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FINAL REPORT

SD 2-6 Surface Water Management Plan - Meliadine Gold Project, Nunavut

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REPORT

Golder Associates

Executive Summary

Agnico Eagle Mines Limited (AEM) is developing the Meliadine Gold Project (the Project), located approximately 25 kilometres north from Rankin Inlet, and 80 km southwest from Chesterfield Inlet in the Kivalliq Region of Nunavut. Situated on the western shore of Hudson's Bay, the Project site is located on a peninsula (the Peninsula) between the east, south, and west basins of Meliadine Lake (63°01'23.8"N, 92°16'6.42"W), on Inuit owned land. This report presents the Surface Water Management Plan (SWMP) for the Project and forms a component of the documentation series produced in accordance with the Project. The document addresses Guidelines issued by the Nunavut Impact Review Board (NIRB) for the preparation of a SWMP (NIRB 2012).

The water management objectives for the Project are to minimize potential impacts to the quantity and quality of surface water at the site. Diversion channels will be constructed as needed to avoid the contact of clean runoff water with areas affected by the mine or mining activities. During mine construction and operation, contact water originating from affected areas will be intercepted, collected, conveyed to central storage facilities for reuse in process, or treatment (if needed) prior to release to the receiving aquatic environment. The uncontrolled release of contact water to neighbouring waterbodies is not anticipated. Water management infrastructure sizes presented in this report are provided as a preliminary guide. These sizes will be finalized during detailed design in conjunction with the mine engineer, based on estimated inflows, local field conditions and the requirements of mining operations at each stage of the mine development.

The Project consists of several gold-bearing deposits that will be mined from 5 sets of open pits: Tiriganiaq, Wesmeg, F Zone, Pump, and Discovery. A series of dikes will be required to isolate open pit mining activities from neighbouring waterbodies and to create attenuation ponds for contact water. Dewatering of Lake B7, which is at the location of the proposed tailings storage facility (TSF), will be accomplished by pumping water to the west into Lake B6. Additional dikes will also be constructed to manage tailings within the Lake B7 basin. Other waterbodies (i.e., A8, A6, B5 and B4) will also be dewatered to adjacent waterbodies to allow pit mining and development of rock stockpile facilities.

The total suspended solids (TSS) levels within the water that is dewatered or pumped from each basin will be closely monitored to verify that it is acceptable for release to the neighbouring waterbodies. Where and if necessary, additional TSS management practices will be implemented to ensure that pumped water meets discharge standards. These practices may include a reduction in pumping rates, the installation of silt curtains and/or baffles in the vicinity of exposed beaches to increase the flow path and residency time within each basin, and/or the use of dedicated TSS treatment systems.

Site contact water from the mine area will be collected in Attenuation Pond 1 (AP01) located north of the plant site. Contact water collected within the attenuation pond will be used to satisfy mill process water make-up requirements. Any excess water will be treated, if required, and discharged to Meliadine Lake. Reclaimed water from the tailings storage facility (TSF) will also be available to meet the process water demand, with excess water being returned to AP01 through a water treatment plant. All attenuation ponds will be operated in a manner to minimize the amount of water stored within the facility during the open water period. This will limit water storage over the winter period, thereby maximizing the storage capacity available for the spring freshet.

Following completion of mining, the pits will be filled with water from Meliadine Lake over a period of 10 years. The TSF Reclaim Pond will remain in place until mining has been completed. At this time, excess reclaim water will be treated, if necessary, and pumped to AP01 for discharge to Meliadine Lake or the Tiriganiaq Pit Lake.

Water management during closure and reclamation will involve maintaining surface water diversions to prevent clean runoff water from coming into contact with areas affected by the mine or mining activities. The water management facilities, including the dikes, attenuation ponds, water collection systems (sumps and channels), and treatment plants (if necessary), will remain in place until mine closure activities are completed and monitoring results demonstrate that water quality conditions are acceptable for discharge of all contact water to the environment without further treatment.

All infrastructure that are maintained for mine operations, closure, and reclamation, including channels and sumps, will be re-contoured and/or surface treated according to site-specific conditions to minimize wind-blown dust and erosion from surface runoff, and to enhance the development site area for re-vegetation and wildlife habitat.

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Abbreviation and Acronym List

AEM	Agnico Eagle Mines Limited
AP01	Attenuation Pond 1
AP02	Attenuation Pond 2
CCME	Canadian Council of Ministers of the Environment
DFO	Fisheries and Oceans Canada
FEIS	Final Environmental Impact Statement
Golder	Golder Associates Ltd.
MMER	Metal Mining Effluent Regulations
NIRB	Nunavut Impact Review Board
SWMP	Surface Water Management Plan
TSF	Tailings Storage Facility
TSS	Total Suspened Solids
WRSF	Waste Rock Storage Facility

Table of Contents

1.0 INTRODUCTION 1

1.1 Concordance with Project Guidelines 1

2.0 PHYSICAL SETTING 2

2.1 Site Characteristics 2

2.2 Climate 2

2.3 Permafrost 4

2.4 Climate Change 4

2.5 Groundwater 5

3.0 MINE DEVELOPMENT PLAN 6

3.1 Development Sequence 7

3.2 Waterbody Dewatering 17

3.2.1 Waterbody Inventory 17

3.2.2 Pumping Requirements 19

3.2.3 Total Suspended Solids Management 20

3.3 Tailings Deposition Planning 21

3.4 Dike Breaching 22

4.0 WATER MANAGEMENT 23

4.1 Water Management Objectives and Strategies 23

4.2 Water Management Design Criteria 23

4.3 Water Management Systems 25

4.4 Plant Site Area 26

4.4.1 Water Supply and Distribution 26

4.4.2 Surface Water Management Systems and Activities 27

4.5 TSF and B7 WRSF Area 28

4.5.1 Surface Water Management Systems and Activities 28

4.5.2 Supernatant Reclaim 28

4.6 Tiriganiaq Area 29

4.7 Wesmeg Area 29

4.8 B4 WRSF and Pump Area 30

4.9 A45-2 WRSF and F Zone Area 31
4.10 Discovery Mining Areas 31
4.11 Haul Roads 32
4.12 Pit and Underground Flooding 32
4.13 Changes in Hydrologic Conditions 34
5.0 INFRASTRUCTURE SIZING 35
5.1 Sumps and Ponds 35
5.2 Channels 36
5.3 Dikes 38
6.0 WATER BALANCE 38
6.1 Conceptual Water Balance Framework 39
6.2 Water Balance Assumptions 39
6.3 Water Balance Results 40
7.0 WATER QUALITY 47
7.1 Input Parameters 48
7.2 Geochemical Controls on Water Quality 49
7.3 Treatment Options Specified 49
7.4 Water Quality Assumptions 49
7.5 Closure 49
7.6 Water Quality Results 50
7.6.1 Operation Phase 51
7.6.2 Closure and Post-Closure Phases 52
8.0 CONCEPTUAL WATER QUALITY MONITORING PLAN 54
9.0 MINE CLOSURE AND RECLAMATION 56
9.1 Tailing Storage Facility 57
9.2 Pits 57
9.3 Tiriganiaq Underground 57
9.4 Waste Rock Storage Facilities 58
9.5 Dikes 58
9.6 Channels and Sumps 58

10.0 CLOSURE **59**

11.0 REFERENCES **59**

TABLES

Table 1: Estimated Mine Site Monthly Climate Characteristics 3

Table 2: Estimated Mine Site Extreme Annual Precipitation 3

Table 3: Estimated Mine Site Extreme 24-hour Rainfall Events 4

Table 4: Summary of Average Projected Climate Trend Deviations from Observed Historic Values 5

Table 5: Storage Infrastructure 7

Table 6: Mine Workings 7

Table 7: Mine Development Sequence 9

Table 8: Inventory of Waterbodies Impacted by Mining Activities 18

Table 9: Dewatering Levels 20

Table 10: Average Tailings Surface Elevation for Various Amounts of Ice Entrapment 22

Table 11: Pit and Underground Flooding 33

Table 12: Surface Sump and Pond Storage Requirements 35

Table 13: Pit Sumps 36

Table 14: Preliminary Channel Characteristics 37

Table 15: Preliminary Dike Characteristics 38

Table 16: Summary of Estimated Annual Volumes from the Mine Site Water Balance (m^3) 41

Table 17: Summary of Estimated Annual Volumes at the Pits and Underground during Closure (m^3) 45

Table 18: Construction Period Proposed Water Quality Monitoring Program 55

Table 19: Operation Period Proposed Water Quality Monitoring Program 55

Table 20: Closure Period Proposed Water Quality Monitoring Program 55

FIGURES

Figure 1: Location Plan 61

Figure 2: Preproduction Phase – Years -3, -2, -1 62

Figure 3: Mining Phase 1 – Years 1, 2 63

Figure 4: Mining Phase 2 – Years 3, 4 64

Figure 5: Mining Phase 3 – Years 5, 6, 7, 8 65

Figure 6: Mining Phase 4 – Year 9 66

Figure 7: Mining Phase 5 – Years 10, 11, 12 67

Figure 8: Discovery Pit 68
Figure 9: Mining Post Closure 69
Figure 10: Discovery Pit – Post Closure 70
Figure 11: Tailing Production and Storage Curves 71
Figure 12: TSF Storage as a Function of Ice Content 72
Figure 13: Water Balance Flow Diagram Summary 73
Figure 14: Reclaim Pond Water Management 74
Figure 15: Process Water to Mill 75
Figure 16: Attenuation Pond 1 Water Management 76
Figure 17: Attenuation Pond 2 Water Management 77
Figure 18: Underground Water Storage and Treatment 78
Figure 19: Wesmeg Pits Water Filling 79
Figure 20: Tiriganiaq and Pump Pits Water Filling 80
Figure 21: F Zone and Discovery Water Filling 81
Figure 22: Tiriganiaq Underground Water Filling 82
Figure 23: Tailings Storage Facility – Untreated Pond Water 83
Figure 24: Tailings Storage Facility – Treated Outflow 84
Figure 25: Tailings Storage Facility – Untreated Pond Water 85
Figure 26: Tailings Storage Facility – Treated Outflow 86
Figure 27: Groundwater Outflow (Salt Plant Inflow) 87
Figure 28: Salt Plan Outflow (Treated to 1000mg/L Chloride) 88
Figure 29: Attenuation Pond 1 Water Quality for Discharge to Meliadine Lake 89
Figure 30: Attenuation Pond 1 Water Quality for Discharge to Meliadine Lake 90
Figure 31: Proposed Monitoring Locations Construction Period 91
Figure 32: Proposed Monitoring Locations Operation Period 92
Figure 33: Proposed Monitoring Locations Closing Period 93

APPENDICES

APPENDIX A
Water Balance Model Inputs and Assumptions

APPENDIX B
Model Simulation Calendar

APPENDIX C
Mine Site Water Quality Predictions, Meliadine Gold Project

1.0 INTRODUCTION

Agnico Eagle Mines Limited (AEM) is developing the Meliadine Gold Project (the Project), located approximately 25 kilometres (km) north from Rankin Inlet, and 80 km southwest from Chesterfield Inlet in the Kivalliq Region of Nunavut. Situated on the western shore of Hudson's Bay, the proposed Project site is located on a peninsula (the Peninsula) between the east, south, and west basins of Meliadine Lake (63°01'23.8"N, 92°13'6.42"W), on Inuit owned land. This report presents the Surface Water Management Plan (SWMP) for the Project.

The Project is composed of 5 gold deposits: Tiriganiaq, F Zone, Pump, Wesmeg, and Discovery. The current mining plan indicates that approximately 22.1 Mt of ore will be mined over a nominal mine life of approximately 13 years. The deposits will be mined using conventional open pit mining methods with additional underground mining for the Tiriganiaq deposit. Approximately 8500 tonnes of ore will be processed per day.

Proposed mining facilities in the area include a plant site, an ore stockpile site, a tailings storage facility (TSF), waste rock piles and diversion and containment dikes. A general location plan of the proposed Meliadine Mine is shown in Figure 1.

The SWMP is divided into the following components:

- A brief summary of the physical setting at the mine site (Section 2);
- A description of the mine development plan (Section 3);
- A description of water management at the mine site (Section 4);
- A summary of the sizing of major water management infrastructure components (Section 5);
- A presentation of the mine site water balance model and its results (Section 6);
- A presentation of the mine site water quality model and its results (Section 7);
- A description of the water quality monitoring plan (Section 8);
- A discussion on the mine closure and reclamation, as related to water management (Section 9); and
- A conclusion (Section 10).

This SWMP has been prepared to the preliminary design stage. Proposed infrastructure alignments shown are conceptual for information purposes only; final alignments will be confirmed during detailed design and will be subject to change based on local field conditions. This SWMP will be reviewed and updated on a regular basis as the Project proceeds into detailed design, construction, operations and closure.

This report has been prepared in accordance with the "Study Limitations of This Report," which are presented at the beginning of the report. The reader's attention is specifically drawn to this information for reference during the use of this report.

1.1 Concordance with Project Guidelines

The purpose of this document is to address the Guidelines issued by the Nunavut Impact Review Board (NIRB) for the Project (NIRB 2012), and specifically those relating to the preparation of a SWMP. The complete Guidelines for the Project, including Final Environmental Impact Statement (FEIS) section and page number referencing, are summarized in the main FEIS concordance table (FEIS Volume 1, Appendix 1.0-A).

2.0 PHYSICAL SETTING

2.1 Site Characteristics

Located within a polar tundra climate, the general physical setting of the Project site is typical of a remote, relatively undisturbed northern environment; it is comprised of a hummocky topography having glacial landforms draped with water bodies and tundra vegetation that are home to northern fish, wildlife and birds. The area is subject to great seasonal changes in the length of days and nights causing long, cold winters and short, cool summers. A zone of continuous permafrost underlies the Project site. The Tiriganiaq deposit is the only deposit that is planned to be mined below the inferred depth of permafrost at the site. Half of the mean annual precipitation of the area occurs as snow and the other half occurs as rain. The regional surface drainage patterns are controlled by a series of low relief ridges composed of glacial deposits.

2.2 Climate

Climate characteristics presented herein were extracted from the Aquatic Baseline Synthesis Report (SD 7-1 2009 Aquatics Synthesis Baseline) for the Project. The site is located in an arid arctic environment that experiences extreme winter conditions, with an annual average temperature of -10.4^{o}C. The monthly average temperature ranges from -30.9^{o}C in January to +10.5^{o}C in July, with above-freezing averages for only 4 months of the year (i.e., June to September). The site is underlain by thick and continuous permafrost, except under larger waterbodies where taliks can exist. The annual average total precipitation at the mine site is 404.8 mm/year and falls almost equally as snow and rainfall. Average annual evaporation for small waterbodies in the Project area is estimated to be 323 mm between June and September. The average annual loss of snowpack to sublimation and snow redistribution is estimated to vary between 46% and 52% of the total precipitation for the winter period and occurs between October and May. Table 1 below presents the annual precipitation, evaporation and temperature characteristics.

A frequency analysis was conducted on the annual precipitation data based on the hydrological year (i.e., October to September), in order to characterize extreme values for various return periods at the Project site. Annual rainfall, snowfall, and precipitation events were estimated using data from the Rankin Inlet A climate station for the period of hydrological years 1982 to 2009. Due to missing data in 1993, the hydrological years 1993 and 1994 were omitted from the analysis. The selected distributions were the Pearson 3 distribution for rainfall and precipitation and Log Pearson 3 distribution for snowfall, based on the best-of-fit test in Environment Canada (Environment Canada 1994). Results of these analyses are tabulated in Table 2.

Table 1: Estimated Mine Site Monthly Climate Characteristics

Month[a]	Monthly Air Temperature (°C)			Monthly Precipitation (mm)			Lake Evaporation (mm)
	Minimum	Average	Maximum	Rainfall[b]	Snowfall[c]	Total[d]	
January	-37.2	-30.9	-19.8	0.0	12.9	11.1	0
February	-35.3	-30.1	-24	0.0	13.1	11.1	0
March	-30.8	-25.1	-18.8	0.0	18.6	16.1	0
April	-20.2	-15.7	-10.4	1.4	28.8	26.4	0
May	-10.8	-5.9	-1.2	7.7	19.2	25.2	0
June	0.1	4.1	6.7	26.4	7.1	37.0	60.4
July	6.9	10.5	14.9	43.7	0.2	51.2	124.4
August	7.7	9.7	11.2	63.7	0.3	74.6	95.6
September	1.3	3.8	6.8	45.2	5.7	57.8	42.7
October	-9.9	-4.6	1.7	15.5	36.9	50.0	0
November	-23.6	-17.2	-10.2	0.3	33.3	28.5	0
December	-33.3	-25.9	-19.4	0.0	18.9	15.8	0
Annual	-37.2	-10.4	14.9	203.9	195.0	404.8	323.1

[a] Climate characteristics obtained from Golder (SD 7-1 2009 Aquatics Synthesis Baseline).

[b] Rainfall was adjusted to account for under catch by 13%.

[c] Snowfall was adjusted to account for under catch by 50%.

[d] Total precipitation was adjusted to account for under catch by 32%.

Table 2: Estimated Mine Site Extreme Annual Precipitation

Type of Year[a]	Return Period (years)	Annual Rainfall (mm)[b]	Annual Snowfall (mm)[c]	Annual Total Precipitation (mm)[d]
Wet	100	324	489	594
	50	310	414	573
	25	289	331	541
	10	271	278	513
	5	249	233	479
Median	2	207	179	412
Dry	5	165	151	345
	10	144	143	310
	25	126	138	280
	50	106	134	247
	100	93	133	225

[a] Precipitation extreme obtained from Golder (SD 7-1 2009 Aquatics Synthesis Baseline).

[b] Rainfall was adjusted to account for under catch by 13%.

[c] Snowfall was adjusted to account for under catch by 50%.

[d] Total precipitation was adjusted to account for under catch by 32%.

Table 3 summarizes the extreme 24-hour rainfall events derived for the mine site based on intensity-duration-frequency curves established from the regional Rankin Inlet rainfall observations.

Table 3: Estimated Mine Site Extreme 24-hour Rainfall Events

Return Period (Years)	24-hour Precipitation (mm)
2	33
5	44
10	50
25	57
50	61
100	65

a) Precipitation extreme obtained from Golder (SD 7-1 2009 Aquatics Synthesis Baseline).
b) No adjustments were made for undercatch since undercatch is generally not significant for extreme rainfall events on a daily time scale.

2.3 Permafrost

Permafrost is the state or condition in which the terrain, or terrain materials, continuously exists at a temperature below 0°C for 2 or more years. This state applies to any material, soil, rock, or water. The Project is located in a zone of continuous permafrost within the Southern Arctic terrestrial ecozone, one of the coldest and driest regions of Canada. Golder (SD 6-1 Permafrost Baseline Report) presents the permafrost thermal regime baseline studies for the Meliadine site. Continuous permafrost to depths of between 360 and 495 metres (m) is expected based on historical and recent ground temperature data from thermistors installed near Tiriganiaq, F Zone, and Discovery deposits. The ground temperature data indicates that the surface active layer thickness is 1.0 to 3.0 m in areas of shallow soil away from the influence of waterbodies. It is anticipated that the active layer adjacent to waterbodies or below a body of moving water, such as a stream, will be deeper.

Taliks (areas of unfrozen ground) are to be expected where waterbody depths are greater than about 1.0 to 2.3 m. Formation of an open talik, which penetrates through the permafrost, would be expected for waterbodies which exceed a critical depth and size (SD 6-1 Permafrost Baseline Report).

The salinity level of the deep groundwater in the Project area is elevated (FEIS Volume 7, Section 7.2.2.5), which is expected to result in a freezing point depression. Test results on two deep groundwater samples collected from a Westbay monitoring well installed below the base of the permafrost (at 450 meters below the ground surface) have indicated a salinity levels that lead to a freezing point depression of about 3.3°C (FEIS Volume 7, Appendix 7.2-A). This suggests that the depth of frozen ground may be less than the depth of ground with temperatures continuously below 0°C (i.e., permafrost at depth may be unfrozen at temperatures between 0°C and -3.3°C in the presence of highly saline groundwater).

2.4 Climate Change

Long term climate trends were assessed as part of the Project in FEIS Volume 5, Section 5.4, and included estimating changes in air temperature and precipitation from observed historic values for 2 typical time horizons: 2041 to 2070 (the 2050s) and 2071 to 2100 (the 2080s). The average projected climate trend deviations from the observed historic values are provided in Table 4. Conclusions on trend deviation for air temperature and precipitations are as follows:

- The climate in the Project region is projected to be warmer for the 2050s and 2080s time horizons when compared to the observed historic values.
- Precipitation shows a larger amount compared to historical values, however the majority of projections are within the annual recorded precipitation values.

Conclusions from FEIS Volume 5, Section 5.4 also indicate that a warming climate can increase the thickness of the permafrost active layer. Overall, warming could cause thawing of ice-rich permafrost, potentially resulting in thaw lakes and subsidence of the land surface.

Table 4: Summary of Average Projected Climate Trend Deviations from Observed Historic Values

Station and Period[a]			Air Temperature (°C)	Precipitation (mm equiv.)
Baker Lake	2050s	Annual	+3 to 3.5	+30 to 50
		Spring	+3 to 3.5	+5 to 10
		Summer	+2 to 2.5	+10 to 15
		Fall	+3 to 3.5	+15 to 20
		Winter	+4.5 to 5	+0 to 5
	2080s	Annual	+4.5 to 5	+35 to 55
		Spring	+4 to 4.5	+5 to 10
		Summer	+2 to 2.5	+10 to 15
		Fall	+5 to 5.5	+15 to 20
		Winter	+7 to 7.5	+5 to 10

[a] Data in this table obtained from Golder (FEIS Volume 5, Section 5.4).

2.5 Groundwater

Groundwater characteristics for the Project mine site are detailed in FEIS Volume 7, Section 7.2 Hydrogeology and Groundwater, and are briefly summarized herein.

Two groundwater flow regimes in areas of continuous permafrost are generally present:

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

The water table in the active layer is expected to be a subdued replica of topography, and is expected to parallel the topographic surface. The shallow groundwater flow regime has little to no hydraulic connection with the groundwater regime located below the permafrost.

Taliks (unfrozen ground surrounded by permafrost) exist beneath waterbodies which have sufficient depth such that they do not freeze to the bottom over the winter. Beneath small waterbodies that do not freeze to the bottom over the winter, a talik bulb that is not connected to the deep groundwater flow regime will form (a closed talik). When the size of a waterbody is above a critical value, the talik beneath the waterbody will be an open talik,

which connects to the deep groundwater flow regime beneath the permafrost. Elongated waterbodies with terraces (where the depth is within the range of winter ice thickness), a central pool(s) (where the depth is greater than the range of winter ice thickness) and a width of 340 m to 460 m or greater are expected to have open taliks extending to the deep groundwater flow regime at the project site. A review of bathymetric data, ice thickness data, and results of thermal modelling suggests that near the Tiriganiaq deposit, only Meliadine Lake, Lake B7 and Lake D7 are likely to have open taliks connected to the deep groundwater flow regime.

Underground mine workings for the Project at Tiriganiaq deposit are planned to extend to approximately 770 m below the ground surface, and therefore part of these facilities would be below the base of the continuous permafrost. The underground excavations will act as a sink for groundwater flow during operation, with water induced to flow through the bedrock to the underground mine workings once the mine has advanced below the base of the permafrost.

No Project open pits are expected to intersect the deep groundwater regime below the permafrost or open taliks below large waterbodies. The Discovery deposit is excavated entirely within permafrost using open pit mining methods and groundwater inflows are expected to be negligible. Portions of the Pump, Wesmeg, F Zone and Tiriganiaq open pits intersect dewatered waterbodies that have unfrozen groundwater within talik bulbs beneath them.

Assumptions on groundwater contributions to the surface water balance (Section 6) are presented in Appendix A.

3.0 MINE DEVELOPMENT PLAN

This section describes the links between water management activities and the mining development of the Project. The mine development comprises the following phases:

- Construction, spanning from mine years -3 to -1, when activities are primarily focused on construction of infrastructure, with some mining occurring (i.e., Tiriganiaq Pit 1 and underground);
- Operations, spanning from mine years 1 to 13, when activities are primarily focused on mining, with construction activities occurring as needed;
- Closure, occurring following completion of mining, assumed to span a period of 10 years for the filling of the pits (with water); and
- Post-closure, which is the period when the pit lakes discharge water to the receiving environment.

Figures 2 to 10 illustrate the development of the mine area from pre-mining to post-closure. Mine infrastructure for the Project, including water management infrastructure components, are also shown in Figures 2 to 10. Major mine infrastructure includes:

- material and water storage areas (Table 5), such as the ore stockpiles, TSF, and waste rock storage facilities (WRSF);
- open pits and underground workings (Table 6); and
- the plant site.

The designated areas listed in Table 5 and Table 6 refer to general areas of the mine development that are typically cited in this document (e.g., Table 7).

The following details the chronology of water management activities over the course of the mine development (Section 3.1), and discusses waterbody dewatering (Section 3.2), tailings deposition planning (Section 3.3) and dike breaching (Section 3.4).

Table 5: Storage Infrastructure

Infrastructure	Designated Area
Tailings storage facility (TSF)	TSF and B7 WRSF
B7 Waste rock storage facility (WRSF) – North, East, South, and West	TSF and B7 WRSF
B4 WRSF – East and West	B4 WRSF and Pump
A45-2 WRSF	F Zone
Discovery WRSF	Discovery
Ore stockpile	Plant site
Attenuation Pond 1 (AP01)	Plant site
Attenuation Pond 2 (AP02)	Tiriganiaq

Table 6: Mine Workings

Infrastructure	Designated Area
Tiriganiaq underground	Tiriganiaq
Tiriganiaq Pit 1 (Phases 1 to 3)	Tiriganiaq
Tiriganiaq Pit 2 (Phase 4)	Tiriganiaq
Wesmeg Pit 1, Pit 2, Pit 3, Pit 4, Pit 5	Wesmeg
Pump Pit 1, Pit 2	B4 WRSF and Pump
F Zone Pit 1, Pit 2, Pit 3	F Zone
Discovery Pit	Discovery

3.1 Development Sequence

The planned mine development sequence as it pertains to water management on site is summarized in Table 7 and Figures 2 to 10. The water management infrastructure introduced in Table 7 and Figures 2 to 10 were proposed for the conveyance and storage of water for the fullfilment of the following strategies:

- Reduce contact water (i.e., water in contact with mine processes) for management, monitoring and treatment (if required) to the extent practical;
- Divert non-contact water from undisturbed lands away from the mine site infrastructure to the extent practical; and
- Limit fresh water make-up quantities to the extent practical.

The proposed water management infrastructure were developed to ensure all contact water will be collected and stored for use in mine processes. Water collected from pit areas will be directed to the TSF, while water reporting from the waste rock storage facilities will be conveyed to attenuation ponds. Water stored in the TSF

and AP01 will be recycled to the mill to satisfy water demand for mining processes and in order to minimize fresh water make-up requirements from Meliadine Lake.

The strategy to reduce the amount of contact water collected entailed proposing water management infrastructure (Table 7 and Figures 2 to 10) that minimize the drainage areas carrying contact water. This strategy in turn maximizes the drainage areas left undisturbed, mininimizing potential impacts to the receiving environment.

During the construction to the closure phase, the number of discharge points from the mine site to the receiving environment are limited to:

- A diffuser outfall in Meliadine Lake for the discharge of water from AP01 during construction, operations and closure (Volume 7, Appendix 7.4-A); and
- Dewatering station for draining waterbodies during the construction phase (Section 3.2).

These outlets will consist of engineered structures that will be designed to yield discharges to the receiving environment that meet acceptable water quality criteria. Water management during closure and post-closure, including the requirement that discharges to the receiving environment meet acceptable water quality conditions, is addressed in Section 9.

Table 7: Mine Development Sequence

Mine Year	Figure	Designated Area	Mine Development and Water Management Activities[a]
-3	2	Plant Site	■ AP01 collects drainage from the B7 WRSF East, and pumped flows from PS-S-01 and B7-S-03. It serves as the last water collection point prior to discharge to Meliadine Lake. To minimize fresh water make-up requirements from Meliadine Lake, water collected at AP01 is used for make-up supply to the ore processing mill, and dust control for the mine site. ■ Construction of a pipeline to the effluent discharge location in Meliadine Lake (Volume 7, Appendix 7.4-A). ■ During the first year of construction, the plant site pad will be constructed and will include the following: ▪ Dewatering of Lakes H20 and H19 to Meliadine Lake (Lakes H16, H5, H4, H3, and H2 will not need dewatering and will be covered by the plant site pad). ▪ Construction of a sump at H6 basin (B7-S-03) to collect water from the plant site pad (the plant site pad will be graded to the west, draining to B7-S-03, and water from that sump will then be pumped to AP01). ▪ Construction of a sump in H1 basin (PS-S-01) on the east side of the plant site pad that will collect drainage from PS-C-01 and PS-C-02, and water from that sump will then be pumped to AP01. The construction of the sump will be facilitated by the construction of a dike on the east side of H1 (PS-D-01). ▪ Construction of channels PS-C-01 and PS-C-02 to collect water east of the plant site pad and divert to PS-S-01.
-3	2	TSF and B7 WRSF	■ Construction of the TSF will entail the following: ▪ The water level in B7 will be lowered by 1 m (water will be pumped to B6). ▪ Dike TSF-D-01 will be constructed to facilitate construction of the TSF and to prevent TSF flows from going into Lake E11. ▪ Dike TSF-D-02 will be constructed to facilitate construction of the TSF and to prevent TSF flows from going into Lake B6. ■ The TSF will include a pumping facility to recycle water to the ore processing mill, or to AP01 following treatment (Section 6). ■ A road will be built from the plant that will follow the eastern and northern ends of the TSF and B7 WRSF. ■ The B7 WRSF will receive waste rock from the Tiriganiaq underground, starting in the east and working to the west. Construction of the WRSF will entail the following: ▪ Dewatering of Lake H13 to Meliadine Lake (H18, H15G, H15D, H15E, H15, H14A, H14, H12, H11, H10, H9, A17 and A59 will not be dewatered and will be covered by the WRSF). ▪ Reduced upstream catchment area for H8 (this waterbody is expected to have low water levels due to that reduction). ▪ Drainage (gravity-driven) of water from the B7 WRSF to AP01 (it is anticipated that the section of the B7 WRSF within the A watershed will be developed at a later date).

Table 7: Mine Development Sequence (continued)

Mine Year	Figure	Designated Area	Mine Development and Water Management Activities[a]
	2	B4 WRSF and Pump	■ Construction of B4 WRSF and Pump access road and Dike WM-D-01, which include dewatering Lake A8 to Lake A6 through A7 to facilitate dike construction (dewatering of Lake A8 will be required for the remainder of mine life, and construction of channel WM-NC-03 from the eastern arm of Lake A8 to Lake A31 will be needed to convey drainage downstream into the A watershed). ■ Construction of Dike B4-D-01 to separate Lake B45 from Lake B4. ■ Channels or improvements to channels will be implemented between the following waterbodies: B45 to B44, B44 to P3, P3 to P2 and P2 to B2, in order to facilitate a new flow path from B45 to Meliadine Lake through P2 and B2. ■ Dewater Lake B4 to Meliadine Lake to allow water from underground workings to be stored temporally before being treated. ■ Lower Lake B36 water levels by pumping to Lake B34 (Lake B36 will be maintained at lower levels to prevent water from entering B4 WRSF, and this pumping activity will be maintained until Pump Pit 1 is developed).
	2	Tiriganiaq	■ Pumping from Lake B5 to Lake D7 will be used to maintain water levels below the outlet from Lake B5 to Lake B4. ■ Discharges from B10, B9, and B8 will be diverted by channel or pumping to B33 in order to minimize water pooling at the toe of the TSF Dam.
-2	2	TSF and B7 WRSF	■ Sumps TSF-S-01 and TSF-S-02 will be constructed to collect seepage from the TSF and pump back to the TSF. ■ Dam raises will be continued. ■ Placement of waste rock in the B7 WRSF East will be continued.
	2	Tiriganiaq	■ Sump B7-S-02 (Lake A54) will be constructed to collect water from the existing underground facilities, the section of the B7 WRSF in the A watershed when complete, and B7-C-01. Construction of this sump entails: ▪ Construct Dike B7-D-02 in Lake A54 to enclose that water body and minimise inflows to Tiriganiaq Pit in subsequent years. ▪ Dewater Lake A54 to AP01. ▪ Reduced upstream catchment areas for A39, A38, and A35 (these waterbodies are expected to have lowered water levels so may not require dewatering for the development of Tiriganiaq Pit 1). ▪ Draining of the southern half of Lake A54 into Tiriganiaq Pit 1. ▪ Reduced catchment areas for A13, A12, A11, A10 and A9 (these waterbodies may not require dewatering for the development of Tiriganiaq pit 1). ■ Channel B7-C-01 will be developed to collect drainage from the southern toe of the B7 WRSF in the A watershed. The water is drained by gravity to sump B7-S-02. ■ Underground development reaches depth below permafrost, groundwater starts to inflow into underground development.

Table 7: Mine Development Sequence (continued)

Mine Year	Figure	Designated Area	Mine Development and Water Management Activities[a]
			Seepage and saline drill water will be pumped to Lake B4 for temporary storage; water will be treated at the salt plant.
-1	2	TSF and B7 WRSF	■ Water collected from the Tiriganiaq Pit 1 will be pumped to the TSF. ■ Dam raises will be continued. ■ Sump B7-S-04 will be constructed as B7 WRSF reaches elevations that require collection of seepage in the G watershed (water from that sump will be pumped to AP01). ■ B7 WRSF will extend into Watershed A; seepage and runoff will be collected in channel B7-C-01.
	2	B4 WRSF and Pump	■ Water (from underground workings) stored in Lake B4 will be pumped to the salt plant for treatment, then pumped to AP01 for reuse and/or discharge. ■ Water Levels in B4 will be controlled to prevent flows from Lake B4 to B2.
	2	Tiriganiaq	■ Tiriganiaq Pit 1 (Phase 1) will start development. Waste rock and overburden will be placed in the B7 WRSF (if still present, A13, A12, A11, A10 and A9 may require dewatering to Lake A8). ■ The Tiriganiaq access road will be constructed from the plant side along the southern toe of B7 WRSF to Tiriganiaq Pit 1.
1	3	TSF and B7 WRSF	■ Dam raises will continue. ■ Waste rock from Tiriganiaq underground and Pit 1 will continue to be placed in B7 WRSF.
	3	Tiriganiaq	■ Mining in Tiriganiaq Pit 1 (Phase 1) will continue.
2	3	TSF and B7 WRSF	■ Placement of waste rock at B7 WRSF East will be completed. ■ Placement of waste rock at B7 WRSF South will start.
	3	Wesmeg	■ Sump WM-S-01 will be constructed, and will entail building dike WM-D-02 to enclose that water body. ■ Construct channel WM-NC-01 to divert water from B33A away from the B7 WRSF toe.
	3	Tiriganiaq	■ Construct the road extension of the Tiriganiaq access road along the southern toe of the B7 WRSF.
	3	F Zone	■ Dike F-D-01 will be constructed, entailing: ▪ Lower water level in Lake A6 by 1.5 m to facilitate construction of the dike (water level will be maintained low for the remainder of the mine life); ▪ Dewater the east side of Lake A6 to the west side of that waterbody at dike completion; ▪ Construct diversion F-NC-01 to direct flow from Lake A6 away from A5, A4, A3, A2A, and A2 (these waterbodies may require dewatering to Lake A1); and ▪ Pump water ponding upstream of the dike at Lake A6 to F-NC-01.

Table 7: Mine Development Sequence (continued)

Mine Year	Figure	Designated Area	Mine Development and Water Management Activities[a]
			■ Lake A54 will be dewatered prior to A45-2 WRSF placement. ■ F Zone access roads will be constructed.
3	4	Tiriganiaq	■ Attenuation Pond AP02 created in B5 basin. Water levels will be lowered by 1m to prevent spills to the B4 WRSF and Lake D7 (all water will be pumped to channel B7-C-01). ■ Water inflows from the B7 WRSF West and South will drain by gravity to AP02 and be pumped to the diversion channel at the toe of B7 South WRSF (B7-C-01). ■ Water inflows from Lake B4 (B4-S-04) will be pumped to AP02. ■ A channel will be constructed if necessary to connect the deeper pools of Lake B5 (B5-C-01). ■ Pumping from Lakes B5 to D7 will be stopped. ■ The extension of the Tiriganiaq access road along the western toe of the B7 WRSF will be constructed.
	4	Plant Site	■ Construction of the pad to sustain temporary ore stockpiling, which will entails the following: ▪ Dewatering, if required, of J7, J6, J5, J3, J2, and J8 to J1; and ▪ Extension of PS-C-01 to collect the western drainage from the stockpile and direct it to sump PS-S-01. ■ Sump WM-S-02 will be constructed to collect drainage from the eastern side of the pad, with the water collected pumped to AP01.
	4	TSF and B7 WRSF	■ Placement of waste rock in the B7 WRSF South will end. ■ Sump B7-S-01 and dike B7-D-01 will be constructed to collect seepage and runoff prior to entering Lake E3 (collected water will be pumped to the TSF). ■ Placement of waste rock in the B7 WRSF West and North will start. Preparing for placement will entail the following: ▪ Dewatering Lakes E4 to E3, E5 to B6, and B6 to B5. ▪ Gravity-driven drainage of water from B7 WRSF West to AP02. ■ Lake B33 will require dewatering or infilling.
	4	B4 WRSF and Pump	■ Placement of the B4 WRSF East will begin. ■ Sumps along low points surrounding B4 WRSF (B4-S-02, B4-S-04) will be constructed. ■ Channels, if required, will be constructed around the eastern perimeter of B4 WRSF (B4-C-02, B4-C-03, B4-C-04. ■ Water will be pumped from Lake B4 (B4-S-04) to AP02. ■ Lake B39 will be filled with waste rock.

Table 7: Mine Development Sequence (continued)

Mine Year	Figure	Designated Area	Mine Development and Water Management Activities[a]
	4	Wesmeg	■ Development of Wesmeg Pits 2 and 3 will start (pit water will be pumped to the TSF).
	4	A45-2 WRSF and F Zone	■ Development of F Zone Pit 2 will start. (F Zone Pit 2 water will be pumped to the TSF). ■ Placement of waste rock and overburden will begin at A45-2 WRSF (sumps F-S-01, F-S-02 and F-S-03 will be constructed along low points surrounding the A45-2 WRSF, and water collected will be pumped AP01). ■ Dike F-D-02 will be constructed (to prevent Lake A1 backwater from reaching into the upstream chain of A waterbodies).
4	4	TSF and B7 WRSF	■ Placement of waste rock will continue in B7 WRSF West and North.
	4	B4 WRSF and Pump	■ Placement of waste rock will continue in B4 WRSF East.
	4	F Zone	■ Development will begin of F Zone Pit 1 and Pit 3 (pit water will be pumped to the TSF). ■ Development of Pit 2 will end. ■ Placement of waste rock and overburden at A45-2 WRSF will continue.
5	5	B4 WRSF and Pump	■ Dikes P-D-01 and P-D-02 will be constructed to prevent water from Lake B59 flowing into Pump Pit 1. ■ Placement of waste rock in B4 WRSF East will continue.
	5	Tiriganiaq	■ Development of Tiriganiaq Pit 1, Phase 2 will start. ■ If still present, Lakes A39, A38, and A35 may require dewatering to Lake A8.
	5	F Zone	■ Development of Pit 1 and Pit 3 will end (pit water will be pumped to the TSF). ■ Placement of waste rock and overburden at the A45-2 WRSF will end.
6	5	TSF and B7 WRSF	■ Placement of waste rock in the B7 WRSF West and North will continue.
	5	B4 WRSF and Pump	■ Pump Pit 1 and will be developed (water from pit will be pumped to the TSF). ■ Placement of waste rock in B4 WRSF East will continue.
	5	Tiriganiaq	■ Development of Tiriganiaq Pit 1, Phase 1 will end.
	5	Wesmeg	■ Development of Wesmeg Pit 2 will end. ■ Development of Wesmeg Pit 4 will start and end (pit water will be pumped to the TSF).
	8	Discovery	■ Development of Discovery Pit and WRSF will start, where:

Table 7: Mine Development Sequence (continued)

Mine Year	Figure	Designated Area	Mine Development and Water Management Activities[a]
			▪ Water will be managed within the Discovery Pit. ▪ Excess water will be directed to the TSF. ▪ Water from Discovery Sump could be used as dust control for the mine site.
7	5	TSF and B7 WRSF	■ Placement of waste rock in B7 WRSF West and North will continue.
	5	B4 WRSF and Pump	■ Mining in Pump Pits 1 and 2 and placement of waste rock at B4 WRSF East will continue.
	5	Wesmeg	■ Development of Wesmeg Pit 3 will end.
	8	Discovery	■ Mining and development of WRSF will continue.
8	5	TSF and B7 WRSF	■ Placement of waste rock in WRSF West will continue.
	5	B4 WRSF and Pump	■ Placement of waste rock at B4 WRSF East will continue. Mining will not take place in Pump Pits this year.
	8	Discovery	■ Mining at the Discovery Pit and development of Discovery WRSF will continue.
9	6	Tiriganiaq	■ Dike B5-D-01 will be constructed to facilitate the construction of Tiriganiaq Pit 2 and Tiriganiaq Pit 1 (Phase 3). ■ Pumping will be required between deeper pools within AP02.
	6	TSF and B7 WRSF	■ Placement of waste rock in B7 WRSF West and North will continue.
	6	B4 WRSF and Pump	■ Mining in Pump Pits 1 and 2 and placement of waste rock at the B4 WRSF east will continue.
	6	Tiriganiaq	■ Development of Tiriganiaq Pit 1, Phase 3 will start.
10	7	TSF and B7 WRSF	■ Placement of waste rock in B7 WRSF West and North will end.
	7	B4 WRSF and Pump	■ Mining in Pump Pits 1 and 2 and placement of waste rock at B4 WRSF West will continue. ■ B4 WRSF West will be developed, which will entail the following: ▪ Dewatering of Lakes B19 and B22 if required. ▪ Construction of sump B4-S-01 and dike B4-D-02 to collect seepage from B4 WRSF West. ▪ Construction of sumps along low points surrounding B4 WRSF West, as needed. ■ Water management will continue to collect seepage and runoff from collection sumps and pump water to AP02.

Table 7: Mine Development Sequence (continued)

Mine Year	Figure	Designated Area	Mine Development and Water Management Activities[a]
	7	Tiriganiaq	■ Development of Tiriganiaq Pit 1 Phase 2 will end. ■ Development of Tiriganiaq Pit 2 will start and end.
	7	Wesmeg	■ Wesmeg Pit 1 will begin development.
	8	Discovery	■ Mining of the Discovery pit and development of the Discovery WRSF will continue.
11	7	Tiriganiaq	■ Development of Tiriganiaq Pit 1 Phase 3 will end.
	7	Wesmeg	■ Development of Wesmeg Pit 1 will end.
	7	B4 WRSF and Pump	■ Development of Pump Pit 1 will end. ■ Development of Pump Pit 2 will end. ■ Placement of waste rock at B4 WRSF West will continue.
	8	Discovery	■ Development of Discovery Pit will end (excess pit water will be directed as needed to the TSF until closure). ■ Placement of waste rock and overburden of the Discovery WRSF will end.
12	7	B4 WRSF and Pump	■ Placement of waste rock at B4 WRSF West will continue.
	7	Wesmeg	■ Development of Wesmeg Pit 5 will start and end.
Post-closure	9	Plant site	■ Once water quality monitoring results demonstrate that water quality conditions are acceptable for direct discharge to Meliadine Lake, an outlet will be constructed along the alignment of the original H waterbody Chain from H17 to H1. ■ The infrastructure will be dismantled and the pad will be scarified. ■ Areas of thick pad deposits will have rock transferred to a WRSF.
	9	TSF and B7 WRSF	■ The TSF surface will be filled with 3 m rock cover, graded toward the spillway entrance. ■ Excess water will continue to be treated, if required, and discharged to either Tiriganiaq open pit or to Meliadine Lake. ■ Once water quality monitoring results from the B7 WRSF demonstrate that water quality conditions are acceptable for discharge to the receiving environment, contact water channels and sumps will be removed and a layer of non-potentially acid generating rock will be placed over any sediment in the sumps to prevent dusting and erosion.
	9	B4 WRSF and Pump	■ Once water quality monitoring results from the B4 WRSF demonstrate that water quality conditions are acceptable for discharge to the receiving environment, contact water channels and sumps will be removed and a layer of non-potentially acid generating rock will be placed over any sediment in the sumps to prevent dusting and erosion. Dike B4-D-01 will remain in place as an unmaintained dike to help the flow from Lake B45 to Lake B44 to continue.

Table 7: Mine Development Sequence (continued)

Mine Year	Figure	Designated Area	Mine Development and Water Management Activities[a]
			■ Pump Pit 1 will be actively filled with water from Meliadine Lake over a period of ten years. ■ Pump Pit 2 will be partly filled with waste rock and actively refilled over an 10-year period with water from Meliadine lake.
	9	Tiriganiaq	■ Once water quality monitoring results from AP02 demonstrate that water quality conditions are acceptable for natural flow to the receiving environment, a channel from Lake B5 to Lake D7 (B5-C-02) will be constructed. The outlet level will be constructed to maintain water levels below the outlet from Lake B5 to Lake B4. ■ Tiriganiaq Pits will be actively filled with water from Meliadine Lake over a period of ten years. ■ Tiriganiaq Underground will be filled with water from Meliadine Lake to maintain a freshwater cap.
	9	Wesmeg	■ Wesmeg pits will be actively filled with water from Meliadine Lake over a period of ten years.
	9	F Zone	■ F Zone Pit 1 and 2 will be partly filled with waste rock and actively re-flooded over an 10-year period. ■ F Zone Pit 3 will be re-flooded over a 10 year period. ■ Dike F-D-01 will be removed and a channel constructed along the western edge of the pit to allow Lake A6 to drain into F Zone Pit 3 and maintain fish passage. ■ Once water quality monitoring results from the A45-2 WRSF demonstrate that water quality conditions are acceptable for discharge to the receiving environment, contact water channels and sumps will be removed and a layer of non-potentially acid generating rock will be placed over any sediment in the sumps to prevent dusting and erosion.
	10	Discovery	■ Discovery pit will be actively filled over a ten year period. ■ Once water quality monitoring results from Discovery WRSF demonstrate that water quality conditions are acceptable to the receiving environment, for discharge contact water channels and sumps will be removed and a layer of non-potentially acid generating rock will be placed over any sediment in the sumps to prevent dusting and erosion.

[a] Overburden and waste rock material from development works (e.g. stripping of deposits areas) will be used for construction as much as possible, if material characteristics allow it.

3.2 Waterbody Dewatering

As indicated above, the Project consists of several gold-bearing deposits in relatively close proximity to one another (Figures 2 to 10). Mining the ore at these deposits will require a number of waterbodies having alterations of water levels or complete dewatering to provide room for the facilities. Section 3.2.1 provides an inventory of waterbodies that will require dewatering, while Sections 3.2.2 and 3.2.3 respectively discuss pumping requirements and total suspended solid management, as related to dewatering activities.

3.2.1 Waterbody Inventory

Table 8 lists on a watershed basis waterbodies that will be impacted by mining activities. Also included are estimates of dewatering volumes, when needed, based on current dike configurations and the results of bathymetry surveys carried out at the site. Dewatering volume is estimated as the waterbody volume to be dewatered, in addition to the annual snowmelt, and rainfall over the summer. It has been assumed that small/shallow waterbodies will not need to be dewatered if covered by infrastructure, or if the majority of their watershed areas are diverted. Rationale for dewatering major waterbodies is as follows:

- **Lake A6 (A45-2 WRSF and F Zone area):** Water levels in A6 will be lowered by 1.5 m in order to facilitate construction of dike F-D-01 (water levels will be maintained by pumping flows from the contained area A6 to channel F-NC-01, in order to prevent water from flowing into the area of F Zone Pits).
- **Lake A8 (Tiriganiaq/Wesmeg area):** A8 will be dewatered to allow the construction of dikes WM-D-01 and WM-D-02, as well as the access road to B4 WRSF and Pump areas (water will be required to be pumped from A8 to A7 for the duration of the mine life to keep water away from the areas of Wesmeg Pit 2 and Pump Pit 2, and to maintain the access road).
- **Lake B4 (B4 WRSF and Pump area):** B4 will be dewatered 1) to be used for temporary storage of water from underground workings; 2) to allow the implementation of the B4 WRSF.
- **Lake B5 (Attenuation Pond 2 area):** B5 will be dewatered to become Attenuation Pond 2 (AP02), which will be used for storage of water that was in contact with mine facilities or activities.
- **Lake B7 (TSF area):** B7 will be required to have its water level lowered by 1.0 m to allow for the construction of the TSF starter dams TSF-D-01 and TSF-D-02 under dry conditions (water levels will be maintained at lowered levels until the completion of the starter dams).

Table 8: Inventory of Waterbodies Impacted by Mining Activities

Watershed	Waterbody(ies)	Dewatering Volume (m^3)[a]	Point of Discharge[b]	Notes
A	A54	40,400	To A39	Converted into sump B7-S-02.
	A13, A12, A11, A10, A9	NA	NA	Removed to implement Tiriganiaq Pit 1; assumed dewatering will not be required due to loss of watershed area.
	A39, A38, A35	NA	NA	Removed to implement Tiriganiaq Pit 1 and Wesmeg Pit 2; assumed dewatering will not be required due to loss of watershed area.
	A37	NA	NA	Removed to implement Wesmeg Pit 2; assumed dewatering will not be required due to loss of watershed area.
	A17, A58	NA	NA	Covered by B7 WRSF.
	A8	1,500,000	To A7	Dewatered to allow construction of dikes WM-D-01 and WM-D-02 under dry conditions and to allow construction of access road to B4 WRSF and Pump.
	A6	740,000	To A1 through F-NC-01	Water level lowered by 1.0 m to allow construction of dike F-D-01 under dry conditions and to prevent water from entering F Zone Pit 3.
	A52	NA	To A1 through F-NC-01	Pumped to implement A45-2 WRSF.
	A53, A51, A50	NA	NA	Removed to implement F Zone Pit 3; assumed dewatering will not be required.
	A19, A5, A4, A3, A2A, A2	NA	NA	Removed to implement F Zone Pits 1 to 3; assumed dewatering will not be required due to loss of watershed area.
B	B39, B22, B19	NA	NA	Covered by B4 WRSF; assumed dewatering will not be required (small size, therefore in-filled).
	B61, B62, B38, B37, B36	NA	NA	Removed to implement Pump Pit 2; assumed dewatering will not be required.
	B4	942,000	To Meliadine Lake	Ultimately covered by B4 WRSF, although first used to temporarily store water from underground workings.
	B30, B31, B32, B33, B9, B10, B33A	NA	NA	Covered by B7 WRSF; assumed dewatering will not be required (small size, therefore in-filled).
	B5	1,170,200	To D7	Converted to AP02; water level lowered, yielding a storage capacity of 220,700 m^3.
	B28, B25, B8	NA	NA	Covered by TSF; assumed dewatering will not be required (small size, therefore in-filled).

Table 8: Inventory of Waterbodies Impacted by Mining Activities (continued)

Watershed	Waterbody(ies)	Dewatering Volume (m^3)[a]	Point of Discharge[b]	Notes
	B7	464,600	To B6	Water level lowered by 1m to construct the TSF
E	E4	118,500	To E3	Covered by B7 WRSF.
	E5	NA	To B6	Covered by B7 WRSF.
H	H18, H15G, H15E H15D, H15, H14A, H14, H13, H12, H11, H10, H9	NA	NA	Covered by B7 WRSF; assumed dewatering will not be required (small size, therefore in-filled).
	H19, H16, H7, H6, H5, H4, H3, H2	NA	NA	Covered by plant site pad; assumed dewatering will not be required (small size, therefore in-filled).
	H17	195,700	To Meliadine Lake	Becomes AP01. Consider improvements to H17 waterbody for seepage control with increase in water level based on site conditions.
	H20	NA	To Meliadine Lake	
J	J7	NA	To J1	
	J8, J5, J4, J3, J2	NA	NA	Covered by ore stockpile; assumed dewatering will not be required (small size, therefore in-filled).
Chicken Head (Discovery)	CH28, CH29, CH32	NA	NA	Covered by the Discovery WRSF; assumed dewatering will not be required (small size, therefore in-filled).

[a] The term NA indicates that a volume estimate is not available to calculate pumping capacity.

[b] The term NA indicates that a point of discharge is not applicable, since dewatering is not required.

3.2.2 Pumping Requirements

Pumping capacity will be finalized during detailed design. Potential constraints on pumping capacities may include:

- Available pumping capacity at site;
- Limited dewatering volume during the winter period in order to maintain natural water levels during the subsequent freshet; and
- Effluent from dewatering must meet discharge criteria for total suspended solids (TSS) that will be established as part of the Type-A Water License application process for the Project.

The discharge piping will be heat traced and insulated, if required, and will be installed on a graded pipe bed with an installed vacuum break. This will allow the lines to be fully drained in the event of a prolonged pump outage. The pumping systems will be optimized as required based on the experiences gained during initial phases of the Project.

3.2.3 Total Suspended Solids Management

Dewatering of waterbodies may expose shoals composed of unconsolidated sediments, which may lead to local sedimentation within the impounded water. The introduction of sediments (TSS) into the water column will depend on the type of material exposed, material properties, slope gradient, timing (e.g., ice cover versus open water conditions), prevailing weather conditions (e.g., wind speed and direction, wave action) and rate at which the waterbody is drawn down. Where under water slopes are steep, these may be underlain by a thin layer of soft sediments overlying till or bedrock. Steep slopes are not anticipated based on bathymetry measurements from the site. Nevertheless, slumping may occur as the waterbody is drawn down if steep areas are found to exist. Where under water slopes are less steep, these may be underlain by thicker sequences of soft sediments overlying till or bedrock and may be prone to flow. It is not possible to accurately quantify areas that may be prone to slumping or flow other than in general terms.

The quality of water pumped from each waterbody will be monitored to verify that it is acceptable for release to the receiving environment. Where necessary, additional TSS control practices will be used to limit the amount of TSS reporting to the dewatering pumps and increase the amount of water released directly to the environment without further TSS management. These practices may include a reduction in pumping rates, and the installation of silt curtains and/or baffles in the vicinity of exposed beaches to increase the flow path and residency time within each waterbody, and limit the uptake of TSS laden water.

As a base case, approximately 60% of total pooled water volume from each waterbody is assumed to be of suitable quality to permit direct discharge to neighbouring waterbodies without further TSS management. This estimate is consistent with other similar mining operations in the north requiring dewatering of mining areas. However, given the inherent uncertainties in TSS generation during dewatering, contingency scenarios of 50% and 40% direct discharge to the environment were also considered in the development of this water management plan. The approximate remaining water volumes and water levels within B7, B5, B4, A8, and A6 waterbodies at 60%, 50%, and 40% dewatering are presented in Table 9 below.

Table 9: Dewatering Levels

Water-body	Original Volume (m^3)	Maximum Water Depth (m)	60% Dewatered Volume		50% Dewatered Volume		40% Dewatered Volume	
			Volume (m^3)	Level Lower By (m)	Volume (m^3)	Level Lower By (m)	Volume (m^3)	Level Lower By (m)
B7	852,510	5	341,004	1.17	426,255	0.91	511,506	0.71
B5	872,750	3	349,100	1.10	436,375	0.89	523,650	0.70
B4	753,510	2	301,404	0.68	376,755	0.52	452,106	0.41
A8	1,419,320	4	567,728	1.14	709,660	0.92	851,592	0.73
A6[(a)]	839,260	4	335,704	1.20	419,630	0.94	503,556	0.74

a) A6 will not be fully dewatered. Water levels will be lowered by 1.5m for the construction of F-D-01.

Since the waterbodies on the Project site are typically shallow, it is expected that TSS treatment will be required during dewatering, such as the treatment units used in other northern projects (e.g., Meadowbank and Diavik). A treatment unit removes TSS by typically using chemical flocculants and fine sand to seed flocculent growth, followed by high capacity clarification (other systems could be used). Sludge from the clarifier could be disposed

of within the footprint of the B7 WRSF, for example, so that drainage, if any, would report to contact water collection ponds.

3.3 Tailings Deposition Planning

A preliminary tailings deposition plan for the Project has been developed assuming that tailings will be initially discharged into B7 basin (SD 2-8 Mine Waste Management Plan). The preliminary deposition plan uses discharge points positioned all around the perimeter of the facility to maintain tailings beaches against the upstream embankment face of the TSF dikes. Most of the deposition is planned to be done from the northwest end of the facility so as to develop beaches and a sloping surface towards the south. Deposition around the southern portion of the facility will be required to maintain beaches against the upstream embankment face of the TSF southern dikes. Near the end of the operation, spigots along the northwest boundary of the facility will be progressively advanced to the southeast to develop the final tailings surface and allow progressive reclamation to take place in the northwest sector (SD 2-3 TSF Preliminary Design Report and SD 2-8 Mine Waste Management Plan).

As mill processing rates and tailings characteristics are liable to fluctuate over the life of the mine, the design of the TSF allows for modification to construction staging, providing additional contingency for potential variations in design parameters. These parameters include mill process rates, tailings beach slopes, ice entrapment, and tailings in-situ densities (SD 2-3 TSF Preliminary Design Report). The preliminary tailings deposition plan, which includes a 20% tailings bulking factor due to ice entrapment, indicates that the proposed TSF has sufficient capacity to store the expected tailings volume over the life of the mine. The tailings production and storage curve for the total tailings basin is shown in Figure 11.

It is likely that some ice will be trapped in the tailings as a result of tailings transport water freezing before it reaches the Reclaim Pond. The quantity of ice trapped will depend on tailings beach management, but increases in tailings volume of up to 30% due to ice entrapment have been reported in similar environments. The impact of varying proportions of entrapped ice on the storage capacity of the TSF is presented in Figure 12. Figure 12 indicates that bulking of the tailings by 30% due to ice entrapment would result in an increase of the final height of the TSF by roughly 4.5 m, if compared to a case where no ice is entrapped. This increase would require minor extensions of the TSF dikes and would have a negligible impact on the visibility of the TSF.

The impact of possible ice entrapment on the final elevation of the TSF is summarized in Table 10. As indicated above, the current tailings deposition plan assumes a 20% bulking factor for ice. While the actual amounts of ice entrapment will not be known until the commencement of operation of the TSF, ice entrapment can be managed to a large degree by effective beach management and through the implementation of appropriate operational strategies. It should be noted however that the preliminary tailings deposition plan was developed assuming a relatively low tailings in-situ density; and therefore, additional storage contingency may be available within the TSF. Nevertheless, an advantage of the current facility layout relative to other possible storage areas is that increases in storage volume requirements can be accommodated by relatively small increases in the final tailings surface elevation, while maintaining a low overall profile relative to the surrounding terrain.

Table 10: Average Tailings Surface Elevation for Various Amounts of Ice Entrapment

Proportion of Entrapped Ice (%)	Final Elevation of Tailings (m)
0	77.85
10	79.09
20	80.68
30	82.39

From a water management perspective, an increase in ice entrapment would result in a decrease in the reclaim water rate and an equivalent increase in the freshwater makeup rate since less water would be released from the tailings and, hence, less supernatant would be available for reclaim (water from AP01 will also be used as a source of makeup water; however, the volume of water available from this source is anticipated to by relatively small). If less than 20% ice entrapment occurs, the reclaim rate may increase and the freshwater makeup would decrease accordingly.

As indicated above, the TSF pond may also be considered for contingency storage of dewatering volume that does not meet discharge standards for TSS, should TSS treatment systems at site not function as intended. It should be noted however, that the current tailings deposition plan assumes a constant pond volume of approximately 2.9 Mm^3, and a significant increase in the amount of water stored within the facility will likely alter the final tailings deposition slopes and volumes that can be reasonably achieved. This in turn would influence the available water storage capacity within the facility. The transfer of TSS laden water to the TSF will be considered only as a last resort to facilitate mining of the open pits. .

3.4 Dike Breaching

Following completion of mining, the pits will be filled with water from Meliadine Lake over a period of 10 years. Once flooded, outflows from pit lakes will contribute to watersheds draining into Meliadine Lake. Any dike used for preventing water from draining into pits will be removed to help the flooding process. Pit lake water will be prevented from reporting to the natural environment until monitoring has shown that it is of sufficient quality to allow for free release without additional controls.

Dike breaching will involve the removal of a portion of the dikes to a minimum depth of 1 m below average lake water level or back to original lake bed levels. Consideration will be given to breach staging, with above-water portions of the dike in the breach area removed during winter periods, when there will be little surface water flow, thereby minimizing the potential release of sediments to the neighbouring waterbodies. The remainder of the breach would be completed during the open water season following freshet so as to allow for the deployment of turbidity curtains to control potential releases of sediment.

4.0 WATER MANAGEMENT

This section first describes the mine site water management objectives and strategies (Section 4.1), as well as the design criteria applied to the water management infrastructure (Section 4.2). Water management structures and practices are discussed in general terms in Section 4.3. Application of the SWMP is then specifically described for the designated areas of the mine site, namely, i) the plant site area (Section 4.4); ii) the TSF and B7 WRSF areas (Section 4.5); iii) the Tiriganiaq area (Section 4.6); iv) the Wesmeg (Section 4.7); v) the B4 WRSF and Pump area (Section 4.8); vi) the A45-2 WRSF and F Zone area (Section 4.9); and vii) the Discovery area (Section 4.10). Haul roads and pit flooding are respectively discussed in Sections 4.11 and 4.12.

4.1 Water Management Objectives and Strategies

The goal of water management is to minimize the impact of the Project on the aquatic ecosystem surrounding the mining area. The development of the water management plan was undertaken on the basis of the following strategies:

- Reduce contact water (i.e., water in contact with mine processes) for management, monitoring and treatment (if required) to the extent practical;
- Divert non-contact water from undisturbed lands away from the mine site infrastructure to the extent practical; and
- Limit fresh water make-up quantities to the extent practical.

4.2 Water Management Design Criteria

Two levels of catchment disturbance have been defined for the area, namely undisturbed and disturbed. Areas that have been disturbed as part of the mine development are considered disturbed catchments, while the areas left unaffected are considered undisturbed catchments. For the purposes of this mine water management, runoff from undisturbed areas is considered non-contact water, while runoff from disturbed catchment areas is considered contact water. Surface water that is diverted around the mine facilities or groundwater that does not emerge into a mine facility is considered non-contact water. Any non-contact water that mixes with contact water becomes contact water.

Disturbed areas include the following:

- Surface runoff from the mining and milling areas;
- Groundwater seepage into open pits and underground;
- Surface runoff and shallow drainage from rock storage areas;
- Surface runoff and shallow drainage from tailings disposal areas;
- Process water from tailings; and
- Water generated from consolidation of tailings (bleed water).

Conveyance and storage of contact water will be controlled by channels and containment structures (i.e., sumps and ponds). All contact water will be intercepted, contained, analyzed, and reused in process, or treated if required. Controlled discharge of contact water to the receiving environment will occur only when the quality of that water meets discharge criteria. No un-controlled discharge of contact water to the receiving environment is anticipated as water can be temporarily stored in the TSF and open pits in case of emergency.

Non-contact water is limited to runoff originating from areas unaffected by mining activity that does not come into contact with developed areas. Non-contact water will be intercepted and directed away from developed areas by means of natural or man-made diversion channels and allowed to flow to the neighbouring waterbodies untreated.

The various components of the water management system will be designed to meet the following criteria:

- Water management infrastructure along the perimeter of the developed areas will be able to intercept and convey to proper handling facilities contact water from a 1:100-year, 24-hour precipitation event (65 mm of rainfall plus 6.5 mm snowmelt).
- Water management infrastructure located within mining affected areas where water has no chance of overflow outside of developed areas will be able to handle the runoff from a 1:10-year, 24-hour precipitation event (50 mm of rainfall plus 6.5 mm snowmelt).
- Water management infrastructure along the perimeter of the developed areas will be able to divert non-contact water from a 1:100-year, 24-hour precipitation event.
- Minimum pumping capacities for contact water sumps and ponds will be selected to handle the greater of:
  - The average year spring melt (93 mm) volume in a 30-day period; and
  - The 1:100-year, wet-year spring melt (249 mm) volume in a 90-day period.

While observing required storage volumes:

- In the case of the pit sumps, the pumps will be able to handle the expected maximum monthly flow volume including seepage in addition to the spring melt criterion.
- Attenuation ponds will be sized to accommodate the runoff from a 1:100-year, 24-hour precipitation event in excess of their maximum operating storage volume (average year climate conditions), while maintaining a 1 m freeboard before the possibility of a spill to the receiving environment.
- Sumps will be sized to accommodate the runoff from a 1:100-year, 24-hour precipitation event in excess of their maximum operating storage volume (average year climate conditions), while maintaining a 1 m freeboard before the possibility of a spill to the receiving environment.

The design events (i.e., 10 and 100 year return periods) were selected instead of higher events (e.g., the probable maximum precipitation or flood) based on the following:

- the insfrastructure have a short life (1 to 16 years);
- these design events are typically used for mines in northern Canada; and
- during the occurrence of higher events, water can be conveyed if needed to the TSF and open pits.

4.3 Water Management Systems

The development of the proposed water management systems will require the consideration of storm drainage design in cold regions. The importance of control and prevention of icing within and adjacent to drainage structures will be acknowledged in the detailed engineering design of these structures and will include the assessment of the degree of drainage required, hydrologic data (including extreme events), and the effects of, and impacts on, the permafrost thermal regime. Standard techniques for addressing icing of structures and facilities in cold regions will be employed during the design phase of the Project. These will include such standard techniques as avoidance, and control and prevention.

The design of the surface water control structures will consider the existing geotechnical surface, subsurface, hydrological, hydrogeological and seasonal temperature conditions such that adequate measures are taken to maximize the interception and collection of contact water from the Project for environmental monitoring, water quality sampling and assessment for treatment prior to discharge to the environment.

The collection of surface water runoff and groundwater flow from the Project will apply appropriate and cost-effective engineered solutions to minimize soil erosion, sediment entrainment, and seepage loss of collected water from the facilities. Surface contact water will be collected by conventional gravitational means using perimeter drainage channels and sumps where required. The collected water will be pumped to an attenuation pond by a mechanical system of pump (or gravity mechanism if possible) and surface pipelines.

In areas where fine to coarse grained soils are encountered overlying weathered to intact bedrock, design measures will be taken to limit soil erosion and seepage losses from the drainage channels and collection sumps using natural means supplemented with engineered solutions. In areas where the soil and/or bedrock are of sufficiently low permeability to limit seepage losses, drainage measures will consider erosion protection and sediment control measures only. In areas where the soil and/or bedrock permeability is comparatively high, additional measures will be considered to limit seepage losses from the water control structures. Depending on the actual ground conditions encountered around the perimeter of the infrastructure development, some engineered solutions that may be considered during detailed design and construction include:

- Increasing the channel gradients to minimize ponding of water in the perimeter collection channels.
- Excavation of the drainage channel inverts and sumps to underlying intact bedrock.
- Provision of perimeter seepage containment by maintaining permafrost conditions down gradient of the water control structures by construction of a thaw stable fill embankment to insulate the ground from seasonal active thaw and to encourage re-freezing of the ground above the drainage channel inverts.
- Provision of positive seepage gradient containment around the water control structures by maintaining groundwater seepage flow from the waterbody environment towards the perimeter collection system using drainage channel inverts lower than the waterbody level.
- Applying surface treatments to the channel and sump excavation surfaces as necessary to seal the exposed subgrade surface to a condition where the hydraulic conductivity is suitably reduced using site appropriate engineered materials, which may include geosynthetic, geomembrane, bentonite, surface grouting, injection grouting and/or concrete applications.

The appropriate and active management of water within the open pits will be a critical component of mining activities as it relates to operational considerations, but also to slope stability. This will be particularly true for the development of stable soil slopes within overburden materials. While allowances will be made for diversion of surface runoff from the perimeter of the pits, there is no plan to include additional drainage benches within the pits; nor is there a requirement. Unlike soil slopes, experience in open pit mining in hard rock has shown that seepage from the pit walls can be allowed to drain over the benches and catch-berms without causing erosion or stability problems. Moreover, the majority of seepage from the pit walls is conveyed to the pit bottom through the blast damaged rock below the bench faces and catch-berms, and only a small portion of the flow actually emanates on the pit wall surface. Consequently, the majority of wall flow would pass beneath any channels established on the individual rock catch-berms. Water inflow to the pits will be collected in sumps, and pumped to the attenuation ponds. Water inflows reporting to the Discovery Sump may be used for dust control.

The sumps will generally be operated with a low water level to provide temporary storage capacity for runoff generated by an extreme runoff event, possible breakdowns, or power failures at the pump stations. The pumping equipment and infrastructure will be selected and designed to accommodate the sub-zero temperatures that will prevail during the early and late portion of the open-water season. This may entail heat tracing of the pump intakes and providing self-priming pumps and increased monitoring during these periods. Pumping of the sumps will likely be possible to temperatures of up to -10°C during late winter or early spring. Other options would be to pump the sumps dry prior to freeze-up, or to break and remove ice manually or mechanically. Further standard techniques of control and prevention will be investigated during detailed engineering design of the sumps.

Environmental monitoring of the water control system field performance will be carried out during the regular collection of groundwater and temperature data and annual geotechnical site inspections completed as part of the environmental monitoring program. In addition, regular inspections (i.e., weekly from mid-May through June for the freshet, and once every two weeks during summer and fall) of water management infrastructure such as culverts and ditches will occur. Snow, ice and debris will be removed from these conveyance structures as needed (i.e., based on the results of the inspection) to prevent blockages and overflows. Results of the data collection and site inspections will be used to assess and improve where necessary the field performance of the water control structures.

4.4 Plant Site Area

Under full operation, the plant site area will consist of an Attenuation Pond (AP01), an ore processing mill, and a service complex. The mill and service complex will be located to the south of AP01 and next to Meliadine Lake (Figure 2).

4.4.1 Water Supply and Distribution

Fresh water for site use will be pumped from Meliadine Lake. The details of the infrastructure for collecting and managing this water supply is provided in the Project description (FEIS Volume 2, Section 2.6.1.7). The fresh water intake will consist of a rockfill jetty (constructed with non-acid generating, low metal leaching material) and a pump house. The facility will employ measures, if needed, to avoid the entrainment of fish in the intake or the impingement of the fish on any screens.

Dust-control water for the plant site area will be drawn from AP01 (water could also be drawn from the Discovery Sump once the Discovery pit is developed). Dust control water for the haul roads outside the mining catchment areas will be drawn from Meliadine Lake.

4.4.2 Surface Water Management Systems and Activities

Activities in the plant site area will be limited to local hauling, disposal of waste rock, and hauling of ore to the milling area. This area includes the multiuse pad, the ore stockpile pads, and the plant site.

The SWMP for the plant site area during operation (Figures 2 to 10) involves the following:

- Construction of attenuation pond AP01 (depending on field conditions, lining may be needed to prevent seepage to Meliadine Lake; to be confirmed during detailed design);
- Construction of a containment dike in Lake H1 (PS-D-01);
- Construction of diversion channels PS-C-01 and PC-C-02 and sump PS-S-01 along the northeast side of plant site to collect contact water that will be pumped to AP01;
- Dewatering of Lakes H19 and H20 (other smaller waterbodies may also require dewatering);
- Construction of the site pad, which will be graded to drain to the west to sumps B7-S-02 (Lake A54) and B7-S-03;
- Construction of an effluent discharge pipeline and diffuser from AP01 to Meliadine Lake;
- Construction of a freshwater intake; and
- Collection, transportation, and treatment, if necessary, of camp water sewage prior to discharge to the Reclaim Pond.

During construction and operations, site contact water from the plant site area will be attenuated in AP01. Water will be collected in the channel to the east of the plant site and pumped to AP01 from sump PS-S-01. Additionally, water will also drain to the west of the plant site to sumps B7-S-02 and B7-S-03, and be pumped to AP01.

Attenuation Pond AP01 will receive runoff and seepage from each of the waste rock storage facilities, plant site, the other attenuation pond (AP02), and treated water from the TSF. AP01 will be operated in such a manner as to minimize the amount of water stored within the facility during the open water period. Contact water collected within AP01 will be used to satisfy mill process water make-up requirements, with any excess water treated, as required, and discharged to the environment via an effluent pipe and diffuser located within Meliadine Lake.

The process plant will have three water sources to meet the process water demand: reclaim water from the TSF, contact water from AP01, and freshwater from Meliadine Lake.

4.5 TSF and B7 WRSF Area

4.5.1 Surface Water Management Systems and Activities

The TSF and B7 WRSF area consists of the extent of the TSF, surrounded by the four sections of the B7 WRSF (i.e., North, East, South, and West). Activities at this location will be limited to local hauling, disposal of waste rock, and piping of tailings to the TSF.

The SWMP for the TSF and B7 WRSF area during operations (Figures 2 to 10) involves the following:

- Construction of a dike across A54 to create a sump B7-S-02 for site surface water drainage and B7 WRSF drainage;
- Construction of a diversion channel along the base of the southern aspect of B7 WRSF (B7-C-01). The channel will collect water from the southern side of B7 WRSF and minimise inflows to Tiriganiaq Pit 1. (collected water, including pumped flows from AP02, will drain to sump B7-S-02, where it will be pumped to AP01);
- Construction of a series of pump back sumps, as facilities expand around the northern perimeter of the B7/TSF facilities (i.e., dike B7-D-01 and sump B7-S-01, as well as sumps TSF-S-01, TSF-S-02 and B7-S-04); and
- Construction of a diversion channel WM-NC-01 to direct non-contact water away from B7 WRSF South.

During construction and operations, site contact water from B7 WRSF will be collected in the following series of channels and sumps:

- B7 WRSF East: drainage will be collected by B7-S-03;
- B7 WRSF South: drainage will be collected by channel B7-C-01 and conveyed to sump B7-S-02;
- B7 WRSF West: drainage will be collected in the AP02 and pumped to channel B7-C-01; and
- B7 WRSF North: drainage will be collected in sump B7-S-01 and pumped back to the TSF.

4.5.2 Supernatant Reclaim

Tailings will be stored within the TSF, located over the B7 area. Any process water (supernatant) seepage and surface water runoff from the tailings will be collected within the Reclaim Pond. A series of dams will be constructed to allow the pond and tailings surface level to be raised above the current basin level so that sufficient process water volume requirements are maintained as necessary (see Figure 2).

The reclaim of supernatant and runoff water from the Reclaim Pond will be achieved using a floating barge, which will be moved progressively during the operation of the TSF. It will probably be necessary to use heated reclaim pumps to ensure operation during the winter. A bubbler system may also be required to keep ice away from the barge.

Losses from the facility include evaporation, reclaim water use, and pumping to the water treatment plant for discharge. The water treatment plant rate and the timing of the start of treatment are set to maintain the Reclaim

Pond volume at maximum level of 2.9 Mm^3 under average conditions. During the last two years of operations treatment is increased so that the Reclaim Pond volume is reduced to 1.0 Mm^3 in preparation for closure.

4.6 Tiriganiaq Area

During operation, mining in the Tiriganiaq area will consist of two open pits (Tiriganiaq pits 1 and 2), and one underground mining operation (Tiriganiaq Underground). Attenuation Pond 2 (AP02), located in B5 basin, is also part of that area. The Tiriganiaq mining area is located approximately 1 km southwest of the plant site area. Activities at this location will include open pit mining, underground mining, hauling of waste rock to the B7 WRSF, and hauling of ore to the milling area.

The SWMP for the Tiriganiaq mining area during construction and operations (Figures 2 to 10) involves the following:

- Construction of a pipeline to pump water from Lake B5 to Lake D7 (this infrastructure is intended to lower levels in Lake B5 for mining years -1 to 3, to prevent water from flowing into the B4 WRSF);
- Constructing dike B5-D-01 across Lake B5 to create Attenuation Pond 2 (AP02) after mining year 3, for storing excess surface water from B7 WRSF West and B4 WRSF; and
- Construction of a pipeline to pump the seepage and drill water from the Tiriganiaq underground to B4 basin for temporary storage (when B4 reaches capacity saline water will be pumped to the desalinisation plant for eventual discharge to AP01).

During construction and operation, contact water from the Tiriganiaq pits will be pumped to the Reclaim Pond in the TSF. Water diverted upstream of Tiriganiaq Pit 1 will be collected in channel B7-C-01 and sump B7-S-02, where it will be pumped to AP01.

In Year 3, dike B5-D-01 will be constructed to form the Attenuation Pond 2 (AP02). AP02 will receive runoff and seepage from B4 WRSF and the western portion of B7 WRSF. AP02 will be operated in such a manner as to minimize the amount of water stored within the facility during the open water period. Contact water collected within AP02 will be pumped to AP01.

4.7 Wesmeg Area

The Wesmeg mining area is located approximately 1.8 km south of the plant site area. Activities at this location will be limited to open pit mining (i.e., at Wesmeg Pits 1 to 5), hauling of waste rock to B4 WRSF, and hauling of ore to the milling area.

The SWMP for the Wesmeg mining area during construction and operations (Figures 2 to 10) involves the following:

- Dewatering of Lake A8 to allow for pit development of Wesmeg pit 2 (and Pump pit 2), and construction of two dikes (WM-D01 and WM-D-02) across the east arm of Lake A8 to create sump WM-S-01;
- Construction of a new outlet located at the south-eastern tip of Lake A8, which will drain to Lake A31; and

- Construction of sump WM-S-02, west of the ore stockpile (water collected in that sump will be pumped to AP01).

During construction and operations, contact water from the Wesmeg pits will be pumped to the Reclaim Pond in the TSF. There are no diversions associated with the Wesmeg pits. However, Lake A6 will require ongoing dewatering to Lake A7 for the duration of operations.

In Year 2, sump WM-S-01 will be constructed, in order to attenuate spring freshet flows impacting AP01. Sump WM-S-01 will be operated in such a manner as to minimize the amount of water stored within the facility during the open water period.

4.8 B4 WRSF and Pump Area

The B4 WRSF and Pump mining area is located approximately 3 km southwest of the plant site area. Activities at this location will be limited to open pit mining, hauling of waste rock to the B4 WRSF, and hauling of ore to the milling area. The area includes Pump Pits 1 and 2 and B4 WRSF.

The SWMP for the B4 WRSF and Pump mining area during construction and operations (Figures 2 to 10) involves the following:

- Initial dewatering of Lake B36 to lower water levels by 1 meter, in order to prevent flows to B4 WRSF (water levels will be managed by pumping until the development of Pump Pit 1 is initiated);
- Dewatering B60 to B62, and B36 to B38 to allow for pit development;
- Constructing dikes P-D-01 and P-D-02 across the inlets of B59 to prevent backwater from that water body from reaching into Pump Pit 1;
- Constructing dike B4-D-01 to separate Lakes B45 and B4; and
- Collecting contact water from B4 WRSF and pumping that water to AP02 (from Year 4 to the end of the mine life).

During construction and operations, site contact water from B4 WRSF will be collected in a series of channels and sumps surrounding the WRSF. Each sump will pump water to a central sump (B4-S-01), which will then be pumped to AP02. The exact number of sumps will be determined by field conditions. Pit water from Pump Pits 1 and 2 will be pumped to the Reclaim Pond.

Tiriganiaq underground seepage and drill water will be pumped to B4 basin starting in mining year -2, when seepage is estimated to begin. Using B4 as a temporary storage of underground (UG) water allows for better estimation of size of the salt plant to be made with no extra loss of habitat. When the capacity of B4 is reached (1 m below natural levels of this waterbody), water will be pumped through the salt plant to AP01.

Water levels in Lake B45 will be allowed to rise by 0.5 m in addition to channels being constructed from B44 to P3 and P3 to P2. The increased water levels and additional channels will allow the flow of water from Lake B45 to bypass Lake B4. To minimize the disturbance to the outlet of P2, a connection between B2 and P2 will be

constructed. The connection will allow an additional outlet to Meliadine Lake through the B2 outlet for water inflows to P2.

4.9 A45-2 WRSF and F Zone Area

The A45-2 WRSF and F Zone area is located approximately 4.5 km south of the plant site area. Activities at this location will be limited to open pit mining (F Zone Pits 1 to 3), hauling for disposal of waste rock to A45-2 WRSF, and hauling of ore to the milling area.

The SWMP for the F Zone mining area during operations (Figures 2 to 10) involves the following:

- Constructing dike F-D-01 across the outlet of the east arm of A6 waterbody to allow the dewatering of approximately 740,000 m^3 of water to lower levels by 1.0 m;
- Construction of channel F-NC-01 around A5, A51, A53 and A19 to allow for the development of the three open pits;
- While the Lake A6 outlet is sealed by dike F-D-01, water from A6 will be pumped to channel F-NC-01, which will direct this water to Lake A1;
- Constructing dike F-D-02 across the inlet of Lake A1 to prevent backwater from that waterbody from reaching the F Zone pits; and
- Collection of contact water from the A45-2 WRSF through a series of sumps (F-S-01, F-S-02 and F-S-03) around that facility (that water will then be pumped to AP01).

The A-45-2 WRSF will be surrounded along its edges by interceptor channels as required to direct any contact water towards sumps. From the surrounding sumps, water will be pumped or drained via gravity to the main sump (F-S-03). Water collected in the main sump will be pumped to AP01. Pit water from each of the F Zone pits will be pumped to the Reclaim Pond.

4.10 Discovery Mining Areas

The Discovery mining area is located approximately 15 km south of the plant site area. Activities at this location will be limited to open pit mining (Discover pit), hauling for disposal of waste rock to Discovery WRSF, and hauling of ore to the milling area.

The SWMP for the Discovery mining area during operation (Figure 8) involves the following:

- Collecting contact water from the Discovery Pit and WRSF;
- Possibly using water collected in sumps as dust control for the mine site after Year 6; and
- Dewatering CH28, CH29, and CH32 (if needed) to allow for the development of the WRSF.

The Discovery WRSF will be surrounded along its edges by interceptor channels as required to direct any contact water towards sumps. From surrounding sumps, water will be pumped or drained by gravity to the main sump (D-S-01). Pit water will be mixed with waste rock drainage water and used for dust control for the mine site for the remainder of operations (Years 6 to 12). Any excess water will be directed to the TSF.

4.11 Haul Roads

A network of haul roads will connect the ore bodies to the WRSFs and the plant site. The majority of the roadways servicing the mining area will be located so that their drainage will be directed towards the proposed contact water management infrastructure.

Due to the geographic remoteness of the Discovery and F Zone ore bodies from the remaining mining areas, significant sections of haul road will fall outside of the catchment areas serviced by contact water management infrastructure. These sections will drain naturally to a number of different small and medium sized waterbodies.

The approach to water management for these sections of haul road will involve the implementation of local best management practices during construction, operation, and closure. The road will be constructed of non-PAG and non leaching waste rock from mining operations. Other best management practices will strive to minimize the amount of runoff originating from the roadways and to prevent the migration of surfacing material from the roadway and crossings. Any areas identified as point sources of runoff originating from the roadway or crossings can be managed locally with silt fences, turbidity curtains, interceptor channels, rock check dams, and/or small sedimentation ponds.

4.12 Pit and Underground Flooding

Following completion of mining, the pits will be filled with water over a period of several years. Flooding will be achieved by a combination of seepage, precipitation, partial re-direction of annual freshet flows, and active pumping from Meliadine Lake over several years. Table 11 summarizes the pit volume and expected water elevations at the completion of flooding activities.

The walls of the open pits will have been exposed for a number of years during mine operation, and some weathering will have occurred. As the pits flood, the water will contact the weathered rocks, which may affect the water quality by increasing concentrations of dissolved metals. The water quality within the flooded pits will need to be monitored, and could be treated if necessary (although modelling results show no treatment is necessary) until the water is of acceptable quality to be allowed to flow freely to downstream waterbodies.

This SWMP assumes that each pit will be filled over a 10 year period, with pumping from Meliadine Lake occurring over 4 months during the open water period. The water balance for the mine site (Section 6) provides preliminary filling rates for each of the pits. Pump sizing for pit filling and duration of filling will be established during the detailed design phase of the Project to optimize pumping costs and reduce potential impacts to Meliadine Lake. Flooding activities and resulting drainage are as follows (Figures 9 and 10):

- Tiriganiaq Pits 1 and 2 and Wesmeg Pit 1, once flooded will become part of Lake B5, draining into the D watershed. Dike B5-D-01 will be breached when flooding is completed and water quality in the flooded pits has become acceptable to allow discharge to Lake D7. Dike B7-D-02 will be breached at closure to

help flooding of Tiriganiaq Pit 1. Dike B7-D-01, which contains runoff from B7 WRSF North in sump B7-S-01, will be breached when water quality in that sump is demonstrated to be acceptable for free release to Lake E3.

- Pump pit 1 will drain into B59. Dikes P-D-01 and P-D-02 will be breached once water quality in the flooded pit has become acceptable to allow natural overflow. Water from Pump Pit 1 will flow though the B4 WRSF until the WRSF either freezes or becomes a barrier to flow, then water levels will rise and flow south from the pit into Lake B45.
- Wesmeg Pit 2 and Pump pit 2, once flooded, will become part of Lake A8 draining into Lake A7. Dikes WM-D-01 and WM-D-02 will be breached to re-connect the northeast tip of Lake A8 to its main waterbody.
- Wesmeg Pits 3 to 5, once flooded and of acceptable water quality, will respectively drain into J8, A30 and A8.
- F Zone pits will eventually become part of the chain of waterbodies draining into Lake A1. Dike F-D-01 will be breached at closure and water will be allowed to overflow by gravity along into F Zone Pit 3. The gradient will be such that a fish passage will be established. Pits will flood from Pit 3 to Pit 1. Dike F-D-02 will be breached once water quality in the flooded pits is demonstrated to be acceptable to allow natural overflow.
- Discovery Pit, once flooded, will overflow into Chicken Head Lake.

Flooding of the pit areas may mobilize fine sediments that may affect water quality. Given that it will be several years before pit lakes are fully flooded, fine sediments are expected to have settled by that time.

Table 11: Pit and Underground Flooding

Pit	Volume (m^3)	Final Water Elevation (masl)
Wesmeg #1	506 340	59.0
Wesmeg #2	25 081 282	62.2
Wesmeg #3	4 169 520	65.0
Wesmeg #4	675 905	64.0
Wesmeg #5	845 002	64.0
Pump #1	14 469 923	60.5
Pump #2	4 051 846	62.2
Tiriganiaq #1	66 877 675	57.8
Tiriganiaq #2	1 501 932	57.8
Tiriganiaq Underground[b]	1 372 000	Groundwater level
F Zone # 1	1 695 7529	54.0
F Zone # 2	2 116 503	55.0
F Zone # 3	9 498 301	56.0
Discovery	35 745 437	66.0

a) During the detailed design phase, pump sizing for pit filling will be conducted to optimize pumping costs and reduce impacts to Meliadine Lake.

b) Tiriganiaq Underground will be filled with both seepage inflows and a minimum volume of 160,000 m^3 of freshwater from Meliadine Lake to form a freswhater cap 150m deep.

Flooding of the Tiriganiaq Underground mine will also occur following completion of mining. The estimated total flooding volume of the underground workings is 1,372,000 m^3 (Table 11). Groundwater seepage will continue to flow into the mine during closure; however, the rate of groundwater inflow will decrease as the water level in the mine rises. In the absence of additional freshwater inputs, it is estimated that it would take over 2.8 years to flood the underground workings to the top of the unfrozen portions of the permafrost (the cryopeg), and over 4.2 years to flood from the top of the cryopeg to the final groundwater level following flooding of the Tiriganiaq pit (i.e., a total of approximately 7 years in the absence of additional freshwater inputs). However, it is also planned to pump approximately 160,000 m^3 of freshwater from Meliadine Lake into the underground mine at closure so that flooding of the mine will occur more rapidly (6.1 years) and to provide a 150 m deep freshwater cap to keep high TDS groundwater in the lower portions of the mine. In the initial stages of flooding with freshwater, saline water will continue to flow into the underground mine; however, as the water level in the mine rises, a lower density freshwater layer will form on top of the high TDS water. Based on the results of hydro-dynamic modelling (FEIS Volume 7, Appendix 7.4-B, Appendix B), a 150 m deep cap of freshwater will keep TDS concentrations in the Tiriganiaq Pit Lake below 300 mg/L.

4.13 Changes in Hydrologic Conditions

Sizing of water management infrastructure (Section 5) and estimations of water volumes from the mine site water balance (Section 6) were based on the existing hydrologic conditions, particularly historical climate, provided in the aquatic baseline (SD 7-1 2009 Aquatics Synthesis Baseline). However changes to these hydrologic conditions may occur during the life of the Project, possibly as a result of changes in climate conditions over time. Climate predictions produced for the Project indicate possible increases in total precipitation and air temperature over time (FEIS Volume 5, Table 5.4-7), including during the 2020s climate modelling period (covers the period 2011 to 2040). A summary of climate trends (FEIS Volume 5, Table 5.4-8) also indicate a possible increase in the frequency and magnitude of rainfall events. However, the historical annual air temperature and total precipitation used for the purposes of this plan (see sections 5 and 6) are within the range of climate predictions for the 2020 period (FEIS Volume 5, Figures 5.4-5 and 5.4-8). The historical climate therefore represents a plausible climate scenario that might occur in the future.

Change in hydrologic conditions as a result of climate change can be summarized as lower or higher water volumes at the mine site than those estimated in the water balance in Section 6. Under drier conditions, more make-up from Meliadine Lake would be required. Under wetter conditions, larger discharge of mine effluent to Meliadine Lake would be expected. These changes in hydrologic conditions can be addressed within the mine water management plan during operations through adaptive management. For example, changes in the site hydrologic conditions can be addressed by adjustments to the water conveyance capacity at the mine site (i.e., increase to pumping capacity at the Meliadine Lake water intake, increase to pumping capacity from Attenuation Pond 1 to the Meliadine Lake mine effluent outfall diffuser, increase or decrease of pumping capacity within the mine site, and adjustment to channel dimensions at the mine site). The water conveyance and storage structures at the mine site are intented to intercept and contain contact water. As a contingency measure, contact water can be temporarily stored within the TSF and open pits in case of emergency (Section 4.2).Finally, infrastructure sizing provided in Section 5 are preliminary at this stage. Adjustments of infrastructure sizes, including as required to account for changing hydrologic conditions, will be made as part of the detailed design.

5.0 INFRASTRUCTURE SIZING

During the mine construction and operation phases, a network of collection and interceptor channels and sumps will be constructed and maintained to facilitate mine site water management. The following sections provide preliminary infrastructure sizing requirements for each of the mine areas based on the water management plan description and design criteria provided in Sections 3.0 and 4.0.

Note that infrastructure sizes are provided as a preliminary guide. These sizes will be finalized during detailed design in conjunction with the mine engineer, based on estimated inflows, local field conditions and the requirements of mining operations at each stage of the mine development.

5.1 Sumps and Ponds

The preliminary storage requirements for surface sumps and ponds are based on their respective drainage areas and the water management design criteria presented in Section 4.2 (i.e., the average spring melt over a 30-day period and the 100-year spring melt over a 90-day period). The attenuation ponds are sized to store the runoff volume from the 24-hour, 1:100-year storm event, in addition to their peak annual operating volume under average climate conditions. Drainage areas and resulting storages for surface sumps and ponds are presented in Table 12.

Table 12: Surface Sump and Pond Storage Requirements

Area	Description	Drainage Area (ha)	Storage Requirements (m^3)
Plant Site	AP01	33.1	158,000[d]
	PS-S-01	14.5	21,800
Tiriganiaq	AP02	33.1	220,000[d]
TSF and B7 WRSF	TSF-S-01	2.4	1,700
	TSF-S-02	11.9	8,500
	Reclaim Pond[e]	209.3	2,900,000
	B7-S-01	2.9	30,600
	B7-S-02	32.7	48,100
	B7-S-03	81.2	47,600
	B7-S-04	12.2	8,700
B4 WRSF and Pump[b]	B4-S-01	198.9	142,200
	B4-S-02	56.5	40,400
	B4-S-04	198.9	99,903
	Lake B36[a]	73.9	0[c]
Wesmeg	WM-S-01	40.8	120,700
	WM-S-02	44.6	183,127[d]
	Lake A8	157	0[c]
F Zone[b]	F-S-01	18.2	13,000
	F-S-02	20.4	14,600
	F-S-03	41.6	29,800
Discovery[b]	D-S-01	130.5	64,859

[a] Sumps B4-S-04, B4-S-02, and B4-S-01 will also be pumped through this sump.
[b] Likely distributed among a number of sumps at low points surrounding the facility.
[c] Waterbody level pumped to maintain low water levels. Waterbodies do not require storage volumes.
[d] Defined by waterbody volume and dike location and size.
[e] Variable pump rate.

The surface sumps and ponds are preferentially located in dewatered waterbodies. These waterbodies are expected to have slopes that have acclimatized to the seasonal variations in permafrost levels in their vicinity. The proposed water management ponds are anticipated to be of smaller or similar storage volumes to the dewatered waterbodies, and consequently there are no added water volumes that may compromise the slopes of these storage structures in the event of a thawing permafrost. The impact of permafrost (either stable or thawing) on the stability of ponds will nevertheless be considered in the detailed design of the water management infrastructure.

The Reclaim Pond inflows increase throughout mine life. Each open pit development pumps to the TSF, and therefore each pit increases the total inflows to the TSF. The size of the Reclaim Pond will reach a maximum volume of 2.9 Mm^3 in Year 9. Water treatment begins at the Reclaim Pond in Year 2.

Sizes and locations for sumps in the open pits will be dependent on the development of these pits. Drainage areas for the pits are presented in Table 13.

Table 13: Pit Sumps

Pit Name	Drainage Area (ha)
Tiriganiaq Pit 1	84.9
Tiriganiaq Pit 2	29.1
Wesmeg Pit 1	4.2
Wesmeg Pit 2	49.7
Wesmeg Pit 3	14.5
Wesmeg Pit 4	4.9
Wesmeg Pit 5	3.6
Pump Pit 1	112.2
Pump Pit 2	22.2
F Zone 1	26.4
F Zone 2	20.1
F Zone 3	27.5
Discovery	73.3

5.2 Channels

Channels will be sized to accommodate the peak runoff rate from a 1:100-year, 24-hour storm. Attempts will be made to avoid constructing channels in ice-rich areas where thaw instability is a concern. A variety of mitigation measures are available where ice-rich areas cannot be avoided. For contact water channels, mitigation may include providing training berms instead of, or in combination with, channels; and lining and insulating channels with compact till or bentonite to prevent sedimentation and permafrost degradation. Where thaw-related impacts affect non-contact water channels, special care will be taken to ensure linings comprise non-acid-generating and non-metal-leaching granular materials.

Prior to channel construction, a review of the existing topographic and geotechnical conditions will be carried out to locate, to the extent possible, the channel alignments in favourable ground, with a channel invert at or above the existing grade. If this cannot be achieved, the alignment will be located in-ground with shallow excavation

into the overburden soil or rock. This may require the excavation and replacement of ice-rich soils with compacted till materials. The channels have been designed as oversized structures, which will allow for the addition of insulated channel lining materials where required.

The preliminary characteristics of the diversion (non-contact) and collection (contact) channels may be found in Table 14 (see also Figures 2 to 10). For practical purposes, drainage channels with a minimum uniform base width of 1 m, channel slope of 0.5%, 2H:1V side slopes, and depths adjusted to suit discharge requirements have been assumed. Channel lining, if needed, will be confirmed during detailed design; however, as part of the preliminary design herein, riprap with a median diameter of 150 mm was considered as a liner for all channels.

Table 14: Preliminary Channel Characteristics

Area	Description	Length (m)	Depth (m)[a]
Plant site	PS-CC-1	2192	0.75
	PS-CC-2	657	1.25
TSF and B7 WRSF	B7-C-01	883	1.50
Wesmeg	WM-NC-1	316	1.00
Tiriganiaq	B5-C-01	883	0.50
	B5-C-02	136	0.50
B4 WRSF and Pump	B4-CC-1	1687	0.75
	B4-CC-2	619	0.50
	B4-CC-3	1060	0.50
	B4-CC-4	264	0.50
F Zone	FZ-CC-2	715	0.50
	FZ-CC-3	600	0.50
	FZ-CC-4	634	0.50
	FZ-CC-5	737	0.50
	FZ-NC-1[b]	1039	1.75
Discovery	D-C-01	1814	0.50
	D-C-02	867	0.75
	D-C-03	958	0.50
	D-C-04	1046	0.50

[a] For all channels, except FZ-NC-1, assumes trapezoidal channel with 2H:1V side slopes, 1 m base width, 0.5% longitudinal slope and includes 0.3 m freeboard.

[b] For channel FZ-NC-1, assumes a trapezoidal channel with 2H:1V side slopes, 2.75 m base width, 0.5% longitudinal slope and includes 0.3 m freeboard.

Design flows for the preliminary sizing of diversion and collection channels in Table 14 were estimated using the Hydrologic Engineering Center Hydrologic Modeling System software (HEC-HMS) (USACE, 2010). The storm events were distributed using the U.S. Natural Soil Conservation Service (SCS) Type II rainfall distribution curve with additional snowmelt added to the event. The SCS curve number (CN) methodology was used for calculating general catchment area losses with normal antecedent moisture conditions (AMC II). Time of concentration was calculated using the SCS Lag Method by dividing the longest flow path for each sub-catchment into its components of sheet flow (overland flow), shallow concentrated flow, and channelized flow (USDA 1986).

5.3 Dikes

Dikes are constructed to maintain water levels in specific waterbodies, and to divert water away from pits. At the end of mine life, all dikes will be breached, except dikes TSF-D-01 and TSF-D-02. The dike breaches will be designed to accommodate the peak runoff rate from a 1:100-year, 24-hour storm. Attempts will be made to avoid constructing dikes in ice-rich areas where thaw instability is a concern.

The preliminary characteristics of the dikes may be found in Table 15 (see also Figures 2 to 10). The dike characteristics presented are provided as a preliminary guide and will be finalized during detailed design.

Table 15: Preliminary Dike Characteristics

Area	Dike	Dike Height (m)[a]	Length (m)
Plant Site Area	PS-D-01	2	75
TSF and B7 WRSF	TSF-D-01	2.5	55
	TSF-D-02	2.0	135
	B7-D-01	2.5	235
	B7-D-02	2.5	190
Tiriganiaq	B5-D-01	2.5	330
B4 WRSF and Pump	B4-D-01	2.5	135
	B4-D-02	2.0	280
	P-D-01	2.0	80
	P-D-02	2.0	80
Wesmeg	WM-D-01	3.5	345
	WM-D-02	3.0	155
F Zone	F-D-01	2.5	265
	F-D-02	2.0	100

[a] The height of dikes is based on maximum waterbody depth below the dike alignment and a minimum of 2 m over the water surface, if the dike is aligned across a waterbody. If the dike is aligned across a stream, the maximum depth is 2 m over the ground surface at the location of the stream.

6.0 WATER BALANCE

A water balance model was developed to assist in the evaluation of the proposed water management infrastructure over the life of the mine and under closure conditions. The model includes a water balance on a monthly basis along with a mass balance of geochemical parameters.

The water balance model for the Meliadine Gold Project was developed using the GoldSim Technology Group's software GoldSim™. GoldSim is a highly graphical program for carrying out dynamic, probabilistic simulations to support decision-making (Goldsim 2010). GoldSim is especially well suited to simulating a dynamic, computationally intensive but well-defined networked model such as a water balance. The mine and water management infrastructure was formulated into the model, which then simulated the conveyance and storage of water within the mine site from the construction to the post closure phases of the Project. This model was also used to build a mass balance module to predict water quality (i.e., parameter concentrations) at mine and water management infrastructure, from the construction to the post-closure phases of the Project. Overall, GoldSim

has been used to build water and mass balance for numerous mines, including in a Nordic environment. Diavik and Meadowbank are examples of mines for which GoldSim was used.

The following section presents the parameters and assumptions adopted in the water balance model along with a summary of the water balance results. Results from the mass balance portion of the model are provided in Section 7.0.

6.1 Conceptual Water Balance Framework

The conceptual water balance framework developed for the site-wide water balance model is presented in Figure 13. In order to simulate a range of conditions, the model was run for the proposed mine life and closure conditions.

6.2 Water Balance Assumptions

The water balance model was developed to assist in the evaluation of the maximum operating storage volume of the proposed contact water management infrastructure under average year climate conditions over the life the mine and under closure conditions. The model focuses specifically on contact water management infrastructure and areas that have been physically or chemically affected by mining activities. Therefore, it is not impacted by water levels in the neighbouring waterbodies.

The model assumes the following:

- Precipitation patterns from Rankin Inlet are applicable to the Project site;
- Evaporation only occurs from the months of June through September;
- Snow accumulates throughout the months of October to May, and thaws in July;
- Average year climate conditions;
- Open pits are not to be used for long term storage of water during operations;
- The presence of permafrost virtually eliminates seepage into the pit footprints; and
- The collection sumps are empty at the start of the simulation.

Extreme events were not incorporated into the model as it was assumed that the following contact water management contingencies would be in place:

- The contact water management infrastructure will be designed, sized and operated to intercept and contain extreme event run-off from the mine-affected areas as described in Sections 4 and 5 above.
- Any excess contact water will be directed to the TSF or to open pits, if available, for temporary storage prior to recycle, reuse, treatment (if necessary) and release to the environment. Upon completion of mine life, excess water will be directed to the pit lakes to assist with flooding.
- The Attenuation Pond (AP01) has a capacity of approximately 158,000 m^3 (the original basin volume). Water in AP01 is used to satisfy make-up requirements to the mill with any excess assumed to be

monitored, treated (if necessary) and released to Meliadine Lake. Additional capacity is obtained by construction of AP02 and WM-S-01.

Based on the above, the uncontrolled release of contact water to the neighbouring waterbodies is not anticipated.

As indicated previously, one of the strategies of water management on site is to recycle and reuse contact and process water wherever practicable. From a water balance perspective, recycling and reusing excess contact water from extreme run-off events would act to reduce freshwater intake requirements from Meliadine Lake. Any remaining water would be analyzed and treated (if necessary), prior to controlled release to the environment.

A brief description of the input parameters and assumptions used in the water balance model are provided in Tables A.1 to A.9 in Appendix A. A simulation calendar correlating the simulation time steps (in months according to both mine year and calendar year) is presented in Appendix B. Figure 13 shows the conceptual water balance diagram.

6.3 Water Balance Results

The results of the site water balance are summarized in Table 16 for mining years -3, -1, 2, 4, 8, 9, and 12, which coincide with key periods during the construction and operation phases with respect to water management (Table 7 and Figures 2 to 10). Table 17 summarizes the results of the water balance at the pits during the closure period. Time series of key water management facilities are also presented in Figures 14 to 21.

Table 16: Summary of Estimated Annual Volumes from the Mine Site Water Balance (m^3)

Flow Description	Year -3		Year -1		Year 2		Year 4		Year 8		Year 9		Year 12	
	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows
AP01 Attenuation Pond														
Pumped from A54 (B7-S-02)	165,800		198,490		182,290		203,940		250,860		250,860		250,860	
Runoff from B7 WRSF East	0		0		0		7,425		7,425		7,425		25,538	
Pumped from Wesmeg sump (WM-S-01)	60,041		61,822		61,822		61,822		61,822		61,822		61,822	
Pumped from plant site sump (PS-S-01)	38,192		39,235		39,235		39,235		39,235		39,235		39,235	
Pumped from TSF treatment plant	0		0		383,500		767,000		1,150,500		1,534,000		2,192,000	
Pumped from WTP-DESAL	0		574,760		597,690		381,840		401,520		401,520		401,520	
Pumped from AP02	0		0		0		484,790		271,050		271,050		233,930	
Pumped from F Zone sump (F-S-03)	0		0		0		87,860		88,030		88,030		88,030	
Transferred from Discovery	0		0		0		0		0		0		0	
Pumped from WM-S-02	56,860		56,860		56,860		56,860		56,860		56,860		56,860	
Road runoff and infiltration	37,699		41,502		41,502		41,502		41,502		41,502		41,502	
Runoff to AP01	30,364		43,264		43,264		43,264		43,264		43,264		38,595	
Direct precipitation	19,486		1,068		1,068		1,068		1,068		1,068		16,634	
Evaporation		10,115		1,266		1,266		1,266		1,266		1,266		22,627
Truck wash, truck shop		83,649		127,112		127,112		127,112		127,112		127,112		127,112
Reclaim to mill		0		0		0		0		0		0		86,440
Mill supply		0		0		568,020		556,940		578,330		579,570		579,570
AP01 dust control		60,000		60,000		60,000		60,000		0		0		0
Discharge to Meliadine Lake		392,507		828,580		650,813		1,431,190		1,706,600		2,088,900		2,630,600
Subtotal	408,442	546,271	1,017,001	1,016,958	1,407,231	1,407,211	2,176,607	2,176,508	2,413,137	2,413,308	2,796,637	2,796,848	3,446,525	3,446,349
Change in storage volume	-137,829		44		21		99		-171		-211		176	
AP02 Attenuation Pond														
Pumped from B4 WRSF East							191,160		82,139		82,139		82,139	
Pumped from B4 WRSF West							278,970		172,085		172,085		98,868	
Runoff from B7 WRSF West							0		0		0		36,062	
Road runoff and infiltration							231		0		0		0	
Direct precipitation							771		0		0		0	
Road to AP02							16,842		16,842		16,842		16,842	
Evaporation								3,138		0		0		0
Pumped to AP01								484,790		271,050		271,050		233,930

Table 16: Summary of Estimated Annual Volumes from the Mine Site Water Balance (m^3) (continued)

Flow Description	Year -3		Year -1		Year 2		Year 4		Year 8		Year 9		Year 12	
	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows
Subtotal							487,974	487,928	271,066	271,050	271,066	271,050	233,911	233,930
Change in storage volume							46		16		16		-20	
Wesmeg Sump (WM-S-01)														
Road runoff and infiltration	17,672		19,455		19,455		19,455		19,455		19,455		19,455	
Direct precipitation	42,371		42,371		42,371		42,371		42,371		42,371		42,371	
Runoff	2		2		2		2		2		2		2	
Evaporation		7		7		7		7		7		7		7
Pumped to AP01		60,037		61,820		61,820		61,820		61,820		61,820		61,820
Subtotal	60,044	60,044	61,828	61,827	61,828	61,827	61,828	61,827	61,828	61,827	61,828	61,827	61,828	61,827
Change in storage volume	0		1		1		1		1		1		1	
F Zone (F-S-03)														
Runoff from A45-2 WRSF							180,100		180,770		180,770		180,770	
Runoff							7,063		7,063		7,063		7,063	
Direct precipitation							0		0		0		0	
Evaporation								0		0		0		0
Pumped to AP01								187,160		187,840		187,840		187,840
Subtotal							187,163	187,160	187,833	187,840	187,833	187,840	187,833	187,840
Change in storage volume							3		-7		-7		-7	
Discovery (D-S-01)														
Runoff									0		0		0	
Direct precipitation									1,165		1,164		1,168	
Pumped from Discovery Pit									93,365		93,365		93,365	
Runoff from Discovery WRSF									287,157		287,070		289,047	
Evaporation										3,116		3,115		3,122
Dust control										60,000		60,000		60,000
Conveyed to AP01										318,569		318,487		320,463
Subtotal									381,686	381,685	381,599	381,602	383,580	383,585
Change in storage volume									2		-3		-5	
Tailings Storage Facility (TSF)														
Tiriganiac Pit 1	0		207,150		207,150		207,150		207,150		207,150		207,150	
Tiriganiac Pit 2	0		0		0		0		0		0		43,839	
Wesmeg Pit 1	0		0		0		0		0		0		8,309	
Wesmeg Pit 2	0		0		0		111,325		111,325		111,325		111,325	

Table 16: Summary of Estimated Annual Volumes from the Mine Site Water Balance (m^3) (continued)

Flow Description	Year -3		Year -1		Year 2		Year 4		Year 8		Year 9		Year 12	
	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows
Wesmeg Pit 3	0		0		0		31,772		31,772		31,772		31,772	
Wesmeg Pit 4	0		0		0		0		10,071		10,071		10,071	
Wesmeg Pit 5	0		0		0		0		0		0		8,652	
F Zone Pit 1	0		0		0		23,195		23,195		23,195		23,195	
F Zone Pit 2	0		0		0		29,478		29,478		29,478		29,478	
F Zone Pit 3	0		0		0		40,376		40,376		40,376		40,376	
Pump Pit 1	0		0		0		0		230,074		230,074		230,074	
Pump Pit 2	0		0		0		0		230,074		230,074		230,074	
Discovery Pit	0		0		0		0		318,590		318,460		320,460	
Sewage	49,680		49,680		49,680		49,680		49,680		49,680		49,680	
Water in tailings available for process	0		0		1,031,400		1,031,400		1,031,400		1,031,400		1,031,400	
Runoff from B7 WRSF	0		0		0		34,200		34,200		34,200		63,996	
Direct Precipitation	98,059		153,930		329,480		181,290		185,330		195,220		169,858	
Runoff	228,866		205,553		176,280		287,930		285,540		279,310		294,610	
Evaporation		115,760		191,940		400,240		407,970		412,510		443,680		337,390
Reclaim to mill		0		0		827,560		1,037,280		1,037,280		1,037,280		691,520
TSF treatment		0		0		383,500		767,000		1,150,500		1,534,000		2,192,000
TSF overflow		0		0		0		0		0		0		0
B7 dewatering to B6		260,850		0		0		0		0		0		0
Subtotal	376,605	376,610	616,313	191,940	1,793,990	1,611,300	2,027,796	2,212,250	2,818,255	2,600,290	2,821,785	3,014,960	2,904,320	3,220,910
Change in storage volume	-5		424,373		182,690		-184,454		217,965		-193,175		-316,590	
Mill														
Water in ore					96,019		96,019		96,019		96,019		96,019	
Reclaim from TSF					827,528		1,037,232		1,037,232		1,037,232		1,037,232	
Water from AP01					568,075		556,994		578,307		579,555		579,555	
Freshwater from Meliadine Lake					574,692		376,062		354,742		353,493		353,493	
Slurry water						2,066,280		2,066,280		2,066,280		2,066,280		2,066,280
Subtotal					2,066,314	2,066,280	2,066,307	2,066,280	2,066,300	2,066,280	2,066,299	2,066,280	2,066,299	2,066,280
Change in storage volume					34		27		20		19		19	
Lake B4														
Runoff from B4 WRSF West	0		0		0		0		0		0		60,453	
Pumped from UG	0		651,612		694,344		0		0		0		0	
Direct precipitation	205,760		4,415		4,717		3,225		3,225		3,225		3,225	
Runoff	397,525		397,525		397,525		279,542		172,655		172,655		39,005	

Table 16: Summary of Estimated Annual Volumes from the Mine Site Water Balance (m^3) (continued)

Flow Description	Year -3		Year -1		Year 2		Year 4		Year 8		Year 9		Year 12	
	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows	Inflows	Outflows
Evaporation		250,458		8,662		9,894		3,821		3,821		3,821		3,821
Pumped to environment (dewatering)		942,100		0		0		0		0		0		0
Pumping to AP02		0		0		0		278,944		172,056		172,056		98,862
Pumping to WTP-DESAL		0		1,044,888		1,086,696		0		0		0		0
Subtotal	603,285	1,192,558	1,053,552	1,053,550	1,096,586	1,096,590	282,767	282,765	175,880	175,877	175,880	175,877	102,683	102,683
Change in storage volume	-589,273		1		-3		2		3		3		0	
Underground														
Seepage into underground			154,872		197,604		197,604		233,400		233,400		233,400	
Drill water from Meliadine			496,740		496,740		496,740		496,740		496,740		496,740	
Evaporation if UG water stored				0		0		0		0		0		0
Pumped to TSF				0		0		0		0		0		0
Pumped to WTP-DESAL				0		0		694,344		730,140		730,140		730,140
Pumped to B4				651,612		694,344		0		0		0		0
Subtotal			651,612	651,612	694,344	694,344	694,344	694,344	730,140	730,140	730,140	730,140	730,140	730,140
Change in storage volume			0		0		0		0		0		0	
Freshwater from Meliadine Lake														
Pumped to mill (freshwater makeup)		0		0		422,310		376,062		354,742		353,493		353,493
Pumped to underground (drill water)		0		496,740		496,740		496,740		496,740		496,740		496,740
Potable water		62,063		62,063		62,063		62,063		62,063		62,063		62,063
Subtotal		62,063		558,803		981,113		934,865		913,544		912,296		912,296
Salt Treatment (WTP-DESAL)														
Lake B4 pumped to WTP-DESAL			1,044,888		1,086,696									
Underground pumped to WTP-DESAL							694,344		730,140		730,140		730,140	
WTP-DESAL pumped to AP01				574,760		597,690		381,840		401,520		401,520		401,520
WTP-DESAL pumped to Brine Storage				470,128		489,006		312,504		328,620		328,620		328,620
Subtotal			1,044,888	1,044,888	1,086,696	1,086,696	694,344	694,344	730,140	730,140	730,140	730,140	730,140	730,140
Change in storage volume			0		0		0		0		0		0	

Table 17: Summary of Estimated Annual Volumes at the Pits and Underground during Closure (m^3)

Pit Name	Flow Description	Inflow	Outflow
Tiriganiaq Pit 1	Runoff	157,826	
	Direct precipitation	56,154	
	A54 overflows	250,873	
	Runoff from plant site pad	56,856	
	Runoff from TSF	485,458	
	Pumped from Meliadine Lake	5,698,000	
	Evaporation		67,222
	Subtotal	6,705,167	67,222
	Change in storage volume	6,637,945	
Tiriganiaq Pit 2	Runoff	32,141	
	Direct precipitation	13,000	
	Pumped from Meliadine Lake	131,492	
	Evaporation		15,401
	Subtotal	176,633	15,401
	Change in storage volume	161,232	
Tiriganiaq Underground	Seepage	1,212,503	
	Freshwater Pumped from Meliadine Lake	159,797	
	Subtotal	1,372,300	0
	Change in storage volume	1,372,300	
Wesmeg Pit 1	Runoff	2,188	
	Direct precipitation	6,808	
	Pumped from Meliadine Lake	58,440	
	Evaporation		8,066
	Subtotal	67,436	8,066
	Change in storage volume	59,370	
Wesmeg Pit 2	Runoff	10,201	
	Direct precipitation	114,599	
	Pumped from Meliadine Lake	2,542,160	
	Evaporation		135,762
	Subtotal	2,666,961	135,762
	Change in storage volume	2,531,199	
Wesmeg Pit 3	Runoff	4,491	
	Direct precipitation	30,369	
	Pumped from Meliadine Lake	423,680	
	Evaporation		35,977
	Subtotal	458,539	35,977
	Change in storage volume	422,562	
Wesmeg Pit 4	Runoff	2,264	
	Direct precipitation	8,686	
	Pumped from Meliadine Lake	73,052	
	Evaporation		10,291
	Subtotal	84,002	10,291
	Change in storage volume	73,711	
Wesmeg Pit 5	Runoff	190	
	Direct precipitation	9,440	
	Pumped from Meliadine Lake	87,662	

Table 17: Summary of Estimated Annual Volumes at the Pits and Underground during Closure (m^3) (continued)

Pit Name	Flow Description	Inflow	Outflow
	Evaporation		11,183
	Subtotal	97,292	11,183
	Change in storage volume	86,109	
F Zone Pit 1	Runoff	10,541	
	Direct precipitation	27,806	
	Pumped from Meliadine Lake	175,320	
	Runoff from waste rock	24,177	
	Evaporation		32,941
	Subtotal	237,844	32,941
	Change in storage volume	204,903	
F Zone Pit 2	Runoff	19,636	
	Direct precipitation	21,623	
	Runoff from waste rock	44,241	
	Pumped from Meliadine Lake	102,272	
	Evaporation		25,617
	Subtotal	187,772	25,617
	Change in storage volume	162,155	
F Zone Pit 3	Runoff	19,659	
	Direct precipitation	45,525	
	Pumped from Meliadine Lake	730,520	
	Runoff from waste rock	187,833	
	Evaporation		53,933
	Subtotal	983,536	53,933
	Change in storage volume	929,604	
Pump Pit 1	Runoff	183,728	
	Direct precipitation	101,773	
	Pumped from Meliadine Lake	1,314,920	
	Evaporation		120,568
	Subtotal	1,600,421	120,568
	Change in storage volume	1,479,853	
Pump Pit 2	Runoff	10,895	
	Direct precipitation	37,999	
	Pumped from Meliadine Lake	292,200	
	Flows from A8	106,960	
	Evaporation		45,018
	Subtotal	448,055	45,018
	Change in Storage Volume	403,037	
Discovery	Runoff	38,534	
	Direct Precipitation	120,486	
	Pumped from Meliadine	3,535,640	
	Evaporation		142,738
	Subtotal	3,694,660	142,738
	Change in Storage Volume	3,551,922	

The model results indicate that the Reclaim Pond in the TSF will operate as a positive water balance. Starting Year 3, excess water is treated over the open water period and discharged to AP01 and then Meliadine Lake (see Figure 14). There is no discharge of water from the TSF over the winter period. The high summer inflows and constant treatment plant rates lead to large fluctuations in water levels on an annual basis, as shown in Figure 14. However, the TSF facility is predicted to have sufficient capacity to store all excess water once reclaim demands are satisfied. The proposed water treatment strategy for Reclaim Pond water will be reviewed and updated as required throughout mine life based on observed reclaim water quality and tailings facility storage volumes.

Mill water demands are met from three sources. Reclaim water will be drawn from the TSF first, from AP01 as a second source, and then from Meliadine Lake as a third and last source. Model results indicate that during the summer AP01 has enough water to satisfy mill demands, while during the winter water is drawn from both AP01 and Meliadine Lake (see Figure 15).

AP01 and AP02 will be operated such that the annual volume of water collected within the ponds on a hydrologic year basis (Nov. 1 through Oct. 30) will be decanted during the open water period between June and September (Figures 16 and 17). This limits the amount of water that will be stored over the winter period and maximizes the storage capacity available for the spring freshet.

Pumping rates for underground water, which is temporarily stored in B4 basin are summarized in Figure 18. Model results indicate that B4 basin will form a temporary storage for underground seepage and drill water for approximately 1 year under average climate conditions, after which water treatment or expanded capacity of B4 will become necessary.

Flooding of the pits and re-flooding of Lake A8 via pumped inflows from Meliadine Lake will commence at the end of operations and continue at an average annual rate for approximately 10 years. The average annual pumping rates were set to fill the pits with pumped water and tributary area runoff over a period of 10 years, assuming average annual conditions. Tiriganiaq underground pumping rates were set to pump 160,000 m^3 of freshwater to form a 150 m deep freshwater cap on top of the groundwater seepage inflows. The underground workings will be reflooded in approximately 6.1 years (see Table 17 and Figures 19 to 22).

7.0 WATER QUALITY

The mass balance model used to predict water quality within the Project footprint was constructed within the water balance model. The aqueous chemistry of water flows contacting mine wastes (tailings, waste rock, overburden), referred to as ‘contact water’, was evaluated for the following mine components:

- Open pit sumps at each of the five deposits: Tiriganiaq, Wesmeg, Pump, F Zone and Discovery;
- Underground workings at Tiriganiaq;
- WRSF B7, B4, Discovery, and A45-2;
- Attenuation Ponds AP01 and AP02;
- The TSF; and
- The fully flooded open pit lakes at the end of mine life.

Other infrastructure (roads, mill and plant site) are accounted for implicitly in drainages reporting to one of the above water collection points.

The following section presents a brief summary of the parameters and assumptions adopted in the mass balance model along with a summary of the water quality results. Additional information on the methods of water quality prediction, the input parameters and assumptions are presented in the Mine Site Water Quality Predictions Report included as Appendix C.

7.1 Input Parameters

The following information was reviewed and used to assign the various input parameters for the water quality model:

- The Baseline Water Quality Database (1997-2011) for the Site was used to determine background surface water and non-contact runoff water quality;
- The groundwater quality results from the Westbay monitoring well installation at M11-1257 (FEIS Volume 7, Appendix 7.2-A) was used to assign groundwater inflow concentrations;
- Kinetic test results for the various rock types for each deposit (SD 6-3 Geochemistry Baseline Report) were used to determine loading rates for waste rock contact water in the WRSFs, from the TSF berms, in the open pit sumps and from all site roads;
- Mine production plans and geological cross sections provided by AEM were used to determine the proportion of each rock type present in each infrastructure during operation and at closure;
- Actual concentration of explosives by-products (ammonia and nitrate) in open pit and underground sump waters from AEM operating mines, including the Meadowbank mine, were provided by AEM; these were used to assign ammonia and nitrate concentrations originating from explosives residues to mine contact water;
- The concentration of ammonia in the TSF water was based on the monthly average values reported for the Meadowbank TSF pond, provided by AEM;
- The process water quality, including cyanide levels, was assigned based on results from samples of Meliadine process water that underwent laboratory-based cyanide detoxification;
- The chemical load from water that would contact exposed tailings was evaluated based on kinetic test results on whole ore tailings from the various deposits; and
- Expected treatment limits for sewage on the site, provided by AEM, were used to assign nitrate and phosphorous loading rates from this water source.

A more detailed discussion of the information used to assign the various input parameters for the water quality model is included in Appendix C. Water quality input data used in the water quality model are summarized in Tables C-1.1 through C-1.6 in Appendix C-1 of Appendix C.

7.2 Geochemical Controls on Water Quality

Solubility limits were imposed on Reclaim Pond water within the mass balance model. The solubility limits were derived using interim water quality model results input to the USGS mass transfer and speciation modelling code PhreeqC (Version 2.15.0) (Parkhurst and Appelo 1999). PhreeqC calculates aqueous speciation and solubility indices of solutions using the thermodynamic equations of mineral phases, assuming equilibrium conditions between mineral and soluble phases. Table C-1.7 in Appendix C-1 lists the constituents subject to these limits, and their respective upper limit values. These values were hardwired into the water quality model as upper parameter concentration limits in TSF water.

Geochemical controls were not imposed on AP01 water, and as such, the water quality results for some parameters in AP01 do not account for any minerals that may precipitate naturally once in the pond. Therefore, the concentration of some dissolved constituents in AP01 could be overestimated.

7.3 Treatment Options Specified

Water quality model results reflect treatment options selected by AEM on 2 streams: groundwater inflows and Reclaim Pond water.

Underground water was assumed to be treated through a salt removal plant (the 'salt' plant) to chloride concentrations under 1000 mg/L and discharged to AP01. WTP_DESAL efficiency to achieve the stated chloride concentration was applied to all other chemical parameters in groundwater.

Cyanide treatment effectiveness is considered implicitely in the data used as input for mill effluent quality. The input data were generated from samples of process water from milled ore from each deposit that underwent laboratory-based cyanide detoxification. For conservatism, cyanide degradation was not considered to occur in the TSF pond. Production of ammonia or nitrate from the biological degradation of cyanide and cyanide products have not been considered.

Water pumped from the TSF to AP01 was assumed to be treated for arsenic and total cyanide to values of 0.1 and 0.5 mg/L, respectively. Since copper sulphate is expected to be used in the treatment process, a fixed copper concentration of 0.15 mg/L was applied to the treated outflow. All treatment target concentrations are representative of the targeted monthly averages for these parameters.

7.4 Water Quality Assumptions

The assumptions made in the modelling process are described in Tables 9 to 13 in Appendix C. These assumptions reflect the current level of understanding of the Project.

7.5 Closure

A discussion of water management plans during mine closure is included Section 9.0. The following section outlines the assumptions that pertain to water quality during closure:

- Dewatering of the underground operations and salt treatment will terminate at the end of mine life;

- Treatment of TSF pond water is assumed to continue during the closure period until the water is completely drained from the pond and the cover is placed over the entire surface area of the TSF. Thus, treatment is assumed to continue for a period of 3 years following the end of mine life. The treated TSF water is pumped to AP01 for discharge to Meliadine Lake during the first year of closure. Thereafter the treated TSF water is pumped to Tiriganiaq open pit to assist with flooding of the pit;
- Meliadine Lake water is sourced (pumped) to flood open pits (along with treated TSF water to the Tiriganiaq open pit following year one of closure);
- During pit flooding, a chemical load is assumed to be transferred to pit waters from exposed open pit walls and the pit floor. This load is calculated from kinetic test results and assumes the fracture system through which water can contact wall rock extends to a depth of 1 meter. Loading of chemicals from the open pit walls is assumed to stop once the walls are submerged due to pit flooding;
- F Zone pits 1 and 2 and Pump pit 2 are assumed to be partially backfilled with waste rock such that the final depth of the filled pit lakes is 20 metres. The F Zone pits are assumed to be filled with F Zone waste rock, while Pump pit 2 is assumed to be filled with B4 WRSF material (a combination of Wesmeg and Pump waste rock). In addition to chemical loading from pit walls described above, waste rock is also considered to potentially contribute a load to water flooding the pits. Given the contrast in hydraulic conductivity between the pit walls and rock filled pit, water in pore spaces from the top 2 meters of rock fill only is assumed to transfer its chemical load to the open water above the rock fill immediately upon flooding. The chemical load in the pore space below this level is assumed to remain in place. Chemical loading is assumed to be arrested following initial flooding of the rock;
- Ice formation and its effect on water quality is not accounted for in pit lake water quality modelling because inflows to the pit are anticipated to occur in the summer when pits are ice free. However, ice formation is expected to increase the concentration of dissolved elements in the free water during winter months. This could eventually lead to chemical stratification of pit lakes where a denser, more chemically charged water may develop in time at the bottom of the flooded pit. Further assessment of potential pit lake water quality is being prepared under a separate cover; and
- A cover system at closure was not considered for any of the WRSF. The water quality modeling completed is considered representative of WRSF that are not covered in the long term.

Closure results are included to provide a preliminary estimate of water quality following mine life, and reflect only the initial stages of closure planning.

7.6 Water Quality Results

Water quality model results for the TSF water pond, open pits, waste rock piles and attenuation ponds are included in Tables C-2.1 to C-2.15 in Appendix C-2 of Appendix C. Results represent dissolved parameter concentrations for elements that were present above detection limit in static and kinetic leaching tests (SD 6-3). To this effect, mercury was not modelled because all static leaching tests were below the analytical detection limits for mercury (which is lower than the Canadian Council of Ministers of the Environment (CCME) aquatic life

water quality guidelines (CCME-aquatic life)). Thallium and silver were not modelled because most test results were below analytical detection limits with few exceptions. When detected, thallium and silver were well below CCME-aquatic life criteria.

Results do not consider the effect that suspended solids (TSS) could have on total parameter concentrations. Modeled dissolved parameter concentrations that exceed the Metal Mining Effluent Regulations (MMER; DFO 2006) criteria or the Canadian Council of Ministers of the Environment (CCME)-aquatic life guidelines (CCME 2012) are highlighted in bold font. The CCME-aquatic life guidelines are used for comparison purposes only since no site specific water quality criteria are available. Site specific criteria and performance criteria are expected to be developed during the water licensing process.

Predicted concentrations are monthly mean values during operation, and summer time mean values at closure and 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, the predicted concentrations are considered to be order-of-magnitude estimates. As such, concentrations that are predicted to be close but still meet the comparative criteria may exceed them.

Figures 22 to 29 show time series plots of the main parameters of interest in water quality for the following waters: TSF pond water quality prior to treatment, TSF treated outflow to AP-01, the salt plant inflow and treated outflow, and AP01 pond water quality (which is discharged to Meliadine Lake via an outfall diffuser without further treatment other than TSS removal). Graphical peaks in pond water concentrations pertain to winter months when ice is formed at the surface, concentrating the free water below the ice.

TSS were not considered in the mass load model, but the concentration of TSS is regulated in effluents and AEM has committed to meeting TSS criteria that will be imposed on the Project during the water licensing process. It is anticipated that suspended solids will require monitoring and proper management based on experience at other Arctic mine sites. TSS can contribute to chemical loading of water (i.e., can increase the total concentration of chemicals). This was not accounted for in modelling; the water quality results are for dissolved components only.

The concentration of explosives by-products (ammonia and nitrate) in site contact water is sensitive to the management of blasting agents during their use; the predicted concentrations of these parameters may vary depending on these practices.

7.6.1 Operation Phase

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 TSF pond water is expected to have an alkaline pH.

Open pit sump modeled water quality generally meets Metal Mining Effluent Regulations (MMER) criteria; only arsenic concentrations are predicted to sporadically exceed CCME-aquatic life guidelines in all pit sumps. Aluminum marginally exceeds the CCME-aquatic life guideline during summer months in the Wesmeg, F Zone, Pump, and Discovery pit sumps. Few additional parameters, including, copper, cadmium and fluoride exceed CCME-aquatic life guidelines sporadically during summer months in the Discovery Pit. Higher sump water concentrations occur in June and July because of high pit inflows during the spring freshet and the subsequent evaporative losses during summer months. During summer months, water collected in the open pit sumps is

assumed to be pumped to the TSF at a rate equal to the average annual spring melt volume distributed over a one month period. The combined runoff and spring melt in the month of June exceeds this potential pumping rate, resulting in small volumes of water that accumulate in the pit sumps during the months of June and July. During these months approximately 50% of the water accumulated in the pit sumps is lost to evaporation, increasing the elemental concentrations in the residual water.

Waste rock pile water quality meets MMER criteria and shows fewer, more sporadic exceedances to CCME-aquatic life guidelines than open pit sumps; namely, arsenic at all rock piles, aluminum in B4 WRSF and marginal exceedances of cadmium at the Discovery WRSF.

The TSF pond water quality is predicted to exceed MMER effluent criteria for total cyanide and arsenic. The concentration of cadmium, chloride, copper, fluoride, lead and selenium are also predicted to exceed CCME water quality guidelines for aquatic life. This water is predicted to require treatment before discharge to the receiving environment. A water treatment system is planned to attenuate cyanide, arsenic and copper, as a minimum. This treatment is likely to attenuate the concentration of other metals sensitive to pH adjustment but these are not accounted for in modelling. Treated TSF water will be discharged to AP01.

AP01 receives all site waters including TSF treated water and the salt plant treated discharges. It is the final site contact water collection point prior to discharge to Meliadine Lake via a diffuser. All parameter concentrations meet MMER criteria in AP01. Arsenic, cadmium, copper and selenium seasonally exceed CCME-aquatic life guidelines. Fluoride and lead concentrations marginally and intermittently exceed CCME-aquatic life guidelines. Lead marginally exceeds CCME-aquatic life guidelines on a single occasion. Chloride concentrations in AP01 also exceed the CCME-aquatic life guidelines. Chloride concentrations are higher than the salt plant effluent concentrations due to the recirculation of TSF pond water in the mill. Sodium and chloride are introduced in process water effluent from the mill from moisture in the ore which is assumed to have the saline chemistry of underground inflows.

Model results of effluent mixing in Meliadine Lake are presented in a separate document.

7.6.2 Closure and Post-Closure Phases

Concentrations in the open pit lakes at closure are predicted to meet CCME-aquatic life guidelines during summer months from the time the open pits are fully flooded, until the end of the modeling period (13 years post-closure). Some exceedances may persist in pit lake water during the early flooding period when the waters are still confined to within the open pit. Although not considered in closure modeling for the pit lakes, ice formation during winter months may cause CCME-aquatic life exceedances in remaining free water during this period. Given the preliminary nature of the closure plans, verification monitoring is recommended during closure to track pit lake water quality.

Modelled water quality concentrations in AP01 in the closure phase and H17 in the post-closure phase are presented in Table C-2.2, Appendix C-2. At the initiation of the closure phase (the first few months), modelled concentrations of arsenic, chloride, fluoride, cadmium, copper, lead and selenium exceed CCME-aquatic life guidelines. The modelled elevated concentrations for this phase of the Project are related to groundwater and / or mine contact water inflows. At the end of the first year of the closure phase, values of these parameters are reduced to below CCME aquatic life guidelines. Modelled concentrations in H17 (formerly AP01 during the operations and closure phases) decrease throughout the first 4 years of the post-closure phase. Following these initial decreases, concentrations do not vary from year to year. During the winter months of the closure and post-

closure phases, water volumes in AP01/H17 are low and the pond is expected to freeze to the bottom. As no free water would be available under this condition, no discharge is expected, and no water quality estimates or model results are provided in Table C-2.2 for these phases.

Monitoring at AP01/H17 will be carried out during closure and post-closure phases. Water in AP01 will be managed to ensure any discharge criteria established through the water licensing process for the Project are met.

WRSF contact water quality is predicted to meet most CCME aquatic life parameter concentrations except for arsenic which is predicted to marginally exceed the guideline (by less than 10 times the guideline). Cadmium is also predicted to marginally exceed the CCME aquatic life guidance concentration in Discovery WRSF contact water. It is noted that the CCME aquatic life criteria is not the adopted criteria for closure performance. It is anticipated that surface water quality criteria (parameters, limits and monitoring locations) for the WRSF in closure will be established through the water licensing process for the Project.

The WRSF contact water system will be maintained in closure until water quality monitoring demonstrates that water reporting from these facilities is acceptable for direct release to the environment. Once water quality is acceptable for direct release based on criteria established through the water licensing process, contact water channels and sumps will be removed and a layer of non-acid generating rock will be placed over sediment in the sumps to prevent dusting and erosion.

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, and the internal characteristics of the piles themselves (e.g., temperature, degree of saturation, presence of ice). This 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.

Given the complex interplay of climate, rock geochemical processes, and pile characteristics, several simplifying and conservative assumptions were made in the modelling process. The water quality predictions presented in this plan are a reflection of these assumptions. While it is believed that the modelling approach and resulting water quality predictions presented herein are justified and appropriate for evaluating potential impacts associated with the Project, actual contact water quality during pre-development, construction, operations, closure and post-closure may differ from predictions.

Water quality monitoring will be completed during pre-development, construction, operations, closure and post-closure to monitor the contribution of specific infrastructure components (including the WRSF) to the overall site water quality (see Section 8.0). The water quality monitoring will be used to support the closure planning process, and to update and reassess, as needed, water quality model results. The water quality data collected will be compared to the predictive modelling results to identify if and where additional mitigation and management strategies may be required. The intent of the closure planning process is to develop a final plan using adaptive management. The use of adaptive management will enable the closure plan to evolve as new information becomes available through analysis, testing, monitoring, and progressive reclamation.

8.0 CONCEPTUAL WATER QUALITY MONITORING PLAN

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

Water quality monitoring will be initiated at the pre-development stage and will continue during construction, operations, closure, and post-closure. Monitoring will occur at 2 levels:

- *Regulated Monitoring* refers to the monitoring requirements that will be established through the water licensing process for the Project. Regulated monitoring pertains to water discharged to the receiving environment or water not discharged to the receiving environment that regulatory authorities require to be monitored. Reporting the data collected from the regulated monitoring program will occur on a regular frequency to the regulatory authorities, following the schedules established through the MMER and the water licensing process. The regulated monitoring program would including the Surveillance Network Program stations, the Aquatic Effects Monitoring Program locations, and any other stations that will be included in the Water License for the Project, including compliance points where performance standards for releases of contact water to the environment cannot be exceeded.

  It is anticipated that the performance standards for releases of contact water to the environment will be established through the water licensing process for the Project. Once in the receiving environment, and outside of the mixing zone, the CCME aquatic life guidelines, or/and the Canadian Drinking Water Quality guidelines (Health Canada, 2012) may be used to assess performance standards. Performance standards will be selected based on feedback received through community consultation, the Nunavut Water Board, and other interested parties during the water licensing process.

- *Verification Monitoring* refers to an internally defined monitoring program that will be established to monitor the contribution of specific infrastructure components to the overall site water quality, and to apply targeted adaptive management strategies where required to meet the established performance standards at compliance (or regulated) monitoring points.

  Data collected as part of the verification monitoring program will be used by AEM in the management of water on the mine site and the mine roads. The verification monitoring data will be collected, compiled, and managed internally. The verification monitoring data will not be reported to the regulators, but will be used by AEM for the adaptive management of water on the mine site and the mine roads.

Figures 30 to 32 present the proposed monitoring locations for the pre-development, construction, operations, closure, and post-closure phases, respectively. Table 18 to Table 20 list the monitoring frequencies and analytical parameters for these periods. Additional monitoring of small waterbodies downstream of mine infrastructure is discussed within the Aquatic Effects Monitoring Program (SD 7-3) for the Project.

Table 18: Construction Period Proposed Water Quality Monitoring Program

Monitoring Location	Monitoring Frequency	Monitored Parameters
Regulated Monitoring		
Dewatering ML-1, B6, B34, A7	Daily during ice-free months, initiated upon dewatering.	TSS, turbidity, pH.
Meliadine Lake Discharge from AP01	Weekly during ice-free months, when discharge occurs.	Temperature, conductivity, alkalinity, pH, suspended solids, MMER metals, cyanide, chloride, petroleum hydrocarbon.
Verification Monitoring		
Ponds AP01, B4	Monthly during ice-free months, initiated upon construction of the pond.	Temperature, conductivity, alkalinity, pH, suspended solids, turbidity, metals, explosives by-products, petroleum hydrocarbon.
Tiriganiaq groundwater	Monthly	TDS

Table 19: Operation Period Proposed Water Quality Monitoring Program

Monitoring Location	Monitoring Frequency	Monitored Parameters
Regulated Monitoring		
Meliadine Lake Discharge	Weekly during ice-free months, when discharge occurs.	Temperature, conductivity, alkalinity, pH, suspended solids, MMER metals, cyanide, chloride, petroleum hydrocarbon.
Dewatering A7, A1	Daily during the period of dewatering.	TSS, turbidity, pH.
Verification Monitoring		
Ponds B4 (Until Year 3), AP01[1], AP02, and TSF; sumps B4-S, WM-S, FZ-S, Disc-S	Monthly during ice-free months when the pond is active.	Parameters of interest.
Open pit, waste rock, TSF berm seepages	Monthly during ice-free months, when water is present.	Visual Inspection of rock storage piles, open pit sumps and tailings management facility for seepages. Analysis: parameters of interest.
Tiriganiaq groundwater	Weekly	TDS

[1] Monitoring of the water reporting to individual sumps reporting to AP-01 may also be included in the verification monitoring program as part of an adaptive management strategy

Table 20: Closure Period Proposed Water Quality Monitoring Program

Monitoring Location	Monitoring Frequency	Monitored Parameters
Regulated Monitoring		
Meliadine Lake discharge	Weekly during ice-free months, when discharge occurs	Temperature, conductivity, alkalinity, pH, suspended solids, MMER metals, cyanide, chloride, petroleum hydrocarbon.
Verification Monitoring		
Open pits: Tiriganiaq, Wesmeg, Pump, F Zone, Discovery	Annual over the flooding period, during the ice-free months	Parameters of interest.
Ponds AP01[1], AP02, TSF	Monthly during ice-free months, when the pond is in operation.	Parameters of interest.
WRSF Seepages, TSF dike toe seepage	Monthly during ice-free months, when water is present	Visual Inspection of rock storage piles and tailings management facilities for seepages. Analysis: parameters of interest.

[1] Monitoring of the water from individual sumps reporting to AP01 may also be included in the verification monitoring program as part of an adaptive management strategy.

It is noted that Regulated monitoring is expected to start following issuance of the Project water licences and when the volume of water discharged to the environment exceeds the MMER regulated thresholds. Regulated monitoring will be carried out at the frequency and for the parameters specified in the MMER and in the Type A and B water licences for the Project.

Parameters for the Verification monitoring program have not been explicitely stated above. However, it is anticipated that the Verification monitoring program will include the following parameters: temperature, conductivity, alkalinity, pH, suspended solids, MMER metals, total cyanide, chloride, and petroleum hydrocarbons (monitoring parameters may vary between locations). These parameters are believed to be key parameters for the Project for the evaluation of site-wide water quality during operations. During the closure period, parameters included in the CCME aquatic life guidelines may also be included in the Verification monitoring program.

The monitoring programs summarized herein are provisional, and both the Regulated monitoring program and Verification monitoring program, including monitoring parameters, frequency, and reporting, will be further developed through the water licensing process for the Project.

9.0 MINE CLOSURE AND RECLAMATION

Mine closure is integral to the mine design and will be modified as operations progress. Planning for permanent closure is an active and iterative process. The intent of the process is to develop a final plan using adaptive management. The process begins in the mine design phase and continues through to closure implementation. Adaptive management enables the plan to evolve as new information becomes available through analysis, testing, monitoring, and progressive reclamation.

The intent of reclamation is to produce a final landscape that reflects the surrounding land features and land forms. The mine will result in a permanent change to the landscape. Reclamation cannot totally remove the disturbance caused by the development and operation of the mine. Certain features, such as the TSF, pit lakes and WRSFs will become permanent parts of the current landscape. Other features, such as the plant site pad, will be removed. Reclamation will minimize the potential for disturbances that cause degradation of the surrounding water, air and land after mining operations cease.

Mine closure and reclamation will utilize currently accepted management practices and appropriate mine closure techniques that will comply with accepted protocols and standards. Closure will be based on project design and operation to minimize the area of surface disturbance, stabilize disturbed land surfaces and permafrost against erosion, and return the land to post-mining uses for traditional pursuits (SD 2-17 Mine Closure and Reclamation Plan).

Water management during closure and reclamation will involve maintaining surface water diversions to prevent clean runoff water from coming into contact with areas affected by the mine or mining activities. The water management facilities, including the dikes, ponds, water collection systems (sumps and channels), and treatment plants (if necessary), will be required to remain in place until mine closure activities are completed and monitoring results demonstrate that water quality conditions are acceptable for discharge of all contact water to the environment without further treatment.

All water management infrastructure maintained for mine operations, closure and reclamation, including channels and sumps, will be re-contoured and/or surface treated according to site-specific conditions to minimize wind-blown dust and erosion from surface runoff, and to enhance the development site area for re-colonization by native plant species and wildlife habitat.

The final Reclamation and Closure Plan for the Project will be developed in conjunction with the mine plan so that considerations for site closure can be incorporated into the mine design. Monitoring will be carried out during all stages of the mine life to demonstrate the safe performance of the mine facilities. If non-compliant conditions are identified, then maintenance and planning for corrective measures will be completed in a timely manner for completion of the Reclamation and Closure Plan (SD 2-17 Mine Closure and Reclamation Plan).

Figures 9 and 10 show the post-closure concept for the Project. The following section provides a brief description of closure activities for the water management facilities.

9.1 Tailing Storage Facility

The Reclaim Pond will remain in place until mining and milling has been completed. The general closure concept for the TSF is to place an engineered cover of suitable thickness over the tailings surface, with the tailings grading from northwest to the southeast. The intent of the engineered cover will be to prevent wind erosion of the tailings and to minimize water infiltration into the tailings. Although not a requirement of the management strategy, the engineered cover can also be designed to keep the permafrost active layer within the rockfill if the tailings geochemistry and water quality turn out to be problematic (i.e., the tailings material will remain below the active layer). The operating spillway at the southwest corner of the facility will be maintained at closure, so that surface runoff from the TSF area is directed through that spillway to the Tiriganiaq Pit Lake once water quality monitoring demonstrates the water can be freely released without further treatment (SD 2-3 TSF Preliminary Design Report).

9.2 Pits

Each open pit will be flooded. Water will be initially pumped at controlled rates from Meliadine Lake. The maximum fill rate will be based on the maximum acceptable draw down of Meliadine Lake. Water quality in the pits will be monitored during flooding. Any diversion dikes will be kept intact to provide a barrier between the open pits and surrounding waterbodies until the pit lake water levels achieve static conditions and the water quality is demonstrated to be acceptable for it to flow naturally to the environment without treatment. Following completion of flooding, dikes will be breached and pit waters will be allowed to mix with adjacent water bodies, provided that pit water quality is acceptable and water levels between the pit and the adjacent waterbody maintain a water balance.

9.3 Tiriganiaq Underground

The Tiriganiaq Underground will also be flooded in closure. The estimated total flooding volume of the underground workings is 1,372,000 m^3 (Table 11). The workings will be flooded over approximately 6.1 years by a combination of groundwater seepage and freshwater from Meliadine Lake. Approximately 160,000 m^3 of freshwater will be pumped in a controlled manner from Meliadine Lake to provide a 150 m deep freshwater cap

and keep high TDS groundwater in the lower portions of the mine. The maximum fill rate will be based on the maximum acceptable draw down of Meliadine Lake.

9.4 Waste Rock Storage Facilities

Geochemical testing indicates that overburden and most waste rock are non-acid generating and drainage water quality is expected to meet MMER monthly mean effluent limits. A cover system is not considered for the B4, B7, and A45-2 waste rock storage facilities. Some of the waste rock at Discovery has an uncertain ARD potential in the long-term. Notwithstanding this, the Discovery waste rock pile is not expected to generate ARD in the short-term based on the low reactivity of potentially acid-generating (PAG) rock demonstrated in kinetic testing combined with AEM's experience at Meadowbank where the waste rock pile containing PAG rock froze within the first year of deposition. The Discovery pile is also expected to freeze prior to the onset of ARD. A contingency measure will include monitoring of the buffering capacity and sulphur content of Discovery waste rock and monitirong of rock pile contact water quality. A cover of non-PAG rock would be placed on the rock pile to host the active thaw layer should operational monitoring support the PAG nature of Discovery waste rock.

Once water quality monitoring results from each rock pile demonstrate that water quality is acceptable for direct release to the environment, contact water channels and sumps will be removed and a layer of non-acid generating rock will be placed over sediment in the sumps to prevent dusting and erosion.

9.5 Dikes

When water quality allows, dikes will be breached at closure to allow pit and pond water to flow naturally to the receiving environment. Dike breaching will involve the removal of a portion of the dikes to a minimum depth of 1 m below average water level or back to original waterbody bed levels. Consideration will be given to breach staging, with above-water portions of the dike in the breach area removed during winter periods, when there will be little surface water flow, thereby minimizing the potential release of sediments to the neighbouring waterbodies. The remainder of the breach would be completed during the open water season following freshet so as to allow for the deployment of turbidity curtains to control potential releases of sediment.

9.6 Channels and Sumps

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

10.0 CLOSURE

We trust this report satisfies your current requirements. If you have any questions or require further assistance, please do not hesitate to contact the undersigned.

GOLDER ASSOCIATES LTD.

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Water Resources Engineer

ORIGINAL SIGNED

Nicolas Lauzon, P.Eng.
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Melissa Bunn
Environmental Consultant

ORIGINAL SIGNED

Valerie Bertrand, P.Geo.
Associate, Senior Geochemist

MLP/NL/MIB/VB/se/rs/lw

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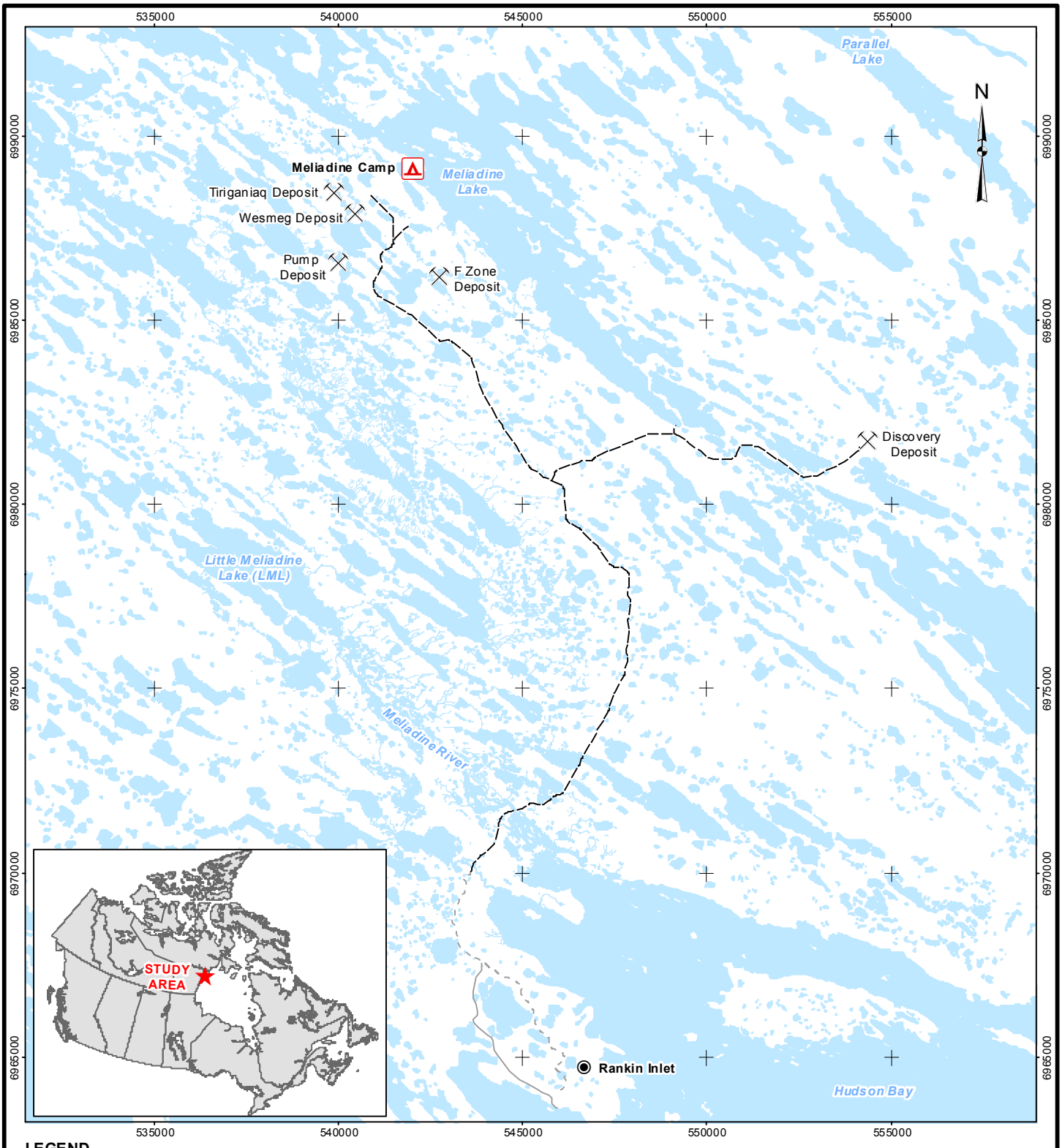
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LEGEND

- Camp
- Proposed Mine Site
- All-weather Access Road (AWAR)
- Road - New
- Road - Existing
- Watercourse
- Waterbody

3000 0 3000
METRES

REFERENCE

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

PROJECT
AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

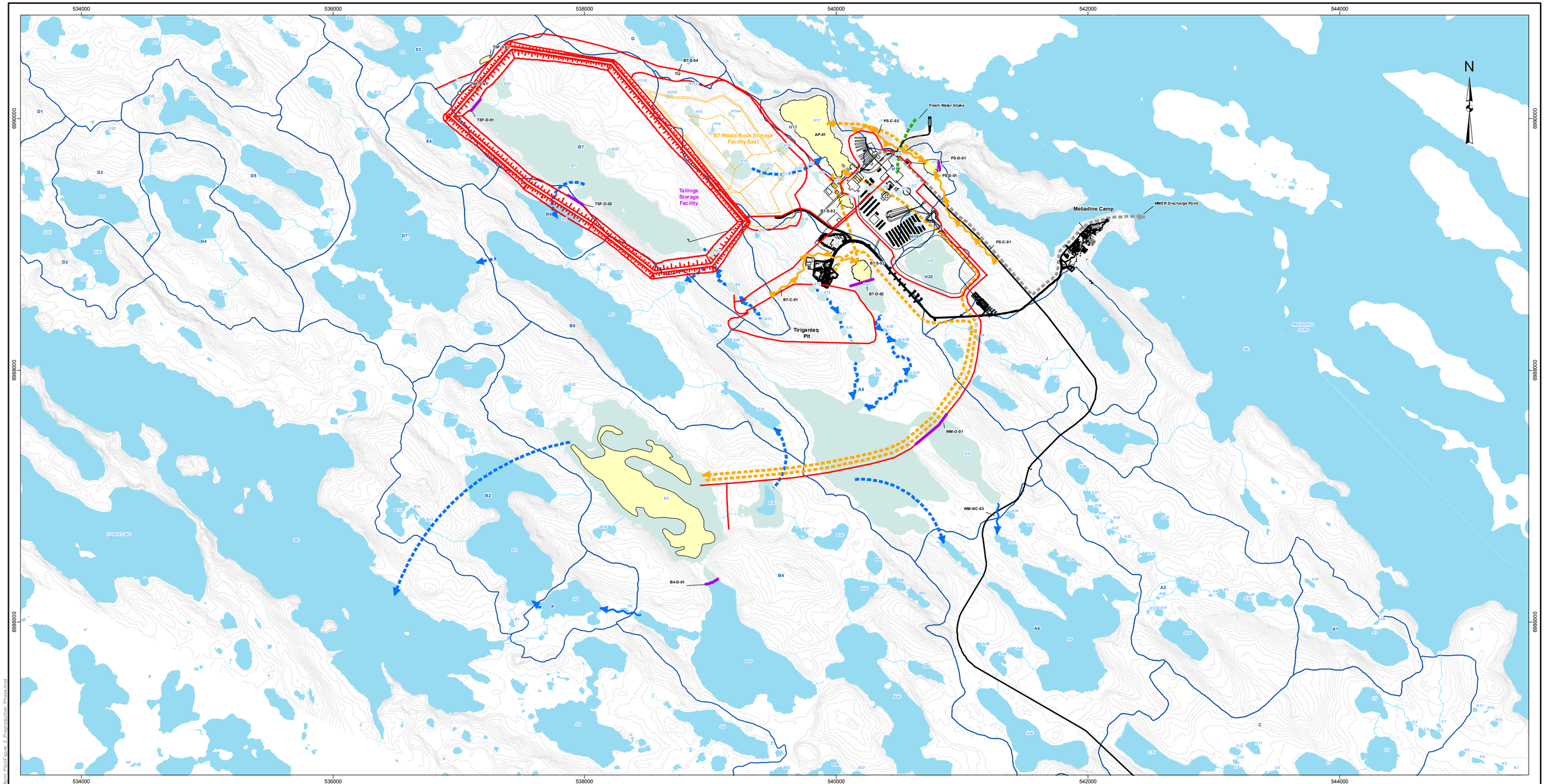
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LOCATION PLAN

Golder Associates

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GIS	AL	26 July 2011		
CHECK	JC	28 Jun. 2012		
REVIEW	CJC	28 Jun. 2012		

FIGURE 1

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LEGEND

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

NOTE

Dewatering of lakes may require TSS control.
Pumped water from waste rock storage facilities, pits and the tailing storage facility to sumps not shown for clarity.
Pumped contact water from B4 is assumed to be treated prior to discharge to AP01.
Pipe and ditch alignments shown are conceptual for information purposes only.
Final alignments to be confirmed during detailed design and will be subject to change based on local field conditions.

REFERENCE

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

PROJECT

AGNICO EAGLE

AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

PREPRODUCTION PHASE - YEARS -3, -2, -1

Golder Associates

PROJECT NO.		10-1373-0076	FILE No.		
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CHECK	DW	13 Jan. 2013			
REVIEW	DW	13 Jan. 2013			

FIGURE 2

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534000 536000 538000 540000 542000 544000

6990000 6988000 6986000

N

TSF-S-02
TSF-S-01
TSF-D-01
TSF-D-02
B7-S-04
B7-S-03
B7-C-01
B7-D-02
WM-NC-01
WM-NC-03
WM-D-01
WM-S-01
WM-D-02
F-NC-01
F-D-01
B4-D-01
PS-C-02
PS-D-01
PS-S-01
PS-C-01
AP-01
Fresh Water Intake
MMER Discharge Point
Meliadine Camp
Tailings Storage Facility
B7 Waste Rock Storage Facility East
B7 Waste Rock Storage Facility South
Tiriganiaq Pit
Meliadine Lake
Camp Lake

1000 0 1000
METRES

LEGEND

- Contact Flow Path
- Non Contact Flow Path
- Dike
- New Infrastructure
- Watercourse
- Existing Infrastructure
- All-weather Access Road (AWAR)
- Open Pit
- Waste Rock Storage Facility
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- Watershed Boundary

NOTE

Dewatering of lakes may require TSS control.
AP01 attenuation pond may require linear.
Pumped water from waste rock storage facilities, pits and the tailing storage facility to sumps not shown for clarity.
Pumped contact water from B4 is assumed to be treated prior to discharge to AP01.
Pipe and ditch alignments shown are conceptual for information purposes only.
Final alignments to be confirmed during detailed design and will be subject to change based on local field conditions.

REFERENCE

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

PROJECT
AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

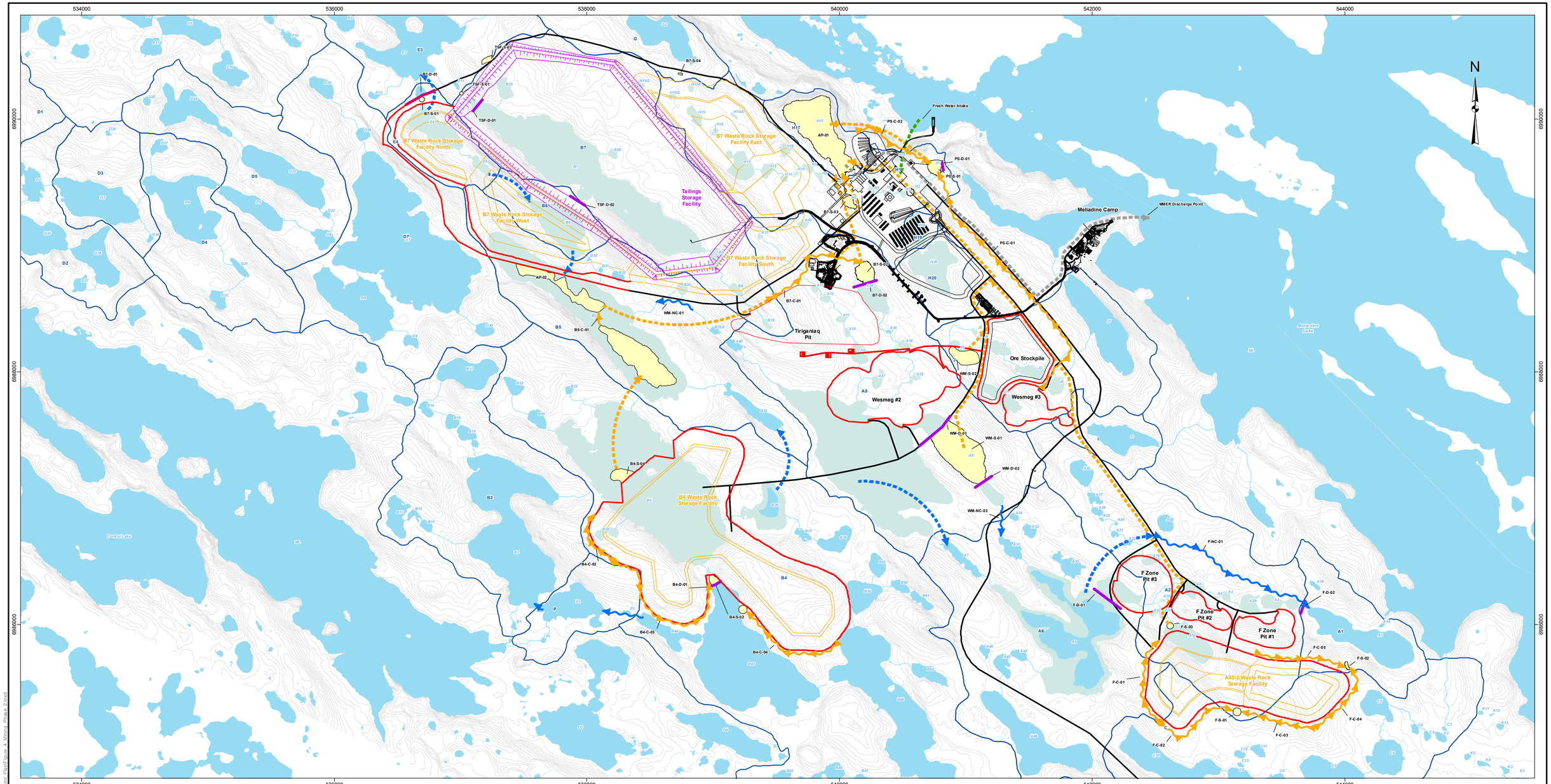
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MINING PHASE 1 - YEARS 1, 2

Golder Associates

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CHECK	DW	13 Jan. 2013			
REVIEW	DW	13 Jan. 2013			

FIGURE 3

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LEGEND

- Contact Flow Path
- Non Contact Flow Path
- Dike
- New Infrastructure
- Watercourse
- Existing Infrastructure
- All-weather Access Road (AWAR)
- Open Pit
- Waste Rock Storage Facility
- Tailings Facility
- Pumped Contact Water
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- Topographic Contour (1.0 m Interval above sea level)
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- Lake
- Contact Water Pond
- Watershed Boundary

1000 0 1000
METRES

NOTE

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

REFERENCE

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

PROJECT

AGNICO EAGLE

AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

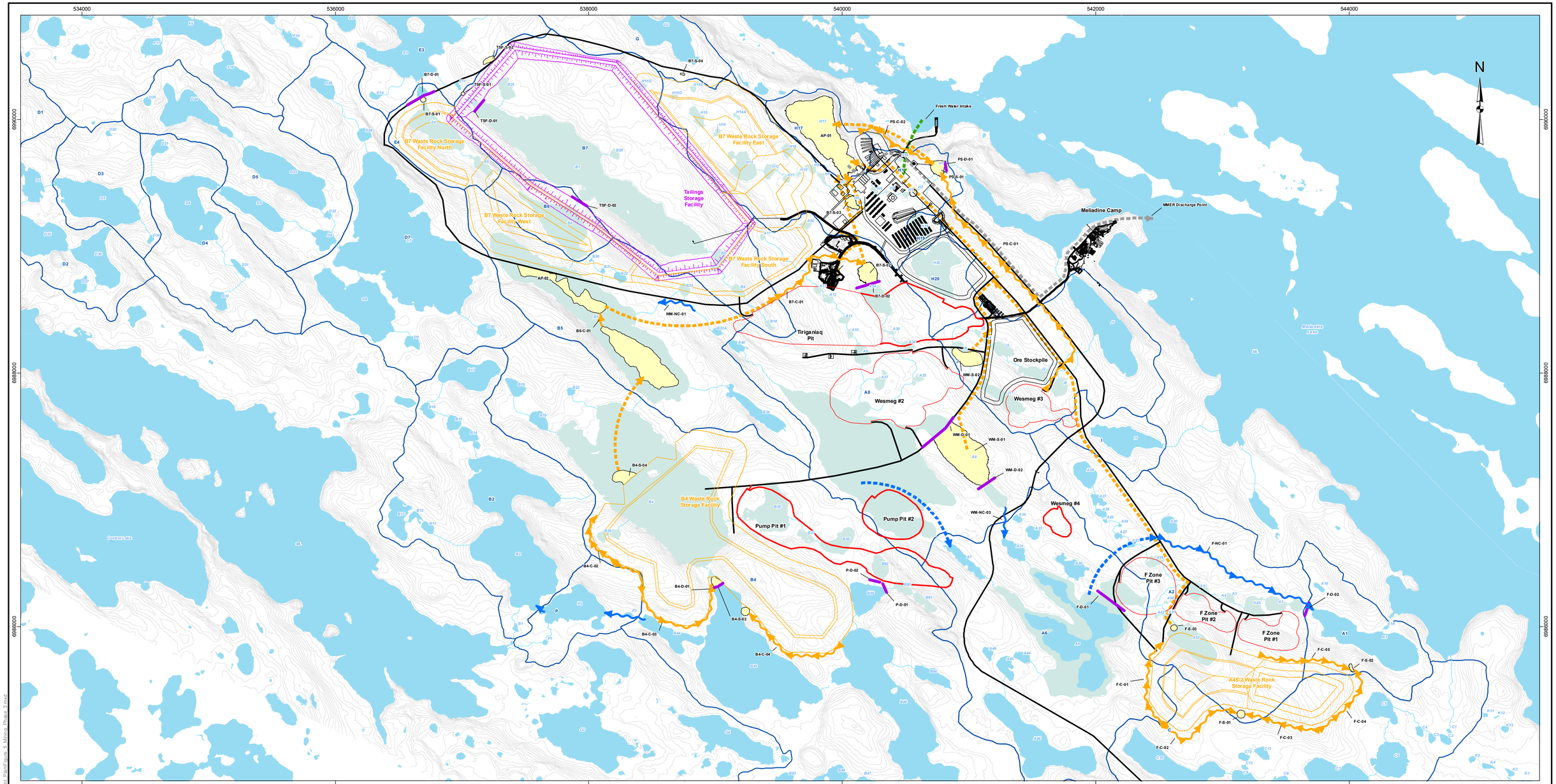
MINING PHASE 2 - YEARS 3, 4

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FIGURE 4

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LEGEND

- Contact Flow Path
- Non Contact Flow Path
- Dike
- New Infrastructure
- Watercourse
- Existing Infrastructure
- All-weather Access Road (AWAR)
- Open Pit
- Waste Rock Storage Facility
- Tailings Facility
- Pumped Contact Water
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- Lake
- Contact Water Pond
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NOTE

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

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Datum: NAD 83 Projection: UTM Zone 15

PROJECT

AGNICO EAGLE

AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

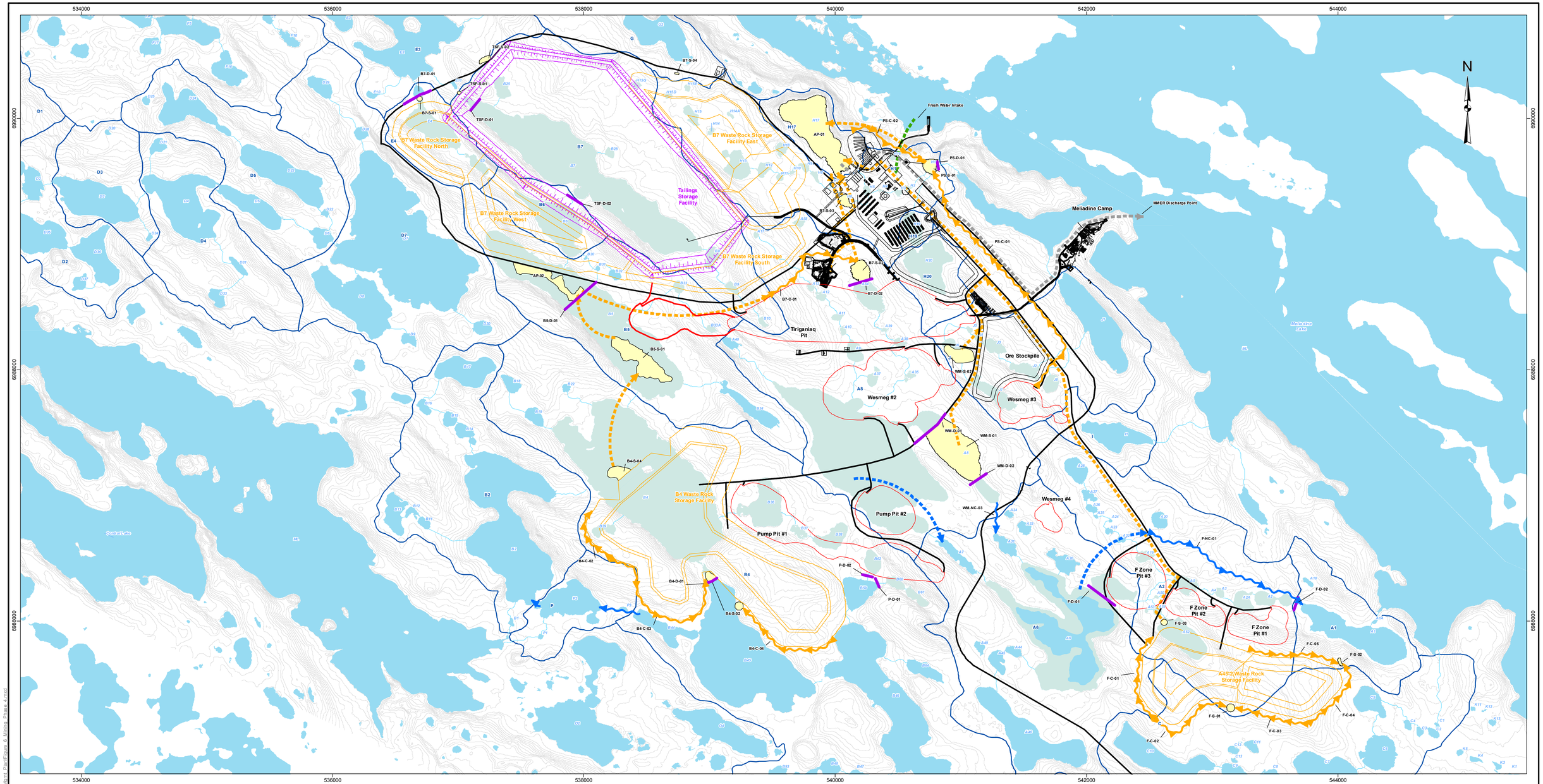
MINING PHASE 3 - YEARS 5, 6, 7, 8

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REVIEW	DW	13 Jan. 2013		

FIGURE 5

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LEGEND

- Contact Flow Path
- Non Contact Flow Path
- Dike
- New Infrastructure
- Watercourse
- Existing Infrastructure
- All-weather Access Road (AWAR)
- Open Pit
- Waste Rock Storage Facility
- Tailings Facility
- Pumped Contact Water
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NOTE

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

REFERENCE

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Datum: NAD 83 Projection: UTM Zone 15

PROJECT

AGNICO EAGLE

AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

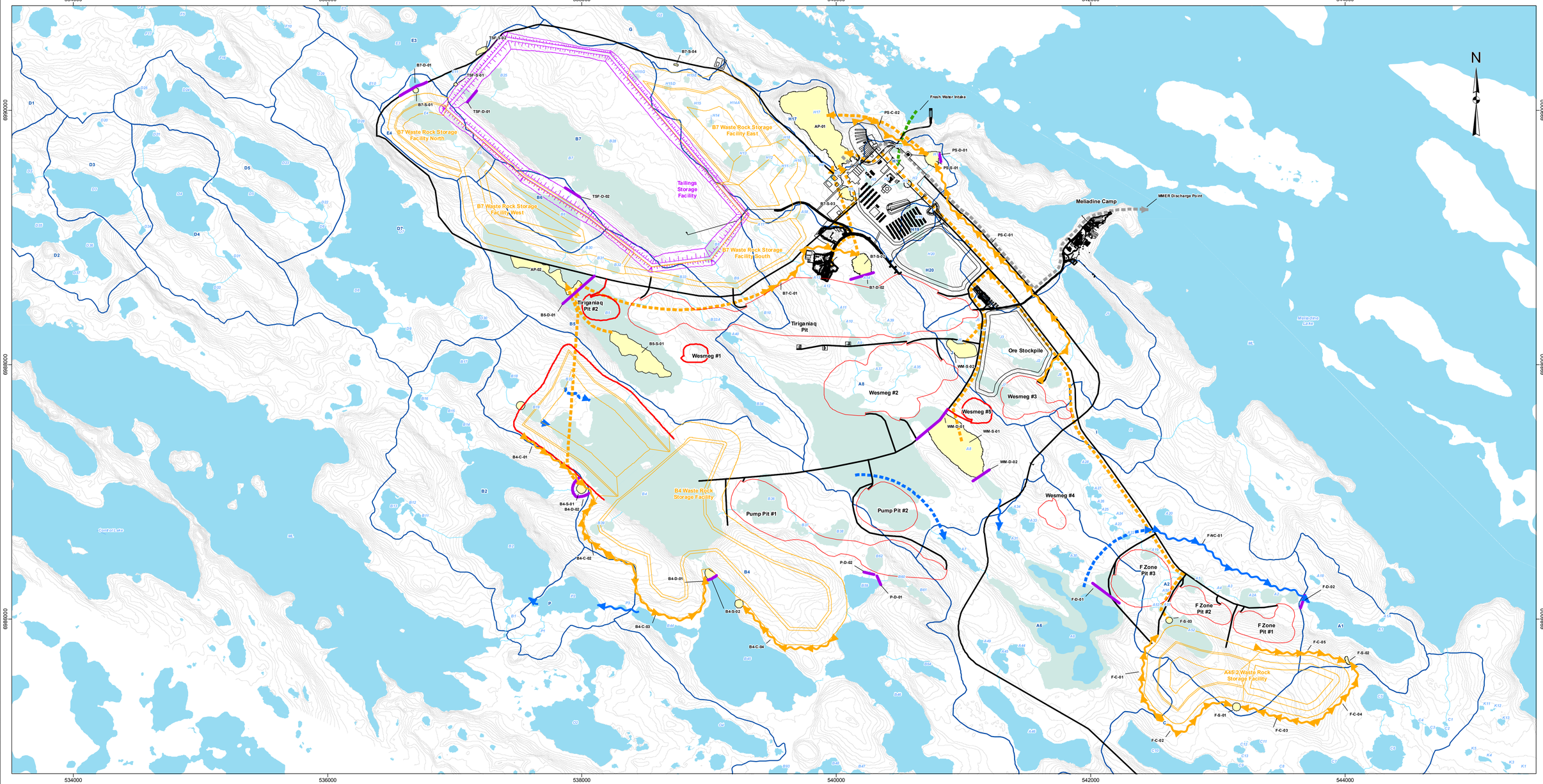
MINING PHASE 4 - YEAR 9

Golder Associates

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GIS	DSC	09 Nov. 2012		
CHECK	DW	13 Jan. 2013		
REVIEW	DW	13 Jan. 2013		

FIGURE 6

N:\Burnaby\Projects\2012\1439\10-1439-0007\GIS\Mapping\MXD\FIG\Volume_ASD_2_8_SW_Mgmt_Plan\Figure_6_Mining_Phase_4.mxd



LEGEND

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

1000 0 1000
METRES

NOTE

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

REFERENCE

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

PROJECT

AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

MINING PHASE 5 - YEARS 10, 11, 12

Golder Associates

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

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

548000 550000 552000 554000 556000 558000

6984000 6982000 6980000

N

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

1000 0 1000
METRES

LEGEND

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

NOTE

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

REFERENCE

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

PROJECT

AGNICO EAGLE

AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

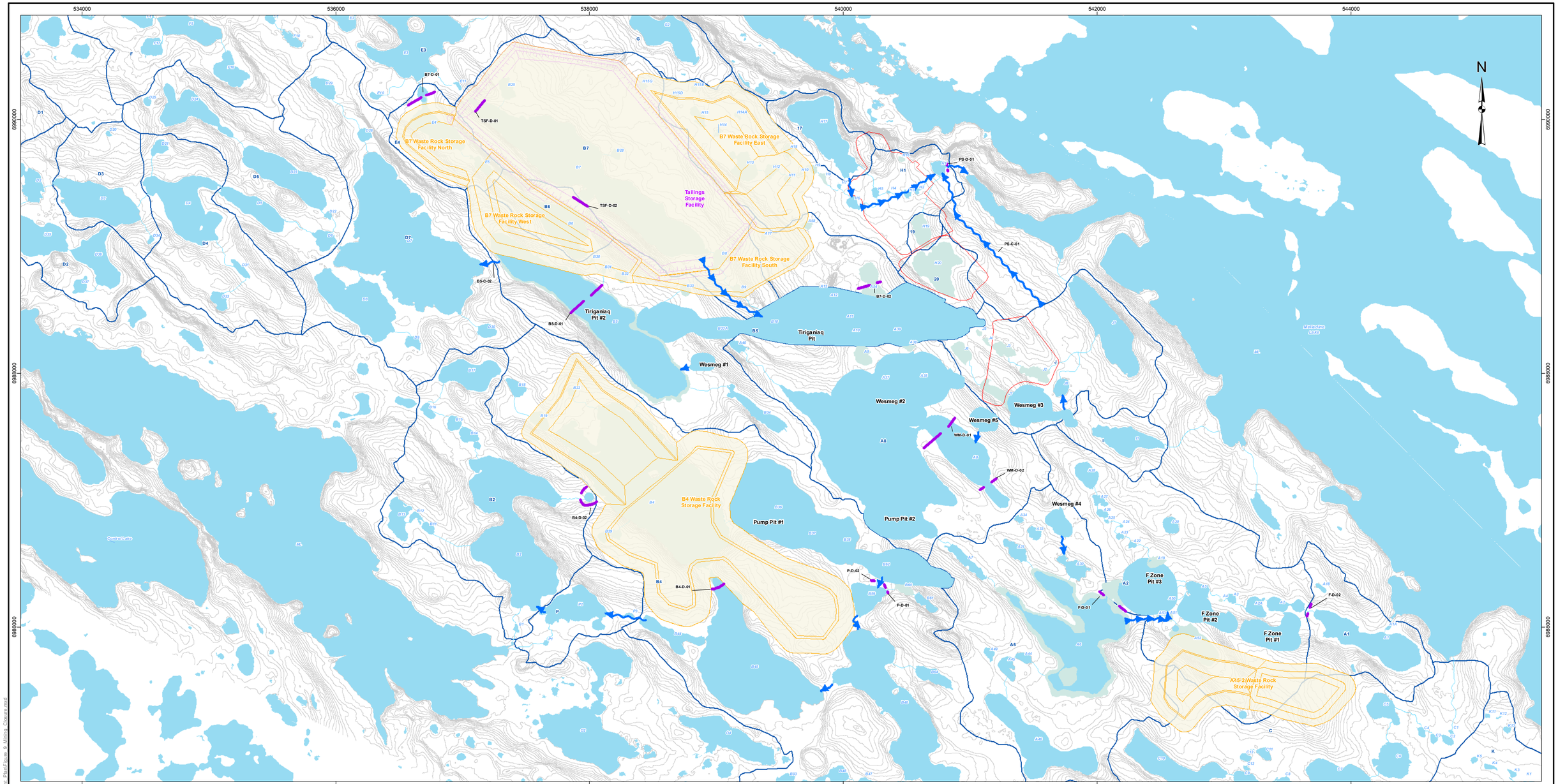
TITLE

DISCOVERY PIT

Golder Associates

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

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



LEGEND

- Non Contact Flow Path
- Dike
- Scarified Rock Pad
- Tailings Facility
- Watercourse
- Topographic Contour (1.0 m Interval above sea level)
- Waste Rock Storage Facility
- Watershed Boundary
- Dewatered or Filled in Lake
- Lake

NOTE

Dewatering of lakes may require TSS control.
Pipe and ditch alignments shown are conceptual for information purposes only.
Final alignments to be confirmed during detailed design and will be subject to change based on local field conditions.

REFERENCE

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

PROJECT

AGNICO EAGLE

AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

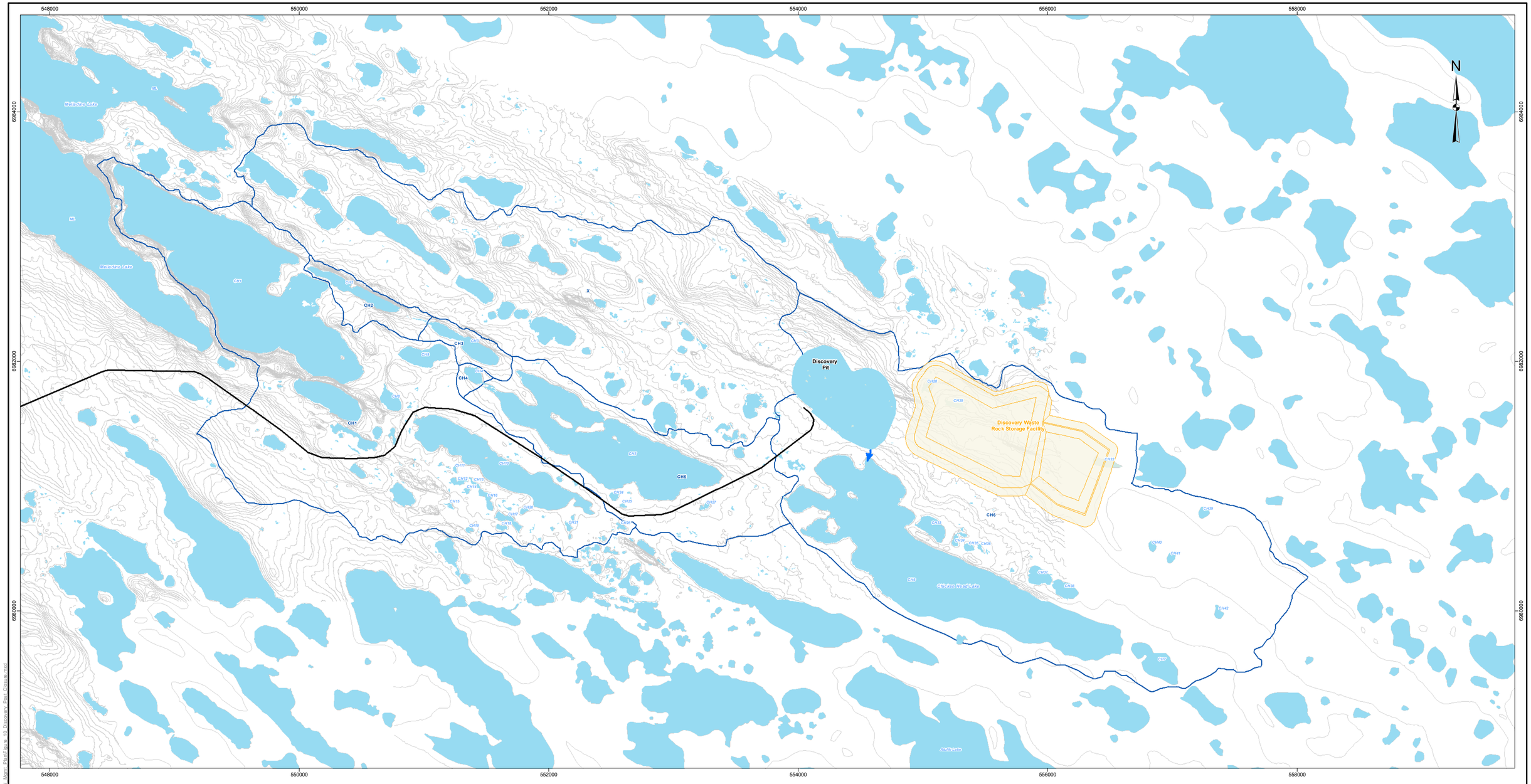
MINING POST-CLOSURE

Golder Associates

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

FIGURE 9

N:\Burnaby\Projects\2013\1409\13-1409-0007\GIS\Mapping\MXD\FIGS\Volume 2\SD_2_6_SW_Mgmt_PostFigure_9_Mining_Closure.mxd



LEGEND

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

NOTE

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

REFERENCE

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

PROJECT

AGNICO EAGLE

AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

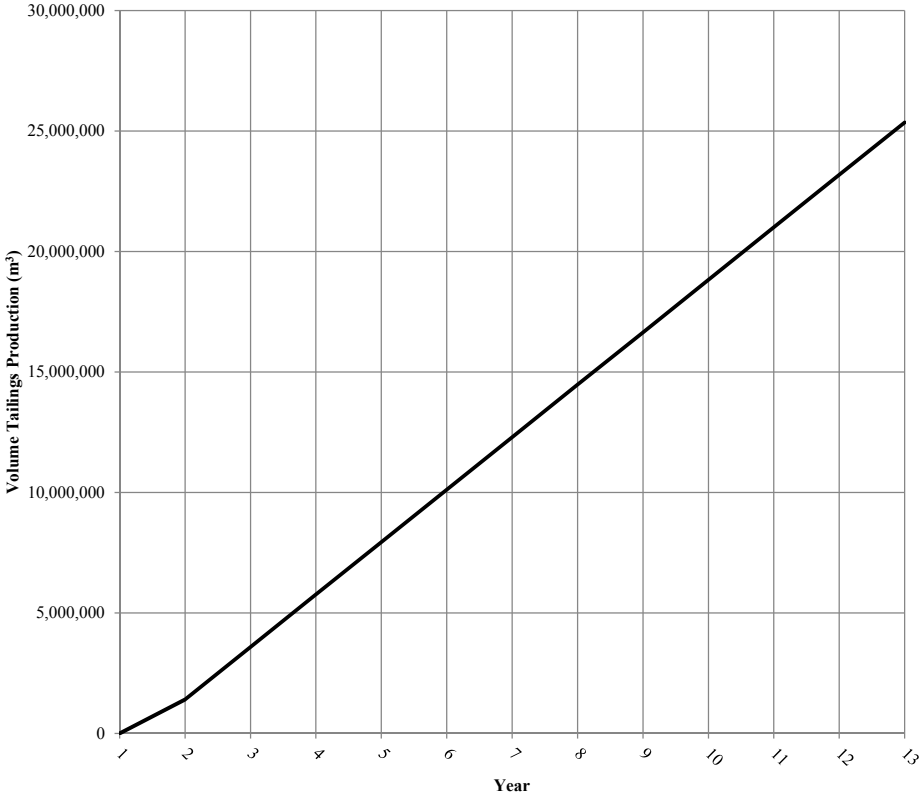
DISCOVERY PIT POST-CLOSURE

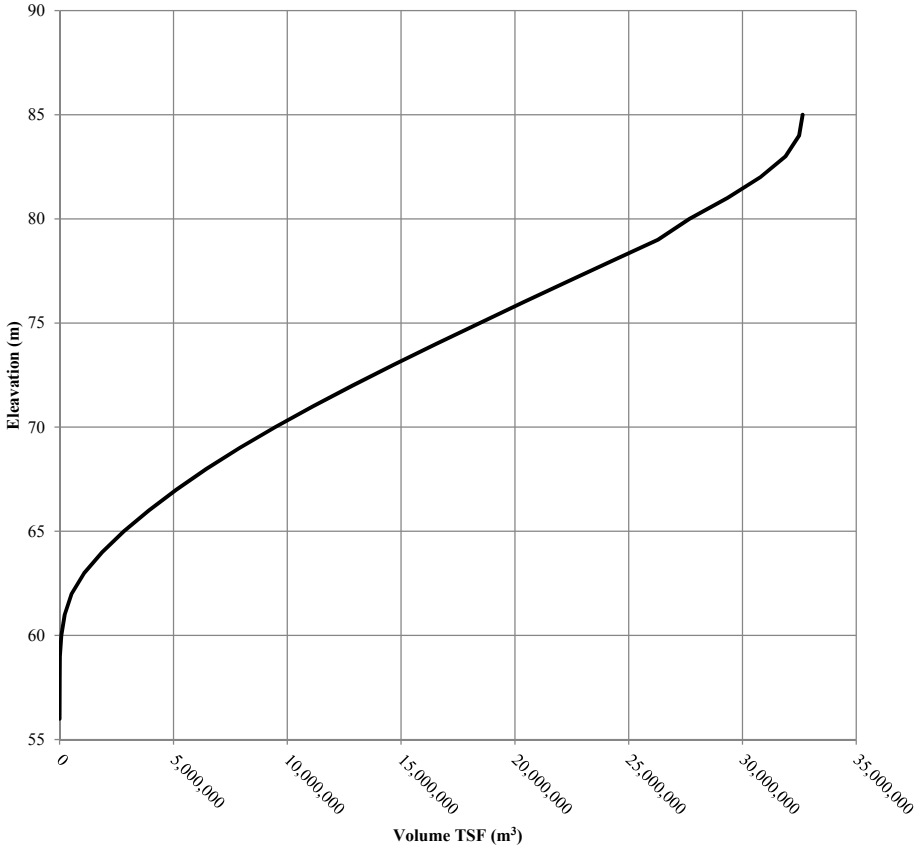
Golder Associates

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

FIGURE 10

N:\Burnaby\Projects\2012\1428\13-1428-0007\GIS\Mapping\MXD\FIS\Volume_2\SD_2-6_SW_Mgmt_Plan\Figure_10_Discovery_Post_Closure.mxd





Notes:

1) Tailings density of 1.31 t/m^3 with 20% ice entrapment
2) 1% Beach Slope
3) Mill at 50% capacity month one, 75% month two, and 100% month three.
4) Volume of tailings based on data from the preliminary tailings design report (Golder 2012f).

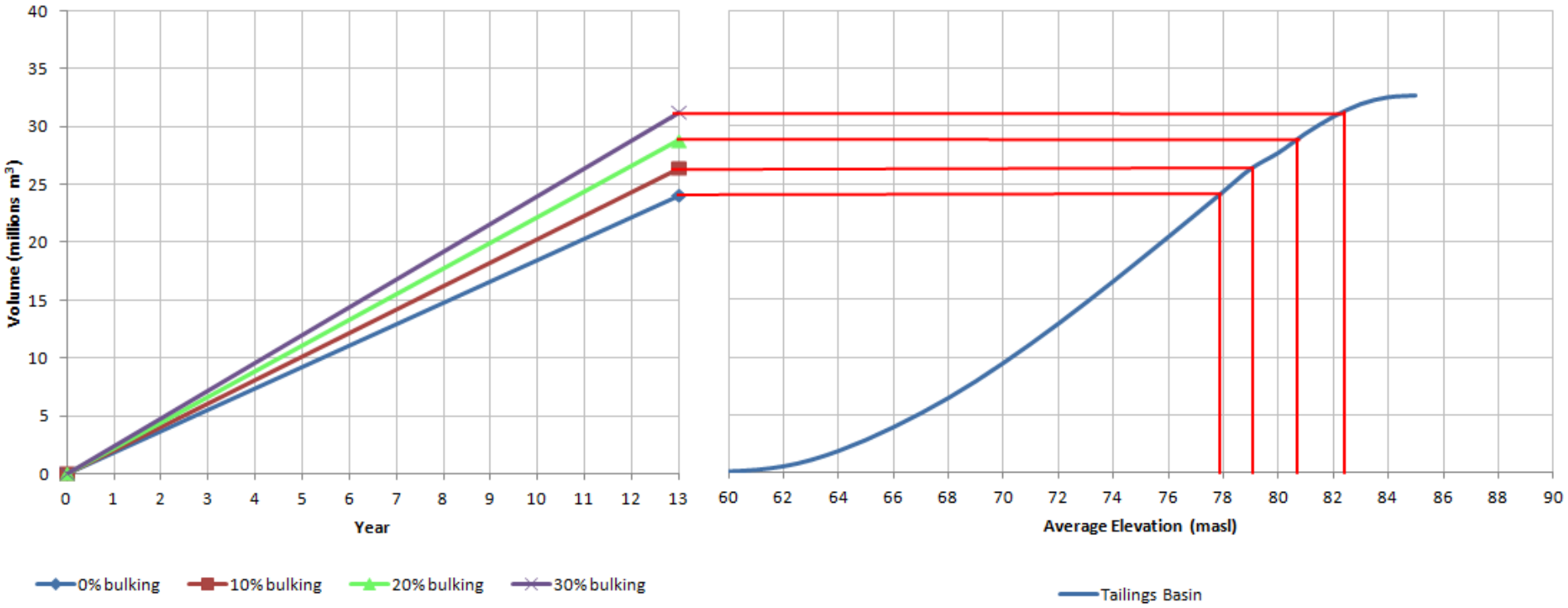
PROJECT: AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE: TAILING PRODUCTION AND STORAGE CURVES

PROJECT No. 10-1373-0076			PHASE No. 6000/6200	
DESIGN	MLP	15JUL12	SCALE NTS	REV.1
CADD	MLP	15JUL12	FIGURE 11	
CHECK	DW	13JAN13		
REVIEW	DW	13JAN13		

Golder Associates

FILE: O:\Active_2010\1373\10-1373-0076 Meliadine EIS\Phase 6000 Water Management Plan\Reporting\Figures\ Figure X TSF as a function of Ice Content



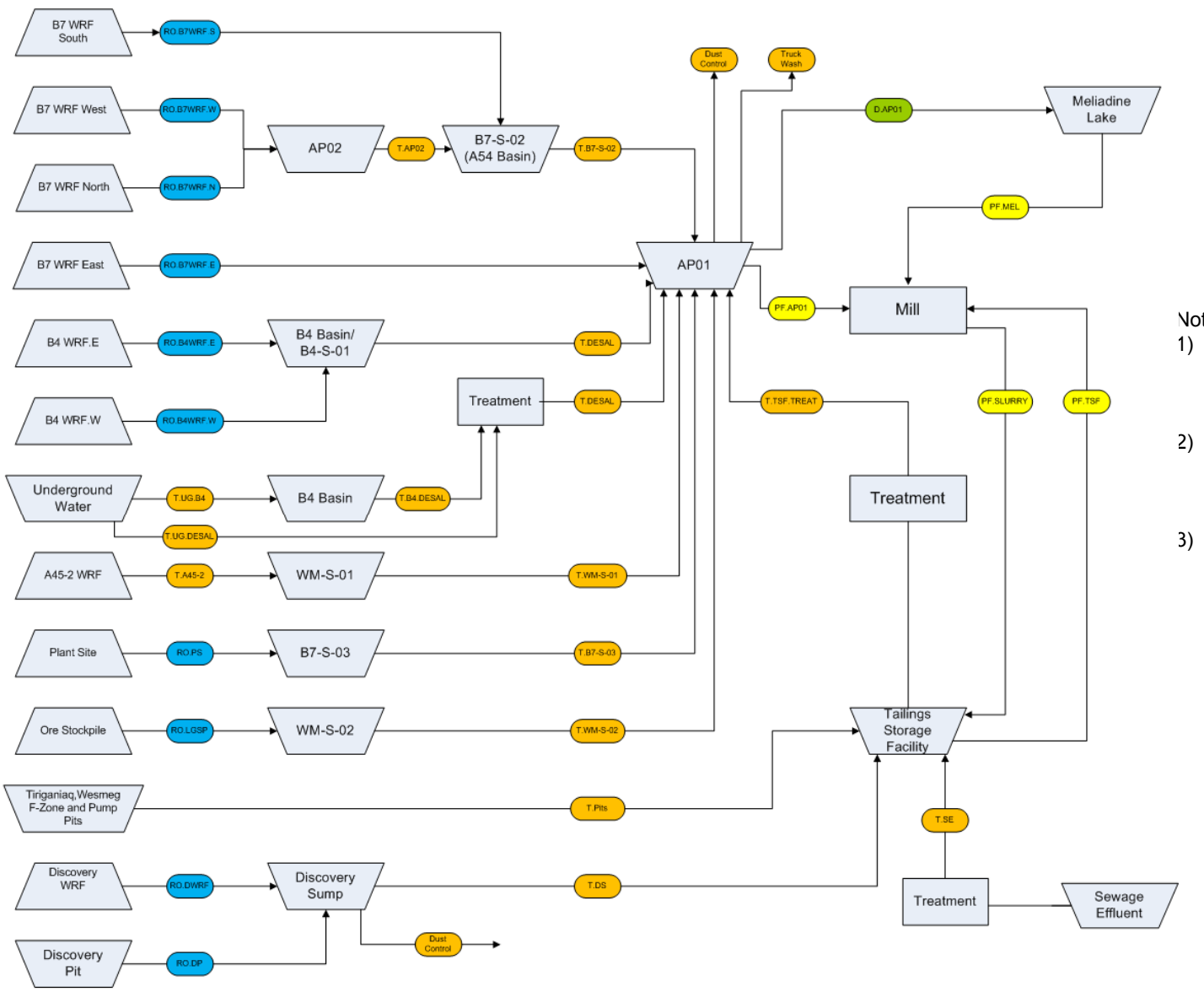
PROJECT: AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE: TSF STORAGE AS A FUNCTION OF ICE CONTENT

PROJECT No. 10-1373-0076			PHASE No. 6000/6200	
DESIGN	MLP	15JUL12	SCALE NTS	REV.1
CADD	MLP	15JUL12	FIGURE 12	
CHECK	DW	13JAN13		
REVIEW	DW	13JAN13		

Golder Associates

FILE: C:\Active_2010\1373\10-1373-0076 Meliadine EIS\Phase 6000 Water Management Plan\Reporting\Figures\ Figure X TSF as a function of Ice Content



Notes:

1) Waste Rock Facility inflows include precipitation . Outflows include a combined runoff and seepage rate (RO), and water lost to the pile;
2) Open Pit inflows include precipitation and runoff. Outflows include evaporation, and pumped transfer flows . No seepage is included;
3) Sump and Pond inflows include precipitation and runoff. Outflows include evaporation, and pumped transfer flows . No seepage is included;

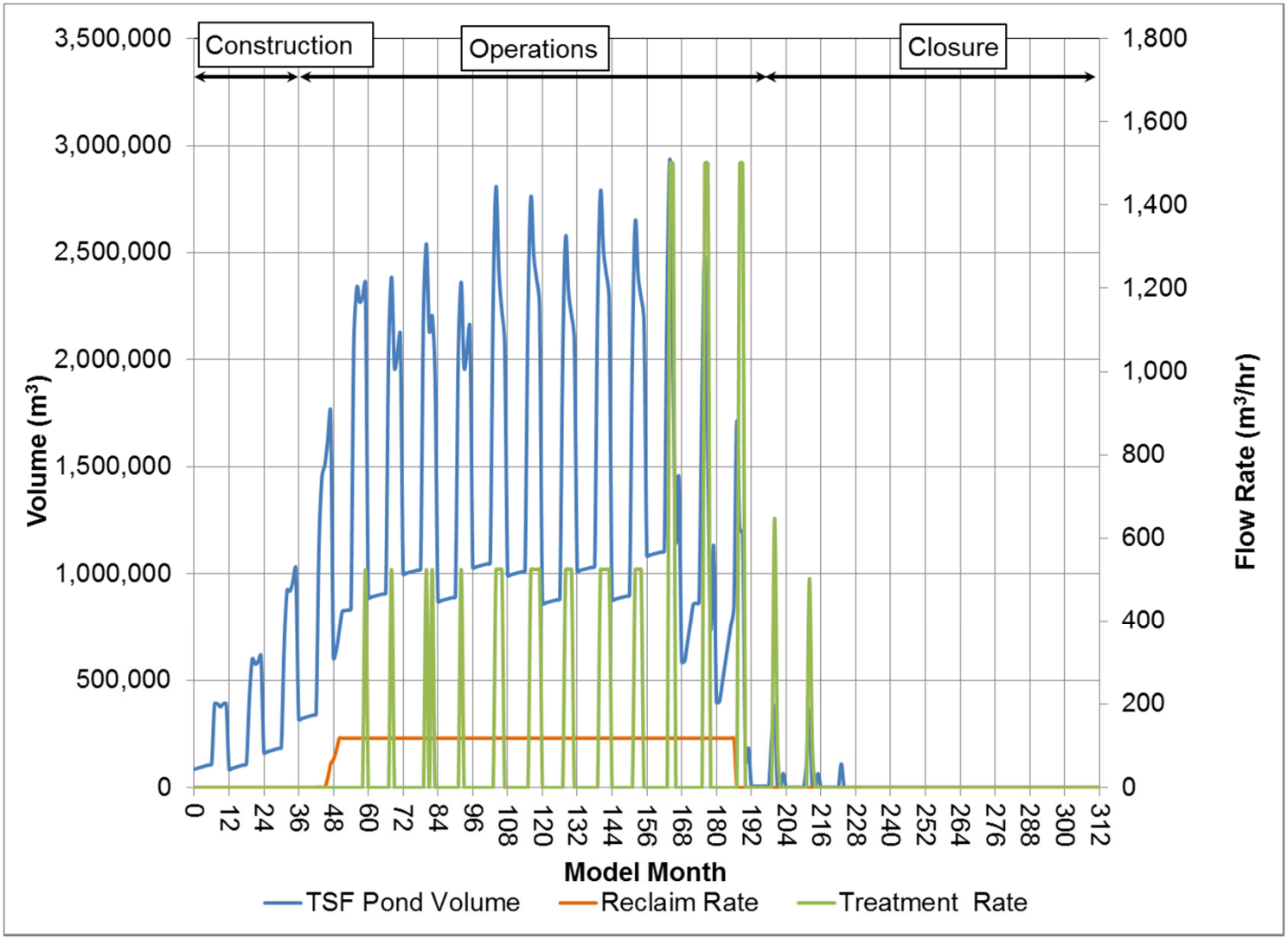
PROJECT: AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE: WATER BALANCE FLOW DIAGRAM SUMMARY

PROJECT No. 10-1373-0076			PHASE No. 6000/6200		
DESIGN	MLP	30OCT12	SCALE NTS		REV.1
CADD	MLP	30OCT12	FIGURE 13		
CHECK	DW	13JAN13			
REVIEW	DW	13JAN13			

Golder Associates

FILE: O:\Active_2010\1373\10-1373-0076 Meliadine EIS\Phase 6000 Water Management Plan\Reporting\Figures\ Figure X TSF as a function of Ice Content



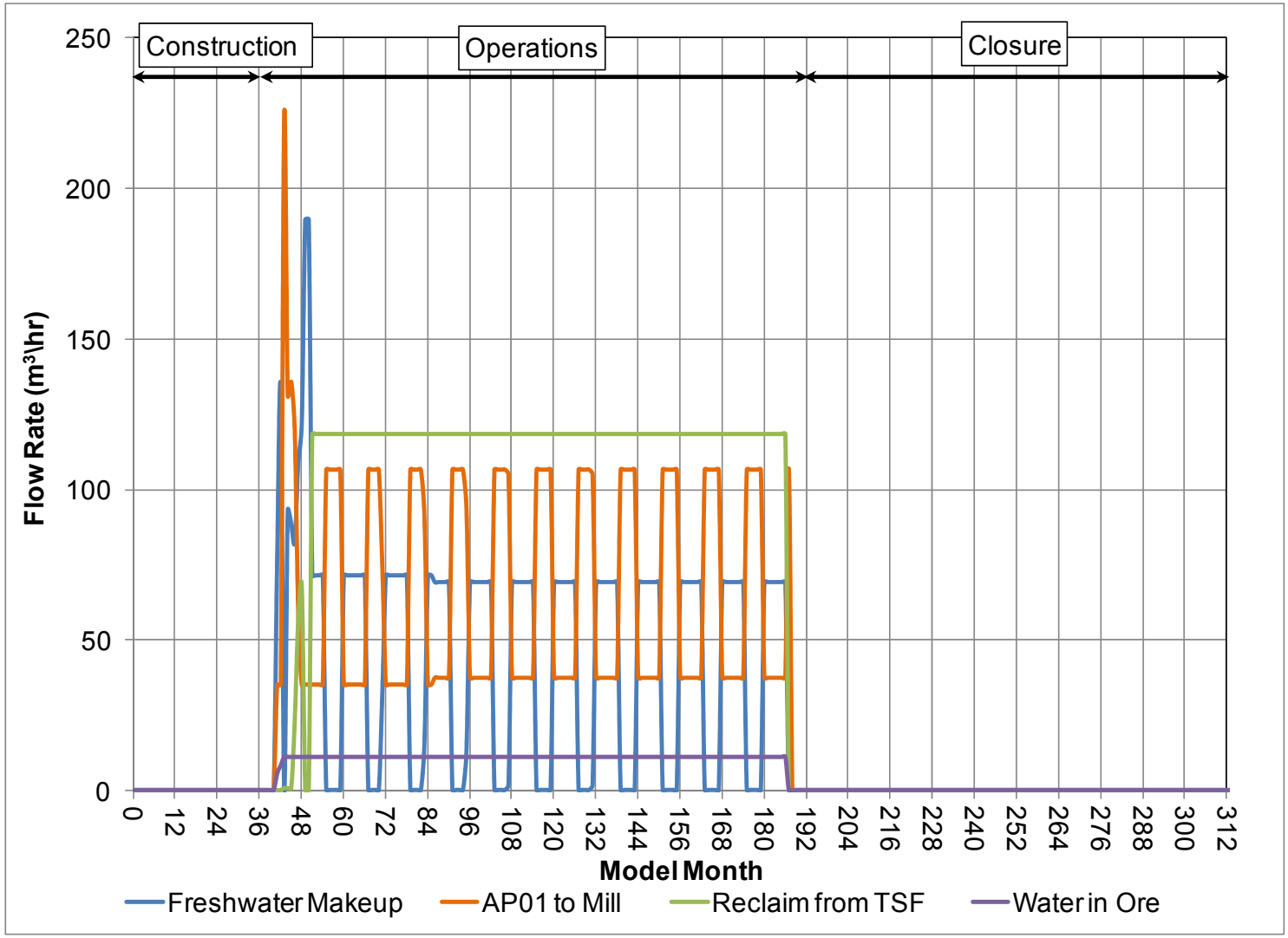
PROJECT: AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE: Tailings Pond Water Management

PROJECT No. 10-1373-0076			PHASE No. 6000/6200		
DESIGN	MLP	27SEP12	SCALE NTS		REV.1
CADD	MLP	27SEP12	FIGURE 14		
CHECK	DW	13JAN13			
REVIEW	DW	13JAN13			

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FILE: O:\Active_2010\1373\10-1373-0076 Meliadine EIS\Phase 6000 Water Management Plan\Reporting\Figures\ Figure X TSF as a function of Ice Content



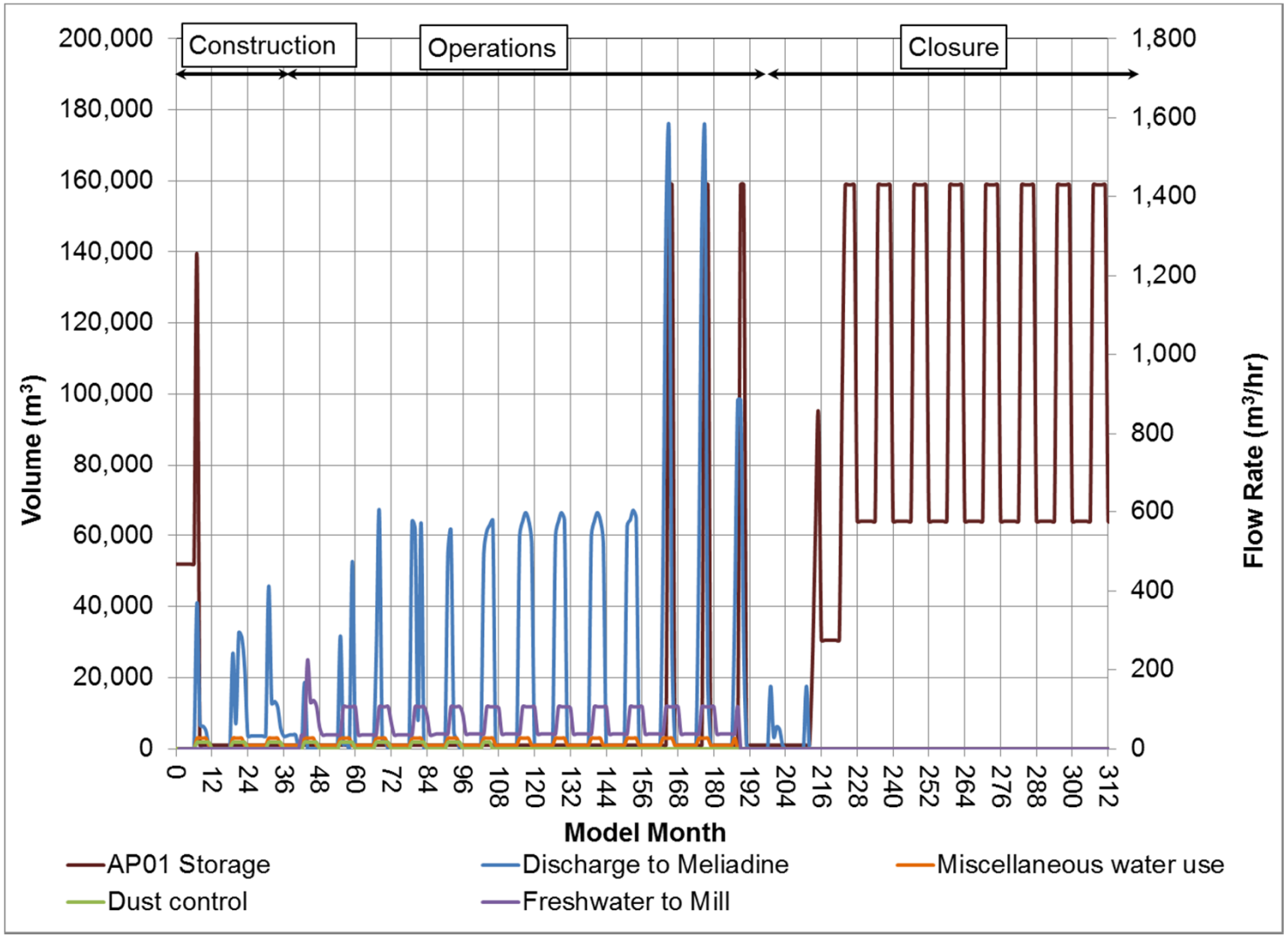
PROJECT: AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE: Process Water to Mill

PROJECT No. 10-1373-0076			PHASE No. 6000/6200		
DESIGN	MLP	27SEP12	SCALE NTS		REV.1
CADD	MLP	27SEP12	FIGURE 15		
CHECK	DW	13JAN13			
REVIEW	DW	13JAN13			

Golder Associates

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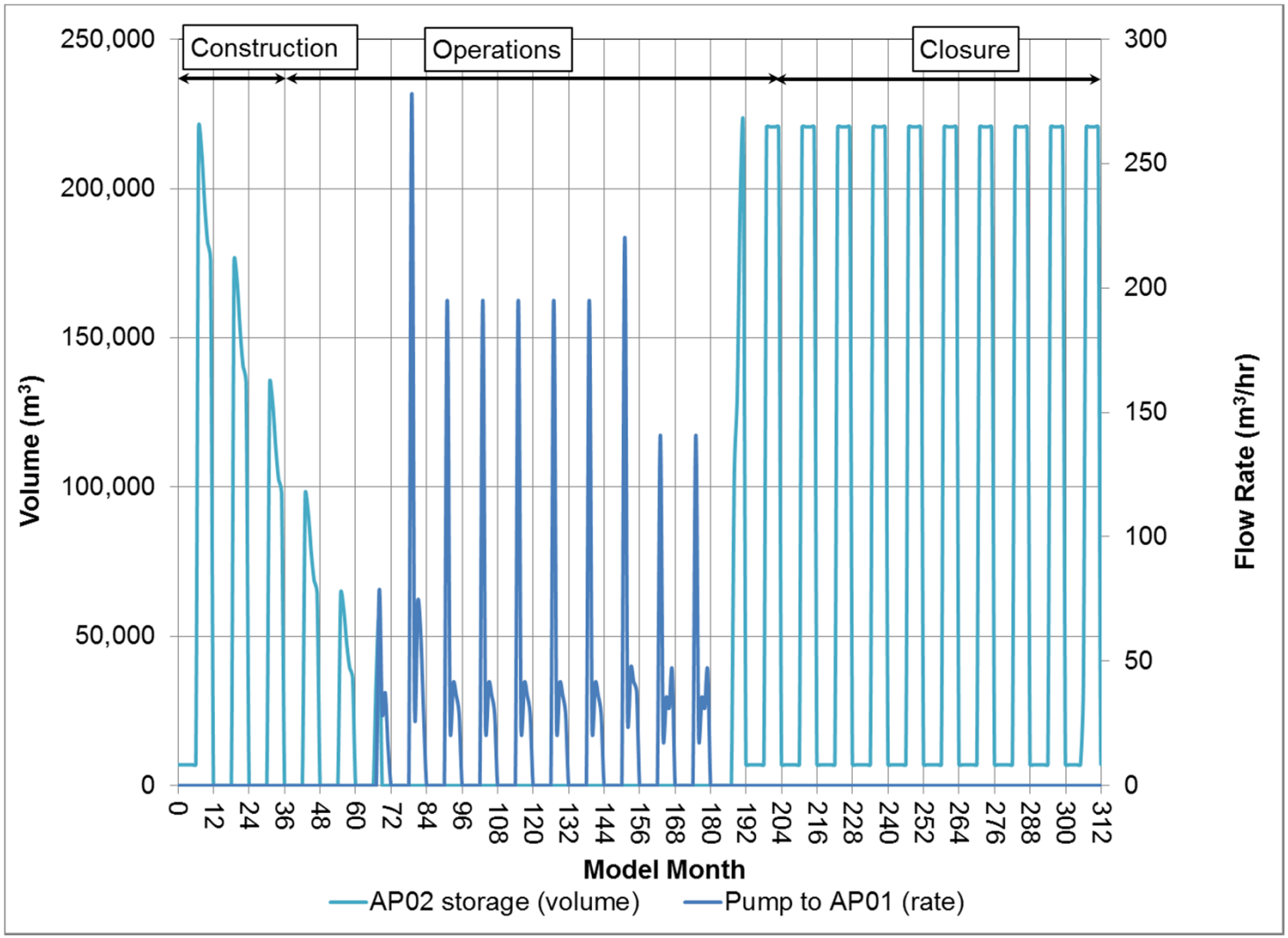


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PROJECT: AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE: Attenuation Pond 1 Water Management

PROJECT No. 10-1373-0076			PHASE No. 6000/6200		
DESIGN	MLP	27SEP12	SCALE NTS		REV.1
CADD	MLP	27SEP12	FIGURE 16		
CHECK	DW	13JAN13			
REVIEW	DW	13JAN13			



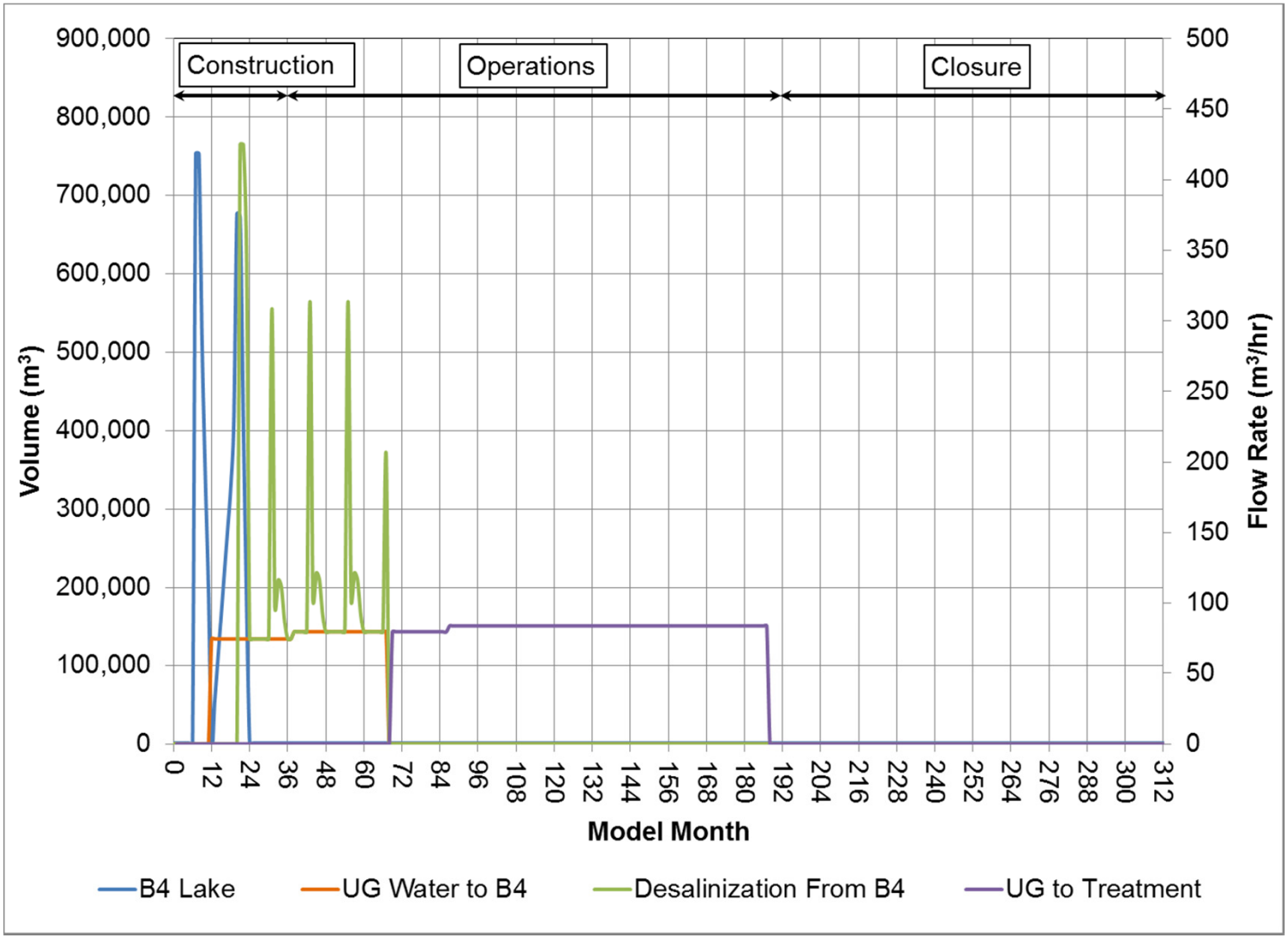
PROJECT: AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE: Attenuation Pond 2 Water Management

PROJECT No. 10-1373-0076			PHASE No. 6000/6200		
DESIGN	MLP	27SEP12	SCALE NTS		REV.1
CADD	MLP	27SEP12	FIGURE 17		
CHECK	DW	13JAN13			
REVIEW	DW	13JAN13			

Golder Associates

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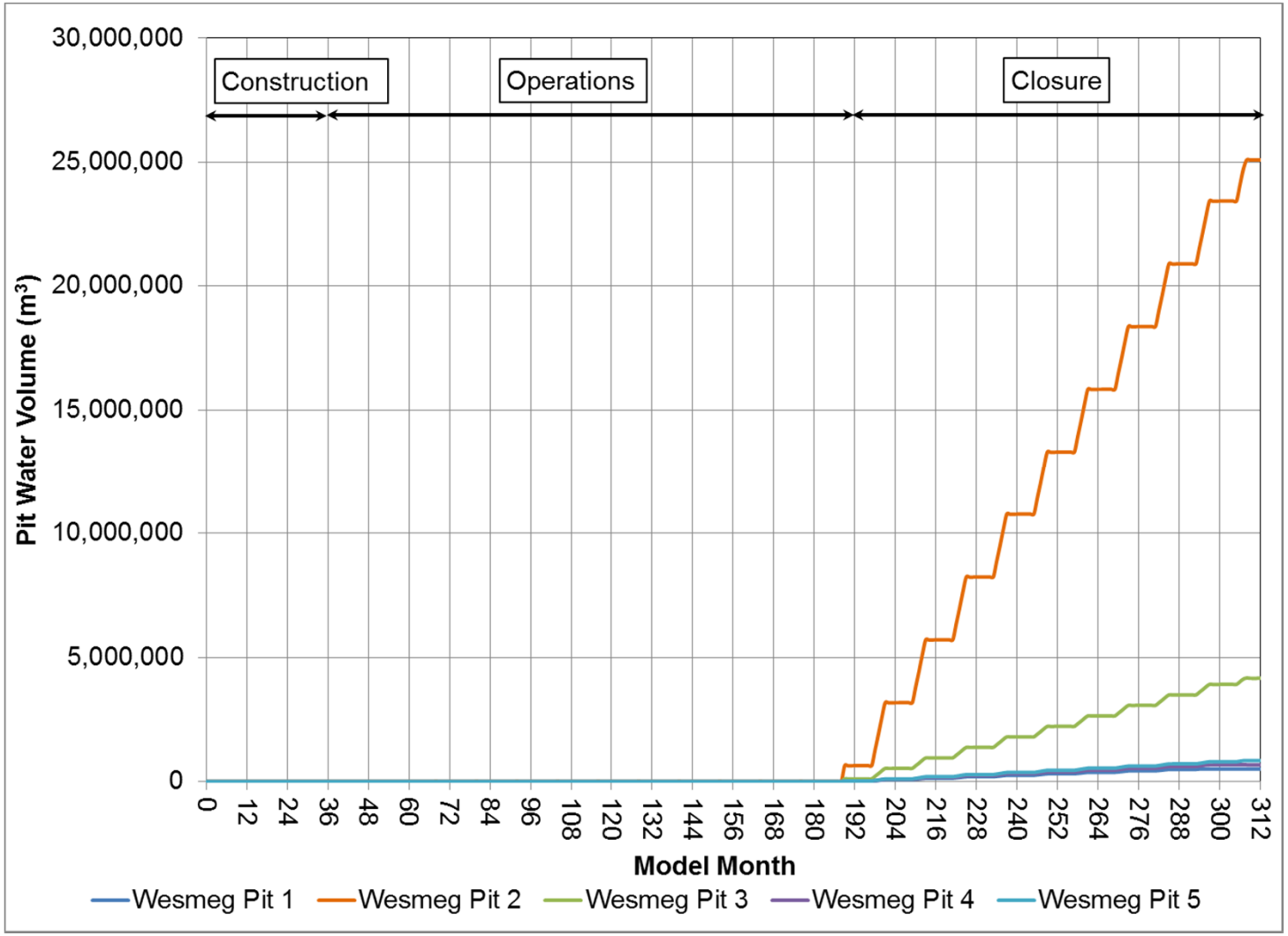
PROJECT
AGNICO EAGLE
AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE
Underground Water Storage and Treatment

Golder Associates

PROJECT No. 10-1373-0076			PHASE No. 6000/6200	
DESIGN	MLP	27SEP12	SCALE NTS	REV.1
CADD	MLP	27SEP12	FIGURE 18	
CHECK	DW	13JAN13		
REVIEW	DW	13JAN13		

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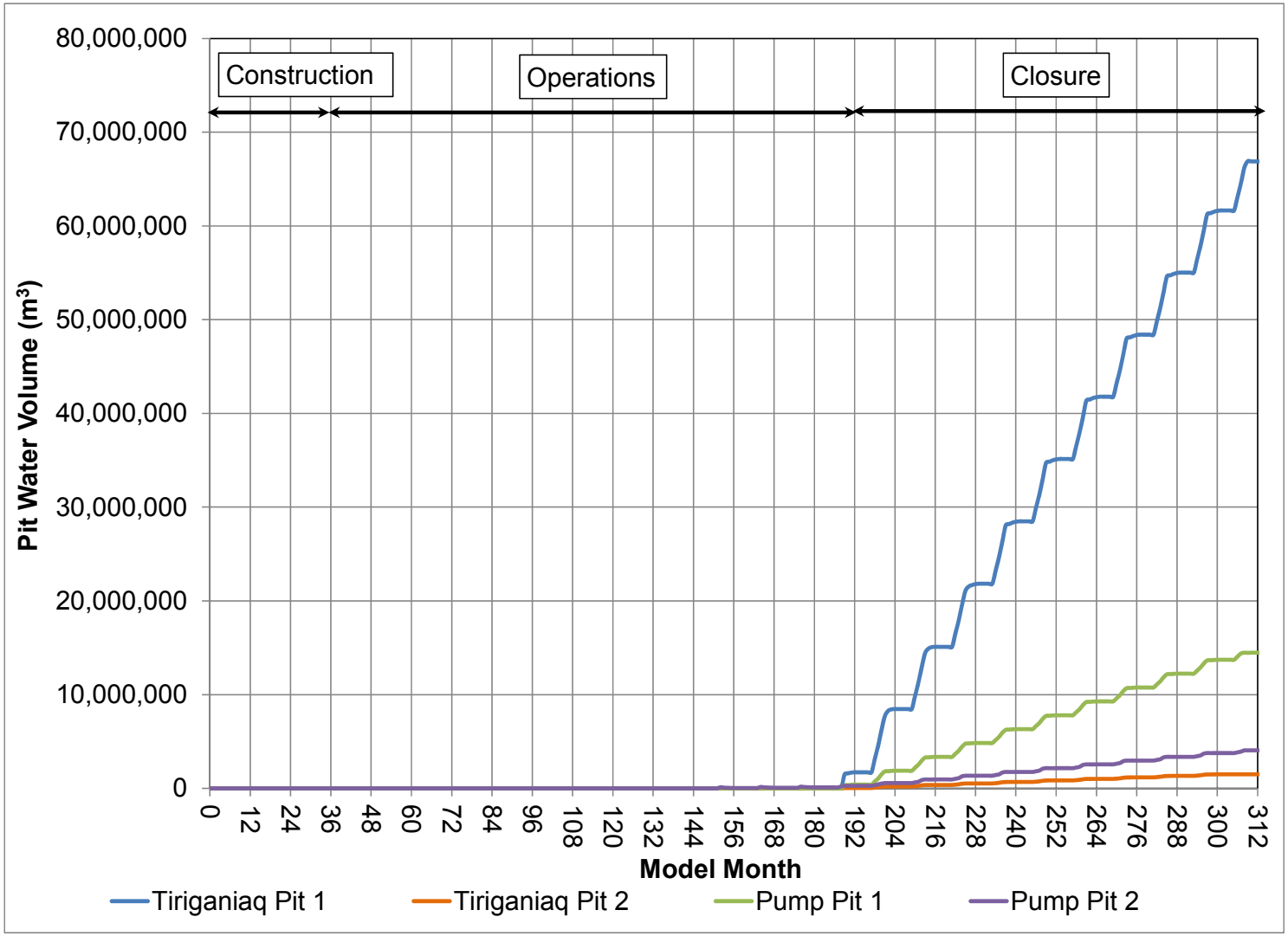
PROJECT: AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE: **Wesmeg Pits Water Filling**

PROJECT No. 10-1373-0076			PHASE No. 6000/6200		
DESIGN	MLP	27SEP12	SCALE NTS		REV.1
CADD	MLP	27SEP12	**FIGURE 19**		
CHECK	DW	13JAN13			
REVIEW	DW	13JAN13			

Golder Associates

FILE: O:\Active_2010\1373\10-1373-0076 Meliadine EIS\Phase 6000 Water Management Plan\Reporting\Figures\ Figure X TSF as a function of Ice Content



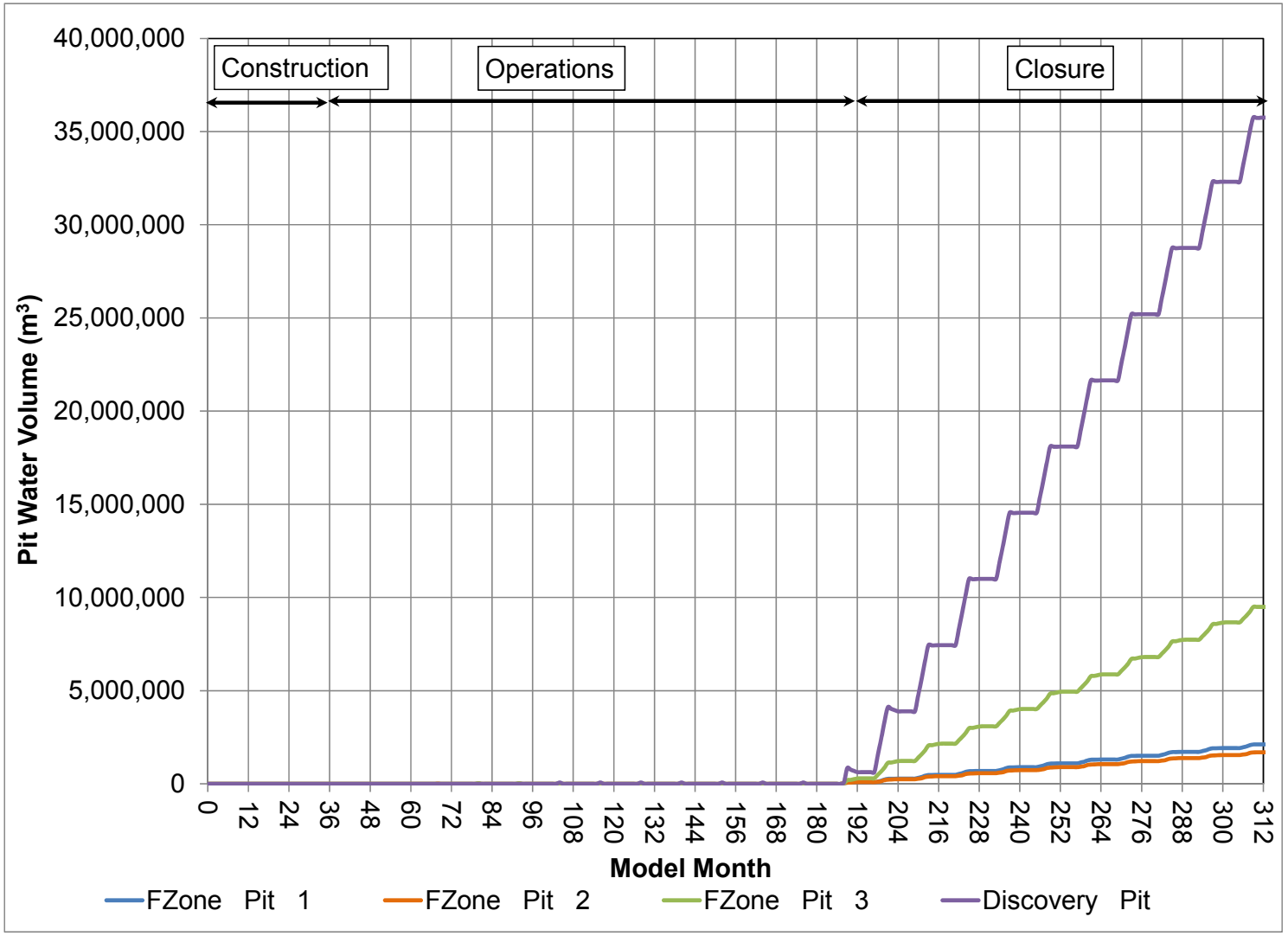
FILE: O:\Active_2010\1373\10-1373-0076 Meliadine EIS\Phase 6000 Water Management Plan\Reporting\Figures\ Figure X TSF as a function of Ice Content

PROJECT: AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE: Tiriganiaq and Pump Pits Water Filling

Golder Associates

PROJECT No. 10-1373-0076			PHASE No. 6000/6200	
DESIGN	MLP	27SEP12	SCALE NTS	REV.1
CADD	MLP	27SEP12	FIGURE 20	
CHECK	DW	13JAN13		
REVIEW	DW	13JAN13		



FILE: O:\Active_2010\1373\10-1373-0076 Meliadine EIS\Phase 6000 Water Management Plan\Reporting\Figures\ Figure X TSF as a function of Ice Content

PROJECT

AGNICO EAGLE

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MELIADINE GOLD PROJECT
NUNAVUT

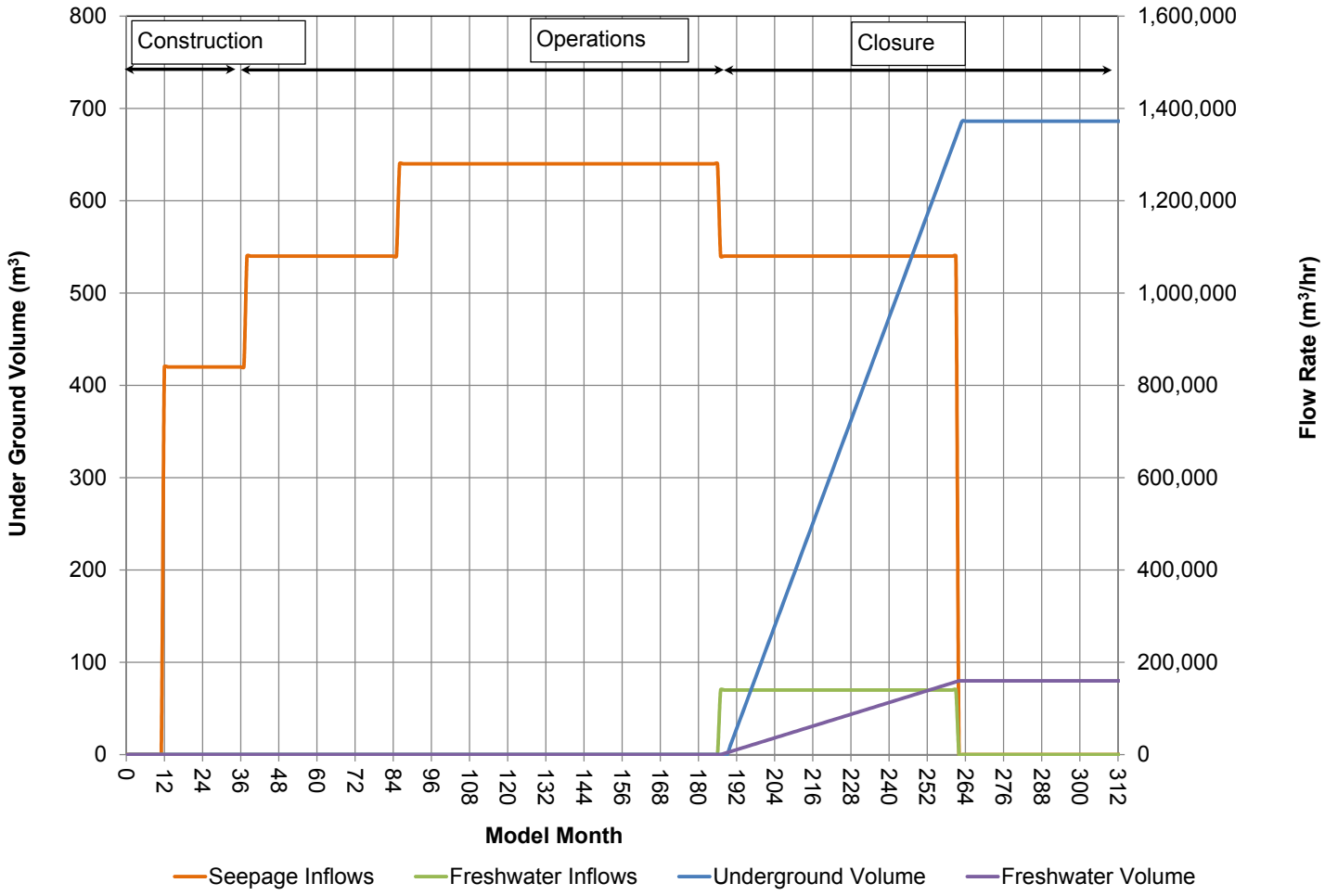
TITLE

F-Zone and Discovery Water Filling

Golder Associates

PROJECT No. 10-1373-0076			PHASE No. 6000/6200	
DESIGN	MLP	27SEP12	SCALE NTS	REV.1
CADD	MLP	27SEP12		
CHECK	DW	13JAN13		
REVIEW	DW	13JAN13		

FIGURE 21

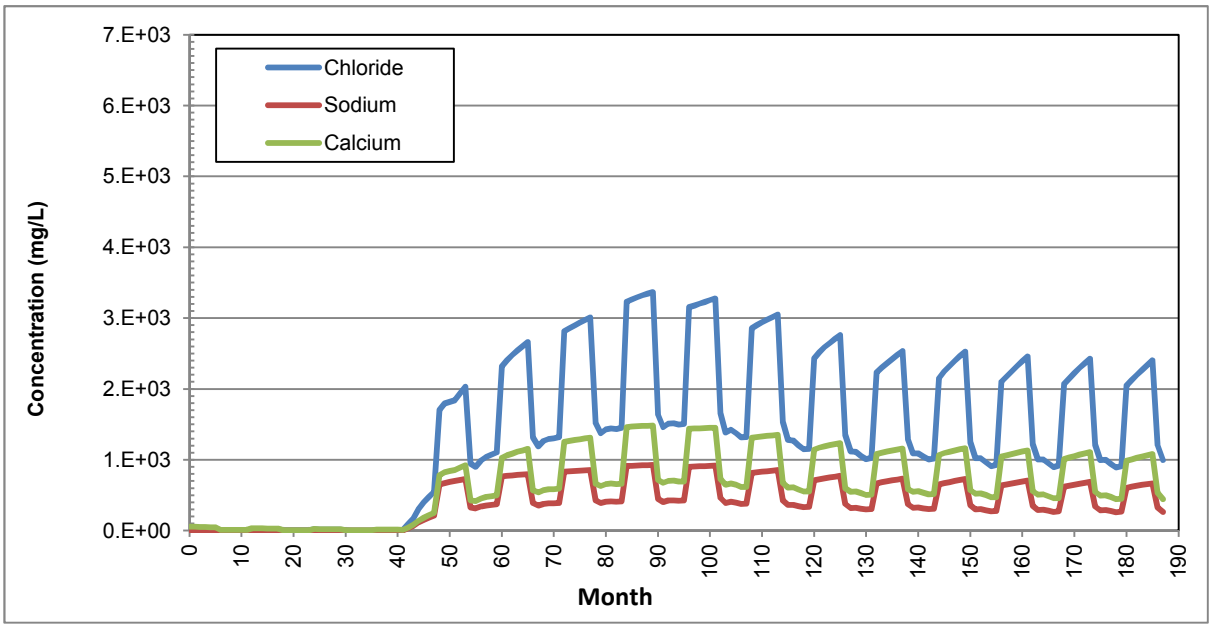


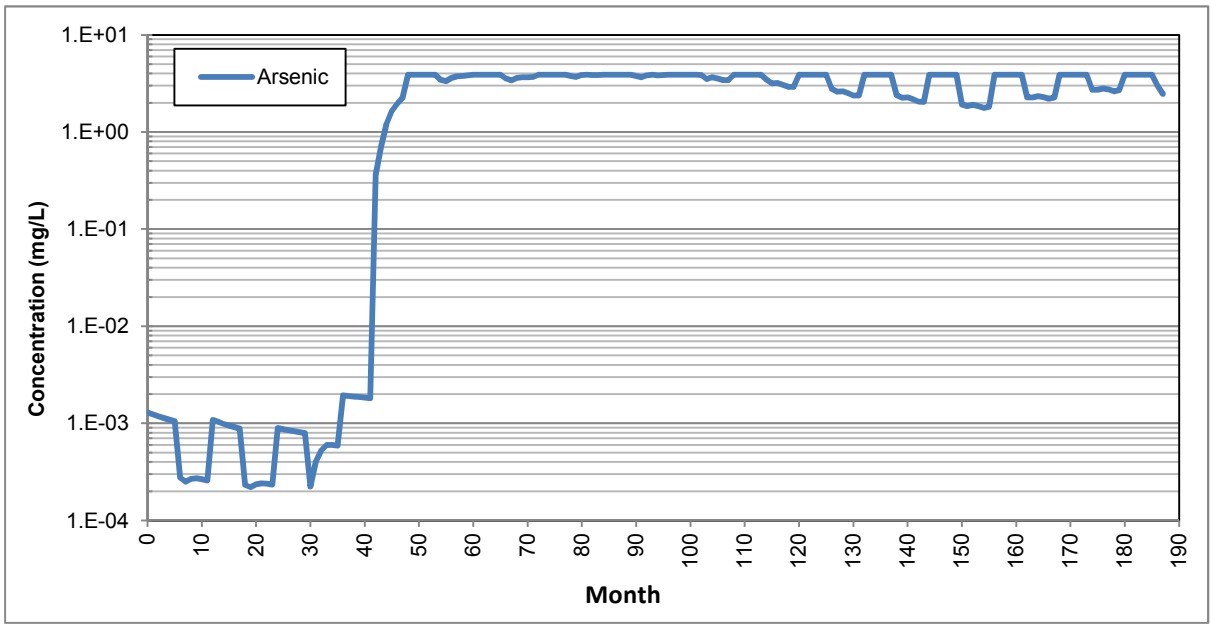
FILE: O:\Active_2010\1373\10-1373-0076 Meliadine EIS\Phase 6000 Water Management Plan\Reporting\Figures\ Figure X TSF as a function of Ice Content

PROJECT: AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE: Tiriganiaq Underground Water Filling

PROJECT No. 10-1373-0076			PHASE No. 6000/6200	
DESIGN	MLP	27SEP12	SCALE NTS	REV.1
CADD	MLP	27SEP12	FIGURE 22	
CHECK	DW	13JAN13		
REVIEW	DW	13JAN13		





Golder Associates

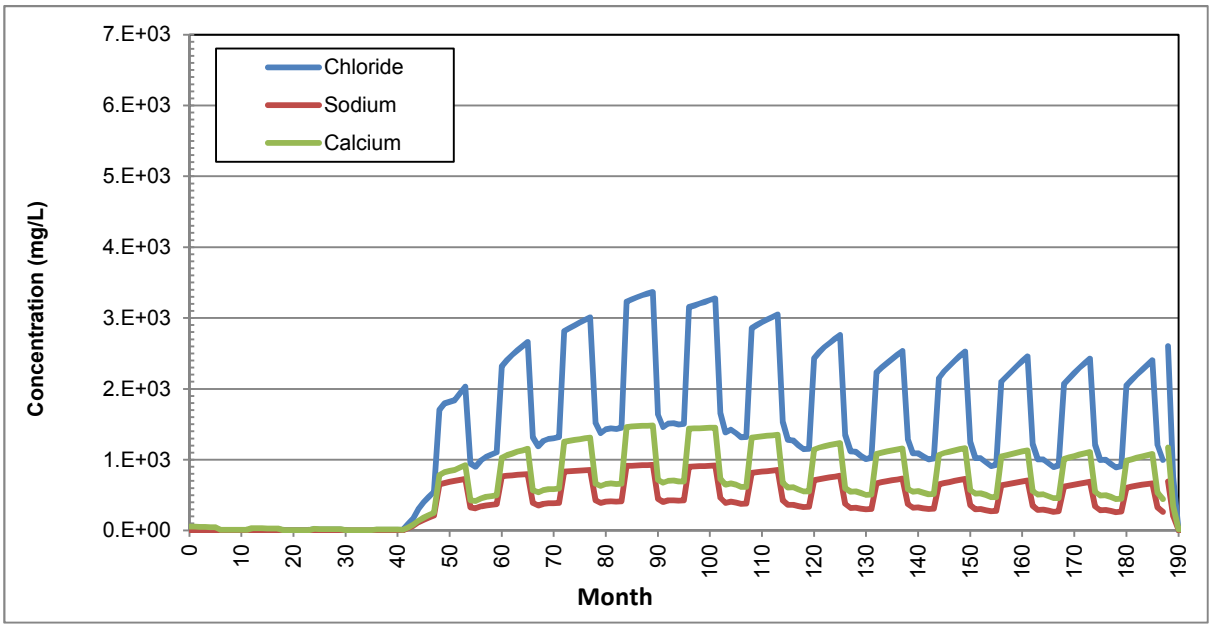
Water Quality Model Results

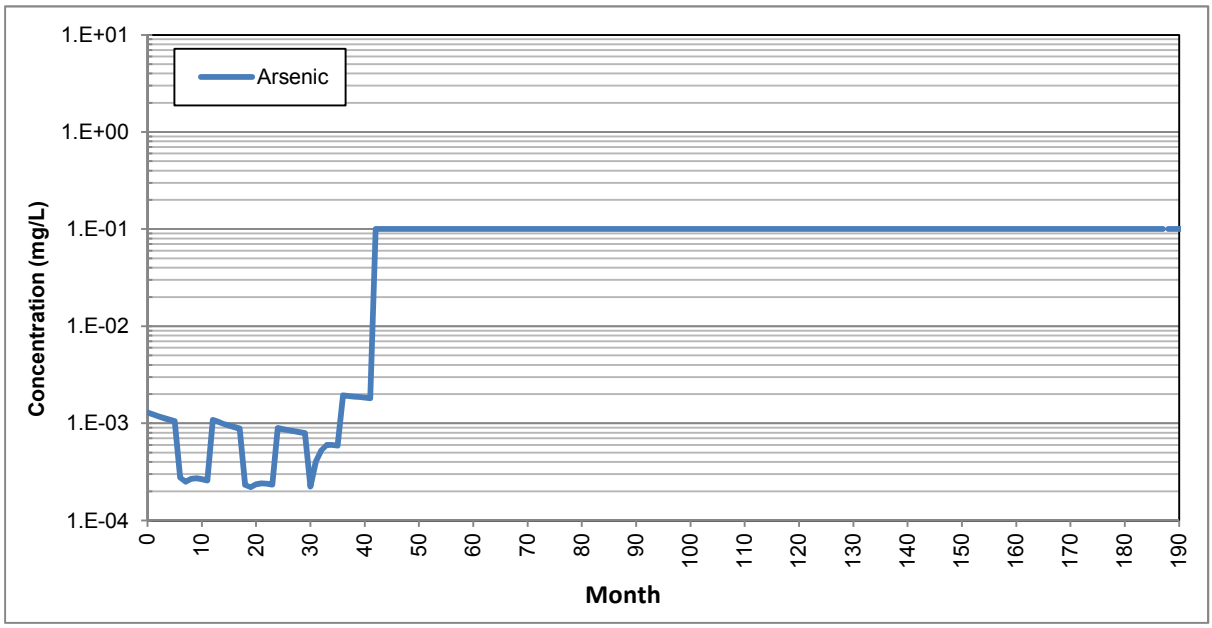
Tailings Storage Facility - Untreated Pond Water

Prepared	MIB	Date	October 2012
Checked	VJB	Project N°	10-1373-0076
Reviewed	DRW	Figure	**23**

Meliandine Gold Project

Agnico Eagle Mines Limited





Golder Associates

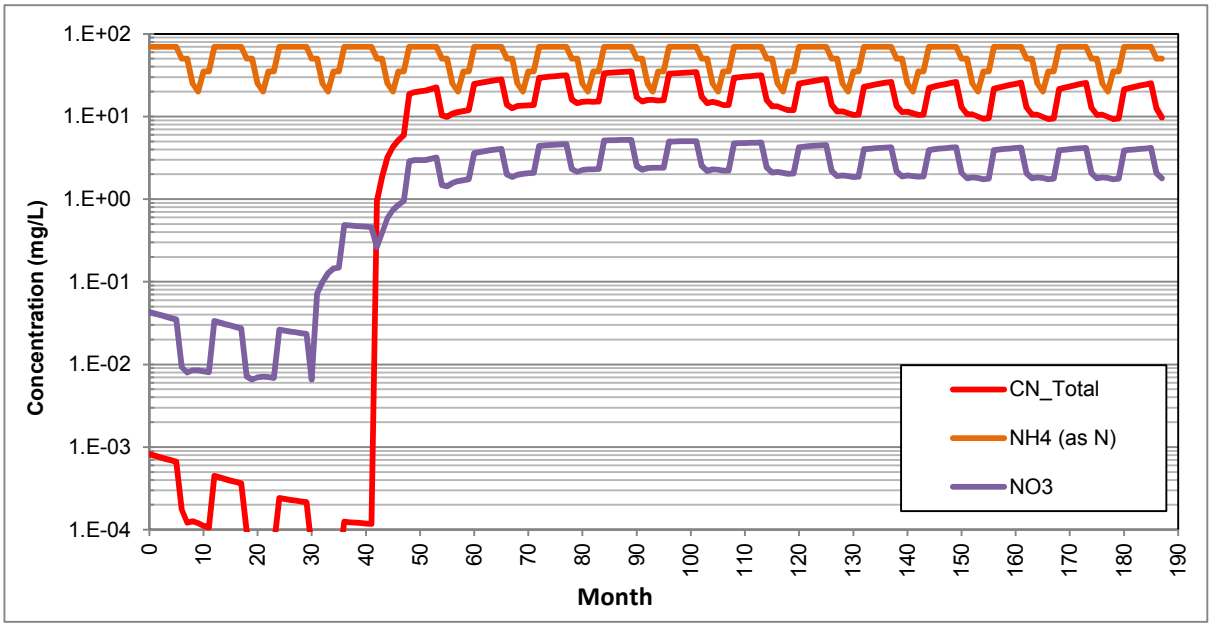
Water Quality Model Results

Tailings Storage Facility - Treated Outflow

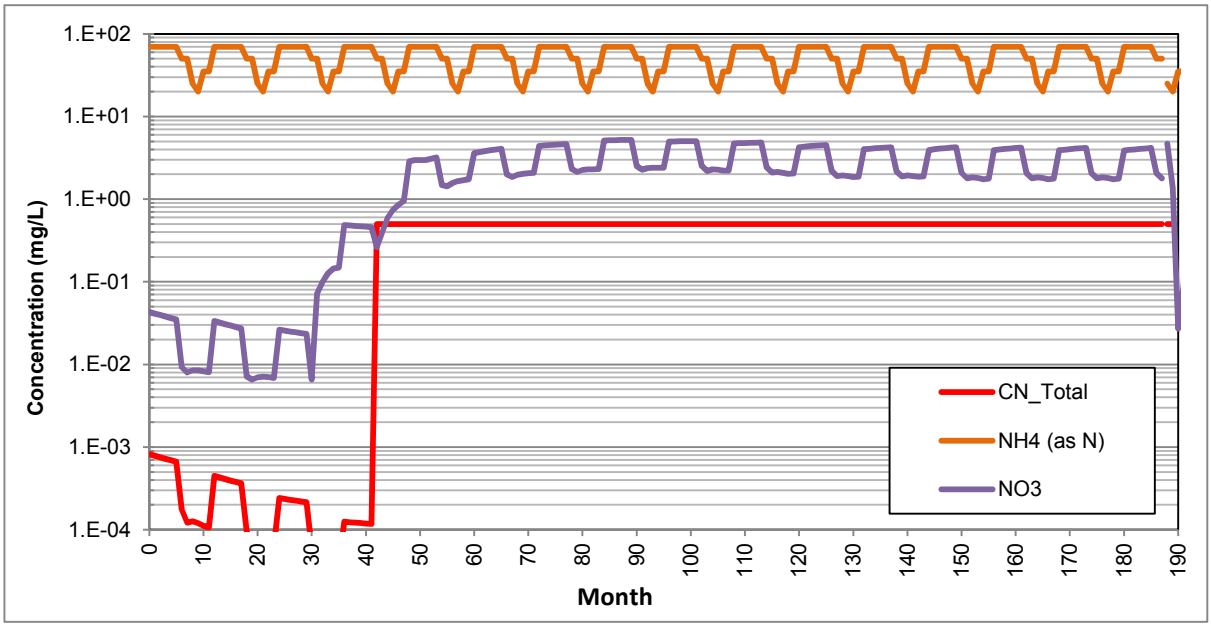
Prepared	MIB	Date	October 2012
Checked	VJB	Project N°	10-1373-0076
Reviewed	DRW	Figure	**24**

Meliandine Gold Project

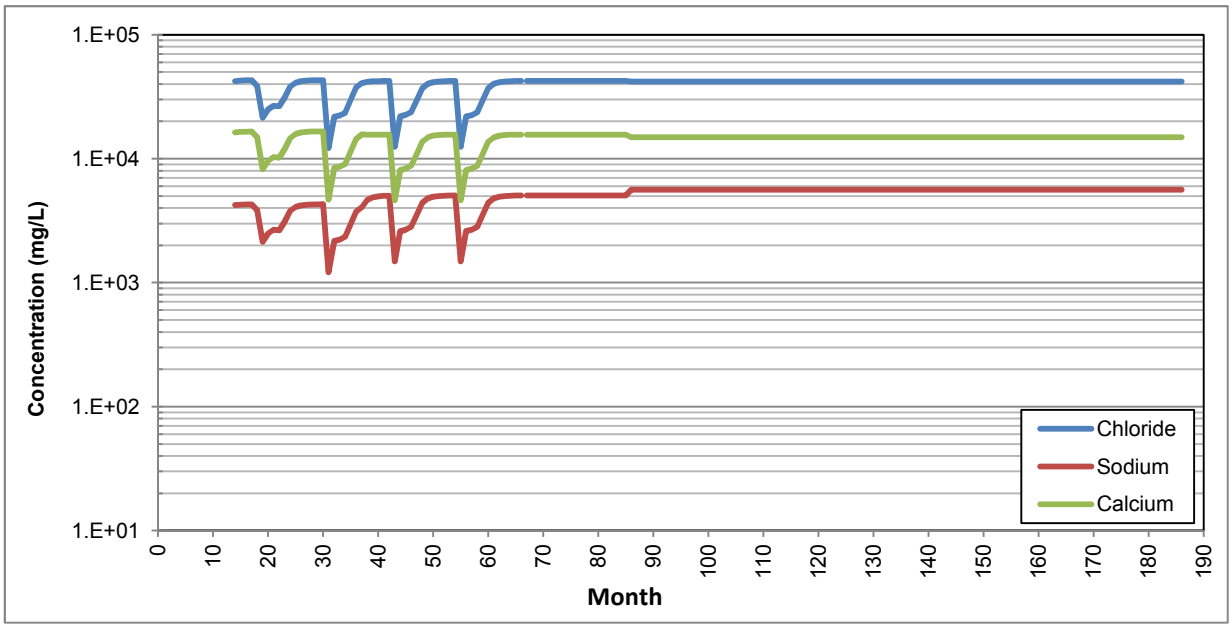
Agnico Eagle Mines Limited

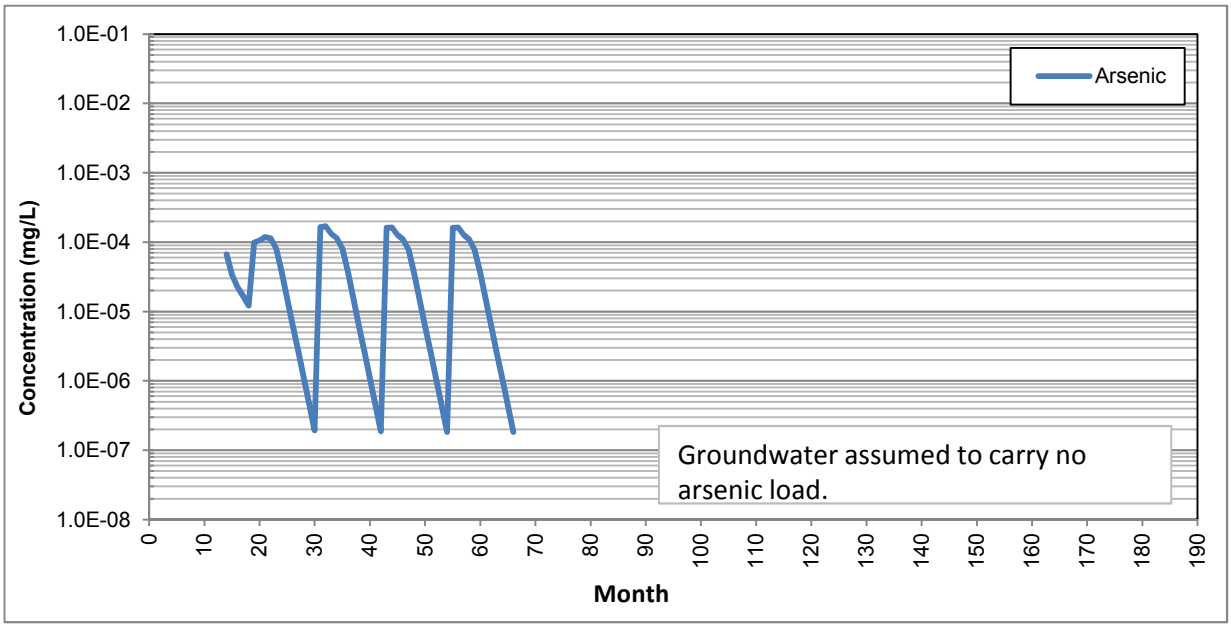


Golder Associates			**Water Quality Model Results** **Tailings Storage Facility - Untreated Pond Water**
Prepared	MIB	Date	October 2012
Checked	VJB	Project N°	10-1373-0076
Reviewed	DRW	Figure	**25**
			Meliandine Gold Project **Agnico Eagle Mines Limited**



Golder Associates			**Water Quality Model Results** **Tailings Storage Facility - Treated Outflow**
Prepared	MIB	Date	October 2012
Checked	VJB	Project N°	10-1373-0076
Reviewed	DRW	Figure	**26**
			Meliandine Gold Project **Agnico Eagle Mines Limited**



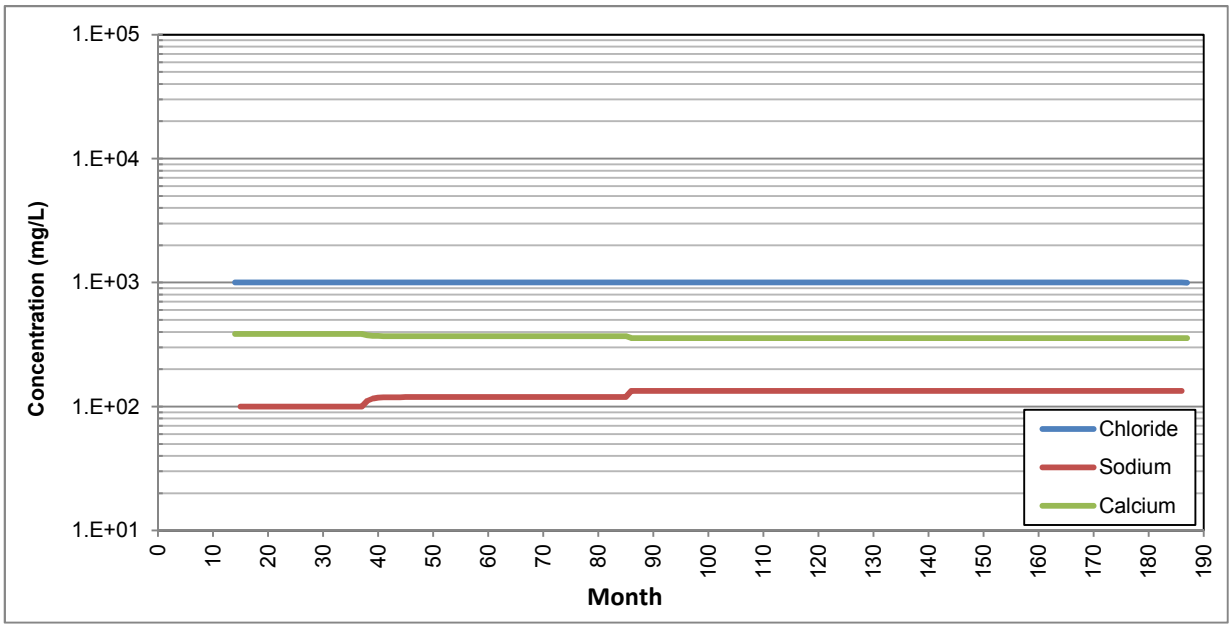


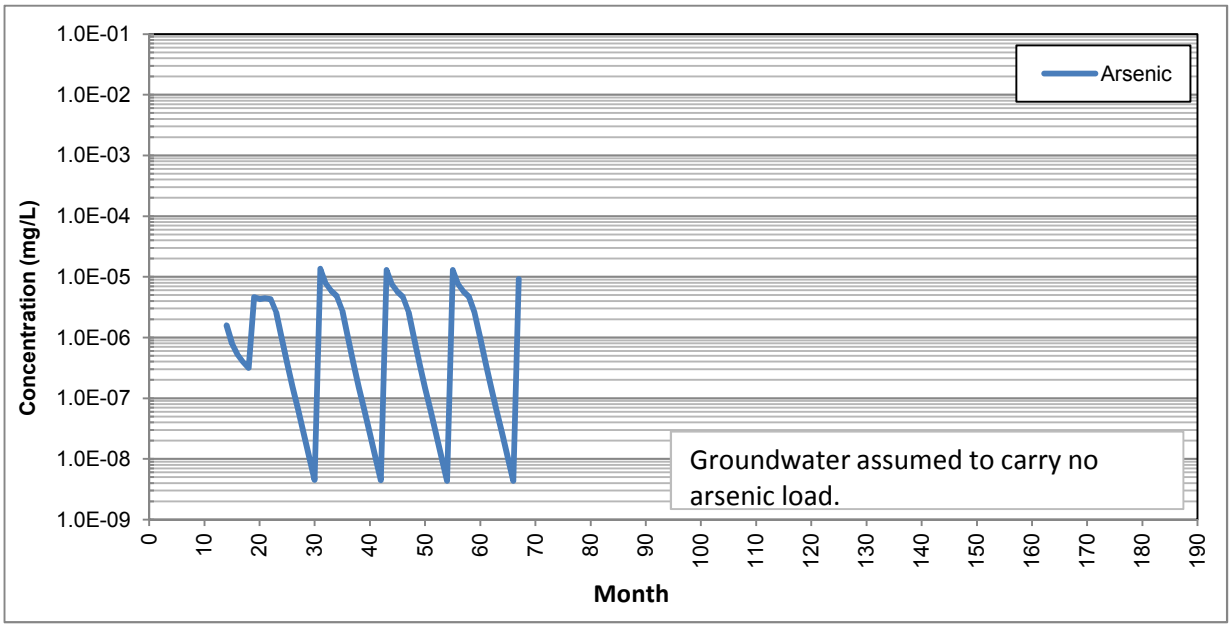
From month 8 to month 67, water pumped from the underground is sent to Lake B4 prior to treatment. During summer months, the groundwater is mixed with non-saline runoff water. After month 67, groundwater is sent directly to the salt plant as Lake B4 becomes occupied by the B4 Rock Storage Facility. No mixing with non-saline water occurs after month 67.

Golder Associates			**Water Quality Model Results Groundwater Outflow (Salt Plant Inflow)**
Prepared	MIB	Date	October 2012
Checked	VJB	Project N°	10-1373-0076
Reviewed	DRW	Figure	**27**

Meliandine Gold Project

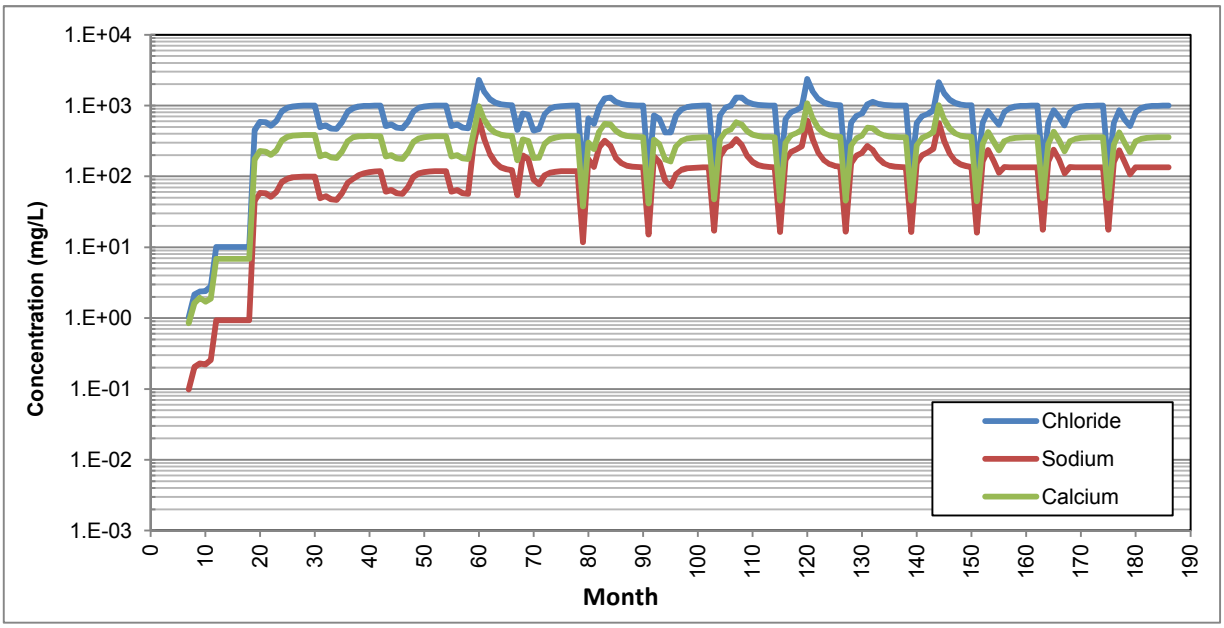
Agnico Eagle Mines Limited

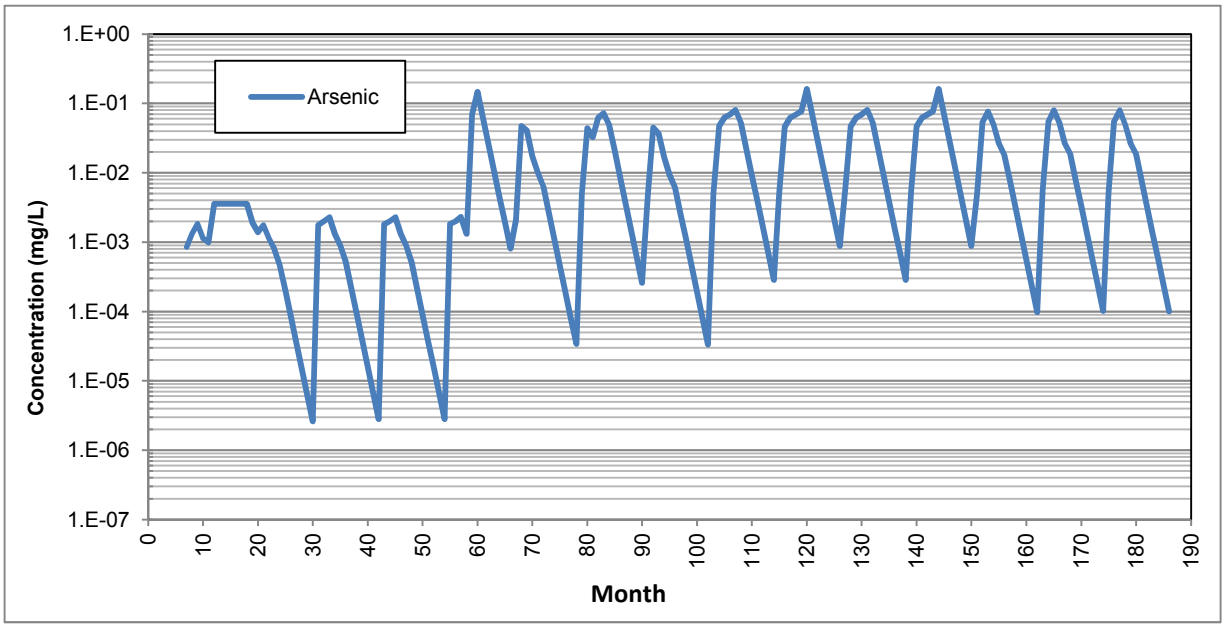




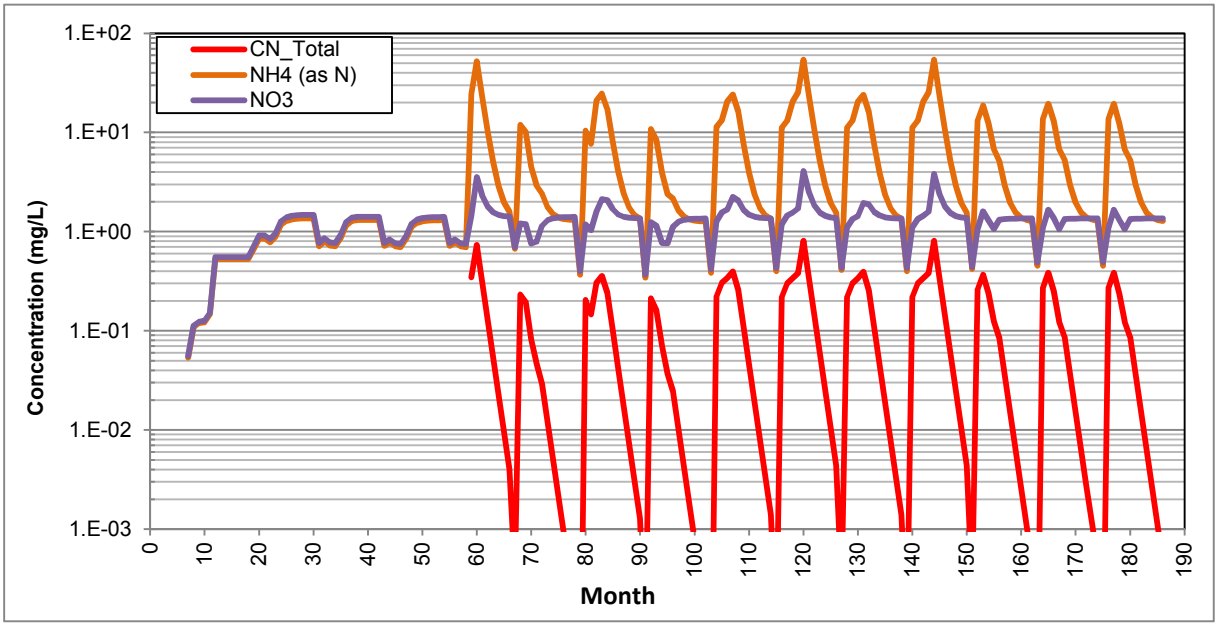
From month 8 to month 67, water pumped from the underground is sent to Lake B4 prior to treatment. During summer months, the groundwater is mixed with non-saline runoff water. After month 67, groundwater is sent directly to the salt plant as Lake B4 becomes occupied by the B4 Rock Storage Facility. No mixing with non-saline water occurs after month 67.

Golder Associates			**Water Quality Model Results** **Salt Plant Outflow** **(Treated to 1000 mg/L Chloride)**
Prepared	MIB	Date	October 2012
Checked	VJB	Project N°	11-1428-0011
Reviewed	DRW	Figure	**28**
			Meliandine Gold Project **Agnico Eagle Mines Limited**





Golder Associates			**Water Quality Model Results** **Attenuation Pond 1 Water Quality for Discharge to Meliadine Lake**
Prepared	MIB	Date	October 2012
Checked	VJB	Project N°	11-1428-0011
Reviewed	DRW	Figure	**29**
			Meliandine Gold Project **Agnico Eagle Mines Limited**



Golder Associates			**Water Quality Model Results** **Attenuation Pond 1 Water Quality for Discharge to Meliadine Lake**
Prepared	MIB	Date	October 2012
Checked	VJB	Project N°	11-1428-0011
Reviewed	DRW	Figure	**30**
			Meliandine Gold Project **Agnico Eagle Mines Limited**

535000 540000 545000

6990000

6985000

N

AP01

H17

H11

H19

H20

Fresh Water Intake

PS-C-02

PS-D-01

PS-C-01

B7 Waste Rock Storage Facility East

Tailings Storage Facility

Meliadine Camp

MMER Discharge Point

DISCHARGE POINT

Meliadine Lake

Tiriganiaq Pit

B7-S-04

B7-S-03

B7-D-02

B7-C-01

WM-D-01

WM-NC-03

TSF-S-01

TSF-D-01

TSF-D-02

B6

B34

B4

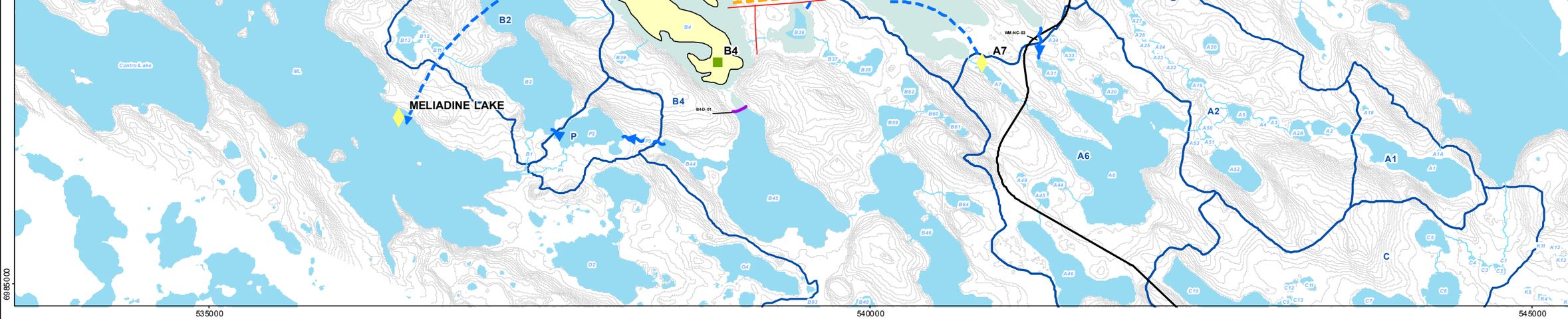
B4-D-01

A7

MELIADINE LAKE

Contro Lake

D1 D2 D3 D4 D5 D7 E3 E4 G B7 B6 B5 B2 P B4 A8 J I A7 A6 A2 A1 C



535000 540000 545000

6985000

LEGEND

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

1 0 1

KILOMETRES

NOTE

Dewatering of lakes may require TSS control.
Pumped water from waste rock stoarge facilities, pits and the tailing storage facility to sumps not shown for clarity.
Pumped contact water from B4 is assumed to be treated prior to discharge to AP01.
Pipe and ditch alignments shown are conceptual for information purposes only.
Final alignments to be confirmed during detailed design and will be subject to change based on local field conditions.

REFERENCE

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

PROJECT

AGNICO EAGLE

AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

PROPOSED MONITORING LOCATIONS CONSTRUCTION PERIOD

Golder Associates

PROJECT NO. 10-1373-0076			FILE No.	
DESIGN	MP	13 Nov. 2012	SCALE AS SHOWN	REV. 0
GIS	JW	13 Nov. 2012		
CHECK	DW	13 Jan. 2013	FIGURE 31	
REVIEW	DW	13 Jan. 2013		

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535000

540000

6990000

6985000

N

DISCOVERY PIT

AP01

AP02

H1

H17

H20

TSF

Tailings Storage Facility

B7 Waste Rock Storage Facility East

B7 Waste Rock Storage Facility South

B7 Waste Rock Storage Facility West

Fresh Water Intake

PS-C-02

PS-D-01

PS-S-01

Meliadine Camp

MMER Discharge Point

DISCHARGE POINT

PS-C-01

Meliadine Lake

Tiriganiaq Pit #2

Tiriganiaq Pit

B5

Wesmeg #1

Ore Stockpile

Wesmeg #2

Wesmeg #3

Wesmeg #5

WM-S

Wesmeg #4

A8

B4(Until Year 3)

B4 Waste Rock Storage Facility

Pump Pit #1

Pump Pit #2

B4-S

F Zone Pit #3

F Zone Pit #2

F Zone Pit #1

A1

A2

A6

A44 Waste Rock Storage Facility

F-S-01

Discovery Waste Rock Storage Facility

D-S

CH5

CH6

D1

D2

D3

D4

D5

D7

E3

E4

G

B2

B4

B6

B7

P

X

C

LEGEND

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

1 0 1

KILOMETRES

NOTE

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

REFERENCE

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

PROJECT

AGNICO EAGLE

AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

PROPOSED MONITORING LOCATIONS OPERATIONS PERIOD

Golder Associates

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

FIGURE 32

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535000

540000

6990000

6985000

N

DISCOVERY PIT

DISCOVERY LAKE

Discovery Waste Rock Storage Facility

CH5

CH6

TIRIGANIAQ LAKE

Tiriganiaq Pit

Tiriganiaq Pit #2

Wesmeg #1

Wesmeg #2

Wesmeg #3

Wesmeg #4

Wesmeg #5

WM3-Lake

WM5-Lake

Pump Pit #1

Pump Pit #2

Pump-Lake

B4-S

F Zone Pit #3

F Zone Pit #2

F Zone Pit #1

FZ-Lake

Meliadine Lake

B7 Waste Rock Storage Facility East

B7 Waste Rock Storage Facility South

B7 Waste Rock Storage Facility West

B4 Waste Rock Storage Facility

A45 Waste Rock Storage Facility

Tailings Storage Facility

H17

H1

A6

A8

A2

B2

B4

B5

B6

B7

C

K

P

X

LEGEND

- Regulated Monitoring
- Verification Monitoring
- Seepage Monitoring
- Non Contact Flow Path
- Dike
- Scarified Rock Pad
- Watercourse
- Topographic Contour (1.0 m Interval above sea level)
- Waste Rock Storage Facility
- Watershed Boundary
- Dewatered or Filled in Lake
- Lake

1 0 1

KILOMETRES

NOTE

Dewatering of lakes may require TSS control.
Pipe and ditch alignments shown are conceptual for information purposes only.
Final alignments to be confirmed during detailed design and will be subject to change based on local field conditions.

REFERENCE

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

PROJECT

AGNICO EAGLE

AGNICO EAGLE MINES LIMITED
MELIADINE GOLD PROJECT
NUNAVUT

TITLE

PROPOSED MONITORING LOCATIONS CLOSING PERIOD

Golder Associates

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

FIGURE 33

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APPENDIX A

Water Balance Model Inputs and Assumptions

Table A1: Water Balance Assumptions-General

Property	Value	Source	Comment/Assumptions
Time Step	1 Month	Golder	Runoff generation based on monthly precipitation totals. Water quality regulations are generally based on mean monthly water quality.
Simulation Start	November 1, Yr -3 (month 0)	Golder	Model is based on hydrologic year (November 1 to October 31)

Table A2: Water Balance Model Assumptions – Mill/Process

Property	Value	Source	Comment/Assumptions
Active Life, i.e., mill operational from / to	Mar. 1, Yr 1 June 30, Yr 13	Golder	Mill is active from start of Yr 1 (month 40) to Yr 13 (month 187)
Feed Rate	8500 t/yr	AEM	Mass including water; Mill at 50% capacity in Month 1, 75% capacity in Month 2, 100% capacity in Month 3 and thereafter.
Feed Moisture Content	3.0%	AEM	Percentage by weight
Solids Specific Gravity	2.95	AEM	
Tailings Solids Content	60%	AEM	Slurry to TSF
Maximum Reclaim Rate	118.4 m^3/hr	Computed	Based on 20% bulking of settled tailings due to ice entrapment and a corresponding water content of 40% (Ww/Ws). Based on 100% availability of the mill.
Min. Freshwater Make-Up Rate to Process	115.7 m^3/hr	AEM	Assumed to be limited availability for the first 9 months of process plant operation.
Potable Freshwater Rate to Mine	7.1 m^3/hr	AEM	

Table A3: Water Balance Model Input Parameters and Assumptions - Runoff Generation

Property	Value	Source	Comment/Assumptions
Precipitation	411.7 mm	Golder	Annual value. Based on Precipitation data from Rankin Inlet from 1982 to 2009.
Sublimation and redistribution	49%	Golder	Based on Climate data from Rankin Inlet from 1982 to 2009.
Potential Evapotranspiration	36 mm	Golder	Annual value. Based on average from completed studies.
Lake Evaporation	323.1 mm	Golder	Annual value. Based on 4 years of collected site data.
Terrestrial Runoff	272.7 mm	Computed	Terrestrial runoff = precip. – sublimation – evapotranspiration. Precipitation from October to May stored and released in June over a period of one month. Equivalent to a 33% runoff coefficient under average conditions. Seepage to/from groundwater assumed negligible due to permafrost.
Runoff coefficient for Undisturbed Area	0.7 from June to September and 0.3 from October through to May	Golder	Monthly runoff coefficients applied to the natural ground and undisturbed areas. Accounts for losses due to evaporation, storage etc.
Runoff coefficient for WRSFs and TSF	0.7	Golder	
Runoff coefficient for Water Surface	1	Golder	Assumed: Average annual runoff coefficient applied to the pond surface (direct precipitation).
Runoff coefficient for Pits	0.9	Golder	Assumed: Average annual runoff coefficient applied to the open pit areas. Accounts for losses due to evaporation, storage etc.
Runoff coefficient for Plant site	0.8	Golder	Assumed: Average annual runoff coefficient applied to the plant site areas. Accounts for losses due to evaporation, storage, etc.

Table A4: Water Balance Model Assumptions-Tiriganiaq Underground/WTP-DESAL

Property	Value	Source	Comment/Assumptions
Seepage	Year -2 to 1 424 m^3/day Year 1 to 5 541 m^3/day Year 5 to 13 639 m^3/day	Golder	
Drill Water	1360 m^3/day @ 12% TDS	AEM	Excess groundwater will be used and freshwater sourced from Meliadine Lake if needed.
WTP-DESAL Brine concentration	45% of feed water rate	Golder	55% of the water volume sent to the desalination plant is pumped to AP01 while 45% is stored as concentrated brine.

Table A5: Water Balance Model Assumptions – Waste Rock Storage Facilities

Property	Value	Source	Comment/Assumptions
Infiltration (shallow)	0, 65 & 80% of total runoff	Golder	Infiltration 0% (winter), 65% (June freshet) or 80% (summer) of total available runoff. Assumed shallow infiltration which reports to base of pile in same month. Surface runoff = total runoff less infiltration. [geochem].
Surface Runoff	Total less Infiltration	Golder	Surface runoff = total runoff less infiltration
Water Retention	3%	Golder	Assumed percentage of infiltrated water by volume retained in rock piles until capping.
Pile Area Growth Rate		Golder	Pile sections are assumed to grow to full footprint throughout the winter. This is conservative as the full prints will be available for the following freshet.
B7 WRF Final Area	214 ha	Golder	Footprint area (69 ha B7 East, 36 ha B7 South ha, and 109 B7 West/North).
B7 WRF Active Life	Jan. 1, Yr -3 to Jul. 31, Yr 12	Golder	East Pile is active from Jan. 1, Yr -3 (month 0) to Jun. 30, Yr 2 (month 55); South Pile is active from Jun. 1, Yr 3 (month 55) to Jun. 30, Yr 4 (month 79); and West Pile is active from Jun. 1, Yr 3 (month 55) to Jun. 31 Yr 12 (month 175).
B4 WRF Final Area	237 ha	Golder	Footprint area (136 ha B4 East, 100 ha B4 West ha)
B4 WRF Active Life	Jul. 1, Yr 3 to Jul. 1, Yr 12	Golder	East Pile is active from Jun. 1, Yr 3 (month 67) to Jun. 30, Yr 10 (month 163); and West Pile is active from Jun. 1, Yr 10 (month 151) to Jun. 30, Yr 12 (month 187).
A45-2 WRF Final Area	94.6 ha	Golder	Footprint area
A45-2 WRF Active Life	Jul. 1, Yr 3 to Jul. 31, Yr 6	Golder	Pile is active from Jun. 1, Yr 3 (month 67) to Jun. 31,Yr 6 (month 103)
Discovery WRF Final Area	151.4 ha	Golder	Footprint area.
Discovery WRF Active Life	Jul. 1, Yr 6 to Jul. 31, Yr 13	Golder	Pile is active from Jun. 1, Yr 6 (month 103) to Jun. 31, Yr 12 (month 175)

Table A6: Water Balance Model Assumptions – Attenuation/Storage Ponds

Property	Value	Source	Comment/Assumptions
Ice Thickness	1.5 m	Golder 2009	Average value over pond surface areas, assumed to initiate in November and thaw in June. Values can range from 2.5 m to 1 m.
Max Dust Control AP01	12,000 m^3/mon	Golder	12,000 m^3/month from June to September, otherwise 0 m^3/month. Assumed to evaporate on surfaces once applied. From Year -3 to Year 6.
Max Dust Control Discovery	12,000 m^3/mon	Golder	12,000 m^3/mon from June to September, otherwise 0 m^3/month. Assumed to evaporate from surfaces once applied. From Year 6 to year end of mine life.
Initial Water Volume AP01	138,800m^3	Golder	Assumed full
Initial Water Volume AP02	220,000m^3	Golder	Assumed full
Initial Water Volume TSF Reclaim Pond	390,000 m^3	Golder	Assumes Lake B7 is dewatered by 1m to start construction of Tailings Storage Facility (TSF).
Min. Free Water Reclaim Pond	800,000 m^3	Golder	For mill reclaim/operation, excluding ice. Equal to 90 days at maximum reclaim rate of 235 m^3/hr. Water age of 60 to 140 days recommended for reclaim.
Seepage		Golder	Seepage to or from ponds through taliks assumed negligible.

Table A7: Water Balance Model Assumptions – Tailings Disposal Facility

Property	Value	Source	Comment/Assumptions
Ice Bulking	20%	Golder	Expected range is 10 to 30%
Solids Specific Gravity	3.10	AEM	
Settled Solids Content	75%	AEM	
Void Ratio	1.25	computed	Ratio of volume of voids (Vv) to volume of solids (Vs) – Vv/Vs
Water Content	40%	computed	Ratio of mass of water (Ww) to mass of solids (Ws) = Ww/Ws, assumes voids saturated with ice
Infiltration (shallow)	0%, 15% & 40% of total runoff	Golder	Infiltration = 0% (winter), 15% (July freshet) and 40% (summer). Assumed shallow infiltration which reports to base of tailings in same month. Surface runoff = total runoff less infiltration [geochem].
Surface Runoff	0%, 85% & 60%	Golder	
Active Life - to / from	Jan. 1, Yr -3 June 30, Yr 13	AEM	TSF is active from start of Yr 1 (month 41) to Yr 13 (month 187) – same as mill
Surface Area of Exposed Tailings	Varies	Golder	Varies with time – deposition plan.
Reclaim Treatment	525 m^3/hr /1500 m^3/hr	Golder	Assumed treatment rate of reclaim pond water at mill closure. Treated water is conveyed to AP01 during operations and first year of closure, Tiriganiaq Pit 1 for remainder of closure and post closure. Rates are increased to 1500 m^3/hr in the last three years of operations to account for the higher inflows, as more open pits become active. In addition, higher treatment rates are required to lower water levels in the TSF prior to closure.

Table A8: Water Balance Model Assumptions – Open Pits

Property	Value	Source	Comment/Assumptions
Seepage	0 m^3/hr	Golder	Assumed zero seepage into the open pits due to permafrost
Growth Rate of Pit Footprints	Linear	Golder	Pits are assumed to reach their final footprint for over the first winter and the full footprint is assumed for the following freshet
Runoff Volume	computed	Golder	Computed based on pit footprint (in plan).

Table A9: Water Balance Model Assumptions –Open Pits (by Pit)

Pit	Pit Start	Pit Compete	Surface Area[a] (m^2)	Volume (m^3)
Tiriganiaq Pit 1	Year -1	Year 11	848,900	66,877,675
Tiriganiaq Pit 1	Year 10	Year 10	291,000	1,501,932
Wesmeg Pit 1	Year 3	Year 7	41,523	506,340
Wesmeg Pit 2	Year 10	Year 11	497,400	25,081,282
Wesmeg Pit 3	Year 3	Year 6	145,300	4,169,520
Wesmeg Pit 4	Year 6	Year 6	48,900	675,905
Wesmeg Pit 5	Year 12	Year 12	36,000	845,002
Pump Pit 1	Year 6	Year 11	1,121,700	7,004,134
Pump Pit 2	Year 6	Year 11	221,800	14,469,923
F Zone Pit 1	Year 4	Year 5	275,000	2,297,157
F Zone Pit 2	Year 3	Year 4	200,900	1,952,586
F Zone Pit 3	Year 4	Year 5	264,200	9,498,301
Discovery	Year 6	Year 11	733,467	35,745,437

[a] Ultimate operational footprint (in plan) including catchment area outside of pit.

APPENDIX B

Model Simulation Calendar

Table B1: Model Simulation Calendar – Presented in Hydrologic Years
(Nov. 1 of Mine Year X to Oct. 31 of Mine Year X+1, with a Simulation Time Step of 1 Month)

Mine Year	Month											
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sept.	Oct.
-3	0	1	2	3	4	5	6	7	8	9	10	11
-2	12	13	14	15	16	17	18	19	20	21	22	23
-1	24	25	26	27	28	29	30	31	32	33	34	35
1	36	37	38	39	40	41	42	43	44	45	46	47
2	48	49	50	51	52	53	54	55	56	57	58	59
3	60	61	62	63	64	65	66	67	68	69	70	71
4	72	73	74	75	76	77	78	79	80	81	82	83
5	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107
7	108	109	110	111	112	113	114	115	116	117	118	119
8	120	121	122	123	124	125	126	127	128	129	130	131
9	132	133	134	135	136	137	138	139	140	141	142	143
10	144	145	146	147	148	149	150	151	152	153	154	155
11	156	157	158	159	160	161	162	163	164	165	166	167
12	168	169	170	171	172	173	174	175	176	177	178	179
13	180	181	182	183	184	185	186	187	188	189	190	191

APPENDIX C

Mine Site Water Quality Predictions, Meliadine Gold Project

April 2014

FINAL REPORT

Mine Site Water Quality Predictions Meliadine Gold Project, Nunavut

Submitted to:
Les Mines Agnico Eagle Ltee/ Agnico Eagle Mines Limited
20 Route 395
Cadillac, QC J0Y 1C0

REPORT

Report Number: Doc 319-1314280007 Ver. 0

Distribution:

2 copies - Agnico Eagle Mines Limited

2 copies - Golder Associates Ltd.

Golder Associates

Executive Summary

Agnico Eagle Mines Limited (AEM) is developing the Meliadine Gold Project (the Project), located approximately 25 km north of Rankin Inlet, and 80 km southwest from Chesterfield Inlet in the Kivalliq Region of Nunavut. The Project is situated on Inuit Owned Land administered by the Kivalliq Inuit Association (KIA), on a peninsula between the east, south, and west basins of Meliadine Lake. The Project comprises five deposits that include, from west to east: Tiriganiaq, Pump, Wesmeg, F Zone, and the Discovery deposit.

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. This GoldSim mass balance model was constructed within the water balance model for the site. As multiple aspects of the project are currently being developed and mine water and mine waste management plans are expected to continue to evolve through mine life, the model and results should be considered a representation of Golder's understanding of mine water and mine waste management plans for the Project at the time of this report.

This report provides a summary of the main mine components relevant to the water quality predictions, including; the open pits, waste rock storage facilities, underground workings, attenuation ponds, and the tailings storage facility. Post-closure water quality is also estimated, and includes the representation of flooding of the open pits. The parameters and assumptions adopted in the mass balance model, and a summary of the results are also included.

Water quality model results were generated for the Tailings Storage Facility (TSF) pond, open pits, waste rock piles, attenuation ponds and treatment plant outflows. Results represent dissolved parameter concentrations and do not consider suspended solids (TSS), nor the effect these could have on total parameter concentrations. Given the uncertainties associated with the modelling exercise and use of an average climate year in the water balance, the predicted concentrations are considered to be order-of-magnitude estimates.

TSS were not considered in the mass load model, but the concentration of TSS is regulated in effluents. It is anticipated that suspended solids will require monitoring and proper management based on experience at other arctic mine sites.

Open pit sump water quality is predicted to meet all MMER criteria; only arsenic concentrations are predicted to sporadically exceed Canadian Council for Ministers of the Environment (CCME) aquatic life guidelines in all pit sumps. Other parameters including aluminum, copper, cadmium and fluoride are predicted to occasionally exceed CCME-aquatic life guidelines in select pit sumps during summer months.

The quality of waste rock storage facility (WRSF) drainage during operations, if any is generated, is predicted to meet MMER criteria. These drainages show fewer, more sporadic exceedances to CCME-aquatic life guidelines than open pit sumps, namely, arsenic at all rock WRSFs, aluminum in the B4 WRSF and marginal exceedances of cadmium at the Discovery WRSF.

The TSF pond water quality is predicted to exceed MMER effluent criteria for total cyanide and arsenic during operations. The concentration of cadmium, chloride, copper, fluoride, lead and selenium are also predicted to exceed CCME water quality guidelines for aquatic life. Treatment is planned for this water prior to discharge to AP01.

WRSF contact water quality at closure is predicted to meet most CCME aquatic life parameter concentrations except for arsenic which is predicted to marginally exceed the guideline (by less than 10 times). Cadmium is also predicted to marginally exceed the CCME aquatic life guidance concentration in Discovery WRSF contact water.

Concentrations in the open pit lakes and attenuation ponds at closure are predicted to meet CCME-aquatic life guidelines during summer months from the time the open pits are fully flooded, until the end of the modelling period (13 years post-closure). Although not considered in closure modelling for the pit lakes, ice formation during winter months may cause CCME-aquatic life exceedances in remaining free water during this period.

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Abbreviation and Acronym List

AEM	Agnico Eagle Mines Limited
AP01	Attenuation Pond 1
AP02	Attenuation Pond 2
CCME	Canadian Council for Ministers of the Environment
CN(WAD)	Weak Acid Dissociable Cyanide
CN(total)	Total Cyanide
Golder	Golder Associates Ltd.
KIA	Kivalliq Inuit Association
m^3	cubic metres
m^3/day	Cubic metres per day
mg/L	Milligrams per litre
MEND	Mine Environment Neutral Drainage Program
MMER	Metal Mining Effluent Regulations
Mt	Million tonnes
TSF	Tailings Storage Facility
TSS	Total Suspended Solids
USGS	United States Geological Survey
WRSF	Waste Rock Storage Facility

Table of Contents

1.0 INTRODUCTION **1**

2.0 MINE COMPONENTS RELEVANT TO WATER QUALITY PREDICTIONS **1**

3.0 INPUT PARAMETERS **3**

3.1 Geochemical Controls on Water Quality 7

3.2 Treatment Options Specified 8

4.0 MODEL ASSUMPTIONS **8**

5.0 CLOSURE PLAN **13**

6.0 SUMMARY OF RESULTS **14**

6.1 Operation Phase 15

6.2 Closure and Post-Closure Phases 15

7.0 CLOSURE **17**

REFERENCES **18**

TABLES

Table 1: Summary of Inflows to Open Pits during Operations 2

Table 2: Summary of Inflows to Attenuation and Storage Ponds 2

Table 3: Summary of Water Quality Input Parameters 3

Table 4: Proportion of Rock Types to Waste Rock Storage by Deposit (Percentage) 5

Table 5: Proportion of Source Feeds to Mill through Mine Life (Percentage) 6

Table 6: Lithological Exposures in Final Pit Outlines 6

Table 7: Density by Lithology 6

Table 8: Ambient Air Temperature by Month 7

Table 9: Water Quality Assumptions – Tiriganiaq Underground Workings 8

Table 10: Water Quality Assumptions – Open Pits 9

Table 11: Water Quality Assumptions – Tailings Storage Facility 10

Table 12: Water Quality Assumptions – Waste Rock Storage 11

Table 13: Water Quality Assumptions – Water Treatment and Discharge 12

FIGURES

Figure 1: Site Plan 19

Figure 2: Tailings Storage Facility – Untreated Pond Water (Salinity and Arsenic) 20
Figure 3: Tailings Storage Facility – Untreated Pond Water (Cyanide and Explosives) 21
Figure 4: Tailings Storage Facility – Treated Outflow (Salinity and Arsenic) 22
Figure 5: Tailings Storage Facility – Treated Outflow (Cyanide and Explosives) 23
Figure 6: Groundwater Outflow (Salt Plant Inflow) 24
Figure 7: Salt Plant Outflow (Treated to 1000 mg/L Chloride) 25
Figure 8: Attenuation Pond 1 Water Quality for Discharge to Meliadine Lake (Salinity and Arsenic) 26
Figure 9: Attenuation Pond 1 Water Quality for Discharge to Meliadine Lake (Cyanide and Explosives) 27

APPENDICES

APPENDIX C-1
Water Quality Input Parameters

APPENDIX C-2
Water Quality Model Results

1.0 INTRODUCTION

Agnico Eagle Mines Limited (AEM) is developing the Meliadine Gold Project (the Project), located approximately 25 km north of Rankin Inlet, and 80 km southwest from Chesterfield Inlet in the Kivalliq Region of Nunavut. The Project is situated on Inuit Owned Land administered by the Kivalliq Inuit Association (KIA), on a peninsula between the east, south, and west basins of Meliadine Lake.

The Project comprises five deposits that include, from west to east: Tiriganiaq, Pump, Wesmeg, F Zone, and Discovery. A general location plan of the proposed Project is shown in Figure 1. The current mining plan indicates that approximately 22.1 Mt of ore will be mined over a nominal mine life of approximately 10 to 13 years. The deposits will be mined using conventional open pit mining methods with additional underground mining for some deposits. Approximately 8,500 tonnes of ore will be processed per day.

Golder Associated Ltd. (Golder) was retained to provide a prediction of the probable quality of mine contact water to assist AEM 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); summarizes all assumptions made in the modelling process (Section 4.0); summarizes aspects of the mine closure plan considered in the mass balance model (Section 5.0); and presents a summary of mine contact water quality for select mine components during operations and at closure (Section 6.0).

2.0 MINE COMPONENTS RELEVANT TO WATER QUALITY PREDICTIONS

The following section provides a brief overview of the mine water management plan, focusing on those aspects relevant to the mine site water quality predictions, including: open pits at each of the five deposits; underground workings at Tiriganiaq; waste rock storage facilities (WRSFs) at B7 Lake, B4 Lake, Discovery, and F Zone (A45-2 WRSF); Attenuation Pond 1 (AP01) (at Lake H17) and Attenuation Pond 2 (AP02) (at Lake B5); and the fully flooded open pit lakes at the end of mine life. Other infrastructure (roads, mill and plant site) are accounted for implicitly in drainages reporting to one of the above water collection points.

A more detailed discussion of key components of the mine site for which assumptions have been made is included in Sections 3.0 and 4.0.

The five gold deposits in the study area are planned to be mined using open pits, with deeper portions of the Tiriganiaq deposit accessed by underground development. The open pits are expected to receive surface water runoff during the summer months. This runoff is generated by various sources including the runoff over pit walls, overland non-contact water inflows and some WRSF contact waters draining into open pits. Although some deposits have multiple pits, the model calculations were completed for one pit for each deposit. Calculations for this one pit are representative of the combined inflows and use the combined volume and surface area of all pits within the deposit. It is assumed that all water collected in each open pit will be directed to the Tailings Storage Facility (TSF). Table 1 provides a summary of the inflows to the pits of each deposit.

Table 1: Summary of Inflows to Open Pits during Operations

Deposit	Number of Pits	Inflows Received
Tiriganiaq	2	Pit Wall Runoff Non-Contact Runoff B7-S-02 Pond Overflow
Wesmeg	5	Pit Wall Runoff Non-Contact Runoff Road Runoff
Pump	2	Pit Wall Runoff Non-Contact Runoff
F Zone	3	Pit Wall Runoff Non-Contact Runoff Road Runoff A45-2 WRSF Runoff and Seepage
Discovery	1	Pit Wall Runoff Non-Contact Runoff Road Runoff Discovery WRSF Runoff and Seepage

In addition to the open pit water quality, the model accounts for the water quality at eight attenuation/storage areas. Each area consists of one or more storage ponds as described in SD 2-6 Surface Water Management. The water quality calculations were completed by grouping the ponds within each storage area. Table 2 summarizes the flows received by each attenuation/storage area, and lists the individual ponds that constitute each area.

Table 2: Summary of Inflows to Attenuation and Storage Ponds

Area	Attenuation / Storage Ponds	Flows Received
Attenuation Pond 1	AP01	Pumped water from B7-S-02 Pond Runoff and seepage from B7 waste rock Pumped water from Wesmeg Pond Pumped water from Plant Site Pond Pumped water from F Zone Pond Treated water from salt plant Discovery Pond overflow (Potential, not currently occurring) Treated water from the TSF Road Runoff Non-Contact Runoff
Attenuation Pond 2	AP02	Pumped water from B4 Pond Road Runoff Non-Contact Runoff
Plant Site Pond	PS-S-01	Road Runoff Non-Contact Runoff
Tailings Storage Facility (TSF)	TSF-S-01 TSF-S-02 Reclaim Pond	Tailings Decant Water All pit inflows Non-Contact Runoff Runoff from tailings impoundment area B7 Waste Rock Runoff and Seepage
B7 Pond	B7-S-01 B7-S-02 B7-S-03 B7-S-04	Non-Contact Runoff Multipurpose Pad Runoff Road Runoff B7 Waste Rock Runoff and Seepage Pumped water from AP02 (to B7-S-02)

Area	Attenuation / Storage Ponds	Flows Received
B4 Pond	B4-S-01 B4-S-02 B4-S-03 B4-S-04	Non-Contact Runoff B4 Waste Rock Runoff and Seepage Pumped water from Tiriganiaq Underground (Until year -1)
Wesmeg Pond	WM-S-01 WM-S-02	B7-S-02 Pond overflow Road Runoff Non-Contact Runoff
F Zone Pond	F-S-01 F-S-02 F-S-03	A45-2 WRSF Runoff/Seepage Non-Contact Runoff
Discovery Pond	D-S-01 D-S-02	Discovery Waste Rock Runoff/Seepage Non-Contact Runoff Pumped water from Discovery Pit

The underground workings at Tiriganiaq are expected to receive groundwater inflow and drilling fluid inflow. As these waters are predicted to be saline, treatment is expected to be required, and it is planned that mixing of these waters with water from other sources will be avoided until after it has been treated. A more detailed discussion of the handling of the underground water within the predictive model is included in Section 4.0.

Waste rock generated by the mining operations will be stored in 4 WRSFs. Waste rock generated by mining at the Discovery and F Zone deposits is to be stored in WRSFs adjacent to each deposit. All remaining waste rock will be stored in the B7 and B4 WRSFs.

Ore generated by the mining activities is planned to be stockpiled prior to processing at the mill site. It was assumed in model development that any ore piles will remain covered to prevent freezing. No ore pile runoff has been accounted for in the predictive model.

Water contained in the ore (3% by mass) makes up only a small proportion of the total process water requirements for the mill. Available process water will be recirculated from the TSF to the mill, with any additional process water demand satisfied from Meliadine Lake and AP01.

3.0 INPUT PARAMETERS

The following section summarizes the input parameters used in the water quality model. Water quality input data are included in Appendix C-1. The following table summarizes sources used for model input.

Table 3: Summary of Water Quality Input Parameters

Modelled Flow	Type	Source	Reference
Non-Contact Runoff	Concentration	Average B6-7 stream (1997-2011) See Appendix C-1, Table C-1.1	Baseline Water Quality Database (1997-2011)
Initial Concentrations in AP01, AP02, and TSF	Concentration	Average of historical water quality data (1997-2011) See Appendix C-1, Table C-1.1	Baseline Water Quality Database (1997-2011)
Groundwater Inflow	Concentration	Average of duplicate samples of sub-permafrost groundwater (corrected to remove brine content) See Appendix C-1, Table C-1.1	FEIS Volume 7, Appendix 7.2-A
Drilling Fluid	Concentration	Average of Brine used in drilling and installation of Westbay monitoring well See Appendix C-1, Table C-1.1	FEIS Volume 7, Appendix 7.2-A

Table 3: Summary of Water Quality Input Parameters (continued)

Modelled Flow	Type	Source	Reference
Grey Water	Concentration	Expected concentrations of nutrients (phosphorus, total nitrogen, nitrite/nitrate as nitrogen) based on information provided by Biotest See Appendix C-1, Table C-1.1	Provided by M-C Dion St-Pierre (email commun. 26 and 30 July, 2012)
Pit Wall Runoff	Loading Rate	Weighted average of rock types based on expected proportion of exposure in pit walls (See Table 6). See Appendix C-1, Table C-1.2 for loading rates by rock type and Appendix C-1, Table C-1.3 for kinetic test sample contribution to lithological loading rates For lithologies without representative samples, the average load from all rock types was applied.	Calculated based on cross-sections included in SD 6-3 Geochemistry Baseline Report SD 6-3 Geochemistry Baseline Report
Waste Rock Runoff	Loading Rate	Loading rates calculated for laboratory leaching tests on waste rock (not from existing site pond water quality). Weighted average of rock types based on deposition in each waste rock facility (See Table 4) See Appendix C-1, Table C-1.2 for loading rates by rock type and Appendix C-1, Table C-1.3 for kinetic test sample contribution to lithological loading rates For lithologies without representative samples, the average load from all rock types was applied.	File: *Production Plan (2012-02-07).xls* email from J. Noël, AEM, (13 February, 2012) SD 6-3 Geochemistry Baseline Report
Residual explosives in underground inflow and open pit sump	Concentrations of ammonia and nitrate	Underground: Annual average of underground inflows at the LaRonde mine (a wet mine with conditions expected to be similar to the Meliadine underground development). See Appendix C-1, Table C-1.1 Open Pits and Waste Rock: Average of monthly values observed in open pits at the Meadowbank Mine (dry pits with conditions expected to be similar to the Meliadine open pits). See Appendix C-1, Table C-1.1	File: *GroundwaterDataComparison.xls*, email from Josée Noël, AEM, (22 May, 2012) File: *AmmoniaMBK.xls*, email from Josée Noël, AEM, (27 June, 2012)
Mill Process Water (pore water in mill feed)	Concentration	Calculated as a weighted average of process waters by deposit based on proportion of feed to mill (See Table 5 for Mill feed) Process Water chemistry for each deposit included in Appendix C-1, Table C-1.4	File: *Production Plan (2012-02-07).xls* email from J. Noël, AEM (13 February, 2012) SD 6-3 Geochemistry Baseline Report
Cyanide concentration in process water	Concentration of cyanide species	Average CN(total) and CN(WAD) from samples of Meliadine process water that underwent laboratory-based cyanide detoxification	File: *SGS_2011-11-25_variability samples – CNDetox.pdf*, email from Mario Drapeau, AEM, (23 May, 2012)
Ammonia concentration in TSF	Concentration of Ammonia Nitrogen (varies by month)	Calculated as average monthly concentration observed in the Meadowbank Tailings Facility between 2010 and 2011 (and one observation in 2012). Values rounded to nearest 5 mg/L. (See Appendix C-1, Table C-1.6 for concentrations by month). Fixed concentrations representative of all ammonia loads to the TSF (i.e., reflects load due to open pit water, tailings runoff, and the cyanide destruction process in the mill).	File: *MD-2012-07-17-Meadowbank – Tailings Reclaim Pond – ST – 21 – NH3-NH4-2010-2011.xls* email from M. Drapeau (17 July, 2012)

Table 3: Summary of Water Quality Input Parameters (continued)

Modelled Flow	Type	Source	Reference
Tailings Runoff	Loading Rate	Calculated as weighted average of loading rates by deposit based on proportion of feed to mill (See Table 5 for Mill feed)	File: *Production Plan (2012-02-07).xls* email from J. Noël, AEM, (13 February, 2012)
		Tailings loading rates for each deposit included in Appendix C-1, Table C-1.5	SD 6-3 Geochemistry Baseline Report

The composition of waste rock in each facility varies by year as a function of the mine plan. The proportions of each rock type generated at each deposit are shown in Table 4 below. Note that the mine plan lithologies include an "undefined" unit. The proportions of waste rock and pit exposures represented by the "undefined" unit have been distributed between iron formation (19%) and greywacke (81%) for the purpose of this model (per AEM direction, as described in SD 6-3 Geochemistry Baseline Report). As noted above, waste rock generated by the F Zone and Discovery deposits are stored in the WRSF within their respective deposit areas (A45-2 WRSF and Discovery WRSF). Waste rock generated at the Wesmeg and Pump deposits are stored at the B4 WRSF, while waste rock generated by Tiriganiaq is sent to the B7 WRSF until year 11. After year 11 Tiriganiaq was rock is directed to the B4 WRSF.

Table 4: Proportion of Rock Types to Waste Rock Storage by Deposit (Percentage)

		Mine Year														
Deposit	**Rock Type**	**-3**	**-2**	**-1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Tiriganiaq	Gabbro	-	-	5	5	5	5	5	5	4	4	1	0	0	0	0
	Mafic Volcanic	-	-	12	12	13	13	12	12	12	12	14	15	16	19	11
	Greywacke/Siltstone	-	-	80	80	79	79	79	79	79	79	78	75	72	69	73
	Iron Formation	-	-	3	3	4	4	4	4	5	5	7	9	11	12	16
Wesmeg	Mafic Volcanic	-	-	-	-	-	99	99	99	99	99	99	100	100	100	100
	Ultramafic	-	-	-	-	-	1	1	1	1	1	1	0	0	0	0
Pump	Greywacke/Siltstone	-	-	-	-	-	-	-	-	1	1	-	1	1	1	-
	Mafic Volcanic	-	-	-	-	-	-	-	-	86	86	-	86	86	86	-
	Iron Formation	-	-	-	-	-	-	-	-	13	13	-	13	13	13	-
Discovery	Gabbro	-	-	-	-	-	-	-	-	6	7	9	9	6	0	-
	Mafic Volcanic	-	-	-	-	-	-	-	-	15	18	18	15	11	25	-
	Greywacke/Siltstone	-	-	-	-	-	-	-	-	68	63	60	62	68	61	-
	Iron Formation	-	-	-	-	-	-	-	-	11	12	13	13	15	14	-
F Zone	Gabbro	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-
	Iron Formation	-	-	-	-	-	7	7	7	-	-	-	-	-	-	-
	Mafic Volcanic	-	-	-	-	-	92	92	92	-	-	-	-	-	-	-

Source: Calculated based on *Production Plan (2012-02-07).xls* (email from J. Noël, February 2012).

The source of ore fed to the mill was used to determine process water chemistry, decant water chemistry and tailings loads. The proportion of feed to the mill from each deposit is summarized in the following Table 5.

Table 5: Proportion of Source Feeds to Mill through Mine Life (Percentage)

Mine Year	Tiriganiaq Underground	Tiriganiaq Open Pit	F Zone	Pump	Discovery	Wesmeg
-2	0	0	0	0	0	0
-1	0	0	0	0	0	0
1	0	100	0	0	0	0
2	5	95	0	0	0	0
3	26	74	0	0	0	0
4	30	24	45	0	0	1
5	23	52	15	0	0	10
6	22	46	4	0	0	28
7	26	47	0	13	1	13
8	28	41	0	9	12	10
9	29	35	0	0	21	15
10	30	19	0	0	40	11
11	27	4	0	20	26	23
12	58	5	0	18	2	17
13	59	20	0	0	0	21

Source: Calculated based on *Production Plan (2012-02-07).xls* (email from J. Noël, February 2012).

Lithological exposures in the pit walls were interpreted from cross sections through final pit outlines provided by AEM. The proportion of each rock type is summarized in Table 6 below. The lithological proportions have been assumed to be constant throughout mine life.

Table 6: Lithological Exposures in Final Pit Outlines

Deposit	Ore	Greywacke/Siltstone	Mafic Volcanic	Ultra Mafic	Iron Formation	Gabbro	Overburden
Tiriganiaq	6	56	31	0	2	5	0
Wesmeg	6	0	90	4	0	0	0
Pump	3	19	54	0	24	0	0
Discovery	3.5	81	0	0	8	7.5	0
F Zone	3.5	0	89	0	7.5	0	0

Source: Calculated based on Cross-sections included in SD 6-3 Geochemistry Baseline Report

Pit wall loads were calculated using the density of each exposed lithology. Density values used as model input are summarized in Table 7 below.

Table 7: Density by Lithology

Lithology	Density (tonnes/m^3)
Greywacke	2.83
Mafic Volcanic	2.84
Ultra Mafic	2.88
Iron Formation	3.06
Gabbro	2.83
Overburden	2.65

Source: Golder (pers. commun, C. Clayton, March 4, 2012)

Air temperatures were used within the model to determine temperature effects on loading rates. Mean ambient air temperatures measured at the Meliadine Project weather station between 1997 and 2001 were used as climatic input in the predictive model. Mean monthly air temperatures are summarized in Table 8 below.

Table 8: Ambient Air Temperature by Month

Month	Actual Mean Ambient Air Temperature (ºC)
October	-4.6
November	-17.2
December	-25.9
January	-30.9
February	-30.1
March	-25.1
April	-15.7
May	-5.9
June	4.1
July	10.5
August	9.7
September	3.8

Source: SD 7-1 2009 Aquatics Synthesis Baseline

3.1 Geochemical Controls on Water Quality

Evaporation and recirculation of TSF water increases concentrations of some parameters to beyond their solubility limits. Geochemical modelling was carried out on the modelled output of TSF water quality to define the likely upper concentration limit for parameters controlled by solubility. The United States Geological Survey (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 parameter concentrations remaining after precipitation of the specified mineral phases and returns solubility indices for all mineral phases in the PhreeqC database. This code is widely used and accepted by the scientific and regulatory community.

Interim GoldSim water quality results from the TSF were used as input to PhreeqC, consisting of the water quality output from two distinct time-steps selected for their high and moderate dissolved concentrations of iron and arsenic. This water was assumed to have a pH of 8 and to be fully oxidizing (a pE of 2.13). The PhreeqC results were used to identify parameters subject to solubility control and their upper concentration limits. The results from both input water qualities were compared, and the highest concentrations resulting from equilibrium with plausible mineral phases were retained as upper concentration limits. The precipitate was assumed to be permanently removed from the mass balance. Appendix C-1, Table C-1.7 lists the constituents subject to these limits, and their respective concentrations, which were hardwired into the GoldSim model as upper concentration limits for these parameters in TSF water. The GoldSim model was then re-run with these upper concentration limits.

3.2 Treatment Options Specified

Water quality model results reflect treatment options selected by AEM on two streams: groundwater inflows and tailings pond water.

Underground water was assumed to be treated through a salt removal plant (the 'salt' plant) to chloride concentrations of 1000 mg/L and discharged from the plant to AP01. The salt plant treatment efficiency to achieve the stated chloride concentration was applied to all other chemical parameters in groundwater. The plant is assumed to release 55% of the treated water volume to AP01. The other 45% of the plant inflow volume constitutes a concentrated brine residue which is assumed to be stored in a non-leaking facility at site until closure. Details on the management of this concentrated brine will be developed during subsequent design phases of the project.

Cyanide treatment effectiveness is considered implicitly in the data used as input for mill effluent quality. The input data were generated from samples of process water of milled ore from each deposit that underwent laboratory-based cyanide detoxification. For conservatism, cyanide degradation was not considered to occur in the TSF pond. Given the Arctic conditions at site, biological degradation is not expected to occur. Production of ammonia or nitrate from the biological degradation of cyanide and cyanide products has not been considered.

Water pumped from the TSF to AP01 was assumed to be treated for arsenic and total cyanide to values of 0.1 and 0.5 mg/L, respectively. Since copper sulphate is expected to be used in the treatment process, a fixed copper concentration of 0.15 mg/L was applied to the treated outflow. All treatment target concentrations are representative of the targeted monthly averages for these parameters.

Assumptions made in the modelling process regarding treatment rates and discharge options are summarized in Table 13.

4.0 MODEL ASSUMPTIONS

The following section summarizes the assumptions made in model development. Assumptions are discussed relative to the main mine/model component to which they apply.

Table 9: Water Quality Assumptions – Tiriganiaq Underground Workings

Property	Assumptions/Comments	Source
Groundwater Inflow	Inflow begins in Year -2 at 420 m^3/day and grows with progression of underground workings to 640 m^3/day by Year 5. Ends in Year 13	Golder
Drill Water Inflow	Drill water inflow occurs over the same time interval as groundwater inflow (Year -2 to Year 13). Quantity is constant at 1,360 m^3/day.	Provided by J. Noël, AEM, pers. commun. (March 23, 2012)
Handling and Storage of Underground Mine Inflow	From the start of mill operations until Mining Year 3, all water pumped from the underground workings is sent to B4 Pond prior to being treated at a salt plant. After Year 3 underground water is pumped directly to the salt plant and no pre-treatment water storage is accounted for.	AEM

Table 10: Water Quality Assumptions – Open Pits

Property	Assumptions/Comments	Source
Pit Footprint Progression	Pits assumed to develop to full footprint over winter with the full footprint contributing to the chemical load during the following spring freshet	SD 2-6 Surface Water Management
Exposed Pit Wall Area	Area of pit footprint not covered by pit water. Function of pit storage elevation curve. Does not account for slope of pit wall.	Calculated within water balance (SD 2-6 Surface Water Management)
Proportion of Exposed Lithologies	Provided by cross-sections through final pit shell. Same lithological proportions assumed throughout pit life. (See Table 6)	Calculated based on cross-sections shown in Appendix A of SD 6-3 Geochemistry Baseline Report.
Damaged Rock Zone	An active rock thickness of 1 m is applied to represent the rock zone where fractures allow contact of pit wall runoff with rock.	Siskind and Fumanti, 1974
Factors affecting leaching rates	Leaching rates are halved for every 10˚C decrease in temperature from 25˚C for all parameters Temperature throughout damaged rock zones assumed to be equal to monthly mean ambient air temperature.	Diavik, 1998; Davé and Clulow, 1996; Davé and Blanchette, 1999
Pit Outflow	Accumulated pit water is used for dust control, remaining water is conveyed to the TSF throughout mine life. Removal of water from the F Zone and Discovery pits is assumed to occur from July through October. Pumping from all other pits is assumed to occur from June through October.	SD 2-6 Surface Water Management SD 2-6 Surface Water Management
Physical Properties of Fractured Rock	Porosity: 0.005 Specific Gravity: Varies as a function of rock type (See Table 7)	Golder
Ice formation	Ice formation was not accounted for in open pits. This assumption will have no effect on model results for mine operation as it is assumed that water will be pumped from the pits during active mining.	SD 2-6 Surface Water Management

Table 11: Water Quality Assumptions – Tailings Storage Facility

Property	Assumptions/Comments	Source
Storage Capacity	As an initial condition, the level of Lake B7 is assumed to have been lowered by 1 m to facilitate berm construction. Based on measured bathymetry (including 1 m lowering), initial water volume present in the TSF (lake water that is not pumped out) is approximately 390,880 m^3. The TSF is assumed to hold a minimum to 2,200,000 m^3 of water at the beginning of each winter for reclaim to the mill.	SD 7-1 2009 Aquatics Synthesis Baseline AEM Assumption: to prevent freezing of full volume of water in TSF in winter
Tailings Footprint	Tailings are assumed to be deposited over the entire footprint of the TSF in an initial 3 m thick layer. There is no separation of the tailings impoundment from the water stored in the TSF pond. The proportion of the tailings footprint exposed to precipitation fluctuates as the volume of water stored in the TSF varies.	Assumptions. Final tailings deposition details are unavailable. A preliminary tailings deposition plan has been prepared and is included in the mine waste management plan.
Tailings Composition	Varies as a function of ore source fed to mill. See Table 5.	Calculated based on *Production Plan (2012-02-07).xls* email from J. Noël, AEM, (13 February, 2012)
Tailings Reactive Zone	0.5 m active thickness participating in chemical exchange with surface runoff. Assumed constant over entire surface area of exposed tails and throughout the entire year.	Assumed
Tailings Properties	Porosity: 0.5 Settled Dry Bulk Density: 1.37 Tonnes/m^3	SD 2-3 TSF Preliminary Design Report
Factors Affecting Loading Rates	Leaching rates are halved for every 10˚C decrease in temperature from 25˚C for all parameters Temperature throughout active zone assumed to be equal to monthly mean ambient air temperature. No scale-up factor used.	Diavik, 1998; Davé and Clulow, 1996; Davé and Blanchette, 1999 Tailings grain size similar to laboratory samples
Loading Rates	Short-term loading rates applied throughout mine life. Assumes that continual deposition of tailings will prevent prolonged exposure of any area (Appendix C-1, Table C-1.5 for loading rates by deposit). Long term loading rates applied beginning 1 month after mill processing ends (See Appendix C-1, Table C-1.5 for loading rates by deposit). Cover placement details not finalized; model assumes tails will be covered by a 2 m thick layer of waste rock within 2 years following the end of mine life.	SD 6-3 Geochemistry Baseline Report
Decant Water Chemistry	Proportional combination of process water chemistry and chemistry of make-up water supplied to mill. Upper concentration limits imposed on the concentration of parameters that are solubility controlled (Appendix C-1, Table C-1.6). Due to mixing of waters at the mill from sources such as Meliadine Lake, recirculation of the process water does not result in a consistent increase in concentrations in the TSF	Calculated PhreeqC Geochemical modelling of TSF water quality
Cyanide Degradation	Although cyanide degradation may occur in the TSF pond these processes were not represented in the model.	Golder

Table 12: Water Quality Assumptions – Waste Rock Storage

Property	Assumptions/Comments	Source
Loading Rates	Long term loading rates applied to all waste rock (See Appendix C-1, Table C-1.2 for loading rates by rock type and Appendix C-1, Table C-1.3 for kinetic test sample contribution to lithological loading rates)	SD 6-3 Geochemistry Baseline Report
Waste Rock Active Depth	2 meters	Golder, 2005
Factor affecting loading rates	Leaching rates are halved for every 10˚C decrease in temperature from 25˚C for all parameters Rate factor of 0.1 applied to account for channelling of runoff flow through the waste rock pile	Diavik, 1998; Davé and Clulow, 1996; Davé and Blanchette, 1999 Adjusted based on model results and laboratory results from SD 6-3 Geochemistry Baseline Report
Waste Rock Physical Properties	Porosity: 0.33 Specific Gravity: Varies as a function of rock type (See Table 7)	Golder
Runoff and Seepage Generation	Runoff from the rock piles represents 20% of the total outflow from the piles during the summer months, and 65% of total outflow during the spring freshette (June). Rock piles assumed to freeze in winter months, and no seepage or runoff are generated.	SD 2-6 Surface Water Management
Outflow from Waste Rock Facilities	Runoff and infiltration from each waste rock facility is diverted to the nearby collection ponds as follows: A45 (F Zone) Facility: 100% to F Zone Pond. No flow to open pits. Discovery Facility: 100% to Discovery Pond. No flow to open pit. B4 Facility: 100% to B4 Sumps, B4 Pond B7 Facility: 30% to 95% to B7-S-02 10% to 45% to AP02 15% to 50% TSF 5% to 45% to AP01	SD 2-6 Surface Water Management
Site Infrastructure		
Multipurpose Pads	Constructed from Tiriganiaq greywacke-siltstone run of mine waste rock.	AEM
Roads	Constructed from Tiriganiaq greywacke-siltstone run of mine waste rock. Assumed width of 30 m. Length proportioned to each deposit area as a function of total catchment area.	Assumed. Road construction details unavailable at the time of this report
Waste Rock Piles		
Footprint growth	Piles are assumed to cover entire footprint area from start of pile operation.	Assumed. Waste Rock deposition phasing unknown at the time of this report
Waste Rock Composition	Varies by waste rock facility and year as shown in Table 4.	*Production Plan (2012-02-07) .xls* email from J. Noël, AEM, (13 February, 2012)

Table 13: Water Quality Assumptions – Water Treatment and Discharge

Property	Assumption/Comments	Source/Rationale
Salt Plant		
Treatment Rate	Months 19 to 67: Equal to the total inflow to B4 Pond (1,700 m^3/day to 9,900 m^3/day) Months 68 to 187: Equal to the inflow rate to the underground workings (varies from 424 m^3/day to 639 m^3/day), plus drilling fluid in flow (1,360 m^3/day). Treatment occurs year-round.	Underground water is pumped to B4 Pond until month 67. During that period all water in the pond is pumped to the Desalination plant for treatment. After month 67 it is assumed underground inflows are pumped directly to the desalination plant (a holding pond will likely be required to hold underground inflows for feed to the plant during this period). Treatment rate and storage of water prior to treatment will be updated when details are known.
Discharge	55% of the plant inflow volume is treated. Treated water is pumped to AP01, having the chemistry described in Section 3.2. Saline concentrate (45% of plant inflow) is stored in a virtual reservoir of infinite volume until the end of mine life. This volume is removed from the water balance.	Provided by AEM, M. Drapeau (Person. Commun., 30-May-2012.) Storage of saline concentrate to be updated when details are known.
TSF Treatment Plant		
Pumping Rate from TSF to AP01	Begins in October of Year 2. Rate of 12,599 m^3/day, during summer months, as required, to prevent overflow during operations. Beginning in Year 10, pumping rate is increased to 48,597 m^3/day, during summer months, as required, to reduce the capacity of the TSF to 10^6 m^3 by end of mine life. Treatment continues until tailings cover of tails is complete. Treated water is pumped to AP01 during the first summer of the closure period. In subsequent years treated water is pumped to Tiriganiaq pit to assist with pit flooding.	Calculated based on maximum capacity of the TSF, 2.9 x 10^6 m^3. Pumping rate is increased as TSF capacity is decreased to 10^6 m^3 by end of mine life.
Discharge	Treated water is discharged to AP01 prior to discharge to Meliadine Lake. Discharge occurs year round	SD 2-6 Surface Water Management

5.0 CLOSURE PLAN

A more detailed discussion of water management plans during mine closure is included in SD 2-6 Surface Water Management and SD 2-17 Mine Closure and Reclamation Plan. The following section outlines the aspects of the closure plan that pertain to water quality.

- Dewatering of the underground operations and salt treatment will terminate at the end of mine life;
- Treatment of TSF pond water is assumed to continue during the closure period until the water is completely drained from the pond and the engineered cover is placed over the entire surface area of the TSF. At this point it is assumed any runoff and/or seepages reporting from the facility will not require further treatment. Thus, treatment was assumed to continue for a period of 3 years following the end of mine life for modelling purposes. Adaptive management of mine water in closure will be used to determine actual treatment durations. The treated TSF water is pumped to AP01, for discharge to Meliadine Lake during the first year of closure, then to Tiriganiaq open pit to assist with flooding of the pit;
- Meliadine Lake water is sourced (pumped) to flood open pits along with treated TSF water for the Tiriganiaq open pit (following year one of closure);
- During pit flooding a chemical load is transferred to pit waters from exposed open pit walls and the pit floor. This load is calculated from kinetic test results and assumes the fracture system through which water can contact wall rock extends to a depth of 1 meter. Loading of chemicals from the open pit walls is assumed to stop once the walls are submerged due to pit flooding;
- F Zone Pits 1 and 2 and Pump Pit 2 are assumed to be partially backfilled with waste rock such that the final depth of the filled pit lakes is 20 metres. The F Zone pits 1 and 2 are assumed to be backfilled with A45-2 WRSF material, while Pump Pit 2 is assumed to be backfilled with B4 WRSF material (a combination of Wesmeg and Pump waste rock). In addition to chemical loading from pit walls described above, waste rock is also considered to contribute a load to water flooding the pits. Given the contrast in hydraulic conductivity between the pit walls and rock filled pit, water in pore spaces from the top 2 meters of rock fill is assumed to transfer its chemical load to the open water above the rock fill immediately upon flooding. The chemical load in the pore space below this level is assumed to remain in place. Chemical loading is assumed to be arrested following initial flooding of the rock;
- Ice formation and its effect on water quality is not accounted for in pit lake water quality modelling because inflows to the pit are anticipated to occur in the summer when pits are ice free. However, ice formation is expected to increase the concentration of dissolved elements in the free water during winter months. This could eventually lead to chemical stratification of pit lakes where denser, more chemically charged water may develop in time at the bottom of the flooded pit. Further assessment of potential pit lake water quality is being prepared under a separate cover; and,
- A cover system at closure was not considered for any WRSF. The water quality modeling completed is considered representative of WRSF that are not covered in the long term.

Closure results are included to provide a preliminary estimate of water quality following mine life, and reflect assumed steady state conditions at 13 years post-closure.

6.0 SUMMARY OF RESULTS

Water quality model results for the TSF water pond, open pits, waste rock piles and attenuation ponds are included in Tables C-2.1 to C-2.15 in Appendix C-2. Results represent dissolved parameter concentrations for elements that were present above detection limit in static and kinetic leaching tests (SD 6-3). To this effect, mercury was not modelled because all static leaching tests were below the analytical detection limits for mercury (which is lower than the Canadian Council of Ministers of the Environment (CCME) aquatic life water quality guidelines (CCME-aquatic life)). Thallium and silver were not modelled because most test results were below analytical detection limits with few exceptions. When detected, thallium and silver were well below CCME-aquatic life criteria.

Water quality predictions do not consider the effect that suspended solids (TSS) could have on total parameter concentrations in water. Dissolved parameter concentrations that are predicted to exceed the Metal Mine Effluent Regulation (MMER) criteria or the Canadian Council for Ministers of the Environment (CCME) aquatic life water quality guidelines are highlighted in bold font. The CCME-aquatic life guidelines are used for comparison purposes only since no site specific water quality criteria are available. Such criteria, and any other performance criteria, are expected to be developed during the water licensing process. .

Predicted concentrations are monthly mean values during operation, and summer time mean values at closure and post closure. Individual grab sample concentrations may vary from the monthly or summer averages predicted. Given the uncertainties associated with the modelling exercise and use of an average climate year in the water balance, the predicted concentrations are considered to be order-of-magnitude estimates. As such, concentrations that are predicted to be close but still meet the comparative criteria may exceed them on occasion or at times within a given month.

Figures 2 to 9 show time series plots of the main parameters of interest in water quality for the following waters: TSF pond water quality prior to treatment, TSF treated outflow to AP01, the salt plant inflow and treated outflow, and AP01 pond water quality (which is discharged to Meliadine Lake via an outfall diffuser) without further treatment other than possible TSS removal. Graphical peaks in pond water concentrations pertain to winter months when ice is formed at the surface, concentrating the free water below the ice (model months and corresponding calendar month and year are provided in the tables in Appendix C-2).

TSS were not considered in the mass load model, but the concentration of TSS is regulated in effluents and AEM has committed to meeting the MMER or Project limit effluent criteria for TSS as defined during the water licensing process. Based on experience at other arctic mine sites, it is anticipated that suspended solids will require monitoring and proper management. TSS can contribute to chemical loading of water (i.e., can increase the total concentration of chemicals). This was not accounted for in modelling; the water quality results are for dissolved components only.

Values of pH were not represented in the GoldSim mass load model. 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 pH values of all samples collected on site fall within the circum-neutral range (between 6.5 and 9.5) and are not expected to influence chemical speciation.

The concentration of explosives by-products (ammonia and nitrate) in site contact water is sensitive to the management of blasting agents during their use; the predicted concentrations of these parameters may vary depending on these practices.

6.1 Operation Phase

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 TSF pond water is expected to have an alkaline pH.

Open pit sump water quality for dissolved constituents is predicted to generally meet MMER criteria. Only arsenic concentrations are predicted to sporadically exceed CCME-aquatic life guidelines in all pit sumps. Aluminum is predicted to marginally exceed the CCME-aquatic life guideline during summer months in the Wesmeg, F Zone, Pump and Discovery pit sumps. Few additional parameters, including, copper, cadmium and fluoride show exceedances to CCME-aquatic life guidelines sporadically during summer months in the Discovery Pit. Higher sump water concentrations occur in June and July because of high pit inflows during the spring freshet and the subsequent evaporative losses during summer months. During summer months, water collected in the open pit sumps is assumed to be pumped to the TSF at a rate equal to the average annual spring melt volume distributed over a one month period. The combined runoff and spring melt in the month of June exceeds this potential pumping rate, resulting in small volumes of water that accumulate in the pit sumps during the months of June and July. During these months approximately 50% of the water accumulated in the pit sumps is lost to evaporation, increasing concentrations in the residual water.

WRSF drainage water quality is predicted to meet MMER criteria and shows fewer, more sporadic exceedances to CCME-aquatic life guidelines than open pit sumps, namely, arsenic at all WRSFs, aluminum in the B4 WRSF and marginal exceedances of cadmium at the Discovery WRSF.

The TSF pond water quality for dissolved constituents is predicted to exceed MMER effluent criteria for total cyanide and arsenic. The concentration of cadmium, chloride, copper, fluoride, lead and selenium are also predicted to exceed CCME water quality guidelines for aquatic life. This water is expected to require treatment before discharge to the receiving environment. A water treatment system is planned to attenuate cyanide, arsenic and copper, as a minimum. This treatment is likely to attenuate the concentration of other metals sensitive to pH adjustment but these are not accounted for in modelling. Treated TSF water will be discharged to AP01.

AP01 receives all site waters including TSF treated water and the salt plant treated discharges. It is the final contact water collection point prior to discharge to Meliadine Lake via a diffuser. All parameter concentrations are predicted to meet MMER criteria in AP01. Arsenic, cadmium, copper and selenium are predicted to exceed CCME-aquatic life guidelines on a seasonal basis. Fluoride and lead concentrations are predicted to marginally and intermittently exceed CCME-aquatic life guidelines. Lead marginally exceeds CCME-aquatic life guidelines on a single occasion. Chloride concentrations in AP01 also exceed the CCME-aquatic life guidelines. Chloride concentrations are predicted to be higher than the salt plant effluent concentrations due to the recirculation of TSF pond water in the mill. Sodium and chloride are introduced in process water effluent from the mill from moisture in the ore which is assumed to have the saline chemistry of underground inflows.

Model results of effluent mixing in Meliadine Lake are presented in a separate document.

6.2 Closure and Post-Closure Phases

The water quality in fully flooded open pit lakes at closure is predicted to meet CCME-aquatic life guidelines during summer months until the end of the modelling period (13 years post-closure). Some exceedances may

persist in pit lake water during the early flooding period (early in the closure period) when the waters are still confined to within the open pit. Although not considered in closure modelling for the pit lakes, ice formation during winter months may cause CCME-aquatic life exceedances in remaining free water during this period. Given the preliminary nature of the closure plans, verification monitoring is recommended during closure to document pit lake water quality as they flood.

Modelled water quality concentrations in AP01 in the closure phase and H17 in the post-closure phase are presented in Table C-2.2 in Appendix C-2. At the initiation of the closure phase (the first few months), modelled concentrations arsenic, chloride, fluoride, cadmium, copper, lead and selenium, exceed CCME-aquatic life guidelines. Elevated concentrations at this time are related to groundwater and / or mine contact water inflows. At the end of the first year of the closure phase, values of these parameters are reduced to below CCME-aquatic life guidelines. Modelled concentrations in H17 (formerly AP01 during the operations and closure phases) decrease throughout the first 4 years of the post-closure phase. Following these initial decreases, concentrations do not vary from year to year. During the winter months of the closure and post-closure phases, water volumes in AP01/H17 are low, such that the pond is expected to freeze to the bottom. As no free water would be available under this condition, no discharge is expected, no water quality estimates are provided and model results are not shown in Table C-2.2 for these phases.

Monitoring at AP01/ H17 will be carried out during closure and post-closure phases. Water in AP01 will be managed to ensure any discharge criteria established through the water licensing process for the Project are met.

WRSF drainage water quality during closure, should drainage occur, is predicted to meet most CCME aquatic life parameter concentrations except for arsenic which is predicted to marginally exceed the guideline (by less than 10 times the guideline). Cadmium is also predicted to marginally exceed the CCME aquatic life guidance concentration in Discovery WRSF drainage water. It is noted that the CCME-aquatic life criteria is not the adopted criteria for closure performance. It is anticipated that surface water quality criteria (parameters, limits and monitoring locations) for the WRSF in closure will be established through the water licensing process.

The WRSF contact water system will be maintained in closure until water quality monitoring demonstrates that water reporting from these facilities is acceptable for direct release to the environment. Once water quality is acceptable for direct release based on criteria established through the water licensing process, contact water channels and sumps will be removed and a layer of chemically suitable rock will be placed over sediment in the sumps to prevent dusting and erosion.

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, and the internal characteristics of the piles themselves (e.g., temperature, degree of saturation, presence of ice). This 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.

Given the complex interplay of climate, rock geochemical processes, and pile characteristics, several simplifying and conservative assumptions were made in the modelling process. The water quality predictions presented in this plan are a reflection of these assumptions. While it is believed that the modelling approach and resulting water quality predictions presented herein are justified and appropriate for evaluating potential impacts associated with the Project, actual contact water quality during pre-development, construction, operations, closure and post-closure may differ from predictions. As such, the management of contact water on site will need to be adaptive.

Water quality monitoring will be completed during pre-development, construction, operations, closure and post-closure to monitor the contribution of specific infrastructure components (including the WRSF) to the overall site water quality (see Section 8.0 of SD 2-6 Surface Water Management Plan). The water quality monitoring, will be used to support the closure planning process, and to update and reassess, as needed, water quality model results. The water quality data collected will be compared to the predictive modelling results to identify if and where additional mitigation and management strategies may be required. The intent of the closure planning process is to develop a final plan using adaptive management. The use of adaptive management will enable the closure plan to evolve as new information becomes available through analysis, testing, monitoring, and progressive reclamation.

7.0 CLOSURE

We trust the information provided herein is sufficient for your present needs. Should you have any questions or concerns, please do not hesitate to contact the undersigned.

GOLDER ASSOCIATES LTD.

ORIGINAL SIGNED

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Environmental Consultant

ORIGINAL SIGNED

Valérie Bertrand, M.Sc.A., P.Geol. (NT/NU)
Associate, Geochemist

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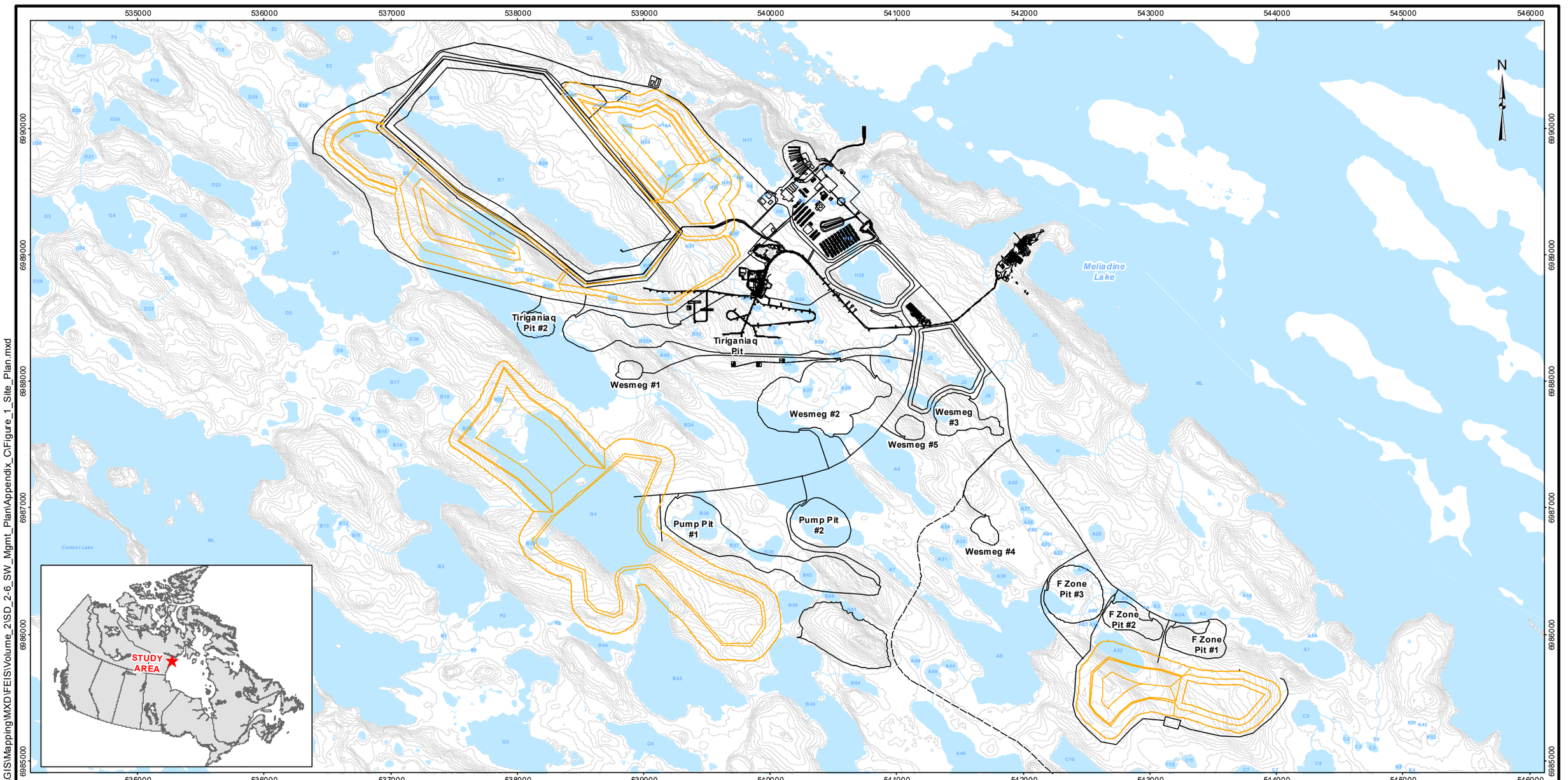
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LEGEND

- All-weather Access Road (AWAR)
- Proposed Project Infrastructure
- Topographic Contour (1.0 m Interval above sea level)
- Watercourse
- Waste Rock Storage Facility
- Waterbody

REFERENCE

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

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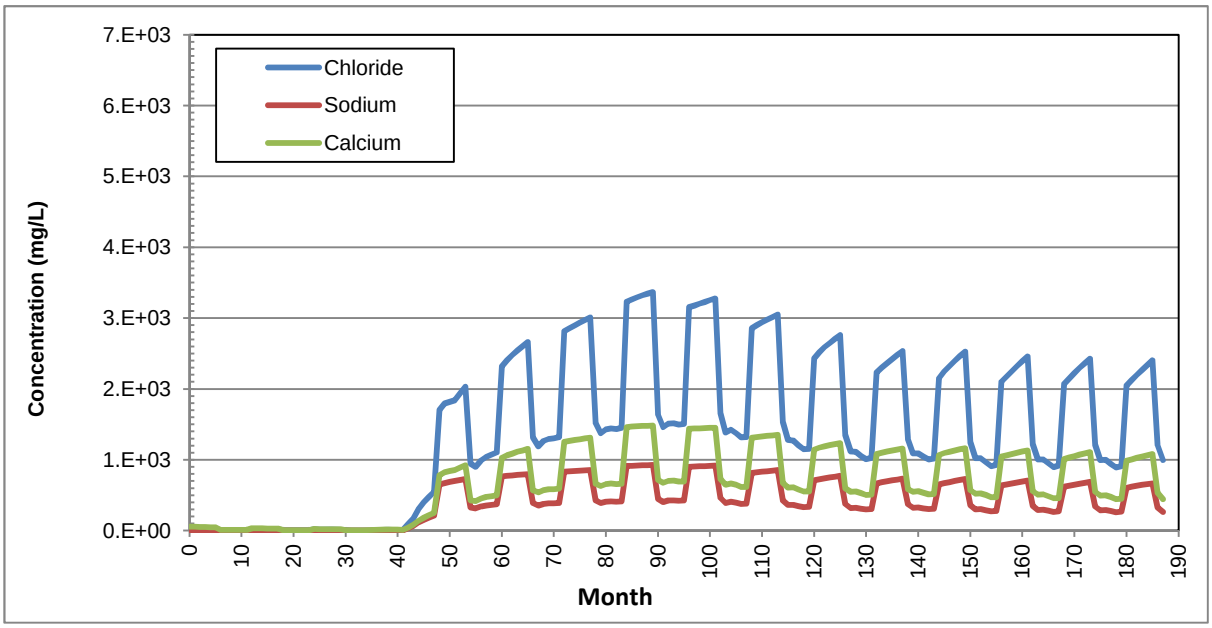
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MELIADINE GOLD PROJECT
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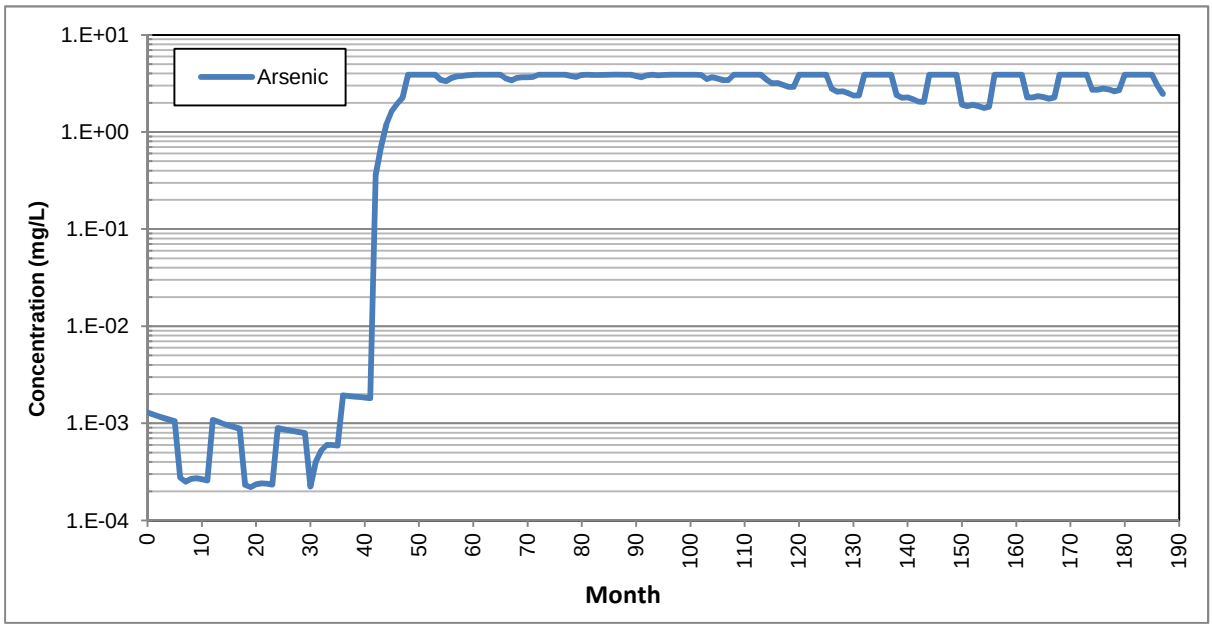
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Golder Associates

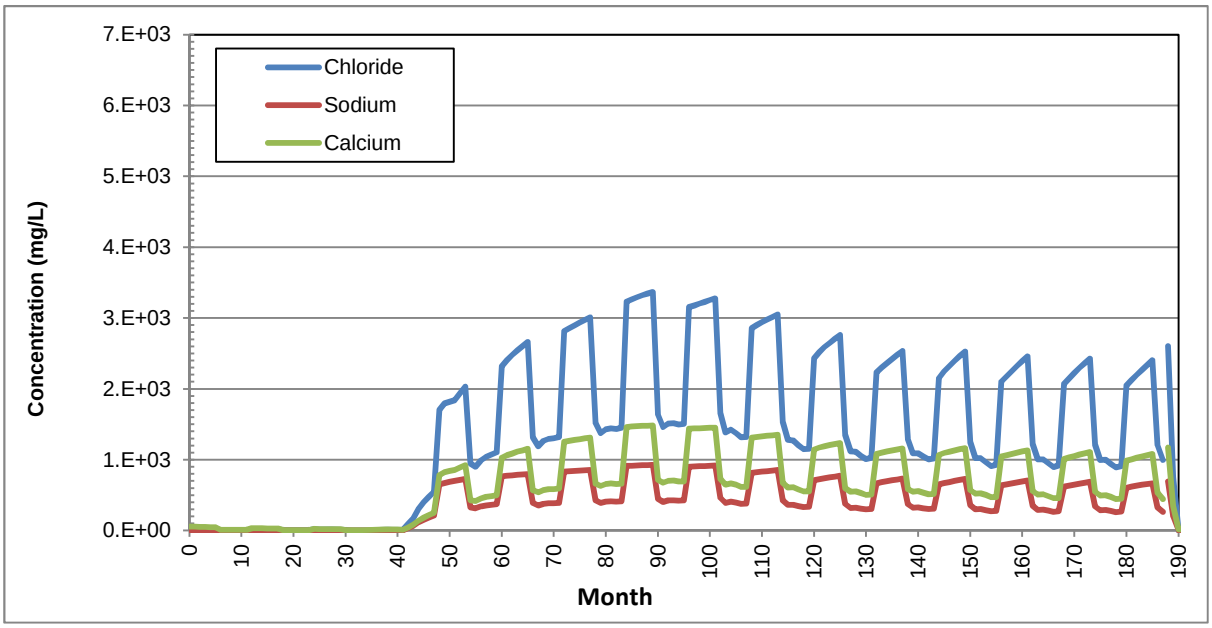
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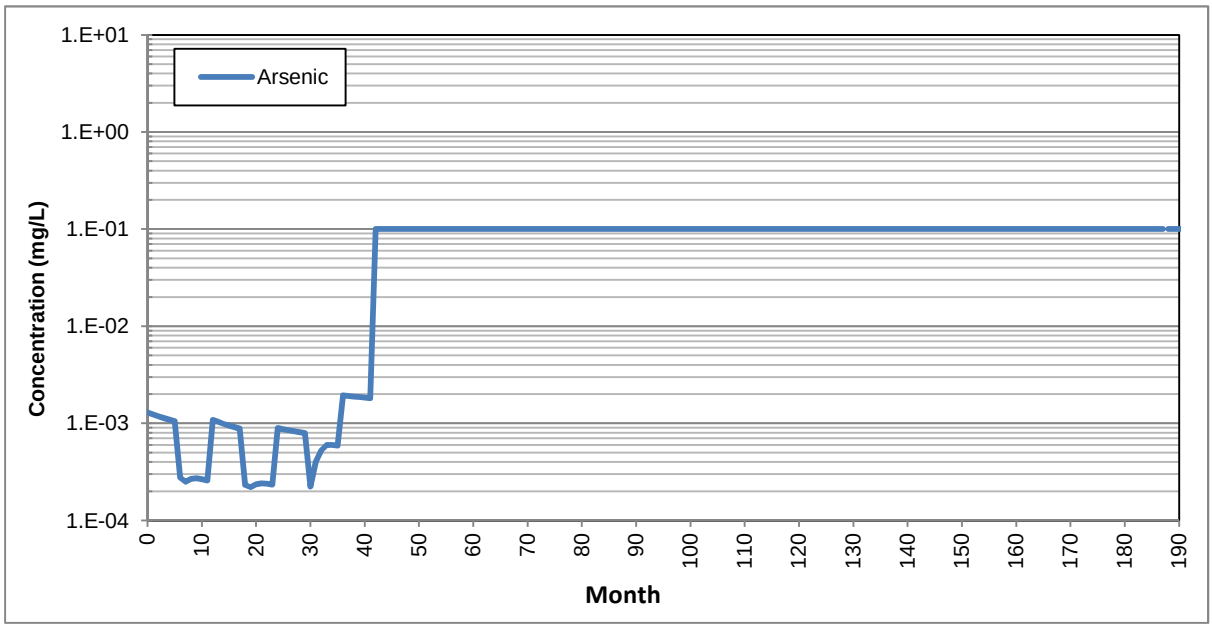
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Golder Associates			**Water Quality Model Results** **Tailings Storage Facility - Untreated Pond Water**
Prepared	MIB	Date	January 2013
Checked	VJB	Project N°	10-1373-0076
Reviewed	DRW	Figure	**2**
			Meliandine Gold Project **Agnico-Eagle Mines Limited**





Golder Associates

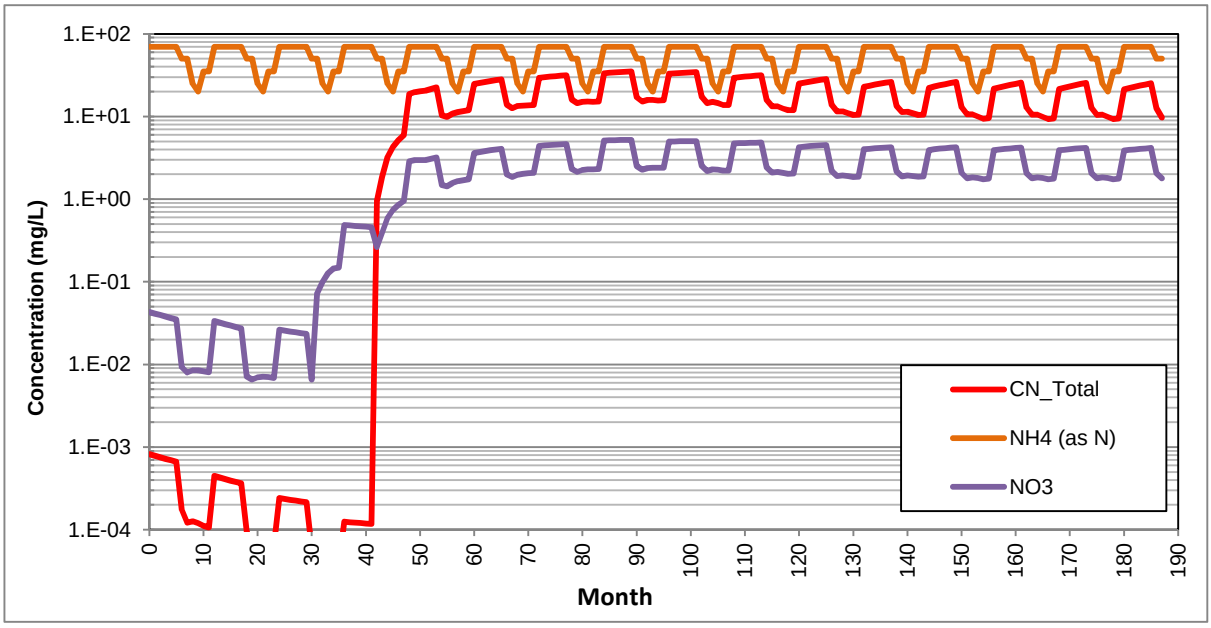
Water Quality Model Results

Tailings Storage Facility - Treated Outflow

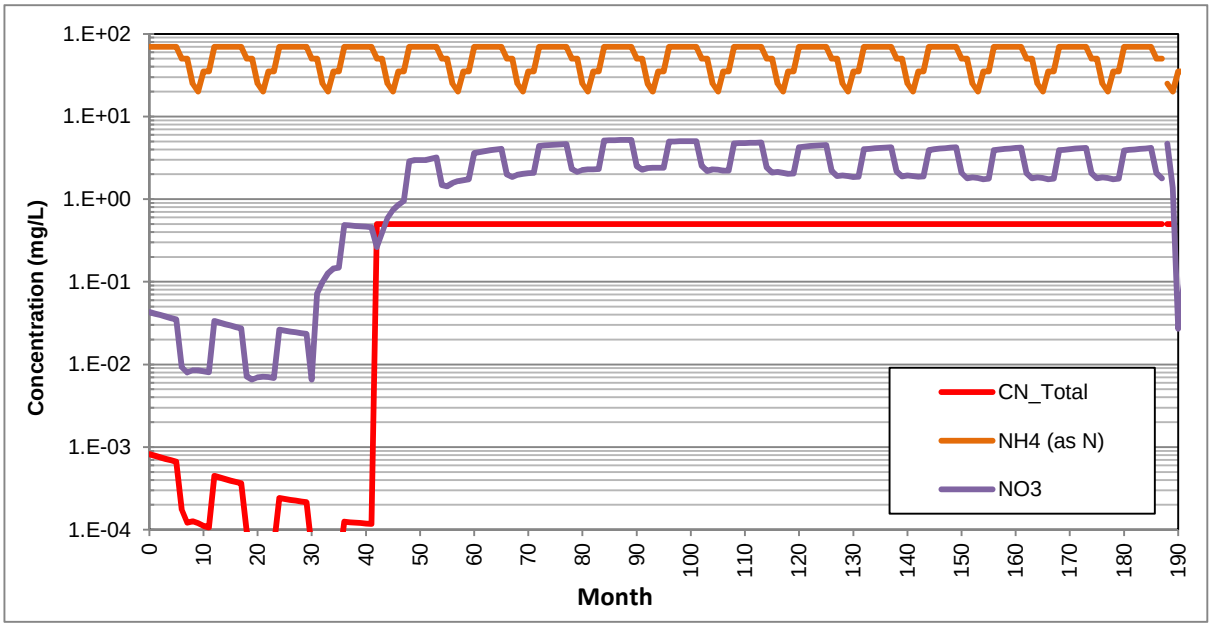
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Checked	VJB	Project N°	10-1373-0076
Reviewed	DRW	Figure	**3**

Meliandine Gold Project

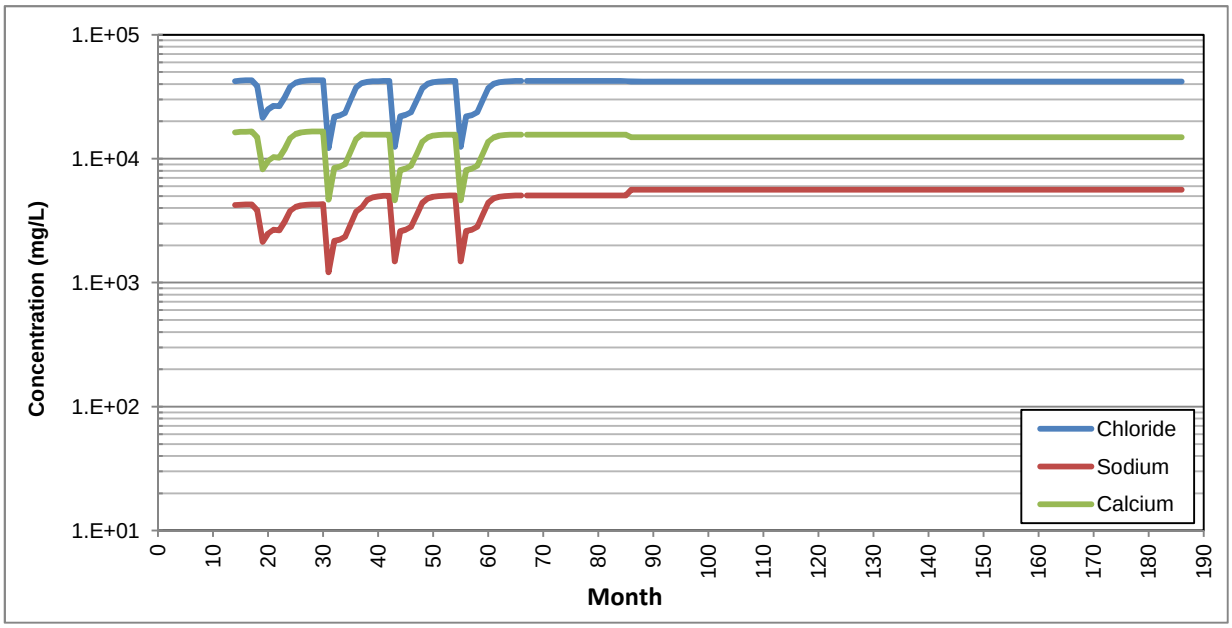
Agnico-Eagle Mines Limited

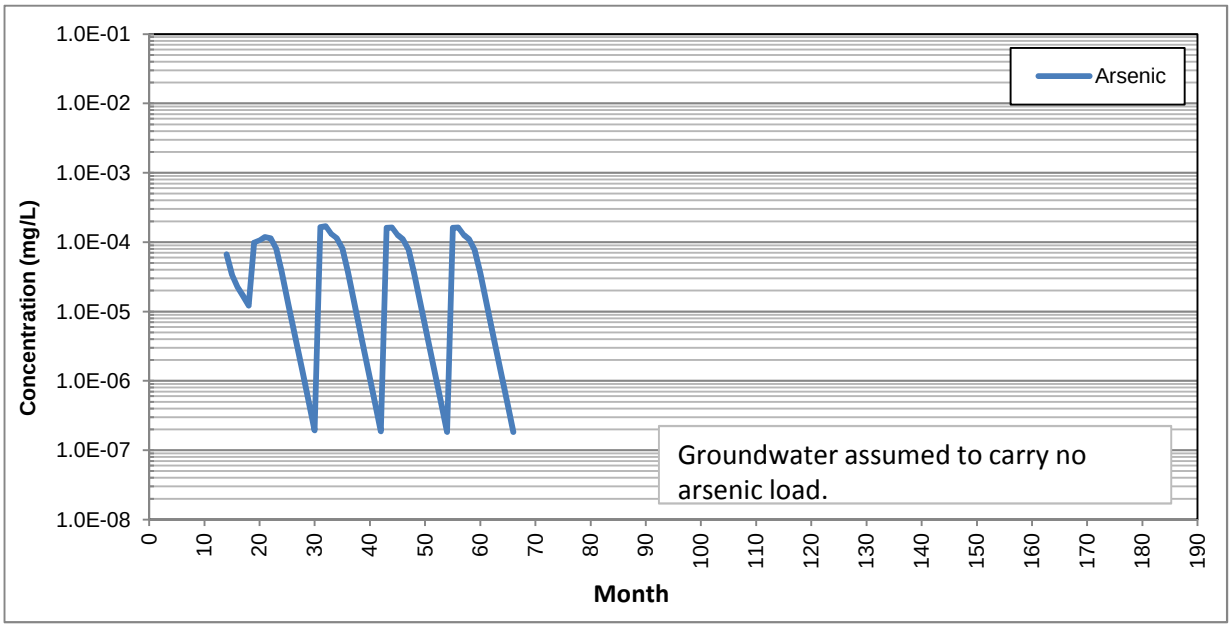


Golder Associates			**Water Quality Model Results** **Tailings Storage Facility - Untreated Pond Water**
Prepared	MIB	Date	January 2013
Checked	VJB	Project N°	10-1373-0076
Reviewed	DRW	Figure	**4**
			Meliandine Gold Project **Agnico-Eagle Mines Limited**



Golder Associates			**Water Quality Model Results** **Tailings Storage Facility - Treated Outflow**
Prepared	MIB	Date	January 2013
Checked	VJB	Project N°	10-1373-0076
Reviewed	DRW	Figure	**5**
			Meliandine Gold Project **Agnico-Eagle Mines Limited**



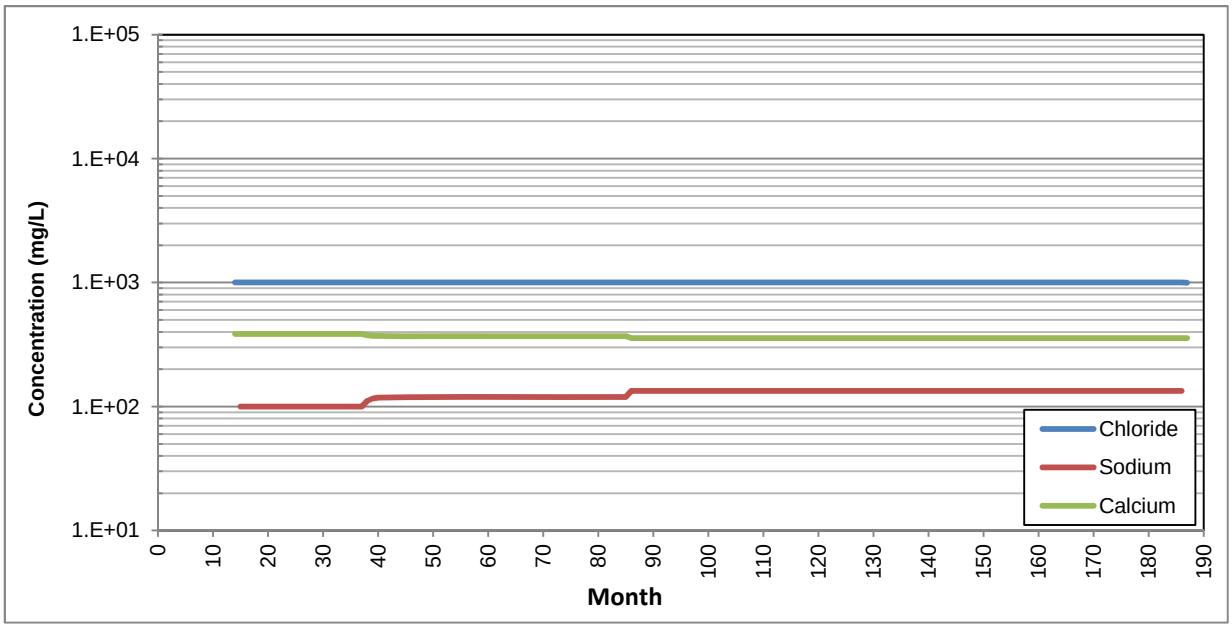


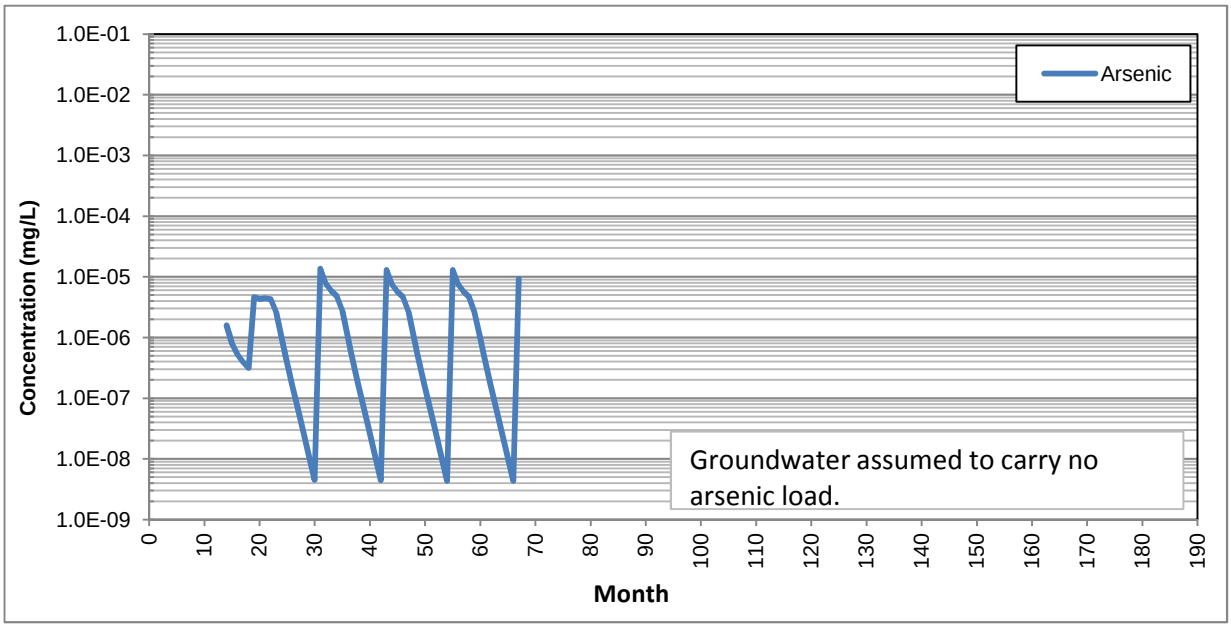
From month 8 to month 67, water pumped from the underground is sent to Lake B4 prior to treatment. During summer months, the groundwater is mixed with non-saline runoff water. After month 67, groundwater is sent directly to the salt plant as Lake B4 becomes occupied by the B4 Rock Storage Facility. No mixing with non-saline water occurs after month 67.

Golder Associates			**Water Quality Model Results Groundwater Outflow (Salt Plant Inflow)**
Prepared	MIB	Date	January 2013
Checked	VJB	Project N°	10-1373-0076
Reviewed	DRW	Figure	**6**

Meliandine Gold Project

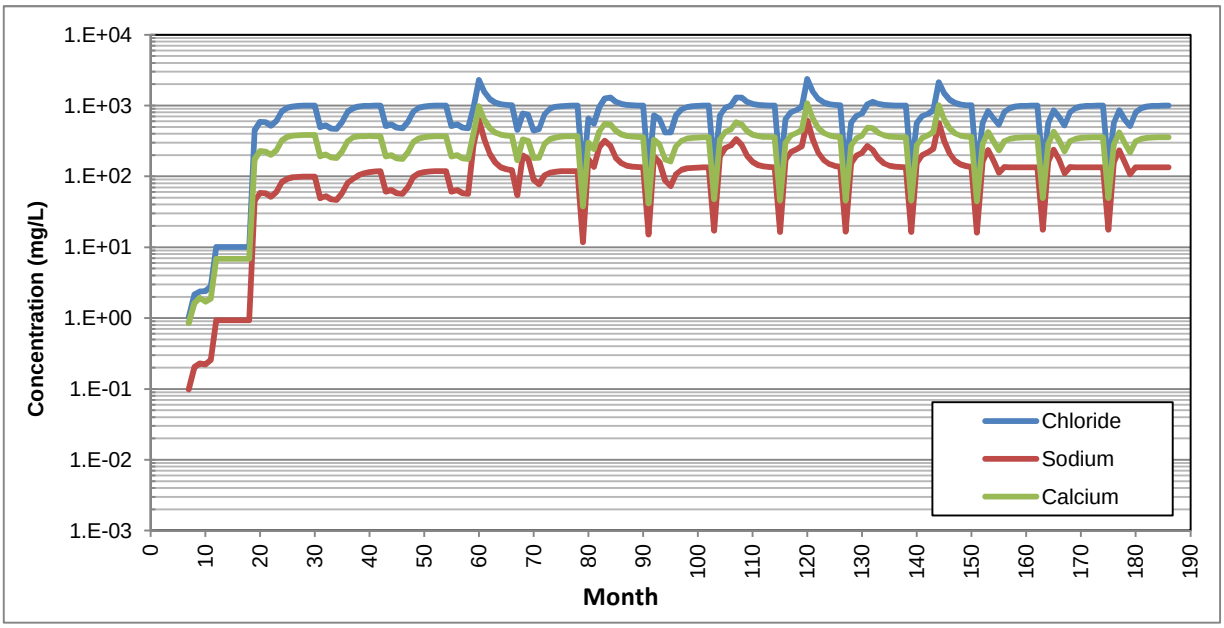
Agnico-Eagle Mines Limited

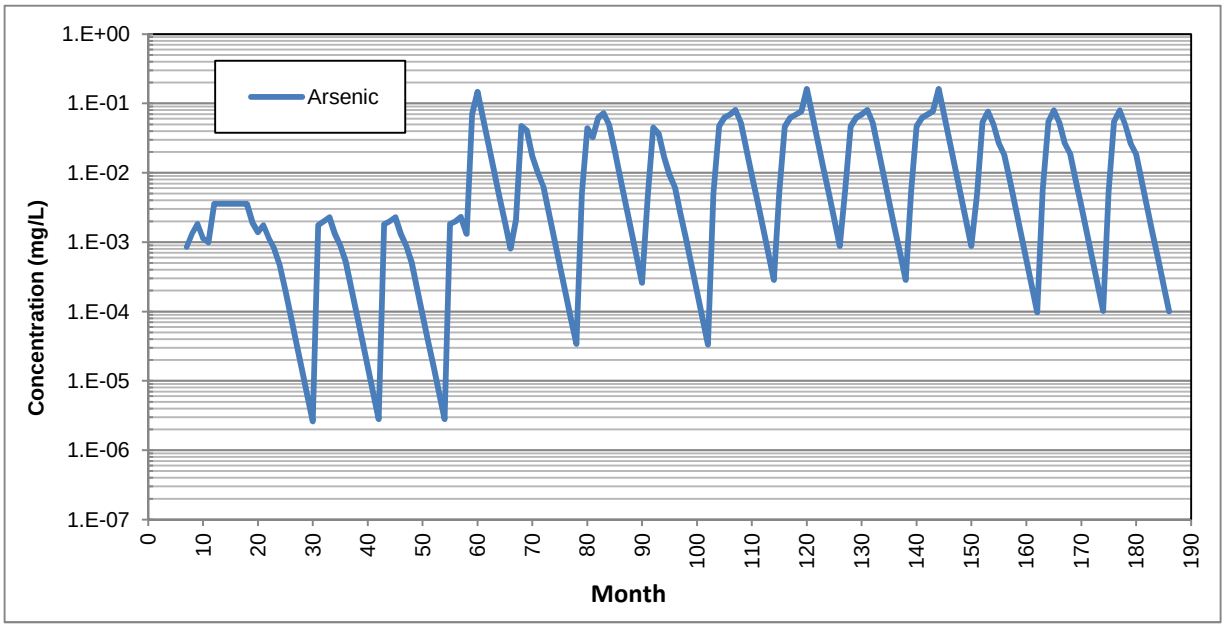




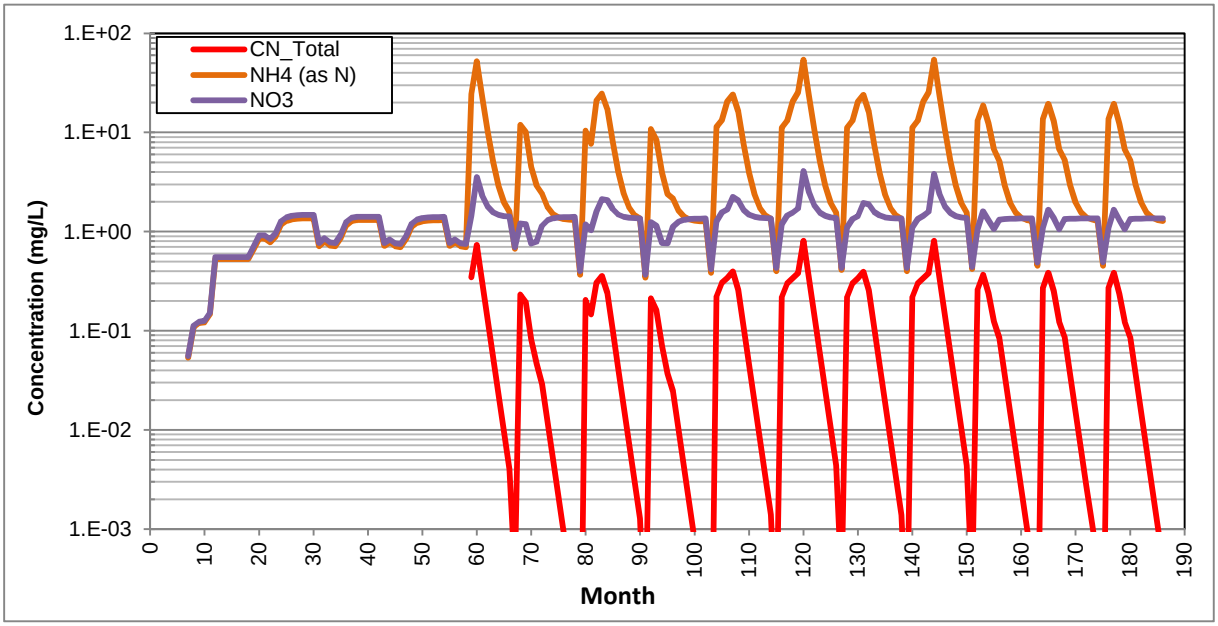
From month 8 to month 67, water pumped from the underground is sent to Lake B4 prior to treatment. During summer months, the groundwater is mixed with non-saline runoff water. After month 67, groundwater is sent directly to the salt plant as Lake B4 becomes occupied by the B4 Rock Storage Facility. No mixing with non-saline water occurs after month 67.

Golder Associates			**Water Quality Model Results** **Salt Plant Outflow** **(Treated to 1000 mg/L Chloride)**
Prepared	MIB	Date	January 2013
Checked	VJB	Project N°	10-1373-0076
Reviewed	DRW	Figure	**7**
			Meliandine Gold Project **Agnico-Eagle Mines Limited**





Golder Associates			**Water Quality Model Results** **Attenuation Pond 1 Water Quality for Discharge to Meliadine Lake**
Prepared	MIB	Date	January 2013
Checked	VJB	Project N°	10-1373-0076
Reviewed	DRW	Figure	**8**
			Meliandine Gold Project **Agnico-Eagle Mines Limited**



Golder Associates			**Water Quality Model Results** **Attenuation Pond 1 Water Quality for Discharge to Meliadine Lake**
Prepared	MIB	Date	January 2013
Checked	VJB	Project N°	10-1373-0076
Reviewed	DRW	Figure	**9**
			Meliandine Gold Project **Agnico-Eagle Mines Limited**

APPENDIX C-1

Water Quality Input Parameters

April 2014
Report No. Doc 319-1314280007 Ver. 0

Table C-1.1
Water Quality Input Parameters
Mine Site Flows
Meliadine Gold Project

		Non-Contact Runoff	Groundwater	Drilling Fluid	Meliadine Lake	B5 Lake	B7 Lake	Grey Water
Source Data		Average of samples from B6-7 Stream (Baseline Water Quality Database 1997-2011)	Average of Groundwater Samples (DEIS, Volume 7, Appendix 7.2-A)	Average of Brine (DEIS, Volume 7, Appendix 7.2-A)	Average of samples from Meliadine Lake (Baseline Water Quality Database 1997-2011)	Average of samples from B5 Lake (Baseline Water Quality Database 1997-2011)	Average of samples from B7 Lake (Baseline Water Quality Database 1997-2011)	Expected effluent from BioNest
Parameter	**Unit**							
pH	--			--				
Total Dissolved Solids	mg/L	3.5E+01	6.1E+04	8.7E+04	3.0E+01	8.0E+01	1.4E+02	--
Alkalinity as CaCO3	mg/L	2.1E+01	4.9E+01	5.7E+01	1.7E+01	6.9E+01	8.0E+01	--
Chloride	mg/L	4.2E+00	3.2E+04	4.7E+04	6.9E+00	1.1E+01	2.9E+01	--
Fluoride	mg/L	---	*<2.5*	3.5E-02	---	---	---	--
Dissolved Silicon (Si)	mg SiO2/L	0.0E+00	4.4E+00	0.0E+00	--	1.3E+00	2.8E+00	--
Sulphate	mg/L	2.2E+00	3.4E+03	1.1E+01	2.7E+00	5.4E+00	5.1E+00	--
CN, total	mg/L	*<6*	---	---	*<2*	9.4E-04	8.6E-04	--
Total Ammonia-N	mg N /L	1.9E-02	75.8 [1]	75.8 [1]	1.9E-02	4.4E-02	1.3E-01	1.0E+01
Nitrate as N	mg N /L	6.1E-03	83.4 [2]	83.4 [2]	1.9E-02	1.7E-02	4.5E-02	--
Nitrite as N	mg N /L	--	*<0.1*	*<1*	--	--	--	--
Nitrate + Nitrite	mg N /L	5.7E-03	*<0.1*	*<0.1*	2.1E-02	2.0E-02	4.8E-02	1.5E+01
TKN	mg/L	3.4E-01	---	---	2.2E-01	5.3E-01	8.5E-01	--
Dissolved Phosphorus (P)	mg/L	4.1E-03	*<10*	*<5*	4.1E-03	6.9E-03	7.1E-03	5.5E+00
Phosphate	mg P /L	5.7E-04	---	---	1.2E-03	1.0E-03	6.9E-04	--
Dissolved Aluminum (Al)	mg/L	8.3E-04	6.1E-01	*<0.3*	2.2E-03	3.1E-03	5.5E-03	--
Dissolved Antimony (Sb)	mg/L	*<0.5*	*<0.05*	*<0.03*	*<0.5*	*<0.5*	*<0.5*	--
Dissolved Arsenic (As)	mg/L	2.3E-04	*<0.1*	*<0.05*	2.5E-04	2.2E-03	1.4E-03	--
Dissolved Barium (Ba)	mg/L	3.3E-03	*<0.2*	1.0E-01	6.2E-03	1.0E-02	5.9E-02	--
Dissolved Beryllium (Be)	mg/L	*<1*	*<0.05*	*<0.03*	*<1*	*<1*	*<1*	--
Dissolved Bismuth (Bi)	mg/L	*<0.05*	*<0.1*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	--
Dissolved Boron (B)	mg/L	1.7E-02	4.2E+00	6.3E+00	3.0E-03	3.8E-03	3.4E-03	--
Dissolved Cadmium (Cd)	mg/L	*<0.05*	*<0.01*	*<0.005*	*<0.05*	1.7E-05	1.5E-05	--
Dissolved Calcium (Ca)	mg/L	2.4E+00	9.4E+02	2.2E+04	2.0E+00	2.5E+01	6.0E+01	--
Dissolved Chromium (Cr)	mg/L	*<4*	*<0.5*	*<0.3*	6.7E-04	*<4*	1.8E-03	--
Dissolved Cobalt (Co)	mg/L	*<0.3*	*<0.05*	*<0.03*	*<0.3*	8.3E-05	0.0E+00	--
Dissolved Copper (Cu)	mg/L	1.7E-04	*<0.1*	*<0.05*	1.2E-03	1.1E-03	1.3E-03	--
Dissolved Iron (Fe)	mg/L	1.3E-02	5.0E+00	*<5*	7.0E-03	3.6E-02	4.8E-02	--
Dissolved Lead (Pb)	mg/L	8.3E-05	*<0.05*	*<0.03*	1.7E-04	1.2E-04	1.3E-04	--
Dissolved Lithium (Li)	mg/L	*<5*	2.2E+00	2.1E+01	*<5*	4.0E-03	2.3E-02	--
Dissolved Magnesium (Mg)	mg/L	2.6E-01	2.1E+03	4.5E+00	4.4E-01	3.2E+00	5.8E+00	--
Dissolved Manganese (Mn)	mg/L	1.3E-03	6.7E-01	*<0.1*	1.2E-03	8.0E-02	7.5E-02	--
Dissolved Mercury (Hg)	mg/L	*<0.02*	*<0.0001*	-	*<0.02*	*<0.02*	*<0.02*	--
Dissolved Molybdenum (Mo)	mg/L	1.7E-04	*<0.05*	*<0.03*	2.8E-04	2.9E-04	2.7E-04	--
Dissolved Nickel (Ni)	mg/L	1.7E-04	*<0.1*	*<0.1*	5.2E-04	1.2E-03	2.2E-03	--
Dissolved Potassium (K)	mg/L	1.6E-01	3.3E+02	8.1E+02	3.7E-01	1.8E+00	3.3E+00	--
Dissolved Selenium (Se)	mg/L	4.3E-04	*<0.2*	*<0.002*	*<0.1*	*<0.1*	*<0.1*	--
Dissolved Silver (Ag)	mg/L	*<0.02*	*<10*	*<0.005*	*<0.02*	*<0.02*	*<0.02*	--
Dissolved Sodium (Na)	mg/L	3.8E-01	1.6E+04	4.9E+02	1.8E+00	6.3E+00	8.5E+00	--
Dissolved Strontium (Sr)	mg/L	--	6.3E+01	3.5E+02	2.5E-02	5.1E-02	3.6E-01	--
Dissolved Tellurium (Te)	mg/L	---	*<0.005*	*<0.05*	---	---	---	--
Dissolved Thallium (Tl)	mg/L	*<0.2*	*<0.005*	*<0.003*	*<0.2*	*<0.2*	*<0.2*	--
Dissolved Tin (Sn)	mg/L	*<0.3*	*<0.1*	*<0.05*	*<0.5*	*<0.5*	*<0.5*	--
Dissolved Titanium (Ti)	mg/L	*<10*	*<0.5*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	--
Dissolved Tungsten (W)	mg/L	--	*<0.1*	*<0.05*	---	---	---	--
Dissolved Uranium (U)	mg/L	*<0.2*	*<0.01*	*<0.005*	6.3E-05	5.5E-05	7.7E-05	--
Dissolved Vanadium (V)	mg/L	1.7E-04	*<0.05*	6.0E-02	3.0E-04	*<1*	*<1*	--
Dissolved Zinc (Zn)	mg/L	8.3E-04	*<0.5*	*<0.3*	1.5E-03	3.1E-03	1.6E-03	--
Dissolved Zirconium (Zr)	mg/L	---	*<0.1*	*<0.05*	---	---	---	--

Notes:
--'=parameter not analyzed, concentration of 0 mg/L used as model input

Parameters for which all results <Method Detection Limit. Maximum Method Detection Limit shown. Concentration of 0 mg/L input to model.

[1] Annual Average concentration a LaRonde Mine

[2] 1.1 x Ammonia Nitrate Concentration based on the molecular ratio of nitrate to ammonia in explovies products

Table C-1.2
Lithological Loading Rates for Waste Rock
Meliadine Gold Project

	Deposit	Discovery			F-Zone		Pump		Tiriganiaq				Wesmeg	
	Rock Type	Greywacke-siltstone	Iron formation	UOTIR	Iron formation	Mafic volcanic	Iron formation	Mafic volcanic	Greywacke-siltstone	Iron formation	UOTIR	Mafic volcanic	Mafic volcanic	Ultra mafic
Parameter (Unit)	**Unit**													
pH	pH unit	7.4	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
Total Dissolved Solids	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Alkalinity as CaCO3	mg/kg/wk	7.0	13	8.1	13	6.5	16	17	6.6	10	7.3	6.5	17	26
Chloride	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Fluoride	mg/kg/wk	0.02	0.03	0.02	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Silicon (Si)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Sulphate	mg/kg/wk	3.3	2.5	3.2	8.0	2.5	69	30	2.2	2.1	2.1	1.9	29	40
CN, total	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Ammonia-N	mg/L	**0.66** [1]												
Nitrate as N	mg/L	**0.73** [2]												
Nitrite as N	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Nitrate + Nitrite	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
TKN	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Phosphorus (P)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Phosphate	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Aluminum (Al)	mg/kg/wk	0.01	0.03	0.01	0.003	0.02	0.007	0.04	0.02	0.03	0.02	0.02	0.05	0.1
Dissolved Antimony (Sb)	mg/kg/wk	6.0E-05	0.0001	7.4E-05	0.0005	0.0004	*0*	0.0007	0.0004	3.7E-05	0.0003	0.0003	0.0010	0.0003
Dissolved Arsenic (As)	mg/kg/wk	0.01	0.002	0.01	0.0004	0.006	5.0E-05	0.010	0.007	0.0006	0.006	0.005	0.02	0.04
Dissolved Barium (Ba)	mg/kg/wk	0.002	0.01	0.004	0.005	0.004	0.0002	0.002	0.001	0.0009	0.001	0.0005	0.001	0.001
Dissolved Beryllium (Be)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Bismuth (Bi)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Boron (B)	mg/kg/wk	0.0005	0.001	0.0007	0.002	0.0008	0.002	0.003	0.0003	0.0005	0.0004	0.0004	0.001	*0*
Dissolved Cadmium (Cd)	mg/kg/wk	2.2E-05	*0*	1.8E-05	6.6E-07	3.2E-07	*0*	*0*	1.5E-06	*0*	1.2E-06	9.2E-08	3.0E-07	*0*
Dissolved Calcium (Ca)	mg/kg/wk	2.1	3.7	2.4	6.8	2.2	21	1.1	2.2	3.9	2.5	2.0	1.3	0.7
Dissolved Chromium (Cr)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Cobalt (Co)	mg/kg/wk	0.0001	2.0E-05	0.0001	0.0001	4.0E-05	3.0E-05	4.1E-05	0.0001	1.0E-05	0.0001	5.2E-05	0.0002	8.6E-05
Dissolved Copper (Cu)	mg/kg/wk	8.7E-05	*0*	7.0E-05	*0*	1.3E-05	*0*	*0*	6.2E-05	*0*	5.0E-05	7.1E-05	8.8E-05	*0*
Dissolved Iron (Fe)	mg/kg/wk	0.001	0.002	0.001	0.002	0.0001	*0*	0.001	0.001	*0*	0.001	0.001	*0*	*0*
Dissolved Lead (Pb)	mg/kg/wk	2.9E-05	*0*	2.4E-05	8.2E-06	3.9E-06	*0*	2.5E-06	1.1E-05	9.8E-06	1.1E-05	9.6E-06	1.6E-05	9.9E-06
Dissolved Lithium (Li)	mg/kg/wk	0.0003	0.003	0.0007	*0*	0.0003	*0*	*0*	6.0E-05	*0*	4.9E-05	7.3E-05	*0*	*0*
Dissolved Magnesium (Mg)	mg/kg/wk	0.2	0.2	0.2	1.0	0.6	2.6	0.5	0.6	0.4	0.5	0.7	0.8	1.4
Dissolved Manganese (Mn)	mg/kg/wk	0.001	0.002	0.001	0.2	0.02	0.02	0.01	0.004	0.004	0.004	0.004	0.02	0.006
Dissolved Mercury (Hg)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Molybdenum (Mo)	mg/kg/wk	0.0004	1.2E-05	0.0003	1.5E-05	2.5E-05	3.2E-05	3.2E-05	0.0002	3.0E-05	0.0001	5.1E-05	3.6E-05	*0*
Dissolved Nickel (Ni)	mg/kg/wk	0.0003	*0*	0.0002	0.0001	0.0001	*0*	*0*	0.0001	*0*	0.0001	7.2E-05	0.0001	*0*
Dissolved Potassium (K)	mg/kg/wk	0.5	2.5	0.9	0.2	0.5	0.03	0.9	0.3	0.2	0.3	0.08	0.4	0.2
Dissolved Selenium (Se)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Silver (Ag)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Sodium (Na)	mg/kg/wk	0.07	0.08	0.07	0.08	0.1	0.02	0.1	0.06	0.006	0.05	0.04	0.08	0.06
Dissolved Strontium (Sr)	mg/kg/wk	0.007	0.03	0.01	0.008	0.005	0.006	0.007	0.01	0.03	0.02	0.009	0.01	0.02
Dissolved Tellurium (Te)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Thallium (Tl)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Tin (Sn)	mg/kg/wk	4.0E-05	0.0002	6.4E-05	0.0002	4.4E-05	9.2E-05	0.0002	8.1E-05	0.0002	0.0001	9.0E-05	0.0003	0.0001
Dissolved Titanium (Ti)	mg/kg/wk	7.8E-05	*0*	6.4E-05	*0*	2.2E-05	2.5E-05	*0*	4.6E-05	*0*	3.8E-05	2.9E-05	2.9E-05	*0*
Dissolved Tungsten (W)	mg/kg/wk	2.0E-05	0.0001	3.5E-05	4.9E-06	1.9E-05	*0*	1.2E-05	7.3E-06	1.5E-05	8.8E-06	5.8E-06	3.6E-05	1.0E-04
Dissolved Uranium (U)	mg/kg/wk	0.0003	0.0005	0.0003	0.0002	2.1E-05	3.8E-05	8.3E-05	0.0001	6.4E-05	0.0001	8.3E-06	0.0001	1.6E-05
Dissolved Vanadium (V)	mg/kg/wk	0.0001	4.8E-05	0.0001	1.8E-05	0.0001	*0*	0.0003	4.2E-05	*0*	3.4E-05	4.7E-05	0.0002	0.001
Dissolved Zinc (Zn)	mg/kg/wk	0.0003	0.001	0.0005	0.002	8.2E-05	0.001	*0*	0.0001	*0*	1.0E-04	3.1E-05	0.0002	*0*
Dissolved Zirconium (Zr)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Notes:

Parameter not analyzed or all results <Method Detection Limit, loading rate set to 0 mg/kg/wk

Fixed concentration applied to all flows

[1] Average of summer concentrations in open pit at Meadowbank Mine

[2] 1.1 x Ammonia Nitrate Concentration based on the molecular ratio of nitrate to ammonia in explovies products

Table C-1.3
Sample Proportion Contribution to Loading Rate Calculations by Rock Type
Meliadine Gold Project

Deposit	Rock Type	Sample ID	Sample Proportion Contribution to Loading Rate by Rock Type
Discovery	Greywacke/ Siltstone	ML08-232-01 ML95-83-02 ML90-14-2 ML92-061-01 ML95-82-1	average, weighted at 25%
		Column 6 Disc GW (OP)	75%
	Iron Formation	ML08-226-02 ML95-82-01 ML95-95-01	average, 100%
	UOTIR	average GW average IF	81% 19%
F Zone	Iron Formation	M09-802-02 M10-935-02 M98-248-01	average, 100%
	Mafic Volcanic	M08-733-01 M09-859-01 M08-740-05 M08-750-03 M08-734-03	average, weighted at 25%
		Column 5 F-Zone MV (OP)	75%
Pump	Iron Formation	W94-61-01 W94-73-02	average
	Mafic Volcanic	M96-58-02 M97-123-01 M97-124-01 M98-184-01	average, 100%
	14% IF 86% MV	C-7 Pump	n/a
Tiriganiaq	Greywacke/Siltstone	M03-508-01 M06-623-01 M06-625-01 M97-95-02 M98-194-01 M99-403-03 M04-533-01	average, weighted at 25%
		Column 1 Tiri GW OP E	22%
		Column 2 Tiri GW OP W	22%
		Column 3 Tiri GW UG (All)	31%
		WR1 WR2	0% 0%
	Iron Formation	M04-526-01 M96-74-01	75% 25%
	Mafic Volcanic	M99-409-05 GT08-04-02 M05-536A-01 M97-141-01	average, weighted at 25%
		Column 4 Tiri MV UG (All)	75%
	UOTIR	average GW average IF	81% 19%
Wesmeg	Mafic Volcanic	M10-981-03 M10-985-01 M10-987-04 M10-994-04 M98-222-01 C-8 Wesmeg	average
	Ultramafic	M10-992-04	100%

Notes: GW = greywacke-siltstone; MV = mafic volcanic; IF = iron formation

Table C-1.4
Process Water Quality Input Parameters
Meliadine Gold Project

	Deposit	Discovery	F-Zone	Pump	Tiriganiaq Open Pit	Tiriganiaq Underground	Wesmeg
	Sample ID	Discovery CN8 (CND5-7)	F Zone Open Pit CN6 CND residue	Pump CN7	Tiriganiaq Open Pit CN2	Tiriganiaq Underground CN1	Wesmeg Open Pit CN3
Parameter	**Unit**						
pH	--	8.8	8.3	9.2	8.2	8.2	8.3
Total Dissolved Solids	mg/L	3.3E+03	2.7E+03	2.9E+03	3.7E+03	2.5E+03	2.8E+03
Alkalinity as CaCO3	mg/L	5.3E+01	7.2E+01	6.0E+01	9.2E+01	9.8E+01	1.1E+02
Chloride	mg/L	1.2E+01	1.1E+01	1.2E+01	2.0E+01	1.3E+01	1.4E+01
Fluoride	mg/L	2.9E-01	0.0E+00	*<0.06*	9.0E-02	1.0E-01	1.2E-01
Dissolved Silicon (Si)	mg SiO2/L	---	---	---	---	---	---
Sulphate	mg/L	1.6E+03	1.2E+03	1.2E+03	2.2E+03	1.2E+03	1.5E+03
CN, total	mg/L	2.0E+01	2.0E+01	2.0E+01	2.0E+01	2.0E+01	---
Total Ammonia-N	mg N /L	---	---	---	---	---	---
Nitrate as N	mg N /L	1.4E-01	1.3E-01	1.5E-01	1.3E-01	1.2E-01	1.5E-01
Nitrite as N	mg N /L	*<0.06*	*<0.06*	*<0.06*	*<0.06*	*<0.06*	*<0.06*
Nitrate + Nitrite	mg N /L	---	---	---	---	---	---
TKN	mg/L	---	---	---	---	---	---
Dissolved Phosphorus (P)	mg/L	---	---	---	---	---	---
Phosphate	mg P /L	---	---	---	---	---	---
Dissolved Aluminum (Al)	mg/L	5.0E-02	1.0E-02	2.0E-02	1.2E-01	1.3E-01	2.0E-02
Dissolved Antimony (Sb)	mg/L	7.0E-03	2.4E-02	1.6E-02	4.1E-02	3.2E-02	7.0E-03
Dissolved Arsenic (As)	mg/L	4.2E-01	3.3E+00	4.2E+00	9.7E+00	7.6E+00	2.2E-01
Dissolved Barium (Ba)	mg/L	1.5E-01	1.3E-02	5.6E-03	8.6E-02	7.1E-02	2.6E-02
Dissolved Beryllium (Be)	mg/L	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*
Dissolved Bismuth (Bi)	mg/L	*<0.0001*	1.3E-03	*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*
Dissolved Boron (B)	mg/L	2.6E-02	2.6E-02	2.8E-02	2.7E-02	3.0E-02	3.3E-02
Dissolved Cadmium (Cd)	mg/L	*<0.00003*	1.1E-04	*<0.00003*	*<0.00003*	7.0E-05	*<0.00003*
Dissolved Calcium (Ca)	mg/L	1.7E+02	2.2E+02	1.5E+02	3.5E+02	2.0E+02	1.8E+02
Dissolved Chromium (Cr)	mg/L	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
Dissolved Cobalt (Co)	mg/L	5.1E-02	9.8E-02	2.0E-01	7.7E-02	8.3E-02	1.1E-01
Dissolved Copper (Cu)	mg/L	5.9E-02	8.8E-02	1.1E-01	2.9E-02	9.0E-02	5.2E-02
Dissolved Iron (Fe)	mg/L	5.6E+00	9.5E+00	5.2E+00	3.1E+00	6.8E+00	8.1E+00
Dissolved Lead (Pb)	mg/L	0.0E+00	3.0E-04	0.0E+00	6.0E-04	9.0E-04	3.0E-04
Dissolved Lithium (Li)	mg/L	1.3E-02	4.0E-03	1.0E-03	0.0E+00	3.0E-03	2.0E-03
Dissolved Magnesium (Mg)	mg/L	4.2E+00	5.8E+00	3.2E+00	5.2E+00	3.5E+00	1.3E+01
Dissolved Manganese (Mn)	mg/L	2.8E-03	2.6E-02	2.6E-03	1.1E-02	7.2E-03	5.2E-02
Dissolved Mercury (Hg)	mg/L	---	---	---	---	---	---
Dissolved Molybdenum (Mo)	mg/L	6.8E-02	6.9E-02	8.4E-02	5.1E-02	5.8E-02	5.0E-02
Dissolved Nickel (Ni)	mg/L	8.0E-03	8.0E-03	5.0E-03	1.2E-02	7.0E-03	8.0E-03
Dissolved Potassium (K)	mg/L	7.6E+01	4.8E+01	2.6E+01	5.3E+01	5.3E+01	3.0E+01
Dissolved Selenium (Se)	mg/L	2.0E-02	1.0E-02	2.0E-02	1.0E-02	1.0E-02	2.0E-02
Dissolved Silver (Ag)	mg/L	---	---	---	---	---	---
Dissolved Sodium (Na)	mg/L	7.6E+02	5.7E+02	6.8E+02	6.9E+02	5.6E+02	5.8E+02
Dissolved Strontium (Sr)	mg/L	3.5E-01	2.1E-01	1.4E-01	5.5E-01	4.3E-01	2.0E-01
Dissolved Tellurium (Te)	mg/L	---	---	---	---	---	---
Dissolved Thallium (Tl)	mg/L	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*
Dissolved Tin (Sn)	mg/L	2.0E-03	1.0E-03	3.1E-03	1.0E-03	8.0E-04	6.0E-04
Dissolved Titanium (Ti)	mg/L	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Dissolved Tungsten (W)	mg/L	4.0E-03	2.3E-03	2.7E-03	7.5E-03	6.2E-03	4.1E-03
Dissolved Uranium (U)	mg/L	1.0E-02	2.5E-03	3.2E-03	3.2E-03	2.6E-03	3.0E-03
Dissolved Vanadium (V)	mg/L	*<0.0003*	*<0.0003*	7.0E-04	1.9E-03	*<0.0003*	*<0.0003*
Dissolved Zinc (Zn)	mg/L	*<0.002*	*<0.002*	*<0.002*	*<0.002*	3.0E-03	*<0.002*
Dissolved Zirconium (Zr)	mg/L	---	---	---	---	---	---

Notes:

-- : parameter not analyzed, concentration of 0 mg/L used as model input

Parameters for which all results <Method Detection Limit. Concentration of 0 mg/L input to model.

Table C-1.5
Tailings Loading Rates
Meliadine Gold Project

		Short Term Loading Rate						Long Term Loading Rate					
	Ore	Discovery	F-Zone	Pump	Tiriganiaq Open Pit	Tiriganiaq Underground	Wesmeg	Discovery	F-Zone	Pump	Tiriganiaq Open Pit	Tiriganiaq Underground	Wesmeg
	Leaching Cycle	0-4	0-4	0-4	0-4	0-4	0-4	12-16	12-16	12-16	12-16	12-16	12-16
	Sample ID	Discovery CN8 (CND5-7)	F-Zone Open Pit CN6 CND residue	Pump CN7	Tiriganiaq Open Pit CN2	Tiriganiaq Underground CN1	Wesmeg Open Pit CN3	Discovery CN8 (CND5-7)	F Zone Open Pit CN6 CND residue	Pump CN7	Tiriganiaq Open Pit CN2	Tiriganiaq Underground CN1	Wesmeg Open Pit CN3
Parameter (Unit)	**Unit**												
pH	pH unit	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
Total Dissolved Solids	mg/kg/wk	3.8E+02	1.1E+02	1.8E+02	1.2E+02	2.1E+02	1.1E+02	7.8E+01	6.2E+01	8.2E+01	5.7E+01	5.9E+01	7.1E+01
Alkalinity as CaCO3	mg/kg/wk	1.5E+01	2.8E+01	1.7E+01	2.3E+01	8.9E+01	3.8E+01	1.2E+01	1.1E+01	1.3E+01	2.2E+01	2.3E+01	2.3E+01
Chloride	mg/kg/wk	---	---	---	---	---	---	---	---	---	---	---	---
Fluoride	mg/kg/wk	4.4E-02	*0*	*0*	*0*	9.6E-02	*0*	5.9E-02	*0*	*0*	*0*	*0*	*0*
Dissolved Silicon (Si)	mg/kg/wk	---	---	---	---	---	---	---	---	---	---	---	---
Sulphate	mg/kg/wk	1.8E+02	5.4E+01	9.3E+01	5.4E+01	5.8E+01	4.5E+01	4.2E+01	3.5E+01	4.7E+01	2.1E+01	2.1E+01	3.1E+01
CN, total	mg/kg/wk	---	---	---	---	---	---	---	---	---	---	---	---
Total Ammonia-N	mg/kg/wk	---	---	---	---	---	---	---	---	---	---	---	---
Nitrate as N	mg/kg/wk	---	---	---	---	---	---	---	---	---	---	---	---
Nitrite as N	mg/kg/wk	---	---	---	---	---	---	---	---	---	---	---	---
Nitrate + Nitrite	mg/kg/wk	---	---	---	---	---	---	---	---	---	---	---	---
TKN	mg/kg/wk	---	---	---	---	---	---	---	---	---	---	---	---
Dissolved Phosphorus (P)	mg/kg/wk	---	---	---	---	---	---	---	---	---	---	---	---
Phosphate	mg/kg/wk	---	---	---	---	---	---	---	---	---	---	---	---
Dissolved Aluminum (Al)	mg/kg/wk	1.2E-02	*0*	9.1E-03	3.7E-02	1.2E-01	*0*	*0*	1.2E-02	1.2E-02	1.2E-02	*0*	1.9E-02
Dissolved Antimony (Sb)	mg/kg/wk	5.9E-04	1.2E-03	5.3E-04	2.0E-03	7.1E-03	5.5E-04	*0*	*0*	3.3E-04	7.9E-04	2.5E-04	*0*
Dissolved Arsenic (As)	mg/kg/wk	3.0E-02	5.8E-02	6.8E-02	2.0E-01	5.8E-01	3.7E-02	6.7E-03	1.0E-02	1.6E-02	1.1E-02	8.8E-03	2.4E-03
Dissolved Barium (Ba)	mg/kg/wk	2.5E-02	2.3E-03	2.0E-03	5.5E-03	2.2E-02	6.0E-03	8.2E-03	9.6E-04	1.3E-03	2.8E-03	7.7E-03	3.8E-03
Dissolved Beryllium (Be)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Bismuth (Bi)	mg/kg/wk	7.2E-05	*0*	1.2E-05	1.6E-05	8.3E-06	5.2E-06	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Boron (B)	mg/kg/wk	2.5E-03	2.9E-03	3.1E-03	1.7E-03	5.1E-03	2.4E-03	1.0E-03	7.7E-04	1.3E-03	1.5E-03	7.4E-04	8.1E-04
Dissolved Cadmium (Cd)	mg/kg/wk	8.5E-06	7.2E-06	4.4E-05	*0*	3.4E-06	1.0E-04	5.4E-06	3.4E-05	1.4E-05	5.9E-06	6.9E-06	2.0E-05
Dissolved Calcium (Ca)	mg/kg/wk	8.8E+01	2.1E+01	4.7E+01	3.0E+01	4.4E+01	2.0E+01	2.1E+01	1.2E+01	1.8E+01	1.2E+01	1.2E+01	1.3E+01
Dissolved Chromium (Cr)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Cobalt (Co)	mg/kg/wk	7.7E-04	1.5E-03	1.0E-03	5.3E-04	1.7E-03	1.2E-03	2.8E-04	4.5E-04	1.0E-03	1.9E-04	2.1E-04	5.0E-04
Dissolved Copper (Cu)	mg/kg/wk	4.0E-03	1.9E-03	1.5E-03	9.7E-04	1.5E-03	4.9E-03	4.2E-04	*0*	*0*	*0*	*0*	4.0E-04
Dissolved Iron (Fe)	mg/kg/wk	2.5E-02	2.0E-02	5.9E-03	6.1E-02	2.3E-01	1.1E-02	1.6E-02	7.7E-03	*0*	2.2E-03	5.9E-03	*0*
Dissolved Lead (Pb)	mg/kg/wk	5.4E-05	6.7E-05	7.3E-05	1.0E-04	4.2E-04	1.4E-04	3.4E-05	*0*	*0*	5.4E-05	2.5E-04	*0*
Dissolved Lithium (Li)	mg/kg/wk	8.0E-03	1.1E-03	*0*	5.5E-04	3.3E-03	8.5E-04	2.5E-03	*0*	*0*	*0*	*0*	*0*
Dissolved Magnesium (Mg)	mg/kg/wk	1.4E+00	6.7E+00	2.7E+00	1.3E+00	5.5E+00	8.9E+00	4.3E-01	4.6E+00	4.6E+00	2.3E+00	2.7E+00	5.5E+00
Dissolved Manganese (Mn)	mg/kg/wk	1.5E-02	1.1E-01	5.3E-02	1.7E-02	1.5E-02	8.2E-02	1.1E-02	1.1E-01	9.0E-02	3.9E-02	3.9E-02	1.4E-01
Dissolved Mercury (Hg)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Molybdenum (Mo)	mg/kg/wk	1.3E-03	1.9E-03	9.9E-04	1.7E-03	4.3E-03	1.2E-03	2.6E-04	2.2E-04	6.9E-04	4.0E-04	3.5E-04	2.8E-04
Dissolved Nickel (Ni)	mg/kg/wk	9.0E-04	3.8E-04	1.1E-03	6.6E-04	7.7E-04	1.3E-03	6.4E-04	2.4E-04	8.1E-04	2.5E-04	2.5E-04	7.6E-04
Dissolved Potassium (K)	mg/kg/wk	1.7E+01	2.9E+00	1.8E+00	2.9E+00	1.5E+01	2.6E+00	4.8E+00	7.3E-01	8.5E-01	1.0E+00	1.6E+00	7.0E-01
Dissolved Selenium (Se)	mg/kg/wk	*0.0E+00*	5.5E-04	*0.0E+00*	3.9E-03	3.2E-03	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Silver (Ag)	mg/kg/wk	---	---	---	---	---	---	---	---	---	---	---	---
Dissolved Sodium (Na)	mg/kg/wk	2.5E+00	2.3E+00	1.3E+00	1.4E+00	5.0E+00	7.4E-01	1.9E-01	2.0E-01	2.7E-01	4.0E-01	2.3E-01	1.8E-01
Dissolved Strontium (Sr)	mg/kg/wk	1.3E-01	3.8E-02	3.9E-02	6.2E-02	1.4E-01	3.1E-02	7.0E-02	2.4E-02	2.1E-02	5.1E-02	7.0E-02	2.3E-02
Dissolved Tellurium (Te)	mg/kg/wk	---	---	---	---	---	---	---	---	---	---	---	---
Dissolved Thallium (Tl)	mg/kg/wk	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Dissolved Tin (Sn)	mg/kg/wk	6.0E-04	6.3E-04	3.8E-04	9.9E-04	3.6E-04	4.2E-04	2.1E-04	5.7E-05	1.6E-04	1.6E-04	1.1E-04	3.3E-04
Dissolved Titanium (Ti)	mg/kg/wk	5.4E-05	7.3E-05	*0*	1.3E-04	1.4E-04	*0*	2.2E-04	*0*	*0*	1.7E-04	1.7E-04	*0*
Dissolved Tungsten (W)	mg/kg/wk	5.6E-05	8.6E-05	1.6E-05	1.2E-04	2.8E-04	1.9E-05	*0*	*0*	*0*	0	*0*	*0*
Dissolved Uranium (U)	mg/kg/wk	1.3E-03	5.7E-04	1.2E-04	2.2E-04	8.8E-04	1.8E-04	7.8E-04	7.4E-05	8.3E-05	7.5E-05	7.8E-05	3.9E-05
Dissolved Vanadium (V)	mg/kg/wk	3.0E-05	5.1E-05	3.0E-05	1.4E-04	2.0E-04	2.7E-05	2.7E-05	2.6E-05	2.6E-05	2.7E-05	*0*	*0*
Dissolved Zinc (Zn)	mg/kg/wk	1.2E-03	1.9E-03	1.7E-03	7.2E-04	1.1E-03	6.7E-03	1.2E-03	2.6E-03	2.8E-03	*0*	*0*	2.8E-03
Dissolved Zirconium (Zr)	mg/kg/wk	---	---	---	---	---	---	---	---	---	---	---	---

Notes:

-- : parameter not analyzed, concentration of 0 mg/L used as model input

All values used in calculation of loading rate <Method Detection Limit, loading rate set to 0 mg/kg/wk

Table C-1.6
Ammonia Concentrations in the Tailings Storage Facility by Month
Meliadine Gold Project

Month	$NH_4 - NH_3$ (mg/L)
January	70
February	70
March	70
April	70
May	50
June	50
July	25
August	20
September	35
October	35
November	70
December	70

Note: Ammonia concentrations based on the monthly average values reported for the Meadowbank TSF pond, provided by AEM

Table C-1.7
Geochemical Controls on Water Quality in the Tailings Storage Facility
Meliadine Gold Project

PARAMETER	UNITS	Maximum Concentration fixed in TSF
Alkalinity	mg/L as CaCO3	17
Aluminum	mg/L	0.0002
Arsenic	mg/L	3.9
Calcium	mg/L	1601
Iron	mg/L	0.0004
Phosphorous	mg/L	0.00001
Sulfate	mg/L	1678

Notes:
The following mineral phases were allowed to precipitate in the PhreeqC calculations:
Aragonite, Calcite, Dolomite, Hydroxylapatite, Ca3(PO4)2(beta), Ca4H(PO4)3:3H2O, FCO3Apatite, Gibbsite, Diaspore, Boehmite, Ferrihydrite, Goethite, Lepidocrocite, Hematite, Maghemite, Magnetite, Na-Jarosite, and K-Jarosite

APPENDIX C-2

Water Quality Model Results

April 2014
Report No. Doc 319-1314280007 Ver. 0

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12					13			0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											1									0.5							
LOCATION	Model Month	Mine Year	Date Year	Month	TDS	Total Alkalinity	Cl	F	Si	SO4	CN_Total	NH4 (as N)	NO3	Nitrate+Nitrite	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
					mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/L	mg/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
Pre-Development and Operations Water Quality (Years -3 to 13)																											
Tailings Storage Facility	**0**	**-3**	**2011**	**November**	263	17	27	0	2.6	4.9	8.2E-04	70	0.043	0.045	0.81	1.2E-05	6.6E-04	2.2E-04	0	1.3E-03	0.056	0	0	3.2E-03	**1.4E-05**	57	**1.7E-03**
Tailings Storage Facility	**1**	**-3**	**2011**	**December**	254	17	26	0	2.5	4.7	7.8E-04	70	0.041	0.043	0.78	1.2E-05	6.3E-04	2.2E-04	0	1.2E-03	0.054	0	0	3.1E-03	**1.3E-05**	55	**1.7E-03**
Tailings Storage Facility	**2**	**-3**	**2012**	**January**	247	17	25	0	2.4	4.5	7.5E-04	70	0.040	0.042	0.74	1.2E-05	6.0E-04	2.2E-04	0	1.2E-03	0.052	0	0	2.9E-03	**1.3E-05**	52	**1.6E-03**
Tailings Storage Facility	**3**	**-3**	**2012**	**Febraury**	240	17	24	0	2.3	4.3	7.2E-04	70	0.038	0.040	0.71	1.2E-05	5.8E-04	2.2E-04	0	1.1E-03	0.050	0	0	2.8E-03	**1.2E-05**	50	**1.5E-03**
Tailings Storage Facility	**4**	**-3**	**2012**	**March**	233	17	23	0	2.2	4.1	6.9E-04	70	0.036	0.038	0.69	1.2E-05	5.5E-04	2.2E-04	0	1.1E-03	0.048	0	0	2.7E-03	1.2E-05	48	**1.5E-03**
Tailings Storage Facility	**5**	**-3**	**2012**	**April**	227	17	22	0	2.1	4.0	6.6E-04	70	0.035	0.037	0.66	1.2E-05	5.3E-04	2.2E-04	0	1.0E-03	0.046	0	0	2.6E-03	1.1E-05	46	**1.4E-03**
Tailings Storage Facility	**6**	**-3**	**2012**	**May**	91	16	5.8	0	0.56	1.0	1.8E-04	50	9.2E-03	9.7E-03	0.17	1.2E-05	1.4E-04	2.2E-04	0	2.8E-04	0.012	0	0	6.8E-04	3.0E-06	12	3.7E-04
Tailings Storage Facility	**7**	**-3**	**2012**	**June**	87	17	5.1	0	0.39	1.3	1.2E-04	50	8.0E-03	8.2E-03	0.21	1.2E-05	2.4E-04	2.2E-04	0	2.5E-04	9.3E-03	0	0	4.8E-03	2.1E-06	9.1	2.6E-04
Tailings Storage Facility	**8**	**-3**	**2012**	**July**	65	17	5.5	0	0.40	1.4	1.3E-04	25	8.5E-03	8.7E-03	0.23	1.2E-05	2.7E-04	2.2E-04	0	2.7E-04	9.7E-03	0	0	5.5E-03	2.2E-06	9.5	2.7E-04
Tailings Storage Facility	**9**	**-3**	**2012**	**August**	60	17	5.5	0	0.39	1.5	1.2E-04	20	8.5E-03	8.7E-03	0.24	1.2E-05	3.0E-04	2.2E-04	0	2.7E-04	9.5E-03	0	0	6.4E-03	2.1E-06	9.3	2.6E-04
Tailings Storage Facility	**10**	**-3**	**2012**	**September**	74	17	5.4	0	0.36	1.5	1.1E-04	35	8.3E-03	8.4E-03	0.24	1.2E-05	3.1E-04	2.2E-04	0	2.7E-04	9.0E-03	0	0	6.9E-03	1.9E-06	8.8	2.4E-04
Tailings Storage Facility	**11**	**-3**	**2012**	**October**	73	17	5.2	0	0.34	1.5	1.1E-04	35	8.0E-03	8.2E-03	0.24	1.2E-05	3.1E-04	2.2E-04	0	2.6E-04	8.7E-03	0	0	7.0E-03	1.8E-06	8.4	2.3E-04
Tailings Storage Facility	**12**	**-2**	**2012**	**November**	230	17	22	0	1.4	6.2	4.5E-04	70	0.034	0.034	1.0	1.2E-05	1.3E-03	2.2E-04	0	1.1E-03	0.036	0	0	0.029	7.7E-06	35	9.5E-04
Tailings Storage Facility	**13**	**-2**	**2012**	**December**	223	17	21	0	1.4	5.9	4.3E-04	70	0.032	0.033	0.96	1.2E-05	1.2E-03	2.2E-04	0	1.0E-03	0.035	0	0	0.028	7.3E-06	34	9.1E-04
Tailings Storage Facility	**14**	**-2**	**2013**	**January**	217	17	20	0	1.3	5.7	4.1E-04	70	0.031	0.031	0.92	1.2E-05	1.2E-03	2.2E-04	0	9.9E-04	0.033	0	0	0.027	7.0E-06	32	8.7E-04
Tailings Storage Facility	**15**	**-2**	**2013**	**Febraury**	211	17	19	0	1.3	5.4	3.9E-04	70	0.029	0.030	0.88	1.2E-05	1.1E-03	2.2E-04	0	9.5E-04	0.032	0	0	0.026	6.7E-06	31	8.4E-04
Tailings Storage Facility	**16**	**-2**	**2013**	**March**	205	17	18	0	1.2	5.2	3.8E-04	70	0.028	0.029	0.85	1.2E-05	1.1E-03	2.2E-04	0	9.1E-04	0.031	0	0	0.025	6.5E-06	30	8.0E-04
Tailings Storage Facility	**17**	**-2**	**2013**	**April**	200	17	18	0	1.2	5.0	3.6E-04	70	0.027	0.028	0.81	1.2E-05	1.1E-03	2.2E-04	0	8.8E-04	0.030	0	0	0.024	6.2E-06	29	7.7E-04
Tailings Storage Facility	**18**	**-2**	**2013**	**May**	84	16	4.7	0	0.31	1.3	9.6E-05	50	7.2E-03	7.3E-03	0.21	1.2E-05	2.8E-04	2.2E-04	0	2.3E-04	7.8E-03	0	0	6.2E-03	1.6E-06	7.5	2.0E-04
Tailings Storage Facility	**19**	**-2**	**2013**	**June**	82	17	4.3	0	0.22	1.5	6.7E-05	50	6.6E-03	6.6E-03	0.24	1.2E-05	3.4E-04	2.2E-04	0	2.2E-04	6.3E-03	0	0	8.6E-03	1.1E-06	5.9	1.4E-04
Tailings Storage Facility	**20**	**-2**	**2013**	**July**	60	17	4.6	0	0.22	1.6	7.0E-05	25	7.0E-03	7.0E-03	0.25	1.2E-05	3.7E-04	2.2E-04	0	2.4E-04	6.6E-03	0	0	9.4E-03	1.2E-06	6.2	1.5E-04
Tailings Storage Facility	**21**	**-2**	**2013**	**August**	55	17	4.7	0	0.22	1.7	6.8E-05	20	7.1E-03	7.1E-03	0.26	1.2E-05	3.9E-04	2.2E-04	0	2.4E-04	6.7E-03	0	0	9.9E-03	1.2E-06	6.2	1.5E-04
Tailings Storage Facility	**22**	**-2**	**2013**	**September**	70	17	4.7	0	0.21	1.7	6.5E-05	35	7.0E-03	7.0E-03	0.26	1.2E-05	3.9E-04	2.2E-04	0	2.4E-04	6.5E-03	0	0	0.010	1.1E-06	6.0	1.4E-04
Tailings Storage Facility	**23**	**-2**	**2013**	**October**	69	17	4.6	0	0.20	1.6	6.3E-05	35	6.9E-03	6.9E-03	0.26	1.2E-05	3.8E-04	2.2E-04	0	2.3E-04	6.3E-03	0	0	1.0E-02	1.1E-06	5.8	1.3E-04
Tailings Storage Facility	**24**	**-1**	**2013**	**November**	201	17	17	0	0.77	6.2	2.4E-04	70	0.026	0.026	0.99	1.2E-05	1.5E-03	2.2E-04	0	8.9E-04	0.024	0	0	0.038	4.1E-06	22	5.1E-04
Tailings Storage Facility	**25**	**-1**	**2013**	**December**	198	17	17	0	0.76	6.1	2.4E-04	70	0.026	0.026	0.97	1.2E-05	1.4E-03	2.2E-04	0	8.7E-04	0.023	0	0	0.037	4.0E-06	22	5.0E-04
Tailings Storage Facility	**26**	**-1**	**2014**	**January**	195	17	17	0	0.74	5.9	2.3E-04	70	0.025	0.025	0.95	1.2E-05	1.4E-03	2.2E-04	0	8.5E-04	0.023	0	0	0.036	3.9E-06	21	4.9E-04
Tailings Storage Facility	**27**	**-1**	**2014**	**Febraury**	192	17	16	0	0.72	5.8	2.2E-04	70	0.024	0.024	0.93	1.2E-05	1.4E-03	2.2E-04	0	8.3E-04	0.022	0	0	0.035	3.8E-06	21	4.8E-04
Tailings Storage Facility	**28**	**-1**	**2014**	**March**	189	17	16	0	0.70	5.7	2.2E-04	70	0.024	0.024	0.90	1.2E-05	1.3E-03	2.2E-04	0	8.1E-04	0.022	0	0	0.035	3.8E-06	20	4.7E-04
Tailings Storage Facility	**29**	**-1**	**2014**	**April**	187	17	16	0	0.69	5.5	2.1E-04	70	0.023	0.023	0.88	1.2E-05	1.3E-03	2.2E-04	0	7.9E-04	0.021	0	0	0.034	3.7E-06	20	4.6E-04
Tailings Storage Facility	**30**	**-1**	**2014**	**May**	83	17	4.4	0	0.19	1.6	6.1E-05	50	6.6E-03	6.6E-03	0.25	1.2E-05	3.7E-04	2.2E-04	0	2.2E-04	6.0E-03	0	0	9.5E-03	1.0E-06	5.6	1.3E-04
Tailings Storage Facility	**31**	**-1**	**2014**	**June**	79	16	3.8	1.2E-05	0.14	1.5	4.3E-05	50	0.072	5.6E-03	0.23	1.2E-05	3.5E-04	2.2E-04	1.1E-05	4.0E-04	4.9E-03	0	0	9.4E-03	7.8E-07	4.5	9.3E-05
Tailings Storage Facility	**32**	**-1**	**2014**	**July**	55	16	3.9	1.9E-05	0.14	1.6	4.4E-05	25	0.100	5.7E-03	0.24	1.2E-05	3.6E-04	2.2E-04	1.8E-05	5.3E-04	5.0E-03	0	0	9.7E-03	8.1E-07	4.6	9.3E-05
Tailings Storage Facility	**33**	**-1**	**2014**	**August**	49	16	3.8	2.3E-05	0.13	1.7	4.2E-05	20	0.13	5.6E-03	0.23	1.2E-05	3.6E-04	2.2E-04	2.2E-05	6.0E-04	4.8E-03	0	0	9.7E-03	7.9E-07	4.5	8.9E-05
Tailings Storage Facility	**34**	**-1**	**2014**	**September**	63	16	3.6	2.3E-05	0.13	1.6	3.9E-05	35	0.14	5.3E-03	0.23	1.2E-05	3.5E-04	2.2E-04	2.3E-05	6.0E-04	4.6E-03	0	0	9.4E-03	7.5E-07	4.2	8.3E-05
Tailings Storage Facility	**35**	**-1**	**2014**	**October**	63	15	3.6	2.3E-05	0.12	1.6	3.8E-05	35	0.15	5.2E-03	0.22	1.2E-05	3.4E-04	2.2E-04	2.2E-05	5.9E-04	4.5E-03	0	0	9.2E-03	7.2E-07	4.1	8.1E-05
Tailings Storage Facility	**36**	**1**	**2014**	**November**	161	17	12	7.6E-05	0.40	5.2	1.2E-04	70	0.49	0.017	0.73	1.2E-05	1.1E-03	2.2E-04	7.3E-05	1.9E-03	0.015	0	0	0.030	2.4E-06	14	2.7E-04
Tailings Storage Facility	**37**	**1**	**2014**	**December**	160	17	12	7.5E-05	0.40	5.2	1.2E-04	70	0.48	0.017	0.72	1.2E-05	1.1E-03	2.2E-04	7.2E-05	1.9E-03	0.015	0	0	0.030	2.4E-06	13	2.6E-04
Tailings Storage Facility	**38**	**1**	**2015**	**January**	159	17	11	7.4E-05	0.39	5.1	1.2E-04	70	0.48	0.017	0.71	1.2E-05	1.1E-03	2.2E-04	7.1E-05	1.9E-03	0.014	0	0	0.030	2.3E-06	13	2.6E-04
Tailings Storage Facility	**39**	**1**	**2015**	**Febraury**	157	17	11	7.3E-05	0.39	5.0	1.2E-04	70	0.47	0.017	0.70	1.2E-05	1.1E-03	2.2E-04	7.0E-05	1.9E-03	0.014	0	0	0.029	2.3E-06	13	2.6E-04

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3	0.2						0.5												0.5	
LOCATION	Model Month	Mine Year	Date Year	Month	Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Ag	Na	Sr	Tl	Sn	Ti	W	U	V	Zn	TSF OVERFLOW
					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	m^3/mon
Pre-Development and Operations Water Quality (Years -3 to 13)																											
Tailings Storage Facility	**0**	**-3**	**2011**	**November**	0	1.2E-03	4.3E-04	1.3E-04	0.022	5.5	0.072	0	2.5E-04	2.1E-03	3.1	0	0	8.1	0.34	0	0	0	0	7.3E-05	0	1.5E-03	0
Tailings Storage Facility	**1**	**-3**	**2011**	**December**	0	1.2E-03	4.3E-04	1.2E-04	0.021	5.3	0.068	0	2.4E-04	2.0E-03	3.0	0	0	7.7	0.33	0	0	0	0	7.0E-05	0	1.4E-03	0
Tailings Storage Facility	**2**	**-3**	**2012**	**January**	0	1.1E-03	4.3E-04	1.2E-04	0.020	5.1	0.065	0	2.3E-04	2.0E-03	2.8	0	0	7.4	0.32	0	0	0	0	6.7E-05	0	1.4E-03	0
Tailings Storage Facility	**3**	**-3**	**2012**	**Febraury**	0	1.1E-03	4.3E-04	1.1E-04	0.019	4.9	0.063	0	2.2E-04	1.9E-03	2.7	0	0	7.1	0.30	0	0	0	0	6.5E-05	0	1.3E-03	0
Tailings Storage Facility	**4**	**-3**	**2012**	**March**	0	1.0E-03	4.3E-04	1.1E-04	0.018	4.7	0.060	0	2.1E-04	1.8E-03	2.6	0	0	6.8	0.29	0	0	0	0	6.2E-05	0	1.2E-03	0
Tailings Storage Facility	**5**	**-3**	**2012**	**April**	0	1.0E-03	4.3E-04	1.0E-04	0.018	4.5	0.058	0	2.1E-04	1.7E-03	2.5	0	0	6.6	0.28	0	0	0	0	6.0E-05	0	1.2E-03	0
Tailings Storage Facility	**6**	**-3**	**2012**	**May**	0	2.7E-04	4.3E-04	2.7E-05	4.6E-03	1.2	0.015	0	5.4E-05	4.6E-04	0.66	0	0	1.7	0.074	0	0	0	0	1.6E-05	0	3.2E-04	2.9E+04
Tailings Storage Facility	**7**	**-3**	**2012**	**June**	0	2.3E-04	4.3E-04	4.0E-05	3.2E-03	0.89	0.011	0	8.1E-05	3.6E-04	0.50	1.1E-04	0	1.3	0.051	0	0	0	0	1.1E-05	4.3E-05	4.3E-04	1.8E+05
Tailings Storage Facility	**8**	**-3**	**2012**	**July**	0	2.4E-04	4.3E-04	4.4E-05	3.3E-03	0.93	0.011	0	8.9E-05	3.8E-04	0.53	1.3E-04	0	1.4	0.053	0	0	0	0	1.1E-05	5.0E-05	4.8E-04	0
Tailings Storage Facility	**9**	**-3**	**2012**	**August**	0	2.4E-04	4.3E-04	4.8E-05	3.2E-03	0.90	0.011	0	9.7E-05	3.7E-04	0.51	1.6E-04	0	1.3	0.051	0	0	0	0	1.1E-05	6.0E-05	5.2E-04	3.9E+03
Tailings Storage Facility	**10**	**-3**	**2012**	**September**	0	2.3E-04	4.3E-04	5.0E-05	3.0E-03	0.85	0.010	0	1.0E-04	3.6E-04	0.49	1.7E-04	0	1.3	0.047	0	0	0	0	1.0E-05	6.5E-05	5.3E-04	3.0E+04
Tailings Storage Facility	**11**	**-3**	**2012**	**October**	0	2.3E-04	4.3E-04	4.9E-05	2.8E-03	0.82	9.9E-03	0	9.9E-05	3.5E-04	0.47	1.7E-04	0	1.2	0.045	0	0	0	0	9.6E-06	6.5E-05	5.2E-04	1.8E+04
Tailings Storage Facility	**12**	**-2**	**2012**	**November**	0	9.5E-04	4.3E-04	2.1E-04	0.012	3.4	0.041	0	4.1E-04	1.4E-03	2.0	7.1E-04	0	5.0	0.19	0	0	0	0	4.0E-05	2.7E-04	2.2E-03	0
Tailings Storage Facility	**13**	**-2**	**2012**	**December**	0	9.1E-04	4.3E-04	2.0E-04	0.011	3.3	0.039	0	3.9E-04	1.4E-03	1.9	6.8E-04	0	4.8	0.18	0	0	0	0	3.8E-05	2.6E-04	2.1E-03	0
Tailings Storage Facility	**14**	**-2**	**2013**	**January**	0	8.7E-04	4.3E-04	1.9E-04	0.011	3.1	0.038	0	3.8E-04	1.3E-03	1.8	6.5E-04	0	4.6	0.17	0	0	0	0	3.7E-05	2.5E-04	2.0E-03	0
Tailings Storage Facility	**15**	**-2**	**2013**	**Febraury**	0	8.4E-04	4.3E-04	1.8E-04	0.010	3.0	0.036	0	3.6E-04	1.3E-03	1.7	6.3E-04	0	4.4	0.17	0	0	0	0	3.5E-05	2.4E-04	1.9E-03	0
Tailings Storage Facility	**16**	**-2**	**2013**	**March**	0	8.0E-04	4.3E-04	1.7E-04	0.010	2.9	0.035	0	3.5E-04	1.2E-03	1.7	6.0E-04	0	4.3	0.16	0	0	0	0	3.4E-05	2.3E-04	1.8E-03	0
Tailings Storage Facility	**17**	**-2**	**2013**	**April**	0	7.7E-04	4.3E-04	1.7E-04	9.6E-03	2.8	0.034	0	3.4E-04	1.2E-03	1.6	5.8E-04	0	4.1	0.15	0	0	0	0	3.3E-05	2.2E-04	1.8E-03	0
Tailings Storage Facility	**18**	**-2**	**2013**	**May**	0	2.0E-04	4.3E-04	4.4E-05	2.5E-03	0.74	8.8E-03	0	8.8E-05	3.1E-04	0.42	1.5E-04	0	1.1	0.040	0	0	0	0	8.6E-06	5.9E-05	4.7E-04	0
Tailings Storage Facility	**19**	**-2**	**2013**	**June**	0	1.8E-04	4.3E-04	5.2E-05	1.8E-03	0.58	6.5E-03	0	1.0E-04	2.6E-04	0.33	2.2E-04	0	0.85	0.028	0	0	0	0	6.0E-06	8.3E-05	5.4E-04	0
Tailings Storage Facility	**20**	**-2**	**2013**	**July**	0	2.0E-04	4.3E-04	5.6E-05	1.9E-03	0.61	6.8E-03	0	1.1E-04	2.7E-04	0.35	2.4E-04	0	0.90	0.029	0	0	0	0	6.3E-06	9.1E-05	5.8E-04	0
Tailings Storage Facility	**21**	**-2**	**2013**	**August**	0	2.0E-04	4.3E-04	5.9E-05	1.8E-03	0.61	6.7E-03	0	1.2E-04	2.8E-04	0.35	2.5E-04	0	0.89	0.029	0	0	0	0	6.1E-06	9.7E-05	6.1E-04	0
Tailings Storage Facility	**22**	**-2**	**2013**	**September**	0	2.0E-04	4.3E-04	5.9E-05	1.7E-03	0.59	6.5E-03	0	1.2E-04	2.7E-04	0.34	2.6E-04	0	0.87	0.027	0	0	0	0	5.9E-06	9.8E-05	6.1E-04	0
Tailings Storage Facility	**23**	**-2**	**2013**	**October**	0	1.9E-04	4.3E-04	5.8E-05	1.7E-03	0.58	6.3E-03	0	1.2E-04	2.6E-04	0.33	2.5E-04	0	0.84	0.027	0	0	0	0	5.7E-06	9.7E-05	6.0E-04	0
Tailings Storage Facility	**24**	**-1**	**2013**	**November**	0	7.4E-04	4.3E-04	2.2E-04	6.4E-03	2.2	0.024	0	4.5E-04	1.0E-03	1.3	9.7E-04	0	3.2	0.10	0	0	0	0	2.2E-05	3.7E-04	2.3E-03	0
Tailings Storage Facility	**25**	**-1**	**2013**	**December**	0	7.2E-04	4.3E-04	2.2E-04	6.3E-03	2.1	0.023	0	4.4E-04	9.8E-04	1.2	9.4E-04	0	3.1	0.099	0	0	0	0	2.1E-05	3.6E-04	2.2E-03	0
Tailings Storage Facility	**26**	**-1**	**2014**	**January**	0	7.0E-04	4.3E-04	2.1E-04	6.1E-03	2.1	0.023	0	4.2E-04	9.6E-04	1.2	9.2E-04	0	3.1	0.097	0	0	0	0	2.1E-05	3.5E-04	2.2E-03	0
Tailings Storage Facility	**27**	**-1**	**2014**	**Febraury**	0	6.9E-04	4.3E-04	2.1E-04	6.0E-03	2.0	0.022	0	4.2E-04	9.3E-04	1.2	9.0E-04	0	3.0	0.095	0	0	0	0	2.0E-05	3.5E-04	2.1E-03	0
Tailings Storage Facility	**28**	**-1**	**2014**	**March**	0	6.7E-04	4.3E-04	2.0E-04	5.8E-03	2.0	0.022	0	4.1E-04	9.1E-04	1.2	8.8E-04	0	2.9	0.092	0	0	0	0	2.0E-05	3.4E-04	2.1E-03	0
Tailings Storage Facility	**29**	**-1**	**2014**	**April**	0	6.6E-04	4.3E-04	2.0E-04	5.7E-03	2.0	0.021	0	4.0E-04	8.9E-04	1.1	8.6E-04	0	2.9	0.090	0	0	0	0	1.9E-05	3.3E-04	2.0E-03	0
Tailings Storage Facility	**30**	**-1**	**2014**	**May**	0	1.8E-04	4.3E-04	5.6E-05	1.6E-03	0.55	6.0E-03	0	1.1E-04	2.5E-04	0.32	2.4E-04	0	0.81	0.025	0	0	0	0	5.4E-06	9.3E-05	5.7E-04	0
Tailings Storage Facility	**31**	**-1**	**2014**	**June**	3.4E-06	1.6E-04	4.3E-04	5.3E-05	1.2E-03	0.46	4.7E-03	0	1.1E-04	2.1E-04	0.26	2.4E-04	0	0.64	0.019	0	3.2E-06	1.3E-06	2.9E-07	7.0E-06	9.4E-05	5.4E-04	0
Tailings Storage Facility	**32**	**-1**	**2014**	**July**	5.4E-06	1.6E-04	4.3E-04	5.5E-05	1.2E-03	0.47	4.9E-03	0	1.2E-04	2.2E-04	0.27	2.5E-04	0	0.65	0.019	0	5.0E-06	2.1E-06	4.6E-07	8.8E-06	9.8E-05	5.6E-04	0
Tailings Storage Facility	**33**	**-1**	**2014**	**August**	6.6E-06	1.6E-04	4.3E-04	5.5E-05	1.1E-03	0.47	4.7E-03	0	1.2E-04	2.1E-04	0.27	2.5E-04	0	0.63	0.018	0	6.1E-06	2.5E-06	5.6E-07	9.7E-06	9.8E-05	5.6E-04	0
Tailings Storage Facility	**34**	**-1**	**2014**	**September**	6.7E-06	1.6E-04	4.3E-04	5.3E-05	1.0E-03	0.45	4.5E-03	0	1.1E-04	2.0E-04	0.25	2.4E-04	0	0.60	0.017	0	6.2E-06	2.6E-06	5.7E-07	9.6E-06	9.6E-05	5.4E-04	0
Tailings Storage Facility	**35**	**-1**	**2014**	**October**	6.6E-06	1.5E-04	4.3E-04	5.2E-05	1.0E-03	0.44	4.4E-03	0	1.1E-04	2.0E-04	0.25	2.4E-04	0	0.58	0.017	0	6.1E-06	2.5E-06	5.6E-07	9.4E-06	9.4E-05	5.3E-04	0
Tailings Storage Facility	**36**	**1**	**2014**	**November**	2.2E-05	5.0E-04	4.3E-04	1.7E-04	3.3E-03	1.4	0.014	0	3.6E-04	6.5E-04	0.81	7.8E-04	0	1.9	0.055	0	2.0E-05	8.4E-06	1.9E-06	3.1E-05	3.1E-04	1.7E-03	0
Tailings Storage Facility	**37**	**1**	**2014**	**December**	2.1E-05	5.0E-04	4.3E-04	1.7E-04	3.3E-03	1.4	0.014	0	3.6E-04	6.4E-04	0.80	7.7E-04	0	1.9	0.055	0	2.0E-05	8.3E-06	1.8E-06	3.1E-05	3.1E-04	1.7E-03	0
Tailings Storage Facility	**38**	**1**	**2015**	**January**	2.1E-05	4.9E-04	4.3E-04	1.7E-04	3.2E-03	1.4	0.014	0	3.6E-04	6.3E-04	0.79	7.6E-04	0	1.9	0.054	0	2.0E-05	8.2E-06	1.8E-06	3.0E-05	3.0E-04	1.7E-03	0
Tailings Storage Facility	**39**	**1**	**2015**	**Febraury**	2.1E-05	4.8E-04	4.3E-04	1.6E-04	3.2E-03	1.4	0.014	0	3.5E-04	6.2E-04	0.78	7.5E-04	0	1.8	0.053	0	1.9E-05	8.1E-06	1.8E-06	3.0E-05	3.0E-04	1.7E-03	0

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12					13			0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											1									0.5							
	Model	Mine	Date	Month	TDS	Total Alkalinity	Cl	F	Si	SO4	CN_Total	NH4 (as N)	NO3	Nitrate+Nitrite	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/L	mg/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
Tailings Storage Facility	40	1	2015	March	156	17	11	7.2E-05	0.38	5.0	1.2E-04	70	0.46	0.016	0.70	1.2E-05	1.1E-03	2.2E-04	7.0E-05	1.8E-03	0.014	0	0	0.029	2.3E-06	13	2.5E-04
Tailings Storage Facility	41	1	2015	April	155	17	11	7.1E-05	0.38	4.9	1.2E-04	70	0.46	0.016	0.69	1.2E-05	1.1E-03	2.2E-04	6.9E-05	1.8E-03	0.014	0	0	0.029	2.2E-06	13	2.5E-04
Tailings Storage Facility	42	1	2015	May	321	17	90	3.5E-03	0.12	81	0.95	50	0.26	5.4E-03	0.21	1.2E-05	3.5E-04	2.2E-04	1.5E-03	0.36	7.4E-03	0	0	0.021	9.5E-07	44	9.2E-05
Tailings Storage Facility	43	1	2015	June	547	17	167	7.0E-03	0.094	157	1.8	50	0.39	5.4E-03	0.20	1.2E-05	3.6E-04	2.2E-04	3.0E-03	0.71	0.010	0	3.3E-07	0.031	1.2E-06	82	9.4E-05
Tailings Storage Facility	44	1	2015	July	879	17	301	0.012	0.094	269	3.2	25	0.59	5.3E-03	0.20	1.2E-05	3.6E-04	2.2E-04	5.2E-03	1.2	0.015	0	4.0E-07	0.049	1.7E-06	139	9.1E-05
Tailings Storage Facility	45	1	2015	August	1.2E+03	17	400	0.016	0.091	358	4.3	20	0.74	5.5E-03	0.20	1.2E-05	3.7E-04	2.2E-04	7.0E-03	1.6	0.018	0	4.9E-07	0.063	2.2E-06	184	9.8E-05
Tailings Storage Facility	46	1	2015	September	1.4E+03	17	475	0.019	0.087	427	5.1	35	0.85	5.5E-03	0.19	1.2E-05	3.7E-04	2.2E-04	8.3E-03	2.0	0.021	0	5.3E-07	0.073	2.6E-06	219	1.0E-04
Tailings Storage Facility	47	1	2015	October	1.6E+03	17	546	0.022	0.084	490	5.9	35	0.95	5.5E-03	0.19	1.2E-05	3.7E-04	2.2E-04	9.6E-03	2.2	0.023	0	5.4E-07	0.082	3.0E-06	252	1.1E-04
Tailings Storage Facility	48	2	2015	November	4.9E+03	17	1.7E+03	0.069	0.23	1.5E+03	19	70	2.9	0.016	0.51	1.2E-05	1.1E-03	2.2E-04	0.030	3.9	0.070	0	1.4E-06	0.25	9.7E-06	785	3.2E-04
Tailings Storage Facility	49	2	2015	December	5.1E+03	17	1.8E+03	0.071	0.22	1.6E+03	20	70	3.0	0.016	0.48	1.2E-05	1.0E-03	2.2E-04	0.031	3.9	0.071	0	1.3E-06	0.26	1.0E-05	823	3.3E-04
Tailings Storage Facility	50	2	2016	January	5.1E+03	17	1.8E+03	0.073	0.20	1.6E+03	20	70	3.0	0.016	0.45	1.2E-05	1.0E-03	2.2E-04	0.031	3.9	0.072	0	1.2E-06	0.27	1.1E-05	841	3.5E-04
Tailings Storage Facility	51	2	2016	Febraury	5.2E+03	17	1.8E+03	0.075	0.19	1.6E+03	20	70	3.0	0.016	0.42	1.2E-05	1.0E-03	2.2E-04	0.032	3.9	0.073	0	1.0E-06	0.27	1.2E-05	855	3.7E-04
Tailings Storage Facility	52	2	2016	March	5.4E+03	17	1.9E+03	0.076	0.18	1.6E+03	21	70	3.1	0.016	0.40	1.2E-05	1.0E-03	2.2E-04	0.032	3.9	0.073	0	5.3E-06	0.28	1.3E-05	891	3.7E-04
Tailings Storage Facility	53	2	2016	April	5.5E+03	17	2.0E+03	0.076	0.18	1.7E+03	22	70	3.2	0.015	0.39	1.2E-05	9.8E-04	2.2E-04	0.033	3.9	0.073	0	1.3E-05	0.29	1.4E-05	925	3.7E-04
Tailings Storage Facility	54	2	2016	May	2.6E+03	17	944	0.034	0.079	740	10	50	1.5	6.8E-03	0.17	1.2E-05	4.3E-04	2.2E-04	0.015	3.4	0.032	0	1.1E-05	0.14	6.8E-06	426	1.6E-04
Tailings Storage Facility	55	2	2016	June	2.5E+03	17	902	0.042	0.071	719	9.9	50	1.4	6.2E-03	0.15	1.2E-05	4.0E-04	2.2E-04	0.015	3.3	0.034	0	2.1E-05	0.13	7.8E-06	417	1.5E-04
Tailings Storage Facility	56	2	2016	July	2.7E+03	17	989	0.045	0.074	778	11	25	1.6	6.3E-03	0.16	1.2E-05	4.0E-04	2.2E-04	0.016	3.6	0.037	0	3.0E-05	0.14	9.3E-06	453	1.5E-04
Tailings Storage Facility	57	2	2016	August	2.8E+03	17	1.0E+03	0.048	0.075	808	11	20	1.6	6.2E-03	0.15	1.2E-05	4.0E-04	2.2E-04	0.017	3.7	0.038	0	4.0E-05	0.15	1.1E-05	474	1.5E-04
Tailings Storage Facility	58	2	2016	September	2.8E+03	17	1.1E+03	0.049	0.073	818	12	35	1.7	5.9E-03	0.15	1.2E-05	3.8E-04	2.2E-04	0.017	3.8	0.039	0	5.0E-05	0.15	1.2E-05	484	1.4E-04
Tailings Storage Facility	59	2	2016	October	2.9E+03	17	1.1E+03	0.049	0.073	830	12	35	1.7	5.7E-03	0.14	1.2E-05	3.7E-04	2.2E-04	0.018	3.8	0.039	0	6.1E-05	0.16	1.3E-05	496	1.4E-04
Tailings Storage Facility	60	3	2016	November	6.0E+03	17	2.3E+03	0.098	0.15	1.7E+03	25	70	3.6	0.011	0.29	1.2E-05	7.3E-04	2.2E-04	0.036	3.9	0.078	0	1.5E-04	0.33	2.9E-05	1.0E+03	2.7E-04
Tailings Storage Facility	61	3	2016	December	6.1E+03	17	2.4E+03	0.097	0.15	1.7E+03	25	70	3.7	0.011	0.28	1.2E-05	7.3E-04	2.2E-04	0.036	3.9	0.077	0	1.8E-04	0.34	3.2E-05	1.1E+03	2.7E-04
Tailings Storage Facility	62	3	2017	January	6.2E+03	17	2.5E+03	0.095	0.15	1.7E+03	26	70	3.8	0.011	0.28	1.2E-05	7.3E-04	2.2E-04	0.035	3.9	0.076	0	2.0E-04	0.35	3.4E-05	1.1E+03	2.8E-04
Tailings Storage Facility	63	3	2017	Febraury	6.3E+03	17	2.5E+03	0.092	0.15	1.6E+03	27	70	3.9	0.011	0.27	1.2E-05	7.3E-04	2.2E-04	0.035	3.9	0.074	0	2.3E-04	0.36	3.7E-05	1.1E+03	2.8E-04
Tailings Storage Facility	64	3	2017	March	6.4E+03	17	2.6E+03	0.091	0.14	1.6E+03	28	70	4.0	0.011	0.26	1.2E-05	7.3E-04	2.2E-04	0.035	3.9	0.073	0	2.6E-04	0.37	4.0E-05	1.1E+03	2.9E-04
Tailings Storage Facility	65	3	2017	April	6.5E+03	17	2.7E+03	0.089	0.14	1.6E+03	28	70	4.0	0.011	0.26	1.2E-05	7.3E-04	2.2E-04	0.034	3.9	0.072	0	2.8E-04	0.37	4.1E-05	1.2E+03	2.9E-04
Tailings Storage Facility	66	3	2017	May	3.2E+03	17	1.3E+03	0.042	0.069	782	14	50	2.0	5.6E-03	0.12	1.2E-05	3.5E-04	2.2E-04	0.017	3.5	0.034	0	1.4E-04	0.19	2.1E-05	567	1.4E-04

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						0.002	0.3	0.001				0.000026	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03	
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						0.3	3	0.2						0.5												0.5	
LOCATION	Model Month	Mine Year	Date Year	Month	Co mg/L	Cu[4] mg/L	Fe mg/L	Pb[4] mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg mg/L	Mo mg/L	Ni[4] mg/L	K mg/L	Se mg/L	Ag mg/L	Na mg/L	Sr mg/L	Tl mg/L	Sn mg/L	Ti mg/L	W mg/L	U mg/L	V mg/L	Zn mg/L	TSF OVERFLOW m^3/mon
Tailings Storage Facility	40	1	2015	March	2.1E-05	4.8E-04	4.3E-04	1.6E-04	3.2E-03	1.4	0.014	0	3.5E-04	6.2E-04	0.77	7.4E-04	0	1.8	0.053	0	1.9E-05	8.0E-06	1.8E-06	3.0E-05	2.9E-04	1.7E-03	0
Tailings Storage Facility	41	1	2015	April	2.0E-05	4.7E-04	4.3E-04	1.6E-04	3.1E-03	1.3	0.014	0	3.4E-04	6.1E-04	0.77	7.3E-04	0	1.8	0.052	0	1.9E-05	7.9E-06	1.7E-06	2.9E-05	2.9E-04	1.6E-03	0
Tailings Storage Facility	42	1	2015	May	3.0E-03	1.5E-03	4.3E-04	7.3E-05	0.033	1.8	4.8E-03	0	2.1E-03	6.2E-04	3.3	6.0E-04	0	34	0.58	0	4.3E-05	2.4E-06	2.8E-04	1.3E-04	2.3E-04	5.4E-04	0
Tailings Storage Facility	43	1	2015	June	5.8E-03	**2.8E-03**	4.3E-04	9.5E-05	0.062	3.0	5.4E-03	0	4.0E-03	1.0E-03	6.4	**1.0E-03**	0	66	1.1	0	1.0E-04	7.0E-06	5.5E-04	2.5E-04	3.5E-04	5.6E-04	0
Tailings Storage Facility	44	1	2015	July	1.0E-02	**4.8E-03**	4.3E-04	1.3E-04	0.11	5.0	6.5E-03	0	6.8E-03	1.6E-03	11	**1.6E-03**	0	113	1.9	0	1.6E-04	9.2E-06	9.5E-04	4.2E-04	5.5E-04	5.8E-04	0
Tailings Storage Facility	45	1	2015	August	0.013	**6.5E-03**	4.3E-04	1.6E-04	0.15	6.5	7.3E-03	0	9.1E-03	2.1E-03	14	**2.0E-03**	0	152	2.6	0	2.1E-04	1.1E-05	1.3E-03	5.6E-04	7.0E-04	6.0E-04	0
Tailings Storage Facility	46	1	2015	September	0.016	**7.9E-03**	4.3E-04	1.8E-04	0.18	7.7	7.7E-03	0	0.011	2.5E-03	17	**2.4E-03**	0	181	3.1	0	2.4E-04	1.1E-05	1.5E-03	6.6E-04	8.1E-04	6.0E-04	0
Tailings Storage Facility	47	1	2015	October	0.019	**9.2E-03**	4.3E-04	2.0E-04	0.20	8.7	8.1E-03	0	0.013	2.8E-03	20	**2.7E-03**	0	209	3.5	0	2.7E-04	1.1E-05	1.7E-03	7.6E-04	9.2E-04	6.1E-04	0
Tailings Storage Facility	48	2	2015	November	0.058	**0.029**	4.3E-04	5.9E-04	0.64	27	0.023	0	0.039	8.7E-03	62	**8.2E-03**	0	651	11	0	8.3E-04	3.0E-05	5.4E-03	2.3E-03	2.8E-03	1.7E-03	0
Tailings Storage Facility	49	2	2015	December	0.060	**0.031**	4.3E-04	6.0E-04	0.67	28	0.023	0	0.040	8.9E-03	64	**8.4E-03**	0	672	12	0	8.4E-04	2.7E-05	5.6E-03	2.4E-03	2.9E-03	1.7E-03	0
Tailings Storage Facility	50	2	2016	January	0.062	**0.032**	4.3E-04	6.0E-04	0.68	29	0.022	0	0.042	9.1E-03	65	**8.5E-03**	0	689	12	0	8.5E-04	2.4E-05	5.7E-03	2.5E-03	2.9E-03	1.6E-03	0
Tailings Storage Facility	51	2	2016	Febraury	0.063	**0.033**	4.3E-04	6.1E-04	0.69	29	0.022	0	0.042	9.2E-03	67	**8.6E-03**	0	702	12	0	8.6E-04	2.2E-05	5.8E-03	2.5E-03	3.0E-03	1.6E-03	0
Tailings Storage Facility	52	2	2016	March	0.064	**0.034**	4.3E-04	6.1E-04	0.72	31	0.022	0	0.043	9.3E-03	68	**8.7E-03**	0	715	13	0	8.6E-04	2.1E-05	5.9E-03	2.5E-03	3.0E-03	1.6E-03	0
Tailings Storage Facility	53	2	2016	April	0.065	**0.035**	4.3E-04	6.1E-04	0.76	32	0.022	0	0.044	9.3E-03	70	**8.8E-03**	0	727	13	0	8.6E-04	2.0E-05	6.0E-03	2.6E-03	3.1E-03	1.5E-03	0
Tailings Storage Facility	54	2	2016	May	0.030	**0.016**	4.3E-04	2.7E-04	0.35	15	0.010	0	0.020	4.2E-03	32	**3.9E-03**	0	329	6.1	0	3.9E-04	8.4E-06	2.7E-03	1.2E-03	1.4E-03	6.8E-04	0
Tailings Storage Facility	55	2	2016	June	0.029	**0.016**	4.3E-04	3.3E-04	0.34	15	0.020	0	0.020	4.2E-03	32	**5.0E-03**	0	313	5.9	0	6.6E-04	5.6E-05	2.6E-03	1.3E-03	1.4E-03	1.0E-03	0
Tailings Storage Facility	56	2	2016	July	0.031	**0.018**	4.3E-04	3.5E-04	0.37	17	0.022	0	0.022	4.5E-03	35	**5.5E-03**	0	341	6.4	0	7.3E-04	6.5E-05	2.8E-03	1.4E-03	1.5E-03	1.1E-03	0
Tailings Storage Facility	57	2	2016	August	0.033	**0.020**	4.3E-04	3.8E-04	0.39	18	0.025	0	0.023	4.7E-03	37	**5.9E-03**	0	355	6.8	0	8.0E-04	7.4E-05	2.9E-03	1.5E-03	1.6E-03	1.1E-03	0
Tailings Storage Facility	58	2	2016	September	0.034	**0.021**	4.3E-04	3.8E-04	0.40	18	0.026	0	0.024	4.8E-03	38	**6.0E-03**	0	362	6.9	0	8.3E-04	7.9E-05	2.9E-03	1.5E-03	1.6E-03	1.2E-03	0
Tailings Storage Facility	59	2	2016	October	0.035	**0.022**	4.3E-04	3.9E-04	0.41	19	0.026	0	0.025	4.9E-03	39	**6.1E-03**	0	371	7.2	0	8.4E-04	8.0E-05	2.9E-03	1.5E-03	1.6E-03	1.2E-03	3.8E+05
Tailings Storage Facility	60	3	2016	November	0.073	**0.048**	4.3E-04	7.8E-04	0.87	39	0.052	0	0.051	1.0E-02	80	**0.012**	0	765	15	0	1.7E-03	1.6E-04	6.0E-03	3.1E-03	3.3E-03	2.3E-03	0
Tailings Storage Facility	61	3	2016	December	0.074	**0.051**	4.3E-04	7.7E-04	0.90	40	0.052	0	0.052	9.9E-03	81	**0.012**	0	773	16	0	1.6E-03	1.5E-04	5.9E-03	3.1E-03	3.4E-03	2.3E-03	0
Tailings Storage Facility	62	3	2017	January	0.075	**0.053**	4.3E-04	7.6E-04	0.93	41	0.051	0	0.052	9.8E-03	82	**0.012**	0	780	16	0	1.6E-03	1.4E-04	5.9E-03	3.0E-03	3.4E-03	2.2E-03	0
Tailings Storage Facility	63	3	2017	Febraury	0.076	**0.054**	4.3E-04	7.5E-04	0.95	42	0.050	0	0.053	9.7E-03	82	**0.012**	0	786	16	0	1.6E-03	1.4E-04	5.8E-03	3.0E-03	3.5E-03	2.2E-03	0
Tailings Storage Facility	64	3	2017	March	0.076	**0.056**	4.3E-04	7.4E-04	0.97	43	0.049	0	0.053	9.6E-03	83	**0.012**	0	793	17	0	1.5E-03	1.3E-04	5.7E-03	3.0E-03	3.5E-03	2.1E-03	0
Tailings Storage Facility	65	3	2017	April	0.077	**0.057**	4.3E-04	7.3E-04	1.00	44	0.048	0	0.053	9.6E-03	84	**0.012**	0	799	17	0	1.5E-03	1.3E-04	5.7E-03	3.0E-03	3.5E-03	2.1E-03	0
Tailings Storage Facility	66	3	2017	May	0.038	**0.028**	4.3E-04	3.5E-04	0.49	21	0.023	0	0.026	4.6E-03	41	**5.6E-03**	0	390	8.5	0	7.1E-04	5.8E-05	2.7E-03	1.4E-03	1.7E-03	9.9E-04	0

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12					13			0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											1									0.5							
LOCATION	Model Month	Mine Year	Date Year	Month	TDS mg/L	Total Alkalinity mg/L as CaCO3	Cl mg/L	F mg/L	Si mg/L	SO4 mg/L	CN_Total mg/L	NH4 (as N) mg N/L	NO3 mg/L	Nitrate+Nitrite mg/L	TKN mg/L	P_dissolved[6] mg/L	PO4 mg/L	Al[5] mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd[4] mg/L	Ca mg/L	Cr[3] mg/L
Tailings Storage Facility	67	3	2017	June	3.0E+03	17	1.2E+03	0.061	0.060	758	13	50	1.8	5.0E-03	0.11	1.2E-05	3.1E-04	2.2E-04	0.018	3.4	0.039	0	1.4E-04	0.17	2.5E-05	539	1.3E-04
Tailings Storage Facility	68	3	2017	July	3.1E+03	17	1.3E+03	0.065	0.063	806	13	25	2.0	5.0E-03	0.11	1.2E-05	3.2E-04	2.2E-04	0.019	3.6	0.041	0	1.6E-04	0.18	2.7E-05	571	1.3E-04
Tailings Storage Facility	69	3	2017	August	3.2E+03	17	1.3E+03	0.068	0.062	825	14	20	2.0	4.9E-03	0.11	1.2E-05	3.1E-04	2.2E-04	0.020	3.7	0.043	0	1.6E-04	0.18	2.8E-05	584	1.2E-04
Tailings Storage Facility	70	3	2017	September	3.2E+03	17	1.3E+03	0.069	0.061	828	14	35	2.1	4.6E-03	0.10	1.2E-05	3.0E-04	2.2E-04	0.020	3.7	0.043	0	1.6E-04	0.19	2.9E-05	585	1.2E-04
Tailings Storage Facility	71	3	2017	October	3.3E+03	17	1.3E+03	0.069	0.061	838	14	35	2.1	4.5E-03	0.10	1.2E-05	2.9E-04	2.2E-04	0.020	3.7	0.043	0	1.6E-04	0.19	2.9E-05	591	1.1E-04
Tailings Storage Facility	72	4	2017	November	6.8E+03	17	2.8E+03	0.14	0.13	1.7E+03	29	70	4.4	9.2E-03	0.21	1.2E-05	5.9E-04	2.2E-04	0.041	3.9	0.089	0	3.5E-04	0.40	6.0E-05	1.3E+03	2.3E-04
Tailings Storage Facility	73	4	2017	December	6.9E+03	17	2.9E+03	0.14	0.13	1.7E+03	30	70	4.5	9.3E-03	0.20	1.2E-05	6.0E-04	2.2E-04	0.041	3.9	0.088	0	3.4E-04	0.40	5.9E-05	1.3E+03	2.4E-04
Tailings Storage Facility	74	4	2018	January	6.9E+03	17	2.9E+03	0.14	0.13	1.7E+03	30	70	4.5	9.4E-03	0.20	1.2E-05	6.0E-04	2.2E-04	0.040	3.9	0.087	0	3.4E-04	0.41	5.8E-05	1.3E+03	2.4E-04
Tailings Storage Facility	75	4	2018	Febraury	7.0E+03	17	2.9E+03	0.13	0.13	1.7E+03	31	70	4.5	9.5E-03	0.20	1.2E-05	6.0E-04	2.2E-04	0.040	3.9	0.086	0	3.3E-04	0.41	5.7E-05	1.3E+03	2.5E-04
Tailings Storage Facility	76	4	2018	March	7.0E+03	17	3.0E+03	0.13	0.13	1.7E+03	31	70	4.6	9.6E-03	0.19	1.2E-05	6.0E-04	2.2E-04	0.040	3.9	0.085	0	3.2E-04	0.42	5.6E-05	1.3E+03	2.5E-04
Tailings Storage Facility	77	4	2018	April	7.1E+03	17	3.0E+03	0.13	0.12	1.7E+03	32	70	4.6	9.7E-03	0.19	1.2E-05	6.1E-04	2.2E-04	0.039	3.9	0.084	0	3.2E-04	0.42	5.5E-05	1.3E+03	2.6E-04
Tailings Storage Facility	78	4	2018	May	3.6E+03	17	1.5E+03	0.063	0.062	866	16	50	2.3	4.9E-03	0.094	1.2E-05	3.0E-04	2.2E-04	0.019	3.8	0.041	0	1.5E-04	0.21	2.7E-05	661	1.3E-04
Tailings Storage Facility	79	4	2018	June	3.4E+03	17	1.4E+03	0.081	0.055	860	14	50	2.1	4.4E-03	0.084	1.2E-05	2.8E-04	2.2E-04	0.021	3.7	0.047	0	1.5E-04	0.20	3.8E-05	630	1.2E-04
Tailings Storage Facility	80	4	2018	July	3.5E+03	17	1.4E+03	0.085	0.057	907	15	25	2.2	4.4E-03	0.087	1.2E-05	2.8E-04	2.2E-04	0.022	3.8	0.050	0	1.5E-04	0.21	4.0E-05	658	1.2E-04
Tailings Storage Facility	81	4	2018	August	3.6E+03	17	1.4E+03	0.088	0.057	924	15	20	2.3	4.3E-03	0.086	1.2E-05	2.7E-04	2.2E-04	0.022	3.9	0.052	0	1.5E-04	0.21	4.2E-05	665	1.1E-04
Tailings Storage Facility	82	4	2018	September	3.6E+03	17	1.4E+03	0.088	0.056	922	15	35	2.3	4.1E-03	0.083	1.2E-05	2.6E-04	2.2E-04	0.022	3.9	0.052	0	1.4E-04	0.21	4.2E-05	658	1.1E-04
Tailings Storage Facility	83	4	2018	October	3.6E+03	17	1.5E+03	0.087	0.056	929	15	35	2.3	3.9E-03	0.081	1.2E-05	2.5E-04	2.2E-04	0.022	3.9	0.051	0	1.4E-04	0.21	4.2E-05	663	1.0E-04
Tailings Storage Facility	84	5	2018	November	7.6E+03	17	3.2E+03	0.19	0.12	1.7E+03	33	70	5.1	8.5E-03	0.17	1.2E-05	5.4E-04	2.2E-04	0.048	3.9	0.11	0	2.9E-04	0.46	8.8E-05	1.5E+03	2.2E-04
Tailings Storage Facility	85	5	2018	December	7.6E+03	17	3.3E+03	0.18	0.12	1.7E+03	34	70	5.2	8.6E-03	0.17	1.2E-05	5.5E-04	2.2E-04	0.047	3.9	0.11	0	2.8E-04	0.47	8.5E-05	1.5E+03	2.3E-04
Tailings Storage Facility	86	5	2019	January	7.6E+03	17	3.3E+03	0.18	0.12	1.7E+03	34	70	5.2	8.8E-03	0.17	1.2E-05	5.5E-04	2.2E-04	0.046	3.9	0.11	0	2.7E-04	0.47	8.2E-05	1.5E+03	2.3E-04
Tailings Storage Facility	87	5	2019	Febraury	7.7E+03	17	3.3E+03	0.17	0.12	1.7E+03	34	70	5.2	8.9E-03	0.17	1.2E-05	5.6E-04	2.2E-04	0.045	3.9	0.10	0	2.6E-04	0.47	7.9E-05	1.5E+03	2.4E-04
Tailings Storage Facility	88	5	2019	March	7.7E+03	17	3.3E+03	0.17	0.12	1.7E+03	35	70	5.2	9.0E-03	0.17	1.2E-05	5.6E-04	2.2E-04	0.044	3.9	0.10	0	2.5E-04	0.47	7.6E-05	1.5E+03	2.5E-04
Tailings Storage Facility	89	5	2019	April	7.7E+03	17	3.4E+03	0.17	0.12	1.7E+03	35	70	5.2	9.1E-03	0.16	1.2E-05	5.7E-04	2.2E-04	0.043	3.9	0.099	0	2.4E-04	0.48	7.3E-05	1.5E+03	2.5E-04
Tailings Storage Facility	90	5	2019	May	3.9E+03	17	1.6E+03	0.078	0.059	932	17	50	2.5	4.4E-03	0.078	1.2E-05	2.8E-04	2.2E-04	0.021	3.8	0.047	0	1.1E-04	0.23	3.4E-05	716	1.2E-04
Tailings Storage Facility	91	5	2019	June	3.6E+03	17	1.5E+03	0.096	0.053	917	15	50	2.3	4.0E-03	0.069	1.2E-05	2.5E-04	2.2E-04	0.022	3.7	0.053	0	1.1E-04	0.21	5.7E-05	675	1.1E-04
Tailings Storage Facility	92	5	2019	July	3.7E+03	17	1.5E+03	0.10	0.055	964	16	25	2.4	4.0E-03	0.073	1.2E-05	2.5E-04	2.2E-04	0.023	3.8	0.057	0	1.1E-04	0.22	6.1E-05	701	1.1E-04

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3	0.2						0.5												0.5	
	Model	Mine	Date	Month	Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Ag	Na	Sr	Tl	Sn	Ti	W	U	V	Zn	TSF OVERFLOW
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L	mg/L	m^3/mon
Tailings Storage Facility	67	3	2017	June	0.035	**0.027**	4.3E-04	4.7E-04	0.45	23	0.067	0	0.026	4.7E-03	42	**7.2E-03**	0	355	7.8	0	1.3E-03	1.5E-04	2.6E-03	1.8E-03	1.7E-03	2.1E-03	0
Tailings Storage Facility	68	3	2017	July	0.038	**0.029**	4.3E-04	5.0E-04	0.47	25	0.075	0	0.028	5.0E-03	45	**7.7E-03**	0	377	8.2	0	1.4E-03	1.7E-04	2.7E-03	1.9E-03	1.8E-03	2.3E-03	3.8E+05
Tailings Storage Facility	69	3	2017	August	0.039	**0.030**	4.3E-04	5.3E-04	0.49	26	0.083	0	0.029	5.2E-03	46	**8.1E-03**	0	384	8.4	0	1.5E-03	1.9E-04	2.8E-03	2.0E-03	1.9E-03	2.5E-03	0
Tailings Storage Facility	70	3	2017	September	0.039	**0.030**	4.3E-04	5.3E-04	0.49	26	0.086	0	0.029	5.2E-03	46	**8.2E-03**	0	385	8.5	0	1.5E-03	1.9E-04	2.8E-03	2.0E-03	1.9E-03	2.6E-03	0
Tailings Storage Facility	71	3	2017	October	0.040	**0.030**	4.3E-04	5.3E-04	0.50	27	0.085	0	0.029	5.3E-03	47	**8.2E-03**	0	390	8.6	0	1.5E-03	1.9E-04	2.8E-03	2.0E-03	1.9E-03	2.6E-03	0
Tailings Storage Facility	72	4	2017	November	0.085	**0.064**	4.3E-04	**1.1E-03**	1.1	56	0.17	0	0.062	0.011	98	**0.017**	0	832	18	0	3.0E-03	3.8E-04	6.0E-03	4.2E-03	4.0E-03	5.2E-03	0
Tailings Storage Facility	73	4	2017	December	0.085	**0.064**	4.3E-04	**1.1E-03**	1.1	56	0.17	0	0.061	0.011	98	**0.017**	0	837	19	0	2.9E-03	3.7E-04	6.0E-03	4.1E-03	4.0E-03	5.0E-03	0
Tailings Storage Facility	74	4	2018	January	0.085	**0.063**	4.3E-04	**1.0E-03**	1.1	56	0.16	0	0.061	0.011	98	**0.016**	0	842	19	0	2.9E-03	3.5E-04	6.0E-03	4.0E-03	4.0E-03	4.8E-03	0
Tailings Storage Facility	75	4	2018	Febraury	0.084	**0.063**	4.3E-04	**1.0E-03**	1.1	56	0.16	0	0.060	0.011	98	**0.016**	0	846	19	0	2.8E-03	3.4E-04	6.0E-03	4.0E-03	4.0E-03	4.7E-03	0
Tailings Storage Facility	76	4	2018	March	0.084	**0.062**	4.3E-04	**1.0E-03**	1.1	56	0.15	0	0.060	0.011	98	**0.016**	0	851	19	0	2.7E-03	3.2E-04	6.0E-03	3.9E-03	4.0E-03	4.5E-03	0
Tailings Storage Facility	77	4	2018	April	0.084	**0.062**	4.3E-04	9.8E-04	1.1	57	0.15	0	0.060	0.011	98	**0.016**	0	855	20	0	2.6E-03	3.1E-04	5.9E-03	3.9E-03	4.1E-03	4.4E-03	0
Tailings Storage Facility	78	4	2018	May	0.042	**0.030**	4.3E-04	4.8E-04	0.57	28	0.071	0	0.030	5.3E-03	49	**7.7E-03**	0	428	9.8	0	1.3E-03	1.5E-04	3.0E-03	1.9E-03	2.0E-03	2.1E-03	0
Tailings Storage Facility	79	4	2018	June	0.039	**0.029**	4.3E-04	6.2E-04	0.52	30	0.11	0	0.029	5.6E-03	50	**9.8E-03**	0	391	9.0	0	2.0E-03	2.6E-04	2.9E-03	2.2E-03	2.1E-03	3.8E-03	0
Tailings Storage Facility	80	4	2018	July	0.041	**0.031**	4.3E-04	6.5E-04	0.54	32	0.13	0	0.031	5.9E-03	52	**0.010**	0	409	9.4	0	2.1E-03	2.8E-04	3.0E-03	2.4E-03	2.2E-03	4.1E-03	3.8E+05
Tailings Storage Facility	81	4	2018	August	0.042	**0.031**	4.3E-04	6.7E-04	0.54	33	0.14	0	0.031	6.1E-03	53	**0.011**	0	413	9.4	0	2.2E-03	3.0E-04	3.1E-03	2.4E-03	2.3E-03	4.3E-03	0
Tailings Storage Facility	82	4	2018	September	0.042	**0.031**	4.3E-04	6.7E-04	0.54	32	0.14	0	0.031	6.0E-03	53	**0.011**	0	410	9.4	0	2.2E-03	3.0E-04	3.1E-03	2.4E-03	2.3E-03	4.4E-03	3.8E+05
Tailings Storage Facility	83	4	2018	October	0.042	**0.031**	4.3E-04	6.6E-04	0.55	33	0.13	0	0.031	6.0E-03	52	**0.011**	0	413	9.5	0	2.2E-03	3.0E-04	3.1E-03	2.4E-03	2.3E-03	4.3E-03	0
Tailings Storage Facility	84	5	2018	November	0.094	**0.070**	4.3E-04	**1.4E-03**	1.2	71	0.28	0	0.068	0.013	114	**0.023**	0	914	21	0	4.7E-03	6.3E-04	6.8E-03	5.1E-03	4.9E-03	9.1E-03	0
Tailings Storage Facility	85	5	2018	December	0.093	**0.069**	4.3E-04	**1.4E-03**	1.2	71	0.27	0	0.067	0.013	113	**0.022**	0	916	21	0	4.5E-03	6.0E-04	6.8E-03	5.0E-03	4.9E-03	8.8E-03	0
Tailings Storage Facility	86	5	2019	January	0.093	**0.068**	4.3E-04	**1.3E-03**	1.2	70	0.26	0	0.066	0.013	112	**0.022**	0	918	21	0	4.3E-03	5.7E-04	6.7E-03	4.9E-03	4.9E-03	8.4E-03	0
Tailings Storage Facility	87	5	2019	Febraury	0.092	**0.067**	4.3E-04	**1.3E-03**	1.2	70	0.25	0	0.065	0.013	111	**0.021**	0	921	22	0	4.2E-03	5.5E-04	6.7E-03	4.8E-03	4.9E-03	8.1E-03	0
Tailings Storage Facility	88	5	2019	March	0.092	**0.066**	4.3E-04	**1.3E-03**	1.3	70	0.24	0	0.064	0.012	110	**0.021**	0	925	22	0	4.0E-03	5.2E-04	6.6E-03	4.7E-03	4.9E-03	7.8E-03	0
Tailings Storage Facility	89	5	2019	April	0.091	**0.066**	4.3E-04	**1.2E-03**	1.3	70	0.23	0	0.064	0.012	110	**0.020**	0	928	22	0	3.9E-03	5.0E-04	6.6E-03	4.6E-03	4.8E-03	7.5E-03	0
Tailings Storage Facility	90	5	2019	May	0.044	**0.031**	4.3E-04	5.7E-04	0.61	34	0.11	0	0.030	5.8E-03	53	**9.6E-03**	0	449	11	0	1.8E-03	2.3E-04	3.1E-03	2.2E-03	2.3E-03	3.5E-03	0
Tailings Storage Facility	91	5	2019	June	0.041	**0.030**	4.3E-04	7.3E-04	0.55	36	0.15	0	0.030	6.2E-03	54	**0.012**	0	406	9.5	0	2.5E-03	3.4E-04	3.0E-03	2.5E-03	2.3E-03	5.7E-03	0
Tailings Storage Facility	92	5	2019	July	0.043	**0.032**	4.3E-04	7.6E-04	0.56	37	0.17	0	0.031	6.6E-03	56	**0.012**	0	424	9.9	0	2.7E-03	3.6E-04	3.2E-03	2.6E-03	2.5E-03	6.1E-03	3.8E+05

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12					13			0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											1									0.5							
LOCATION	Model Month	Mine Year	Date Year	Month	TDS mg/L	Total Alkalinity mg/L as CaCO3	Cl mg/L	F mg/L	Si mg/L	SO4 mg/L	CN_Total mg/L	NH4 (as N) mg N/L	NO3 mg/L	Nitrate+Nitrite mg/L	TKN mg/L	P_dissolved[6] mg/L	PO4 mg/L	Al[5] mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd[4] mg/L	Ca mg/L	Cr[3] mg/L
Tailings Storage Facility	93	5	2019	August	3.7E+03	17	1.5E+03	0.10	0.055	976	16	20	2.4	3.9E-03	0.072	1.2E-05	2.4E-04	2.2E-04	0.023	3.9	0.058	0	1.1E-04	0.22	6.4E-05	704	1.1E-04
Tailings Storage Facility	94	5	2019	September	3.7E+03	17	1.5E+03	0.10	0.054	967	16	35	2.4	3.7E-03	0.069	1.2E-05	2.3E-04	2.2E-04	0.023	3.8	0.058	0	1.0E-04	0.22	6.4E-05	694	9.9E-05
Tailings Storage Facility	95	5	2019	October	3.7E+03	17	1.5E+03	0.100	0.054	971	16	35	2.4	3.5E-03	0.068	1.2E-05	2.3E-04	2.2E-04	0.023	3.9	0.057	0	9.9E-05	0.22	6.3E-05	693	9.4E-05
Tailings Storage Facility	96	6	2019	November	7.4E+03	17	3.2E+03	0.20	0.11	1.7E+03	33	70	5.0	7.2E-03	0.14	1.2E-05	4.6E-04	2.2E-04	0.047	3.9	0.12	0	2.0E-04	0.45	1.3E-04	1.4E+03	1.9E-04
Tailings Storage Facility	97	6	2019	December	7.5E+03	17	3.2E+03	0.20	0.11	1.7E+03	33	70	5.0	7.3E-03	0.14	1.2E-05	4.7E-04	2.2E-04	0.046	3.9	0.11	0	1.9E-04	0.46	1.2E-04	1.4E+03	2.0E-04
Tailings Storage Facility	98	6	2020	January	7.5E+03	17	3.2E+03	0.19	0.11	1.7E+03	34	70	5.0	7.5E-03	0.14	1.2E-05	4.7E-04	2.2E-04	0.046	3.9	0.11	0	1.8E-04	0.46	1.2E-04	1.4E+03	2.0E-04
Tailings Storage Facility	99	6	2020	Febraury	7.5E+03	17	3.2E+03	0.19	0.11	1.7E+03	34	70	5.0	7.6E-03	0.14	1.2E-05	4.8E-04	2.2E-04	0.045	3.9	0.11	0	1.7E-04	0.46	1.1E-04	1.4E+03	2.1E-04
Tailings Storage Facility	100	6	2020	March	7.6E+03	17	3.3E+03	0.18	0.11	1.7E+03	34	70	5.0	7.8E-03	0.14	1.2E-05	4.9E-04	2.2E-04	0.044	3.9	0.11	0	1.7E-04	0.46	1.1E-04	1.4E+03	2.2E-04
Tailings Storage Facility	101	6	2020	April	7.6E+03	17	3.3E+03	0.18	0.12	1.7E+03	34	70	5.0	7.9E-03	0.14	1.2E-05	4.9E-04	2.2E-04	0.044	3.9	0.11	0	1.6E-04	0.47	1.1E-04	1.5E+03	2.2E-04
Tailings Storage Facility	102	6	2020	May	4.0E+03	17	1.7E+03	0.089	0.058	968	17	50	2.5	4.0E-03	0.068	1.2E-05	2.5E-04	2.2E-04	0.022	3.9	0.052	0	7.8E-05	0.24	5.2E-05	731	1.1E-04
Tailings Storage Facility	103	6	2020	June	3.5E+03	17	1.4E+03	0.099	0.048	889	15	50	2.2	3.6E-03	0.065	1.2E-05	2.3E-04	2.2E-04	0.021	3.5	0.054	0	7.6E-05	0.20	6.4E-05	645	9.6E-05
Tailings Storage Facility	104	6	2020	July	3.6E+03	17	1.4E+03	0.11	0.050	929	15	25	2.3	3.7E-03	0.073	1.2E-05	2.4E-04	2.2E-04	0.022	3.7	0.058	0	7.7E-05	0.21	6.8E-05	668	9.5E-05
Tailings Storage Facility	105	6	2020	August	3.4E+03	17	1.4E+03	0.10	0.048	906	14	20	2.3	3.5E-03	0.077	1.2E-05	2.4E-04	2.2E-04	0.022	3.6	0.057	0	7.4E-05	0.20	6.8E-05	647	8.8E-05
Tailings Storage Facility	106	6	2020	September	3.3E+03	17	1.3E+03	0.10	0.046	868	14	35	2.2	3.4E-03	0.077	1.2E-05	2.3E-04	2.2E-04	0.021	3.4	0.055	0	6.9E-05	0.19	6.6E-05	618	8.1E-05
Tailings Storage Facility	107	6	2020	October	3.3E+03	17	1.3E+03	0.098	0.046	866	14	35	2.2	3.2E-03	0.076	1.2E-05	2.2E-04	2.2E-04	0.020	3.4	0.054	0	6.7E-05	0.19	6.4E-05	615	7.7E-05
Tailings Storage Facility	108	7	2020	November	6.9E+03	17	2.9E+03	0.20	0.099	1.7E+03	29	70	4.7	6.7E-03	0.16	1.2E-05	4.6E-04	2.2E-04	0.043	3.9	0.11	0	1.4E-04	0.41	1.3E-04	1.3E+03	1.6E-04
Tailings Storage Facility	109	7	2020	December	7.0E+03	17	2.9E+03	0.20	0.10	1.7E+03	30	70	4.8	6.9E-03	0.16	1.2E-05	4.7E-04	2.2E-04	0.042	3.9	0.11	0	1.3E-04	0.42	1.3E-04	1.3E+03	1.7E-04
Tailings Storage Facility	110	7	2021	January	7.0E+03	17	2.9E+03	0.19	0.10	1.7E+03	30	70	4.8	7.1E-03	0.16	1.2E-05	4.7E-04	2.2E-04	0.041	3.9	0.11	0	1.3E-04	0.42	1.2E-04	1.3E+03	1.7E-04
Tailings Storage Facility	111	7	2021	Febraury	7.1E+03	17	3.0E+03	0.19	0.10	1.7E+03	31	70	4.8	7.2E-03	0.15	1.2E-05	4.8E-04	2.2E-04	0.041	3.9	0.11	0	1.2E-04	0.43	1.2E-04	1.3E+03	1.8E-04
Tailings Storage Facility	112	7	2021	March	7.1E+03	17	3.0E+03	0.19	0.10	1.7E+03	31	70	4.8	7.4E-03	0.15	1.2E-05	4.9E-04	2.2E-04	0.040	3.9	0.11	0	1.2E-04	0.43	1.1E-04	1.3E+03	1.9E-04
Tailings Storage Facility	113	7	2021	April	7.2E+03	17	3.0E+03	0.18	0.11	1.7E+03	32	70	4.8	7.5E-03	0.15	1.2E-05	4.9E-04	2.2E-04	0.039	3.9	0.10	0	1.1E-04	0.44	1.1E-04	1.4E+03	2.0E-04
Tailings Storage Facility	114	7	2021	May	3.7E+03	17	1.5E+03	0.090	0.053	883	16	50	2.4	3.8E-03	0.074	1.2E-05	2.5E-04	2.2E-04	0.019	3.5	0.051	0	5.3E-05	0.22	5.3E-05	676	1.0E-04
Tailings Storage Facility	115	7	2021	June	3.2E+03	17	1.3E+03	0.11	0.044	841	13	50	2.1	3.4E-03	0.071	1.2E-05	2.2E-04	2.2E-04	0.020	3.2	0.057	0	6.2E-05	0.19	6.2E-05	608	8.6E-05
Tailings Storage Facility	116	7	2021	July	3.2E+03	17	1.3E+03	0.14	0.044	855	13	25	2.1	3.5E-03	0.086	1.2E-05	2.4E-04	2.2E-04	0.020	3.2	0.063	0	6.1E-05	0.19	9.2E-05	609	8.1E-05
Tailings Storage Facility	117	7	2021	August	3.1E+03	17	1.2E+03	0.14	0.041	824	13	20	2.1	3.4E-03	0.091	1.2E-05	2.4E-04	2.2E-04	0.019	3.1	0.062	0	5.9E-05	0.18	9.7E-05	581	7.3E-05
Tailings Storage Facility	118	7	2021	September	2.9E+03	17	1.1E+03	0.14	0.039	789	12	35	2.0	3.2E-03	0.090	1.2E-05	2.3E-04	2.2E-04	0.018	2.9	0.060	0	5.6E-05	0.17	9.3E-05	553	6.7E-05
Tailings Storage Facility	119	7	2021	October	3.0E+03	17	1.2E+03	0.13	0.040	790	12	35	2.0	3.1E-03	0.089	1.2E-05	2.3E-04	2.2E-04	0.018	2.9	0.059	0	5.4E-05	0.17	9.0E-05	552	6.3E-05
Tailings Storage Facility	120	8	2021	November	6.2E+03	17	2.4E+03	0.27	0.083	1.6E+03	25	70	4.2	6.2E-03	0.18	1.2E-05	4.5E-04	2.2E-04	0.037	3.9	0.12	0	1.1E-04	0.36	1.8E-04	1.1E+03	1.3E-04
Tailings Storage Facility	121	8	2021	December	6.3E+03	17	2.5E+03	0.26	0.086	1.6E+03	26	70	4.3	6.5E-03	0.18	1.2E-05	4.7E-04	2.2E-04	0.036	3.9	0.12	0	1.0E-04	0.37	1.7E-04	1.2E+03	1.4E-04
Tailings Storage Facility	122	8	2022	January	6.4E+03	17	2.6E+03	0.25	0.088	1.6E+03	26	70	4.4	6.7E-03	0.17	1.2E-05	4.8E-04	2.2E-04	0.035	3.9	0.12	0	9.9E-05	0.38	1.7E-04	1.2E+03	1.5E-04
Tailings Storage Facility	123	8	2022	Febraury	6.5E+03	17	2.6E+03	0.25	0.090	1.6E+03	27	70	4.4	6.9E-03	0.17	1.2E-05	4.9E-04	2.2E-04	0.035	3.9	0.11	0	9.5E-05	0.39	1.6E-04	1.2E+03	1.6E-04
Tailings Storage Facility	124	8	2022	March	6.6E+03	17	2.7E+03	0.24	0.092	1.6E+03	28	70	4.5	7.1E-03	0.17	1.2E-05	4.9E-04	2.2E-04	0.034	3.9	0.11	0	9.1E-05	0.39	1.5E-04	1.2E+03	1.7E-04
Tailings Storage Facility	125	8	2022	April	6.6E+03	17	2.8E+03	0.24	0.094	1.6E+03	28	70	4.5	7.3E-03	0.17	1.2E-05	5.0E-04	2.2E-04	0.034	3.9	0.11	0	8.7E-05	0.40	1.5E-04	1.2E+03	1.8E-04
Tailings Storage Facility	126	8	2022	May	3.2E+03	17	1.4E+03	0.11	0.046	779	14	50	2.2	3.6E-03	0.079	1.2E-05	2.4E-04	2.2E-04	0.016	2.8	0.053	0	4.0E-05	0.20	6.8E-05	600	8.9E-05
Tailings Storage Facility	127	8	2022	June	2.9E+03	17	1.1E+03	0.13	0.038	770	12	50	1.9	3.2E-03	0.074	1.2E-05	2.2E-04	2.2E-04	0.017	2.6	0.061	0	5.9E-05	0.17	7.4E-05	549	7.5E-05
Tailings Storage Facility	128	8	2022	July	2.9E+03	17	1.1E+03	0.17	0.038	787	12	25	1.9	3.3E-03	0.090	1.2E-05	2.4E-04	2.2E-04	0.017	2.6	0.068	0	5.8E-05	0.17	1.0E-04	552	7.1E-05
Tailings Storage Facility	129	8	2022	August	2.8E+03	17	1.1E+03	0.17	0.036	761	11	20	1.9	3.2E-03	0.094	1.2E-05	2.4E-04	2.2E-04	0.017	2.5	0.067	0	5.7E-05	0.16	1.1E-04	528	6.3E-05
Tailings Storage Facility	130	8	2022	September	2.7E+03	17	1.0E+03	0.16	0.034	732	10	35	1.9	3.0E-03	0.093	1.2E-05	2.3E-04	2.2E-04	0.016	2.4	0.065	0	5.5E-05	0.15	1.0E-04	504	5.7E-05
Tailings Storage Facility	131	8	2022	October	2.7E+03	17	1.0E+03	0.16	0.035	736	11	35	1.9	2.9E-03	0.091	1.2E-05	2.2E-04	2.2E-04	0.016	2.4	0.064	0	5.4E-05	0.15	9.9E-05	506	5.4E-05
Tailings Storage Facility	132	9	2022	November	5.8E+03	17	2.2E+03	0.32	0.076	1.6E+03	23	70	4.0	6.0E-03	0.19	1.2E-05	4.5E-04	2.2E-04	0.032	3.9	0.13	0	1.1E-04	0.33	2.0E-04	1.1E+03	1.1E-04
Tailings Storage Facility	133	9	2022	December	5.9E+03	17	2.3E+03	0.31	0.078	1.6E+03	24	70	4.1	6.2E-03	0.19	1.2E-05	4.6E-04	2.2E-04	0.032	3.9	0.13	0	1.1E-04	0.34	1.9E-04	1.1E+03	1.2E-04
Tailings Storage Facility	134	9	2023	January	6.0E+03	17	2.4E+03	0.31	0.080	1.6E+03	24	70	4.1	6.4E-03	0.18	1.2E-05	4.7E-04	2.2E-04	0.031	3.9	0.13	0	1.0E-04	0.35	1.9E-04	1.1E+03	1.3E-04

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						0.002	0.3	0.001				0.000026	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03	
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						0.3	3	0.2						0.5												0.5	
LOCATION	Model Month	Mine Year	Date Year	Month	Co mg/L	Cu[4] mg/L	Fe mg/L	Pb[4] mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg mg/L	Mo mg/L	Ni[4] mg/L	K mg/L	Se mg/L	Ag mg/L	Na mg/L	Sr mg/L	Tl mg/L	Sn mg/L	Ti mg/L	W mg/L	U mg/L	V mg/L	Zn mg/L	TSF OVERFLOW m^3/mon
Tailings Storage Facility	93	5	2019	August	0.044	0.032	4.3E-04	7.8E-04	0.57	38	0.18	0	0.032	6.7E-03	56	0.012	0	427	9.9	0	2.8E-03	3.7E-04	3.2E-03	2.6E-03	2.5E-03	6.4E-03	0
Tailings Storage Facility	94	5	2019	September	0.044	0.032	4.3E-04	7.7E-04	0.56	38	0.18	0	0.031	6.6E-03	55	0.012	0	423	9.8	0	2.7E-03	3.7E-04	3.2E-03	2.6E-03	2.5E-03	6.4E-03	0
Tailings Storage Facility	95	5	2019	October	0.045	0.032	4.3E-04	7.6E-04	0.56	38	0.17	0	0.032	6.6E-03	55	0.012	0	427	9.8	0	2.7E-03	3.6E-04	3.2E-03	2.6E-03	2.5E-03	6.3E-03	0
Tailings Storage Facility	96	6	2019	November	0.094	0.066	4.3E-04	1.5E-03	1.2	78	0.34	0	0.066	0.014	114	0.025	0	899	20	0	5.4E-03	7.3E-04	6.7E-03	5.2E-03	5.1E-03	0.013	0
Tailings Storage Facility	97	6	2019	December	0.094	0.066	4.3E-04	1.5E-03	1.2	77	0.33	0	0.065	0.013	113	0.024	0	903	21	0	5.2E-03	7.0E-04	6.6E-03	5.1E-03	5.1E-03	0.012	0
Tailings Storage Facility	98	6	2020	January	0.094	0.065	4.3E-04	1.4E-03	1.2	77	0.32	0	0.065	0.013	112	0.024	0	907	21	0	5.1E-03	6.7E-04	6.6E-03	5.1E-03	5.0E-03	0.012	0
Tailings Storage Facility	99	6	2020	Febraury	0.094	0.065	4.3E-04	1.4E-03	1.2	76	0.31	0	0.064	0.013	111	0.023	0	911	21	0	4.9E-03	6.4E-04	6.6E-03	5.0E-03	5.0E-03	0.011	0
Tailings Storage Facility	100	6	2020	March	0.094	0.064	4.3E-04	1.4E-03	1.2	76	0.30	0	0.064	0.013	111	0.023	0	915	21	0	4.7E-03	6.2E-04	6.5E-03	4.9E-03	5.0E-03	0.011	0
Tailings Storage Facility	101	6	2020	April	0.094	0.064	4.3E-04	1.3E-03	1.2	76	0.29	0	0.063	0.013	110	0.022	0	919	21	0	4.6E-03	5.9E-04	6.5E-03	4.8E-03	5.0E-03	0.010	0
Tailings Storage Facility	102	6	2020	May	0.047	0.032	4.3E-04	6.6E-04	0.61	38	0.14	0	0.032	6.3E-03	55	0.011	0	464	11	0	2.2E-03	2.9E-04	3.2E-03	2.4E-03	2.5E-03	5.1E-03	0
Tailings Storage Facility	103	6	2020	June	0.041	0.029	4.3E-04	7.4E-04	0.51	36	0.16	0	0.029	6.1E-03	52	0.012	0	390	9.0	0	2.7E-03	3.5E-04	2.9E-03	2.5E-03	2.3E-03	6.2E-03	0
Tailings Storage Facility	104	6	2020	July	0.043	0.030	4.3E-04	7.7E-04	0.53	37	0.17	0	0.030	6.4E-03	54	0.012	0	406	9.2	0	2.8E-03	3.8E-04	3.0E-03	2.6E-03	2.5E-03	6.6E-03	3.8E+05
Tailings Storage Facility	105	6	2020	August	0.042	0.029	4.3E-04	7.6E-04	0.51	36	0.17	0	0.029	6.3E-03	53	0.012	0	394	8.9	0	2.8E-03	3.8E-04	2.9E-03	2.6E-03	2.4E-03	6.6E-03	3.8E+05
Tailings Storage Facility	106	6	2020	September	0.040	0.029	4.3E-04	7.2E-04	0.49	35	0.16	0	0.028	6.0E-03	50	0.011	0	377	8.5	0	2.6E-03	3.6E-04	2.8E-03	2.5E-03	2.3E-03	6.3E-03	3.8E+05
Tailings Storage Facility	107	6	2020	October	0.040	0.029	4.3E-04	7.1E-04	0.49	35	0.16	0	0.028	5.9E-03	50	0.011	0	379	8.6	0	2.6E-03	3.5E-04	2.8E-03	2.4E-03	2.3E-03	6.2E-03	0
Tailings Storage Facility	108	7	2020	November	0.086	0.064	4.3E-04	1.4E-03	1.1	73	0.33	0	0.060	0.012	104	0.023	0	816	18	0	5.3E-03	7.2E-04	6.0E-03	5.1E-03	4.8E-03	0.013	0
Tailings Storage Facility	109	7	2020	December	0.086	0.064	4.3E-04	1.4E-03	1.1	73	0.31	0	0.060	0.012	104	0.023	0	824	19	0	5.1E-03	7.0E-04	6.0E-03	5.0E-03	4.8E-03	0.012	0
Tailings Storage Facility	110	7	2021	January	0.086	0.064	4.3E-04	1.4E-03	1.1	73	0.30	0	0.060	0.012	104	0.022	0	832	19	0	4.9E-03	6.7E-04	6.0E-03	4.9E-03	4.8E-03	0.012	0
Tailings Storage Facility	111	7	2021	Febraury	0.086	0.063	4.3E-04	1.3E-03	1.1	73	0.29	0	0.059	0.012	103	0.022	0	839	19	0	4.8E-03	6.4E-04	5.9E-03	4.9E-03	4.8E-03	0.011	0
Tailings Storage Facility	112	7	2021	March	0.086	0.063	4.3E-04	1.3E-03	1.1	72	0.28	0	0.059	0.012	103	0.021	0	847	19	0	4.6E-03	6.2E-04	5.9E-03	4.8E-03	4.8E-03	0.011	0
Tailings Storage Facility	113	7	2021	April	0.086	0.063	4.3E-04	1.3E-03	1.1	72	0.27	0	0.059	0.012	103	0.021	0	853	20	0	4.5E-03	5.9E-04	5.9E-03	4.8E-03	4.7E-03	0.010	0
Tailings Storage Facility	114	7	2021	May	0.043	0.031	4.3E-04	6.1E-04	0.56	36	0.13	0	0.029	5.7E-03	51	0.010	0	428	9.8	0	2.2E-03	2.8E-04	2.9E-03	2.4E-03	2.3E-03	5.0E-03	0
Tailings Storage Facility	115	7	2021	June	0.037	0.028	4.3E-04	7.1E-04	0.47	34	0.15	0	0.027	5.7E-03	51	0.011	0	362	8.3	0	2.6E-03	3.5E-04	2.6E-03	2.6E-03	2.3E-03	6.2E-03	0
Tailings Storage Facility	116	7	2021	July	0.037	0.028	4.3E-04	7.5E-04	0.47	35	0.16	0	0.028	6.1E-03	52	0.011	0	363	8.2	0	2.8E-03	4.7E-04	2.7E-03	3.1E-03	2.5E-03	6.9E-03	3.8E+05
Tailings Storage Facility	117	7	2021	August	0.036	0.027	4.3E-04	7.4E-04	0.45	33	0.16	0	0.027	6.0E-03	50	0.011	0	347	7.8	0	2.7E-03	4.8E-04	2.6E-03	3.1E-03	2.5E-03	6.9E-03	3.8E+05
Tailings Storage Facility	118	7	2021	September	0.034	0.026	4.3E-04	7.0E-04	0.42	32	0.15	0	0.026	5.7E-03	48	0.010	0	332	7.5	0	2.5E-03	4.6E-04	2.5E-03	3.0E-03	2.4E-03	6.6E-03	3.8E+05
Tailings Storage Facility	119	7	2021	October	0.034	0.027	4.3E-04	6.8E-04	0.43	31	0.15	0	0.026	5.7E-03	48	0.010	0	336	7.5	0	2.5E-03	4.5E-04	2.5E-03	2.9E-03	2.3E-03	6.4E-03	3.8E+05
Tailings Storage Facility	120	8	2021	November	0.072	0.058	4.3E-04	1.4E-03	0.90	65	0.29	0	0.053	0.012	97	0.020	0	709	16	0	4.9E-03	8.9E-04	5.2E-03	5.9E-03	4.8E-03	0.013	0
Tailings Storage Facility	121	8	2021	December	0.072	0.060	4.3E-04	1.3E-03	0.93	65	0.28	0	0.053	0.011	98	0.020	0	724	16	0	4.8E-03	8.6E-04	5.3E-03	5.8E-03	4.8E-03	0.012	0
Tailings Storage Facility	122	8	2022	January	0.072	0.060	4.3E-04	1.3E-03	0.95	66	0.27	0	0.053	0.011	98	0.020	0	737	17	0	4.6E-03	8.2E-04	5.3E-03	5.8E-03	4.8E-03	0.012	0
Tailings Storage Facility	123	8	2022	Febraury	0.073	0.060	4.3E-04	1.2E-03	0.98	66	0.26	0	0.053	0.011	98	0.019	0	750	17	0	4.4E-03	7.8E-04	5.3E-03	5.7E-03	4.8E-03	0.011	0
Tailings Storage Facility	124	8	2022	March	0.073	0.060	4.3E-04	1.2E-03	1.00	66	0.25	0	0.054	0.011	98	0.019	0	762	17	0	4.3E-03	7.5E-04	5.3E-03	5.6E-03	4.7E-03	0.011	0
Tailings Storage Facility	125	8	2022	April	0.073	0.059	4.3E-04	1.2E-03	1.0	66	0.24	0	0.054	0.011	98	0.019	0	774	18	0	4.1E-03	7.1E-04	5.4E-03	5.6E-03	4.7E-03	0.010	0
Tailings Storage Facility	126	8	2022	May	0.035	0.028	4.3E-04	5.5E-04	0.50	32	0.11	0	0.026	5.1E-03	47	8.9E-03	0	378	8.6	0	1.9E-03	3.3E-04	2.6E-03	2.6E-03	2.3E-03	4.8E-03	0
Tailings Storage Facility	127	8	2022	June	0.030	0.026	4.3E-04	6.7E-04	0.41	31	0.13	0	0.024	5.3E-03	50	9.9E-03	0	319	7.3	0	2.5E-03	3.9E-04	2.3E-03	3.0E-03	2.2E-03	6.2E-03	0
Tailings Storage Facility	128	8	2022	July	0.031	0.026	4.3E-04	7.1E-04	0.41	31	0.15	0	0.025	5.7E-03	51	9.9E-03	0	322	7.2	0	2.6E-03	5.1E-04	2.4E-03	3.5E-03	2.5E-03	6.9E-03	3.8E+05
Tailings Storage Facility	129	8	2022	August	0.030	0.026	4.3E-04	7.0E-04	0.39	30	0.14	0	0.024	5.6E-03	50	9.6E-03	0	309	6.9	0	2.5E-03	5.2E-04	2.3E-03	3.5E-03	2.4E-03	6.9E-03	3.8E+05
Tailings Storage Facility	130	8	2022	September	0.028	0.025	4.3E-04	6.6E-04	0.38	29	0.14	0	0.024	5.4E-03	48	9.2E-03	0	299	6.6	0	2.4E-03	4.9E-04	2.2E-03	3.4E-03	2.3E-03	6.6E-03	3.8E+05
Tailings Storage Facility	131	8	2022	October	0.029	0.026	4.3E-04	6.5E-04	0.38	29	0.13	0	0.024	5.3E-03	48	9.1E-03	0	306	6.7	0	2.3E-03	4.8E-04	2.3E-03	3.4E-03	2.3E-03	6.4E-03	0
Tailings Storage Facility	132	9	2022	November	0.062	0.057	4.3E-04	1.3E-03	0.83	61	0.27	0	0.051	0.011	100	0.019	0	667	14	0	4.7E-03	9.7E-04	4.8E-03	7.0E-03	4.7E-03	0.013	0
Tailings Storage Facility	133	9	2022	December	0.063	0.057	4.3E-04	1.3E-03	0.85	61	0.26	0	0.052	0.011	100	0.019	0	682	15	0	4.6E-03	9.3E-04	4.9E-03	6.9E-03	4.7E-03	0.013	0
Tailings Storage Facility	134	9	2023	January	0.063	0.058	4.3E-04	1.2E-03	0.87	61	0.25	0	0.052	0.011	101	0.019	0	696	15	0	4.4E-03	8.9E-04	4.9E-03	6.9E-03	4.7E-03	0.012	0

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12					13			0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											1									0.5							
	Model	Mine	Date	Month	TDS	Total Alkalinity	Cl	F	Si	SO4	CN_Total	NH4 (as N)	NO3	Nitrate+Nitrite	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/L	mg/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
Tailings Storage Facility	135	9	2023	Febraury	6.1E+03	17	2.4E+03	0.30	0.082	1.6E+03	25	70	4.2	6.6E-03	0.18	1.2E-05	4.8E-04	2.2E-04	0.031	3.9	0.13	0	9.8E-05	0.36	1.8E-04	1.1E+03	1.4E-04
Tailings Storage Facility	136	9	2023	March	6.1E+03	17	2.5E+03	0.30	0.084	1.6E+03	26	70	4.2	6.8E-03	0.18	1.2E-05	4.9E-04	2.2E-04	0.030	3.9	0.13	0	9.4E-05	0.36	1.7E-04	1.1E+03	1.5E-04
Tailings Storage Facility	137	9	2023	April	6.2E+03	17	2.5E+03	0.29	0.086	1.5E+03	26	70	4.3	7.0E-03	0.18	1.2E-05	4.9E-04	2.2E-04	0.030	3.9	0.12	0	9.0E-05	0.37	1.7E-04	1.2E+03	1.6E-04
Tailings Storage Facility	138	9	2023	May	3.2E+03	17	1.3E+03	0.14	0.044	771	13	50	2.2	3.6E-03	0.087	1.2E-05	2.5E-04	2.2E-04	0.015	2.4	0.062	0	4.3E-05	0.19	8.1E-05	587	8.2E-05
Tailings Storage Facility	139	9	2023	June	2.9E+03	17	1.1E+03	0.16	0.037	777	11	50	1.9	3.2E-03	0.081	1.2E-05	2.3E-04	2.2E-04	0.016	2.2	0.070	0	6.6E-05	0.16	8.6E-05	549	7.1E-05
Tailings Storage Facility	140	9	2023	July	2.9E+03	17	1.1E+03	0.19	0.037	794	11	25	1.9	3.3E-03	0.095	1.2E-05	2.4E-04	2.2E-04	0.016	2.3	0.076	0	6.7E-05	0.17	1.2E-04	555	6.8E-05
Tailings Storage Facility	141	9	2023	August	2.8E+03	17	1.0E+03	0.19	0.035	770	11	20	1.9	3.2E-03	0.099	1.2E-05	2.4E-04	2.2E-04	0.015	2.2	0.075	0	6.6E-05	0.16	1.2E-04	534	6.1E-05
Tailings Storage Facility	142	9	2023	September	2.7E+03	17	1.0E+03	0.18	0.034	739	10	35	1.9	3.2E-03	0.100	1.2E-05	2.4E-04	2.2E-04	0.015	2.1	0.072	0	6.4E-05	0.15	1.1E-04	513	6.0E-05
Tailings Storage Facility	143	9	2023	October	2.7E+03	17	1.0E+03	0.18	0.034	739	11	35	1.9	3.2E-03	0.099	1.2E-05	2.4E-04	2.2E-04	0.014	2.0	0.070	0	6.3E-05	0.15	1.1E-04	515	6.0E-05
Tailings Storage Facility	144	10	2023	November	5.6E+03	17	2.2E+03	0.35	0.072	1.5E+03	22	70	3.9	6.3E-03	0.19	1.2E-05	4.8E-04	2.2E-04	0.029	3.9	0.14	0	1.2E-04	0.32	2.1E-04	1.1E+03	1.2E-04
Tailings Storage Facility	145	10	2023	December	5.8E+03	17	2.2E+03	0.35	0.076	1.5E+03	23	70	4.0	6.6E-03	0.19	1.2E-05	4.9E-04	2.2E-04	0.028	3.9	0.14	0	1.2E-04	0.34	2.1E-04	1.1E+03	1.3E-04
Tailings Storage Facility	146	10	2024	January	5.9E+03	17	2.3E+03	0.33	0.078	1.5E+03	24	70	4.1	6.8E-03	0.19	1.2E-05	5.0E-04	2.2E-04	0.028	3.9	0.13	0	1.1E-04	0.35	2.0E-04	1.1E+03	1.4E-04
Tailings Storage Facility	147	10	2024	Febraury	6.0E+03	17	2.4E+03	0.33	0.081	1.5E+03	25	70	4.1	7.1E-03	0.19	1.2E-05	5.1E-04	2.2E-04	0.027	3.9	0.13	0	1.1E-04	0.35	1.9E-04	1.1E+03	1.5E-04
Tailings Storage Facility	148	10	2024	March	6.1E+03	17	2.5E+03	0.32	0.083	1.5E+03	25	70	4.2	7.2E-03	0.19	1.2E-05	5.1E-04	2.2E-04	0.027	3.9	0.13	0	1.1E-04	0.36	1.8E-04	1.1E+03	1.6E-04
Tailings Storage Facility	149	10	2024	April	6.1E+03	17	2.5E+03	0.31	0.085	1.5E+03	26	70	4.2	7.4E-03	0.18	1.2E-05	5.2E-04	2.2E-04	0.026	3.9	0.12	0	1.0E-04	0.37	1.8E-04	1.2E+03	1.7E-04
Tailings Storage Facility	150	10	2024	May	3.0E+03	17	1.2E+03	0.14	0.042	706	13	50	2.1	3.7E-03	0.087	1.2E-05	2.5E-04	2.2E-04	0.012	1.9	0.059	0	4.6E-05	0.18	8.2E-05	569	8.6E-05
Tailings Storage Facility	151	10	2024	June	2.7E+03	17	1.0E+03	0.16	0.034	711	11	50	1.8	3.9E-03	0.089	1.2E-05	2.7E-04	2.2E-04	0.014	1.9	0.065	0	6.4E-05	0.16	9.6E-05	522	9.4E-05
Tailings Storage Facility	152	10	2024	July	2.7E+03	17	1.0E+03	0.19	0.034	724	11	25	1.8	4.0E-03	0.10	1.2E-05	2.9E-04	2.2E-04	0.014	1.9	0.071	0	6.3E-05	0.16	1.3E-04	527	8.9E-05
Tailings Storage Facility	153	10	2024	August	2.6E+03	17	964	0.19	0.032	696	10	20	1.8	4.3E-03	0.11	1.2E-05	3.1E-04	2.2E-04	0.014	1.8	0.069	0	6.1E-05	0.15	1.3E-04	501	9.2E-05
Tailings Storage Facility	154	10	2024	September	2.4E+03	17	908	0.18	0.030	652	9.4	35	1.7	4.3E-03	0.11	1.2E-05	3.1E-04	2.2E-04	0.013	1.8	0.064	0	5.7E-05	0.14	1.2E-04	470	9.3E-05
Tailings Storage Facility	155	10	2024	October	2.5E+03	17	927	0.17	0.031	652	9.5	35	1.8	4.2E-03	0.11	1.2E-05	3.0E-04	2.2E-04	0.013	1.8	0.062	0	5.6E-05	0.14	1.2E-04	472	9.1E-05
Tailings Storage Facility	156	11	2024	November	5.5E+03	17	2.1E+03	0.35	0.071	1.4E+03	22	70	3.9	8.8E-03	0.24	1.2E-05	6.4E-04	2.2E-04	0.028	3.9	0.13	0	1.2E-04	0.32	2.4E-04	1.0E+03	1.9E-04
Tailings Storage Facility	157	11	2024	December	5.6E+03	17	2.2E+03	0.34	0.073	1.4E+03	22	70	4.0	9.0E-03	0.23	1.2E-05	6.4E-04	2.2E-04	0.028	3.9	0.13	0	1.1E-04	0.33	2.3E-04	1.1E+03	2.0E-04
Tailings Storage Facility	158	11	2025	January	5.7E+03	17	2.3E+03	0.33	0.076	1.4E+03	23	70	4.0	9.1E-03	0.23	1.2E-05	6.4E-04	2.2E-04	0.027	3.9	0.12	0	1.1E-04	0.34	2.2E-04	1.1E+03	2.0E-04
Tailings Storage Facility	159	11	2025	Febraury	5.8E+03	17	2.3E+03	0.32	0.078	1.4E+03	24	70	4.1	9.2E-03	0.22	1.2E-05	6.4E-04	2.2E-04	0.027	3.9	0.12	0	1.0E-04	0.35	2.1E-04	1.1E+03	2.1E-04
Tailings Storage Facility	160	11	2025	March	5.8E+03	17	2.4E+03	0.31	0.080	1.4E+03	25	70	4.2	9.3E-03	0.22	1.2E-05	6.4E-04	2.2E-04	0.027	3.9	0.12	0	9.6E-05	0.35	2.1E-04	1.1E+03	2.2E-04

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3	0.2						0.5												0.5	
	Model	Mine	Date	Month	Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Ag	Na	Sr	Tl	Sn	Ti	W	U	V	Zn	TSF OVERFLOW
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L	mg/L	m^3/mon
Tailings Storage Facility	135	9	2023	Febraury	0.064	0.058	4.3E-04	1.2E-03	0.89	62	0.24	0	0.052	0.011	101	0.018	0	709	16	0	4.3E-03	8.6E-04	4.9E-03	6.8E-03	4.7E-03	0.012	0
Tailings Storage Facility	136	9	2023	March	0.064	0.058	4.3E-04	1.2E-03	0.92	62	0.23	0	0.053	0.011	101	0.018	0	722	16	0	4.2E-03	8.2E-04	4.9E-03	6.7E-03	4.6E-03	0.011	0
Tailings Storage Facility	137	9	2023	April	0.065	0.058	4.3E-04	1.1E-03	0.93	62	0.23	0	0.053	0.010	101	0.018	0	734	16	0	4.0E-03	7.9E-04	4.9E-03	6.7E-03	4.6E-03	0.011	0
Tailings Storage Facility	138	9	2023	May	0.033	0.029	4.3E-04	5.6E-04	0.48	31	0.11	0	0.027	5.2E-03	51	9.0E-03	0	373	8.3	0	2.0E-03	3.8E-04	2.5E-03	3.3E-03	2.3E-03	5.2E-03	0
Tailings Storage Facility	139	9	2023	June	0.029	0.028	4.3E-04	6.6E-04	0.41	31	0.13	0	0.025	5.3E-03	54	9.4E-03	0	320	7.1	0	2.4E-03	4.2E-04	2.2E-03	3.6E-03	2.2E-03	6.5E-03	0
Tailings Storage Facility	140	9	2023	July	0.030	0.028	4.3E-04	7.0E-04	0.41	31	0.14	0	0.026	5.7E-03	55	9.5E-03	0	325	7.1	0	2.5E-03	5.2E-04	2.3E-03	4.1E-03	2.5E-03	7.2E-03	3.8E+05
Tailings Storage Facility	141	9	2023	August	0.030	0.027	4.3E-04	6.9E-04	0.39	30	0.14	0	0.025	5.6E-03	54	9.2E-03	0	313	6.8	0	2.5E-03	5.3E-04	2.2E-03	4.1E-03	2.4E-03	7.2E-03	3.8E+05
Tailings Storage Facility	142	9	2023	September	0.029	0.027	4.3E-04	6.6E-04	0.37	29	0.14	0	0.025	5.4E-03	52	8.9E-03	0	303	6.6	0	2.3E-03	5.0E-04	2.1E-03	3.9E-03	2.3E-03	6.9E-03	3.8E+05
Tailings Storage Facility	143	9	2023	October	0.030	0.028	4.3E-04	6.4E-04	0.38	29	0.13	0	0.025	5.3E-03	51	8.9E-03	0	309	6.6	0	2.3E-03	4.9E-04	2.1E-03	3.8E-03	2.3E-03	6.7E-03	3.8E+05
Tailings Storage Facility	144	10	2023	November	0.064	0.060	4.3E-04	1.3E-03	0.80	59	0.26	0	0.052	0.011	103	0.018	0	654	14	0	4.5E-03	9.6E-04	4.4E-03	7.7E-03	4.7E-03	0.013	0
Tailings Storage Facility	145	10	2023	December	0.066	0.063	4.3E-04	1.2E-03	0.83	60	0.25	0	0.053	0.010	104	0.018	0	670	15	0	4.4E-03	9.3E-04	4.4E-03	7.6E-03	4.7E-03	0.013	0
Tailings Storage Facility	146	10	2024	January	0.069	0.064	4.3E-04	1.2E-03	0.86	61	0.24	0	0.054	0.010	103	0.018	0	686	15	0	4.2E-03	8.9E-04	4.4E-03	7.4E-03	4.6E-03	0.012	0
Tailings Storage Facility	147	10	2024	Febraury	0.072	0.065	4.3E-04	1.2E-03	0.89	61	0.24	0	0.054	0.010	103	0.018	0	701	15	0	4.1E-03	8.5E-04	4.4E-03	7.3E-03	4.6E-03	0.012	0
Tailings Storage Facility	148	10	2024	March	0.074	0.065	4.3E-04	1.1E-03	0.91	61	0.23	0	0.055	1.0E-02	103	0.018	0	715	16	0	4.0E-03	8.2E-04	4.4E-03	7.2E-03	4.6E-03	0.011	0
Tailings Storage Facility	149	10	2024	April	0.076	0.066	4.3E-04	1.1E-03	0.93	61	0.22	0	0.055	9.8E-03	102	0.018	0	728	16	0	3.9E-03	7.8E-04	4.4E-03	7.0E-03	4.6E-03	0.011	0
Tailings Storage Facility	150	10	2024	May	0.038	0.032	4.3E-04	5.1E-04	0.46	30	0.10	0	0.027	4.7E-03	49	8.4E-03	0	358	8.0	0	1.8E-03	3.6E-04	2.1E-03	3.3E-03	2.2E-03	5.1E-03	0
Tailings Storage Facility	151	10	2024	June	0.033	0.030	4.3E-04	6.4E-04	0.38	30	0.13	0	0.025	4.9E-03	51	8.5E-03	0	298	6.7	0	2.2E-03	3.8E-04	1.9E-03	3.5E-03	2.1E-03	6.9E-03	0
Tailings Storage Facility	152	10	2024	July	0.034	0.030	4.3E-04	6.9E-04	0.38	31	0.15	0	0.026	5.3E-03	53	8.6E-03	0	302	6.7	0	2.3E-03	4.9E-04	2.0E-03	3.9E-03	2.4E-03	7.6E-03	1.5E+06
Tailings Storage Facility	153	10	2024	August	0.033	0.029	4.3E-04	6.8E-04	0.36	29	0.15	0	0.025	5.2E-03	51	8.2E-03	0	287	6.3	0	2.2E-03	5.0E-04	1.9E-03	3.9E-03	2.3E-03	7.7E-03	0
Tailings Storage Facility	154	10	2024	September	0.032	0.029	4.3E-04	6.3E-04	0.34	28	0.14	0	0.024	4.9E-03	47	7.7E-03	0	272	5.9	0	2.1E-03	4.6E-04	1.8E-03	3.5E-03	2.2E-03	7.3E-03	0
Tailings Storage Facility	155	10	2024	October	0.033	0.029	4.3E-04	6.2E-04	0.35	28	0.13	0	0.024	4.8E-03	46	7.6E-03	0	279	6.0	0	2.0E-03	4.4E-04	1.8E-03	3.4E-03	2.1E-03	7.0E-03	0
Tailings Storage Facility	156	11	2024	November	0.076	0.066	4.3E-04	1.3E-03	0.78	60	0.28	0	0.054	0.010	100	0.017	0	637	14	0	4.1E-03	9.1E-04	4.2E-03	7.2E-03	4.6E-03	0.015	0
Tailings Storage Facility	157	11	2024	December	0.078	0.067	4.3E-04	1.3E-03	0.81	61	0.27	0	0.054	0.010	100	0.017	0	652	14	0	4.0E-03	8.7E-04	4.2E-03	7.0E-03	4.6E-03	0.014	0
Tailings Storage Facility	158	11	2025	January	0.080	0.068	4.3E-04	1.2E-03	0.83	61	0.26	0	0.054	9.9E-03	99	0.016	0	666	15	0	3.9E-03	8.3E-04	4.3E-03	6.8E-03	4.6E-03	0.013	0
Tailings Storage Facility	159	11	2025	Febraury	0.082	0.069	4.3E-04	1.2E-03	0.86	61	0.25	0	0.055	9.8E-03	99	0.016	0	680	15	0	3.8E-03	8.0E-04	4.3E-03	6.6E-03	4.5E-03	0.013	0
Tailings Storage Facility	160	11	2025	March	0.084	0.070	4.3E-04	1.2E-03	0.88	61	0.24	0	0.055	9.6E-03	99	0.016	0	693	15	0	3.6E-03	7.6E-04	4.4E-03	6.5E-03	4.5E-03	0.012	0

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12					13			0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											1									0.5							
LOCATION	Model Month	Mine Year	Date Year	Month	TDS	Total Alkalinity	Cl	F	Si	SO4	CN_Total	NH4 (as N)	NO3	Nitrate+Nitrite	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
					mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/L	mg/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
Tailings Storage Facility	161	11	2025	April	5.9E+03	17	2.5E+03	0.30	0.083	1.4E+03	26	70	4.2	9.3E-03	0.21	1.2E-05	6.4E-04	2.2E-04	0.027	3.9	0.11	0	9.2E-05	0.36	2.0E-04	1.1E+03	2.2E-04
Tailings Storage Facility	162	11	2025	May	2.9E+03	17	1.2E+03	0.14	0.041	670	13	50	2.1	4.6E-03	0.10	1.2E-05	3.1E-04	2.2E-04	0.013	2.3	0.054	0	4.3E-05	0.18	9.3E-05	557	1.1E-04
Tailings Storage Facility	163	11	2025	June	2.6E+03	17	1.0E+03	0.17	0.034	659	10	50	1.8	4.7E-03	0.10	1.2E-05	3.2E-04	2.2E-04	0.016	2.3	0.062	0	5.0E-05	0.15	1.0E-04	506	1.2E-04
Tailings Storage Facility	164	11	2025	July	2.6E+03	17	1.0E+03	0.20	0.034	675	11	25	1.8	4.7E-03	0.12	1.2E-05	3.3E-04	2.2E-04	0.016	2.3	0.067	0	4.9E-05	0.16	1.3E-04	511	1.1E-04
Tailings Storage Facility	165	11	2025	August	2.5E+03	17	949	0.20	0.032	648	9.9	20	1.8	4.9E-03	0.12	1.2E-05	3.4E-04	2.2E-04	0.016	2.3	0.066	0	4.7E-05	0.15	1.4E-04	486	1.1E-04
Tailings Storage Facility	166	11	2025	September	2.3E+03	17	896	0.19	0.030	609	9.3	35	1.7	4.9E-03	0.12	1.2E-05	3.4E-04	2.2E-04	0.015	2.2	0.061	0	4.3E-05	0.14	1.3E-04	456	1.1E-04
Tailings Storage Facility	167	11	2025	October	2.4E+03	17	917	0.18	0.031	613	9.5	35	1.8	4.8E-03	0.12	1.2E-05	3.4E-04	2.2E-04	0.015	2.3	0.059	0	4.2E-05	0.14	1.2E-04	458	1.1E-04
Tailings Storage Facility	168	12	2025	November	5.3E+03	17	2.1E+03	0.37	0.069	1.4E+03	21	70	3.9	9.9E-03	0.25	1.2E-05	7.0E-04	2.2E-04	0.033	3.9	0.12	0	8.6E-05	0.32	2.5E-04	1.0E+03	2.2E-04
Tailings Storage Facility	169	12	2025	December	5.4E+03	17	2.1E+03	0.36	0.072	1.4E+03	22	70	4.0	1.0E-02	0.25	1.2E-05	7.0E-04	2.2E-04	0.032	3.9	0.12	0	8.3E-05	0.33	2.4E-04	1.0E+03	2.3E-04
Tailings Storage Facility	170	12	2026	January	5.5E+03	17	2.2E+03	0.35	0.075	1.4E+03	23	70	4.0	0.010	0.24	1.2E-05	7.0E-04	2.2E-04	0.032	3.9	0.12	0	7.9E-05	0.34	2.3E-04	1.1E+03	2.3E-04
Tailings Storage Facility	171	12	2026	Febraury	5.6E+03	17	2.3E+03	0.34	0.077	1.4E+03	24	70	4.1	0.010	0.24	1.2E-05	7.0E-04	2.2E-04	0.032	3.9	0.12	0	7.6E-05	0.34	2.2E-04	1.1E+03	2.4E-04
Tailings Storage Facility	172	12	2026	March	5.7E+03	17	2.4E+03	0.33	0.079	1.4E+03	25	70	4.1	0.010	0.23	1.2E-05	6.9E-04	2.2E-04	0.032	3.9	0.11	0	7.2E-05	0.35	2.1E-04	1.1E+03	2.4E-04
Tailings Storage Facility	173	12	2026	April	5.8E+03	17	2.4E+03	0.32	0.081	1.4E+03	25	70	4.2	0.010	0.23	1.2E-05	6.9E-04	2.2E-04	0.031	3.9	0.11	0	6.9E-05	0.36	2.1E-04	1.1E+03	2.5E-04
Tailings Storage Facility	174	12	2026	May	2.9E+03	17	1.2E+03	0.15	0.041	663	13	50	2.1	5.0E-03	0.11	1.2E-05	3.4E-04	2.2E-04	0.015	2.7	0.053	0	3.2E-05	0.18	9.7E-05	547	1.2E-04
Tailings Storage Facility	175	12	2026	June	2.6E+03	17	997	0.19	0.033	641	10	50	1.8	5.0E-03	0.11	1.2E-05	3.3E-04	2.2E-04	0.018	2.7	0.063	0	3.7E-05	0.15	1.0E-04	495	1.2E-04
Tailings Storage Facility	176	12	2026	July	2.6E+03	17	998	0.22	0.033	656	10	25	1.8	5.0E-03	0.12	1.2E-05	3.5E-04	2.2E-04	0.019	2.8	0.069	0	3.7E-05	0.16	1.3E-04	500	1.2E-04
Tailings Storage Facility	177	12	2026	August	2.4E+03	17	943	0.22	0.032	627	9.9	20	1.8	5.1E-03	0.13	1.2E-05	3.6E-04	2.2E-04	0.019	2.7	0.068	0	3.5E-05	0.15	1.3E-04	476	1.2E-04
Tailings Storage Facility	178	12	2026	September	2.3E+03	17	891	0.20	0.030	585	9.3	35	1.7	5.1E-03	0.13	1.2E-05	3.6E-04	2.2E-04	0.018	2.6	0.063	0	3.2E-05	0.14	1.2E-04	446	1.2E-04
Tailings Storage Facility	179	12	2026	October	2.3E+03	17	911	0.20	0.031	586	9.5	35	1.8	5.0E-03	0.12	1.2E-05	3.5E-04	2.2E-04	0.018	2.7	0.061	0	3.1E-05	0.14	1.1E-04	449	1.1E-04
Tailings Storage Facility	180	13	2026	November	5.2E+03	17	2.0E+03	0.41	0.069	1.3E+03	21	70	3.9	0.010	0.26	1.2E-05	7.2E-04	2.2E-04	0.038	3.9	0.13	0	6.4E-05	0.31	2.4E-04	985	2.3E-04
Tailings Storage Facility	181	13	2026	December	5.3E+03	17	2.1E+03	0.39	0.071	1.3E+03	22	70	3.9	0.010	0.25	1.2E-05	7.2E-04	2.2E-04	0.038	3.9	0.13	0	6.1E-05	0.32	2.3E-04	1.0E+03	2.4E-04
Tailings Storage Facility	182	13	2027	January	5.4E+03	17	2.2E+03	0.38	0.074	1.3E+03	23	70	4.0	0.010	0.25	1.2E-05	7.2E-04	2.2E-04	0.037	3.9	0.12	0	5.8E-05	0.33	2.2E-04	1.0E+03	2.4E-04
Tailings Storage Facility	183	13	2027	Febraury	5.5E+03	17	2.3E+03	0.37	0.076	1.3E+03	24	70	4.1	0.010	0.24	1.2E-05	7.2E-04	2.2E-04	0.037	3.9	0.12	0	5.6E-05	0.34	2.2E-04	1.0E+03	2.5E-04
Tailings Storage Facility	184	13	2027	March	5.6E+03	17	2.3E+03	0.35	0.078	1.2E+03	24	70	4.1	0.010	0.23	1.2E-05	7.1E-04	2.2E-04	0.036	3.9	0.12	0	5.4E-05	0.35	2.1E-04	1.1E+03	2.5E-04
Tailings Storage Facility	185	13	2027	April	5.6E+03	17	2.4E+03	0.34	0.081	1.2E+03	25	70	4.2	0.010	0.23	1.2E-05	7.1E-04	2.2E-04	0.036	3.9	0.12	0	5.1E-05	0.36	2.0E-04	1.1E+03	2.6E-04
Tailings Storage Facility	186	13	2027	May	2.8E+03	17	1.2E+03	0.16	0.040	591	13	50	2.1	5.1E-03	0.11	1.2E-05	3.5E-04	2.2E-04	0.017	3.0	0.055	0	2.4E-05	0.18	9.6E-05	537	1.3E-04
Tailings Storage Facility	187	13	2027	June	2.3E+03	17	993	0.14	0.033	502	9.7	50	1.8	5.1E-03	0.11	1.2E-05	3.4E-04	2.2E-04	0.015	2.5	0.047	0	1.9E-05	0.15	7.5E-05	446	1.3E-04
				MINIMUM	49	15	3.6	1.2E-05	0.030	1.0	3.8E-05	20	6.6E-03	2.9E-03	0.065	1.2E-05	1.4E-04	2.2E-04	1.1E-05	2.2E-04	4.5E-03	0	3.3E-07	6.8E-04	7.2E-07	4.1	5.4E-05
				MAXIMUM	7.7E+03	17	3.4E+03	0.41	2.6	1.7E+03	35	70	5.2	0.045	1.0	1.2E-05	1.5E-03	2.2E-04	0.048	3.9	0.14	0	3.5E-04	0.48	2.5E-04	1.5E+03	1.7E-03
				AVERAGE	3.6E+03	17	1.4E+03	0.16	0.24	889	15	53	2.4	9.5E-03	0.25	1.2E-05	5.2E-04	2.2E-04	0.024	2.6	0.067	0	1.0E-04	0.21	8.0E-05	663	2.4E-04

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3	0.2						0.5												0.5	
	Model	Mine	Date	Month	Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Ag	Na	Sr	Tl	Sn	Ti	W	U	V	Zn	TSF OVERFLOW
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L	mg/L	m^3/mon
Tailings Storage Facility	161	11	2025	April	0.085	0.071	4.3E-04	1.1E-03	0.91	62	0.23	0	0.055	9.5E-03	99	0.016	0	705	16	0	3.5E-03	7.3E-04	4.5E-03	6.3E-03	4.5E-03	0.012	0
Tailings Storage Facility	162	11	2025	May	0.042	0.035	4.3E-04	5.4E-04	0.45	30	0.11	0	0.027	4.6E-03	48	7.6E-03	0	348	7.8	0	1.7E-03	3.4E-04	2.2E-03	3.0E-03	2.2E-03	5.6E-03	0
Tailings Storage Facility	163	11	2025	June	0.036	0.031	4.3E-04	7.4E-04	0.37	31	0.14	0	0.025	4.8E-03	50	8.3E-03	0	291	6.5	0	2.0E-03	3.8E-04	2.0E-03	3.1E-03	2.1E-03	7.2E-03	0
Tailings Storage Facility	164	11	2025	July	0.037	0.032	4.3E-04	7.9E-04	0.37	31	0.15	0	0.026	5.3E-03	51	8.4E-03	0	294	6.6	0	2.1E-03	4.9E-04	2.1E-03	3.6E-03	2.4E-03	7.9E-03	1.5E+06
Tailings Storage Facility	165	11	2025	August	0.035	0.030	4.3E-04	7.8E-04	0.35	30	0.15	0	0.025	5.2E-03	49	8.1E-03	0	280	6.2	0	2.1E-03	5.0E-04	2.1E-03	3.5E-03	2.3E-03	7.9E-03	0
Tailings Storage Facility	166	11	2025	September	0.033	0.029	4.3E-04	7.4E-04	0.33	28	0.14	0	0.024	4.8E-03	46	7.6E-03	0	265	5.9	0	1.9E-03	4.6E-04	2.0E-03	3.2E-03	2.2E-03	7.4E-03	0
Tailings Storage Facility	167	11	2025	October	0.034	0.030	4.3E-04	7.2E-04	0.34	28	0.13	0	0.024	4.8E-03	45	7.5E-03	0	273	6.0	0	1.8E-03	4.4E-04	2.0E-03	3.1E-03	2.1E-03	7.2E-03	0
Tailings Storage Facility	168	12	2025	November	0.076	0.066	4.3E-04	1.5E-03	0.77	62	0.28	0	0.053	0.010	98	0.016	0	619	13	0	3.8E-03	9.2E-04	4.6E-03	6.5E-03	4.6E-03	0.015	0
Tailings Storage Facility	169	12	2025	December	0.077	0.066	4.3E-04	1.5E-03	0.79	62	0.27	0	0.053	0.010	98	0.016	0	634	14	0	3.6E-03	8.8E-04	4.7E-03	6.3E-03	4.6E-03	0.014	0
Tailings Storage Facility	170	12	2026	January	0.078	0.066	4.3E-04	1.4E-03	0.82	62	0.26	0	0.053	0.010	98	0.016	0	649	14	0	3.5E-03	8.4E-04	4.7E-03	6.1E-03	4.5E-03	0.014	0
Tailings Storage Facility	171	12	2026	Febraury	0.078	0.066	4.3E-04	1.4E-03	0.85	62	0.25	0	0.053	9.9E-03	98	0.016	0	663	15	0	3.4E-03	8.0E-04	4.8E-03	6.0E-03	4.5E-03	0.013	0
Tailings Storage Facility	172	12	2026	March	0.079	0.066	4.3E-04	1.4E-03	0.87	62	0.24	0	0.053	9.8E-03	98	0.015	0	676	15	0	3.3E-03	7.7E-04	4.9E-03	5.8E-03	4.5E-03	0.013	0
Tailings Storage Facility	173	12	2026	April	0.079	0.067	4.3E-04	1.3E-03	0.89	63	0.23	0	0.053	9.7E-03	97	0.015	0	689	16	0	3.2E-03	7.4E-04	5.0E-03	5.7E-03	4.5E-03	0.012	0
Tailings Storage Facility	174	12	2026	May	0.039	0.033	4.3E-04	6.4E-04	0.45	31	0.11	0	0.026	4.7E-03	47	7.3E-03	0	341	7.8	0	1.5E-03	3.4E-04	2.5E-03	2.7E-03	2.2E-03	5.7E-03	0
Tailings Storage Facility	175	12	2026	June	0.033	0.029	4.3E-04	8.7E-04	0.37	32	0.13	0	0.025	4.9E-03	51	8.7E-03	0	286	6.5	0	1.9E-03	4.0E-04	2.3E-03	3.0E-03	2.1E-03	7.1E-03	0
Tailings Storage Facility	176	12	2026	July	0.034	0.030	4.3E-04	9.2E-04	0.37	32	0.14	0	0.026	5.3E-03	52	8.7E-03	0	290	6.5	0	2.0E-03	5.2E-04	2.4E-03	3.4E-03	2.4E-03	7.8E-03	1.5E+06
Tailings Storage Facility	177	12	2026	August	0.032	0.029	4.3E-04	9.1E-04	0.35	31	0.14	0	0.025	5.2E-03	50	8.4E-03	0	276	6.2	0	1.9E-03	5.3E-04	2.3E-03	3.4E-03	2.4E-03	7.7E-03	0
Tailings Storage Facility	178	12	2026	September	0.030	0.028	4.3E-04	8.6E-04	0.33	29	0.13	0	0.023	4.8E-03	47	7.9E-03	0	261	5.8	0	1.8E-03	4.9E-04	2.2E-03	3.1E-03	2.2E-03	7.2E-03	0
Tailings Storage Facility	179	12	2026	October	0.031	0.029	4.3E-04	8.4E-04	0.34	29	0.13	0	0.024	4.7E-03	47	7.8E-03	0	268	6.0	0	1.7E-03	4.7E-04	2.2E-03	3.0E-03	2.2E-03	7.0E-03	0
Tailings Storage Facility	180	13	2026	November	0.069	0.065	4.3E-04	1.8E-03	0.76	63	0.26	0	0.052	0.010	100	0.017	0	603	13	0	3.6E-03	9.7E-04	5.0E-03	6.2E-03	4.7E-03	0.014	0
Tailings Storage Facility	181	13	2026	December	0.070	0.067	4.3E-04	1.7E-03	0.78	63	0.25	0	0.053	1.0E-02	100	0.016	0	618	14	0	3.4E-03	9.3E-04	5.1E-03	6.0E-03	4.6E-03	0.014	0
Tailings Storage Facility	182	13	2027	January	0.071	0.068	4.3E-04	1.7E-03	0.81	63	0.24	0	0.053	9.8E-03	100	0.016	0	632	14	0	3.3E-03	8.9E-04	5.2E-03	5.9E-03	4.6E-03	0.013	0
Tailings Storage Facility	183	13	2027	Febraury	0.072	0.070	4.3E-04	1.6E-03	0.84	63	0.23	0	0.053	9.7E-03	100	0.016	0	646	15	0	3.2E-03	8.5E-04	5.2E-03	5.7E-03	4.6E-03	0.013	0
Tailings Storage Facility	184	13	2027	March	0.071	0.070	4.3E-04	1.6E-03	0.86	63	0.22	0	0.053	9.5E-03	100	0.015	0	656	15	0	3.1E-03	8.1E-04	5.2E-03	5.6E-03	4.5E-03	0.012	0
Tailings Storage Facility	185	13	2027	April	0.071	0.070	4.3E-04	1.6E-03	0.88	63	0.21	0	0.052	9.3E-03	99	0.015	0	663	15	0	3.0E-03	7.8E-04	5.2E-03	5.4E-03	4.5E-03	0.012	0
Tailings Storage Facility	186	13	2027	May	0.034	0.034	4.3E-04	7.4E-04	0.44	31	0.10	0	0.025	4.4E-03	48	7.1E-03	0	327	7.7	0	1.4E-03	3.7E-04	2.5E-03	2.6E-03	2.2E-03	5.7E-03	0
Tailings Storage Facility	187	13	2027	June	0.027	0.027	4.3E-04	6.5E-04	0.37	26	0.095	0	0.020	3.7E-03	41	5.9E-03	0	264	6.4	0	1.3E-03	3.2E-04	2.0E-03	2.2E-03	2.0E-03	4.9E-03	0
				MINIMUM	3.4E-06	1.5E-04	4.3E-04	2.7E-05	1.0E-03	0.44	4.4E-03	0	5.4E-05	2.0E-04	0.25	1.1E-04	0	0.58	0.017	0	3.2E-06	1.3E-06	2.9E-07	5.4E-06	4.3E-05	3.2E-04	3.9E+03
				MAXIMUM	0.094	0.071	4.3E-04	1.8E-03	1.3	78	0.34	0	0.068	0.014	114	0.025	0	928	22	0	5.4E-03	9.7E-04	6.8E-03	7.7E-03	5.1E-03	0.015	1.5E+06
				AVERAGE	0.052	0.034	4.3E-04	7.3E-04	0.53	34	0.13	0	0.031	6.3E-03	56	0.010	0	421	9.3	0	2.5E-03	4.4E-04	3.7E-03	3.0E-03	2.6E-03	5.9E-03	4.4E+05

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12					13			0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											1									0.5							
	Model	Mine	Date	Month	TDS	Total Alkalinity	Cl	F	Si	SO4	CN_Total	NH4 (as N)	NO3	Nitrate+Nitrite	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/L	mg/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
Closure Water Quality (Years 13 - 14)																											
Tailings Storage Facility	**188**	**13**	**2027**	**July**	6.0E+03	17	**2.6E+03**	**0.36**	0.087	1.3E+03	**26**	25	4.7	0.013	0.28	1.2E-05	9.0E-04	2.2E-04	0.040	**3.9**	0.12	0	5.1E-05	0.39	**2.0E-04**	1.2E+03	3.4E-04
Tailings Storage Facility	**189**	**13**	**2027**	**August**	1.8E+03	17	**758**	0.11	0.025	386	**7.4**	20	1.4	3.9E-03	0.083	1.2E-05	2.6E-04	2.2E-04	0.012	**1.9**	0.037	0	1.5E-05	0.11	**5.7E-05**	343	9.8E-05
Tailings Storage Facility	**190**	**13**	**2027**	**September**	76	17	0	0.031	0	19	0	35	0.027	0	0	0	0	2.2E-04	2.3E-03	**0.19**	7.3E-03	0	2.7E-06	1.7E-03	1.1E-06	14	0
Tailings Storage Facility	**191**	**13**	**2027**	**October**	93	17	0	0.043	0	26	0	35	0.093	0	0	0	0	2.2E-04	3.2E-03	**0.26**	0.010	0	3.7E-06	2.3E-03	1.5E-06	20	0
Tailings Storage Facility	**192**	**14**	**2027**	**November**	4.6E+03	17	0	**4.8**	0	1.7E+03	0	70	10	0	0	0	0	2.2E-04	0.35	**3.9**	1.1	0	4.1E-04	0.26	**1.7E-04**	1.6E+03	0
Tailings Storage Facility	**193**	**14**	**2027**	**December**	4.6E+03	17	0	**4.8**	0	1.7E+03	0	70	10	0	0	0	0	2.2E-04	0.35	**3.9**	1.1	0	4.1E-04	0.26	**1.7E-04**	1.6E+03	0
Tailings Storage Facility	**194**	**14**	**2028**	**January**	4.6E+03	17	0	**4.8**	0	1.7E+03	0	70	10	0	0	0	0	2.2E-04	0.35	**3.9**	1.1	0	4.1E-04	0.26	**1.7E-04**	1.6E+03	0
Tailings Storage Facility	**195**	**14**	**2028**	**Febraury**	4.6E+03	17	0	**4.8**	0	1.7E+03	0	70	10	0	0	0	0	2.2E-04	0.35	**3.9**	1.1	0	4.1E-04	0.26	**1.7E-04**	1.6E+03	0
Tailings Storage Facility	**196**	**14**	**2028**	**March**	4.6E+03	17	0	**4.8**	0	1.7E+03	0	70	10	0	0	0	0	2.2E-04	0.35	**3.9**	1.1	0	4.1E-04	0.26	**1.7E-04**	1.6E+03	0
Tailings Storage Facility	**197**	**14**	**2028**	**April**	4.6E+03	17	0	**4.8**	0	1.7E+03	0	70	10	0	0	0	0	2.2E-04	0.35	**3.9**	1.1	0	4.1E-04	0.26	**1.7E-04**	1.6E+03	0
Tailings Storage Facility	**198**	**14**	**2028**	**May**	108	17	0	0.043	0	26	0	50	0.093	0	0	0	0	2.2E-04	3.2E-03	**0.26**	0.010	0	3.7E-06	2.3E-03	1.5E-06	20	0
Tailings Storage Facility	**199**	**14**	**2028**	**June**	133	17	0	0.061	0	37	0	50	0.095	0	0	0	0	2.2E-04	4.6E-03	**0.37**	0.015	0	5.3E-06	3.4E-03	2.4E-06	29	0
Tailings Storage Facility	**200**	**14**	**2028**	**July**	113	17	0	0.065	0	40	0	25	0.10	0	0	0	0	2.2E-04	4.9E-03	**0.40**	0.016	0	5.7E-06	3.6E-03	2.6E-06	31	0
Tailings Storage Facility	**201**	**14**	**2028**	**August**	41	15	0	0.015	0	9.5	0	20	0.031	0	0	0	0	2.2E-04	1.2E-03	**0.093**	3.7E-03	0	1.3E-06	8.6E-04	6.6E-07	7.4	0
Tailings Storage Facility	**202**	**14**	**2028**	**September**	68	17	0	0.024	0	15	0	35	0.058	0	0	0	0	2.2E-04	1.8E-03	**0.15**	5.7E-03	0	2.1E-06	1.3E-03	9.1E-07	11	0
Tailings Storage Facility	**203**	**14**	**2028**	**October**	66	17	0	0.023	0	14	0	35	0.11	0	0	0	0	2.2E-04	1.7E-03	**0.14**	5.4E-03	0	2.0E-06	1.2E-03	8.4E-07	11	0
				MINIMUM	41	15	**758**	0.015	0.025	9.5	**7.4**	20	0.027	3.9E-03	0.083	1.2E-05	2.6E-04	2.2E-04	1.2E-03	**0.093**	3.7E-03	0	1.3E-06	8.6E-04	6.6E-07	7.4	9.8E-05
				MAXIMUM	6.0E+03	17	**2.6E+03**	**4.8**	0.087	1.7E+03	**26**	70	10	0.013	0.28	1.2E-05	9.0E-04	2.2E-04	0.35	**3.9**	1.1	0	4.1E-04	0.39	**2.0E-04**	1.6E+03	3.4E-04
				AVERAGE	2.3E+03	17	**1.7E+03**	**1.8**	0.056	748	**16**	47	4.3	8.6E-03	0.18	1.2E-05	5.8E-04	2.2E-04	0.14	**1.9**	0.43	0	1.6E-04	0.13	**8.0E-05**	704	2.2E-04

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.1 - Tailings Storage Facility
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						0.002	0.3	0.001				0.000026	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03	
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						0.3	3	0.2						0.5												0.5	
LOCATION	Model Month	Mine Year	Date Year	Month	Co mg/L	Cu[4] mg/L	Fe mg/L	Pb[4] mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg mg/L	Mo mg/L	Ni[4] mg/L	K mg/L	Se mg/L	Ag mg/L	Na mg/L	Sr mg/L	Tl mg/L	Sn mg/L	Ti mg/L	W mg/L	U mg/L	V mg/L	Zn mg/L	TSF OVERFLOW m^3/mon
Closure Water Quality (Years 13 - 14)																										
Tailings Storage Facility	**188**	**13**	**2027**	**July**	0.072	**0.071**	4.3E-04	**1.7E-03**	0.96	70	0.25	0	0.054	9.6E-03	107	**0.016**	0	692	17	0	3.5E-03	8.4E-04	5.4E-03	5.8E-03	5.3E-03	0.013	1.5E+06
Tailings Storage Facility	**189**	**13**	**2027**	**August**	0.021	**0.021**	4.3E-04	5.2E-04	0.28	20	0.074	0	0.016	2.8E-03	32	**4.7E-03**	0	202	4.9	0	1.0E-03	2.5E-04	1.6E-03	1.7E-03	1.5E-03	3.8E-03	1.2E+06
Tailings Storage Facility	**190**	**13**	**2027**	**September**	5.5E-04	4.8E-04	4.3E-04	1.4E-04	1.1E-03	1.8	4.9E-03	0	1.4E-03	2.5E-04	4.8	**1.0E-03**	0	1.6	0.046	0	1.2E-04	4.5E-05	9.0E-05	2.9E-04	6.6E-05	3.6E-04	0
Tailings Storage Facility	**191**	**13**	**2027**	**October**	7.6E-04	6.6E-04	4.3E-04	1.9E-04	1.5E-03	2.5	6.8E-03	0	1.9E-03	3.5E-04	6.7	**1.4E-03**	0	2.2	0.065	0	1.6E-04	6.3E-05	1.2E-04	4.0E-04	9.1E-05	4.9E-04	0
Tailings Storage Facility	**192**	**14**	**2027**	**November**	0.084	**0.073**	4.3E-04	**0.021**	0.17	274	0.74	0	**0.21**	**0.038**	733	**0.16**	0	246	7.1	0	0.018	6.9E-03	0.014	**0.044**	0.010	**0.054**	0
Tailings Storage Facility	**193**	**14**	**2027**	**December**	0.084	**0.073**	4.3E-04	**0.021**	0.17	274	0.74	0	**0.21**	**0.038**	733	**0.16**	0	246	7.1	0	0.018	6.9E-03	0.014	**0.044**	0.010	**0.054**	0
Tailings Storage Facility	**194**	**14**	**2028**	**January**	0.084	**0.073**	4.3E-04	**0.021**	0.17	274	0.74	0	**0.21**	**0.038**	733	**0.16**	0	246	7.1	0	0.018	6.9E-03	0.014	**0.044**	0.010	**0.054**	0
Tailings Storage Facility	**195**	**14**	**2028**	**Febraury**	0.084	**0.073**	4.3E-04	**0.021**	0.17	274	0.74	0	**0.21**	**0.038**	733	**0.16**	0	246	7.1	0	0.018	6.9E-03	0.014	**0.044**	0.010	**0.054**	0
Tailings Storage Facility	**196**	**14**	**2028**	**March**	0.084	**0.073**	4.3E-04	**0.021**	0.17	274	0.74	0	**0.21**	**0.038**	733	**0.16**	0	246	7.1	0	0.018	6.9E-03	0.014	**0.044**	0.010	**0.054**	0
Tailings Storage Facility	**197**	**14**	**2028**	**April**	0.084	**0.073**	4.3E-04	**0.021**	0.17	274	0.74	0	**0.21**	**0.038**	733	**0.16**	0	246	7.1	0	0.018	6.9E-03	0.014	**0.044**	0.010	**0.054**	0
Tailings Storage Facility	**198**	**14**	**2028**	**May**	7.6E-04	6.6E-04	4.3E-04	1.9E-04	1.5E-03	2.5	6.8E-03	0	1.9E-03	3.5E-04	6.7	**1.4E-03**	0	2.2	0.065	0	1.6E-04	6.3E-05	1.2E-04	4.0E-04	9.1E-05	4.9E-04	0
Tailings Storage Facility	**199**	**14**	**2028**	**June**	1.1E-03	9.5E-04	4.3E-04	2.7E-04	2.1E-03	3.6	0.010	0	2.8E-03	5.2E-04	9.5	**2.0E-03**	0	3.2	0.095	0	2.5E-04	9.6E-05	1.8E-04	5.8E-04	1.4E-04	7.2E-04	0
Tailings Storage Facility	**200**	**14**	**2028**	**July**	1.2E-03	1.0E-03	4.3E-04	2.9E-04	2.3E-03	3.9	0.011	0	3.0E-03	5.5E-04	10	**2.2E-03**	0	3.4	0.10	0	2.7E-04	1.0E-04	1.9E-04	6.2E-04	1.5E-04	7.7E-04	3.7E+05
Tailings Storage Facility	**201**	**14**	**2028**	**August**	2.8E-04	2.4E-04	4.3E-04	6.8E-05	5.4E-04	0.94	2.8E-03	0	7.0E-04	1.3E-04	2.4	5.1E-04	0	0.80	0.025	0	6.8E-05	2.6E-05	4.5E-05	1.5E-04	3.6E-05	1.8E-04	7.6E+04
Tailings Storage Facility	**202**	**14**	**2028**	**September**	4.3E-04	3.7E-04	4.3E-04	1.1E-04	8.4E-04	1.4	4.0E-03	0	1.1E-03	2.0E-04	3.7	8.0E-04	0	1.3	0.037	0	9.5E-05	3.7E-05	7.0E-05	2.3E-04	5.3E-05	2.8E-04	0
Tailings Storage Facility	**203**	**14**	**2028**	**October**	4.1E-04	3.5E-04	4.3E-04	1.0E-04	8.0E-04	1.3	3.7E-03	0	1.0E-03	1.9E-04	3.5	7.6E-04	0	1.2	0.035	0	8.8E-05	3.4E-05	6.7E-05	2.1E-04	5.0E-05	2.6E-04	0
				MINIMUM	2.8E-04	2.4E-04	4.3E-04	6.8E-05	5.4E-04	0.94	2.8E-03	0	7.0E-04	1.3E-04	2.4	5.1E-04	0	0.80	0.025	0	6.8E-05	2.6E-05	4.5E-05	1.5E-04	3.6E-05	1.8E-04	7.6E+04
				MAXIMUM	0.084	**0.073**	4.3E-04	**0.021**	0.96	274	0.74	0	**0.21**	**0.038**	733	**0.16**	0	692	17	0	0.018	6.9E-03	0.014	**0.044**	0.010	**0.054**	1.5E+06
				AVERAGE	0.037	**0.033**	4.3E-04	**8.0E-03**	0.14	110	0.30	0	**0.085**	0.015	286	**0.061**	0	149	4.0	0	7.0E-03	2.7E-03	5.6E-03	**0.017**	4.2E-03	0.022	7.8E+05

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

				Guidelines for Canadian Drinking Water Quality	*500*		*250*	*1.5*	*500*	*0.2*		*10*					*0.006*	*0.01*	*1*		*5*	*0.005*	
				CCME aquatic life (long-term)[1] (mg/L)			**120**	**0.12**				**13**		**0.004 to 0.01**		**0.1**		**0.005**			**1.5**	**0.000012**	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						**1**								**0.5**					
LOCATION	**Model Month**	**Mine Year**	**Date Year**	**Month**	**TDS mg/L**	**Total Alkalinity mg/L as CaCO3**	**Cl mg/L**	**F mg/L**	**SO4 mg/L**	**CN_Total Total (mg/L)**	**NH4 (as N) mg N/L**	**NO3 mg/L**	**TKN mg/L**	**P_dissolved[6] mg/L**	**PO4 mg/L**	**Al[5] mg/L**	**Sb mg/L**	**As mg/L**	**Ba mg/L**	**Bi mg/L**	**B mg/L**	**Cd[4] mg/L**	**Ca mg/L**
Pre-Development and Operations Water Quality (Years -3 to 13)																						
Attenuation Pond 1	**7**	**-3**	**2012**	**June**	8.8	5.8	1.0	0	0.78	0	0.054	0.056	0.082	1.0E-03	1.4E-04	2.3E-03	4.5E-05	8.5E-04	9.5E-04	0	4.1E-03	1.8E-07	0.85
Attenuation Pond 1	**8**	**-3**	**2012**	**July**	18	12	2.2	0	1.5	0	0.11	0.11	0.17	2.1E-03	2.9E-04	3.7E-03	6.8E-05	1.3E-03	1.9E-03	0	8.6E-03	2.7E-07	1.6
Attenuation Pond 1	**9**	**-3**	**2012**	**August**	20	13	2.4	0	1.8	0	0.12	0.12	0.19	2.3E-03	3.2E-04	5.1E-03	9.7E-05	1.8E-03	2.2E-03	0	9.5E-03	3.8E-07	1.9
Attenuation Pond 1	**10**	**-3**	**2012**	**September**	20	13	2.4	0	1.5	0	0.12	0.13	0.19	2.3E-03	3.2E-04	3.2E-03	5.7E-05	1.1E-03	2.1E-03	0	9.5E-03	2.2E-07	1.7
Attenuation Pond 1	**11**	**-3**	**2012**	**October**	23	15	2.8	0	1.7	0	0.15	0.15	0.22	2.7E-03	3.8E-04	2.8E-03	4.7E-05	9.9E-04	2.4E-03	0	0.011	1.9E-07	1.9
Attenuation Pond 1	**12**	**-2**	**2012**	**November**	83	53	10	0	6.2	0	0.53	0.55	0.81	9.9E-03	1.4E-03	0.010	1.7E-04	3.6E-03	8.5E-03	0	0.040	6.8E-07	6.8
Attenuation Pond 1	**13**	**-2**	**2012**	**December**	83	53	10	0	6.2	0	0.53	0.55	0.81	9.9E-03	1.4E-03	0.010	1.7E-04	3.6E-03	8.5E-03	0	0.040	6.8E-07	6.8
Attenuation Pond 1	**14**	**-2**	**2013**	**January**	83	53	10	0	6.2	0	0.53	0.55	0.81	9.9E-03	1.4E-03	0.010	1.7E-04	3.6E-03	8.5E-03	0	0.040	6.8E-07	6.8
Attenuation Pond 1	**15**	**-2**	**2013**	**Febraury**	83	53	10	0	6.2	0	0.53	0.55	0.81	9.9E-03	1.4E-03	0.010	1.7E-04	3.6E-03	8.5E-03	0	0.040	6.8E-07	6.8
Attenuation Pond 1	**16**	**-2**	**2013**	**March**	83	53	10	0	6.2	0	0.53	0.55	0.81	9.9E-03	1.4E-03	0.010	1.7E-04	3.6E-03	8.5E-03	0	0.040	6.8E-07	6.8
Attenuation Pond 1	**17**	**-2**	**2013**	**April**	83	53	10	0	6.2	0	0.53	0.55	0.81	9.9E-03	1.4E-03	0.010	1.7E-04	3.6E-03	8.5E-03	0	0.040	6.8E-07	6.8
Attenuation Pond 1	**18**	**-2**	**2013**	**May**	83	53	10	0	6.2	0	0.53	0.55	0.81	9.9E-03	1.4E-03	0.010	1.7E-04	3.6E-03	8.5E-03	0	0.040	6.8E-07	6.8
Attenuation Pond 1	**19**	**-2**	**2013**	**June**	*704*	9.8	***451***	2.8E-04	9.8	0	0.66	0.71	0.12	1.5E-03	2.0E-04	6.7E-03	1.0E-04	1.9E-03	2.3E-03	0	0.066	4.0E-07	175
Attenuation Pond 1	**20**	**-2**	**2013**	**July**	*912*	8.5	***588***	3.6E-04	12	0	0.85	0.92	0.11	1.3E-03	1.8E-04	5.7E-03	7.4E-05	1.4E-03	2.3E-03	0	0.084	2.9E-07	228
Attenuation Pond 1	**21**	**-2**	**2013**	**August**	*900*	9.0	***580***	3.6E-04	12	0	0.85	0.92	0.11	1.3E-03	1.8E-04	6.7E-03	9.5E-05	1.7E-03	2.4E-03	0	0.083	3.7E-07	225
Attenuation Pond 1	**22**	**-2**	**2013**	**September**	*808*	8.5	***520***	3.2E-04	11	0	0.78	0.84	0.11	1.3E-03	1.9E-04	4.9E-03	6.0E-05	1.1E-03	2.2E-03	0	0.075	2.4E-07	201
Attenuation Pond 1	**23**	**-2**	**2013**	**October**	*938*	7.8	***605***	3.7E-04	12	0	0.89	0.96	0.10	1.3E-03	1.7E-04	4.2E-03	4.1E-05	8.0E-04	2.2E-03	0	0.086	1.6E-07	234
Attenuation Pond 1	**24**	**-1**	**2013**	**November**	*1.3E+03*	5.2	***833***	5.2E-04	16	0	1.2	1.3	0.061	7.4E-04	1.0E-04	4.1E-03	2.4E-05	4.7E-04	2.1E-03	0	0.11	9.6E-08	322
Attenuation Pond 1	**25**	**-1**	**2013**	**December**	*1.4E+03*	3.0	***930***	5.8E-04	18	0	1.3	1.4	0.026	3.2E-04	4.4E-05	3.7E-03	1.0E-05	2.0E-04	1.9E-03	0	0.13	4.0E-08	359
Attenuation Pond 1	**26**	**-1**	**2014**	**January**	*1.5E+03*	2.0	***971***	6.0E-04	18	0	1.3	1.4	0.011	1.3E-04	1.9E-05	3.5E-03	4.3E-06	8.3E-05	1.8E-03	0	0.13	1.7E-08	375
Attenuation Pond 1	**27**	**-1**	**2014**	**Febraury**	*1.5E+03*	1.6	***988***	6.1E-04	19	0	1.4	1.5	4.7E-03	5.7E-05	7.9E-06	3.4E-03	1.8E-06	3.5E-05	1.8E-03	0	0.13	7.1E-09	381
Attenuation Pond 1	**28**	**-1**	**2014**	**March**	*1.5E+03*	1.4	***995***	6.2E-04	19	0	1.4	1.5	2.0E-03	2.4E-05	3.4E-06	3.4E-03	7.6E-07	1.5E-05	1.8E-03	0	0.13	3.0E-09	384
Attenuation Pond 1	**29**	**-1**	**2014**	**April**	*1.5E+03*	1.3	***998***	6.2E-04	19	0	1.4	1.5	8.5E-04	1.0E-05	1.4E-06	3.4E-03	3.2E-07	6.2E-06	1.8E-03	0	0.13	1.3E-09	385
Attenuation Pond 1	**30**	**-1**	**2014**	**May**	*1.5E+03*	1.3	***999***	6.2E-04	19	0	1.4	1.5	3.6E-04	4.4E-06	6.1E-07	3.3E-03	1.3E-07	2.6E-06	1.8E-03	0	0.13	5.3E-10	386
Attenuation Pond 1	**31**	**-1**	**2014**	**June**	*765*	9.4	***491***	3.0E-04	11	0	0.71	0.77	0.12	1.4E-03	1.9E-04	6.4E-03	9.5E-05	1.8E-03	2.3E-03	0	0.071	3.8E-07	191
Attenuation Pond 1	**32**	**-1**	**2014**	**July**	*823*	12	***527***	3.3E-04	12	0	0.79	0.86	0.16	1.9E-03	2.6E-04	7.2E-03	1.1E-04	2.0E-03	2.8E-03	0	0.078	4.2E-07	204
Attenuation Pond 1	**33**	**-1**	**2014**	**August**	*742*	11	***475***	2.9E-04	11	0	0.73	0.78	0.14	1.7E-03	2.3E-04	7.8E-03	1.3E-04	2.3E-03	2.6E-03	0	0.070	4.9E-07	185
Attenuation Pond 1	**34**	**-1**	**2014**	**September**	*728*	9.1	***467***	2.9E-04	9.9	0	0.71	0.77	0.12	1.4E-03	2.0E-04	5.2E-03	7.0E-05	1.3E-03	2.2E-03	0	0.068	2.8E-07	181
Attenuation Pond 1	**35**	**-1**	**2014**	**October**	*898*	8.0	***579***	3.6E-04	12	0	0.86	0.93	0.11	1.3E-03	1.8E-04	4.4E-03	4.7E-05	9.0E-04	2.2E-03	0	0.082	1.9E-07	224
Attenuation Pond 1	**36**	**1**	**2014**	**November**	*1.3E+03*	5.3	***817***	5.1E-04	16	0	1.2	1.2	0.062	7.6E-04	1.0E-04	4.2E-03	2.7E-05	5.2E-04	2.1E-03	0	0.11	1.1E-07	316
Attenuation Pond 1	**37**	**1**	**2014**	**December**	*1.4E+03*	3.0	***923***	5.7E-04	18	0	1.3	1.4	0.026	3.2E-04	4.4E-05	3.7E-03	1.1E-05	2.2E-04	1.9E-03	0	0.12	4.5E-08	357
Attenuation Pond 1	**38**	**1**	**2015**	**January**	*1.5E+03*	2.0	***967***	5.9E-04	20	0	1.3	1.4	0.011	1.3E-04	1.8E-05	3.7E-03	4.7E-06	9.0E-05	1.8E-03	0	0.13	1.8E-08	367
Attenuation Pond 1	**39**	**1**	**2015**	**Febraury**	*1.5E+03*	1.6	***986***	5.9E-04	21	0	1.3	1.4	4.6E-03	5.6E-05	7.8E-06	3.9E-03	2.0E-06	3.8E-05	1.7E-03	0	0.13	7.8E-09	370
Attenuation Pond 1	**40**	**1**	**2015**	**March**	*1.5E+03*	1.4	***994***	5.9E-04	22	0	1.3	1.4	2.0E-03	2.4E-05	3.3E-06	4.0E-03	8.2E-07	1.6E-05	1.7E-03	0	0.13	3.3E-09	370
Attenuation Pond 1	**41**	**1**	**2015**	**April**	*1.5E+03*	1.3	***998***	5.9E-04	22	0	1.3	1.4	8.3E-04	1.0E-05	1.4E-06	4.0E-03	3.5E-07	6.7E-06	1.7E-03	0	0.13	1.4E-09	370
Attenuation Pond 1	**42**	**1**	**2015**	**May**	*1.5E+03*	1.3	***999***	5.9E-04	23	0	1.3	1.4	3.5E-04	4.3E-06	5.9E-07	4.0E-03	1.5E-07	2.8E-06	1.7E-03	0	0.13	5.7E-10	370
Attenuation Pond 1	**43**	**1**	**2015**	**June**	*803*	8.8	***514***	3.0E-04	13	0	0.72	0.77	0.11	1.3E-03	1.8E-04	7.0E-03	9.9E-05	1.8E-03	2.2E-03	0	0.074	3.9E-07	191
Attenuation Pond 1	**44**	**1**	**2015**	**July**	*845*	11	***538***	3.2E-04	14	0	0.78	0.84	0.14	1.7E-03	2.4E-04	7.6E-03	1.1E-04	2.0E-03	2.6E-03	0	0.079	4.2E-07	200
Attenuation Pond 1	**45**	**1**	**2015**	**August**	*761*	11	***485***	2.9E-04	13	0	0.71	0.76	0.13	1.5E-03	2.1E-04	8.2E-03	1.2E-04	2.3E-03	2.5E-03	0	0.071	4.9E-07	180
Attenuation Pond 1	**46**	**1**	**2015**	**September**	*747*	8.8	***477***	2.8E-04	12	0	0.70	0.75	0.11	1.4E-03	1.9E-04	5.5E-03	7.0E-05	1.3E-03	2.1E-03	0	0.069	2.8E-07	177
Attenuation Pond 1	**47**	**1**	**2015**	**October**	*919*	7.7	***589***	3.5E-04	14	0	0.84	0.90	0.10	1.2E-03	1.7E-04	4.8E-03	4.7E-05	8.9E-04	2.1E-03	0	0.084	1.8E-07	218
Attenuation Pond 1	**48**	**2**	**2015**	**November**	*1.3E+03*	5.1	***822***	4.9E-04	19	0	1.1	1.2	0.058	7.1E-04	9.8E-05	4.7E-03	2.7E-05	5.1E-04	2.0E-03	0	0.11	1.1E-07	304
Attenuation Pond 1	**49**	**2**	**2015**	**December**	*1.4E+03*	2.9	***925***	5.5E-04	21	0	1.2	1.3	0.025	3.0E-04	4.2E-05	4.4E-03	1.1E-05	2.1E-04	1.8E-03	0	0.12	4.4E-08	342
Attenuation Pond 1	**50**	**2**	**2016**	**January**	*1.5E+03*	2.0	***969***	5.7E-04	22	0	1.3	1.4	0.010	1.3E-04	1.8E-05	4.2E-03	4.7E-06	9.0E-05	1.8E-03	0	0.13	1.9E-08	358
Attenuation Pond 1	**51**	**2**	**2016**	**Febraury**	*1.5E+03*	1.6	***987***	5.8E-04	23	0	1.3	1.4	4.5E-03	5.4E-05	7.5E-06	4.1E-03	2.0E-06	3.8E-05	1.7E-03	0	0.13	7.8E-09	365
Attenuation Pond 1	**52**	**2**	**2016**	**March**	*1.5E+03*	1.4	***994***	5.9E-04	23	0	1.3	1.4	1.9E-03	2.3E-05	3.2E-06	4.1E-03	8.3E-07	1.6E-05	1.7E-03	0	0.13	3.3E-09	368
Attenuation Pond 1	**53**	**2**	**2016**	**April**	*1.5E+03*	1.3	***998***	5.9E-04	23	0	1.3	1.4	8.0E-04	9.8E-06	1.4E-06	4.1E-03	3.5E-07	6.7E-06	1.7E-03	0	0.13	1.4E-09	369
Attenuation Pond 1	**54**	**2**	**2016**	**May**	*1.5E+03*	1.3	***999***	5.9E-04	23	0	1.3	1.4	3.4E-04	4.2E-06	5.7E-07	4.1E-03	1.5E-07	2.8E-06	1.7E-03	0	0.13	5.8E-10	369

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

				Guidelines for Canadian Drinking Water Quality	*0.05*		*1*	*0.3*	*0.01*			*0.05*				*0.01*	*200*					*0.02*		*5*	
				CCME aquatic life (long-term)[1] (mg/L)	**0.001**		**0.002**	**0.3**	**0.001**				**0.073**	**0.038**		**0.001**						**0.015**		**0.03**	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)			**0.3**	**3.0**	**0.2**					**0.5**										**0.5**	
LOCATION	**Model Month**	**Mine Year**	**Date Year**	**Month**	**Cr[3] mg/L**	**Co mg/L**	**Cu[4] mg/L**	**Fe mg/L**	**Pb[4] mg/L**	**Li mg/L**	**Mg mg/L**	**Mn mg/L**	**Mo mg/L**	**Ni[4] mg/L**	**K mg/L**	**Se mg/L**	**Na mg/L**	**Sr mg/L**	**Sn mg/L**	**Ti mg/L**	**W mg/L**	**U mg/L**	**V mg/L**	**Zn mg/L**	**Meliadine Discharge m^3/mon**
Pre-Development and Operations Water Quality (Years -3 to 13)																								
Attenuation Pond 1	**7**	**-3**	**2012**	**June**	0	1.5E-05	4.8E-05	3.3E-03	2.1E-05	7.1E-06	0.13	7.5E-04	6.0E-05	5.6E-05	0.075	1.1E-04	0.099	1.7E-03	9.6E-06	5.5E-06	8.7E-07	1.5E-05	4.5E-05	2.2E-04	2.7E+05
Attenuation Pond 1	**8**	**-3**	**2012**	**July**	0	2.3E-05	9.6E-05	6.9E-03	4.5E-05	1.1E-05	0.23	1.3E-03	1.2E-04	1.1E-04	0.14	2.2E-04	0.20	2.5E-03	1.5E-05	8.3E-06	1.3E-06	2.3E-05	9.3E-05	4.5E-04	4.4E+04
Attenuation Pond 1	**9**	**-3**	**2012**	**August**	0	3.3E-05	1.1E-04	7.7E-03	5.0E-05	1.5E-05	0.29	1.7E-03	1.4E-04	1.3E-04	0.17	2.4E-04	0.23	3.6E-03	2.1E-05	1.2E-05	1.9E-06	3.3E-05	1.0E-04	5.0E-04	4.2E+04
Attenuation Pond 1	**10**	**-3**	**2012**	**September**	0	1.9E-05	1.0E-04	7.6E-03	4.9E-05	9.0E-06	0.23	1.3E-03	1.2E-04	1.1E-04	0.14	2.5E-04	0.22	2.1E-03	1.2E-05	6.9E-06	1.1E-06	1.9E-05	1.0E-04	4.9E-04	3.3E+04
Attenuation Pond 1	**11**	**-3**	**2012**	**October**	0	1.6E-05	1.2E-04	8.8E-03	5.7E-05	7.5E-06	0.24	1.3E-03	1.3E-04	1.3E-04	0.14	2.9E-04	0.26	1.7E-03	1.0E-05	5.7E-06	9.1E-07	1.6E-05	1.2E-04	5.7E-04	4.3E+03
Attenuation Pond 1	**12**	**-2**	**2012**	**November**	0	5.9E-05	4.3E-04	0.032	2.0E-04	2.7E-05	0.87	4.8E-03	4.8E-04	4.6E-04	0.52	**1.0E-03**	0.93	6.3E-03	3.7E-05	2.1E-05	3.3E-06	5.9E-05	4.2E-04	2.1E-03	0
Attenuation Pond 1	**13**	**-2**	**2012**	**December**	0	5.9E-05	4.3E-04	0.032	2.0E-04	2.7E-05	0.87	4.8E-03	4.8E-04	4.6E-04	0.52	**1.0E-03**	0.93	6.3E-03	3.7E-05	2.1E-05	3.3E-06	5.9E-05	4.2E-04	2.1E-03	0
Attenuation Pond 1	**14**	**-2**	**2013**	**January**	0	5.9E-05	4.3E-04	0.032	2.0E-04	2.7E-05	0.87	4.8E-03	4.8E-04	4.6E-04	0.52	**1.0E-03**	0.93	6.3E-03	3.7E-05	2.1E-05	3.3E-06	5.9E-05	4.2E-04	2.1E-03	0
Attenuation Pond 1	**15**	**-2**	**2013**	**Febraury**	0	5.9E-05	4.3E-04	0.032	2.0E-04	2.7E-05	0.87	4.8E-03	4.8E-04	4.6E-04	0.52	**1.0E-03**	0.93	6.3E-03	3.7E-05	2.1E-05	3.3E-06	5.9E-05	4.2E-04	2.1E-03	0
Attenuation Pond 1	**16**	**-2**	**2013**	**March**	0	5.9E-05	4.3E-04	0.032	2.0E-04	2.7E-05	0.87	4.8E-03	4.8E-04	4.6E-04	0.52	**1.0E-03**	0.93	6.3E-03	3.7E-05	2.1E-05	3.3E-06	5.9E-05	4.2E-04	2.1E-03	0
Attenuation Pond 1	**17**	**-2**	**2013**	**April**	0	5.9E-05	4.3E-04	0.032	2.0E-04	2.7E-05	0.87	4.8E-03	4.8E-04	4.6E-04	0.52	**1.0E-03**	0.93	6.3E-03	3.7E-05	2.1E-05	3.3E-06	5.9E-05	4.2E-04	2.1E-03	0
Attenuation Pond 1	**18**	**-2**	**2013**	**May**	0	5.9E-05	4.3E-04	0.032	2.0E-04	2.7E-05	0.87	4.8E-03	4.8E-04	4.6E-04	0.52	**1.0E-03**	0.93	6.3E-03	3.7E-05	2.1E-05	3.3E-06	5.9E-05	4.2E-04	2.1E-03	0
Attenuation Pond 1	**19**	**-2**	**2013**	**June**	0	3.5E-05	7.6E-05	0.017	3.3E-05	0.18	5.6	3.1E-03	1.1E-04	9.4E-05	7.4	1.5E-04	45	3.0	2.2E-05	1.2E-05	2.0E-06	3.5E-05	5.5E-04	3.3E-04	3.5E+05
Attenuation Pond 1	**20**	**-2**	**2013**	**July**	0	2.5E-05	6.4E-05	0.021	2.8E-05	0.23	7.2	3.3E-03	8.5E-05	7.7E-05	9.5	1.4E-04	59	3.9	1.6E-05	9.0E-06	1.4E-06	2.5E-05	6.8E-04	2.8E-04	2.2E+05
Attenuation Pond 1	**21**	**-2**	**2013**	**August**	0	3.2E-05	6.8E-05	0.020	2.9E-05	0.23	7.1	3.5E-03	9.5E-05	8.5E-05	9.4	1.4E-04	58	3.8	2.0E-05	1.1E-05	1.8E-06	3.2E-05	6.8E-04	2.9E-04	1.3E+05
Attenuation Pond 1	**22**	**-2**	**2013**	**September**	0	2.1E-05	6.4E-05	0.019	2.9E-05	0.20	6.4	2.9E-03	8.1E-05	7.5E-05	8.4	1.4E-04	52	3.4	1.3E-05	7.3E-06	1.2E-06	2.1E-05	6.1E-04	2.9E-04	8.8E+04
Attenuation Pond 1	**23**	**-2**	**2013**	**October**	0	1.4E-05	5.7E-05	0.021	2.6E-05	0.24	7.4	3.0E-03	6.9E-05	6.5E-05	9.8	1.3E-04	60	4.0	8.8E-06	5.0E-06	7.9E-07	1.4E-05	7.0E-04	2.7E-04	4.2E+04
Attenuation Pond 1	**24**	**-1**	**2013**	**November**	0	8.3E-06	3.4E-05	0.025	1.6E-05	0.32	10	3.5E-03	4.1E-05	3.8E-05	13	7.8E-05	83	5.5	5.2E-06	2.9E-06	4.6E-07	8.3E-06	9.2E-04	1.6E-04	2.4E+04
Attenuation Pond 1	**25**	**-1**	**2013**	**December**	0	3.5E-06	1.4E-05	0.027	6.7E-06	0.36	11	3.6E-03	1.7E-05	1.6E-05	15	3.3E-05	93	6.1	2.2E-06	1.2E-06	2.0E-07	3.5E-06	1.0E-03	6.7E-05	2.4E+04
Attenuation Pond 1	**26**	**-1**	**2014**	**January**	0	1.5E-06	6.1E-06	0.027	2.8E-06	0.38	12	3.7E-03	7.3E-06	6.9E-06	16	1.4E-05	97	6.4	9.1E-07	5.2E-07	8.2E-08	1.5E-06	1.0E-03	2.8E-05	2.4E+04
Attenuation Pond 1	**27**	**-1**	**2014**	**Febraury**	0	6.2E-07	2.6E-06	0.027	1.2E-06	0.38	12	3.7E-03	3.1E-06	2.9E-06	16	6.0E-06	99	6.5	3.8E-07	2.2E-07	3.5E-08	6.2E-07	1.1E-03	1.2E-05	2.4E+04
Attenuation Pond 1	**28**	**-1**	**2014**	**March**	0	2.6E-07	1.1E-06	0.028	5.1E-07	0.39	12	3.7E-03	1.3E-06	1.2E-06	16	2.6E-06	99	6.6	1.6E-07	9.1E-08	1.5E-08	2.6E-07	1.1E-03	5.1E-06	2.4E+04
Attenuation Pond 1	**29**	**-1**	**2014**	**April**	0	1.1E-07	4.7E-07	0.028	2.2E-07	0.39	12	3.7E-03	5.6E-07	5.3E-07	16	1.1E-06	100	6.6	6.8E-08	3.8E-08	6.1E-09	1.1E-07	1.1E-03	2.2E-06	2.4E+04
Attenuation Pond 1	**30**	**-1**	**2014**	**May**	0	4.6E-08	2.0E-07	0.028	9.2E-08	0.39	12	3.7E-03	2.4E-07	2.2E-07	16	4.6E-07	100	6.6	2.8E-08	1.6E-08	2.6E-09	4.6E-08	1.1E-03	9.3E-07	2.4E+04
Attenuation Pond 1	**31**	**-1**	**2014**	**June**	0	3.3E-05	7.2E-05	0.018	3.1E-05	0.19	6.1	3.2E-03	9.9E-05	8.9E-05	8.0	1.5E-04	49	3.2	2.0E-05	1.2E-05	1.8E-06	3.3E-05	5.9E-04	3.1E-04	3.5E+05
Attenuation Pond 1	**32**	**-1**	**2014**	**July**	0	3.6E-05	9.4E-05	0.021	4.1E-05	0.20	6.6	3.6E-03	1.2E-04	1.1E-04	8.6	2.0E-04	53	3.5	2.3E-05	1.3E-05	2.0E-06	3.6E-05	6.5E-04	4.2E-04	9.2E+04
Attenuation Pond 1	**33**	**-1**	**2014**	**August**	0	4.3E-05	8.7E-05	0.019	3.7E-05	0.18	5.9	3.5E-03	1.2E-04	1.1E-04	7.8	1.7E-04	47	3.1	2.7E-05	1.5E-05	2.4E-06	4.3E-05	5.8E-04	3.7E-04	9.7E+04
Attenuation Pond 1	**34**	**-1**	**2014**	**September**	0	2.4E-05	7.0E-05	0.018	3.1E-05	0.18	5.8	2.8E-03	9.0E-05	8.2E-05	7.6	1.5E-04	47	3.1	1.5E-05	8.5E-06	1.3E-06	2.4E-05	5.6E-04	3.1E-04	8.5E+04
Attenuation Pond 1	**35**	**-1**	**2014**	**October**	0	1.6E-05	5.9E-05	0.020	2.7E-05	0.23	7.1	3.0E-03	7.3E-05	6.8E-05	9.4	1.3E-04	58	3.8	1.0E-05	5.7E-06	9.0E-07	1.6E-05	6.7E-04	2.7E-04	4.1E+04
Attenuation Pond 1	**36**	**1**	**2014**	**November**	0	9.3E-06	3.5E-05	0.025	1.6E-05	0.32	9.8	3.5E-03	4.3E-05	4.0E-05	13	7.9E-05	82	5.4	5.8E-06	3.3E-06	5.2E-07	9.3E-06	9.0E-04	1.6E-04	2.4E+04
Attenuation Pond 1	**37**	**1**	**2014**	**December**	0	3.9E-06	1.5E-05	0.027	6.8E-06	0.36	11	3.6E-03	1.8E-05	1.7E-05	15	3.4E-05	92	6.1	2.4E-06	1.4E-06	2.2E-07	3.9E-06	1.0E-03	6.8E-05	2.4E+04
Attenuation Pond 1	**38**	**1**	**2015**	**January**	0	1.6E-06	6.1E-06	0.029	2.8E-06	0.37	12	3.9E-03	7.4E-06	6.9E-06	15	1.4E-05	103	6.3	1.0E-06	5.7E-07	9.0E-08	1.6E-06	1.0E-03	2.8E-05	2.6E+04
Attenuation Pond 1	**39**	**1**	**2015**	**Febraury**	0	6.7E-07	2.6E-06	0.031	1.2E-06	0.37	13	4.2E-03	3.1E-06	2.9E-06	16	5.9E-06	111	6.4	4.2E-07	2.4E-07	3.8E-08	6.7E-07	1.0E-03	1.2E-05	2.6E+04
Attenuation Pond 1	**40**	**1**	**2015**	**March**	0	2.8E-07	1.1E-06	0.032	5.1E-07	0.38	14	4.3E-03	1.3E-06	1.2E-06	16	2.5E-06	115	6.4	1.8E-07	1.0E-07	1.6E-08	2.8E-07	1.0E-03	5.1E-06	2.6E+04
Attenuation Pond 1	**41**	**1**	**2015**	**April**	0	1.2E-07	4.7E-07	0.033	2.1E-07	0.38	14	4.4E-03	5.6E-07	5.3E-07	16	1.1E-06	117	6.4	7.4E-08	4.2E-08	6.6E-09	1.2E-07	1.0E-03	2.2E-06	0
Attenuation Pond 1	**42**	**1**	**2015**	**May**	0	5.0E-08	2.0E-07	0.033	9.1E-08	0.37	14	4.5E-03	2.4E-07	2.2E-07	16	4.5E-07	118	6.4	3.1E-08	1.8E-08	2.8E-09	5.0E-08	1.0E-03	9.1E-07	0
Attenuation Pond 1	**43**	**1**	**2015**	**June**	0	3.4E-05	6.8E-05	0.022	2.9E-05	0.19	7.7	3.6E-03	9.6E-05	8.6E-05	8.2	1.4E-04	61	3.3	2.1E-05	1.2E-05	1.9E-06	3.4E-05	5.8E-04	2.9E-04	1.7E+05
Attenuation Pond 1	**44**	**1**	**2015**	**July**	0	3.7E-05	8.7E-05	0.024	3.8E-05	0.20	8.0	4.0E-03	1.2E-04	1.1E-04	8.6	1.8E-04	64	3.4	2.3E-05	1.3E-05	2.1E-06	3.7E-05	6.3E-04	3.8E-04	0
Attenuation Pond 1	**45**	**1**	**2015**	**August**	0	4.3E-05	8.3E-05	0.022	3.5E-05	0.18	7.3	3.9E-03	1.2E-04	1.1E-04	7.8	1.6E-04	58	3.1	2.7E-05	1.5E-05	2.4E-06	4.3E-05	5.7E-04	3.5E-04	0
Attenuation Pond 1	**46**	**1**	**2015**	**September**	0	2.4E-05	6.7E-05	0.021	3.0E-05	0.18	7.1	3.2E-03	8.7E-05	7.9E-05	7.6	1.4E-04	57	3.0	1.5E-05	8.5E-06	1.3E-06	2.4E-05	5.5E-04	3.0E-04	0
Attenuation Pond 1	**47**	**1**	**2015**	**October**	0	1.6E-05	5.7E-05	0.024	2.6E-05	0.22	8.7	3.5E-03	7.0E-05	6.5E-05	9.4	1.3E-04	70	3.8	9.9E-06	5.6E-06	8.9E-07	1.6E-05	6.5E-04	2.6E-04	0
Attenuation Pond 1	**48**	**2**	**2015**	**November**	0	9.1E-06	3.3E-05	0.030	1.5E-05	0.31	12	4.2E-03	4.0E-05	3.8E-05	13	7.4E-05	98	5.2	5.7E-06	3.2E-06	5.1E-07	9.1E-06	8.6E-04	1.5E-04	0
Attenuation Pond 1	**49**	**2**	**2015**	**December**	0	3.8E-06	1.4E-05	0.032	6.4E-06	0.35	13	4.4E-03	1.7E-05	1.6E-05	15	3.2E-05	110	5.9	2.4E-06	1.4E-06	2.1E-07	3.8E-06	9.5E-04	6.4E-05	0
Attenuation Pond 1	**50**	**2**	**2016**	**January**	0	1.6E-06	5.9E-06	0.033	2.7E-06	0.36	14	4.4E-03	7.3E-06	6.8E-06	15	1.3E-05	115	6.2	1.0E-06	5.7E-07	9.0E-08	1.6E-06	9.9E-04	2.7E-05	0
Attenuation Pond 1	**51**	**2**	**2016**	**Febraury**	0	6.7E-07	2.5E-06	0.033	1.2E-06	0.37	14	4.5E-03	3.1E-06	2.9E-06	16	5.7E-06	118	6.3	4.2E-07	2.4E-07	3.8E-08	6.7E-07	1.0E-03	1.2E-05	0
Attenuation Pond 1	**52**	**2**	**2016**	**March**	0	2.8E-07	1.1E-06	0.033	4.9E-07	0.37	14	4.5E-03	1.3E-06	1.2E-06	16	2.4E-06	118	6.3	1.8E-07	1.0E-07	1.6E-08	2.8E-07	1.0E-03	4.9E-06	0
Attenuation Pond 1	**53**	**2**	**2016**	**April**	0	1.2E-07	4.5E-07	0.034	2.1E-07	0.37	14	4.5E-03	5.5E-07	5.1E-07	16	1.0E-06	119	6.4	7.4E-08	4.2E-08	6.7E-09	1.2E-07	1.0E-03	2.1E-06	0
Attenuation Pond 1	**54**	**2**	**2016**	**May**	0	5.0E-08	1.9E-07	0.034	8.8E-08	0.37	15	4.5E-03	2.3E-07	2.2E-07	16	4.4E-07	119	6.4	3.1E-08	1.8E-08	2.8E-09	5.0E-08	1.0E-03	8.8E-07	0

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12				13		0.004 to 0.01		0.1		0.005			1.5	0.000012	
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)										1								0.5					
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	SO4	CN_Total	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Bi	B	Cd[4]	Ca
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	Total (mg/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
Attenuation Pond 1	55	2	2016	June	803	8.9	**514**	3.0E-04	13	0	0.72	0.77	0.11	1.3E-03	1.8E-04	7.1E-03	1.0E-04	1.8E-03	2.2E-03	0	0.074	3.9E-07	191
Attenuation Pond 1	56	2	2016	July	845	11	**538**	3.2E-04	14	0	0.78	0.83	0.14	1.7E-03	2.4E-04	7.6E-03	1.1E-04	2.0E-03	2.6E-03	0	0.079	4.3E-07	200
Attenuation Pond 1	57	2	2016	August	761	11	**485**	2.9E-04	13	0	0.71	0.76	0.13	1.5E-03	2.1E-04	8.2E-03	1.3E-04	2.3E-03	2.5E-03	0	0.071	5.0E-07	180
Attenuation Pond 1	58	2	2016	September	747	8.8	**477**	2.8E-04	12	0	0.70	0.75	0.11	1.4E-03	1.9E-04	5.6E-03	7.1E-05	1.3E-03	2.1E-03	0	0.069	2.8E-07	177
Attenuation Pond 1	59	2	2016	October	2.3E+03	14	**929**	0.034	580	0.35	25	1.5	0.13	3.7E-04	3.1E-04	1.6E-03	0.012	**0.070**	0.028	4.2E-05	0.13	9.1E-06	405
Attenuation Pond 1	60	3	2016	November	5.3E+03	30	**2.3E+03**	0.073	1.2E+03	0.73	52	3.6	0.27	7.8E-04	6.5E-04	4.8E-03	0.026	**0.15**	0.059	8.9E-05	0.33	**1.9E-05**	983
Attenuation Pond 1	61	3	2016	December	3.1E+03	13	**1.5E+03**	0.031	531	0.31	23	2.3	0.12	3.3E-04	2.7E-04	4.4E-03	0.011	**0.062**	0.026	3.7E-05	0.21	8.1E-06	627
Attenuation Pond 1	62	3	2017	January	2.2E+03	6.4	**1.2E+03**	0.013	236	0.13	10	1.8	0.049	1.4E-04	1.1E-04	4.2E-03	4.6E-03	**0.026**	0.012	1.6E-05	0.17	3.4E-06	478
Attenuation Pond 1	63	3	2017	Febraury	1.8E+03	3.4	**1.1E+03**	5.9E-03	112	0.054	5.1	1.6	0.020	6.0E-05	4.8E-05	4.1E-03	1.9E-03	**0.011**	5.9E-03	6.6E-06	0.15	1.4E-06	415
Attenuation Pond 1	64	3	2017	March	1.7E+03	2.2	**1.0E+03**	2.8E-03	60	0.023	2.9	1.5	8.6E-03	2.5E-05	2.0E-05	4.1E-03	8.1E-04	4.6E-03	3.5E-03	2.8E-06	0.14	6.0E-07	389
Attenuation Pond 1	65	3	2017	April	1.6E+03	1.7	**1.0E+03**	1.5E-03	39	9.6E-03	2.0	1.4	3.6E-03	1.1E-05	8.5E-06	4.1E-03	3.4E-04	1.9E-03	2.4E-03	1.2E-06	0.14	2.5E-07	378
Attenuation Pond 1	66	3	2017	May	1.6E+03	1.5	**1.0E+03**	9.9E-04	30	4.0E-03	1.6	1.4	1.5E-03	4.6E-06	3.6E-06	4.1E-03	1.4E-04	8.1E-04	2.0E-03	4.9E-07	0.13	1.1E-07	373
Attenuation Pond 1	67	3	2017	June	713	9.5	**454**	3.0E-04	12	3.4E-04	0.67	0.70	0.11	1.4E-03	1.9E-04	7.3E-03	1.2E-04	2.1E-03	2.3E-03	4.1E-08	0.066	4.4E-07	169
Attenuation Pond 1	68	3	2017	July	1.7E+03	13	**768**	0.030	379	0.23	12	1.2	0.11	7.6E-04	2.5E-04	3.3E-03	8.8E-03	**0.047**	0.020	7.2E-05	0.11	**1.3E-05**	332
Attenuation Pond 1	69	3	2017	August	1.6E+03	14	**738**	0.025	321	0.19	10	1.2	0.14	1.2E-03	2.8E-04	5.8E-03	7.5E-03	**0.041**	0.018	6.0E-05	0.11	1.1E-05	314
Attenuation Pond 1	70	3	2017	September	885	9.5	**444**	0.011	138	0.082	4.5	0.76	0.11	1.1E-03	2.0E-04	3.8E-03	3.2E-03	**0.017**	8.2E-03	2.5E-05	0.065	4.6E-06	182
Attenuation Pond 1	71	3	2017	October	841	7.6	**469**	6.3E-03	84	0.047	2.9	0.79	0.091	9.8E-04	1.7E-04	3.4E-03	1.8E-03	**0.010**	5.4E-03	1.4E-05	0.068	2.7E-06	184
Attenuation Pond 1	72	4	2017	November	1.2E+03	5.3	**756**	4.2E-03	63	0.029	2.4	1.1	0.056	6.1E-04	1.0E-04	4.0E-03	1.1E-03	**6.2E-03**	4.1E-03	9.0E-06	0.10	1.7E-06	286
Attenuation Pond 1	73	4	2017	December	1.4E+03	3.0	**898**	2.1E-03	40	0.012	1.8	1.3	0.024	2.6E-04	4.3E-05	4.0E-03	4.7E-04	2.6E-03	2.7E-03	3.8E-06	0.12	6.9E-07	334
Attenuation Pond 1	74	4	2018	January	1.5E+03	2.0	**957**	1.2E-03	30	5.1E-03	1.5	1.4	9.9E-03	1.1E-04	1.8E-05	4.1E-03	2.0E-04	1.1E-03	2.1E-03	1.6E-06	0.13	2.9E-07	355
Attenuation Pond 1	75	4	2018	Febraury	1.5E+03	1.6	**982**	8.6E-04	26	2.1E-03	1.4	1.4	4.2E-03	4.5E-05	7.6E-06	4.1E-03	8.3E-05	4.6E-04	1.9E-03	6.7E-07	0.13	1.2E-07	363
Attenuation Pond 1	76	4	2018	March	1.5E+03	1.4	**992**	7.0E-04	24	9.0E-04	1.3	1.4	1.7E-03	1.9E-05	3.2E-06	4.1E-03	3.5E-05	1.9E-04	1.8E-03	2.8E-07	0.13	5.1E-08	367
Attenuation Pond 1	77	4	2018	April	1.5E+03	1.3	**997**	6.4E-04	23	3.8E-04	1.3	1.4	7.3E-04	8.0E-06	1.3E-06	4.1E-03	1.5E-05	8.1E-05	1.7E-03	1.2E-07	0.13	2.2E-08	368
Attenuation Pond 1	78	4	2018	May	1.5E+03	1.3	**999**	6.1E-04	23	1.6E-04	1.3	1.4	3.1E-04	3.3E-06	5.6E-07	4.1E-03	6.1E-06	3.4E-05	1.7E-03	4.9E-08	0.13	9.0E-09	369
Attenuation Pond 1	79	4	2018	June	166	9.5	99	5.9E-05	8.8	7.8E-06	0.37	0.40	0.062	7.5E-04	1.0E-04	0.015	3.2E-04	**5.0E-03**	1.8E-03	2.4E-09	0.017	4.0E-07	38
Attenuation Pond 1	80	4	2018	July	1.6E+03	13	**661**	0.035	376	0.20	10	1.2	0.083	5.8E-04	1.9E-04	8.9E-03	9.2E-03	**0.044**	0.022	6.1E-05	0.097	**1.7E-05**	298
Attenuation Pond 1	81	4	2018	August	1.2E+03	13	**553**	0.025	273	0.15	7.7	1.0	0.096	8.6E-04	2.0E-04	0.010	6.7E-03	**0.033**	0.016	4.3E-05	0.082	**1.2E-05**	243
Attenuation Pond 1	82	4	2018	September	2.3E+03	13	**951**	0.054	566	0.31	21	1.6	0.083	4.0E-04	2.1E-04	3.2E-03	0.014	**0.062**	0.032	8.7E-05	0.14	**2.6E-05**	431
Attenuation Pond 1	83	4	2018	October	2.9E+03	17	**1.3E+03**	0.063	663	0.36	25	2.1	0.12	7.1E-04	2.8E-04	4.8E-03	0.016	**0.073**	0.038	1.0E-04	0.18	**3.0E-05**	555
Attenuation Pond 1	84	5	2018	November	2.6E+03	12	**1.3E+03**	0.043	458	0.24	17	2.1	0.079	4.8E-04	1.9E-04	5.1E-03	0.011	**0.049**	0.026	6.8E-05	0.18	**2.0E-05**	540
Attenuation Pond 1	85	5	2018	December	2.0E+03	5.9	**1.1E+03**	0.018	206	0.10	8.0	1.7	0.033	2.0E-04	8.1E-05	4.5E-03	4.5E-03	**0.021**	0.012	2.9E-05	0.15	8.5E-06	441
Attenuation Pond 1	86	5	2019	January	1.7E+03	3.2	**1.0E+03**	7.8E-03	100	0.041	4.0	1.5	0.014	8.3E-05	3.3E-05	4.6E-03	1.9E-03	**8.4E-03**	5.9E-03	1.2E-05	0.14	3.5E-06	391
Attenuation Pond 1	87	5	2019	Febraury	1.6E+03	2.1	**1.0E+03**	3.6E-03	57	0.017	2.4	1.4	5.7E-03	3.5E-05	1.4E-05	4.6E-03	7.8E-04	3.5E-03	3.4E-03	4.9E-06	0.14	1.5E-06	371
Attenuation Pond 1	88	5	2019	March	1.6E+03	1.6	**1.0E+03**	1.8E-03	39	7.3E-03	1.7	1.4	2.4E-03	1.5E-05	5.8E-06	4.6E-03	3.3E-04	1.5E-03	2.4E-03	2.1E-06	0.13	6.1E-07	363
Attenuation Pond 1	89	5	2019	April	1.6E+03	1.4	**1.0E+03**	1.1E-03	31	3.1E-03	1.5	1.4	1.0E-03	6.1E-06	2.4E-06	4.6E-03	1.4E-04	6.2E-04	1.9E-03	8.6E-07	0.13	2.6E-07	359
Attenuation Pond 1	90	5	2019	May	1.6E+03	1.4	**1.0E+03**	7.9E-04	28	1.3E-03	1.3	1.4	4.2E-04	2.6E-06	1.0E-06	4.6E-03	5.7E-05	2.6E-04	1.8E-03	3.6E-07	0.13	1.1E-07	358
Attenuation Pond 1	91	5	2019	June	188	9.6	112	7.6E-05	8.9	7.1E-05	0.34	0.37	0.067	8.2E-04	1.1E-04	0.014	3.0E-04	4.7E-03	2.0E-03	2.0E-08	0.019	4.3E-07	42
Attenuation Pond 1	92	5	2019	July	1.7E+03	13	**726**	0.043	414	0.21	11	1.2	0.080	6.1E-04	1.9E-04	8.1E-03	1.0E-02	**0.045**	0.025	4.6E-05	0.11	**2.6E-05**	329
Attenuation Pond 1	93	5	2019	August	1.5E+03	15	**648**	0.033	322	0.16	8.5	1.1	0.10	9.6E-04	2.1E-04	0.013	7.8E-03	**0.037**	0.020	3.5E-05	0.096	**2.0E-05**	285
Attenuation Pond 1	94	5	2019	September	853	11	**417**	0.014	145	0.070	3.9	0.77	0.091	9.9E-04	1.7E-04	9.1E-03	3.4E-03	**0.017**	9.6E-03	1.5E-05	0.062	8.8E-06	172
Attenuation Pond 1	95	5	2019	October	759	8.0	**418**	7.6E-03	82	0.037	2.4	0.76	0.075	8.5E-04	1.4E-04	7.0E-03	1.8E-03	**9.3E-03**	5.7E-03	8.1E-06	0.060	4.7E-06	162
Attenuation Pond 1	96	6	2019	November	1.2E+03	5.9	**728**	5.3E-03	66	0.025	2.2	1.1	0.050	5.7E-04	9.0E-05	6.7E-03	1.2E-03	**6.2E-03**	4.5E-03	5.4E-06	0.10	3.1E-06	268
Attenuation Pond 1	97	6	2019	December	1.4E+03	3.2	**886**	2.6E-03	43	0.010	1.6	1.3	0.021	2.4E-04	3.8E-05	5.5E-03	5.1E-04	2.6E-03	2.8E-03	2.2E-06	0.12	1.3E-06	320
Attenuation Pond 1	98	6	2020	January	1.5E+03	2.1	**952**	1.4E-03	33	4.3E-03	1.4	1.3	8.7E-03	9.9E-05	1.6E-05	5.0E-03	2.1E-04	1.1E-03	2.1E-03	9.4E-07	0.13	5.5E-07	341
Attenuation Pond 1	99	6	2020	Febraury	1.5E+03	1.6	**980**	9.2E-04	29	1.8E-03	1.3	1.3	3.7E-03	4.2E-05	6.7E-06	4.8E-03	9.0E-05	4.5E-04	1.8E-03	3.9E-07	0.13	2.3E-07	350
Attenuation Pond 1	100	6	2020	March	1.5E+03	1.4	**992**	7.2E-04	27	7.6E-04	1.3	1.3	1.5E-03	1.7E-05	2.8E-06	4.7E-03	3.8E-05	1.9E-04	1.7E-03	1.7E-07	0.13	9.6E-08	354
Attenuation Pond 1	101	6	2020	April	1.5E+03	1.4	**996**	6.3E-04	27	3.2E-04	1.3	1.4	6.4E-04	7.3E-06	1.2E-06	4.7E-03	1.6E-05	8.0E-05	1.7E-03	6.9E-08	0.13	4.0E-08	356
Attenuation Pond 1	102	6	2020	May	1.5E+03	1.3	**999**	5.9E-04	26	1.3E-04	1.3	1.4	2.7E-04	3.1E-06	4.9E-07	4.6E-03	6.6E-06	3.3E-05	1.6E-03	2.9E-08	0.13	1.7E-08	356
Attenuation Pond 1	103	6	2020	June	213	11	**127**	7.4E-05	11	8.4E-06	0.38	0.42	0.076	9.3E-04	1.3E-04	0.016	3.3E-04	**5.0E-03**	2.4E-03	1.8E-09	0.021	4.7E-07	47
Attenuation Pond 1	104	6	2020	July	1.7E+03	14	**724**	0.047	420	0.22	11	1.3	0.085	6.5E-04	1.9E-04	8.4E-03	0.010	**0.047**	0.027	3.4E-05	0.11	**3.1E-05**	330

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.001		0.002	0.3	0.001				0.073	0.038		0.001						0.015		0.03	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)			0.3	3.0	0.2					0.5										0.5	
	Model	Mine	Date		Cr^3	Co	Cu^4	Fe	Pb^4	Li	Mg	Mn	Mo	Ni^4	K	Se	Na	Sr	Sn	Ti	W	U	V	Zn	Meliadine Discharge
LOCATION	Month	Year	Year	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	mg/L	mg/L	m^3/mon
Attenuation Pond 1	55	2	2016	June	0	3.4E-05	6.8E-05	0.022	2.9E-05	0.19	7.7	3.7E-03	9.6E-05	8.6E-05	8.2	1.4E-04	61	3.3	2.1E-05	1.2E-05	1.9E-06	3.4E-05	5.8E-04	2.9E-04	2.5E+05
Attenuation Pond 1	56	2	2016	July	0	3.7E-05	8.7E-05	0.024	3.8E-05	0.20	8.1	4.0E-03	1.2E-04	1.1E-04	8.6	1.8E-04	64	3.4	2.3E-05	1.3E-05	2.1E-06	3.7E-05	6.3E-04	3.8E-04	1.8E+04
Attenuation Pond 1	57	2	2016	August	0	4.3E-05	8.3E-05	0.022	3.5E-05	0.18	7.3	3.9E-03	1.2E-04	1.1E-04	7.8	1.6E-04	58	3.1	2.7E-05	1.5E-05	2.4E-06	4.3E-05	5.7E-04	3.5E-04	2.1E+04
Attenuation Pond 1	58	2	2016	September	0	2.4E-05	6.7E-05	0.021	3.0E-05	0.18	7.1	3.2E-03	8.7E-05	8.0E-05	7.6	1.4E-04	57	3.0	1.5E-05	8.5E-06	1.4E-06	2.4E-05	5.5E-04	3.0E-04	9.4E+03
Attenuation Pond 1	59	2	2016	October	9.4E-05	0.024	**0.10**	6.9E-03	2.8E-04	0.35	15	0.019	0.017	3.4E-03	30	**4.3E-03**	*277*	6.0	5.8E-04	5.7E-05	2.0E-03	1.1E-03	1.3E-03	8.9E-04	3.5E+05
Attenuation Pond 1	60	3	2016	November	2.0E-04	0.051	**0.22**	0.026	5.9E-04	0.86	38	0.042	0.036	7.2E-03	68	**9.1E-03**	*625*	15	1.2E-03	1.2E-04	4.3E-03	2.2E-03	3.1E-03	1.9E-03	0
Attenuation Pond 1	61	3	2016	December	8.4E-05	0.022	**0.092**	0.031	2.5E-04	0.58	24	0.020	0.015	3.0E-03	38	**3.8E-03**	*332*	9.9	5.2E-04	5.1E-05	1.8E-03	9.4E-04	1.9E-03	7.9E-04	0
Attenuation Pond 1	62	3	2017	January	3.5E-05	9.1E-03	**0.039**	0.032	1.0E-04	0.46	19	0.011	6.4E-03	1.3E-03	25	**1.6E-03**	*208*	7.9	2.2E-04	2.1E-05	7.6E-04	3.9E-04	1.4E-03	3.3E-04	0
Attenuation Pond 1	63	3	2017	Febraury	1.5E-05	3.8E-03	**0.016**	0.033	4.3E-05	0.41	16	7.3E-03	2.7E-03	5.3E-04	20	6.7E-04	157	7.0	9.1E-05	8.9E-06	3.2E-04	1.7E-04	1.2E-03	1.4E-04	0
Attenuation Pond 1	64	3	2017	March	6.2E-06	1.6E-03	**6.8E-03**	0.033	1.8E-05	0.39	15	5.7E-03	1.1E-03	2.2E-04	17	2.8E-04	135	6.6	3.8E-05	3.7E-06	1.3E-04	6.9E-05	1.1E-03	5.9E-05	0
Attenuation Pond 1	65	3	2017	April	2.6E-06	6.7E-04	**2.9E-03**	0.034	7.7E-06	0.38	15	5.0E-03	4.7E-04	9.4E-05	16	1.2E-04	126	6.5	1.6E-05	1.6E-06	5.6E-05	2.9E-05	1.0E-03	2.5E-05	0
Attenuation Pond 1	66	3	2017	May	1.1E-06	2.8E-04	1.2E-03	0.034	3.2E-06	0.38	15	4.7E-03	2.0E-04	3.9E-05	16	5.0E-05	122	6.4	6.7E-06	6.6E-07	2.4E-05	1.2E-05	1.0E-03	1.0E-05	0
Attenuation Pond 1	67	3	2017	June	9.2E-08	6.1E-05	1.8E-04	0.020	3.1E-05	0.17	6.8	3.5E-03	1.2E-04	9.7E-05	7.3	1.5E-04	54	2.9	2.4E-05	1.3E-05	4.1E-06	3.8E-05	5.3E-04	3.2E-04	2.3E+05
Attenuation Pond 1	68	3	2017	July	5.9E-05	0.018	**0.070**	8.8E-03	2.5E-04	0.29	14	0.036	0.013	2.4E-03	24	**3.7E-03**	196	5.0	6.5E-04	8.5E-05	1.3E-03	8.9E-04	1.1E-03	1.2E-03	4.5E+05
Attenuation Pond 1	69	3	2017	August	5.0E-05	0.015	**0.059**	0.012	2.2E-04	0.28	14	0.032	0.011	2.0E-03	22	**3.1E-03**	176	4.8	5.6E-04	7.8E-05	1.1E-03	7.7E-04	1.0E-03	1.2E-03	3.5E+04
Attenuation Pond 1	70	3	2017	September	2.1E-05	6.2E-03	**0.025**	0.012	1.1E-04	0.17	7.7	0.014	4.6E-03	8.9E-04	11	**1.4E-03**	90	2.9	2.4E-04	3.4E-05	4.5E-04	3.3E-04	5.9E-04	6.1E-04	3.0E+04
Attenuation Pond 1	71	3	2017	October	1.2E-05	3.5E-03	**0.014**	0.015	6.8E-05	0.18	7.5	9.3E-03	2.6E-03	5.2E-04	9.8	8.3E-04	77	3.0	1.4E-04	2.0E-05	2.6E-04	1.9E-04	5.7E-04	4.3E-04	0
Attenuation Pond 1	72	4	2017	November	7.4E-06	2.2E-03	**8.7E-03**	0.025	4.2E-05	0.28	11	7.8E-03	1.6E-03	3.2E-04	13	5.1E-04	103	4.8	8.5E-05	1.3E-05	1.6E-04	1.2E-04	8.3E-04	2.6E-04	0
Attenuation Pond 1	73	4	2017	December	3.1E-06	9.3E-04	**3.7E-03**	0.030	1.8E-05	0.34	13	5.9E-03	6.9E-04	1.4E-04	15	2.2E-04	112	5.7	3.6E-05	5.3E-06	6.7E-05	4.9E-05	9.3E-04	1.1E-04	0
Attenuation Pond 1	74	4	2018	January	1.3E-06	3.9E-04	1.5E-03	0.032	7.4E-06	0.36	14	5.1E-03	2.9E-04	5.7E-05	15	9.1E-05	116	6.1	1.5E-05	2.2E-06	2.8E-05	2.1E-05	9.8E-04	4.7E-05	0
Attenuation Pond 1	75	4	2018	Febraury	5.5E-07	1.6E-04	6.5E-04	0.033	3.1E-06	0.37	14	4.8E-03	1.2E-04	2.4E-05	16	3.8E-05	118	6.3	6.3E-06	9.3E-07	1.2E-05	8.7E-06	1.0E-03	2.0E-05	0
Attenuation Pond 1	76	4	2018	March	2.3E-07	6.8E-05	2.7E-04	0.033	1.3E-06	0.37	14	4.6E-03	5.1E-05	1.0E-05	16	1.6E-05	119	6.3	2.7E-06	3.9E-07	5.0E-06	3.6E-06	1.0E-03	8.2E-06	0
Attenuation Pond 1	77	4	2018	April	9.7E-08	2.9E-05	1.1E-04	0.033	5.5E-07	0.37	14	4.5E-03	2.1E-05	4.2E-06	16	6.7E-06	119	6.4	1.1E-06	1.6E-07	2.1E-06	1.5E-06	1.0E-03	3.4E-06	0
Attenuation Pond 1	78	4	2018	May	4.1E-08	1.2E-05	4.8E-05	0.034	2.3E-07	0.37	15	4.5E-03	9.0E-06	1.8E-06	16	2.8E-06	119	6.4	4.7E-07	6.9E-08	8.7E-07	6.4E-07	1.0E-03	1.4E-06	0
Attenuation Pond 1	79	4	2018	June	2.0E-09	6.3E-05	6.3E-05	6.0E-03	2.1E-05	0.037	1.8	9.7E-03	7.5E-05	9.6E-05	1.8	7.9E-05	12	0.63	7.8E-05	1.8E-05	1.1E-05	4.9E-05	2.0E-04	2.4E-04	5.1E+05
Attenuation Pond 1	80	4	2018	July	4.8E-05	0.017	**0.061**	4.8E-03	2.8E-04	0.25	14	*0.057*	0.013	2.5E-03	23	**4.3E-03**	176	4.3	9.2E-04	1.3E-04	1.2E-03	9.9E-04	1.1E-03	1.8E-03	4.2E+05
Attenuation Pond 1	81	4	2018	August	3.4E-05	0.012	**0.044**	7.7E-03	2.1E-04	0.21	12	0.043	9.0E-03	1.8E-03	18	**3.1E-03**	136	3.6	6.8E-04	9.7E-05	8.9E-04	7.3E-04	8.7E-04	1.4E-03	7.0E+04
Attenuation Pond 1	82	4	2018	September	6.6E-05	0.026	**0.092**	4.1E-03	4.2E-04	0.36	21	*0.084*	0.019	3.7E-03	33	**6.5E-03**	*260*	6.2	1.4E-03	1.9E-04	1.9E-03	1.5E-03	1.5E-03	2.7E-03	4.3E+05
Attenuation Pond 1	83	4	2018	October	7.7E-05	0.030	**0.11**	0.010	4.9E-04	0.47	27	*0.099*	0.022	4.3E-03	41	**7.6E-03**	*319*	8.1	1.6E-03	2.2E-04	2.2E-03	1.7E-03	1.9E-03	3.3E-03	0
Attenuation Pond 1	84	5	2018	November	5.2E-05	0.020	**0.072**	0.022	3.3E-04	0.49	24	*0.069*	0.015	2.9E-03	35	**5.1E-03**	*269*	8.4	1.1E-03	1.5E-04	1.5E-03	1.2E-03	1.7E-03	2.2E-03	0
Attenuation Pond 1	85	5	2018	December	2.2E-05	8.5E-03	**0.030**	0.029	1.4E-04	0.42	19	0.032	6.2E-03	1.2E-03	24	**2.2E-03**	182	7.2	4.6E-04	6.2E-05	6.2E-04	4.9E-04	1.3E-03	9.2E-04	0
Attenuation Pond 1	86	5	2019	January	8.9E-06	3.5E-03	**0.012**	0.034	5.7E-05	0.39	17	0.016	2.6E-03	5.0E-04	19	8.8E-04	153	6.6	1.9E-04	2.5E-05	2.5E-04	2.0E-04	1.1E-03	3.8E-04	0
Attenuation Pond 1	87	5	2019	Febraury	3.8E-06	1.5E-03	**5.2E-03**	0.037	2.4E-05	0.37	17	9.7E-03	1.1E-03	2.1E-04	17	3.7E-04	142	6.4	7.8E-05	1.1E-05	1.1E-04	8.4E-05	1.0E-03	1.6E-04	0
Attenuation Pond 1	88	5	2019	March	1.6E-06	6.1E-04	**2.2E-03**	0.038	1.0E-05	0.37	17	7.0E-03	4.5E-04	8.9E-05	16	1.6E-04	137	6.3	3.3E-05	4.4E-06	4.5E-05	3.5E-05	1.0E-03	6.6E-05	0
Attenuation Pond 1	89	5	2019	April	6.6E-07	2.6E-04	9.2E-04	0.038	4.2E-06	0.36	17	5.9E-03	1.9E-04	3.7E-05	16	6.5E-05	135	6.2	1.4E-05	1.9E-06	1.9E-05	1.5E-05	9.9E-04	2.8E-05	0
Attenuation Pond 1	90	5	2019	May	2.8E-07	1.1E-04	3.8E-04	0.038	1.8E-06	0.36	17	5.5E-03	7.9E-05	1.6E-05	16	2.7E-05	135	6.2	5.8E-06	7.8E-07	7.8E-06	6.2E-06	9.8E-04	1.2E-05	0
Attenuation Pond 1	91	5	2019	June	1.5E-08	6.3E-05	8.1E-05	7.2E-03	2.2E-05	0.041	2.3	0.011	8.4E-05	9.8E-05	2.0	8.7E-05	15	0.70	6.8E-05	1.8E-05	1.0E-05	4.9E-05	2.1E-04	2.6E-04	4.6E+05
Attenuation Pond 1	92	5	2019	July	4.7E-05	0.018	**0.064**	5.5E-03	3.4E-04	0.27	17	*0.077*	0.013	2.8E-03	25	**5.2E-03**	191	4.7	1.2E-03	1.6E-04	1.3E-03	1.1E-03	1.2E-03	2.7E-03	4.1E+05
Attenuation Pond 1	93	5	2019	August	3.6E-05	0.014	**0.049**	9.6E-03	2.7E-04	0.24	15	*0.061*	0.010	2.2E-03	21	**4.0E-03**	159	4.2	9.4E-04	1.3E-04	1.0E-03	8.9E-04	1.1E-03	2.2E-03	4.8E+04
Attenuation Pond 1	94	5	2019	September	1.5E-05	6.1E-03	**0.021**	0.011	1.3E-04	0.15	8.9	0.028	4.5E-03	1.0E-03	11	**1.8E-03**	87	2.7	4.2E-04	6.1E-05	4.5E-04	4.0E-04	6.3E-04	1.1E-03	3.2E+04
Attenuation Pond 1	95	5	2019	October	8.1E-06	3.2E-03	**0.011**	0.015	7.6E-05	0.15	8.0	0.016	2.4E-03	5.4E-04	9.0	9.9E-04	72	2.6	2.3E-04	3.3E-05	2.4E-04	2.1E-04	5.4E-04	6.5E-04	0
Attenuation Pond 1	96	6	2019	November	5.4E-06	2.1E-03	**7.4E-03**	0.027	5.0E-05	0.27	13	0.013	1.6E-03	3.6E-04	13	6.6E-04	108	4.5	1.5E-04	2.2E-05	1.6E-04	1.4E-04	8.0E-04	4.3E-04	0
Attenuation Pond 1	97	6	2019	December	2.3E-06	9.0E-04	**3.1E-03**	0.033	2.1E-05	0.32	15	8.5E-03	6.6E-04	1.5E-04	14	2.8E-04	123	5.5	6.4E-05	9.3E-06	6.6E-05	5.9E-05	9.0E-04	1.8E-04	0
Attenuation Pond 1	98	6	2020	January	9.5E-07	3.8E-04	1.3E-03	0.036	8.8E-06	0.35	16	6.5E-03	2.8E-04	6.3E-05	15	1.2E-04	130	5.9	2.7E-05	3.9E-06	2.8E-05	2.5E-05	9.4E-04	7.6E-05	0
Attenuation Pond 1	99	6	2020	Febraury	4.0E-07	1.6E-04	5.5E-04	0.037	3.7E-06	0.36	16	5.7E-03	1.2E-04	2.7E-05	15	4.8E-05	132	6.1	1.1E-05	1.6E-06	1.2E-05	1.0E-05	9.6E-04	3.2E-05	0
Attenuation Pond 1	100	6	2020	March	1.7E-07	6.6E-05	2.3E-04	0.038	1.6E-06	0.36	16	5.4E-03	4.9E-05	1.1E-05	15	2.0E-05	133	6.2	4.7E-06	6.9E-07	4.9E-06	4.4E-06	9.7E-04	1.3E-05	0
Attenuation Pond 1	101	6	2020	April	7.0E-08	2.8E-05	9.6E-05	0.038	6.5E-07	0.36	16	5.2E-03	2.0E-05	4.7E-06	16	8.5E-06	134	6.2	2.0E-06	2.9E-07	2.0E-06	1.8E-06	9.7E-04	5.6E-06	0
Attenuation Pond 1	102	6	2020	May	2.9E-08	1.2E-05	4.0E-05	0.038	2.7E-07	0.36	16	5.2E-03	8.6E-06	2.0E-06	16	3.6E-06	134	6.2	8.2E-07	1.2E-07	8.6E-07	7.7E-07	9.7E-04	2.4E-06	0
Attenuation Pond 1	103	6	2020	June	1.8E-09	6.0E-05	6.5E-05	8.3E-03	2.4E-05	0.046	2.6	0.012	9.1E-05	1.0E-04	2.3	9.7E-05	17	0.79	7.1E-05	1.9E-05	1.0E-05	5.5E-05	2.4E-04	3.0E-04	3.8E+05
Attenuation Pond 1	104	6	2020	July	4.2E-05	0.019	**0.067**	5.9E-03	3.6E-04	0.27	18	*0.082*	0.013	2.9E-03	26	**5.5E-03**	193	4.7	1.3E-03	1.8E-04	1.3E-03	1.2E-03	1.3E-03	3.1E-03	4.0E+05

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12				13		0.004 to 0.01		0.1		0.005			1.5	0.000012	
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)										1								0.5					
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	SO4	CN_Total	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Bi	B	Cd[4]	Ca
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	Total (mg/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
Attenuation Pond 1	105	6	2020	August	2.2E+03	15	**926**	0.064	564	0.31	13	1.6	0.084	4.7E-04	2.1E-04	6.2E-03	0.014	**0.063**	0.036	4.6E-05	0.14	**4.2E-05**	427
Attenuation Pond 1	106	6	2020	September	2.4E+03	15	**988**	0.070	608	0.34	21	1.7	0.082	3.7E-04	2.1E-04	3.7E-03	0.015	**0.069**	0.039	4.9E-05	0.15	**4.6E-05**	456
Attenuation Pond 1	107	6	2020	October	3.0E+03	19	**1.3E+03**	0.081	709	0.40	24	2.2	0.12	6.8E-04	2.7E-04	6.1E-03	0.017	**0.081**	0.046	5.6E-05	0.19	**5.3E-05**	583
Attenuation Pond 1	108	7	2020	November	2.7E+03	13	**1.3E+03**	0.053	472	0.26	16	2.1	0.075	4.4E-04	1.8E-04	6.1E-03	0.011	**0.052**	0.030	3.7E-05	0.18	**3.4E-05**	541
Attenuation Pond 1	109	7	2020	December	2.0E+03	6.2	**1.1E+03**	0.022	213	0.11	7.6	1.7	0.031	1.8E-04	7.5E-05	5.2E-03	4.6E-03	**0.022**	0.014	1.5E-05	0.15	**1.4E-05**	434
Attenuation Pond 1	110	7	2021	January	1.7E+03	3.4	**1.1E+03**	9.7E-03	104	0.045	3.9	1.5	0.013	7.7E-05	3.1E-05	4.9E-03	1.9E-03	**9.2E-03**	6.7E-03	6.4E-06	0.14	6.0E-06	389
Attenuation Pond 1	111	7	2021	Febraury	1.6E+03	2.2	**1.0E+03**	4.4E-03	59	0.019	2.4	1.4	5.5E-03	3.2E-05	1.3E-05	4.7E-03	8.1E-04	3.9E-03	3.7E-03	2.7E-06	0.14	2.5E-06	370
Attenuation Pond 1	112	7	2021	March	1.6E+03	1.7	**1.0E+03**	2.2E-03	40	7.9E-03	1.7	1.4	2.3E-03	1.4E-05	5.5E-06	4.7E-03	3.4E-04	1.6E-03	2.5E-03	1.1E-06	0.13	1.1E-06	363
Attenuation Pond 1	113	7	2021	April	1.6E+03	1.5	**1.0E+03**	1.2E-03	32	3.3E-03	1.5	1.4	9.7E-04	5.7E-06	2.3E-06	4.6E-03	1.4E-04	6.8E-04	2.0E-03	4.7E-07	0.13	4.4E-07	359
Attenuation Pond 1	114	7	2021	May	1.6E+03	1.4	**1.0E+03**	8.5E-04	28	1.4E-03	1.3	1.4	4.1E-04	2.4E-06	9.7E-07	4.6E-03	5.9E-05	2.8E-04	1.8E-03	2.0E-07	0.13	1.9E-07	358
Attenuation Pond 1	115	7	2021	June	206	11	**123**	8.6E-05	10	8.5E-05	0.40	0.43	0.073	8.9E-04	1.2E-04	0.017	3.5E-04	**5.4E-03**	2.4E-03	1.2E-08	0.020	5.2E-07	46
Attenuation Pond 1	116	7	2021	July	1.5E+03	14	**642**	0.061	379	0.22	11	1.2	0.089	6.3E-04	1.9E-04	9.0E-03	8.9E-03	**0.046**	0.029	2.7E-05	0.097	**4.0E-05**	298
Attenuation Pond 1	117	7	2021	August	2.0E+03	15	**807**	0.085	505	0.30	13	1.5	0.091	4.6E-04	2.1E-04	6.6E-03	0.012	**0.062**	0.038	3.6E-05	0.12	**5.7E-05**	381
Attenuation Pond 1	118	7	2021	September	2.2E+03	15	**866**	0.094	550	0.34	21	1.6	0.089	3.6E-04	2.1E-04	4.0E-03	0.013	**0.069**	0.042	3.9E-05	0.13	**6.4E-05**	409
Attenuation Pond 1	119	7	2021	October	2.4E+03	15	**960**	0.10	611	0.38	25	1.7	0.086	2.2E-04	2.1E-04	2.4E-03	0.014	**0.077**	0.046	4.2E-05	0.14	**7.0E-05**	452
Attenuation Pond 1	120	8	2021	November	5.6E+03	32	**2.4E+03**	**0.22**	1.3E+03	0.81	54	4.1	0.18	4.7E-04	4.4E-04	6.6E-03	0.030	**0.16**	0.098	8.9E-05	0.35	**1.5E-04**	1.1E+03
Attenuation Pond 1	121	8	2021	December	3.2E+03	14	**1.6E+03**	0.092	559	0.34	23	2.5	0.076	2.0E-04	1.8E-04	5.4E-03	0.012	**0.068**	0.042	3.7E-05	0.22	**6.2E-05**	659
Attenuation Pond 1	122	8	2022	January	2.3E+03	6.7	**1.2E+03**	0.039	250	0.14	11	1.8	0.032	8.3E-05	7.7E-05	5.0E-03	5.2E-03	**0.029**	0.019	1.6E-05	0.17	**2.6E-05**	483
Attenuation Pond 1	123	8	2022	Febraury	1.8E+03	3.6	**1.1E+03**	0.017	120	0.059	5.2	1.6	0.013	3.5E-05	3.2E-05	4.8E-03	2.2E-03	**0.012**	8.7E-03	6.6E-06	0.15	1.1E-05	410
Attenuation Pond 1	124	8	2022	March	1.7E+03	2.2	**1.0E+03**	7.3E-03	65	0.025	2.9	1.4	5.6E-03	1.5E-05	1.3E-05	4.7E-03	9.1E-04	**5.0E-03**	4.6E-03	2.8E-06	0.14	4.6E-06	379
Attenuation Pond 1	125	8	2022	April	1.6E+03	1.7	**1.0E+03**	3.4E-03	42	0.010	1.9	1.4	2.3E-03	6.1E-06	5.6E-06	4.6E-03	3.8E-04	2.1E-03	2.9E-03	1.2E-06	0.14	1.9E-06	366
Attenuation Pond 1	126	8	2022	May	1.6E+03	1.5	**1.0E+03**	1.8E-03	33	4.4E-03	1.6	1.4	9.8E-04	2.6E-06	2.4E-06	4.6E-03	1.6E-04	8.8E-04	2.1E-03	4.8E-07	0.13	8.0E-07	361
Attenuation Pond 1	127	8	2022	June	206	11	**123**	1.4E-04	10	2.7E-04	0.41	0.43	0.073	8.9E-04	1.2E-04	0.017	3.8E-04	**5.8E-03**	2.4E-03	2.9E-08	0.020	5.8E-07	46
Attenuation Pond 1	128	8	2022	July	1.4E+03	14	**573**	0.072	349	0.22	11	1.1	0.090	6.3E-04	1.9E-04	9.4E-03	7.8E-03	**0.047**	0.031	2.5E-05	0.088	**4.6E-05**	273
Attenuation Pond 1	129	8	2022	August	1.8E+03	15	**716**	0.10	466	0.30	13	1.3	0.093	4.6E-04	2.1E-04	6.9E-03	0.010	**0.062**	0.041	3.5E-05	0.11	**6.5E-05**	348
Attenuation Pond 1	130	8	2022	September	2.0E+03	15	**769**	0.11	509	0.34	21	1.4	0.091	3.5E-04	2.1E-04	4.2E-03	0.011	**0.069**	0.045	3.8E-05	0.12	**7.1E-05**	375
Attenuation Pond 1	131	8	2022	October	2.5E+03	19	**1.0E+03**	**0.13**	594	0.39	24	2.0	0.13	6.5E-04	2.7E-04	6.9E-03	0.013	**0.080**	0.053	4.4E-05	0.16	**8.2E-05**	489
Attenuation Pond 1	132	9	2022	November	2.3E+03	13	**1.1E+03**	0.084	398	0.26	16	1.9	0.082	4.2E-04	1.8E-04	6.6E-03	8.4E-03	**0.052**	0.035	2.9E-05	0.16	**5.3E-05**	480
Attenuation Pond 1	133	9	2022	December	1.9E+03	6.2	**1.1E+03**	0.035	182	0.11	7.5	1.6	0.034	1.8E-04	7.4E-05	5.4E-03	3.5E-03	**0.022**	0.016	1.2E-05	0.15	**2.2E-05**	408
Attenuation Pond 1	134	9	2023	January	1.7E+03	3.3	**1.0E+03**	0.015	91	0.045	3.9	1.4	0.014	7.5E-05	3.1E-05	5.0E-03	1.5E-03	**9.2E-03**	7.5E-03	5.0E-06	0.14	9.4E-06	378
Attenuation Pond 1	135	9	2023	Febraury	1.6E+03	2.2	**1.0E+03**	6.7E-03	53	0.019	2.4	1.4	6.0E-03	3.1E-05	1.3E-05	4.8E-03	6.2E-04	3.8E-03	4.1E-03	2.1E-06	0.14	3.9E-06	366
Attenuation Pond 1	136	9	2023	March	1.6E+03	1.7	**1.0E+03**	3.1E-03	37	7.9E-03	1.7	1.4	2.5E-03	1.3E-05	5.4E-06	4.7E-03	2.6E-04	1.6E-03	2.7E-03	8.8E-07	0.13	1.6E-06	361
Attenuation Pond 1	137	9	2023	April	1.6E+03	1.5	**1.0E+03**	1.6E-03	31	3.3E-03	1.5	1.4	1.1E-03	5.5E-06	2.3E-06	4.6E-03	1.1E-04	6.8E-04	2.1E-03	3.7E-07	0.13	6.9E-07	358
Attenuation Pond 1	138	9	2023	May	1.6E+03	1.4	**1.0E+03**	1.0E-03	28	1.4E-03	1.3	1.4	4.4E-04	2.3E-06	9.6E-07	4.6E-03	4.5E-05	2.8E-04	1.8E-03	1.6E-07	0.13	2.9E-07	358
Attenuation Pond 1	139	9	2023	June	205	11	**123**	9.7E-05	10	8.4E-05	0.40	0.43	0.073	8.9E-04	1.2E-04	0.017	3.6E-04	**5.4E-03**	2.4E-03	9.4E-09	0.020	5.4E-07	46
Attenuation Pond 1	140	9	2023	July	1.4E+03	14	**565**	0.084	352	0.22	11	1.1	0.093	6.3E-04	1.9E-04	9.1E-03	7.2E-03	**0.046**	0.034	2.9E-05	0.087	**5.0E-05**	275
Attenuation Pond 1	141	9	2023	August	1.8E+03	15	**708**	0.12	471	0.30	13	1.3	0.096	4.6E-04	2.1E-04	6.7E-03	9.5E-03	**0.062**	0.046	4.0E-05	0.11	**7.0E-05**	351
Attenuation Pond 1	142	9	2023	September	2.0E+03	15	**763**	**0.13**	515	0.34	21	1.4	0.096	3.5E-04	2.1E-04	4.1E-03	0.010	**0.069**	0.050	4.4E-05	0.12	**7.8E-05**	380
Attenuation Pond 1	143	9	2023	October	2.2E+03	15	**851**	**0.14**	572	0.38	25	1.6	0.093	2.2E-04	2.1E-04	2.4E-03	0.011	**0.077**	0.055	4.9E-05	0.13	**8.5E-05**	421
Attenuation Pond 1	144	10	2023	November	5.1E+03	32	**2.1E+03**	**0.29**	1.2E+03	0.81	54	3.8	0.20	4.7E-04	4.5E-04	6.6E-03	0.024	**0.16**	0.12	1.0E-04	0.32	**1.8E-04**	1.0E+03
Attenuation Pond 1	145	10	2023	December	3.1E+03	14	**1.5E+03**	**0.12**	524	0.34	23	2.4	0.082	2.0E-04	1.9E-04	5.5E-03	9.9E-03	**0.068**	0.050	4.3E-05	0.21	**7.5E-05**	632
Attenuation Pond 1	146	10	2024	January	2.2E+03	6.7	**1.2E+03**	0.052	235	0.14	11	1.8	0.034	8.3E-05	8.0E-05	5.0E-03	4.1E-03	**0.029**	0.022	1.8E-05	0.17	**3.1E-05**	472
Attenuation Pond 1	147	10	2024	Febraury	1.8E+03	3.6	**1.1E+03**	0.022	114	0.059	5.2	1.5	0.014	3.5E-05	3.3E-05	4.8E-03	1.7E-03	**0.012**	0.010	7.6E-06	0.15	**1.3E-05**	405
Attenuation Pond 1	148	10	2024	March	1.7E+03	2.2	**1.0E+03**	9.6E-03	63	0.025	2.9	1.4	6.1E-03	1.5E-05	1.4E-05	4.7E-03	7.3E-04	**5.0E-03**	5.2E-03	3.2E-06	0.14	5.5E-06	377
Attenuation Pond 1	149	10	2024	April	1.6E+03	1.7	**1.0E+03**	4.4E-03	41	0.010	1.9	1.4	2.5E-03	6.1E-06	5.9E-06	4.6E-03	3.1E-04	2.1E-03	3.1E-03	1.3E-06	0.14	2.3E-06	365
Attenuation Pond 1	150	10	2024	May	1.6E+03	1.5	**1.0E+03**	2.2E-03	32	4.4E-03	1.6	1.4	1.1E-03	2.6E-06	2.5E-06	4.6E-03	1.3E-04	8.8E-04	2.2E-03	5.6E-07	0.13	9.7E-07	360
Attenuation Pond 1	151	10	2024	June	200	11	119	1.6E-04	9.8	2.6E-04	0.42	0.44	0.070	8.6E-04	1.2E-04	0.016	3.3E-04	5.0E-03	2.4E-03	3.3E-08	0.020	5.9E-07	45
Attenuation Pond 1	152	10	2024	July	1.5E+03	11	**567**	0.10	382	0.26	13	1.1	0.073	2.3E-04	1.8E-04	3.4E-03	7.6E-03	**0.053**	0.038	3.3E-05	0.088	**6.6E-05**	288
Attenuation Pond 1	153	10	2024	August	2.1E+03	18	**840**	**0.14**	540	0.37	19	1.6	0.12	5.4E-04	2.8E-04	8.0E-03	0.011	**0.076**	0.053	4.7E-05	0.13	**9.3E-05**	420
Attenuation Pond 1	154	10	2024	September	1.6E+03	16	**658**	0.091	354	0.24	12	1.3	0.12	8.3E-04	2.5E-04	8.6E-03	7.0E-03	**0.050**	0.035	3.0E-05	0.10	**6.1E-05**	313

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.001		0.002	0.3	0.001				0.073	0.038		0.001						0.015		0.03	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)			0.3	3.0	0.2					0.5										0.5	
	Model	Mine	Date		Cr[3]	Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Mo	Ni[4]	K	Se	Na	Sr	Sn	Ti	W	U	V	Zn	Meliadine Discharge
LOCATION	Month	Year	Year	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	mg/L	mg/L	m³/mon
Attenuation Pond 1	105	6	2020	August	5.5E-05	0.026	**0.092**	4.8E-03	4.8E-04	0.34	24	*0.11*	0.018	3.9E-03	34	**7.4E-03**	*253*	6.0	1.7E-03	2.4E-04	1.8E-03	1.6E-03	1.6E-03	4.1E-03	4.2E+05
Attenuation Pond 1	106	6	2020	September	5.8E-05	0.028	**0.10**	4.2E-03	5.1E-04	0.37	26	*0.12*	0.020	4.2E-03	36	**8.0E-03**	*272*	6.4	1.9E-03	2.6E-04	2.0E-03	1.7E-03	1.7E-03	4.5E-03	4.3E+05
Attenuation Pond 1	107	6	2020	October	6.7E-05	0.032	**0.12**	0.012	6.0E-04	0.48	32	*0.14*	0.023	4.9E-03	44	**9.3E-03**	*336*	8.4	2.2E-03	3.0E-04	2.3E-03	2.0E-03	2.2E-03	5.2E-03	0
Attenuation Pond 1	108	7	2020	November	4.3E-05	0.021	**0.077**	0.025	3.9E-04	0.48	28	*0.090*	0.015	3.2E-03	36	**6.0E-03**	*279*	8.3	1.4E-03	1.9E-04	1.5E-03	1.3E-03	1.8E-03	3.4E-03	0
Attenuation Pond 1	109	7	2020	December	1.8E-05	8.8E-03	**0.032**	0.033	1.6E-04	0.41	21	0.041	6.2E-03	1.3E-03	24	**2.5E-03**	195	7.1	5.9E-04	8.1E-05	6.2E-04	5.4E-04	1.3E-03	1.4E-03	0
Attenuation Pond 1	110	7	2021	January	7.6E-06	3.7E-03	**0.014**	0.036	6.8E-05	0.38	19	0.020	2.6E-03	5.6E-04	19	**1.1E-03**	160	6.6	2.5E-04	3.4E-05	2.6E-04	2.3E-04	1.1E-03	6.0E-04	0
Attenuation Pond 1	111	7	2021	Febraury	3.2E-06	1.5E-03	**5.7E-03**	0.037	2.9E-05	0.37	17	0.011	1.1E-03	2.3E-04	17	4.4E-04	145	6.4	1.0E-04	1.4E-05	1.1E-04	9.6E-05	1.0E-03	2.5E-04	0
Attenuation Pond 1	112	7	2021	March	1.3E-06	6.5E-04	**2.4E-03**	0.038	1.2E-05	0.37	17	7.7E-03	4.6E-04	9.8E-05	16	1.9E-04	138	6.3	4.3E-05	6.0E-06	4.5E-05	4.0E-05	1.0E-03	1.0E-04	0
Attenuation Pond 1	113	7	2021	April	5.6E-07	2.7E-04	1.0E-03	0.038	5.0E-06	0.36	17	6.2E-03	1.9E-04	4.1E-05	16	7.8E-05	136	6.2	1.8E-05	2.5E-06	1.9E-05	1.7E-05	9.9E-04	4.4E-05	0
Attenuation Pond 1	114	7	2021	May	2.3E-07	1.1E-04	4.2E-04	0.038	2.1E-06	0.36	17	5.6E-03	8.0E-05	1.7E-05	16	3.3E-05	135	6.2	7.6E-06	1.0E-06	8.0E-06	7.1E-06	9.8E-04	1.8E-05	0
Attenuation Pond 1	115	7	2021	June	1.4E-08	7.3E-05	9.1E-05	8.0E-03	2.4E-05	0.044	2.5	0.012	9.8E-05	1.1E-04	2.2	9.5E-05	16	0.76	7.8E-05	2.1E-05	1.2E-05	5.9E-05	2.4E-04	2.9E-04	4.2E+05
Attenuation Pond 1	116	7	2021	July	3.5E-05	0.016	**0.065**	5.8E-03	3.4E-04	0.24	17	*0.077*	0.012	2.7E-03	24	**4.9E-03**	170	4.1	1.2E-03	2.1E-04	1.2E-03	1.4E-03	1.3E-03	3.2E-03	4.2E+05
Attenuation Pond 1	117	7	2021	August	4.5E-05	0.022	**0.090**	4.7E-03	4.6E-04	0.30	22	*0.099*	0.016	3.7E-03	32	**6.6E-03**	*221*	5.2	1.7E-03	2.9E-04	1.6E-03	1.9E-03	1.6E-03	4.3E-03	4.4E+05
Attenuation Pond 1	118	7	2021	September	4.7E-05	0.024	**0.10**	4.1E-03	4.9E-04	0.32	23	*0.11*	0.018	4.0E-03	34	**7.1E-03**	*240*	5.6	1.8E-03	3.2E-04	1.7E-03	2.1E-03	1.7E-03	4.6E-03	4.3E+05
Attenuation Pond 1	119	7	2021	October	5.0E-05	0.026	**0.11**	3.8E-03	5.4E-04	0.35	26	*0.12*	0.020	4.4E-03	38	**7.8E-03**	*267*	6.2	1.9E-03	3.5E-04	1.9E-03	2.3E-03	1.9E-03	5.0E-03	3.8E+05
Attenuation Pond 1	120	8	2021	November	1.1E-04	0.056	**0.24**	0.021	**1.1E-03**	0.87	60	*0.25*	0.042	9.3E-03	85	***0.017***	*610*	15	4.1E-03	7.4E-04	4.1E-03	4.8E-03	4.4E-03	0.011	0
Attenuation Pond 1	121	8	2021	December	4.5E-05	0.023	**0.10**	0.031	4.8E-04	0.58	35	*0.11*	0.017	3.9E-03	45	**6.9E-03**	*334*	10	1.7E-03	3.1E-04	1.7E-03	2.0E-03	2.4E-03	4.5E-03	0
Attenuation Pond 1	122	8	2022	January	1.9E-05	9.8E-03	**0.043**	0.035	2.0E-04	0.45	24	0.047	7.3E-03	1.6E-03	28	**2.9E-03**	*218*	7.8	7.2E-04	1.3E-04	7.1E-04	8.4E-04	1.6E-03	1.9E-03	0
Attenuation Pond 1	123	8	2022	Febraury	7.8E-06	4.1E-03	**0.018**	0.037	8.4E-05	0.40	20	0.023	3.1E-03	6.8E-04	21	**1.2E-03**	169	6.9	3.0E-04	5.5E-05	3.0E-04	3.5E-04	1.2E-03	7.8E-04	0
Attenuation Pond 1	124	8	2022	March	3.3E-06	1.7E-03	**7.5E-03**	0.038	3.5E-05	0.38	18	0.013	1.3E-03	2.9E-04	18	5.1E-04	149	6.5	1.3E-04	2.3E-05	1.3E-04	1.5E-04	1.1E-03	3.3E-04	0
Attenuation Pond 1	125	8	2022	April	1.4E-06	7.2E-04	**3.1E-03**	0.038	1.5E-05	0.37	17	8.2E-03	5.4E-04	1.2E-04	16	2.1E-04	140	6.3	5.3E-05	9.6E-06	5.3E-05	6.2E-05	1.0E-03	1.4E-04	0
Attenuation Pond 1	126	8	2022	May	5.8E-07	3.0E-04	1.3E-03	0.038	6.2E-06	0.37	17	6.4E-03	2.3E-04	5.0E-05	16	9.0E-05	137	6.3	2.2E-05	4.0E-06	2.2E-05	2.6E-05	9.9E-04	5.8E-05	0
Attenuation Pond 1	127	8	2022	June	3.5E-08	9.1E-05	1.5E-04	7.9E-03	2.5E-05	0.044	2.5	0.013	1.1E-04	1.2E-04	2.2	9.9E-05	17	0.77	8.6E-05	2.2E-05	1.4E-05	6.1E-05	2.4E-04	3.0E-04	4.2E+05
Attenuation Pond 1	128	8	2022	July	3.1E-05	0.013	**0.066**	5.8E-03	3.3E-04	0.21	15	*0.070*	0.011	2.6E-03	24	**4.4E-03**	152	3.7	1.2E-03	2.3E-04	1.1E-03	1.6E-03	1.2E-03	3.2E-03	4.2E+05
Attenuation Pond 1	129	8	2022	August	3.9E-05	0.018	**0.090**	4.7E-03	4.3E-04	0.27	20	*0.091*	0.015	3.4E-03	31	**5.9E-03**	198	4.6	1.6E-03	3.2E-04	1.4E-03	2.1E-03	1.6E-03	4.3E-03	4.4E+05
Attenuation Pond 1	130	8	2022	September	4.1E-05	0.020	**0.10**	4.1E-03	4.7E-04	0.28	21	*0.097*	0.016	3.7E-03	34	**6.4E-03**	*216*	5.0	1.7E-03	3.4E-04	1.5E-03	2.3E-03	1.7E-03	4.6E-03	4.3E+05
Attenuation Pond 1	131	8	2022	October	4.7E-05	0.023	**0.12**	0.011	5.5E-04	0.39	27	*0.11*	0.019	4.3E-03	42	**7.4E-03**	*270*	6.7	1.9E-03	4.0E-04	1.8E-03	2.7E-03	2.1E-03	5.4E-03	0
Attenuation Pond 1	132	9	2022	November	3.1E-05	0.015	**0.077**	0.025	3.6E-04	0.42	25	*0.076*	0.012	2.8E-03	34	**4.8E-03**	*236*	7.2	1.3E-03	2.6E-04	1.2E-03	1.8E-03	1.8E-03	3.5E-03	0
Attenuation Pond 1	133	9	2022	December	1.3E-05	6.2E-03	**0.032**	0.033	1.5E-04	0.39	20	0.035	5.1E-03	1.2E-03	23	**2.0E-03**	177	6.6	5.3E-04	1.1E-04	4.9E-04	7.4E-04	1.3E-03	1.5E-03	0
Attenuation Pond 1	134	9	2023	January	5.4E-06	2.6E-03	**0.013**	0.036	6.2E-05	0.37	18	0.018	2.1E-03	5.0E-04	19	8.5E-04	152	6.4	2.2E-04	4.6E-05	2.0E-04	3.1E-04	1.1E-03	6.2E-04	0
Attenuation Pond 1	135	9	2023	Febraury	2.3E-06	1.1E-03	**5.6E-03**	0.037	2.6E-05	0.37	17	0.010	9.0E-04	2.1E-04	17	3.6E-04	142	6.3	9.3E-05	1.9E-05	8.6E-05	1.3E-04	1.0E-03	2.6E-04	0
Attenuation Pond 1	136	9	2023	March	9.5E-07	4.6E-04	**2.4E-03**	0.038	1.1E-05	0.36	17	7.3E-03	3.8E-04	8.7E-05	16	1.5E-04	137	6.2	3.9E-05	8.0E-06	3.6E-05	5.5E-05	1.0E-03	1.1E-04	0
Attenuation Pond 1	137	9	2023	April	4.0E-07	1.9E-04	9.9E-04	0.038	4.6E-06	0.36	17	6.0E-03	1.6E-04	3.7E-05	16	6.3E-05	135	6.2	1.6E-05	3.4E-06	1.5E-05	2.3E-05	9.9E-04	4.5E-05	0
Attenuation Pond 1	138	9	2023	May	1.7E-07	8.0E-05	4.2E-04	0.038	1.9E-06	0.36	17	5.5E-03	6.6E-05	1.5E-05	16	2.6E-05	135	6.2	6.9E-06	1.4E-06	6.3E-06	9.6E-06	9.8E-04	1.9E-05	0
Attenuation Pond 1	139	9	2023	June	1.0E-08	7.2E-05	9.2E-05	8.0E-03	2.4E-05	0.044	2.5	0.013	9.7E-05	1.1E-04	2.2	9.5E-05	16	0.76	8.0E-05	2.1E-05	1.2E-05	6.0E-05	2.4E-04	2.9E-04	4.2E+05
Attenuation Pond 1	140	9	2023	July	2.9E-05	0.013	**0.065**	5.8E-03	3.2E-04	0.21	15	*0.069*	0.011	2.6E-03	26	**4.2E-03**	154	3.7	1.1E-03	2.4E-04	1.0E-03	1.8E-03	1.2E-03	3.3E-03	4.2E+05
Attenuation Pond 1	141	9	2023	August	3.8E-05	0.018	**0.090**	4.7E-03	4.3E-04	0.26	20	*0.089*	0.015	3.4E-03	34	**5.6E-03**	200	4.6	1.5E-03	3.3E-04	1.3E-03	2.5E-03	1.6E-03	4.4E-03	4.4E+05
Attenuation Pond 1	142	9	2023	September	4.2E-05	0.020	**0.10**	4.1E-03	4.6E-04	0.28	21	*0.096*	0.017	3.7E-03	37	**6.2E-03**	*218*	5.0	1.6E-03	3.5E-04	1.5E-03	2.7E-03	1.7E-03	4.8E-03	4.3E+05
Attenuation Pond 1	143	9	2023	October	4.6E-05	0.023	**0.11**	3.8E-03	5.0E-04	0.32	23	*0.10*	0.019	4.1E-03	41	**6.9E-03**	*245*	5.5	1.8E-03	3.8E-04	1.6E-03	3.0E-03	1.9E-03	5.3E-03	3.8E+05
Attenuation Pond 1	144	10	2023	November	9.8E-05	0.048	**0.24**	0.021	**1.1E-03**	0.79	55	*0.22*	0.040	8.7E-03	91	***0.014***	*564*	14	3.8E-03	8.1E-04	3.5E-03	6.3E-03	4.3E-03	0.011	0
Attenuation Pond 1	145	10	2023	December	4.1E-05	0.020	**0.10**	0.031	4.5E-04	0.54	33	*0.096*	0.017	3.6E-03	47	**6.1E-03**	*314*	9.4	1.6E-03	3.4E-04	1.4E-03	2.6E-03	2.4E-03	4.7E-03	0
Attenuation Pond 1	146	10	2024	January	1.7E-05	8.4E-03	**0.043**	0.035	1.9E-04	0.44	23	0.043	7.1E-03	1.5E-03	29	**2.5E-03**	*210*	7.6	6.6E-04	1.4E-04	6.1E-04	1.1E-03	1.6E-03	2.0E-03	0
Attenuation Pond 1	147	10	2024	Febraury	7.2E-06	3.5E-03	**0.018**	0.037	7.8E-05	0.39	19	0.021	3.0E-03	6.4E-04	21	**1.1E-03**	166	6.8	2.8E-04	6.0E-05	2.5E-04	4.6E-04	1.2E-03	8.2E-04	0
Attenuation Pond 1	148	10	2024	March	3.0E-06	1.5E-03	**7.5E-03**	0.038	3.3E-05	0.38	18	0.012	1.2E-03	2.7E-04	18	4.5E-04	147	6.4	1.2E-04	2.5E-05	1.1E-04	1.9E-04	1.1E-03	3.4E-04	0
Attenuation Pond 1	149	10	2024	April	1.3E-06	6.2E-04	**3.1E-03**	0.038	1.4E-05	0.37	17	7.9E-03	5.2E-04	1.1E-04	17	1.9E-04	140	6.3	4.9E-05	1.0E-05	4.5E-05	8.2E-05	1.0E-03	1.4E-04	0
Attenuation Pond 1	150	10	2024	May	5.3E-07	2.6E-04	1.3E-03	0.038	5.8E-06	0.37	17	6.3E-03	2.2E-04	4.7E-05	16	7.9E-05	136	6.3	2.0E-05	4.4E-06	1.9E-05	3.4E-05	9.9E-04	6.0E-05	0
Attenuation Pond 1	151	10	2024	June	3.1E-08	7.7E-05	1.4E-04	7.8E-03	2.3E-05	0.043	2.5	0.012	1.1E-04	1.1E-04	2.2	9.5E-05	16	0.74	7.1E-05	2.1E-05	1.1E-05	6.1E-05	2.3E-04	2.9E-04	4.4E+05
Attenuation Pond 1	152	10	2024	July	4.7E-05	0.018	**0.079**	2.3E-03	3.7E-04	0.21	17	*0.080*	0.013	2.8E-03	28	**4.5E-03**	163	3.7	1.2E-03	2.6E-04	1.0E-03	2.1E-03	1.3E-03	4.1E-03	1.4E+06
Attenuation Pond 1	153	10	2024	August	6.6E-05	0.025	**0.11**	5.6E-03	5.2E-04	0.31	24	*0.11*	0.019	4.0E-03	40	**6.4E-03**	*234*	5.5	1.7E-03	3.7E-04	1.5E-03	2.9E-03	1.9E-03	5.8E-03	2.1E+05
Attenuation Pond 1	154	10	2024	September	4.2E-05	0.016	**0.072**	9.6E-03	3.5E-04	0.24	18	*0.075*	0.012	2.6E-03	28	**4.2E-03**	167	4.2	1.1E-03	2.5E-04	9.5E-04	1.9E-03	1.4E-03	3.9E-03	4.6E+04

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)			120	0.12					13		0.004 to 0.01		0.1		0.005			1.5	0.000012	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						1								0.5					
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	SO4	CN_Total	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Bi	B	Cd[4]	Ca
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	Total (mg/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
Attenuation Pond 1	155	10	2024	October	*1.1E+03*	10	***536***	0.048	191	0.12	6.8	1.1	0.086	7.3E-04	1.7E-04	6.9E-03	3.7E-03	***0.027***	0.019	1.6E-05	0.080	**3.2E-05**	232
Attenuation Pond 1	156	11	2024	November	*1.4E+03*	7.7	***810***	0.033	141	0.084	5.2	1.3	0.058	5.0E-04	1.2E-04	6.8E-03	2.5E-03	***0.018***	0.014	1.1E-05	0.11	**2.1E-05**	317
Attenuation Pond 1	157	11	2024	December	*1.5E+03*	4.0	***920***	0.014	74	0.035	2.9	1.3	0.024	2.1E-04	4.9E-05	5.5E-03	1.0E-03	**7.6E-03**	6.6E-03	4.5E-06	0.13	9.0E-06	340
Attenuation Pond 1	158	11	2025	January	*1.5E+03*	2.4	***967***	6.2E-03	46	0.015	1.9	1.4	0.010	8.7E-05	2.0E-05	5.0E-03	4.4E-04	3.2E-03	3.7E-03	1.9E-06	0.13	3.8E-06	350
Attenuation Pond 1	159	11	2025	Febraury	*1.5E+03*	1.8	***986***	2.9E-03	34	6.2E-03	1.6	1.4	4.3E-03	3.7E-05	8.6E-06	4.8E-03	1.8E-04	1.3E-03	2.5E-03	7.9E-07	0.13	1.6E-06	354
Attenuation Pond 1	160	11	2025	March	*1.5E+03*	1.5	***994***	1.6E-03	30	2.6E-03	1.4	1.4	1.8E-03	1.5E-05	3.6E-06	4.7E-03	7.7E-05	5.6E-04	2.0E-03	3.3E-07	0.13	6.6E-07	356
Attenuation Pond 1	161	11	2025	April	*1.6E+03*	1.4	***998***	9.8E-04	27	1.1E-03	1.3	1.4	7.5E-04	6.4E-06	1.5E-06	4.7E-03	3.2E-05	2.3E-04	1.8E-03	1.4E-07	0.13	2.8E-07	356
Attenuation Pond 1	162	11	2025	May	*1.6E+03*	1.3	***999***	7.4E-04	27	4.6E-04	1.3	1.4	3.1E-04	2.7E-06	6.3E-07	4.6E-03	1.3E-05	9.8E-05	1.7E-03	5.8E-08	0.13	1.2E-07	357
Attenuation Pond 1	163	11	2025	June	219	12	**132**	8.6E-05	8.8	3.0E-05	0.45	0.49	0.079	9.6E-04	1.3E-04	0.018	3.7E-04	**5.6E-03**	2.7E-03	3.8E-09	0.022	7.2E-07	49
Attenuation Pond 1	164	11	2025	July	*1.4E+03*	12	***570***	0.11	363	*0.27*	13	1.1	0.081	2.4E-04	2.1E-04	3.6E-03	*8.8E-03*	***0.055***	0.037	2.6E-05	0.089	**7.1E-05**	286
Attenuation Pond 1	165	11	2025	August	*2.1E+03*	19	***859***	**0.15**	*522*	*0.38*	19	1.7	0.13	5.6E-04	3.3E-04	8.4E-03	*0.013*	***0.079***	0.053	3.8E-05	0.13	**1.0E-04**	425
Attenuation Pond 1	166	11	2025	September	*1.6E+03*	16	***685***	0.10	348	*0.25*	13	1.4	0.13	8.7E-04	2.9E-04	9.2E-03	*8.4E-03*	***0.053***	0.036	2.5E-05	0.11	**6.8E-05**	323
Attenuation Pond 1	167	11	2025	October	*1.1E+03*	10	***523***	0.049	177	0.12	6.8	1.1	0.087	7.2E-04	1.8E-04	7.2E-03	4.1E-03	***0.027***	0.018	1.2E-05	0.078	**3.3E-05**	225
Attenuation Pond 1	168	12	2025	November	*1.4E+03*	7.9	***807***	0.035	135	0.087	5.3	1.3	0.061	5.0E-04	1.3E-04	7.1E-03	2.9E-03	***0.019***	0.013	8.6E-06	0.11	**2.3E-05**	315
Attenuation Pond 1	169	12	2025	December	*1.5E+03*	4.1	***919***	0.015	72	0.036	3.0	1.3	0.026	2.1E-04	5.3E-05	5.6E-03	1.2E-03	**7.8E-03**	6.6E-03	3.6E-06	0.13	9.8E-06	339
Attenuation Pond 1	170	12	2026	January	*1.5E+03*	2.5	***966***	6.6E-03	45	0.015	2.0	1.4	0.011	8.9E-05	2.2E-05	5.1E-03	5.1E-04	3.3E-03	3.7E-03	1.5E-06	0.13	4.1E-06	349
Attenuation Pond 1	171	12	2026	Febraury	*1.5E+03*	1.8	***986***	3.1E-03	34	6.4E-03	1.6	1.4	4.5E-03	3.7E-05	9.3E-06	4.8E-03	2.1E-04	1.4E-03	2.5E-03	6.3E-07	0.13	1.7E-06	354
Attenuation Pond 1	172	12	2026	March	*1.5E+03*	1.5	***994***	1.6E-03	29	2.7E-03	1.4	1.4	1.9E-03	1.6E-05	3.9E-06	4.7E-03	9.0E-05	5.8E-04	2.0E-03	2.7E-07	0.13	7.2E-07	356
Attenuation Pond 1	173	12	2026	April	*1.6E+03*	1.4	***997***	1.0E-03	27	1.1E-03	1.3	1.4	7.9E-04	6.5E-06	1.6E-06	4.7E-03	3.8E-05	2.4E-04	1.8E-03	1.1E-07	0.13	3.0E-07	356
Attenuation Pond 1	174	12	2026	May	*1.6E+03*	1.3	***999***	7.6E-04	27	4.7E-04	1.3	1.4	3.3E-04	2.7E-06	6.9E-07	4.6E-03	1.6E-05	1.0E-04	1.7E-03	4.7E-08	0.13	1.3E-07	357
Attenuation Pond 1	175	12	2026	June	219	12	**132**	8.7E-05	8.8	3.1E-05	0.45	0.49	0.079	9.6E-04	1.3E-04	0.017	3.5E-04	**5.3E-03**	2.7E-03	3.0E-09	0.022	7.3E-07	49
Attenuation Pond 1	176	12	2026	July	*1.4E+03*	12	***567***	0.12	353	*0.27*	13	1.1	0.083	2.4E-04	2.2E-04	3.4E-03	*0.010*	***0.055***	0.037	2.0E-05	0.089	**6.9E-05**	280
Attenuation Pond 1	177	12	2026	August	*2.1E+03*	19	***854***	**0.17**	*507*	*0.38*	19	1.7	0.14	5.6E-04	3.4E-04	8.1E-03	*0.015*	***0.079***	0.054	2.8E-05	0.13	**1.0E-04**	416
Attenuation Pond 1	178	12	2026	September	*1.5E+03*	15	***635***	0.10	316	*0.24*	12	1.3	0.12	8.0E-04	2.7E-04	8.2E-03	*9.1E-03*	***0.050***	0.034	1.7E-05	0.099	**6.2E-05**	296
Attenuation Pond 1	179	12	2026	October	*1.1E+03*	10	***512***	0.053	171	0.12	6.7	1.1	0.087	7.0E-04	1.8E-04	6.7E-03	4.8E-03	***0.026***	0.018	9.0E-06	0.077	**3.2E-05**	219
Attenuation Pond 1	180	13	2026	November	*1.4E+03*	7.7	***799***	0.038	131	0.086	5.3	1.3	0.061	4.9E-04	1.3E-04	6.7E-03	3.4E-03	***0.018***	0.014	6.3E-06	0.11	**2.3E-05**	311
Attenuation Pond 1	181	13	2026	December	*1.5E+03*	4.0	***916***	0.016	70	0.036	2.9	1.3	0.025	2.1E-04	5.4E-05	5.5E-03	1.4E-03	**7.7E-03**	6.6E-03	2.7E-06	0.12	9.5E-06	337
Attenuation Pond 1	182	13	2027	January	*1.5E+03*	2.4	***965***	7.1E-03	44	0.015	2.0	1.4	0.011	8.6E-05	2.2E-05	5.0E-03	5.9E-04	3.2E-03	3.7E-03	1.1E-06	0.13	4.0E-06	349
Attenuation Pond 1	183	13	2027	Febraury	*1.5E+03*	1.8	***985***	3.3E-03	34	6.4E-03	1.6	1.4	4.5E-03	3.6E-05	9.4E-06	4.8E-03	2.5E-04	1.4E-03	2.5E-03	4.7E-07	0.13	1.7E-06	353
Attenuation Pond 1	184	13	2027	March	*1.5E+03*	1.5	***994***	1.7E-03	29	2.7E-03	1.4	1.4	1.9E-03	1.5E-05	4.0E-06	4.7E-03	1.0E-04	5.7E-04	2.0E-03	2.0E-07	0.13	7.0E-07	355
Attenuation Pond 1	185	13	2027	April	*1.5E+03*	1.4	***997***	1.1E-03	27	1.1E-03	1.3	1.4	7.9E-04	6.4E-06	1.7E-06	4.7E-03	4.4E-05	2.4E-04	1.8E-03	8.2E-08	0.13	2.9E-07	356
Attenuation Pond 1	186	13	2027	May	*1.6E+03*	1.3	***999***	7.7E-04	27	4.7E-04	1.3	1.4	3.3E-04	2.7E-06	6.9E-07	4.6E-03	1.8E-05	1.0E-04	1.7E-03	3.4E-08	0.13	1.2E-07	357
Attenuation Pond 1	187	13	2027	June	146	12	85	6.5E-05	5.0	4.0E-05	0.43	0.46	0.10	1.3E-03	1.7E-04	0.015	3.2E-04	4.9E-03	3.1E-03	2.9E-09	0.017	7.3E-07	33
				MINIMUM	8.8	1.3	1.0	5.9E-05	0.78	7.8E-06	0.054	0.056	2.7E-04	2.3E-06	4.9E-07	1.6E-03	1.3E-07	2.6E-06	9.5E-04	1.8E-09	4.1E-03	5.3E-10	0.85
				MAXIMUM	*5.6E+03*	53	***2.4E+03***	**0.29**	*1.3E+03*	*0.81*	54	4.1	0.81	9.9E-03	1.4E-03	0.018	*0.030*	***0.16***	0.12	1.0E-04	0.35	**1.8E-04**	1.1E+03
				AVERAGE	*1.5E+03*	9.4	***799***	0.028	158	0.13	6.1	1.3	0.089	8.7E-04	1.7E-04	6.1E-03	3.3E-03	***0.019***	0.013	1.8E-05	0.11	**1.6E-05**	316

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.001		0.002	0.3	0.001				0.073	0.038		0.001						0.015		0.03	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)			0.3	3.0	0.2					0.5										0.5	
	Model	Mine	Date		Cr[3]	Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Mo	Ni[4]	K	Se	Na	Sr	Sn	Ti	W	U	V	Zn	Meliadine Discharge
LOCATION	Month	Year	Year	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	mg/L	m^3/mon
Attenuation Pond 1	155	10	2024	October	2.2E-05	8.5E-03	**0.037**	0.013	1.9E-04	0.20	12	0.041	6.5E-03	1.4E-03	18	**2.2E-03**	113	3.4	6.0E-04	1.3E-04	5.0E-04	1.0E-03	9.2E-04	2.1E-03	5.3E+03
Attenuation Pond 1	156	11	2024	November	1.5E-05	5.8E-03	**0.025**	0.026	1.3E-04	0.30	16	0.030	4.4E-03	9.4E-04	19	**1.5E-03**	136	5.1	4.1E-04	8.8E-05	3.4E-04	6.8E-04	1.1E-03	1.4E-03	0
Attenuation Pond 1	157	11	2024	December	6.3E-06	2.4E-03	**0.011**	0.033	5.3E-05	0.33	16	0.015	1.8E-03	3.9E-04	17	6.3E-04	135	5.7	1.7E-04	3.7E-05	1.4E-04	2.9E-04	1.0E-03	5.9E-04	0
Attenuation Pond 1	158	11	2025	January	2.6E-06	1.0E-03	**4.5E-03**	0.036	2.2E-05	0.35	16	9.5E-03	7.7E-04	1.6E-04	16	2.6E-04	134	6.0	7.2E-05	1.5E-05	5.9E-05	1.2E-04	9.9E-04	2.5E-04	0
Attenuation Pond 1	159	11	2025	Febraury	1.1E-06	4.3E-04	1.9E-03	0.037	9.4E-06	0.36	16	6.9E-03	3.2E-04	6.9E-05	16	1.1E-04	134	6.1	3.0E-05	6.5E-06	2.5E-05	5.0E-05	9.8E-04	1.0E-04	0
Attenuation Pond 1	160	11	2025	March	4.6E-07	1.8E-04	7.8E-04	0.038	3.9E-06	0.36	16	5.9E-03	1.4E-04	2.9E-05	16	4.6E-05	134	6.2	1.3E-05	2.7E-06	1.0E-05	2.1E-05	9.8E-04	4.4E-05	0
Attenuation Pond 1	161	11	2025	April	1.9E-07	7.5E-05	3.3E-04	0.038	1.6E-06	0.36	16	5.4E-03	5.7E-05	1.2E-05	16	1.9E-05	134	6.2	5.3E-06	1.1E-06	4.4E-06	8.8E-06	9.8E-04	1.8E-05	0
Attenuation Pond 1	162	11	2025	May	8.1E-08	3.1E-05	1.4E-04	0.038	6.9E-07	0.36	16	5.3E-03	2.4E-05	5.1E-06	16	8.1E-06	134	6.2	2.2E-06	4.8E-07	1.8E-06	3.7E-06	9.8E-04	7.7E-06	0
Attenuation Pond 1	163	11	2025	June	5.3E-09	7.9E-05	8.3E-05	8.8E-03	2.7E-05	0.048	2.7	0.013	1.2E-04	1.3E-04	2.4	1.0E-04	18	0.82	8.1E-05	2.7E-05	1.1E-05	7.3E-05	2.5E-04	3.2E-04	3.8E+05
Attenuation Pond 1	164	11	2025	July	5.8E-05	0.020	**0.080**	2.3E-03	4.3E-04	0.21	17	*0.083*	0.014	2.8E-03	28	**4.5E-03**	162	3.7	1.2E-03	2.7E-04	1.1E-03	1.9E-03	1.3E-03	4.3E-03	1.4E+06
Attenuation Pond 1	165	11	2025	August	8.3E-05	0.028	**0.12**	5.8E-03	6.2E-04	0.32	26	*0.12*	0.020	4.1E-03	41	**6.5E-03**	*238*	5.6	1.7E-03	3.9E-04	1.6E-03	2.8E-03	2.0E-03	6.2E-03	2.0E+05
Attenuation Pond 1	166	11	2025	September	5.5E-05	0.019	**0.076**	0.010	4.2E-04	0.25	19	*0.080*	0.013	2.7E-03	29	**4.3E-03**	173	4.4	1.1E-03	2.6E-04	1.1E-03	1.8E-03	1.4E-03	4.2E-03	3.9E+04
Attenuation Pond 1	167	11	2025	October	2.7E-05	9.2E-03	**0.037**	0.013	2.1E-04	0.19	12	0.041	6.5E-03	1.4E-03	17	**2.2E-03**	110	3.3	5.6E-04	1.3E-04	5.3E-04	9.1E-04	9.1E-04	2.1E-03	1.2E+04
Attenuation Pond 1	168	12	2025	November	1.9E-05	6.4E-03	**0.026**	0.026	1.5E-04	0.29	16	0.031	4.6E-03	9.5E-04	19	**1.5E-03**	136	5.1	3.9E-04	9.2E-05	3.7E-04	6.4E-04	1.1E-03	1.5E-03	0
Attenuation Pond 1	169	12	2025	December	7.9E-06	2.7E-03	**0.011**	0.033	6.3E-05	0.33	16	0.016	1.9E-03	4.0E-04	17	6.3E-04	135	5.7	1.6E-04	3.9E-05	1.6E-04	2.7E-04	1.0E-03	6.3E-04	0
Attenuation Pond 1	170	12	2026	January	3.3E-06	1.1E-03	**4.6E-03**	0.036	2.6E-05	0.35	16	9.7E-03	8.0E-04	1.7E-04	16	2.7E-04	134	6.0	6.9E-05	1.6E-05	6.5E-05	1.1E-04	9.9E-04	2.6E-04	0
Attenuation Pond 1	171	12	2026	Febraury	1.4E-06	4.7E-04	1.9E-03	0.037	1.1E-05	0.36	16	7.0E-03	3.4E-04	7.0E-05	16	1.1E-04	134	6.1	2.9E-05	6.8E-06	2.7E-05	4.7E-05	9.8E-04	1.1E-04	0
Attenuation Pond 1	172	12	2026	March	5.8E-07	2.0E-04	8.1E-04	0.038	4.6E-06	0.36	16	5.9E-03	1.4E-04	2.9E-05	16	4.7E-05	134	6.2	1.2E-05	2.8E-06	1.1E-05	2.0E-05	9.8E-04	4.6E-05	0
Attenuation Pond 1	173	12	2026	April	2.5E-07	8.3E-05	3.4E-04	0.038	1.9E-06	0.36	16	5.5E-03	5.9E-05	1.2E-05	16	2.0E-05	134	6.2	5.1E-06	1.2E-06	4.8E-06	8.3E-06	9.8E-04	1.9E-05	0
Attenuation Pond 1	174	12	2026	May	1.0E-07	3.5E-05	1.4E-04	0.038	8.1E-07	0.36	16	5.3E-03	2.5E-05	5.2E-06	16	8.2E-06	134	6.2	2.1E-06	5.0E-07	2.0E-06	3.5E-06	9.8E-04	8.2E-06	0
Attenuation Pond 1	175	12	2026	June	6.7E-09	7.5E-05	7.9E-05	8.8E-03	2.6E-05	0.048	2.7	0.013	1.2E-04	1.2E-04	2.4	1.0E-04	18	0.82	7.4E-05	2.6E-05	1.0E-05	7.4E-05	2.4E-04	3.2E-04	3.8E+05
Attenuation Pond 1	176	12	2026	July	6.3E-05	0.018	**0.080**	2.4E-03	5.0E-04	0.21	18	*0.080*	0.014	2.9E-03	28	**4.7E-03**	159	3.7	1.1E-03	2.8E-04	1.3E-03	1.8E-03	1.3E-03	4.2E-03	1.4E+06
Attenuation Pond 1	177	12	2026	August	9.0E-05	0.026	**0.12**	5.8E-03	7.2E-04	0.32	26	*0.11*	0.020	4.1E-03	42	**6.7E-03**	*234*	5.6	1.6E-03	4.1E-04	1.8E-03	2.6E-03	2.0E-03	6.1E-03	2.0E+05
Attenuation Pond 1	178	12	2026	September	5.5E-05	0.016	**0.071**	9.3E-03	4.5E-04	0.23	18	*0.072*	0.012	2.6E-03	27	**4.2E-03**	159	4.1	9.8E-04	2.6E-04	1.1E-03	1.6E-03	1.4E-03	3.9E-03	5.7E+04
Attenuation Pond 1	179	12	2026	October	2.9E-05	8.4E-03	**0.037**	0.013	2.4E-04	0.19	12	0.039	6.4E-03	1.4E-03	17	**2.2E-03**	107	3.3	5.2E-04	1.4E-04	5.9E-04	8.6E-04	9.0E-04	2.1E-03	1.2E+04
Attenuation Pond 1	180	13	2026	November	2.0E-05	5.9E-03	**0.026**	0.026	1.7E-04	0.29	16	0.030	4.5E-03	9.5E-04	19	**1.6E-03**	134	5.0	3.6E-04	9.6E-05	4.1E-04	6.1E-04	1.1E-03	1.5E-03	0
Attenuation Pond 1	181	13	2026	December	8.5E-06	2.5E-03	**0.011**	0.033	7.1E-05	0.33	16	0.015	1.9E-03	4.0E-04	17	6.5E-04	134	5.7	1.5E-04	4.0E-05	1.7E-04	2.5E-04	1.0E-03	6.2E-04	0
Attenuation Pond 1	182	13	2027	January	3.6E-06	1.0E-03	**4.6E-03**	0.036	3.0E-05	0.35	16	9.4E-03	7.9E-04	1.7E-04	16	2.7E-04	134	6.0	6.4E-05	1.7E-05	7.3E-05	1.1E-04	9.9E-04	2.6E-04	0
Attenuation Pond 1	183	13	2027	Febraury	1.5E-06	4.3E-04	1.9E-03	0.037	1.3E-05	0.36	16	6.9E-03	3.3E-04	7.0E-05	16	1.1E-04	134	6.1	2.7E-05	7.0E-06	3.0E-05	4.5E-05	9.8E-04	1.1E-04	0
Attenuation Pond 1	184	13	2027	March	6.3E-07	1.8E-04	8.0E-04	0.038	5.3E-06	0.36	16	5.9E-03	1.4E-04	2.9E-05	16	4.8E-05	134	6.2	1.1E-05	3.0E-06	1.3E-05	1.9E-05	9.8E-04	4.5E-05	0
Attenuation Pond 1	185	13	2027	April	2.6E-07	7.6E-05	3.4E-04	0.038	2.2E-06	0.36	16	5.4E-03	5.8E-05	1.2E-05	16	2.0E-05	134	6.2	4.7E-06	1.2E-06	5.3E-06	7.8E-06	9.8E-04	1.9E-05	0
Attenuation Pond 1	186	13	2027	May	1.1E-07	3.2E-05	1.4E-04	0.038	9.3E-07	0.36	16	5.3E-03	2.4E-05	5.2E-06	16	8.5E-06	134	6.2	2.0E-06	5.2E-07	2.2E-06	3.3E-06	9.8E-04	8.0E-06	0
Attenuation Pond 1	187	13	2027	June	9.3E-09	7.3E-05	9.3E-05	7.9E-03	3.2E-05	0.031	2.0	0.015	1.3E-04	1.4E-04	1.7	1.3E-04	11	0.53	6.0E-05	2.6E-05	1.0E-05	6.6E-05	2.0E-04	3.8E-04	2.6E+05
				MINIMUM	1.8E-09	4.6E-08	1.9E-07	2.3E-03	8.8E-08	7.1E-06	0.13	7.5E-04	2.3E-07	2.2E-07	0.075	4.4E-07	0.099	1.7E-03	2.8E-08	1.6E-08	2.6E-09	4.6E-08	4.5E-05	8.8E-07	4.3E+03
				MAXIMUM	2.0E-04	0.056	**0.24**	0.038	**1.1E-03**	0.87	60	*0.25*	0.042	9.3E-03	91	***0.017***	*625*	15	4.1E-03	8.1E-04	4.3E-03	6.3E-03	4.4E-03	0.011	1.4E+06
				AVERAGE	2.3E-05	6.3E-03	**0.027**	0.024	1.4E-04	0.30	15	0.029	4.8E-03	1.1E-03	18	**1.8E-03**	135	5.1	4.1E-04	7.9E-05	4.6E-04	5.6E-04	1.0E-03	1.3E-03	2.5E+05

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)			120	0.12				13		0.004 to 0.01		0.1		0.005			1.5	0.000012	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						1								0.5					
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	SO4	CN_Total	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Bi	B	Cd[4]	Ca
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	Total (mg/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
Closure Water Quality for Discharge to Melaidine Lake (Years 13 to 23)																						
Attenuation Pond 1	**188**	**13**	**2027**	**July**	*5.9E+03*	17	***2.6E+03***	**0.36**	*1.3E+03*	*0.49*	25	4.6	0.28	3.1E-05	8.9E-04	2.7E-04	*0.039*	***0.098***	0.12	5.1E-05	0.38	**1.9E-04**	1.2E+03
Attenuation Pond 1	**189**	**13**	**2027**	**August**	*1.7E+03*	17	***730***	0.11	372	*0.48*	19	1.3	0.081	3.6E-05	2.6E-04	3.3E-04	*0.011*	***0.096***	0.036	1.5E-05	0.11	**5.5E-05**	330
Attenuation Pond 1	**190**	**13**	**2027**	**September**	5.7	3.0	0.60	0	0.31	0	0.46	0.50	0.049	5.9E-04	8.2E-05	1.5E-04	6.8E-07	4.5E-05	4.8E-04	0	2.4E-03	2.7E-09	0.35
Attenuation Pond 1	**191**	**13**	**2027**	**October**	14	8.3	1.7	0	0.86	0	0.43	0.47	0.14	1.7E-03	2.3E-04	3.5E-04	2.6E-07	9.7E-05	1.3E-03	0	6.7E-03	1.0E-09	0.98
Attenuation Pond 1	**199**	**14**	**2028**	**June**	15	9.6	1.7	0	1.2	0	0.39	0.43	0.14	1.7E-03	2.3E-04	3.2E-03	4.6E-05	9.0E-04	1.5E-03	0	6.9E-03	1.6E-07	1.4
Attenuation Pond 1	**200**	**14**	**2028**	**July**	12	7.6	1.3	0	1.0	0	0.53	0.58	0.10	1.2E-03	1.7E-04	3.8E-03	5.8E-05	1.1E-03	1.2E-03	0	5.1E-03	2.0E-07	1.2
Attenuation Pond 1	**201**	**14**	**2028**	**August**	10	6.2	1.0	0	0.90	0	0.52	0.58	0.081	9.9E-04	1.4E-04	3.7E-03	5.6E-05	1.0E-03	9.9E-04	0	4.0E-03	2.0E-07	1.0
Attenuation Pond 1	**202**	**14**	**2028**	**September**	8.6	4.7	0.95	0	0.49	0	0.52	0.57	0.076	9.3E-04	1.3E-04	2.2E-04	7.8E-07	6.5E-05	7.5E-04	0	3.7E-03	3.1E-09	0.55
Attenuation Pond 1	**203**	**14**	**2028**	**October**	14	8.3	1.7	0	0.86	0	0.43	0.47	0.14	1.7E-03	2.3E-04	3.5E-04	2.6E-07	9.7E-05	1.3E-03	0	6.7E-03	1.0E-09	0.98
Attenuation Pond 1	**211**	**15**	**2029**	**June**	15	9.6	1.7	0	1.2	0	0.39	0.43	0.14	1.7E-03	2.3E-04	3.2E-03	4.6E-05	9.0E-04	1.5E-03	0	6.9E-03	1.6E-07	1.4
Attenuation Pond 1	**212**	**15**	**2029**	**July**	12	7.6	1.3	0	1.0	0	0.53	0.58	0.10	1.2E-03	1.7E-04	3.8E-03	5.8E-05	1.1E-03	1.2E-03	0	5.1E-03	2.0E-07	1.2
Attenuation Pond 1	**213**	**15**	**2029**	**August**	8.4	5.3	0.82	0	0.78	0	0.49	0.54	0.066	8.1E-04	1.1E-04	3.4E-03	5.3E-05	9.7E-04	8.3E-04	0	3.3E-03	1.9E-07	0.89
Attenuation Pond 1	**214**	**15**	**2029**	**September**	6.5	3.4	0.69	0	0.36	0	0.47	0.52	0.056	6.8E-04	9.4E-05	1.7E-04	7.2E-07	5.0E-05	5.5E-04	0	2.7E-03	2.8E-09	0.40
Attenuation Pond 1	**215**	**15**	**2029**	**October**	9.4	5.4	1.1	0	0.56	0	0.36	0.39	0.089	1.1E-03	1.5E-04	2.3E-04	2.2E-07	6.4E-05	8.7E-04	0	4.4E-03	8.7E-10	0.64
Attenuation Pond 1	**223**	**16**	**2030**	**June**	11	7.2	1.3	0	0.94	0	0.38	0.41	0.10	1.2E-03	1.7E-04	3.0E-03	4.4E-05	8.4E-04	1.1E-03	0	5.0E-03	1.6E-07	1.1
Attenuation Pond 1	**224**	**16**	**2030**	**July**	8.8	5.5	0.89	0	0.80	0	0.46	0.51	0.071	8.7E-04	1.2E-04	3.3E-03	5.1E-05	9.4E-04	8.7E-04	0	3.6E-03	1.8E-07	0.91
Attenuation Pond 1	**225**	**16**	**2030**	**August**	7.0	4.4	0.66	0	0.67	0	0.46	0.50	0.053	6.5E-04	8.9E-05	3.2E-03	4.9E-05	9.0E-04	6.9E-04	0	2.7E-03	1.7E-07	0.76
Attenuation Pond 1	**226**	**16**	**2030**	**September**	5.7	3.0	0.60	0	0.31	0	0.46	0.50	0.049	5.9E-04	8.2E-05	1.5E-04	6.9E-07	4.5E-05	4.8E-04	0	2.4E-03	2.7E-09	0.35
Attenuation Pond 1	**227**	**16**	**2030**	**October**	8.7	5.0	1.0	0	0.52	0	0.35	0.38	0.081	9.9E-04	1.4E-04	2.1E-04	2.1E-07	5.9E-05	8.0E-04	0	4.0E-03	8.4E-10	0.58
Attenuation Pond 1	**235**	**17**	**2031**	**June**	11	6.8	1.2	0	0.90	0	0.37	0.41	0.095	1.2E-03	1.6E-04	2.9E-03	4.4E-05	8.3E-04	1.1E-03	0	4.7E-03	1.5E-07	1.0
Attenuation Pond 1	**236**	**17**	**2031**	**July**	8.8	5.5	0.89	0	0.80	0	0.46	0.51	0.071	8.7E-04	1.2E-04	3.3E-03	5.1E-05	9.4E-04	8.7E-04	0	3.6E-03	1.8E-07	0.91

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.001		0.002	0.3	0.001				0.073	0.038		0.001						0.015		0.03	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)			0.3	3.0	0.2					0.5										0.5	
	Model	Mine	Date		Cr[3]	Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Mo	Ni[4]	K	Se	Na	Sr	Sn	Ti	W	U	V	Zn	Meliadine Discharge
LOCATION	Month	Year	Year	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	mg/L	mg/L	m^3/mon
Closure Water Quality for Discharge to Melaidine Lake (Years 13 to 23)																							
Attenuation Pond 1	**188**	**13**	**2027**	**July**	3.3E-04	0.071	**0.15**	4.8E-04	**1.7E-03**	0.94	68	*0.25*	0.053	9.5E-03	106	***0.015***	*681*	16	3.5E-03	8.3E-04	5.3E-03	5.7E-03	5.2E-03	0.013	6.5E+05
Attenuation Pond 1	**189**	**13**	**2027**	**August**	9.4E-05	0.020	**0.14**	4.9E-04	5.0E-04	0.27	20	*0.071*	0.015	2.7E-03	31	**4.5E-03**	194	4.7	1.0E-03	2.4E-04	1.5E-03	1.7E-03	1.5E-03	3.7E-03	6.5E+05
Attenuation Pond 1	**190**	**13**	**2027**	**September**	0	2.3E-07	2.4E-05	1.9E-03	1.2E-05	1.1E-07	0.038	2.0E-04	2.4E-05	2.4E-05	0.023	6.2E-05	0.054	2.5E-05	1.5E-07	8.3E-08	1.3E-08	2.3E-07	2.4E-05	1.2E-04	1.9E+05
Attenuation Pond 1	**191**	**13**	**2027**	**October**	0	9.0E-08	6.7E-05	5.2E-03	3.3E-05	4.1E-08	0.10	5.3E-04	6.7E-05	6.7E-05	0.064	1.7E-04	0.15	9.7E-06	5.6E-08	3.2E-08	5.0E-09	9.0E-08	6.7E-05	3.3E-04	7.0E+03
Attenuation Pond 1	**199**	**14**	**2028**	**June**	0	1.5E-05	7.6E-05	5.5E-03	3.6E-05	7.6E-06	0.19	1.1E-03	8.8E-05	8.4E-05	0.10	1.8E-04	0.16	2.4E-03	1.5E-05	5.4E-06	1.2E-06	1.5E-05	7.4E-05	3.6E-04	1.2E+05
Attenuation Pond 1	**200**	**14**	**2028**	**July**	0	1.9E-05	6.0E-05	4.1E-03	2.7E-05	9.5E-06	0.18	1.1E-03	7.5E-05	6.9E-05	0.097	1.3E-04	0.12	3.0E-03	1.9E-05	6.8E-06	1.5E-06	2.0E-05	5.7E-05	2.7E-04	2.3E+04
Attenuation Pond 1	**201**	**14**	**2028**	**August**	0	1.8E-05	4.9E-05	3.3E-03	2.2E-05	9.3E-06	0.16	9.8E-04	6.4E-05	5.8E-05	0.086	1.0E-04	0.099	3.0E-03	1.8E-05	6.6E-06	1.5E-06	1.9E-05	4.6E-05	2.2E-04	4.1E+04
Attenuation Pond 1	**202**	**14**	**2028**	**September**	0	2.7E-07	3.7E-05	2.9E-03	1.9E-05	1.2E-07	0.058	3.0E-04	3.8E-05	3.8E-05	0.036	9.7E-05	0.085	2.9E-05	1.7E-07	9.5E-08	1.5E-08	2.7E-07	3.7E-05	1.9E-04	3.6E+04
Attenuation Pond 1	**203**	**14**	**2028**	**October**	0	9.0E-08	6.7E-05	5.2E-03	3.3E-05	4.2E-08	0.10	5.3E-04	6.7E-05	6.7E-05	0.064	1.7E-04	0.15	9.7E-06	5.6E-08	3.2E-08	5.1E-09	9.0E-08	6.7E-05	3.3E-04	7.0E+03
Attenuation Pond 1	**211**	**15**	**2029**	**June**	0	1.5E-05	7.6E-05	5.5E-03	3.6E-05	7.6E-06	0.19	1.1E-03	8.8E-05	8.4E-05	0.10	1.8E-04	0.16	2.4E-03	1.5E-05	5.4E-06	1.2E-06	1.5E-05	7.4E-05	3.6E-04	1.2E+05
Attenuation Pond 1	**212**	**15**	**2029**	**July**	0	1.9E-05	6.0E-05	4.1E-03	2.7E-05	9.5E-06	0.18	1.1E-03	7.5E-05	6.9E-05	0.097	1.3E-04	0.12	3.0E-03	1.9E-05	6.8E-06	1.5E-06	2.0E-05	5.7E-05	2.7E-04	0
Attenuation Pond 1	**213**	**15**	**2029**	**August**	0	1.7E-05	4.1E-05	2.8E-03	1.8E-05	8.7E-06	0.14	8.8E-04	5.5E-05	5.0E-05	0.076	8.5E-05	0.082	2.8E-03	1.7E-05	6.2E-06	1.4E-06	1.8E-05	3.9E-05	1.8E-04	0
Attenuation Pond 1	**214**	**15**	**2029**	**September**	0	2.4E-07	2.7E-05	2.1E-03	1.4E-05	1.1E-07	0.043	2.2E-04	2.8E-05	2.8E-05	0.027	7.1E-05	0.062	2.6E-05	1.5E-07	8.7E-08	1.4E-08	2.4E-07	2.7E-05	1.4E-04	0
Attenuation Pond 1	**215**	**15**	**2029**	**October**	0	7.5E-08	4.4E-05	3.4E-03	2.2E-05	3.5E-08	0.067	3.5E-04	4.4E-05	4.4E-05	0.042	1.1E-04	0.099	8.1E-06	4.7E-08	2.7E-08	4.2E-09	7.5E-08	4.4E-05	2.2E-04	0
Attenuation Pond 1	**223**	**16**	**2030**	**June**	0	1.4E-05	5.7E-05	4.0E-03	2.6E-05	7.2E-06	0.15	9.1E-04	6.8E-05	6.4E-05	0.085	1.3E-04	0.12	2.3E-03	1.4E-05	5.2E-06	1.2E-06	1.5E-05	5.5E-05	2.6E-04	0
Attenuation Pond 1	**224**	**16**	**2030**	**July**	0	1.7E-05	4.4E-05	2.9E-03	1.9E-05	8.4E-06	0.14	8.8E-04	5.7E-05	5.2E-05	0.076	9.1E-05	0.088	2.7E-03	1.6E-05	5.9E-06	1.3E-06	1.7E-05	4.1E-05	1.9E-04	0
Attenuation Pond 1	**225**	**16**	**2030**	**August**	0	1.6E-05	3.4E-05	2.2E-03	1.5E-05	8.2E-06	0.13	7.9E-04	4.7E-05	4.2E-05	0.067	6.8E-05	0.067	2.6E-03	1.6E-05	5.8E-06	1.3E-06	1.7E-05	3.2E-05	1.4E-04	0
Attenuation Pond 1	**226**	**16**	**2030**	**September**	0	2.4E-07	2.4E-05	1.9E-03	1.2E-05	1.1E-07	0.038	2.0E-04	2.4E-05	2.4E-05	0.023	6.2E-05	0.054	2.5E-05	1.5E-07	8.4E-08	1.3E-08	2.4E-07	2.4E-05	1.2E-04	0
Attenuation Pond 1	**227**	**16**	**2030**	**October**	0	7.3E-08	4.0E-05	3.1E-03	2.0E-05	3.4E-08	0.061	3.2E-04	4.0E-05	4.0E-05	0.038	1.0E-04	0.090	7.9E-06	4.5E-08	2.6E-08	4.1E-09	7.3E-08	4.0E-05	2.0E-04	0
Attenuation Pond 1	**235**	**17**	**2031**	**June**	0	1.4E-05	5.4E-05	3.8E-03	2.5E-05	7.2E-06	0.15	8.8E-04	6.5E-05	6.1E-05	0.082	1.2E-04	0.11	2.3E-03	1.4E-05	5.1E-06	1.2E-06	1.5E-05	5.2E-05	2.5E-04	0
Attenuation Pond 1	**236**	**17**	**2031**	**July**	0	1.7E-05	4.4E-05	2.9E-03	1.9E-05	8.4E-06	0.14	8.8E-04	5.7E-05	5.2E-05	0.076	9.1E-05	0.088	2.7E-03	1.6E-05	5.9E-06	1.3E-06	1.7E-05	4.1E-05	1.9E-04	0

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						120	0.12				13		0.004 to 0.01		0.1		0.005			1.5	0.000012	
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)									1								0.5					
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	SO4	CN_Total	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Bi	B	Cd[4]	Ca
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	Total (mg/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
Attenuation Pond 1	237	17	2031	August	7.0	4.4	0.66	0	0.67	0	0.46	0.50	0.053	6.5E-04	8.9E-05	3.2E-03	4.9E-05	9.0E-04	6.9E-04	0	2.7E-03	1.7E-07	0.76
Attenuation Pond 1	238	17	2031	September	5.7	3.0	0.60	0	0.31	0	0.46	0.50	0.049	5.9E-04	8.2E-05	1.5E-04	6.9E-07	4.5E-05	4.8E-04	0	2.4E-03	2.7E-09	0.35
Attenuation Pond 1	239	17	2031	October	8.7	5.0	1.0	0	0.52	0	0.35	0.38	0.081	9.9E-04	1.4E-04	2.1E-04	2.1E-07	5.9E-05	8.0E-04	0	4.0E-03	8.4E-10	0.58
Attenuation Pond 1	247	18	2032	June	11	6.8	1.2	0	0.90	0	0.37	0.41	0.095	1.2E-03	1.6E-04	2.9E-03	4.4E-05	8.3E-04	1.1E-03	0	4.7E-03	1.5E-07	1.0
Attenuation Pond 1	248	18	2032	July	8.8	5.5	0.89	0	0.80	0	0.46	0.51	0.071	8.7E-04	1.2E-04	3.3E-03	5.1E-05	9.4E-04	8.7E-04	0	3.6E-03	1.8E-07	0.91
Attenuation Pond 1	249	18	2032	August	7.0	4.4	0.66	0	0.67	0	0.46	0.50	0.053	6.5E-04	8.9E-05	3.2E-03	4.9E-05	9.0E-04	6.9E-04	0	2.7E-03	1.7E-07	0.76
Attenuation Pond 1	250	18	2032	September	5.7	3.0	0.60	0	0.31	0	0.46	0.50	0.049	5.9E-04	8.2E-05	1.5E-04	6.9E-07	4.5E-05	4.8E-04	0	2.4E-03	2.7E-09	0.35
Attenuation Pond 1	251	18	2032	October	8.7	5.0	1.0	0	0.52	0	0.35	0.38	0.081	9.9E-04	1.4E-04	2.1E-04	2.1E-07	5.9E-05	8.0E-04	0	4.0E-03	8.4E-10	0.58
Attenuation Pond 1	259	19	2033	June	11	6.8	1.2	0	0.90	0	0.37	0.41	0.095	1.2E-03	1.6E-04	2.9E-03	4.4E-05	8.3E-04	1.1E-03	0	4.7E-03	1.5E-07	1.0
Attenuation Pond 1	260	19	2033	July	8.8	5.5	0.89	0	0.80	0	0.46	0.51	0.071	8.7E-04	1.2E-04	3.3E-03	5.1E-05	9.4E-04	8.7E-04	0	3.6E-03	1.8E-07	0.91
Attenuation Pond 1	261	19	2033	August	7.0	4.4	0.66	0	0.67	0	0.46	0.50	0.053	6.5E-04	8.9E-05	3.2E-03	4.9E-05	9.0E-04	6.9E-04	0	2.7E-03	1.7E-07	0.76
Attenuation Pond 1	262	19	2033	September	5.7	3.0	0.60	0	0.31	0	0.46	0.50	0.049	5.9E-04	8.2E-05	1.5E-04	6.9E-07	4.5E-05	4.8E-04	0	2.4E-03	2.7E-09	0.35
Attenuation Pond 1	263	19	2033	October	8.7	5.0	1.0	0	0.52	0	0.35	0.38	0.081	9.9E-04	1.4E-04	2.1E-04	2.1E-07	5.9E-05	8.0E-04	0	4.0E-03	8.4E-10	0.58
Attenuation Pond 1	271	20	2034	June	11	6.8	1.2	0	0.90	0	0.37	0.41	0.095	1.2E-03	1.6E-04	2.9E-03	4.4E-05	8.3E-04	1.1E-03	0	4.7E-03	1.5E-07	1.0
Attenuation Pond 1	272	20	2034	July	8.8	5.5	0.89	0	0.80	0	0.46	0.51	0.071	8.7E-04	1.2E-04	3.3E-03	5.1E-05	9.4E-04	8.7E-04	0	3.6E-03	1.8E-07	0.91
Attenuation Pond 1	273	20	2034	August	7.0	4.4	0.66	0	0.67	0	0.46	0.50	0.053	6.5E-04	8.9E-05	3.2E-03	4.9E-05	9.0E-04	6.9E-04	0	2.7E-03	1.7E-07	0.76
Attenuation Pond 1	274	20	2034	September	5.7	3.0	0.60	0	0.31	0	0.46	0.50	0.049	5.9E-04	8.2E-05	1.5E-04	7.0E-07	4.5E-05	4.8E-04	0	2.4E-03	2.7E-09	0.35
Attenuation Pond 1	275	20	2034	October	8.7	5.0	1.0	0	0.52	0	0.35	0.38	0.081	9.9E-04	1.4E-04	2.1E-04	2.1E-07	5.9E-05	8.0E-04	0	4.0E-03	8.5E-10	0.58
Attenuation Pond 1	283	21	2035	June	11	6.8	1.2	0	0.90	0	0.37	0.41	0.095	1.2E-03	1.6E-04	2.9E-03	4.4E-05	8.3E-04	1.1E-03	0	4.7E-03	1.5E-07	1.0
Attenuation Pond 1	284	21	2035	July	8.8	5.5	0.89	0	0.80	0	0.46	0.51	0.071	8.7E-04	1.2E-04	3.3E-03	5.1E-05	9.4E-04	8.7E-04	0	3.6E-03	1.8E-07	0.91
Attenuation Pond 1	285	21	2035	August	7.0	4.4	0.66	0	0.67	0	0.46	0.50	0.053	6.5E-04	8.9E-05	3.2E-03	4.9E-05	9.0E-04	6.9E-04	0	2.7E-03	1.7E-07	0.76
Attenuation Pond 1	286	21	2035	September	5.7	3.0	0.60	0	0.31	0	0.46	0.50	0.049	5.9E-04	8.2E-05	1.5E-04	7.0E-07	4.5E-05	4.8E-04	0	2.4E-03	2.7E-09	0.35
Attenuation Pond 1	287	21	2035	October	8.7	5.0	1.0	0	0.52	0	0.35	0.38	0.081	9.9E-04	1.4E-04	2.1E-04	2.1E-07	5.9E-05	8.0E-04	0	4.0E-03	8.5E-10	0.58
Attenuation Pond 1	295	22	2036	June	11	6.8	1.2	0	0.90	0	0.37	0.41	0.095	1.2E-03	1.6E-04	2.9E-03	4.4E-05	8.3E-04	1.1E-03	0	4.7E-03	1.5E-07	1.0
Attenuation Pond 1	296	22	2036	July	8.8	5.5	0.89	0	0.80	0	0.46	0.51	0.071	8.7E-04	1.2E-04	3.3E-03	5.1E-05	9.4E-04	8.7E-04	0	3.6E-03	1.8E-07	0.91
Attenuation Pond 1	297	22	2036	August	7.0	4.4	0.66	0	0.67	0	0.46	0.50	0.053	6.5E-04	8.9E-05	3.2E-03	4.9E-05	9.0E-04	6.9E-04	0	2.7E-03	1.7E-07	0.76
Attenuation Pond 1	298	22	2036	September	5.7	3.0	0.60	0	0.31	0	0.46	0.50	0.049	5.9E-04	8.2E-05	1.5E-04	7.0E-07	4.5E-05	4.8E-04	0	2.4E-03	2.7E-09	0.35
Attenuation Pond 1	299	22	2036	October	8.7	5.0	1.0	0	0.52	0	0.35	0.38	0.081	9.9E-04	1.4E-04	2.1E-04	2.1E-07	5.9E-05	8.0E-04	0	4.0E-03	8.5E-10	0.58
Attenuation Pond 1	307	23	2037	June	11	6.8	1.2	0	0.90	0	0.37	0.41	0.095	1.2E-03	1.6E-04	2.9E-03	4.4E-05	8.3E-04	1.1E-03	0	4.7E-03	1.5E-07	1.0

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.001		0.002	0.3	0.001				0.073	0.038		0.001						0.015		0.03	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)			0.3	3.0	0.2					0.5										0.5	
	Model	Mine	Date		Cr[3]	Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Mo	Ni[4]	K	Se	Na	Sr	Sn	Ti	W	U	V	Zn	Meliadine Discharge
LOCATION	Month	Year	Year	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	mg/L	mg/L	m^3/mon
Attenuation Pond 1	237	17	2031	August	0	1.6E-05	3.4E-05	2.2E-03	1.5E-05	8.2E-06	0.13	7.9E-04	4.7E-05	4.2E-05	0.067	6.8E-05	0.067	2.6E-03	1.6E-05	5.8E-06	1.3E-06	1.7E-05	3.2E-05	1.4E-04	0
Attenuation Pond 1	238	17	2031	September	0	2.4E-07	2.4E-05	1.9E-03	1.2E-05	1.1E-07	0.038	2.0E-04	2.4E-05	2.4E-05	0.023	6.2E-05	0.054	2.6E-05	1.5E-07	8.4E-08	1.3E-08	2.4E-07	2.4E-05	1.2E-04	0
Attenuation Pond 1	239	17	2031	October	0	7.3E-08	4.0E-05	3.1E-03	2.0E-05	3.4E-08	0.061	3.2E-04	4.0E-05	4.0E-05	0.038	1.0E-04	0.090	7.9E-06	4.6E-08	2.6E-08	4.1E-09	7.3E-08	4.0E-05	2.0E-04	0
Attenuation Pond 1	247	18	2032	June	0	1.4E-05	5.4E-05	3.8E-03	2.5E-05	7.2E-06	0.15	8.8E-04	6.5E-05	6.1E-05	0.082	1.2E-04	0.11	2.3E-03	1.4E-05	5.1E-06	1.2E-06	1.5E-05	5.2E-05	2.5E-04	0
Attenuation Pond 1	248	18	2032	July	0	1.7E-05	4.4E-05	2.9E-03	1.9E-05	8.4E-06	0.14	8.8E-04	5.7E-05	5.2E-05	0.076	9.1E-05	0.088	2.7E-03	1.6E-05	5.9E-06	1.3E-06	1.7E-05	4.1E-05	1.9E-04	0
Attenuation Pond 1	249	18	2032	August	0	1.6E-05	3.4E-05	2.2E-03	1.5E-05	8.2E-06	0.13	7.9E-04	4.7E-05	4.2E-05	0.067	6.8E-05	0.067	2.6E-03	1.6E-05	5.8E-06	1.3E-06	1.7E-05	3.2E-05	1.4E-04	0
Attenuation Pond 1	250	18	2032	September	0	2.4E-07	2.4E-05	1.9E-03	1.2E-05	1.1E-07	0.038	2.0E-04	2.4E-05	2.4E-05	0.023	6.2E-05	0.054	2.6E-05	1.5E-07	8.4E-08	1.3E-08	2.4E-07	2.4E-05	1.2E-04	0
Attenuation Pond 1	251	18	2032	October	0	7.3E-08	4.0E-05	3.1E-03	2.0E-05	3.4E-08	0.061	3.2E-04	4.0E-05	4.0E-05	0.038	1.0E-04	0.090	7.9E-06	4.6E-08	2.6E-08	4.1E-09	7.3E-08	4.0E-05	2.0E-04	0
Attenuation Pond 1	259	19	2033	June	0	1.4E-05	5.4E-05	3.8E-03	2.5E-05	7.2E-06	0.15	8.8E-04	6.5E-05	6.1E-05	0.082	1.2E-04	0.11	2.3E-03	1.4E-05	5.1E-06	1.2E-06	1.5E-05	5.2E-05	2.5E-04	0
Attenuation Pond 1	260	19	2033	July	0	1.7E-05	4.4E-05	2.9E-03	1.9E-05	8.4E-06	0.14	8.8E-04	5.7E-05	5.2E-05	0.076	9.1E-05	0.088	2.7E-03	1.6E-05	5.9E-06	1.3E-06	1.7E-05	4.1E-05	1.9E-04	0
Attenuation Pond 1	261	19	2033	August	0	1.6E-05	3.4E-05	2.2E-03	1.5E-05	8.2E-06	0.13	7.9E-04	4.7E-05	4.2E-05	0.067	6.8E-05	0.067	2.6E-03	1.6E-05	5.8E-06	1.3E-06	1.7E-05	3.2E-05	1.4E-04	0
Attenuation Pond 1	262	19	2033	September	0	2.4E-07	2.4E-05	1.9E-03	1.2E-05	1.1E-07	0.038	2.0E-04	2.4E-05	2.4E-05	0.023	6.2E-05	0.054	2.6E-05	1.5E-07	8.4E-08	1.3E-08	2.4E-07	2.4E-05	1.2E-04	0
Attenuation Pond 1	263	19	2033	October	0	7.3E-08	4.0E-05	3.1E-03	2.0E-05	3.4E-08	0.061	3.2E-04	4.0E-05	4.0E-05	0.038	1.0E-04	0.090	7.9E-06	4.6E-08	2.6E-08	4.1E-09	7.3E-08	4.0E-05	2.0E-04	0
Attenuation Pond 1	271	20	2034	June	0	1.4E-05	5.4E-05	3.8E-03	2.5E-05	7.2E-06	0.15	8.8E-04	6.5E-05	6.1E-05	0.082	1.2E-04	0.11	2.3E-03	1.4E-05	5.1E-06	1.2E-06	1.5E-05	5.2E-05	2.5E-04	0
Attenuation Pond 1	272	20	2034	July	0	1.7E-05	4.4E-05	2.9E-03	1.9E-05	8.4E-06	0.14	8.8E-04	5.7E-05	5.2E-05	0.076	9.1E-05	0.088	2.7E-03	1.6E-05	5.9E-06	1.3E-06	1.7E-05	4.1E-05	1.9E-04	0
Attenuation Pond 1	273	20	2034	August	0	1.6E-05	3.4E-05	2.2E-03	1.5E-05	8.2E-06	0.13	7.9E-04	4.7E-05	4.2E-05	0.067	6.8E-05	0.067	2.6E-03	1.6E-05	5.8E-06	1.3E-06	1.7E-05	3.2E-05	1.4E-04	0
Attenuation Pond 1	274	20	2034	September	0	2.4E-07	2.4E-05	1.9E-03	1.2E-05	1.1E-07	0.038	2.0E-04	2.4E-05	2.4E-05	0.023	6.2E-05	0.054	2.6E-05	1.5E-07	8.4E-08	1.3E-08	2.4E-07	2.4E-05	1.2E-04	0
Attenuation Pond 1	275	20	2034	October	0	7.3E-08	4.0E-05	3.1E-03	2.0E-05	3.4E-08	0.061	3.2E-04	4.0E-05	4.0E-05	0.038	1.0E-04	0.090	7.9E-06	4.6E-08	2.6E-08	4.1E-09	7.3E-08	4.0E-05	2.0E-04	0
Attenuation Pond 1	283	21	2035	June	0	1.4E-05	5.4E-05	3.8E-03	2.5E-05	7.2E-06	0.15	8.8E-04	6.5E-05	6.1E-05	0.082	1.2E-04	0.11	2.3E-03	1.4E-05	5.1E-06	1.2E-06	1.5E-05	5.2E-05	2.5E-04	0
Attenuation Pond 1	284	21	2035	July	0	1.7E-05	4.4E-05	2.9E-03	1.9E-05	8.4E-06	0.14	8.8E-04	5.7E-05	5.2E-05	0.076	9.1E-05	0.088	2.7E-03	1.6E-05	5.9E-06	1.3E-06	1.7E-05	4.1E-05	1.9E-04	0
Attenuation Pond 1	285	21	2035	August	0	1.6E-05	3.4E-05	2.2E-03	1.5E-05	8.2E-06	0.13	7.9E-04	4.7E-05	4.2E-05	0.067	6.8E-05	0.067	2.6E-03	1.6E-05	5.8E-06	1.3E-06	1.7E-05	3.2E-05	1.4E-04	0
Attenuation Pond 1	286	21	2035	September	0	2.4E-07	2.4E-05	1.9E-03	1.2E-05	1.1E-07	0.038	2.0E-04	2.4E-05	2.4E-05	0.023	6.2E-05	0.054	2.6E-05	1.5E-07	8.4E-08	1.3E-08	2.4E-07	2.4E-05	1.2E-04	0
Attenuation Pond 1	287	21	2035	October	0	7.3E-08	4.0E-05	3.1E-03	2.0E-05	3.4E-08	0.061	3.2E-04	4.0E-05	4.0E-05	0.038	1.0E-04	0.090	7.9E-06	4.6E-08	2.6E-08	4.1E-09	7.3E-08	4.0E-05	2.0E-04	0
Attenuation Pond 1	295	22	2036	June	0	1.4E-05	5.4E-05	3.8E-03	2.5E-05	7.2E-06	0.15	8.8E-04	6.5E-05	6.1E-05	0.082	1.2E-04	0.11	2.3E-03	1.4E-05	5.1E-06	1.2E-06	1.5E-05	5.2E-05	2.5E-04	0
Attenuation Pond 1	296	22	2036	July	0	1.7E-05	4.4E-05	2.9E-03	1.9E-05	8.4E-06	0.14	8.8E-04	5.7E-05	5.2E-05	0.076	9.1E-05	0.088	2.7E-03	1.6E-05	5.9E-06	1.3E-06	1.7E-05	4.1E-05	1.9E-04	0
Attenuation Pond 1	297	22	2036	August	0	1.6E-05	3.4E-05	2.2E-03	1.5E-05	8.2E-06	0.13	7.9E-04	4.7E-05	4.2E-05	0.067	6.8E-05	0.067	2.6E-03	1.6E-05	5.8E-06	1.3E-06	1.7E-05	3.2E-05	1.4E-04	0
Attenuation Pond 1	298	22	2036	September	0	2.4E-07	2.4E-05	1.9E-03	1.2E-05	1.1E-07	0.038	2.0E-04	2.4E-05	2.4E-05	0.023	6.2E-05	0.054	2.6E-05	1.5E-07	8.4E-08	1.3E-08	2.4E-07	2.4E-05	1.2E-04	0
Attenuation Pond 1	299	22	2036	October	0	7.3E-08	4.0E-05	3.1E-03	2.0E-05	3.4E-08	0.061	3.2E-04	4.0E-05	4.0E-05	0.038	1.0E-04	0.090	7.9E-06	4.6E-08	2.6E-08	4.1E-09	7.3E-08	4.0E-05	2.0E-04	0
Attenuation Pond 1	307	23	2037	June	0	1.4E-05	5.4E-05	3.8E-03	2.5E-05	7.2E-06	0.15	8.8E-04	6.5E-05	6.1E-05	0.082	1.2E-04	0.11	2.3E-03	1.4E-05	5.1E-06	1.2E-06	1.5E-05	5.2E-05	2.5E-04	0

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)			120	0.12				13		0.004 to 0.01		0.1		0.005			1.5	0.000012	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						1								0.5					
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	SO4	CN_Total	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Bi	B	Cd[4]	Ca
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	Total (mg/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
Post-Closure Water Quality (Year 23+)																							
Attenuation Pond 1	**308**	**23**	**2037**	**July**	8.8	5.5	0.89	0	0.80	0	0.46	0.51	0.071	8.7E-04	1.2E-04	3.3E-03	5.1E-05	9.4E-04	8.7E-04	0	3.6E-03	1.8E-07	0.91
Attenuation Pond 1	**309**	**23**	**2037**	**August**	7.0	4.4	0.66	0	0.67	0	0.46	0.50	0.053	6.5E-04	8.9E-05	3.2E-03	4.9E-05	9.0E-04	6.9E-04	0	2.7E-03	1.7E-07	0.76
Attenuation Pond 1	**310**	**23**	**2037**	**September**	5.7	3.0	0.60	0	0.31	0	0.46	0.50	0.049	5.9E-04	8.2E-05	1.5E-04	7.0E-07	4.5E-05	4.8E-04	0	2.4E-03	2.8E-09	0.35
Attenuation Pond 1	**311**	**23**	**2037**	**October**	8.7	5.0	1.0	0	0.52	0	0.35	0.38	0.081	9.9E-04	1.4E-04	2.1E-04	2.1E-07	5.9E-05	8.0E-04	0	4.0E-03	8.5E-10	0.58
Attenuation Pond 1	**319**	**24**	**2038**	**June**	11	6.8	1.2	0	0.90	0	0.37	0.41	0.095	1.2E-03	1.6E-04	2.9E-03	4.4E-05	8.3E-04	1.1E-03	0	4.7E-03	1.5E-07	1.0
Attenuation Pond 1	**320**	**24**	**2038**	**July**	8.8	5.5	0.89	0	0.80	0	0.46	0.51	0.071	8.7E-04	1.2E-04	3.3E-03	5.1E-05	9.4E-04	8.7E-04	0	3.6E-03	1.8E-07	0.91
Attenuation Pond 1	**321**	**24**	**2038**	**August**	7.0	4.4	0.66	0	0.67	0	0.46	0.50	0.053	6.5E-04	8.9E-05	3.2E-03	4.9E-05	9.0E-04	6.9E-04	0	2.7E-03	1.7E-07	0.76
Attenuation Pond 1	**322**	**24**	**2038**	**September**	5.7	3.0	0.60	0	0.31	0	0.46	0.50	0.049	5.9E-04	8.2E-05	1.5E-04	7.0E-07	4.5E-05	4.8E-04	0	2.4E-03	2.8E-09	0.35
Attenuation Pond 1	**323**	**24**	**2038**	**October**	8.7	5.0	1.0	0	0.52	0	0.35	0.38	0.081	9.9E-04	1.4E-04	2.1E-04	2.1E-07	5.9E-05	8.0E-04	0	4.0E-03	8.5E-10	0.58
Attenuation Pond 1	**331**	**25**	**2039**	**June**	11	6.8	1.2	0	0.90	0	0.37	0.41	0.095	1.2E-03	1.6E-04	2.9E-03	4.4E-05	8.3E-04	1.1E-03	0	4.7E-03	1.5E-07	1.0
Attenuation Pond 1	**332**	**25**	**2039**	**July**	8.8	5.5	0.89	0	0.80	0	0.46	0.51	0.071	8.7E-04	1.2E-04	3.3E-03	5.1E-05	9.4E-04	8.7E-04	0	3.6E-03	1.8E-07	0.91
Attenuation Pond 1	**333**	**25**	**2039**	**August**	7.0	4.4	0.66	0	0.67	0	0.46	0.50	0.053	6.5E-04	8.9E-05	3.2E-03	4.9E-05	9.0E-04	6.9E-04	0	2.7E-03	1.7E-07	0.76
Attenuation Pond 1	**334**	**25**	**2039**	**September**	5.7	3.0	0.60	0	0.31	0	0.46	0.50	0.049	5.9E-04	8.2E-05	1.5E-04	7.0E-07	4.5E-05	4.8E-04	0	2.4E-03	2.8E-09	0.35
Attenuation Pond 1	**335**	**25**	**2039**	**October**	8.7	5.0	1.0	0	0.52	0	0.35	0.38	0.081	9.9E-04	1.4E-04	2.1E-04	2.1E-07	5.9E-05	8.0E-04	0	4.0E-03	8.5E-10	0.58
Attenuation Pond 1	**343**	**26**	**2040**	**June**	11	6.8	1.2	0	0.90	0	0.37	0.41	0.095	1.2E-03	1.6E-04	2.9E-03	4.4E-05	8.3E-04	1.1E-03	0	4.7E-03	1.5E-07	1.0
Attenuation Pond 1	**344**	**26**	**2040**	**July**	8.8	5.5	0.89	0	0.80	0	0.46	0.51	0.071	8.7E-04	1.2E-04	3.3E-03	5.1E-05	9.4E-04	8.7E-04	0	3.6E-03	1.8E-07	0.91
Attenuation Pond 1	**345**	**26**	**2040**	**August**	7.0	4.4	0.66	0	0.67	0	0.46	0.50	0.053	6.5E-04	8.9E-05	3.2E-03	4.9E-05	9.0E-04	6.9E-04	0	2.7E-03	1.7E-07	0.76
Attenuation Pond 1	**346**	**26**	**2040**	**September**	5.7	3.0	0.60	0	0.31	0	0.46	0.50	0.049	5.9E-04	8.2E-05	1.5E-04	7.0E-07	4.5E-05	4.8E-04	0	2.4E-03	2.8E-09	0.35
Attenuation Pond 1	**347**	**26**	**2040**	**October**	8.7	5.0	1.0	0	0.52	0	0.35	0.38	0.081	9.9E-04	1.4E-04	2.1E-04	2.1E-07	5.9E-05	8.0E-04	0	4.0E-03	8.5E-10	0.58
Long Term Water Quality (Year 26+)																							
				MINIMUM	1.4E-08	3.0	0.60	0	0.31	0	0.35	0.38	0.049	5.9E-04	8.2E-05	1.5E-04	2.1E-07	4.5E-05	4.8E-04	0	2.4E-03	8.5E-10	0.35
				MAXIMUM	11	6.8	1.2	0	0.90	0	0.46	0.51	0.095	1.2E-03	1.6E-04	3.3E-03	5.1E-05	9.4E-04	1.1E-03	0	4.7E-03	1.8E-07	1.0
Notes:				AVERAGE	7.1	4.7	0.83	0	0.61	0	0.42	0.47	0.067	8.2E-04	1.1E-04	1.8E-03	2.7E-05	5.2E-04	7.5E-04	0	3.3E-03	9.7E-08	0.69

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.2 - Attenuation Pond 1
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.001		0.002	0.3	0.001				0.073	0.038		0.001						0.015		0.03	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)			0.3	3.0	0.2					0.5										0.5	
	Model	Mine	Date		Cr[3]	Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Mo	Ni[4]	K	Se	Na	Sr	Sn	Ti	W	U	V	Zn	Meliadine Discharge
LOCATION	Month	Year	Year	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	mg/L	mg/L	m^3/mon
Post-Closure Water Quality (Year 23+)																									
Attenuation Pond 1	**308**	**23**	**2037**	**July**	0	1.7E-05	4.4E-05	2.9E-03	1.9E-05	8.4E-06	0.14	8.8E-04	5.7E-05	5.2E-05	0.076	9.1E-05	0.088	2.7E-03	1.6E-05	5.9E-06	1.3E-06	1.7E-05	4.1E-05	1.9E-04	0
Attenuation Pond 1	**309**	**23**	**2037**	**August**	0	1.6E-05	3.4E-05	2.2E-03	1.5E-05	8.2E-06	0.13	7.9E-04	4.7E-05	4.2E-05	0.067	6.8E-05	0.067	2.6E-03	1.6E-05	5.8E-06	1.3E-06	1.7E-05	3.2E-05	1.4E-04	0
Attenuation Pond 1	**310**	**23**	**2037**	**September**	0	2.4E-07	2.4E-05	1.9E-03	1.2E-05	1.1E-07	0.038	2.0E-04	2.4E-05	2.4E-05	0.023	6.2E-05	0.054	2.6E-05	1.5E-07	8.4E-08	1.3E-08	2.4E-07	2.4E-05	1.2E-04	0
Attenuation Pond 1	**311**	**23**	**2037**	**October**	0	7.3E-08	4.0E-05	3.1E-03	2.0E-05	3.4E-08	0.061	3.2E-04	4.0E-05	4.0E-05	0.038	1.0E-04	0.090	7.9E-06	4.6E-08	2.6E-08	4.1E-09	7.3E-08	4.0E-05	2.0E-04	0
Attenuation Pond 1	**319**	**24**	**2038**	**June**	0	1.4E-05	5.4E-05	3.8E-03	2.5E-05	7.2E-06	0.15	8.8E-04	6.5E-05	6.1E-05	0.082	1.2E-04	0.11	2.3E-03	1.4E-05	5.1E-06	1.2E-06	1.5E-05	5.2E-05	2.5E-04	0
Attenuation Pond 1	**320**	**24**	**2038**	**July**	0	1.7E-05	4.4E-05	2.9E-03	1.9E-05	8.4E-06	0.14	8.8E-04	5.7E-05	5.2E-05	0.076	9.1E-05	0.088	2.7E-03	1.6E-05	5.9E-06	1.3E-06	1.7E-05	4.1E-05	1.9E-04	0
Attenuation Pond 1	**321**	**24**	**2038**	**August**	0	1.6E-05	3.4E-05	2.2E-03	1.5E-05	8.2E-06	0.13	7.9E-04	4.7E-05	4.2E-05	0.067	6.8E-05	0.067	2.6E-03	1.6E-05	5.8E-06	1.3E-06	1.7E-05	3.2E-05	1.4E-04	0
Attenuation Pond 1	**322**	**24**	**2038**	**September**	0	2.4E-07	2.4E-05	1.9E-03	1.2E-05	1.1E-07	0.038	2.0E-04	2.4E-05	2.4E-05	0.023	6.2E-05	0.054	2.6E-05	1.5E-07	8.4E-08	1.3E-08	2.4E-07	2.4E-05	1.2E-04	0
Attenuation Pond 1	**323**	**24**	**2038**	**October**	0	7.3E-08	4.0E-05	3.1E-03	2.0E-05	3.4E-08	0.061	3.2E-04	4.0E-05	4.0E-05	0.038	1.0E-04	0.090	7.9E-06	4.6E-08	2.6E-08	4.1E-09	7.3E-08	4.0E-05	2.0E-04	0
Attenuation Pond 1	**331**	**25**	**2039**	**June**	0	1.4E-05	5.4E-05	3.8E-03	2.5E-05	7.2E-06	0.15	8.8E-04	6.5E-05	6.1E-05	0.082	1.2E-04	0.11	2.3E-03	1.4E-05	5.1E-06	1.2E-06	1.5E-05	5.2E-05	2.5E-04	0
Attenuation Pond 1	**332**	**25**	**2039**	**July**	0	1.7E-05	4.4E-05	2.9E-03	1.9E-05	8.4E-06	0.14	8.8E-04	5.7E-05	5.2E-05	0.076	9.1E-05	0.088	2.7E-03	1.6E-05	5.9E-06	1.3E-06	1.7E-05	4.1E-05	1.9E-04	0
Attenuation Pond 1	**333**	**25**	**2039**	**August**	0	1.6E-05	3.4E-05	2.2E-03	1.5E-05	8.2E-06	0.13	7.9E-04	4.7E-05	4.2E-05	0.067	6.8E-05	0.067	2.6E-03	1.6E-05	5.8E-06	1.3E-06	1.7E-05	3.2E-05	1.4E-04	0
Attenuation Pond 1	**334**	**25**	**2039**	**September**	0	2.4E-07	2.4E-05	1.9E-03	1.2E-05	1.1E-07	0.038	2.0E-04	2.4E-05	2.4E-05	0.023	6.2E-05	0.054	2.6E-05	1.5E-07	8.4E-08	1.3E-08	2.4E-07	2.4E-05	1.2E-04	0
Attenuation Pond 1	**335**	**25**	**2039**	**October**	0	7.3E-08	4.0E-05	3.1E-03	2.0E-05	3.4E-08	0.061	3.2E-04	4.0E-05	4.0E-05	0.038	1.0E-04	0.090	7.9E-06	4.6E-08	2.6E-08	4.1E-09	7.3E-08	4.0E-05	2.0E-04	0
Attenuation Pond 1	**343**	**26**	**2040**	**June**	0	1.4E-05	5.4E-05	3.8E-03	2.5E-05	7.2E-06	0.15	8.8E-04	6.5E-05	6.1E-05	0.082	1.2E-04	0.11	2.3E-03	1.4E-05	5.1E-06	1.2E-06	1.5E-05	5.2E-05	2.5E-04	0
Attenuation Pond 1	**344**	**26**	**2040**	**July**	0	1.7E-05	4.4E-05	2.9E-03	1.9E-05	8.4E-06	0.14	8.8E-04	5.7E-05	5.2E-05	0.076	9.1E-05	0.088	2.7E-03	1.6E-05	5.9E-06	1.3E-06	1.7E-05	4.1E-05	1.9E-04	0
Attenuation Pond 1	**345**	**26**	**2040**	**August**	0	1.6E-05	3.4E-05	2.2E-03	1.5E-05	8.2E-06	0.13	7.9E-04	4.7E-05	4.2E-05	0.067	6.8E-05	0.067	2.6E-03	1.6E-05	5.8E-06	1.3E-06	1.7E-05	3.2E-05	1.4E-04	0
Attenuation Pond 1	**346**	**26**	**2040**	**September**	0	2.4E-07	2.4E-05	1.9E-03	1.2E-05	1.1E-07	0.038	2.0E-04	2.4E-05	2.4E-05	0.023	6.2E-05	0.054	2.6E-05	1.5E-07	8.4E-08	1.3E-08	2.4E-07	2.4E-05	1.2E-04	0
Attenuation Pond 1	**347**	**26**	**2040**	**October**	0	7.3E-08	4.0E-05	3.1E-03	2.0E-05	3.4E-08	0.061	3.2E-04	4.0E-05	4.0E-05	0.038	1.0E-04	0.090	7.9E-06	4.6E-08	2.6E-08	4.1E-09	7.3E-08	4.0E-05	2.0E-04	0
Long Term Water Quality (Year 26+)																									
				MINIMUM	0	7.3E-08	2.4E-05	1.9E-03	1.2E-05	3.4E-08	0.038	2.0E-04	2.4E-05	2.4E-05	0.023	6.2E-05	0.054	7.9E-06	4.6E-08	2.6E-08	4.1E-09	7.3E-08	2.4E-05	1.2E-04	0
				MAXIMUM	0	1.7E-05	5.4E-05	3.8E-03	2.5E-05	8.4E-06	0.15	8.8E-04	6.5E-05	6.1E-05	0.082	1.2E-04	0.11	2.7E-03	1.6E-05	5.9E-06	1.3E-06	1.7E-05	5.2E-05	2.5E-04	0
				AVERAGE	0	8.9E-06	3.8E-05	2.7E-03	1.7E-05	4.5E-06	0.098	5.8E-04	4.5E-05	4.2E-05	0.055	8.6E-05	0.079	1.4E-03	8.8E-06	3.2E-06	7.2E-07	9.2E-06	3.6E-05	1.7E-04	0

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12			5		13	60	
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)															
LOCATION	Model Month	Mine Year	Date Year	Month	TDS mg/L	Total Alkalinity mg/L as CaCO3	Cl mg/L	F mg/L	Si mg/L	SO4 mg/L	Cn_Total Total	NH4 (as N) mg N/L	NO3 mg/L	NO2 mg/L	TKN mg/L
Pond Water Quality (Years -3 to 3)															
B4 Pond	**7**	**-3**	**2012**	**June**	8.2	5.1	1.0	0	0	0.53	0	4.6E-03	1.5E-03	0	0.083
B4 Pond	**8**	**-3**	**2012**	**July**	9.8	6.1	1.2	0	0	0.63	0	5.5E-03	1.8E-03	0	0.100
B4 Pond	**9**	**-3**	**2012**	**August**	12	7.5	1.5	0	0	0.78	0	6.8E-03	2.2E-03	0	0.12
B4 Pond	**10**	**-3**	**2012**	**September**	14	8.6	1.8	0	0	0.89	0	7.8E-03	2.5E-03	0	0.14
B4 Pond	**11**	**-3**	**2012**	**October**	15	9.1	1.9	0	0	0.95	0	8.2E-03	2.7E-03	0	0.15
B4 Pond	**12**	**-2**	**2012**	**November**	534	334	68	0	0	35	0	0.30	0.098	0	5.4
B4 Pond	**13**	**-2**	**2012**	**December**	534	334	68	0	0	35	0	0.30	0.098	0	5.4
B4 Pond	**14**	**-2**	**2013**	**January**	6.5E+04	60	**4.2E+04**	0.026	1.0	797	0	58	**62**	0	0.098
B4 Pond	**15**	**-2**	**2013**	**Febraury**	6.5E+04	58	**4.3E+04**	0.026	1.0	804	0	58	**63**	0	0.050
B4 Pond	**16**	**-2**	**2013**	**March**	6.6E+04	57	**4.3E+04**	0.027	1.0	807	0	58	**63**	0	0.033
B4 Pond	**17**	**-2**	**2013**	**April**	6.6E+04	57	**4.3E+04**	0.027	1.0	808	0	58	**63**	0	0.025
B4 Pond	**18**	**-2**	**2013**	**May**	5.9E+04	51	**3.9E+04**	0.024	0.94	727	0	53	**57**	0	0.018
B4 Pond	**19**	**-2**	**2013**	**June**	3.3E+04	36	**2.1E+04**	0.013	0.52	404	0	29	**32**	0	0.14
B4 Pond	**20**	**-2**	**2013**	**July**	3.8E+04	42	**2.5E+04**	0.015	0.61	471	0	34	**37**	0	0.16
B4 Pond	**21**	**-2**	**2013**	**August**	4.1E+04	45	**2.7E+04**	0.017	0.65	505	0	36	**39**	0	0.17
B4 Pond	**22**	**-2**	**2013**	**September**	4.1E+04	44	**2.6E+04**	0.016	0.64	499	0	36	**39**	0	0.17
B4 Pond	**23**	**-2**	**2013**	**October**	4.8E+04	47	**3.1E+04**	0.019	0.75	586	0	42	**46**	0	0.12
B4 Pond	**24**	**-1**	**2013**	**November**	5.8E+04	52	**3.8E+04**	0.024	0.92	717	0	52	**56**	0	0.055
B4 Pond	**25**	**-1**	**2013**	**December**	6.3E+04	54	**4.1E+04**	0.025	0.99	772	0	56	**60**	0	0.023
B4 Pond	**26**	**-1**	**2014**	**January**	6.5E+04	55	**4.2E+04**	0.026	1.0	795	0	58	**62**	0	9.6E-03
B4 Pond	**27**	**-1**	**2014**	**Febraury**	6.6E+04	55	**4.3E+04**	0.026	1.0	805	0	58	**63**	0	4.0E-03
B4 Pond	**28**	**-1**	**2014**	**March**	6.6E+04	55	**4.3E+04**	0.027	1.0	809	0	59	**63**	0	1.7E-03
B4 Pond	**29**	**-1**	**2014**	**April**	6.6E+04	55	**4.3E+04**	0.027	1.0	810	0	59	**63**	0	6.9E-04
B4 Pond	**30**	**-1**	**2014**	**May**	6.6E+04	55	**4.3E+04**	0.027	1.0	811	0	59	**64**	0	2.9E-04
B4 Pond	**31**	**-1**	**2014**	**June**	1.9E+04	30	**1.2E+04**	7.5E-03	0.29	230	0	17	**18**	0	0.24
B4 Pond	**32**	**-1**	**2014**	**July**	3.4E+04	43	**2.2E+04**	0.014	0.53	413	0	30	**32**	0	0.25
B4 Pond	**33**	**-1**	**2014**	**August**	3.4E+04	41	**2.2E+04**	0.014	0.54	422	0	30	**33**	0	0.19
B4 Pond	**34**	**-1**	**2014**	**September**	3.6E+04	40	**2.3E+04**	0.015	0.57	443	0	32	**35**	0	0.17
B4 Pond	**35**	**-1**	**2014**	**October**	4.5E+04	45	**3.0E+04**	0.018	0.72	559	0	40	**44**	0	0.12
B4 Pond	**36**	**1**	**2014**	**November**	5.7E+04	51	**3.7E+04**	0.023	0.91	704	0	51	**55**	0	0.055
B4 Pond	**37**	**1**	**2014**	**December**	6.2E+04	54	**4.1E+04**	0.025	0.99	767	0	55	**60**	0	0.023
B4 Pond	**38**	**1**	**2015**	**January**	6.4E+04	54	**4.2E+04**	0.025	1.1	886	0	55	**60**	0	9.3E-03
B4 Pond	**39**	**1**	**2015**	**Febraury**	6.5E+04	55	**4.2E+04**	0.025	1.2	935	0	55	**60**	0	3.9E-03
B4 Pond	**40**	**1**	**2015**	**March**	6.5E+04	55	**4.2E+04**	0.025	1.2	955	0	55	**60**	0	1.6E-03
B4 Pond	**41**	**1**	**2015**	**April**	6.5E+04	55	**4.2E+04**	0.025	1.2	964	0	55	**60**	0	6.6E-04
B4 Pond	**42**	**1**	**2015**	**May**	6.5E+04	55	**4.2E+04**	0.025	1.2	967	0	55	**60**	0	2.8E-04
B4 Pond	**43**	**1**	**2015**	**June**	1.9E+04	31	**1.2E+04**	7.4E-03	0.37	287	0	16	**18**	0	0.24
B4 Pond	**44**	**1**	**2015**	**July**	3.4E+04	43	**2.2E+04**	0.013	0.65	502	0	29	**31**	0	0.24
B4 Pond	**45**	**1**	**2015**	**August**	3.5E+04	41	**2.3E+04**	0.013	0.67	516	0	29	**32**	0	0.19
B4 Pond	**46**	**1**	**2015**	**September**	3.7E+04	41	**2.4E+04**	0.014	0.70	544	0	31	**33**	0	0.16
B4 Pond	**47**	**1**	**2015**	**October**	4.6E+04	45	**3.0E+04**	0.018	0.88	679	0	39	**42**	0	0.11

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)					0.5							
	Model	Mine	Date		P_dissolved	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	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
Pond Water Quality (Years -3 to 3)																
B4 Pond	**7**	**-3**	**2012**	**June**	1.0E-03	1.4E-04	2.1E-04	0	5.7E-05	8.2E-04	0	0	4.1E-03	0	0.60	0
B4 Pond	**8**	**-3**	**2012**	**July**	1.2E-03	1.7E-04	2.5E-04	0	6.8E-05	9.8E-04	0	0	4.9E-03	0	0.72	0
B4 Pond	**9**	**-3**	**2012**	**August**	1.5E-03	2.1E-04	3.0E-04	0	8.3E-05	1.2E-03	0	0	6.0E-03	0	0.88	0
B4 Pond	**10**	**-3**	**2012**	**September**	1.7E-03	2.4E-04	3.5E-04	0	9.6E-05	1.4E-03	0	0	6.9E-03	0	1.0	0
B4 Pond	**11**	**-3**	**2012**	**October**	1.8E-03	2.5E-04	3.7E-04	0	1.0E-04	1.5E-03	0	0	7.3E-03	0	1.1	0
B4 Pond	**12**	**-2**	**2012**	**November**	0.067	9.2E-03	0.013	0	3.7E-03	0.054	0	0	0.27	0	39	0
B4 Pond	**13**	**-2**	**2012**	**December**	0.067	9.2E-03	0.013	0	3.7E-03	0.054	0	0	0.27	0	39	0
B4 Pond	**14**	**-2**	**2013**	**January**	1.2E-03	1.7E-04	**0.14**	0	6.7E-05	0.076	0	0	**5.7**	0	1.6E+04	0
B4 Pond	**15**	**-2**	**2013**	**Febraury**	6.1E-04	8.4E-05	**0.14**	0	3.4E-05	0.076	0	0	**5.7**	0	1.6E+04	0
B4 Pond	**16**	**-2**	**2013**	**March**	4.1E-04	5.6E-05	**0.14**	0	2.3E-05	0.076	0	0	**5.7**	0	1.7E+04	0
B4 Pond	**17**	**-2**	**2013**	**April**	3.0E-04	4.2E-05	**0.14**	0	1.7E-05	0.076	0	0	**5.7**	0	1.7E+04	0
B4 Pond	**18**	**-2**	**2013**	**May**	2.2E-04	3.0E-05	**0.13**	0	1.2E-05	0.068	0	0	**5.2**	0	1.5E+04	0
B4 Pond	**19**	**-2**	**2013**	**June**	1.8E-03	2.4E-04	0.072	0	9.8E-05	0.039	0	0	**2.9**	0	8.2E+03	0
B4 Pond	**20**	**-2**	**2013**	**July**	1.9E-03	2.6E-04	0.084	0	1.1E-04	0.046	0	0	**3.3**	0	9.6E+03	0
B4 Pond	**21**	**-2**	**2013**	**August**	2.1E-03	2.9E-04	0.090	0	1.2E-04	0.049	0	0	**3.6**	0	1.0E+04	0
B4 Pond	**22**	**-2**	**2013**	**September**	2.0E-03	2.8E-04	0.089	0	1.1E-04	0.048	0	0	**3.5**	0	1.0E+04	0
B4 Pond	**23**	**-2**	**2013**	**October**	1.5E-03	2.0E-04	**0.10**	0	8.1E-05	0.056	0	0	**4.2**	0	1.2E+04	0
B4 Pond	**24**	**-1**	**2013**	**November**	6.8E-04	9.3E-05	**0.13**	0	3.8E-05	0.068	0	0	**5.1**	0	1.5E+04	0
B4 Pond	**25**	**-1**	**2013**	**December**	2.8E-04	3.9E-05	**0.14**	0	1.6E-05	0.073	0	0	**5.5**	0	1.6E+04	0
B4 Pond	**26**	**-1**	**2014**	**January**	1.2E-04	1.6E-05	**0.14**	0	6.5E-06	0.075	0	0	**5.6**	0	1.6E+04	0
B4 Pond	**27**	**-1**	**2014**	**Febraury**	4.9E-05	6.7E-06	**0.14**	0	2.7E-06	0.076	0	0	**5.7**	0	1.6E+04	0
B4 Pond	**28**	**-1**	**2014**	**March**	2.0E-05	2.8E-06	**0.14**	0	1.1E-06	0.076	0	0	**5.7**	0	1.7E+04	0
B4 Pond	**29**	**-1**	**2014**	**April**	8.4E-06	1.2E-06	**0.14**	0	4.7E-07	0.076	0	0	**5.7**	0	1.7E+04	0
B4 Pond	**30**	**-1**	**2014**	**May**	3.5E-06	4.8E-07	**0.14**	0	1.9E-07	0.076	0	0	**5.7**	0	1.7E+04	0
B4 Pond	**31**	**-1**	**2014**	**June**	3.0E-03	4.1E-04	0.041	0	1.6E-04	0.024	0	0	**1.6**	0	4.7E+03	0
B4 Pond	**32**	**-1**	**2014**	**July**	3.1E-03	4.2E-04	0.074	0	1.7E-04	0.041	0	0	**2.9**	0	8.4E+03	0
B4 Pond	**33**	**-1**	**2014**	**August**	2.4E-03	3.3E-04	0.075	0	1.3E-04	0.041	0	0	**3.0**	0	8.6E+03	0
B4 Pond	**34**	**-1**	**2014**	**September**	2.1E-03	2.8E-04	0.079	0	1.1E-04	0.043	0	0	**3.1**	0	9.1E+03	0
B4 Pond	**35**	**-1**	**2014**	**October**	1.5E-03	2.0E-04	0.099	0	8.1E-05	0.054	0	0	**4.0**	0	1.1E+04	0
B4 Pond	**36**	**1**	**2014**	**November**	6.8E-04	9.4E-05	**0.12**	0	3.8E-05	0.067	0	0	**5.0**	0	1.4E+04	0
B4 Pond	**37**	**1**	**2014**	**December**	2.8E-04	3.9E-05	**0.14**	0	1.6E-05	0.072	0	0	**5.4**	0	1.6E+04	0
B4 Pond	**38**	**1**	**2015**	**January**	1.1E-04	1.6E-05	**0.16**	0	6.3E-06	0.072	0	0	**5.6**	0	1.6E+04	0
B4 Pond	**39**	**1**	**2015**	**Febraury**	4.7E-05	6.5E-06	**0.17**	0	2.6E-06	0.072	0	0	**5.6**	0	1.6E+04	0
B4 Pond	**40**	**1**	**2015**	**March**	2.0E-05	2.7E-06	**0.17**	0	1.1E-06	0.072	0	0	**5.6**	0	1.6E+04	0
B4 Pond	**41**	**1**	**2015**	**April**	8.1E-06	1.1E-06	**0.17**	0	4.5E-07	0.072	0	0	**5.6**	0	1.6E+04	0
B4 Pond	**42**	**1**	**2015**	**May**	3.4E-06	4.7E-07	**0.17**	0	1.9E-07	0.072	0	0	**5.7**	0	1.6E+04	0
B4 Pond	**43**	**1**	**2015**	**June**	2.9E-03	4.0E-04	0.051	0	1.6E-04	0.023	0	0	**1.7**	0	4.6E+03	0
B4 Pond	**44**	**1**	**2015**	**July**	2.9E-03	4.0E-04	0.089	0	1.6E-04	0.039	0	0	**2.9**	0	8.1E+03	0
B4 Pond	**45**	**1**	**2015**	**August**	2.3E-03	3.2E-04	0.092	0	1.3E-04	0.040	0	0	**3.0**	0	8.3E+03	0
B4 Pond	**46**	**1**	**2015**	**September**	2.0E-03	2.7E-04	0.097	0	1.1E-04	0.042	0	0	**3.2**	0	8.8E+03	0
B4 Pond	**47**	**1**	**2015**	**October**	1.4E-03	1.9E-04	**0.12**	0	7.8E-05	0.051	0	0	**4.0**	0	1.1E+04	0

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3.0	0.2						0.5		
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se
LOCATION	Month	Year	Year	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
Pond Water Quality (Years -3 to 3)																
B4 Pond	**7**	**-3**	**2012**	**June**	0	4.1E-05	3.2E-03	2.1E-05	0	0.063	3.2E-04	0	4.1E-05	4.1E-05	0.039	1.1E-04
B4 Pond	**8**	**-3**	**2012**	**July**	0	4.9E-05	3.8E-03	2.5E-05	0	0.075	3.9E-04	0	4.9E-05	4.9E-05	0.047	1.3E-04
B4 Pond	**9**	**-3**	**2012**	**August**	0	6.0E-05	4.7E-03	3.0E-05	0	0.093	4.8E-04	0	6.0E-05	6.0E-05	0.058	1.6E-04
B4 Pond	**10**	**-3**	**2012**	**September**	0	6.9E-05	5.4E-03	3.5E-05	0	0.11	5.5E-04	0	6.9E-05	6.9E-05	0.066	1.8E-04
B4 Pond	**11**	**-3**	**2012**	**October**	0	7.3E-05	5.7E-03	3.7E-05	0	0.11	5.8E-04	0	7.3E-05	7.3E-05	0.070	1.9E-04
B4 Pond	**12**	**-2**	**2012**	**November**	0	**2.7E-03**	0.21	**1.3E-03**	0	4.1	0.021	0	2.7E-03	2.7E-03	2.6	**7.0E-03**
B4 Pond	**13**	**-2**	**2012**	**December**	0	**2.7E-03**	0.21	**1.3E-03**	0	4.1	0.021	0	2.7E-03	2.7E-03	2.6	**7.0E-03**
B4 Pond	**14**	**-2**	**2013**	**January**	0	4.8E-05	**1.2**	2.4E-05	16	505	0.16	0	4.8E-05	4.8E-05	678	1.3E-04
B4 Pond	**15**	**-2**	**2013**	**Febraury**	0	2.4E-05	**1.2**	1.2E-05	17	510	0.16	0	2.4E-05	2.4E-05	685	6.4E-05
B4 Pond	**16**	**-2**	**2013**	**March**	0	1.6E-05	**1.2**	8.2E-06	17	511	0.16	0	1.6E-05	1.6E-05	687	4.3E-05
B4 Pond	**17**	**-2**	**2013**	**April**	0	1.2E-05	**1.2**	6.1E-06	17	512	0.16	0	1.2E-05	1.2E-05	688	3.2E-05
B4 Pond	**18**	**-2**	**2013**	**May**	0	8.8E-06	**1.1**	4.4E-06	15	461	0.14	0	8.8E-06	8.8E-06	619	2.3E-05
B4 Pond	**19**	**-2**	**2013**	**June**	0	7.1E-05	**0.60**	3.6E-05	8.3	255	0.080	0	7.1E-05	7.1E-05	343	1.9E-04
B4 Pond	**20**	**-2**	**2013**	**July**	0	7.7E-05	**0.69**	3.9E-05	9.7	298	0.093	0	7.7E-05	7.7E-05	400	2.0E-04
B4 Pond	**21**	**-2**	**2013**	**August**	0	8.6E-05	**0.74**	4.3E-05	10	320	0.100	0	8.6E-05	8.6E-05	429	2.2E-04
B4 Pond	**22**	**-2**	**2013**	**September**	0	8.2E-05	**0.74**	4.1E-05	10	316	0.098	0	8.2E-05	8.2E-05	424	2.1E-04
B4 Pond	**23**	**-2**	**2013**	**October**	0	5.9E-05	**0.86**	2.9E-05	12	371	0.12	0	5.9E-05	5.9E-05	498	1.5E-04
B4 Pond	**24**	**-1**	**2013**	**November**	0	2.7E-05	**1.1**	1.4E-05	15	454	0.14	0	2.7E-05	2.7E-05	610	7.1E-05
B4 Pond	**25**	**-1**	**2013**	**December**	0	1.1E-05	**1.1**	5.7E-06	16	489	0.15	0	1.1E-05	1.1E-05	657	3.0E-05
B4 Pond	**26**	**-1**	**2014**	**January**	0	4.7E-06	**1.2**	2.4E-06	16	504	0.16	0	4.7E-06	4.7E-06	677	1.2E-05
B4 Pond	**27**	**-1**	**2014**	**Febraury**	0	2.0E-06	**1.2**	9.8E-07	17	510	0.16	0	2.0E-06	2.0E-06	685	5.1E-06
B4 Pond	**28**	**-1**	**2014**	**March**	0	8.1E-07	**1.2**	4.1E-07	17	513	0.16	0	8.1E-07	8.1E-07	689	2.1E-06
B4 Pond	**29**	**-1**	**2014**	**April**	0	3.4E-07	**1.2**	1.7E-07	17	514	0.16	0	3.4E-07	3.4E-07	690	8.8E-07
B4 Pond	**30**	**-1**	**2014**	**May**	0	1.4E-07	**1.2**	7.0E-08	17	514	0.16	0	1.4E-07	1.4E-07	691	3.7E-07
B4 Pond	**31**	**-1**	**2014**	**June**	0	1.2E-04	**0.34**	5.9E-05	4.7	145	0.046	0	1.2E-04	1.2E-04	195	3.1E-04
B4 Pond	**32**	**-1**	**2014**	**July**	0	1.2E-04	**0.61**	6.2E-05	8.5	261	0.082	0	1.2E-04	1.2E-04	351	3.2E-04
B4 Pond	**33**	**-1**	**2014**	**August**	0	9.5E-05	**0.62**	4.8E-05	8.7	267	0.083	0	9.5E-05	9.5E-05	358	2.5E-04
B4 Pond	**34**	**-1**	**2014**	**September**	0	8.3E-05	**0.65**	4.1E-05	9.1	281	0.087	0	8.3E-05	8.3E-05	377	2.2E-04
B4 Pond	**35**	**-1**	**2014**	**October**	0	5.9E-05	**0.82**	2.9E-05	12	354	0.11	0	5.9E-05	5.9E-05	475	1.5E-04
B4 Pond	**36**	**1**	**2014**	**November**	0	2.7E-05	**1.0**	1.4E-05	15	446	0.14	0	2.7E-05	2.7E-05	599	7.1E-05
B4 Pond	**37**	**1**	**2014**	**December**	0	1.1E-05	**1.1**	5.7E-06	16	486	0.15	0	1.1E-05	1.1E-05	653	3.0E-05
B4 Pond	**38**	**1**	**2015**	**January**	0	4.6E-06	**1.3**	2.3E-06	16	562	0.17	0	4.6E-06	4.6E-06	661	1.2E-05
B4 Pond	**39**	**1**	**2015**	**Febraury**	0	1.9E-06	**1.4**	9.5E-07	16	593	0.18	0	1.9E-06	1.9E-06	665	4.9E-06
B4 Pond	**40**	**1**	**2015**	**March**	0	7.9E-07	**1.4**	3.9E-07	16	606	0.19	0	7.9E-07	7.9E-07	667	2.1E-06
B4 Pond	**41**	**1**	**2015**	**April**	0	3.3E-07	**1.4**	1.6E-07	16	611	0.19	0	3.3E-07	3.3E-07	668	8.5E-07
B4 Pond	**42**	**1**	**2015**	**May**	0	1.4E-07	**1.4**	6.8E-08	16	613	0.19	0	1.4E-07	1.4E-07	668	3.5E-07
B4 Pond	**43**	**1**	**2015**	**June**	0	1.2E-04	**0.43**	5.8E-05	4.7	181	0.057	0	1.2E-04	1.2E-04	197	3.0E-04
B4 Pond	**44**	**1**	**2015**	**July**	0	1.2E-04	**0.74**	5.9E-05	8.2	317	0.099	0	1.2E-04	1.2E-04	345	3.1E-04
B4 Pond	**45**	**1**	**2015**	**August**	0	9.2E-05	**0.76**	4.6E-05	8.4	327	0.10	0	9.2E-05	9.2E-05	355	2.4E-04
B4 Pond	**46**	**1**	**2015**	**September**	0	8.0E-05	**0.80**	4.0E-05	8.9	344	0.11	0	8.0E-05	8.0E-05	374	2.1E-04
B4 Pond	**47**	**1**	**2015**	**October**	0	5.6E-05	**1.0**	2.8E-05	11	431	0.13	0	5.6E-05	5.6E-05	468	1.5E-04

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.0001				0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											0.5
	Model	Mine	Date		Ag	Na	Sr	Te	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	Month	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Pond Water Quality (Years -3 to 3)															
B4 Pond	**7**	**-3**	**2012**	**June**	0	0.093	0	0	0	0	0	0	0	4.1E-05	2.1E-04
B4 Pond	**8**	**-3**	**2012**	**July**	0	0.11	0	0	0	0	0	0	0	4.9E-05	2.5E-04
B4 Pond	**9**	**-3**	**2012**	**August**	0	0.14	0	0	0	0	0	0	0	6.0E-05	3.0E-04
B4 Pond	**10**	**-3**	**2012**	**September**	0	0.16	0	0	0	0	0	0	0	6.9E-05	3.5E-04
B4 Pond	**11**	**-3**	**2012**	**October**	0	0.17	0	0	0	0	0	0	0	7.3E-05	3.7E-04
B4 Pond	**12**	**-2**	**2012**	**November**	0	6.1	0	0	0	0	0	0	0	2.7E-03	0.013
B4 Pond	**13**	**-2**	**2012**	**December**	0	6.1	0	0	0	0	0	0	0	2.7E-03	0.013
B4 Pond	**14**	**-2**	**2013**	**January**	0	4.2E+03	279	0	0	0	0	0	0	0.045	2.4E-04
B4 Pond	**15**	**-2**	**2013**	**Febraury**	0	4.3E+03	281	0	0	0	0	0	0	0.045	1.2E-04
B4 Pond	**16**	**-2**	**2013**	**March**	0	4.3E+03	282	0	0	0	0	0	0	0.045	8.2E-05
B4 Pond	**17**	**-2**	**2013**	**April**	0	4.3E+03	282	0	0	0	0	0	0	0.046	6.1E-05
B4 Pond	**18**	**-2**	**2013**	**May**	0	3.8E+03	254	0	0	0	0	0	0	0.041	4.4E-05
B4 Pond	**19**	**-2**	**2013**	**June**	0	2.1E+03	141	0	0	0	0	0	0	0.023	3.6E-04
B4 Pond	**20**	**-2**	**2013**	**July**	0	2.5E+03	164	0	0	0	0	0	0	0.027	3.9E-04
B4 Pond	**21**	**-2**	**2013**	**August**	0	2.7E+03	176	0	0	0	0	0	0	0.028	4.3E-04
B4 Pond	**22**	**-2**	**2013**	**September**	0	2.6E+03	174	0	0	0	0	0	0	0.028	4.1E-04
B4 Pond	**23**	**-2**	**2013**	**October**	0	3.1E+03	205	0	0	0	0	0	0	0.033	2.9E-04
B4 Pond	**24**	**-1**	**2013**	**November**	0	3.8E+03	250	0	0	0	0	0	0	0.040	1.4E-04
B4 Pond	**25**	**-1**	**2013**	**December**	0	4.1E+03	270	0	0	0	0	0	0	0.044	5.7E-05
B4 Pond	**26**	**-1**	**2014**	**January**	0	4.2E+03	278	0	0	0	0	0	0	0.045	2.4E-05
B4 Pond	**27**	**-1**	**2014**	**Febraury**	0	4.3E+03	281	0	0	0	0	0	0	0.045	9.8E-06
B4 Pond	**28**	**-1**	**2014**	**March**	0	4.3E+03	283	0	0	0	0	0	0	0.046	4.1E-06
B4 Pond	**29**	**-1**	**2014**	**April**	0	4.3E+03	283	0	0	0	0	0	0	0.046	1.7E-06
B4 Pond	**30**	**-1**	**2014**	**May**	0	4.3E+03	284	0	0	0	0	0	0	0.046	7.0E-07
B4 Pond	**31**	**-1**	**2014**	**June**	0	1.2E+03	80	0	0	0	0	0	0	0.013	5.9E-04
B4 Pond	**32**	**-1**	**2014**	**July**	0	2.2E+03	144	0	0	0	0	0	0	0.023	6.2E-04
B4 Pond	**33**	**-1**	**2014**	**August**	0	2.2E+03	147	0	0	0	0	0	0	0.024	4.8E-04
B4 Pond	**34**	**-1**	**2014**	**September**	0	2.3E+03	155	0	0	0	0	0	0	0.025	4.1E-04
B4 Pond	**35**	**-1**	**2014**	**October**	0	3.0E+03	195	0	0	0	0	0	0	0.032	2.9E-04
B4 Pond	**36**	**1**	**2014**	**November**	0	3.7E+03	246	0	0	0	0	0	0	0.040	1.4E-04
B4 Pond	**37**	**1**	**2014**	**December**	0	4.1E+03	268	0	0	0	0	0	0	0.043	5.7E-05
B4 Pond	**38**	**1**	**2015**	**January**	0	4.6E+03	269	0	0	0	0	0	0	0.043	2.3E-05
B4 Pond	**39**	**1**	**2015**	**Febraury**	0	4.9E+03	270	0	0	0	0	0	0	0.043	9.5E-06
B4 Pond	**40**	**1**	**2015**	**March**	0	5.0E+03	270	0	0	0	0	0	0	0.043	3.9E-06
B4 Pond	**41**	**1**	**2015**	**April**	0	5.0E+03	270	0	0	0	0	0	0	0.043	1.6E-06
B4 Pond	**42**	**1**	**2015**	**May**	0	5.0E+03	270	0	0	0	0	0	0	0.043	6.8E-07
B4 Pond	**43**	**1**	**2015**	**June**	0	1.5E+03	80	0	0	0	0	0	0	0.013	5.8E-04
B4 Pond	**44**	**1**	**2015**	**July**	0	2.6E+03	139	0	0	0	0	0	0	0.022	5.9E-04
B4 Pond	**45**	**1**	**2015**	**August**	0	2.7E+03	144	0	0	0	0	0	0	0.023	4.6E-04
B4 Pond	**46**	**1**	**2015**	**September**	0	2.8E+03	151	0	0	0	0	0	0	0.024	4.0E-04
B4 Pond	**47**	**1**	**2015**	**October**	0	3.5E+03	189	0	0	0	0	0	0	0.030	2.8E-04

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12			5		13	60	
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)															
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	Si	SO4	Cn_Total	NH4 (as N)	NO3	NO2	TKN
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/L	Total	mg N/L	mg/L	mg/L	mg/L
B4 Pond	48	2	2015	November	5.7E+04	51	**3.7E+04**	0.022	1.1	847	0	48	**52**	0	0.053
B4 Pond	49	2	2015	December	6.2E+04	53	**4.0E+04**	0.024	1.2	919	0	52	**57**	0	0.022
B4 Pond	50	2	2016	January	6.4E+04	54	**4.1E+04**	0.024	1.2	948	0	54	**58**	0	9.1E-03
B4 Pond	51	2	2016	Febraury	6.5E+04	55	**4.2E+04**	0.025	1.2	961	0	55	**59**	0	3.8E-03
B4 Pond	52	2	2016	March	6.5E+04	55	**4.2E+04**	0.025	1.2	966	0	55	**59**	0	1.6E-03
B4 Pond	53	2	2016	April	6.5E+04	55	**4.2E+04**	0.025	1.3	968	0	55	**60**	0	6.5E-04
B4 Pond	54	2	2016	May	6.5E+04	55	**4.2E+04**	0.025	1.3	969	0	55	**60**	0	2.7E-04
B4 Pond	55	2	2016	June	1.9E+04	31	**1.2E+04**	7.4E-03	0.37	287	0	16	**18**	0	0.24
B4 Pond	56	2	2016	July	3.4E+04	43	**2.2E+04**	0.013	0.65	502	0	29	**31**	0	0.24
B4 Pond	57	2	2016	August	3.5E+04	41	**2.3E+04**	0.013	0.67	517	0	29	**32**	0	0.19
B4 Pond	58	2	2016	September	3.7E+04	41	**2.4E+04**	0.014	0.70	544	0	31	**33**	0	0.16
B4 Pond	59	2	2016	October	4.6E+04	45	**3.0E+04**	0.018	0.88	679	0	39	**42**	0	0.11
B4 Pond	60	3	2016	November	5.7E+04	51	**3.7E+04**	0.022	1.1	847	0	48	**52**	0	0.053
B4 Pond	61	3	2016	December	6.2E+04	53	**4.0E+04**	0.024	1.2	919	0	52	**57**	0	0.022
B4 Pond	62	3	2017	January	6.4E+04	54	**4.1E+04**	0.024	1.2	948	0	54	**58**	0	9.1E-03
B4 Pond	63	3	2017	Febraury	6.5E+04	55	**4.2E+04**	0.025	1.2	961	0	55	**59**	0	3.8E-03
B4 Pond	64	3	2017	March	6.5E+04	55	**4.2E+04**	0.025	1.2	966	0	55	**59**	0	1.6E-03
B4 Pond	65	3	2017	April	6.5E+04	55	**4.2E+04**	0.025	1.3	968	0	55	**60**	0	6.5E-04
B4 Pond	66	3	2017	May	6.5E+04	55	**4.2E+04**	0.025	1.3	969	0	55	**60**	0	2.7E-04
				MINIMUM	1.9E+04	30	**1.2E+04**	7.4E-03	0.29	230	0	16	**18**	0	2.7E-04
				MAXIMUM	6.6E+04	60	**4.3E+04**	0.027	1.3	969	0	59	**64**	0	0.25
				AVERAGE	5.3E+04	49	**3.4E+04**	0.021	0.93	724	0	46	**50**	0	0.079

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)					0.5							
	Model	Mine	Date		P_dissolved	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	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
B4 Pond	48	2	2015	November	6.4E-04	8.9E-05	**0.15**	0	3.6E-05	0.063	0	0	**4.9**	0	1.4E+04	0
B4 Pond	49	2	2015	December	2.7E-04	3.7E-05	**0.16**	0	1.5E-05	0.068	0	0	**5.4**	0	1.5E+04	0
B4 Pond	50	2	2016	January	1.1E-04	1.5E-05	**0.17**	0	6.2E-06	0.070	0	0	**5.5**	0	1.5E+04	0
B4 Pond	51	2	2016	Febraury	4.6E-05	6.4E-06	**0.17**	0	2.6E-06	0.071	0	0	**5.6**	0	1.6E+04	0
B4 Pond	52	2	2016	March	1.9E-05	2.6E-06	**0.17**	0	1.1E-06	0.071	0	0	**5.6**	0	1.6E+04	0
B4 Pond	53	2	2016	April	8.0E-06	1.1E-06	**0.17**	0	4.4E-07	0.071	0	0	**5.6**	0	1.6E+04	0
B4 Pond	54	2	2016	May	3.3E-06	4.6E-07	**0.17**	0	1.8E-07	0.071	0	0	**5.7**	0	1.6E+04	0
B4 Pond	55	2	2016	June	2.9E-03	4.0E-04	0.051	0	1.6E-04	0.023	0	0	**1.7**	0	4.6E+03	0
B4 Pond	56	2	2016	July	2.9E-03	4.0E-04	0.089	0	1.6E-04	0.039	0	0	**2.9**	0	8.1E+03	0
B4 Pond	57	2	2016	August	2.3E-03	3.2E-04	0.092	0	1.3E-04	0.040	0	0	**3.0**	0	8.3E+03	0
B4 Pond	58	2	2016	September	2.0E-03	2.7E-04	0.097	0	1.1E-04	0.042	0	0	**3.2**	0	8.8E+03	0
B4 Pond	59	2	2016	October	1.4E-03	1.9E-04	**0.12**	0	7.8E-05	0.051	0	0	**4.0**	0	1.1E+04	0
B4 Pond	60	3	2016	November	6.4E-04	8.9E-05	**0.15**	0	3.6E-05	0.063	0	0	**4.9**	0	1.4E+04	0
B4 Pond	61	3	2016	December	2.7E-04	3.7E-05	**0.16**	0	1.5E-05	0.068	0	0	**5.4**	0	1.5E+04	0
B4 Pond	62	3	2017	January	1.1E-04	1.5E-05	**0.17**	0	6.2E-06	0.070	0	0	**5.5**	0	1.5E+04	0
B4 Pond	63	3	2017	Febraury	4.6E-05	6.4E-06	**0.17**	0	2.6E-06	0.071	0	0	**5.6**	0	1.6E+04	0
B4 Pond	64	3	2017	March	1.9E-05	2.6E-06	**0.17**	0	1.1E-06	0.071	0	0	**5.6**	0	1.6E+04	0
B4 Pond	65	3	2017	April	8.0E-06	1.1E-06	**0.17**	0	4.4E-07	0.071	0	0	**5.6**	0	1.6E+04	0
B4 Pond	66	3	2017	May	3.3E-06	4.6E-07	**0.17**	0	1.8E-07	0.071	0	0	**5.7**	0	1.6E+04	0
				MINIMUM	3.3E-06	4.6E-07	0.041	0	1.8E-07	0.023	0	0	**1.6**	0	4.6E+03	0
				MAXIMUM	3.1E-03	4.2E-04	**0.17**	0	1.7E-04	0.076	0	0	**5.7**	0	1.7E+04	0
				AVERAGE	9.7E-04	1.3E-04	**0.13**	0	5.4E-05	0.060	0	0	**4.6**	0	1.3E+04	0

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						0.002	0.3	0.001				0.000026	0.073	0.038		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						0.3	3.0	0.2						0.5		
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se
LOCATION	Month	Year	Year	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
B4 Pond	48	2	2015	November	0	2.6E-05	1.2	1.3E-05	14	537	0.17	0	2.6E-05	2.6E-05	584	6.8E-05
B4 Pond	49	2	2015	December	0	1.1E-05	1.3	5.4E-06	15	583	0.18	0	1.1E-05	1.1E-05	633	2.8E-05
B4 Pond	50	2	2016	January	0	4.5E-06	1.4	2.2E-06	16	602	0.19	0	4.5E-06	4.5E-06	654	1.2E-05
B4 Pond	51	2	2016	Febraury	0	1.9E-06	1.4	9.3E-07	16	609	0.19	0	1.9E-06	1.9E-06	662	4.8E-06
B4 Pond	52	2	2016	March	0	7.7E-07	1.4	3.9E-07	16	613	0.19	0	7.7E-07	7.7E-07	666	2.0E-06
B4 Pond	53	2	2016	April	0	3.2E-07	1.4	1.6E-07	16	614	0.19	0	3.2E-07	3.2E-07	667	8.4E-07
B4 Pond	54	2	2016	May	0	1.3E-07	1.4	6.6E-08	16	615	0.19	0	1.3E-07	1.3E-07	668	3.5E-07
B4 Pond	55	2	2016	June	0	1.2E-04	0.43	5.8E-05	4.7	181	0.057	0	1.2E-04	1.2E-04	197	3.0E-04
B4 Pond	56	2	2016	July	0	1.2E-04	0.74	5.9E-05	8.2	318	0.099	0	1.2E-04	1.2E-04	345	3.1E-04
B4 Pond	57	2	2016	August	0	9.2E-05	0.76	4.6E-05	8.4	327	0.10	0	9.2E-05	9.2E-05	355	2.4E-04
B4 Pond	58	2	2016	September	0	8.0E-05	0.80	4.0E-05	8.9	344	0.11	0	8.0E-05	8.0E-05	374	2.1E-04
B4 Pond	59	2	2016	October	0	5.6E-05	1.0	2.8E-05	11	431	0.13	0	5.6E-05	5.6E-05	468	1.5E-04
B4 Pond	60	3	2016	November	0	2.6E-05	1.2	1.3E-05	14	537	0.17	0	2.6E-05	2.6E-05	584	6.8E-05
B4 Pond	61	3	2016	December	0	1.1E-05	1.3	5.4E-06	15	583	0.18	0	1.1E-05	1.1E-05	633	2.8E-05
B4 Pond	62	3	2017	January	0	4.5E-06	1.4	2.2E-06	16	602	0.19	0	4.5E-06	4.5E-06	654	1.2E-05
B4 Pond	63	3	2017	Febraury	0	1.9E-06	1.4	9.3E-07	16	609	0.19	0	1.9E-06	1.9E-06	662	4.8E-06
B4 Pond	64	3	2017	March	0	7.7E-07	1.4	3.9E-07	16	613	0.19	0	7.7E-07	7.7E-07	666	2.0E-06
B4 Pond	65	3	2017	April	0	3.2E-07	1.4	1.6E-07	16	614	0.19	0	3.2E-07	3.2E-07	667	8.4E-07
B4 Pond	66	3	2017	May	0	1.3E-07	1.4	6.6E-08	16	615	0.19	0	1.3E-07	1.3E-07	668	3.5E-07
				MINIMUM	0	1.3E-07	0.34	6.6E-08	4.7	145	0.046	0	1.3E-07	1.3E-07	195	3.5E-07
				MAXIMUM	0	1.2E-04	1.4	6.2E-05	17	615	0.19	0	1.2E-04	1.2E-04	691	3.2E-04
				AVERAGE	0	3.9E-05	1.1	2.0E-05	13	459	0.14	0	3.9E-05	3.9E-05	548	1.0E-04

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)					0.0001				0.0008				0.015		0.03
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)															0.5
	Model	Mine	Date		Ag	Na	Sr	Te	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	Month	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
B4 Pond	48	2	2015	November	0	4.4E+03	236	0	0	0	0	0	0	0.038	1.3E-04
B4 Pond	49	2	2015	December	0	4.8E+03	256	0	0	0	0	0	0	0.041	5.4E-05
B4 Pond	50	2	2016	January	0	4.9E+03	264	0	0	0	0	0	0	0.042	2.2E-05
B4 Pond	51	2	2016	Febraury	0	5.0E+03	268	0	0	0	0	0	0	0.043	9.3E-06
B4 Pond	52	2	2016	March	0	5.0E+03	269	0	0	0	0	0	0	0.043	3.9E-06
B4 Pond	53	2	2016	April	0	5.0E+03	270	0	0	0	0	0	0	0.043	1.6E-06
B4 Pond	54	2	2016	May	0	5.0E+03	270	0	0	0	0	0	0	0.043	6.6E-07
B4 Pond	55	2	2016	June	0	1.5E+03	79	0	0	0	0	0	0	0.013	5.8E-04
B4 Pond	56	2	2016	July	0	2.6E+03	139	0	0	0	0	0	0	0.022	5.9E-04
B4 Pond	57	2	2016	August	0	2.7E+03	144	0	0	0	0	0	0	0.023	4.6E-04
B4 Pond	58	2	2016	September	0	2.8E+03	151	0	0	0	0	0	0	0.024	4.0E-04
B4 Pond	59	2	2016	October	0	3.5E+03	189	0	0	0	0	0	0	0.030	2.8E-04
B4 Pond	60	3	2016	November	0	4.4E+03	236	0	0	0	0	0	0	0.038	1.3E-04
B4 Pond	61	3	2016	December	0	4.8E+03	256	0	0	0	0	0	0	0.041	5.4E-05
B4 Pond	62	3	2017	January	0	4.9E+03	264	0	0	0	0	0	0	0.042	2.2E-05
B4 Pond	63	3	2017	Febraury	0	5.0E+03	268	0	0	0	0	0	0	0.043	9.3E-06
B4 Pond	64	3	2017	March	0	5.0E+03	269	0	0	0	0	0	0	0.043	3.9E-06
B4 Pond	65	3	2017	April	0	5.0E+03	270	0	0	0	0	0	0	0.043	1.6E-06
B4 Pond	66	3	2017	May	0	5.0E+03	270	0	0	0	0	0	0	0.043	6.6E-07
				MINIMUM	0	1.2E+03	79	0	0	0	0	0	0	0.013	6.6E-07
				MAXIMUM	0	5.0E+03	284	0	0	0	0	0	0	0.046	6.2E-04
				AVERAGE	0	3.8E+03	223	0	0	0	0	0	0	0.036	2.0E-04

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)			120	0.12			5		13	60	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	Si	SO4	Cn_Total	NH4 (as N)	NO3	NO2	TKN
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/L	Total	mg N/L	mg/L	mg/L	mg/L
Salt Plant Inflow Water Quality (Years 3 to 13)															
Salt Plant Inflow	**67**	**3**	**2017**	**June**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**68**	**3**	**2017**	**July**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**69**	**3**	**2017**	**August**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**70**	**3**	**2017**	**September**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**71**	**3**	**2017**	**October**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**72**	**4**	**2017**	**November**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**73**	**4**	**2017**	**December**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**74**	**4**	**2018**	**January**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**75**	**4**	**2018**	**Febraury**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**76**	**4**	**2018**	**March**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**77**	**4**	**2018**	**April**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**78**	**4**	**2018**	**May**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**79**	**4**	**2018**	**June**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**80**	**4**	**2018**	**July**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**81**	**4**	**2018**	**August**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**82**	**4**	**2018**	**September**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**83**	**4**	**2018**	**October**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**84**	**5**	**2018**	**November**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**85**	**5**	**2018**	**December**	6.5E+04	55	**4.2E+04**	0.025	1.3	970	0	55	**60**	0	0
Salt Plant Inflow	**86**	**5**	**2019**	**January**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**87**	**5**	**2019**	**Febraury**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**88**	**5**	**2019**	**March**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**89**	**5**	**2019**	**April**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**90**	**5**	**2019**	**May**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**91**	**5**	**2019**	**June**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**92**	**5**	**2019**	**July**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**93**	**5**	**2019**	**August**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**94**	**5**	**2019**	**September**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**95**	**5**	**2019**	**October**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**96**	**6**	**2019**	**November**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**97**	**6**	**2019**	**December**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**98**	**6**	**2020**	**January**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**99**	**6**	**2020**	**Febraury**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**100**	**6**	**2020**	**March**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**101**	**6**	**2020**	**April**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**102**	**6**	**2020**	**May**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**103**	**6**	**2020**	**June**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**104**	**6**	**2020**	**July**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**105**	**6**	**2020**	**August**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**106**	**6**	**2020**	**September**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**107**	**6**	**2020**	**October**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**108**	**7**	**2020**	**November**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**109**	**7**	**2020**	**December**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**110**	**7**	**2021**	**January**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**111**	**7**	**2021**	**Febraury**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**112**	**7**	**2021**	**March**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**113**	**7**	**2021**	**April**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**114**	**7**	**2021**	**May**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**115**	**7**	**2021**	**June**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**116**	**7**	**2021**	**July**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)					0.5							
	Model	Mine	Date		P_dissolved	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	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
Salt Plant Inflow Water Quality (Years 3 to 13)																
Salt Plant Inflow	67	3	2017	June	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	68	3	2017	July	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	69	3	2017	August	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	70	3	2017	September	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	71	3	2017	October	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	72	4	2017	November	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	73	4	2017	December	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	74	4	2018	January	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	75	4	2018	Febraury	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	76	4	2018	March	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	77	4	2018	April	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	78	4	2018	May	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	79	4	2018	June	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	80	4	2018	July	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	81	4	2018	August	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	82	4	2018	September	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	83	4	2018	October	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	84	5	2018	November	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	85	5	2018	December	0	0	0.17	0	0	0.072	0	0	5.7	0	1.6E+04	0
Salt Plant Inflow	86	5	2019	January	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	87	5	2019	Febraury	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	88	5	2019	March	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	89	5	2019	April	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	90	5	2019	May	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	91	5	2019	June	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	92	5	2019	July	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	93	5	2019	August	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	94	5	2019	September	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	95	5	2019	October	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	96	6	2019	November	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	97	6	2019	December	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	98	6	2020	January	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	99	6	2020	Febraury	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	100	6	2020	March	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	101	6	2020	April	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	102	6	2020	May	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	103	6	2020	June	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	104	6	2020	July	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	105	6	2020	August	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	106	6	2020	September	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	107	6	2020	October	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	108	7	2020	November	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	109	7	2020	December	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	110	7	2021	January	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	111	7	2021	Febraury	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	112	7	2021	March	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	113	7	2021	April	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	114	7	2021	May	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	115	7	2021	June	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	116	7	2021	July	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

					CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001
					Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3.0	0.2						0.5		
	Model	Mine	Date		Co		Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se
LOCATION	Month	Year	Year	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
Salt Plant Inflow Water Quality (Years 3 to 13)																	
Salt Plant Inflow	**67**	**3**	**2017**	**June**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**68**	**3**	**2017**	**July**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**69**	**3**	**2017**	**August**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**70**	**3**	**2017**	**September**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**71**	**3**	**2017**	**October**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**72**	**4**	**2017**	**November**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**73**	**4**	**2017**	**December**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**74**	**4**	**2018**	**January**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**75**	**4**	**2018**	**Febraury**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**76**	**4**	**2018**	**March**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**77**	**4**	**2018**	**April**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**78**	**4**	**2018**	**May**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**79**	**4**	**2018**	**June**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**80**	**4**	**2018**	**July**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**81**	**4**	**2018**	**August**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**82**	**4**	**2018**	**September**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**83**	**4**	**2018**	**October**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**84**	**5**	**2018**	**November**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**85**	**5**	**2018**	**December**	0		0	**1.4**	0	16	615	0.19	0	0	0	668	0
Salt Plant Inflow	**86**	**5**	**2019**	**January**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**87**	**5**	**2019**	**Febraury**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**88**	**5**	**2019**	**March**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**89**	**5**	**2019**	**April**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**90**	**5**	**2019**	**May**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**91**	**5**	**2019**	**June**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**92**	**5**	**2019**	**July**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**93**	**5**	**2019**	**August**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**94**	**5**	**2019**	**September**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**95**	**5**	**2019**	**October**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**96**	**6**	**2019**	**November**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**97**	**6**	**2019**	**December**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**98**	**6**	**2020**	**January**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**99**	**6**	**2020**	**Febraury**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**100**	**6**	**2020**	**March**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**101**	**6**	**2020**	**April**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**102**	**6**	**2020**	**May**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**103**	**6**	**2020**	**June**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**104**	**6**	**2020**	**July**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**105**	**6**	**2020**	**August**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**106**	**6**	**2020**	**September**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**107**	**6**	**2020**	**October**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**108**	**7**	**2020**	**November**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**109**	**7**	**2020**	**December**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**110**	**7**	**2021**	**January**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**111**	**7**	**2021**	**Febraury**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**112**	**7**	**2021**	**March**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**113**	**7**	**2021**	**April**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**114**	**7**	**2021**	**May**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**115**	**7**	**2021**	**June**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**116**	**7**	**2021**	**July**	0		0	**1.6**	0	15	690	0.21	0	0	0	652	0

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.0001				0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											0.5
	Model	Mine	Date		Ag	Na	Sr	Te	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	Month	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Salt Plant Inflow Water Quality (Years 3 to 13)															
Salt Plant Inflow	**67**	**3**	**2017**	**June**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**68**	**3**	**2017**	**July**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**69**	**3**	**2017**	**August**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**70**	**3**	**2017**	**September**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**71**	**3**	**2017**	**October**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**72**	**4**	**2017**	**November**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**73**	**4**	**2017**	**December**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**74**	**4**	**2018**	**January**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**75**	**4**	**2018**	**Febraury**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**76**	**4**	**2018**	**March**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**77**	**4**	**2018**	**April**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**78**	**4**	**2018**	**May**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**79**	**4**	**2018**	**June**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**80**	**4**	**2018**	**July**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**81**	**4**	**2018**	**August**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**82**	**4**	**2018**	**September**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**83**	**4**	**2018**	**October**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**84**	**5**	**2018**	**November**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**85**	**5**	**2018**	**December**	0	5.0E+03	270	0	0	0	0	0	0	0.043	0
Salt Plant Inflow	**86**	**5**	**2019**	**January**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**87**	**5**	**2019**	**Febraury**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**88**	**5**	**2019**	**March**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**89**	**5**	**2019**	**April**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**90**	**5**	**2019**	**May**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**91**	**5**	**2019**	**June**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**92**	**5**	**2019**	**July**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**93**	**5**	**2019**	**August**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**94**	**5**	**2019**	**September**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**95**	**5**	**2019**	**October**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**96**	**6**	**2019**	**November**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**97**	**6**	**2019**	**December**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**98**	**6**	**2020**	**January**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**99**	**6**	**2020**	**Febraury**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**100**	**6**	**2020**	**March**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**101**	**6**	**2020**	**April**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**102**	**6**	**2020**	**May**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**103**	**6**	**2020**	**June**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**104**	**6**	**2020**	**July**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**105**	**6**	**2020**	**August**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**106**	**6**	**2020**	**September**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**107**	**6**	**2020**	**October**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**108**	**7**	**2020**	**November**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**109**	**7**	**2020**	**December**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**110**	**7**	**2021**	**January**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**111**	**7**	**2021**	**Febraury**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**112**	**7**	**2021**	**March**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**113**	**7**	**2021**	**April**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**114**	**7**	**2021**	**May**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**115**	**7**	**2021**	**June**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**116**	**7**	**2021**	**July**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12			5		13	60	
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)															
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	Si	SO4	Cn_Total	NH4 (as N)	NO3	NO2	TKN
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/L	Total	mg N/L	mg/L	mg/L	mg/L
Salt Plant Inflow	117	7	2021	August	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	118	7	2021	September	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	119	7	2021	October	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	120	8	2021	November	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	121	8	2021	December	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	122	8	2022	January	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	123	8	2022	Febraury	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	124	8	2022	March	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	125	8	2022	April	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	126	8	2022	May	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	127	8	2022	June	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	128	8	2022	July	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	129	8	2022	August	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	130	8	2022	September	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	131	8	2022	October	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	132	9	2022	November	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	133	9	2022	December	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	134	9	2023	January	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	135	9	2023	Febraury	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	136	9	2023	March	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	137	9	2023	April	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	138	9	2023	May	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	139	9	2023	June	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	140	9	2023	July	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	141	9	2023	August	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	142	9	2023	September	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	143	9	2023	October	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	144	10	2023	November	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	145	10	2023	December	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	146	10	2024	January	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	147	10	2024	Febraury	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	148	10	2024	March	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	149	10	2024	April	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	150	10	2024	May	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	151	10	2024	June	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	152	10	2024	July	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	153	10	2024	August	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	154	10	2024	September	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	155	10	2024	October	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	156	11	2024	November	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	157	11	2024	December	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	158	11	2025	January	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	159	11	2025	Febraury	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	160	11	2025	March	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	161	11	2025	April	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	162	11	2025	May	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	163	11	2025	June	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	164	11	2025	July	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	165	11	2025	August	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	166	11	2025	September	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0
Salt Plant Inflow	167	11	2025	October	6.5E+04	55	4.2E+04	0.024	1.4	1.1E+03	0	53	57	0	0

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)					0.5							
	Model	Mine	Date		P_dissolved	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	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
Salt Plant Inflow	117	7	2021	August	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	118	7	2021	September	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	119	7	2021	October	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	120	8	2021	November	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	121	8	2021	December	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	122	8	2022	January	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	123	8	2022	Febraury	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	124	8	2022	March	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	125	8	2022	April	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	126	8	2022	May	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	127	8	2022	June	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	128	8	2022	July	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	129	8	2022	August	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	130	8	2022	September	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	131	8	2022	October	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	132	9	2022	November	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	133	9	2022	December	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	134	9	2023	January	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	135	9	2023	Febraury	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	136	9	2023	March	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	137	9	2023	April	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	138	9	2023	May	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	139	9	2023	June	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	140	9	2023	July	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	141	9	2023	August	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	142	9	2023	September	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	143	9	2023	October	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	144	10	2023	November	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	145	10	2023	December	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	146	10	2024	January	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	147	10	2024	Febraury	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	148	10	2024	March	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	149	10	2024	April	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	150	10	2024	May	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	151	10	2024	June	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	152	10	2024	July	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	153	10	2024	August	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	154	10	2024	September	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	155	10	2024	October	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	156	11	2024	November	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	157	11	2024	December	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	158	11	2025	January	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	159	11	2025	Febraury	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	160	11	2025	March	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	161	11	2025	April	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	162	11	2025	May	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	163	11	2025	June	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	164	11	2025	July	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	165	11	2025	August	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	166	11	2025	September	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0
Salt Plant Inflow	167	11	2025	October	0	0	0.19	0	0	0.068	0	0	5.6	0	1.5E+04	0

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3.0	0.2						0.5		
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se
LOCATION	Month	Year	Year	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
Salt Plant Inflow	117	7	2021	August	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	118	7	2021	September	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	119	7	2021	October	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	120	8	2021	November	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	121	8	2021	December	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	122	8	2022	January	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	123	8	2022	Febraury	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	124	8	2022	March	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	125	8	2022	April	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	126	8	2022	May	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	127	8	2022	June	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	128	8	2022	July	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	129	8	2022	August	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	130	8	2022	September	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	131	8	2022	October	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	132	9	2022	November	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	133	9	2022	December	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	134	9	2023	January	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	135	9	2023	Febraury	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	136	9	2023	March	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	137	9	2023	April	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	138	9	2023	May	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	139	9	2023	June	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	140	9	2023	July	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	141	9	2023	August	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	142	9	2023	September	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	143	9	2023	October	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	144	10	2023	November	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	145	10	2023	December	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	146	10	2024	January	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	147	10	2024	Febraury	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	148	10	2024	March	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	149	10	2024	April	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	150	10	2024	May	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	151	10	2024	June	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	152	10	2024	July	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	153	10	2024	August	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	154	10	2024	September	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	155	10	2024	October	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	156	11	2024	November	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	157	11	2024	December	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	158	11	2025	January	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	159	11	2025	Febraury	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	160	11	2025	March	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	161	11	2025	April	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	162	11	2025	May	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	163	11	2025	June	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	164	11	2025	July	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	165	11	2025	August	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	166	11	2025	September	0	0	1.6	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	167	11	2025	October	0	0	1.6	0	15	690	0.21	0	0	0	652	0

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.0001				0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											0.5
	Model	Mine	Date		Ag	Na	Sr	Te	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	Month	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Salt Plant Inflow	117	7	2021	August	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	118	7	2021	September	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	119	7	2021	October	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	120	8	2021	November	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	121	8	2021	December	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	122	8	2022	January	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	123	8	2022	Febraury	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	124	8	2022	March	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	125	8	2022	April	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	126	8	2022	May	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	127	8	2022	June	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	128	8	2022	July	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	129	8	2022	August	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	130	8	2022	September	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	131	8	2022	October	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	132	9	2022	November	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	133	9	2022	December	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	134	9	2023	January	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	135	9	2023	Febraury	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	136	9	2023	March	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	137	9	2023	April	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	138	9	2023	May	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	139	9	2023	June	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	140	9	2023	July	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	141	9	2023	August	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	142	9	2023	September	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	143	9	2023	October	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	144	10	2023	November	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	145	10	2023	December	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	146	10	2024	January	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	147	10	2024	Febraury	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	148	10	2024	March	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	149	10	2024	April	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	150	10	2024	May	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	151	10	2024	June	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	152	10	2024	July	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	153	10	2024	August	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	154	10	2024	September	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	155	10	2024	October	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	156	11	2024	November	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	157	11	2024	December	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	158	11	2025	January	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	159	11	2025	Febraury	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	160	11	2025	March	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	161	11	2025	April	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	162	11	2025	May	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	163	11	2025	June	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	164	11	2025	July	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	165	11	2025	August	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	166	11	2025	September	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	167	11	2025	October	0	5.6E+03	260	0	0	0	0	0	0	0.041	0

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12			5		13	60	
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)															
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	Si	SO4	Cn_Total	NH4 (as N)	NO3	NO2	TKN
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/L	Total	mg N/L	mg/L	mg/L	mg/L
Salt Plant Inflow	**168**	**12**	**2025**	**November**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**169**	**12**	**2025**	**December**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**170**	**12**	**2026**	**January**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**171**	**12**	**2026**	**Febraury**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**172**	**12**	**2026**	**March**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**173**	**12**	**2026**	**April**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**174**	**12**	**2026**	**May**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**175**	**12**	**2026**	**June**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**176**	**12**	**2026**	**July**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**177**	**12**	**2026**	**August**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**178**	**12**	**2026**	**September**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**179**	**12**	**2026**	**October**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**180**	**13**	**2026**	**November**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**181**	**13**	**2026**	**December**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**182**	**13**	**2027**	**January**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**183**	**13**	**2027**	**Febraury**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**184**	**13**	**2027**	**March**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**185**	**13**	**2027**	**April**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
Salt Plant Inflow	**186**	**13**	**2027**	**May**	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0
				MINIMUM	6.5E+04	55	**4.2E+04**	0.024	1.3	970	0	53	**57**	0	0
				MAXIMUM	6.5E+04	55	**4.2E+04**	0.025	1.4	1.1E+03	0	55	**60**	0	0
				AVERAGE	6.5E+04	55	**4.2E+04**	0.024	1.4	1.1E+03	0	53	**57**	0	0

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)					0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)									0.5							
	Model	Mine	Date		P_dissolved	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	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
Salt Plant Inflow	**168**	**12**	**2025**	**November**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**169**	**12**	**2025**	**December**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**170**	**12**	**2026**	**January**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**171**	**12**	**2026**	**Febraury**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**172**	**12**	**2026**	**March**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**173**	**12**	**2026**	**April**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**174**	**12**	**2026**	**May**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**175**	**12**	**2026**	**June**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**176**	**12**	**2026**	**July**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**177**	**12**	**2026**	**August**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**178**	**12**	**2026**	**September**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**179**	**12**	**2026**	**October**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**180**	**13**	**2026**	**November**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**181**	**13**	**2026**	**December**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**182**	**13**	**2027**	**January**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**183**	**13**	**2027**	**Febraury**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**184**	**13**	**2027**	**March**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**185**	**13**	**2027**	**April**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
Salt Plant Inflow	**186**	**13**	**2027**	**May**	0	0	**0.19**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
				MINIMUM	0	0	**0.17**	0	0	0.068	0	0	**5.6**	0	1.5E+04	0
				MAXIMUM	0	0	**0.19**	0	0	0.072	0	0	**5.7**	0	1.6E+04	0
				AVERAGE	0	0	**0.19**	0	0	0.069	0	0	**5.6**	0	1.5E+04	0

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						0.002	0.3	0.001				0.000026	0.073	0.038		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						0.3	3.0	0.2						0.5		
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se
LOCATION	Month	Year	Year	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
Salt Plant Inflow	**168**	**12**	**2025**	**November**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**169**	**12**	**2025**	**December**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**170**	**12**	**2026**	**January**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**171**	**12**	**2026**	**Febraury**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**172**	**12**	**2026**	**March**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**173**	**12**	**2026**	**April**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**174**	**12**	**2026**	**May**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**175**	**12**	**2026**	**June**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**176**	**12**	**2026**	**July**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**177**	**12**	**2026**	**August**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**178**	**12**	**2026**	**September**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**179**	**12**	**2026**	**October**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**180**	**13**	**2026**	**November**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**181**	**13**	**2026**	**December**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**182**	**13**	**2027**	**January**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**183**	**13**	**2027**	**Febraury**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**184**	**13**	**2027**	**March**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**185**	**13**	**2027**	**April**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
Salt Plant Inflow	**186**	**13**	**2027**	**May**	0	0	**1.6**	0	15	690	0.21	0	0	0	652	0
				MINIMUM	0	0	**1.4**	0	15	615	0.19	0	0	0	652	0
				MAXIMUM	0	0	**1.6**	0	16	690	0.21	0	0	0	668	0
				AVERAGE	0	0	**1.6**	0	15	678	0.21	0	0	0	654	0

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.3 - B4 Pond/Salt Plant Inflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.0001				0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											0.5
	Model	Mine	Date		Ag	Na	Sr	Te	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	Month	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Salt Plant Inflow	**168**	**12**	**2025**	**November**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**169**	**12**	**2025**	**December**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**170**	**12**	**2026**	**January**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**171**	**12**	**2026**	**Febraury**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**172**	**12**	**2026**	**March**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**173**	**12**	**2026**	**April**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**174**	**12**	**2026**	**May**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**175**	**12**	**2026**	**June**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**176**	**12**	**2026**	**July**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**177**	**12**	**2026**	**August**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**178**	**12**	**2026**	**September**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**179**	**12**	**2026**	**October**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**180**	**13**	**2026**	**November**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**181**	**13**	**2026**	**December**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**182**	**13**	**2027**	**January**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**183**	**13**	**2027**	**Febraury**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**184**	**13**	**2027**	**March**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**185**	**13**	**2027**	**April**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
Salt Plant Inflow	**186**	**13**	**2027**	**May**	0	5.6E+03	260	0	0	0	0	0	0	0.041	0
				MINIMUM	0	5.0E+03	260	0	0	0	0	0	0	0.041	0
				MAXIMUM	0	5.6E+03	270	0	0	0	0	0	0	0.043	0
				AVERAGE	0	5.5E+03	262	0	0	0	0	0	0	0.041	0

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.4 - Attenuation Pond 2
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)			120	0.12			13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)													0.5							
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	SO4	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/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
Operations Water Quality (Years 3 to 13)																								
Attenuation Pond 2	**67**	**3**	**2017**	**June**	4.0	2.4	0.49	0	0.26	0.092	0.100	0.039	4.8E-04	6.6E-05	1.7E-04	1.5E-06	5.2E-05	3.9E-04	0	0	1.9E-03	5.8E-09	0.29	0
Attenuation Pond 2	**68**	**3**	**2017**	**July**	3.9	2.3	0.44	0	0.36	0.094	0.10	0.036	4.4E-04	6.0E-05	3.5E-04	5.5E-06	1.1E-04	3.6E-04	0	0	1.8E-03	7.0E-09	0.27	0
Attenuation Pond 2	**69**	**3**	**2017**	**August**	0.30	0.12	0	0	0.19	0.041	0.045	0	0	0	3.2E-04	6.7E-06	1.1E-04	9.7E-06	0	0	1.0E-05	3.5E-09	0.011	0
Attenuation Pond 2	**70**	**3**	**2017**	**September**	0.43	0.083	0	0	0.14	0.13	0.15	0	0	0	2.3E-04	4.7E-06	7.5E-05	6.7E-06	0	0	7.2E-06	2.1E-09	7.1E-03	0
Attenuation Pond 2	**71**	**3**	**2017**	**October**	0.53	0.056	0	0	0.092	0.20	0.22	0	0	0	1.5E-04	3.1E-06	5.0E-05	4.4E-06	0	0	4.8E-06	1.4E-09	4.7E-03	0
Attenuation Pond 2	**79**	**4**	**2018**	**June**	13	6.9	0	0	12	0.25	0.27	0	0	0	0.019	3.9E-04	**6.2E-03**	5.3E-04	0	0	6.0E-04	1.2E-07	0.53	0
Attenuation Pond 2	**80**	**4**	**2018**	**July**	22	11	9.8E-03	0	19	0.44	0.49	7.9E-04	9.6E-06	1.3E-06	0.031	6.4E-04	**0.010**	8.8E-04	0	0	1.0E-03	2.0E-07	0.87	0
Attenuation Pond 2	**81**	**4**	**2018**	**August**	4.2	2.0	0	0	3.4	0.24	0.27	0	0	0	5.5E-03	1.1E-04	1.8E-03	1.5E-04	0	0	1.7E-04	3.7E-08	0.15	0
Attenuation Pond 2	**82**	**4**	**2018**	**September**	2.7	1.1	0	0	1.9	0.30	0.33	0	0	0	3.0E-03	6.3E-05	1.0E-03	8.5E-05	0	0	9.7E-05	2.0E-08	0.086	0
Attenuation Pond 2	**83**	**4**	**2018**	**October**	2.1	0.69	0	0	1.2	0.37	0.41	0	0	0	1.9E-03	3.9E-05	6.2E-04	5.3E-05	0	0	6.0E-05	1.3E-08	0.053	0
Attenuation Pond 2	**91**	**5**	**2019**	**June**	12	6.2	0	0	11	0.14	0.16	0	0	0	0.016	3.3E-04	**5.1E-03**	4.8E-04	0	0	6.1E-04	9.1E-08	0.65	0
Attenuation Pond 2	**92**	**5**	**2019**	**July**	26	13	0	0	23	0.29	0.32	0	0	0	0.033	6.8E-04	**0.011**	1.0E-03	0	0	1.3E-03	1.9E-07	1.3	0
Attenuation Pond 2	**93**	**5**	**2019**	**August**	20	10.0	0	0	18	0.22	0.24	0	0	0	0.026	5.3E-04	**8.2E-03**	7.8E-04	0	0	9.9E-04	1.4E-07	1.1	0
Attenuation Pond 2	**94**	**5**	**2019**	**September**	9.0	4.4	0	0	7.8	0.20	0.22	0	0	0	0.011	2.3E-04	3.6E-03	3.4E-04	0	0	4.3E-04	6.4E-08	0.46	0
Attenuation Pond 2	**95**	**5**	**2019**	**October**	5.1	2.3	0	0	4.0	0.31	0.35	0	0	0	5.8E-03	1.2E-04	1.8E-03	1.8E-04	0	0	2.2E-04	3.3E-08	0.24	0
Attenuation Pond 2	**103**	**6**	**2020**	**June**	20	9.2	0	0	18	0.20	0.23	0	0	0	0.021	4.3E-04	**6.3E-03**	7.4E-04	0	0	1.1E-03	7.9E-08	1.4	0
Attenuation Pond 2	**104**	**6**	**2020**	**July**	41	19	0	0	36	0.41	0.45	0	0	0	0.043	8.7E-04	**0.013**	1.5E-03	0	0	2.2E-03	1.6E-07	2.9	0
Attenuation Pond 2	**105**	**6**	**2020**	**August**	32	14	0	0	27	0.30	0.34	0	0	0	0.033	6.7E-04	**9.9E-03**	1.2E-03	0	0	1.7E-03	1.2E-07	2.2	0
Attenuation Pond 2	**106**	**6**	**2020**	**September**	14	6.3	0	0	12	0.28	0.31	0	0	0	0.014	2.9E-04	4.3E-03	5.0E-04	0	0	7.5E-04	5.4E-08	0.98	0
Attenuation Pond 2	**107**	**6**	**2020**	**October**	7.2	3.0	0	0	5.7	0.39	0.43	0	0	0	6.9E-03	1.4E-04	2.0E-03	2.4E-04	0	0	3.6E-04	2.6E-08	0.47	0
Attenuation Pond 2	**115**	**7**	**2021**	**June**	19	9.2	0	0	17	0.21	0.23	0	0	0	0.023	4.7E-04	**7.2E-03**	7.2E-04	0	0	9.6E-04	1.2E-07	1.1	0
Attenuation Pond 2	**116**	**7**	**2021**	**July**	39	19	0	0	34	0.41	0.45	0	0	0	0.047	9.5E-04	**0.015**	1.5E-03	0	0	2.0E-03	2.4E-07	2.3	0
Attenuation Pond 2	**117**	**7**	**2021**	**August**	30	14	0	0	26	0.30	0.34	0	0	0	0.036	7.3E-04	**0.011**	1.1E-03	0	0	1.5E-03	1.9E-07	1.7	0
Attenuation Pond 2	**118**	**7**	**2021**	**September**	13	6.3	0	0	11	0.28	0.31	0	0	0	0.016	3.2E-04	4.9E-03	4.9E-04	0	0	6.5E-04	8.1E-08	0.75	0
Attenuation Pond 2	**119**	**7**	**2021**	**October**	6.8	3.0	0	0	5.4	0.39	0.43	0	0	0	7.5E-03	1.5E-04	2.3E-03	2.3E-04	0	0	3.1E-04	3.9E-08	0.36	0
Attenuation Pond 2	**127**	**8**	**2022**	**June**	17	9.2	0	0	16	0.21	0.23	0	0	0	0.025	5.2E-04	**8.2E-03**	7.0E-04	0	0	8.0E-04	1.6E-07	0.71	0
Attenuation Pond 2	**128**	**8**	**2022**	**July**	35	19	0	0	32	0.41	0.45	0	0	0	0.051	1.1E-03	**0.017**	1.4E-03	0	0	1.6E-03	3.4E-07	1.4	0
Attenuation Pond 2	**129**	**8**	**2022**	**August**	27	14	0	0	24	0.30	0.34	0	0	0	0.039	8.1E-04	**0.013**	1.1E-03	0	0	1.3E-03	2.6E-07	1.1	0
Attenuation Pond 2	**130**	**8**	**2022**	**September**	12	6.3	0	0	11	0.28	0.31	0	0	0	0.017	3.5E-04	**5.6E-03**	4.8E-04	0	0	5.5E-04	1.1E-07	0.48	0
Attenuation Pond 2	**131**	**8**	**2022**	**October**	6.3	3.0	0	0	5.1	0.39	0.43	0	0	0	8.1E-03	1.7E-04	2.7E-03	2.3E-04	0	0	2.6E-04	5.4E-08	0.23	0
Attenuation Pond 2	**139**	**9**	**2023**	**June**	19	9.2	0	0	17	0.21	0.23	0	0	0	0.023	4.8E-04	**7.2E-03**	7.2E-04	0	0	9.5E-04	1.2E-07	1.1	0
Attenuation Pond 2	**140**	**9**	**2023**	**July**	38	19	0	0	34	0.41	0.45	0	0	0	0.047	9.6E-04	**0.015**	1.5E-03	0	0	1.9E-03	2.5E-07	2.2	0
Attenuation Pond 2	**141**	**9**	**2023**	**August**	29	14	0	0	26	0.30	0.34	0	0	0	0.036	7.4E-04	**0.011**	1.1E-03	0	0	1.5E-03	1.9E-07	1.7	0
Attenuation Pond 2	**142**	**9**	**2023**	**September**	13	6.2	0	0	11	0.28	0.31	0	0	0	0.016	3.2E-04	4.8E-03	4.9E-04	0	0	6.6E-04	8.3E-08	0.75	0
Attenuation Pond 2	**143**	**9**	**2023**	**October**	6.8	3.0	0	0	5.4	0.39	0.43	0	0	0	7.4E-03	1.5E-04	2.3E-03	2.3E-04	0	0	3.1E-04	3.9E-08	0.36	0
Attenuation Pond 2	**151**	**10**	**2024**	**June**	17	8.1	0	0	14	0.25	0.28	0	0	0	0.018	3.6E-04	**5.3E-03**	7.2E-04	0	0	9.5E-04	2.1E-07	1.6	0

Table C-2.4 - Attenuation Pond 2
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						0.002	0.3	0.001				0.000026	0.073	0.038		0.001			0.0008				0.015		0.03
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						0.3	3.0	0.2						0.5											0.5
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L
Operations Water Quality (Years 3 to 13)																								
Attenuation Pond 2	**67**	**3**	**2017**	**June**	5.0E-07	1.9E-05	1.5E-03	9.6E-06	2.3E-07	0.032	1.7E-04	0	2.0E-05	2.0E-05	0.020	5.0E-05	0.044	5.4E-05	0	3.1E-07	1.8E-07	2.8E-08	5.0E-07	1.9E-05	9.6E-05
Attenuation Pond 2	**68**	**3**	**2017**	**July**	1.2E-06	1.8E-05	1.4E-03	8.9E-06	2.3E-07	0.032	2.2E-04	0	1.8E-05	1.9E-05	0.020	4.6E-05	0.040	1.0E-04	0	1.5E-06	3.0E-07	1.8E-07	9.1E-07	1.9E-05	8.9E-05
Attenuation Pond 2	**69**	**3**	**2017**	**August**	1.2E-06	6.3E-07	1.6E-06	1.2E-07	6.4E-08	5.6E-03	1.1E-04	0	4.1E-07	9.7E-07	2.8E-03	0	5.9E-04	8.7E-05	0	2.0E-06	2.4E-07	2.5E-07	7.8E-07	1.7E-06	1.4E-06
Attenuation Pond 2	**70**	**3**	**2017**	**September**	8.1E-07	4.4E-07	6.7E-07	8.0E-08	2.7E-08	3.9E-03	8.1E-05	0	2.4E-07	6.6E-07	1.9E-03	0	4.0E-04	5.8E-05	0	1.4E-06	1.6E-07	1.8E-07	5.3E-07	1.2E-06	9.9E-07
Attenuation Pond 2	**71**	**3**	**2017**	**October**	5.4E-07	2.9E-07	4.5E-07	5.4E-08	1.8E-08	2.6E-03	5.4E-05	0	1.6E-07	4.4E-07	1.3E-03	0	2.7E-04	3.9E-05	0	9.3E-07	1.0E-07	1.2E-07	3.5E-07	8.0E-07	6.6E-07
Attenuation Pond 2	**79**	**4**	**2018**	**June**	6.5E-05	3.5E-05	3.0E-06	6.5E-06	1.2E-07	0.31	6.8E-03	0	1.5E-05	5.2E-05	0.15	0	0.032	4.5E-03	0	1.2E-04	1.2E-05	1.5E-05	4.0E-05	1.0E-04	8.0E-05
Attenuation Pond 2	**80**	**4**	**2018**	**July**	1.1E-04	5.9E-05	3.6E-05	1.1E-05	2.3E-07	0.52	0.011	0	2.5E-05	8.6E-05	0.25	1.0E-06	0.054	7.4E-03	0	1.9E-04	1.9E-05	2.4E-05	6.6E-05	1.7E-04	1.3E-04
Attenuation Pond 2	**81**	**4**	**2018**	**August**	1.9E-05	1.0E-05	2.5E-06	1.9E-06	1.0E-07	0.091	2.0E-03	0	4.4E-06	1.5E-05	0.044	0	9.4E-03	1.3E-03	0	3.4E-05	3.4E-06	4.3E-06	1.2E-05	2.9E-05	2.3E-05
Attenuation Pond 2	**82**	**4**	**2018**	**September**	1.0E-05	5.7E-06	1.2E-06	1.0E-06	4.9E-08	0.051	1.1E-03	0	2.5E-06	8.5E-06	0.025	0	5.2E-03	7.3E-04	0	1.9E-05	1.9E-06	2.4E-06	6.5E-06	1.6E-05	1.3E-05
Attenuation Pond 2	**83**	**4**	**2018**	**October**	6.5E-06	3.5E-06	7.5E-07	6.5E-07	3.0E-08	0.032	6.8E-04	0	1.5E-06	5.3E-06	0.015	0	3.3E-03	4.5E-04	0	1.2E-05	1.2E-06	1.5E-06	4.1E-06	1.0E-05	8.0E-06
Attenuation Pond 2	**91**	**5**	**2019**	**June**	5.0E-05	2.6E-05	6.9E-05	4.9E-06	1.5E-07	0.28	6.0E-03	0	1.3E-05	3.8E-05	0.16	0	0.032	3.8E-03	0	9.5E-05	8.8E-06	1.2E-05	3.5E-05	9.0E-05	7.2E-05
Attenuation Pond 2	**92**	**5**	**2019**	**July**	1.0E-04	5.3E-05	1.5E-04	1.0E-05	3.2E-07	0.59	0.012	0	2.7E-05	7.9E-05	0.34	0	0.067	7.8E-03	0	2.0E-04	1.8E-05	2.4E-05	7.2E-05	1.9E-04	1.5E-04
Attenuation Pond 2	**93**	**5**	**2019**	**August**	8.0E-05	4.1E-05	1.2E-04	7.7E-06	2.5E-07	0.46	9.6E-03	0	2.1E-05	6.1E-05	0.27	0	0.052	6.1E-03	0	1.5E-04	1.4E-05	1.8E-05	5.6E-05	1.5E-04	1.2E-04
Attenuation Pond 2	**94**	**5**	**2019**	**September**	3.5E-05	1.8E-05	5.2E-05	3.4E-06	1.2E-07	0.20	4.2E-03	0	9.3E-06	2.7E-05	0.12	0	0.023	2.7E-03	0	6.7E-05	6.1E-06	8.0E-06	2.4E-05	6.4E-05	5.1E-05
Attenuation Pond 2	**95**	**5**	**2019**	**October**	1.8E-05	9.2E-06	2.7E-05	1.7E-06	6.0E-08	0.10	2.2E-03	0	4.8E-06	1.4E-05	0.061	0	0.012	1.4E-03	0	3.4E-05	3.2E-06	4.1E-06	1.3E-05	3.3E-05	2.6E-05
Attenuation Pond 2	**103**	**6**	**2020**	**June**	5.1E-05	2.2E-05	2.8E-04	4.6E-06	2.2E-07	0.42	8.5E-03	0	1.9E-05	3.2E-05	0.32	0	0.056	4.9E-03	0	1.2E-04	8.2E-06	1.2E-05	4.7E-05	1.3E-04	1.1E-04
Attenuation Pond 2	**104**	**6**	**2020**	**July**	1.0E-04	4.4E-05	5.8E-04	9.4E-06	4.5E-07	0.86	0.017	0	3.8E-05	6.6E-05	0.65	0	0.11	9.9E-03	0	2.4E-04	1.7E-05	2.5E-05	9.7E-05	2.7E-04	2.2E-04
Attenuation Pond 2	**105**	**6**	**2020**	**August**	8.0E-05	3.4E-05	4.4E-04	7.2E-06	3.5E-07	0.66	0.013	0	2.9E-05	5.0E-05	0.50	0	0.088	7.6E-03	0	1.8E-04	1.3E-05	1.9E-05	7.4E-05	2.1E-04	1.7E-04
Attenuation Pond 2	**106**	**6**	**2020**	**September**	3.5E-05	1.5E-05	1.9E-04	3.1E-06	1.7E-07	0.29	5.8E-03	0	1.3E-05	2.2E-05	0.22	0	0.038	3.3E-03	0	7.9E-05	5.6E-06	8.3E-06	3.2E-05	9.1E-05	7.4E-05
Attenuation Pond 2	**107**	**6**	**2020**	**October**	1.7E-05	7.1E-06	9.2E-05	1.5E-06	8.0E-08	0.14	2.7E-03	0	6.1E-06	1.0E-05	0.10	0	0.018	1.6E-03	0	3.8E-05	2.7E-06	3.9E-06	1.5E-05	4.3E-05	3.5E-05
Attenuation Pond 2	**115**	**7**	**2021**	**June**	6.7E-05	3.3E-05	1.6E-04	6.4E-06	2.2E-07	0.42	8.7E-03	0	1.9E-05	4.9E-05	0.27	0	0.051	5.4E-03	0	1.3E-04	1.1E-05	1.5E-05	5.0E-05	1.3E-04	1.1E-04
Attenuation Pond 2	**116**	**7**	**2021**	**July**	1.4E-04	6.7E-05	3.2E-04	1.3E-05	4.6E-07	0.86	0.018	0	3.9E-05	1.0E-04	0.55	0	0.10	0.011	0	2.7E-04	2.3E-05	3.2E-05	1.0E-04	2.7E-04	2.2E-04
Attenuation Pond 2	**117**	**7**	**2021**	**August**	1.1E-04	5.2E-05	2.4E-04	1.0E-05	3.5E-07	0.66	0.014	0	3.0E-05	7.7E-05	0.42	0	0.079	8.4E-03	0	2.1E-04	1.8E-05	2.4E-05	7.9E-05	2.1E-04	1.7E-04
Attenuation Pond 2	**118**	**7**	**2021**	**September**	4.6E-05	2.3E-05	1.1E-04	4.4E-06	1.7E-07	0.29	6.0E-03	0	1.3E-05	3.4E-05	0.18	0	0.034	3.7E-03	0	9.1E-05	8.0E-06	1.1E-05	3.4E-05	9.1E-05	7.4E-05
Attenuation Pond 2	**119**	**7**	**2021**	**October**	2.2E-05	1.1E-05	5.1E-05	2.1E-06	8.2E-08	0.14	2.8E-03	0	6.3E-06	1.6E-05	0.087	0	0.016	1.8E-03	0	4.3E-05	3.8E-06	5.1E-06	1.6E-05	4.3E-05	3.5E-05
Attenuation Pond 2	**127**	**8**	**2022**	**June**	8.6E-05	4.7E-05	8.2E-06	8.6E-06	2.2E-07	0.42	9.1E-03	0	2.0E-05	6.9E-05	0.21	0	0.043	6.0E-03	0	1.5E-04	1.6E-05	2.0E-05	5.4E-05	1.3E-04	1.1E-04
Attenuation Pond 2	**128**	**8**	**2022**	**July**	1.7E-04	9.6E-05	1.6E-05	1.7E-05	4.6E-07	0.85	0.019	0	4.0E-05	1.4E-04	0.42	0	0.088	0.012	0	3.2E-04	3.2E-05	4.0E-05	1.1E-04	2.7E-04	2.2E-04
Attenuation Pond 2	**129**	**8**	**2022**	**August**	1.3E-04	7.3E-05	1.2E-05	1.3E-05	3.6E-07	0.65	0.014	0	3.1E-05	1.1E-04	0.32	0	0.068	9.3E-03	0	2.4E-04	2.4E-05	3.0E-05	8.4E-05	2.1E-04	1.7E-04
Attenuation Pond 2	**130**	**8**	**2022**	**September**	5.9E-05	3.2E-05	5.8E-06	5.9E-06	1.7E-07	0.29	6.2E-03	0	1.4E-05	4.7E-05	0.14	0	0.030	4.1E-03	0	1.1E-04	1.1E-05	1.3E-05	3.7E-05	9.0E-05	7.3E-05
Attenuation Pond 2	**131**	**8**	**2022**	**October**	2.8E-05	1.5E-05	2.8E-06	2.8E-06	8.3E-08	0.14	3.0E-03	0	6.5E-06	2.3E-05	0.067	0	0.014	1.9E-03	0	5.0E-05	5.1E-06	6.3E-06	1.7E-05	4.3E-05	3.5E-05
Attenuation Pond 2	**139**	**9**	**2023**	**June**	6.9E-05	3.5E-05	1.5E-04	6.6E-06	2.2E-07	0.42	8.8E-03	0	1.9E-05	5.1E-05	0.26	0	0.050	5.4E-03	0	1.4E-04	1.2E-05	1.6E-05	5.1E-05	1.3E-04	1.1E-04
Attenuation Pond 2	**140**	**9**	**2023**	**July**	1.4E-04	7.0E-05	3.0E-04	1.3E-05	4.6E-07	0.85	0.018	0	4.0E-05	1.0E-04	0.54	0	0.10	0.011	0	2.8E-04	2.4E-05	3.2E-05	1.0E-04	2.6E-04	2.2E-04
Attenuation Pond 2	**141**	**9**	**2023**	**August**	1.1E-04	5.3E-05	2.4E-04	1.0E-05	3.6E-07	0.65	0.014	0	3.0E-05	7.8E-05	0.42	0	0.079	8.4E-03	0	2.1E-04	1.8E-05	2.4E-05	7.9E-05	2.0E-04	1.7E-04
Attenuation Pond 2	**142**	**9**	**2023**	**September**	4.6E-05	2.3E-05	1.1E-04	4.4E-06	1.8E-07	0.29	6.0E-03	0	1.3E-05	3.4E-05	0.18	0	0.034	3.7E-03	0	9.2E-05	8.1E-06	1.1E-05	3.5E-05	8.8E-05	7.4E-05
Attenuation Pond 2	**143**	**9**	**2023**	**October**	2.2E-05	1.1E-05	5.0E-05	2.1E-06	8.4E-08	0.14	2.9E-03	0	6.3E-06	1.6E-05	0.087	0	0.016	1.7E-03	0	4.4E-05	3.8E-06	5.0E-06	1.6E-05	4.2E-05	3.5E-05
Attenuation Pond 2	**151**	**10**	**2024**	**June**	4.9E-05	2.1E-05	4.5E-04	4.5E-06	8.2E-06	0.41	7.0E-03	0	3.4E-05	3.5E-05	0.30	0	0.053	5.8E-03	0	9.8E-05	1.1E-05	9.2E-06	5.1E-05	1.1E-04	9.7E-05

Table C-2.4 - Attenuation Pond 2
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						120	0.12			13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)																0.5							
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	SO4	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/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
Attenuation Pond 2	152	10	2024	July	34	16	0	0	28	0.49	0.54	0	0	0	0.037	7.3E-04	**0.011**	1.5E-03	0	0	1.9E-03	4.3E-07	3.1	0
Attenuation Pond 2	153	10	2024	August	26	13	0	0	21	0.36	0.40	0	0	0	0.029	5.6E-04	**8.4E-03**	1.1E-03	0	0	1.4E-03	3.6E-07	2.4	0
Attenuation Pond 2	154	10	2024	September	12	5.5	0	0	9.4	0.33	0.37	0	0	0	0.013	2.5E-04	3.7E-03	5.0E-04	0	0	6.3E-04	1.6E-07	1.1	0
Attenuation Pond 2	155	10	2024	October	5.8	2.4	0	0	4.2	0.44	0.48	0	0	0	5.6E-03	1.1E-04	1.6E-03	2.2E-04	0	0	2.8E-04	6.9E-08	0.48	0
Attenuation Pond 2	163	11	2025	June	18	11	0	0	14	0.37	0.41	0	0	0	0.028	5.2E-04	**8.2E-03**	1.2E-03	0	0	9.9E-04	7.5E-07	2.5	0
Attenuation Pond 2	164	11	2025	July	33	20	0	0	25	0.66	0.73	0	0	0	0.051	9.5E-04	**0.015**	2.2E-03	0	0	1.8E-03	1.4E-06	4.5	0
Attenuation Pond 2	165	11	2025	August	25	15	0	0	19	0.47	0.52	0	0	0	0.038	7.1E-04	**0.011**	1.6E-03	0	0	1.4E-03	1.0E-06	3.4	0
Attenuation Pond 2	166	11	2025	September	11	6.6	0	0	8.2	0.43	0.47	0	0	0	0.017	3.1E-04	4.9E-03	7.1E-04	0	0	6.0E-04	4.5E-07	1.5	0
Attenuation Pond 2	167	11	2025	October	4.6	2.3	0	0	2.9	0.42	0.47	0	0	0	5.9E-03	1.1E-04	1.7E-03	2.5E-04	0	0	2.1E-04	1.6E-07	0.53	0
Attenuation Pond 2	175	12	2026	June	18	11	0	0	13	0.37	0.41	0	0	0	0.025	4.3E-04	**6.7E-03**	1.2E-03	0	0	1.1E-03	7.7E-07	3.0	0
Attenuation Pond 2	176	12	2026	July	33	19	0	0	24	0.66	0.73	0	0	0	0.045	7.9E-04	**0.012**	2.2E-03	0	0	2.0E-03	1.4E-06	5.4	0
Attenuation Pond 2	177	12	2026	August	25	15	0	0	18	0.47	0.52	0	0	0	0.034	6.0E-04	**9.2E-03**	1.7E-03	0	0	1.5E-03	1.1E-06	4.1	0
Attenuation Pond 2	178	12	2026	September	11	6.4	0	0	8.0	0.43	0.48	0	0	0	0.015	2.6E-04	4.0E-03	7.3E-04	0	0	6.6E-04	4.6E-07	1.8	0
Attenuation Pond 2	179	12	2026	October	4.6	2.3	0	0	2.8	0.42	0.47	0	0	0	5.2E-03	9.2E-05	1.4E-03	2.6E-04	0	0	2.3E-04	1.6E-07	0.63	0
				MINIMUM	0.30	0.056	9.8E-03	0	0.092	0.041	0.045	7.9E-04	9.6E-06	1.3E-06	1.5E-04	1.5E-06	5.0E-05	4.4E-06	0	0	4.8E-06	1.4E-09	4.7E-03	0
				MAXIMUM	41	20	0.49	0	36	0.66	0.73	0.039	4.8E-04	6.6E-05	0.051	1.1E-03	**0.017**	2.2E-03	0	0	2.2E-03	1.4E-06	5.4	0
				AVERAGE	17	8.4	0.31	0	14	0.33	0.36	0.025	3.1E-04	4.2E-05	0.021	4.1E-04	**6.3E-03**	7.5E-04	0	0	9.3E-04	2.5E-07	1.3	0
Long Term Water Quality (Year 26+)																								
				SUMMER AVERAGE	0.56	0.35	4.2E-03	0	0.38	0.014	0.016	3.3E-04	4.1E-06	5.6E-07	7.8E-04	1.4E-05	2.1E-04	4.1E-05	0	0	4.8E-05	2.6E-08	0.093	0

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.4 - Attenuation Pond 2
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						0.002	0.3	0.001				0.000026	0.073	0.038		0.001			0.0008				0.015		0.03
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						0.3	3.0	0.2						0.5											0.5
	Model	**Mine**	**Date**																						
LOCATION	**Month**	**Year**	**Year**	**Month**	**Co**	**Cu[4]**	**Fe**	**Pb[4]**	**Li**	**Mg**	**Mn**	**Hg**	**Mo**	**Ni[4]**	**K**	**Se**	**Na**	**Sr**	**Tl**	**Sn**	**Ti**	**W**	**U**	**V**	**Zn**
					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
Attenuation Pond 2	**152**	**10**	**2024**	**July**	1.0E-04	4.4E-05	9.2E-04	9.2E-06	1.7E-05	0.82	0.014	0	7.0E-05	7.1E-05	0.61	0	0.11	0.012	0	2.0E-04	2.2E-05	1.9E-05	1.0E-04	2.1E-04	2.0E-04
Attenuation Pond 2	**153**	**10**	**2024**	**August**	8.0E-05	3.5E-05	7.3E-04	7.3E-06	1.5E-05	0.64	0.011	0	5.6E-05	5.7E-05	0.47	0	0.083	9.4E-03	0	1.5E-04	1.8E-05	1.4E-05	8.1E-05	1.6E-04	1.5E-04
Attenuation Pond 2	**154**	**10**	**2024**	**September**	3.5E-05	1.5E-05	3.2E-04	3.2E-06	6.4E-06	0.28	4.7E-03	0	2.5E-05	2.5E-05	0.20	0	0.036	4.1E-03	0	6.7E-05	7.9E-06	6.3E-06	3.5E-05	7.1E-05	6.6E-05
Attenuation Pond 2	**155**	**10**	**2024**	**October**	1.5E-05	6.8E-06	1.4E-04	1.4E-06	2.9E-06	0.12	2.1E-03	0	1.1E-05	1.1E-05	0.091	0	0.016	1.8E-03	0	3.0E-05	3.5E-06	2.8E-06	1.6E-05	3.2E-05	2.9E-05
Attenuation Pond 2	**163**	**11**	**2025**	**June**	1.1E-04	5.4E-05	9.9E-04	1.1E-05	3.5E-05	0.66	8.6E-03	0	9.8E-05	9.3E-05	0.38	0	0.072	0.014	0	1.5E-04	3.0E-05	1.5E-05	1.0E-04	1.2E-04	1.4E-04
Attenuation Pond 2	**164**	**11**	**2025**	**July**	1.9E-04	9.8E-05	1.8E-03	1.9E-05	6.3E-05	1.2	0.016	0	1.8E-04	1.7E-04	0.70	0	0.13	0.025	0	2.8E-04	5.6E-05	2.7E-05	1.8E-04	2.1E-04	2.5E-04
Attenuation Pond 2	**165**	**11**	**2025**	**August**	1.4E-04	7.3E-05	1.4E-03	1.4E-05	4.8E-05	0.90	0.012	0	1.4E-04	1.3E-04	0.53	0	0.100	0.019	0	2.1E-04	4.2E-05	2.0E-05	1.4E-04	1.6E-04	1.9E-04
Attenuation Pond 2	**166**	**11**	**2025**	**September**	6.3E-05	3.2E-05	6.0E-04	6.3E-06	2.1E-05	0.39	5.1E-03	0	5.9E-05	5.6E-05	0.23	0	0.044	8.2E-03	0	9.0E-05	1.8E-05	8.6E-06	6.0E-05	7.0E-05	8.1E-05
Attenuation Pond 2	**167**	**11**	**2025**	**October**	2.2E-05	1.1E-05	2.1E-04	2.2E-06	7.4E-06	0.14	1.8E-03	0	2.1E-05	2.0E-05	0.081	0	0.015	2.9E-03	0	3.2E-05	6.5E-06	3.1E-06	2.1E-05	2.5E-05	2.9E-05
Attenuation Pond 2	**175**	**12**	**2026**	**June**	8.5E-05	3.7E-05	1.2E-03	8.2E-06	3.6E-05	0.65	7.5E-03	0	1.0E-04	7.2E-05	0.44	0	0.078	0.014	0	1.2E-04	2.7E-05	9.3E-06	1.0E-04	1.1E-04	1.3E-04
Attenuation Pond 2	**176**	**12**	**2026**	**July**	1.5E-04	6.8E-05	2.2E-03	1.5E-05	6.6E-05	1.2	0.014	0	1.9E-04	1.3E-04	0.81	0	0.14	0.026	0	2.2E-04	4.9E-05	1.7E-05	1.8E-04	1.9E-04	2.4E-04
Attenuation Pond 2	**177**	**12**	**2026**	**August**	1.2E-04	5.1E-05	1.6E-03	1.1E-05	5.0E-05	0.89	0.010	0	1.4E-04	9.9E-05	0.61	0	0.11	0.019	0	1.7E-04	3.7E-05	1.3E-05	1.4E-04	1.5E-04	1.8E-04
Attenuation Pond 2	**178**	**12**	**2026**	**September**	5.1E-05	2.2E-05	7.1E-04	4.9E-06	2.2E-05	0.39	4.5E-03	0	6.3E-05	4.3E-05	0.27	0	0.047	8.4E-03	0	7.3E-05	1.6E-05	5.6E-06	6.0E-05	6.4E-05	7.9E-05
Attenuation Pond 2	**179**	**12**	**2026**	**October**	1.8E-05	7.9E-06	2.5E-04	1.7E-06	7.7E-06	0.14	1.6E-03	0	2.2E-05	1.5E-05	0.095	0	0.017	3.0E-03	0	2.6E-05	5.7E-06	2.0E-06	2.1E-05	2.3E-05	2.8E-05
				MINIMUM	5.0E-07	2.9E-07	4.5E-07	5.4E-08	1.8E-08	2.6E-03	5.4E-05	0	1.6E-07	4.4E-07	1.3E-03	1.0E-06	2.7E-04	3.9E-05	0	3.1E-07	1.0E-07	2.8E-08	3.5E-07	8.0E-07	6.6E-07
				MAXIMUM	1.9E-04	9.8E-05	2.2E-03	1.9E-05	6.6E-05	1.2	0.019	0	1.9E-04	1.7E-04	0.81	5.0E-05	0.14	0.026	0	3.2E-04	5.6E-05	4.0E-05	1.8E-04	2.7E-04	2.5E-04
				AVERAGE	6.5E-05	3.3E-05	4.0E-04	6.7E-06	8.2E-06	0.42	7.5E-03	0	3.6E-05	5.2E-05	0.27	3.2E-05	0.051	6.6E-03	0	1.2E-04	1.4E-05	1.3E-05	5.5E-05	1.1E-04	1.0E-04
Long Term Water Quality (Year 26+)																									
				SUMMER AVERAGE	2.9E-06	1.5E-06	5.0E-05	3.6E-07	1.2E-06	0.020	2.3E-04	0	3.6E-06	2.7E-06	0.013	4.3E-07	2.7E-03	4.6E-04	0	3.9E-06	9.1E-07	3.1E-07	3.2E-06	3.3E-06	4.8E-06

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.5 - Tiriganiaq Open Pit
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						120	0.12			13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)																0.5							
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	SO4	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/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
Pre-Development and Operations Water Quality (Years -1 to 13)																								
Tiriganiaq Open Pit	**31**	**-1**	**2014**	**June**	3.7	2.7	0	1.3E-04	1.1	0.66	0.73	0	0	0	7.1E-03	1.3E-04	2.3E-03	4.0E-04	0	0	1.5E-04	4.2E-07	0.88	0
Tiriganiaq Open Pit	**32**	**-1**	**2014**	**July**	4.6	3.8	0	1.8E-04	1.5	0.66	0.73	0	0	0	1.0E-02	1.8E-04	3.2E-03	5.6E-04	0	0	2.2E-04	5.9E-07	1.2	0
Tiriganiaq Open Pit	**33**	**-1**	**2014**	**August**	3.5	2.4	0	1.2E-04	1.00	0.66	0.73	0	0	0	6.5E-03	1.1E-04	2.1E-03	3.6E-04	0	0	1.4E-04	3.8E-07	0.80	0
Tiriganiaq Open Pit	**34**	**-1**	**2014**	**September**	2.3	1.1	0	5.2E-05	0.44	0.66	0.73	0	0	0	2.8E-03	5.0E-05	9.1E-04	1.6E-04	0	0	6.2E-05	1.7E-07	0.35	0
Tiriganiaq Open Pit	**35**	**-1**	**2014**	**October**	2.1	0.77	0	3.8E-05	0.31	0.66	0.73	0	0	0	2.0E-03	3.6E-05	6.5E-04	1.1E-04	0	0	4.4E-05	1.2E-07	0.25	0
Tiriganiaq Open Pit	**43**	**1**	**2015**	**June**	7.6	7.2	0	3.5E-04	2.9	0.66	0.73	0	0	0	0.019	3.4E-04	**6.1E-03**	1.1E-03	0	0	4.1E-04	1.1E-06	2.4	0
Tiriganiaq Open Pit	**44**	**1**	**2015**	**July**	8.9	8.6	0	4.2E-04	3.5	0.66	0.73	0	0	0	0.023	4.1E-04	**7.4E-03**	1.3E-03	0	0	5.0E-04	1.4E-06	2.8	0
Tiriganiaq Open Pit	**45**	**1**	**2015**	**August**	5.8	5.1	0	2.5E-04	2.1	0.66	0.73	0	0	0	0.013	2.4E-04	4.3E-03	7.5E-04	0	0	2.9E-04	8.0E-07	1.7	0
Tiriganiaq Open Pit	**46**	**1**	**2015**	**September**	3.3	2.2	0	1.1E-04	0.91	0.66	0.73	0	0	0	5.9E-03	1.0E-04	1.9E-03	3.3E-04	0	0	1.3E-04	3.5E-07	0.73	0
Tiriganiaq Open Pit	**47**	**1**	**2015**	**October**	2.8	1.6	0	7.8E-05	0.66	0.66	0.73	0	0	0	4.3E-03	7.5E-05	1.4E-03	2.4E-04	0	0	9.2E-05	2.5E-07	0.53	0
Tiriganiaq Open Pit	**55**	**2**	**2016**	**June**	7.6	7.2	0	3.5E-04	2.9	0.66	0.73	0	0	0	0.019	3.4E-04	**6.1E-03**	1.1E-03	0	0	4.1E-04	1.1E-06	2.4	0
Tiriganiaq Open Pit	**56**	**2**	**2016**	**July**	8.9	8.7	0	4.2E-04	3.5	0.66	0.73	0	0	0	0.023	4.1E-04	**7.4E-03**	1.3E-03	0	0	5.0E-04	1.4E-06	2.8	0
Tiriganiaq Open Pit	**57**	**2**	**2016**	**August**	5.8	5.1	0	2.5E-04	2.1	0.66	0.73	0	0	0	0.014	2.4E-04	4.3E-03	7.5E-04	0	0	2.9E-04	8.0E-07	1.7	0
Tiriganiaq Open Pit	**58**	**2**	**2016**	**September**	3.3	2.2	0	1.1E-04	0.92	0.66	0.73	0	0	0	5.9E-03	1.0E-04	1.9E-03	3.3E-04	0	0	1.3E-04	3.5E-07	0.73	0
Tiriganiaq Open Pit	**59**	**2**	**2016**	**October**	2.8	1.6	0	7.8E-05	0.66	0.66	0.73	0	0	0	4.3E-03	7.5E-05	1.4E-03	2.4E-04	0	0	9.2E-05	2.5E-07	0.53	0
Tiriganiaq Open Pit	**67**	**3**	**2017**	**June**	7.6	7.2	0	3.5E-04	2.9	0.66	0.73	0	0	0	0.019	3.4E-04	**6.1E-03**	1.1E-03	0	0	4.1E-04	1.1E-06	2.4	0
Tiriganiaq Open Pit	**68**	**3**	**2017**	**July**	8.9	8.7	0	4.2E-04	3.5	0.66	0.73	0	0	0	0.023	4.1E-04	**7.4E-03**	1.3E-03	0	0	5.0E-04	1.4E-06	2.8	0
Tiriganiaq Open Pit	**69**	**3**	**2017**	**August**	5.8	5.1	0	2.5E-04	2.1	0.66	0.73	0	0	0	0.014	2.4E-04	4.3E-03	7.5E-04	0	0	2.9E-04	8.0E-07	1.7	0
Tiriganiaq Open Pit	**70**	**3**	**2017**	**September**	3.3	2.2	0	1.1E-04	0.92	0.66	0.73	0	0	0	5.9E-03	1.0E-04	1.9E-03	3.3E-04	0	0	1.3E-04	3.5E-07	0.73	0
Tiriganiaq Open Pit	**71**	**3**	**2017**	**October**	2.8	1.6	0	7.8E-05	0.66	0.66	0.73	0	0	0	4.3E-03	7.5E-05	1.4E-03	2.4E-04	0	0	9.2E-05	2.5E-07	0.53	0
Tiriganiaq Open Pit	**79**	**4**	**2018**	**June**	7.6	7.2	0	3.5E-04	2.9	0.66	0.73	0	0	0	0.019	3.4E-04	**6.1E-03**	1.1E-03	0	0	4.1E-04	1.1E-06	2.4	0
Tiriganiaq Open Pit	**80**	**4**	**2018**	**July**	8.9	8.7	0	4.2E-04	3.5	0.66	0.73	0	0	0	0.023	4.1E-04	**7.4E-03**	1.3E-03	0	0	5.0E-04	1.4E-06	2.8	0
Tiriganiaq Open Pit	**81**	**4**	**2018**	**August**	5.8	5.1	0	2.5E-04	2.1	0.66	0.73	0	0	0	0.014	2.4E-04	4.3E-03	7.5E-04	0	0	2.9E-04	8.0E-07	1.7	0
Tiriganiaq Open Pit	**82**	**4**	**2018**	**September**	3.3	2.2	0	1.1E-04	0.92	0.66	0.73	0	0	0	5.9E-03	1.0E-04	1.9E-03	3.3E-04	0	0	1.3E-04	3.5E-07	0.73	0
Tiriganiaq Open Pit	**83**	**4**	**2018**	**October**	2.8	1.6	0	7.8E-05	0.66	0.66	0.73	0	0	0	4.3E-03	7.5E-05	1.4E-03	2.4E-04	0	0	9.2E-05	2.5E-07	0.53	0
Tiriganiaq Open Pit	**91**	**5**	**2019**	**June**	7.6	7.2	0	3.5E-04	2.9	0.66	0.73	0	0	0	0.019	3.4E-04	**6.1E-03**	1.1E-03	0	0	4.1E-04	1.1E-06	2.4	0
Tiriganiaq Open Pit	**92**	**5**	**2019**	**July**	8.9	8.7	0	4.2E-04	3.5	0.66	0.73	0	0	0	0.023	4.1E-04	**7.4E-03**	1.3E-03	0	0	5.0E-04	1.4E-06	2.8	0
Tiriganiaq Open Pit	**93**	**5**	**2019**	**August**	5.8	5.1	0	2.5E-04	2.1	0.66	0.73	0	0	0	0.014	2.4E-04	4.3E-03	7.5E-04	0	0	2.9E-04	8.0E-07	1.7	0
Tiriganiaq Open Pit	**94**	**5**	**2019**	**September**	3.3	2.2	0	1.1E-04	0.92	0.66	0.73	0	0	0	5.9E-03	1.0E-04	1.9E-03	3.3E-04	0	0	1.3E-04	3.5E-07	0.73	0
Tiriganiaq Open Pit	**95**	**5**	**2019**	**October**	2.8	1.6	0	7.8E-05	0.66	0.66	0.73	0	0	0	4.3E-03	7.5E-05	1.4E-03	2.4E-04	0	0	9.2E-05	2.5E-07	0.53	0
Tiriganiaq Open Pit	**103**	**6**	**2020**	**June**	7.6	7.2	0	3.5E-04	2.9	0.66	0.73	0	0	0	0.019	3.4E-04	**6.1E-03**	1.1E-03	0	0	4.1E-04	1.1E-06	2.4	0
Tiriganiaq Open Pit	**104**	**6**	**2020**	**July**	8.9	8.7	0	4.2E-04	3.5	0.66	0.73	0	0	0	0.023	4.1E-04	**7.4E-03**	1.3E-03	0	0	5.0E-04	1.4E-06	2.8	0
Tiriganiaq Open Pit	**105**	**6**	**2020**	**August**	5.8	5.1	0	2.5E-04	2.1	0.66	0.73	0	0	0	0.014	2.4E-04	4.3E-03	7.5E-04	0	0	2.9E-04	8.0E-07	1.7	0
Tiriganiaq Open Pit	**106**	**6**	**2020**	**September**	3.3	2.2	0	1.1E-04	0.92	0.66	0.73	0	0	0	5.9E-03	1.0E-04	1.9E-03	3.3E-04	0	0	1.3E-04	3.5E-07	0.73	0
Tiriganiaq Open Pit	**107**	**6**	**2020**	**October**	2.8	1.6	0	7.8E-05	0.66	0.66	0.73	0	0	0	4.3E-03	7.5E-05	1.4E-03	2.4E-04	0	0	9.2E-05	2.5E-07	0.53	0
Tiriganiaq Open Pit	**115**	**7**	**2021**	**June**	7.6	7.2	0	3.5E-04	2.9	0.66	0.73	0	0	0	0.019	3.4E-04	**6.1E-03**	1.1E-03	0	0	4.1E-04	1.1E-06	2.4	0
Tiriganiaq Open Pit	**116**	**7**	**2021**	**July**	8.9	8.7	0	4.2E-04	3.5	0.66	0.73	0	0	0	0.023	4.1E-04	**7.4E-03**	1.3E-03	0	0	5.0E-04	1.4E-06	2.8	0
Tiriganiaq Open Pit	**117**	**7**	**2021**	**August**	5.8	5.1	0	2.5E-04	2.1	0.66	0.73	0	0	0	0.014	2.4E-04	4.3E-03	7.5E-04	0	0	2.9E-04	8.0E-07	1.7	0
Tiriganiaq Open Pit	**118**	**7**	**2021**	**September**	3.3	2.2	0	1.1E-04	0.92	0.66	0.73	0	0	0	5.9E-03	1.0E-04	1.9E-03	3.3E-04	0	0	1.3E-04	3.5E-07	0.73	0
Tiriganiaq Open Pit	**119**	**7**	**2021**	**October**	2.8	1.6	0	7.8E-05	0.66	0.66	0.73	0	0	0	4.3E-03	7.5E-05	1.4E-03	2.4E-04	0	0	9.2E-05	2.5E-07	0.53	0
Tiriganiaq Open Pit	**127**	**8**	**2022**	**June**	7.6	7.2	0	3.5E-04	2.9	0.66	0.73	0	0	0	0.019	3.4E-04	**6.1E-03**	1.1E-03	0	0	4.1E-04	1.1E-06	2.4	0
Tiriganiaq Open Pit	**128**	**8**	**2022**	**July**	8.9	8.7	0	4.2E-04	3.5	0.66	0.73	0	0	0	0.023	4.1E-04	**7.4E-03**	1.3E-03	0	0	5.0E-04	1.4E-06	2.8	0
Tiriganiaq Open Pit	**129**	**8**	**2022**	**August**	5.8	5.1	0	2.5E-04	2.1	0.66	0.73	0	0	0	0.014	2.4E-04	4.3E-03	7.5E-04	0	0	2.9E-04	8.0E-07	1.7	0
Tiriganiaq Open Pit	**130**	**8**	**2022**	**September**	3.3	2.2	0	1.1E-04	0.92	0.66	0.73	0	0	0	5.9E-03	1.0E-04	1.9E-03	3.3E-04	0	0	1.3E-04	3.5E-07	0.73	0
Tiriganiaq Open Pit	**131**	**8**	**2022**	**October**	2.8	1.6	0	7.8E-05	0.66	0.66	0.73	0	0	0	4.3E-03	7.5E-05	1.4E-03	2.4E-04	0	0	9.2E-05	2.5E-07	0.53	0
Tiriganiaq Open Pit	**139**	**9**	**2023**	**June**	7.6	7.2	0	3.5E-04	2.9	0.66	0.73	0	0	0	0.019	3.4E-04	**6.1E-03**	1.1E-03	0	0	4.1E-04	1.1E-06	2.4	0
Tiriganiaq Open Pit	**140**	**9**	**2023**	**July**	8.9	8.7	0	4.2E-04	3.5	0.66	0.73	0	0	0	0.023	4.1E-04	**7.4E-03**	1.3E-03	0	0	5.0E-04	1.4E-06	2.8	0
Tiriganiaq Open Pit	**141**	**9**	**2023**	**August**	5.8	5.1	0	2.5E-04	2.1	0.66	0.73	0	0	0	0.014	2.4E-04	4.3E-03	7.5E-04	0	0	2.9E-04	8.0E-07	1.7	0
Tiriganiaq Open Pit	**142**	**9**	**2023**	**September**	3.3	2.2	0	1.1E-04	0.92	0.66	0.73	0	0	0	5.9E-03	1.0E-04	1.9E-03	3.3E-04	0	0	1.3E-04	3.5E-07	0.73	0
Tiriganiaq Open Pit	**143**	**9**	**2023**	**October**	2.8	1.6	0	7.8E-05	0.66	0.66	0.73	0	0	0	4.3E-03	7.5E-05	1.4E-03	2.4E-04	0	0	9.2E-05	2.5E-07	0.53	0
Tiriganiaq Open Pit	**151**	**10**	**2024**	**June**	15	13	0.82	4.2E-04	3.9	0.66	0.73	0.065	8.0E-04	1.1E-04	0.023	4.0E-04	**7.3E-03**	1.9E-03	0	0	3.7E-03	1.3E-06	3.3	0
Tiriganiaq Open Pit	**152**	**10**	**2024**	**July**	14	12	0.51	4.6E-04	4.1	0.66	0.73	0.041	5.0E-04	7.0E-05	0.025	4.4E-04	**8.1E-03**	1.8E-03	0	0	2.6E-03	1.5E-06	3.4	0
Tiriganiaq Open Pit	**153**	**10**	**2024**	**August**	9.4	7.4	0.46	2.5E-04	2.3	0.66	0.73	0.037	4.5E-04	6.2E-05	0.014	2.4E-04	4.4E-03	1.1E-03	0	0	2.1E-03	8.0E-07	1.9	0
Tiriganiaq Open Pit	**154**	**10**	**2024**	**September**	6.5	4.2	0.40	1.1E-04	1.1	0.66	0.73	0.032	3.9E-04	5.4E-05	6.0E-03	1.1E-04	1.9E-03	6.5E-04	0	0	1.7E-03	3.5E-07	0.97	0
Tiriganiaq Open Pit	**155**	**10**	**2024**	**October**	6.3	3.8	0.44	7.9E-05	0.88	0.66	0.73	0.036	4.3E-04	6.0E-05	4.4E-03	7.6E-05	1.4E-03	5.9E-04	0	0	1.8E-03	2.5E-07	0.78	0
Tiriganiaq Open Pit	**163**	**11**	**2025**	**June**	20	18	0.82	6.7E-04	6.0	0.66	0.73	0.066	8.1E-04	1.1E-04	0.037	6.4E-04	**0.012**	2.7E-03	0	0	4.0E-03	2.2E-06	5.0	0
Tiriganiaq Open Pit	**164**	**11**	**2025**	**July**	16	15	0.52	5.9E-04	5.2	0.66	0.73	0.042	5.1E-04	7.0E-05	0.032	5.7E-04	**0.010**	2.2E-03	0	0	2.7E-03	1.9E-06	4.3	0
Tiriganiaq Open Pit	**165**	**11**	**2025**	**August**	10	8.5	0.46	3.0E-04	2.8	0.66	0.73	0.037	4.5E-04	6.2E-05	0.017	2.9E-04	**5.3E-03**	1.3E-03	0	0	2.2E-03	9.8E-07	2.3	0
Tiriganiaq Open Pit	**166**	**11**	**2025**	**September**	6.9	4.7	0.40	1.3E-04	1.3	0.66	0.73	0.032	3.9E-04	5.4E-05	7.4E-03	1.3E-04	2.4E-03	7.2E-04	0	0	1.7E-03	4.3E-07	1.1	0
Tiriganiaq Open Pit	**167**	**11**	**2025**	**October**	6.6	4.1	0.44	9.6E-05	1.0	0.66	0.73	0.036	4.4E-04	6.0E-05	5.3E-03	9.2E-05	1.7E-03	6.4E-04	0	0	1.9E-03	3.1E-07	0.90	0
Tiriganiaq Open Pit	**175**	**12**	**2026**	**June**	20	18	0.82	6.7E-04	6.0	0.66	0.73	0.066	8.1E-04	1.1E-04	0.037	6.4E-04	**0.012**	2.7E-03	0	0	4.0E-03	2.2E-06	5.0	0
Tiriganiaq Open Pit	**176**	**12**	**2026**	**July**	16	15	0.52	5.9E-04	5.2	0.66	0.73	0.042	5.1E-04	7.0E-05	0.032	5.7E-04	**0.010**	2.2E-03	0	0	2.7E-03	1.9E-06	4.3	0
Tiriganiaq Open Pit	**177**	**12**	**2026**	**August**	10	8.5	0.46	3.0E-04	2.8	0.66	0.73	0.037	4.5E-04	6.2E-05	0.017	2.9E-04	**5.3E-03**	1.3E-03	0	0	2.2E-03	9.8E-07	2.3	0
Tiriganiaq Open Pit	**178**	**12**	**2026**	**September**	6.9	4.7	0.40	1.3E-04	1.3	0.66	0.73	0.032	3.9E-04	5.4E-05	7.4E-03	1.3E-04	2.4E-03	7.2E-04	0	0	1.7E-03	4.3E-07	1.1	0
Tiriganiaq Open Pit	**179**	**12**	**2026**	**October**	6.6	4.1	0.44	9.6E-05	1.0	0.66	0.73	0.036	4.4E-04	6.0E-05	5.3E-03	9.2E-05	1.7E-03	6.4E-04	0	0	1.9E-03	3.1E-07	0.90	0
Tiriganiaq Open Pit	**187**	**13**	**2027**	**June**	20	18	0.82	6.7E-04	6.0	0.66	0.73	0.066	8.1E-04	1.1E-04	0.037	6.4E-04	**0.012**	2.7E-03	0	0	4.0E-03	2.2E-06	5.0	0
				MINIMUM	2.1	0.77	0.40	3.8E-05	0.31	0.66	0.73	0.032	3.9E-04	5.4E-05	2.0E-03	3.6E-05	6.5E-04	1.1E-04	0	0	4.4E-05	1.2E-07	0.25	0
				MAXIMUM	20	18	0.82	6.7E-04	6.0	0.66	0.73	0.066	8.1E-04	1.1E-04	0.037	6.4E-04	**0.012**	2.7E-03	0	0	4.0E-03	2.2E-06	5.0	0
				AVERAGE	7.0	5.9	0.55	2.6E-04	2.2	0.66	0.73	0.044	5.4E-04	7.4E-05	0.014	2.5E-04	4.5E-03	8.9E-04	0	0	8.3E-04	8.3E-07	1.8	0

Table C-2.5 - Tiriganiaq Open Pit
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		1.0E-03			0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3.0	0.2						0.5											0.5
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L
Pre-Development and Operations Water Quality (Years -1 to 13)																								
Tiriganiaq Open Pit	**31**	**-1**	**2014**	**June**	3.7E-05	2.3E-05	5.3E-04	4.0E-06	3.0E-05	0.23	2.0E-03	0	4.7E-05	4.0E-05	0.094	0	0.021	5.0E-03	0	3.5E-05	1.4E-05	3.2E-06	3.4E-05	1.9E-05	4.0E-05
Tiriganiaq Open Pit	**32**	**-1**	**2014**	**July**	5.2E-05	3.3E-05	7.4E-04	5.6E-06	4.2E-05	0.32	2.8E-03	0	6.5E-05	5.6E-05	0.13	0	0.030	7.0E-03	0	4.9E-05	2.0E-05	4.5E-06	4.8E-05	2.7E-05	5.7E-05
Tiriganiaq Open Pit	**33**	**-1**	**2014**	**August**	3.4E-05	2.1E-05	4.8E-04	3.6E-06	2.7E-05	0.21	1.8E-03	0	4.2E-05	3.6E-05	0.086	0	0.019	4.5E-03	0	3.2E-05	1.3E-05	2.9E-06	3.1E-05	1.8E-05	3.7E-05
Tiriganiaq Open Pit	**34**	**-1**	**2014**	**September**	1.5E-05	9.3E-06	2.1E-04	1.6E-06	1.2E-05	0.092	7.8E-04	0	1.9E-05	1.6E-05	0.038	0	8.5E-03	2.0E-03	0	1.4E-05	5.8E-06	1.3E-06	1.4E-05	7.7E-06	1.6E-05
Tiriganiaq Open Pit	**35**	**-1**	**2014**	**October**	1.1E-05	6.7E-06	1.5E-04	1.1E-06	8.5E-06	0.066	5.6E-04	0	1.3E-05	1.1E-05	0.027	0	6.1E-03	1.4E-03	0	1.0E-05	4.1E-06	9.1E-07	9.8E-06	5.6E-06	1.2E-05
Tiriganiaq Open Pit	**43**	**1**	**2015**	**June**	1.0E-04	6.3E-05	1.4E-03	1.1E-05	7.9E-05	0.62	5.3E-03	0	1.3E-04	1.1E-04	0.25	0	0.057	0.013	0	9.3E-05	3.9E-05	8.5E-06	9.1E-05	5.2E-05	1.1E-04
Tiriganiaq Open Pit	**44**	**1**	**2015**	**July**	1.2E-04	7.5E-05	1.7E-03	1.3E-05	9.6E-05	0.74	6.3E-03	0	1.5E-04	1.3E-04	0.31	0	0.069	0.016	0	1.1E-04	4.7E-05	1.0E-05	1.1E-04	6.3E-05	1.3E-04
Tiriganiaq Open Pit	**45**	**1**	**2015**	**August**	7.1E-05	4.4E-05	1.0E-03	7.6E-06	5.6E-05	0.44	3.7E-03	0	8.8E-05	7.5E-05	0.18	0	0.040	9.4E-03	0	6.6E-05	2.7E-05	6.0E-06	6.5E-05	3.7E-05	7.7E-05
Tiriganiaq Open Pit	**46**	**1**	**2015**	**September**	3.1E-05	1.9E-05	4.4E-04	3.3E-06	2.5E-05	0.19	1.6E-03	0	3.9E-05	3.3E-05	0.079	0	0.018	4.2E-03	0	2.9E-05	1.2E-05	2.7E-06	2.8E-05	1.6E-05	3.4E-05
Tiriganiaq Open Pit	**47**	**1**	**2015**	**October**	2.2E-05	1.4E-05	3.2E-04	2.4E-06	1.8E-05	0.14	1.2E-03	0	2.8E-05	2.4E-05	0.056	0	0.013	3.0E-03	0	2.1E-05	8.6E-06	1.9E-06	2.0E-05	1.2E-05	2.4E-05
Tiriganiaq Open Pit	**55**	**2**	**2016**	**June**	1.0E-04	6.3E-05	1.4E-03	1.1E-05	8.0E-05	0.62	5.3E-03	0	1.3E-04	1.1E-04	0.25	0	0.057	0.013	0	9.3E-05	3.9E-05	8.5E-06	9.2E-05	5.2E-05	1.1E-04
Tiriganiaq Open Pit	**56**	**2**	**2016**	**July**	1.2E-04	7.5E-05	1.7E-03	1.3E-05	9.6E-05	0.74	6.4E-03	0	1.5E-04	1.3E-04	0.31	0	0.069	0.016	0	1.1E-04	4.7E-05	1.0E-05	1.1E-04	6.3E-05	1.3E-04
Tiriganiaq Open Pit	**57**	**2**	**2016**	**August**	7.1E-05	4.4E-05	1.0E-03	7.6E-06	5.6E-05	0.44	3.7E-03	0	8.9E-05	7.6E-05	0.18	0	0.040	9.5E-03	0	6.6E-05	2.7E-05	6.0E-06	6.5E-05	3.7E-05	7.7E-05
Tiriganiaq Open Pit	**58**	**2**	**2016**	**September**	3.1E-05	1.9E-05	4.4E-04	3.3E-06	2.5E-05	0.19	1.6E-03	0	3.9E-05	3.3E-05	0.079	0	0.018	4.2E-03	0	2.9E-05	1.2E-05	2.7E-06	2.8E-05	1.6E-05	3.4E-05
Tiriganiaq Open Pit	**59**	**2**	**2016**	**October**	2.2E-05	1.4E-05	3.2E-04	2.4E-06	1.8E-05	0.14	1.2E-03	0	2.8E-05	2.4E-05	0.057	0	0.013	3.0E-03	0	2.1E-05	8.6E-06	1.9E-06	2.0E-05	1.2E-05	2.4E-05
Tiriganiaq Open Pit	**67**	**3**	**2017**	**June**	1.0E-04	6.3E-05	1.4E-03	1.1E-05	8.0E-05	0.62	5.3E-03	0	1.3E-04	1.1E-04	0.25	0	0.057	0.013	0	9.3E-05	3.9E-05	8.5E-06	9.2E-05	5.2E-05	1.1E-04
Tiriganiaq Open Pit	**68**	**3**	**2017**	**July**	1.2E-04	7.5E-05	1.7E-03	1.3E-05	9.6E-05	0.74	6.4E-03	0	1.5E-04	1.3E-04	0.31	0	0.069	0.016	0	1.1E-04	4.7E-05	1.0E-05	1.1E-04	6.3E-05	1.3E-04
Tiriganiaq Open Pit	**69**	**3**	**2017**	**August**	7.1E-05	4.4E-05	1.0E-03	7.6E-06	5.6E-05	0.44	3.7E-03	0	8.9E-05	7.6E-05	0.18	0	0.040	9.5E-03	0	6.6E-05	2.7E-05	6.0E-06	6.5E-05	3.7E-05	7.7E-05
Tiriganiaq Open Pit	**70**	**3**	**2017**	**September**	3.1E-05	1.9E-05	4.4E-04	3.3E-06	2.5E-05	0.19	1.6E-03	0	3.9E-05	3.3E-05	0.079	0	0.018	4.2E-03	0	2.9E-05	1.2E-05	2.7E-06	2.8E-05	1.6E-05	3.4E-05
Tiriganiaq Open Pit	**71**	**3**	**2017**	**October**	2.2E-05	1.4E-05	3.2E-04	2.4E-06	1.8E-05	0.14	1.2E-03	0	2.8E-05	2.4E-05	0.057	0	0.013	3.0E-03	0	2.1E-05	8.6E-06	1.9E-06	2.0E-05	1.2E-05	2.4E-05
Tiriganiaq Open Pit	**79**	**4**	**2018**	**June**	1.0E-04	6.3E-05	1.4E-03	1.1E-05	8.0E-05	0.62	5.3E-03	0	1.3E-04	1.1E-04	0.25	0	0.057	0.013	0	9.3E-05	3.9E-05	8.5E-06	9.2E-05	5.2E-05	1.1E-04
Tiriganiaq Open Pit	**80**	**4**	**2018**	**July**	1.2E-04	7.5E-05	1.7E-03	1.3E-05	9.6E-05	0.74	6.4E-03	0	1.5E-04	1.3E-04	0.31	0	0.069	0.016	0	1.1E-04	4.7E-05	1.0E-05	1.1E-04	6.3E-05	1.3E-04
Tiriganiaq Open Pit	**81**	**4**	**2018**	**August**	7.1E-05	4.4E-05	1.0E-03	7.6E-06	5.6E-05	0.44	3.7E-03	0	8.9E-05	7.6E-05	0.18	0	0.040	9.5E-03	0	6.6E-05	2.7E-05	6.0E-06	6.5E-05	3.7E-05	7.7E-05
Tiriganiaq Open Pit	**82**	**4**	**2018**	**September**	3.1E-05	1.9E-05	4.4E-04	3.3E-06	2.5E-05	0.19	1.6E-03	0	3.9E-05	3.3E-05	0.079	0	0.018	4.2E-03	0	2.9E-05	1.2E-05	2.7E-06	2.8E-05	1.6E-05	3.4E-05
Tiriganiaq Open Pit	**83**	**4**	**2018**	**October**	2.2E-05	1.4E-05	3.2E-04	2.4E-06	1.8E-05	0.14	1.2E-03	0	2.8E-05	2.4E-05	0.057	0	0.013	3.0E-03	0	2.1E-05	8.6E-06	1.9E-06	2.0E-05	1.2E-05	2.4E-05
Tiriganiaq Open Pit	**91**	**5**	**2019**	**June**	1.0E-04	6.3E-05	1.4E-03	1.1E-05	8.0E-05	0.62	5.3E-03	0	1.3E-04	1.1E-04	0.25	0	0.057	0.013	0	9.3E-05	3.9E-05	8.5E-06	9.2E-05	5.2E-05	1.1E-04
Tiriganiaq Open Pit	**92**	**5**	**2019**	**July**	1.2E-04	7.5E-05	1.7E-03	1.3E-05	9.6E-05	0.74	6.4E-03	0	1.5E-04	1.3E-04	0.31	0	0.069	0.016	0	1.1E-04	4.7E-05	1.0E-05	1.1E-04	6.3E-05	1.3E-04
Tiriganiaq Open Pit	**93**	**5**	**2019**	**August**	7.1E-05	4.4E-05	1.0E-03	7.6E-06	5.6E-05	0.44	3.7E-03	0	8.9E-05	7.6E-05	0.18	0	0.040	9.5E-03	0	6.6E-05	2.7E-05	6.0E-06	6.5E-05	3.7E-05	7.7E-05
Tiriganiaq Open Pit	**94**	**5**	**2019**	**September**	3.1E-05	1.9E-05	4.4E-04	3.3E-06	2.5E-05	0.19	1.6E-03	0	3.9E-05	3.3E-05	0.079	0	0.018	4.2E-03	0	2.9E-05	1.2E-05	2.7E-06	2.8E-05	1.6E-05	3.4E-05
Tiriganiaq Open Pit	**95**	**5**	**2019**	**October**	2.2E-05	1.4E-05	3.2E-04	2.4E-06	1.8E-05	0.14	1.2E-03	0	2.8E-05	2.4E-05	0.057	0	0.013	3.0E-03	0	2.1E-05	8.6E-06	1.9E-06	2.0E-05	1.2E-05	2.4E-05
Tiriganiaq Open Pit	**103**	**6**	**2020**	**June**	1.0E-04	6.3E-05	1.4E-03	1.1E-05	8.0E-05	0.62	5.3E-03	0	1.3E-04	1.1E-04	0.25	0	0.057	0.013	0	9.3E-05	3.9E-05	8.5E-06	9.2E-05	5.2E-05	1.1E-04
Tiriganiaq Open Pit	**104**	**6**	**2020**	**July**	1.2E-04	7.5E-05	1.7E-03	1.3E-05	9.6E-05	0.74	6.4E-03	0	1.5E-04	1.3E-04	0.31	0	0.069	0.016	0	1.1E-04	4.7E-05	1.0E-05	1.1E-04	6.3E-05	1.3E-04
Tiriganiaq Open Pit	**105**	**6**	**2020**	**August**	7.1E-05	4.4E-05	1.0E-03	7.6E-06	5.6E-05	0.44	3.7E-03	0	8.9E-05	7.6E-05	0.18	0	0.040	9.5E-03	0	6.6E-05	2.7E-05	6.0E-06	6.5E-05	3.7E-05	7.7E-05
Tiriganiaq Open Pit	**106**	**6**	**2020**	**September**	3.1E-05	1.9E-05	4.4E-04	3.3E-06	2.5E-05	0.19	1.6E-03	0	3.9E-05	3.3E-05	0.079	0	0.018	4.2E-03	0	2.9E-05	1.2E-05	2.7E-06	2.8E-05	1.6E-05	3.4E-05
Tiriganiaq Open Pit	**107**	**6**	**2020**	**October**	2.2E-05	1.4E-05	3.2E-04	2.4E-06	1.8E-05	0.14	1.2E-03	0	2.8E-05	2.4E-05	0.057	0	0.013	3.0E-03	0	2.1E-05	8.6E-06	1.9E-06	2.0E-05	1.2E-05	2.4E-05
Tiriganiaq Open Pit	**115**	**7**	**2021**	**June**	1.0E-04	6.3E-05	1.4E-03	1.1E-05	8.0E-05	0.62	5.3E-03	0	1.3E-04	1.1E-04	0.25	0	0.057	0.013	0	9.3E-05	3.9E-05	8.5E-06	9.2E-05	5.2E-05	1.1E-04
Tiriganiaq Open Pit	**116**	**7**	**2021**	**July**	1.2E-04	7.5E-05	1.7E-03	1.3E-05	9.6E-05	0.74	6.4E-03	0	1.5E-04	1.3E-04	0.31	0	0.069	0.016	0	1.1E-04	4.7E-05	1.0E-05	1.1E-04	6.3E-05	1.3E-04
Tiriganiaq Open Pit	**117**	**7**	**2021**	**August**	7.1E-05	4.4E-05	1.0E-03	7.6E-06	5.6E-05	0.44	3.7E-03	0	8.9E-05	7.6E-05	0.18	0	0.040	9.5E-03	0	6.6E-05	2.7E-05	6.0E-06	6.5E-05	3.7E-05	7.7E-05
Tiriganiaq Open Pit	**118**	**7**	**2021**	**September**	3.1E-05	1.9E-05	4.4E-04	3.3E-06	2.5E-05	0.19	1.6E-03	0	3.9E-05	3.3E-05	0.079	0	0.018	4.2E-03	0	2.9E-05	1.2E-05	2.7E-06	2.8E-05	1.6E-05	3.4E-05
Tiriganiaq Open Pit	**119**	**7**	**2021**	**October**	2.2E-05	1.4E-05	3.2E-04	2.4E-06	1.8E-05	0.14	1.2E-03	0	2.8E-05	2.4E-05	0.057	0	0.013	3.0E-03	0	2.1E-05	8.6E-06	1.9E-06	2.0E-05	1.2E-05	2.4E-05
Tiriganiaq Open Pit	**127**	**8**	**2022**	**June**	1.0E-04	6.3E-05	1.4E-03	1.1E-05	8.0E-05	0.62	5.3E-03	0	1.3E-04	1.1E-04	0.25	0	0.057	0.013	0	9.3E-05	3.9E-05	8.5E-06	9.2E-05	5.2E-05	1.1E-04
Tiriganiaq Open Pit	**128**	**8**	**2022**	**July**	1.2E-04	7.5E-05	1.7E-03	1.3E-05	9.6E-05	0.74	6.4E-03	0	1.5E-04	1.3E-04	0.31	0	0.069	0.016	0	1.1E-04	4.7E-05	1.0E-05	1.1E-04	6.3E-05	1.3E-04
Tiriganiaq Open Pit	**129**	**8**	**2022**	**August**	7.1E-05	4.4E-05	1.0E-03	7.6E-06	5.6E-05	0.44	3.7E-03	0	8.9E-05	7.6E-05	0.18	0	0.040	9.5E-03	0	6.6E-05	2.7E-05	6.0E-06	6.5E-05	3.7E-05	7.7E-05
Tiriganiaq Open Pit	**130**	**8**	**2022**	**September**	3.1E-05	1.9E-05	4.4E-04	3.3E-06	2.5E-05	0.19	1.6E-03	0	3.9E-05	3.3E-05	0.079	0	0.018	4.2E-03	0	2.9E-05	1.2E-05	2.7E-06	2.8E-05	1.6E-05	3.4E-05
Tiriganiaq Open Pit	**131**	**8**	**2022**	**October**	2.2E-05	1.4E-05	3.2E-04	2.4E-06	1.8E-05	0.14	1.2E-03	0	2.8E-05	2.4E-05	0.057	0	0.013	3.0E-03	0	2.1E-05	8.6E-06	1.9E-06	2.0E-05	1.2E-05	2.4E-05
Tiriganiaq Open Pit	**139**	**9**	**2023**	**June**	1.0E-04	6.3E-05	1.4E-03	1.1E-05	8.0E-05	0.62	5.3E-03	0	1.3E-04	1.1E-04	0.25	0	0.057	0.013	0	9.3E-05	3.9E-05	8.5E-06	9.2E-05	5.2E-05	1.1E-04
Tiriganiaq Open Pit	**140**	**9**	**2023**	**July**	1.2E-04	7.5E-05	1.7E-03	1.3E-05	9.6E-05	0.74	6.4E-03	0	1.5E-04	1.3E-04	0.31	0	0.069	0.016	0	1.1E-04	4.7E-05	1.0E-05	1.1E-04	6.3E-05	1.3E-04
Tiriganiaq Open Pit	**141**	**9**	**2023**	**August**	7.1E-05	4.4E-05	1.0E-03	7.6E-06	5.6E-05	0.44	3.7E-03	0	8.9E-05	7.6E-05	0.18	0	0.040	9.5E-03	0	6.6E-05	2.7E-05	6.0E-06	6.5E-05	3.7E-05	7.7E-05
Tiriganiaq Open Pit	**142**	**9**	**2023**	**September**	3.1E-05	1.9E-05	4.4E-04	3.3E-06	2.5E-05	0.19	1.6E-03	0	3.9E-05	3.3E-05	0.079	0	0.018	4.2E-03	0	2.9E-05	1.2E-05	2.7E-06	2.8E-05	1.6E-05	3.4E-05
Tiriganiaq Open Pit	**143**	**9**	**2023**	**October**	2.2E-05	1.4E-05	3.2E-04	2.4E-06	1.8E-05	0.14	1.2E-03	0	2.8E-05	2.4E-05	0.057	0	0.013	3.0E-03	0	2.1E-05	8.6E-06	1.9E-06	2.0E-05	1.2E-05	2.4E-05
Tiriganiaq Open Pit	**151**	**10**	**2024**	**June**	1.2E-04	1.1E-04	4.2E-03	2.9E-05	9.4E-05	0.78	6.5E-03	0	1.8E-04	1.6E-04	0.33	8.4E-05	0.14	0.016	0	1.1E-04	4.6E-05	1.0E-05	1.1E-04	9.4E-05	2.9E-04
Tiriganiaq Open Pit	**152**	**10**	**2024**	**July**	1.3E-04	1.0E-04	3.4E-03	2.4E-05	1.0E-04	0.84	7.1E-03	0	1.9E-04	1.6E-04	0.35	5.3E-05	0.12	0.018	0	1.2E-04	5.1E-05	1.1E-05	1.2E-04	8.9E-05	2.4E-04
Tiriganiaq Open Pit	**153**	**10**	**2024**	**August**	7.1E-05	6.2E-05	2.4E-03	1.7E-05	5.6E-05	0.46	3.9E-03	0	1.1E-04	9.4E-05	0.20	4.7E-05	0.081	9.5E-03	0	6.6E-05	2.7E-05	6.1E-06	6.5E-05	5.5E-05	1.7E-04
Tiriganiaq Open Pit	**154**	**10**	**2024**	**September**	3.1E-05	3.5E-05	1.7E-03	1.1E-05	2.5E-05	0.22	1.8E-03	0	5.5E-05	4.9E-05	0.094	4.1E-05	0.054	4.2E-03	0	2.9E-05	1.2E-05	2.7E-06	2.9E-05	3.2E-05	1.1E-04
Tiriganiaq Open Pit	**155**	**10**	**2024**	**October**	2.2E-05	3.2E-05	1.7E-03	1.1E-05	1.8E-05	0.16	1.3E-03	0	4.6E-05	4.1E-05	0.073	4.6E-05	0.052	3.0E-03	0	2.1E-05	8.7E-06	1.9E-06	2.0E-05	2.9E-05	1.1E-04
Tiriganiaq Open Pit	**163**	**11**	**2025**	**June**	1.9E-04	1.5E-04	5.2E-03	3.7E-05	1.5E-04	1.2	0.010	0	2.7E-04	2.4E-04	0.51	8.5E-05	0.18	0.025	0	1.8E-04	7.4E-05	1.6E-05	1.7E-04	1.3E-04	3.7E-04
Tiriganiaq Open Pit	**164**	**11**	**2025**	**July**	1.7E-04	1.3E-04	4.0E-03	2.8E-05	1.3E-04	1.1	9.0E-03	0	2.3E-04	2.0E-04	0.45	5.3E-05	0.14	0.023	0	1.6E-04	6.5E-05	1.4E-05	1.5E-04	1.1E-04	2.8E-04
Tiriganiaq Open Pit	**165**	**11**	**2025**	**August**	8.7E-05	7.2E-05	2.6E-03	1.8E-05	6.9E-05	0.56	4.7E-03	0	1.3E-04	1.1E-04	0.24	4.7E-05	0.091	0.012	0	8.1E-05	3.3E-05	7.4E-06	7.9E-05	6.3E-05	1.8E-04
Tiriganiaq Open Pit	**166**	**11**	**2025**	**September**	3.8E-05	4.0E-05	1.8E-03	1.2E-05	3.0E-05	0.26	2.1E-03	0	6.4E-05	5.7E-05	0.11	4.1E-05	0.058	5.1E-03	0	3.6E-05	1.5E-05	3.3E-06	3.5E-05	3.6E-05	1.2E-04
Tiriganiaq Open Pit	**167**	**11**	**2025**	**October**	2.7E-05	3.5E-05	1.8E-03	1.2E-05	2.2E-05	0.20	1.6E-03	0	5.2E-05	4.7E-05	0.086	4.6E-05	0.055	3.7E-03	0	2.6E-05	1.1E-05	2.3E-06	2.5E-05	3.2E-05	1.2E-04
Tiriganiaq Open Pit	**175**	**12**	**2026**	**June**	1.9E-04	1.5E-04	5.2E-03	3.7E-05	1.5E-04	1.2	0.010	0	2.7E-04	2.4E-04	0.51	8.5E-05	0.18	0.025	0	1.8E-04	7.4E-05	1.6E-05	1.7E-04	1.3E-04	3.7E-04
Tiriganiaq Open Pit	**176**	**12**	**2026**	**July**	1.7E-04	1.3E-04	4.0E-03	2.8E-05	1.3E-04	1.1	9.0E-03	0	2.3E-04	2.0E-04	0.45	5.3E-05	0.14	0.023	0	1.6E-04	6.5E-05	1.4E-05	1.5E-04	1.1E-04	2.8E-04
Tiriganiaq Open Pit	**177**	**12**	**2026**	**August**	8.7E-05	7.2E-05	2.6E-03	1.8E-05	6.9E-05	0.56	4.7E-03	0	1.3E-04	1.1E-04	0.24	4.7E-05	0.091	0.012	0	8.1E-05	3.3E-05	7.4E-06	7.9E-05	6.3E-05	1.8E-04
Tiriganiaq Open Pit	**178**	**12**	**2026**	**September**	3.8E-05	4.0E-05	1.8E-03	1.2E-05	3.0E-05	0.26	2.1E-03	0	6.4E-05	5.7E-05	0.11	4.1E-05	0.058	5.1E-03	0	3.6E-05	1.5E-05	3.3E-06	3.5E-05	3.6E-05	1.2E-04
Tiriganiaq Open Pit	**179**	**12**	**2026**	**October**	2.7E-05	3.5E-05	1.8E-03	1.2E-05	2.2E-05	0.20	1.6E-03	0	5.2E-05	4.7E-05	0.086	4.6E-05	0.055	3.7E-03	0	2.6E-05	1.1E-05	2.3E-06	2.5E-05	3.2E-05	1.2E-04
Tiriganiaq Open Pit	**187**	**13**	**2027**	**June**	1.9E-04	1.5E-04	5.2E-03	3.7E-05	1.5E-04	1.2	0.010	0	2.7E-04	2.4E-04	0.51	8.5E-05	0.18	0.025	0	1.8E-04	7.4E-05	1.6E-05	1.7E-04	1.3E-04	3.7E-04
				MINIMUM	1.1E-05	6.7E-06	1.5E-04	1.1E-06	8.5E-06	0.066	5.6E-04	0	1.3E-05	1.1E-05	0.027	4.1E-05	6.1E-03	1.4E-03	0	1.0E-05	4.1E-06	9.1E-07	9.8E-06	5.6E-06	1.2E-05
				MAXIMUM	1.9E-04	1.5E-04	5.2E-03	3.7E-05	1.5E-04	1.2	0.010	0	2.7E-04	2.4E-04	0.51	8.5E-05	0.18	0.025	0	1.8E-04	7.4E-05	1.6E-05	1.7E-04	1.3E-04	3.7E-04
				AVERAGE	7.3E-05	5.1E-05	1.4E-03	1.0E-05	5.8E-05	0.46	3.9E-03	0	9.7E-05	8.4E-05	0.19	5.6E-05	0.054	9.8E-03	0	6.8E-05	2.8E-05	6.3E-06	6.7E-05	4.3E-05	1.1E-04

Table C-2.5 - Tiriganiaq Open Pit
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						**120**	**0.12**			**13**		**0.004 to 0.01**		**0.1**		**0.005**				**1.5**	**0.000012**		**0.001**
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)																**0.5**							
	Model	**Mine**	**Date**		**TDS**	**Total Alkalinity**	**Cl**	**F**	**SO4**	**NH4 (as N)**	**NO3**	**TKN**	**P_dissolved[6]**	**PO4**	**Al[5]**	**Sb**	**As**	**Ba**	**Be**	**Bi**	**B**	**Cd[4]**	**Ca**	**Cr[3]**
LOCATION	**Month**	**Year**	**Year**	**Month**	**mg/L**	**mg/L as CaCO3**	**mg/L**	**mg/L**	**mg/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**
Pit Lake Water Quality When Full (Year 24)																							
Tiriganiaq Open Pit	**318**	**24**	**2055**	**May**	32	16	5.8	6.0E-04	3.0	1.0	0.77	0.19	3.5E-03	1.0E-03	4.8E-03	9.4E-05	2.8E-03	5.5E-03	3.0E-10	5.1E-08	3.0E-03	2.0E-07	2.4	5.6E-04
Tiriganiaq Open Pit	**319**	**24**	**2056**	**June**	32	16	5.8	6.0E-04	3.0	1.0	0.77	0.19	3.5E-03	1.0E-03	4.9E-03	9.5E-05	2.8E-03	5.5E-03	3.0E-10	5.0E-08	3.0E-03	2.1E-07	2.4	5.6E-04
Tiriganiaq Open Pit	**320**	**24**	**2057**	**July**	32	16	5.8	5.9E-04	3.1	1.0	0.77	0.19	3.5E-03	1.0E-03	5.1E-03	9.8E-05	2.8E-03	5.5E-03	2.9E-10	5.0E-08	3.0E-03	2.2E-07	2.4	5.5E-04
Tiriganiaq Open Pit	**321**	**24**	**2058**	**August**	32	16	5.8	5.9E-04	3.1	1.0	0.77	0.19	3.5E-03	1.0E-03	5.1E-03	9.8E-05	2.8E-03	5.5E-03	2.9E-10	5.0E-08	3.0E-03	2.2E-07	2.4	5.5E-04
Tiriganiaq Open Pit	**322**	**24**	**2059**	**September**	32	16	5.8	5.9E-04	3.1	1.0	0.77	0.19	3.5E-03	1.0E-03	5.1E-03	9.9E-05	2.8E-03	5.5E-03	2.9E-10	5.0E-08	3.0E-03	2.2E-07	2.4	5.5E-04
Tiriganiaq Open Pit	**323**	**24**	**2060**	**October**	32	16	5.8	5.9E-04	3.1	1.0	0.77	0.19	3.5E-03	1.0E-03	5.1E-03	9.9E-05	2.8E-03	5.5E-03	2.9E-10	5.0E-08	3.0E-03	2.2E-07	2.4	5.5E-04
Long Term Pit Lake Water Quality (Years 26+)																								
				SUMMER AVERAGE	32	16	5.7	5.8E-04	3.0	1.00	0.77	0.18	3.4E-03	9.9E-04	5.5E-03	1.1E-04	2.9E-03	5.4E-03	2.9E-10	4.9E-08	3.0E-03	2.5E-07	2.4	5.4E-04

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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

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

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

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

Table C-2.5 - Tiriganiaq Open Pit
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						0.002	0.3	0.001				0.000026	0.073	0.038		1.0E-03			0.0008				0.015		0.03
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						0.3	3.0	0.2						0.5											0.5
LOCATION	**Model Month**	**Mine Year**	**Date Year**	**Month**	**Co mg/L**	**Cu[4] mg/L**	**Fe mg/L**	**Pb[4] mg/L**	**Li mg/L**	**Mg mg/L**	**Mn mg/L**	**Hg mg/L**	**Mo mg/L**	**Ni[4] mg/L**	**K mg/L**	**Se mg/L**	**Na mg/L**	**Sr mg/L**	**Tl mg/L**	**Sn mg/L**	**Ti mg/L**	**W mg/L**	**U mg/L**	**V mg/L**	**Zn mg/L**
Pit Lake Water Quality When Full (Year 24)																									
Tiriganiaq Open Pit	**318**	**24**	**2055**	**May**	2.7E-05	2.9E-03	6.5E-03	1.5E-04	2.9E-05	0.50	1.7E-03	1.5E-09	2.9E-04	4.6E-04	0.45	2.8E-05	1.5	0.024	3.3E-10	1.7E-05	6.8E-06	3.0E-06	7.5E-05	2.6E-04	1.3E-03
Tiriganiaq Open Pit	**319**	**24**	**2056**	**June**	2.7E-05	2.9E-03	6.5E-03	1.5E-04	2.9E-05	0.50	1.7E-03	1.5E-09	2.9E-04	4.6E-04	0.45	2.9E-05	1.5	0.024	3.3E-10	1.8E-05	7.0E-06	3.0E-06	7.5E-05	2.6E-04	1.3E-03
Tiriganiaq Open Pit	**320**	**24**	**2057**	**July**	2.8E-05	2.9E-03	6.5E-03	1.5E-04	3.0E-05	0.50	1.8E-03	1.5E-09	2.9E-04	4.6E-04	0.45	2.9E-05	1.5	0.024	3.3E-10	1.9E-05	7.3E-06	3.1E-06	7.6E-05	2.6E-04	1.3E-03
Tiriganiaq Open Pit	**321**	**24**	**2058**	**August**	2.8E-05	2.9E-03	6.5E-03	1.5E-04	3.0E-05	0.50	1.8E-03	1.5E-09	2.9E-04	4.6E-04	0.45	2.9E-05	1.5	0.024	3.3E-10	1.9E-05	7.4E-06	3.1E-06	7.6E-05	2.6E-04	1.3E-03
Tiriganiaq Open Pit	**322**	**24**	**2059**	**September**	2.8E-05	2.9E-03	6.5E-03	1.5E-04	3.0E-05	0.50	1.8E-03	1.5E-09	2.9E-04	4.6E-04	0.45	2.9E-05	1.5	0.024	3.3E-10	1.9E-05	7.4E-06	3.1E-06	7.6E-05	2.6E-04	1.3E-03
Tiriganiaq Open Pit	**323**	**24**	**2060**	**October**	2.8E-05	2.9E-03	6.5E-03	1.5E-04	3.0E-05	0.50	1.8E-03	1.5E-09	2.9E-04	4.6E-04	0.45	2.9E-05	1.5	0.024	3.3E-10	1.9E-05	7.4E-06	3.1E-06	7.6E-05	2.6E-04	1.3E-03
Long Term Pit Lake Water Quality (Years 26+)																									
				SUMMER AVERAGE	3.1E-05	2.8E-03	6.4E-03	1.4E-04	3.1E-05	0.50	1.8E-03	1.4E-09	2.8E-04	4.5E-04	0.44	3.0E-05	1.5	0.024	3.2E-10	2.1E-05	8.3E-06	3.2E-06	7.7E-05	2.5E-04	1.3E-03

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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

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

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

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

Table C-2.6 - Wesmeg Open Pit
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12			13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)																	0.5							
LOCATION	Model Month	Mine Year	Date Year	Month	TDS mg/L	Total Alkalinity mg/L as CaCO3	Cl mg/L	F mg/L	SO4 mg/L	NH4 (as N) mg N/L	NO3 mg/L	TKN mg/L	P_dissolved[6] mg/L	PO4 mg/L	Al[5] mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd[4] mg/L	Ca mg/L	Cr[3] mg/L
Operations Water Quality (Years 3 to 13)																								
Wesmeg Open Pit	**67**	**3**	**2017**	**June**	250	136	0.59	2.7E-03	223	0.66	0.73	0.047	5.8E-04	8.0E-05	**0.37**	7.1E-03	**0.12**	0.011	0	0	0.013	3.7E-06	12	0
Wesmeg Open Pit	**68**	**3**	**2017**	**July**	225	122	0.62	2.4E-03	200	0.66	0.73	0.050	6.1E-04	8.4E-05	**0.33**	6.3E-03	**0.11**	0.010	0	0	0.012	3.3E-06	10	0
Wesmeg Open Pit	**69**	**3**	**2017**	**August**	80	43	0.39	8.3E-04	69	0.66	0.73	0.031	3.8E-04	5.3E-05	**0.11**	2.2E-03	**0.038**	3.6E-03	0	0	5.0E-03	1.1E-06	3.7	0
Wesmeg Open Pit	**70**	**3**	**2017**	**September**	37	20	0.33	3.6E-04	31	0.66	0.73	0.026	3.2E-04	4.4E-05	0.051	9.6E-04	**0.017**	1.7E-03	0	0	2.8E-03	5.0E-07	1.7	0
Wesmeg Open Pit	**71**	**3**	**2017**	**October**	28	15	0.36	2.6E-04	22	0.66	0.73	0.029	3.5E-04	4.8E-05	0.036	6.9E-04	**0.012**	1.3E-03	0	0	2.5E-03	3.6E-07	1.3	0
Wesmeg Open Pit	**79**	**4**	**2018**	**June**	657	358	0.60	7.1E-03	596	0.66	0.73	0.048	5.9E-04	8.1E-05	**0.99**	0.019	**0.33**	0.029	0	0	0.032	9.8E-06	30	0
Wesmeg Open Pit	**80**	**4**	**2018**	**July**	586	319	0.63	6.3E-03	530	0.66	0.73	0.050	6.1E-04	8.5E-05	**0.88**	0.017	**0.29**	0.026	0	0	0.029	8.7E-06	27	0
Wesmeg Open Pit	**81**	**4**	**2018**	**August**	205	111	0.39	2.2E-03	184	0.66	0.73	0.032	3.9E-04	5.3E-05	**0.30**	5.8E-03	**0.10**	9.1E-03	0	0	0.011	3.0E-06	9.4	0
Wesmeg Open Pit	**82**	**4**	**2018**	**September**	92	50	0.33	9.7E-04	81	0.66	0.73	0.026	3.2E-04	4.5E-05	**0.13**	2.6E-03	**0.045**	4.1E-03	0	0	5.3E-03	1.3E-06	4.2	0
Wesmeg Open Pit	**83**	**4**	**2018**	**October**	68	36	0.36	6.9E-04	58	0.66	0.73	0.029	3.5E-04	4.9E-05	0.096	1.8E-03	**0.032**	3.1E-03	0	0	4.3E-03	9.5E-07	3.1	0
Wesmeg Open Pit	**91**	**5**	**2019**	**June**	658	358	0.60	7.1E-03	596	0.66	0.73	0.048	5.9E-04	8.1E-05	**0.99**	0.019	**0.33**	0.029	0	0	0.032	9.8E-06	30	0
Wesmeg Open Pit	**92**	**5**	**2019**	**July**	587	319	0.63	6.3E-03	531	0.66	0.73	0.050	6.1E-04	8.5E-05	**0.88**	0.017	**0.29**	0.026	0	0	0.029	8.7E-06	27	0
Wesmeg Open Pit	**93**	**5**	**2019**	**August**	205	111	0.39	2.2E-03	184	0.66	0.73	0.032	3.9E-04	5.3E-05	**0.30**	5.8E-03	**0.10**	9.1E-03	0	0	0.011	3.0E-06	9.4	0
Wesmeg Open Pit	**94**	**5**	**2019**	**September**	92	50	0.33	9.7E-04	81	0.66	0.73	0.026	3.2E-04	4.5E-05	**0.13**	2.6E-03	**0.045**	4.1E-03	0	0	5.3E-03	1.3E-06	4.2	0
Wesmeg Open Pit	**95**	**5**	**2019**	**October**	68	36	0.36	6.9E-04	58	0.66	0.73	0.029	3.5E-04	4.9E-05	0.096	1.8E-03	**0.032**	3.1E-03	0	0	4.3E-03	9.5E-07	3.1	0
Wesmeg Open Pit	**103**	**6**	**2020**	**June**	626	341	0.64	6.8E-03	567	0.66	0.73	0.052	6.3E-04	8.7E-05	**0.94**	0.018	**0.31**	0.028	0	0	0.030	9.3E-06	29	0
Wesmeg Open Pit	**104**	**6**	**2020**	**July**	563	306	0.67	6.1E-03	509	0.66	0.73	0.054	6.6E-04	9.1E-05	**0.84**	0.016	**0.28**	0.025	0	0	0.028	8.3E-06	26	0
Wesmeg Open Pit	**105**	**6**	**2020**	**August**	197	107	0.42	2.1E-03	176	0.66	0.73	0.034	4.2E-04	5.7E-05	**0.29**	5.6E-03	**0.097**	8.8E-03	0	0	0.010	2.9E-06	9.1	0
Wesmeg Open Pit	**106**	**6**	**2020**	**September**	89	48	0.36	9.3E-04	77	0.66	0.73	0.029	3.5E-04	4.8E-05	**0.13**	2.5E-03	**0.043**	4.0E-03	0	0	5.2E-03	1.3E-06	4.1	0
Wesmeg Open Pit	**107**	**6**	**2020**	**October**	65	35	0.39	6.6E-04	56	0.66	0.73	0.031	3.8E-04	5.2E-05	0.092	1.8E-03	**0.031**	3.0E-03	0	0	4.3E-03	9.1E-07	3.0	0
Wesmeg Open Pit	**115**	**7**	**2021**	**June**	650	354	0.64	7.0E-03	588	0.66	0.73	0.052	6.3E-04	8.7E-05	**0.98**	0.019	**0.33**	0.029	0	0	0.032	9.6E-06	30	0
Wesmeg Open Pit	**116**	**7**	**2021**	**July**	581	316	0.67	6.3E-03	526	0.66	0.73	0.054	6.6E-04	9.1E-05	**0.87**	0.017	**0.29**	0.026	0	0	0.029	8.6E-06	27	0
Wesmeg Open Pit	**117**	**7**	**2021**	**August**	203	110	0.42	2.2E-03	182	0.66	0.73	0.034	4.2E-04	5.7E-05	**0.30**	5.8E-03	**0.10**	9.1E-03	0	0	0.011	3.0E-06	9.4	0
Wesmeg Open Pit	**118**	**7**	**2021**	**September**	92	49	0.36	9.6E-04	80	0.66	0.73	0.029	3.5E-04	4.8E-05	**0.13**	2.5E-03	**0.044**	4.1E-03	0	0	5.3E-03	1.3E-06	4.2	0
Wesmeg Open Pit	**119**	**7**	**2021**	**October**	67	36	0.39	6.9E-04	58	0.66	0.73	0.031	3.8E-04	5.2E-05	0.095	1.8E-03	**0.032**	3.1E-03	0	0	4.4E-03	9.4E-07	3.1	0
Wesmeg Open Pit	**127**	**8**	**2022**	**June**	650	354	0.64	7.0E-03	588	0.66	0.73	0.052	6.3E-04	8.7E-05	**0.98**	0.019	**0.33**	0.029	0	0	0.032	9.7E-06	30	0
Wesmeg Open Pit	**128**	**8**	**2022**	**July**	581	317	0.67	6.3E-03	526	0.66	0.73	0.054	6.6E-04	9.1E-05	**0.87**	0.017	**0.29**	0.026	0	0	0.029	8.6E-06	27	0
Wesmeg Open Pit	**129**	**8**	**2022**	**August**	203	110	0.42	2.2E-03	182	0.66	0.73	0.034	4.2E-04	5.7E-05	**0.30**	5.8E-03	**0.10**	9.1E-03	0	0	0.011	3.0E-06	9.4	0
Wesmeg Open Pit	**130**	**8**	**2022**	**September**	92	49	0.36	9.6E-04	80	0.66	0.73	0.029	3.5E-04	4.8E-05	**0.13**	2.5E-03	**0.044**	4.1E-03	0	0	5.3E-03	1.3E-06	4.2	0
Wesmeg Open Pit	**131**	**8**	**2022**	**October**	67	36	0.39	6.9E-04	58	0.66	0.73	0.031	3.8E-04	5.2E-05	0.095	1.8E-03	**0.032**	3.1E-03	0	0	4.4E-03	9.4E-07	3.1	0
Wesmeg Open Pit	**139**	**9**	**2023**	**June**	650	354	0.64	7.0E-03	588	0.66	0.73	0.052	6.3E-04	8.7E-05	**0.98**	0.019	**0.33**	0.029	0	0	0.032	9.7E-06	30	0
Wesmeg Open Pit	**140**	**9**	**2023**	**July**	581	317	0.67	6.3E-03	526	0.66	0.73	0.054	6.6E-04	9.1E-05	**0.87**	0.017	**0.29**	0.026	0	0	0.029	8.6E-06	27	0
Wesmeg Open Pit	**141**	**9**	**2023**	**August**	203	110	0.42	2.2E-03	182	0.66	0.73	0.034	4.2E-04	5.7E-05	**0.30**	5.8E-03	**0.10**	9.1E-03	0	0	0.011	3.0E-06	9.4	0
Wesmeg Open Pit	**142**	**9**	**2023**	**September**	92	49	0.36	9.6E-04	80	0.66	0.73	0.029	3.5E-04	4.8E-05	**0.13**	2.5E-03	**0.044**	4.1E-03	0	0	5.3E-03	1.3E-06	4.2	0
Wesmeg Open Pit	**143**	**9**	**2023**	**October**	67	36	0.39	6.9E-04	58	0.66	0.73	0.031	3.8E-04	5.2E-05	0.095	1.8E-03	**0.032**	3.1E-03	0	0	4.4E-03	9.4E-07	3.1	0
Wesmeg Open Pit	**151**	**10**	**2024**	**June**	624	340	0.69	6.8E-03	565	0.66	0.73	0.055	6.8E-04	9.3E-05	**0.94**	0.018	**0.31**	0.028	0	0	0.031	9.3E-06	29	0
Wesmeg Open Pit	**152**	**10**	**2024**	**July**	564	307	0.71	6.1E-03	509	0.66	0.73	0.057	7.0E-04	9.7E-05	**0.84**	0.016	**0.28**	0.025	0	0	0.028	8.4E-06	26	0
Wesmeg Open Pit	**153**	**10**	**2024**	**August**	197	107	0.45	2.1E-03	176	0.66	0.73	0.036	4.5E-04	6.1E-05	**0.29**	5.6E-03	**0.097**	8.8E-03	0	0	0.010	2.9E-06	9.1	0
Wesmeg Open Pit	**154**	**10**	**2024**	**September**	89	48	0.38	9.2E-04	77	0.66	0.73	0.031	3.7E-04	5.2E-05	**0.13**	2.4E-03	**0.043**	4.0E-03	0	0	5.3E-03	1.3E-06	4.1	0
Wesmeg Open Pit	**155**	**10**	**2024**	**October**	65	35	0.42	6.6E-04	56	0.66	0.73	0.033	4.1E-04	5.6E-05	0.092	1.8E-03	**0.031**	3.0E-03	0	0	4.4E-03	9.1E-07	3.0	0
Wesmeg Open Pit	**163**	**11**	**2025**	**June**	642	350	0.69	7.0E-03	581	0.66	0.73	0.055	6.8E-04	9.3E-05	**0.96**	0.018	**0.32**	0.028	0	0	0.031	9.5E-06	30	0
Wesmeg Open Pit	**164**	**11**	**2025**	**July**	577	314	0.71	6.2E-03	521	0.66	0.73	0.057	7.0E-04	9.7E-05	**0.87**	0.017	**0.29**	0.026	0	0	0.029	8.6E-06	27	0
Wesmeg Open Pit	**165**	**11**	**2025**	**August**	202	109	0.45	2.2E-03	180	0.66	0.73	0.036	4.5E-04	6.1E-05	**0.30**	5.7E-03	**0.100**	9.0E-03	0	0	0.011	3.0E-06	9.3	0
Wesmeg Open Pit	**166**	**11**	**2025**	**September**	91	49	0.38	9.5E-04	79	0.66	0.73	0.031	3.7E-04	5.2E-05	**0.13**	2.5E-03	**0.044**	4.1E-03	0	0	5.4E-03	1.3E-06	4.2	0
Wesmeg Open Pit	**167**	**11**	**2025**	**October**	67	36	0.42	6.8E-04	57	0.66	0.73	0.033	4.1E-04	5.6E-05	0.094	1.8E-03	**0.031**	3.1E-03	0	0	4.4E-03	9.3E-07	3.1	0
Wesmeg Open Pit	**175**	**12**	**2026**	**June**	625	340	0.66	6.8E-03	566	0.66	0.73	0.053	6.5E-04	9.0E-05	**0.94**	0.018	**0.31**	0.028	0	0	0.030	9.3E-06	29	0
Wesmeg Open Pit	**176**	**12**	**2026**	**July**	556	303	0.68	6.0E-03	502	0.66	0.73	0.055	6.7E-04	9.2E-05	**0.83**	0.016	**0.28**	0.025	0	0	0.027	8.2E-06	26	0
Wesmeg Open Pit	**177**	**12**	**2026**	**August**	196	106	0.43	2.1E-03	175	0.66	0.73	0.035	4.3E-04	5.9E-05	**0.29**	5.5E-03	**0.097**	8.7E-03	0	0	0.010	2.9E-06	9.0	0
Wesmeg Open Pit	**178**	**12**	**2026**	**September**	88	48	0.37	9.2E-04	77	0.66	0.73	0.029	3.6E-04	4.9E-05	**0.13**	2.4E-03	**0.042**	4.0E-03	0	0	5.2E-03	1.3E-06	4.1	0
Wesmeg Open Pit	**179**	**12**	**2026**	**October**	65	35	0.40	6.6E-04	55	0.66	0.73	0.032	3.9E-04	5.4E-05	0.091	1.7E-03	**0.030**	3.0E-03	0	0	4.3E-03	9.0E-07	3.0	0
Wesmeg Open Pit	**187**	**13**	**2034**	**June**	647	352	0.66	7.0E-03	585	0.66	0.73	0.053	6.5E-04	9.0E-05	**0.97**	0.019	**0.32**	0.029	0	0	0.031	9.6E-06	30	0
				MINIMUM	28	15	0.33	2.6E-04	22	0.66	0.73	0.026	3.2E-04	4.4E-05	0.036	6.9E-04	**0.012**	1.3E-03	0	0	2.5E-03	3.6E-07	1.3	0
				MAXIMUM	658	358	0.71	7.1E-03	596	0.66	0.73	0.057	7.0E-04	9.7E-05	**0.99**	0.019	**0.33**	0.029	0	0	0.032	9.8E-06	30	0
				AVERAGE	303	165	0.50	3.3E-03	272	0.66	0.73	0.040	4.9E-04	6.7E-05	**0.45**	8.6E-03	**0.15**	0.013	0	0	0.015	4.5E-06	14	0

Table C-2.6 - Wesmeg Open Pit
Water Quality Prediction
Meliadine Gold Project

			CCME aquatic life (long-term)[1] (mg/L)			0.002	0.3	0.001				0.000026	0.073	0.038		1.0E-03			0.0008				0.015		0.03
			Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)			0.3	3.0	0.2						0.5											0.5
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L
Operations Water Quality (Years 3 to 13)																									
Wesmeg Open Pit	**67**	**3**	**2017**	**June**	1.2E-03	6.6E-04	2.3E-03	1.3E-04	1.5E-04	6.2	0.13	0	3.2E-04	9.8E-04	3.0	6.1E-05	0.67	0.089	0	2.1E-03	2.1E-04	3.0E-04	7.7E-04	2.2E-03	1.7E-03
Wesmeg Open Pit	**68**	**3**	**2017**	**July**	1.1E-03	5.9E-04	2.3E-03	1.2E-04	1.3E-04	5.6	0.12	0	2.9E-04	8.8E-04	2.7	6.4E-05	0.61	0.080	0	1.9E-03	1.9E-04	2.7E-04	6.9E-04	2.0E-03	1.6E-03
Wesmeg Open Pit	**69**	**3**	**2017**	**August**	3.7E-04	2.1E-04	1.3E-03	4.5E-05	4.6E-05	1.9	0.041	0	1.1E-04	3.1E-04	0.93	4.0E-05	0.23	0.028	0	6.6E-04	6.7E-05	9.2E-05	2.4E-04	6.9E-04	5.7E-04
Wesmeg Open Pit	**70**	**3**	**2017**	**September**	1.6E-04	9.9E-05	1.1E-03	2.3E-05	2.0E-05	0.86	0.018	0	5.3E-05	1.4E-04	0.42	3.4E-05	0.11	0.012	0	2.9E-04	2.9E-05	4.0E-05	1.1E-04	3.1E-04	2.8E-04
Wesmeg Open Pit	**71**	**3**	**2017**	**October**	1.2E-04	7.6E-05	1.1E-03	1.9E-05	1.4E-05	0.63	0.013	0	4.3E-05	1.1E-04	0.30	3.7E-05	0.092	8.7E-03	0	2.1E-04	2.1E-05	2.9E-05	7.6E-05	2.3E-04	2.3E-04
Wesmeg Open Pit	**79**	**4**	**2018**	**June**	3.2E-03	1.7E-03	3.0E-03	3.3E-04	4.0E-04	17	0.36	0	8.2E-04	2.6E-03	7.9	6.1E-05	1.7	0.24	0	5.7E-03	5.7E-04	7.9E-04	2.1E-03	5.8E-03	4.4E-03
Wesmeg Open Pit	**80**	**4**	**2018**	**July**	2.8E-03	1.5E-03	3.0E-03	3.0E-04	3.5E-04	15	0.32	0	7.3E-04	2.3E-03	7.1	6.5E-05	1.5	0.21	0	5.1E-03	5.1E-04	7.1E-04	1.8E-03	5.2E-03	3.9E-03
Wesmeg Open Pit	**81**	**4**	**2018**	**August**	9.8E-04	5.4E-04	1.6E-03	1.1E-04	1.2E-04	5.1	0.11	0	2.6E-04	8.0E-04	2.5	4.1E-05	0.54	0.073	0	1.7E-03	1.8E-04	2.4E-04	6.4E-04	1.8E-03	1.4E-03
Wesmeg Open Pit	**82**	**4**	**2018**	**September**	4.3E-04	2.4E-04	1.2E-03	5.0E-05	5.4E-05	2.3	0.048	0	1.2E-04	3.6E-04	1.1	3.4E-05	0.25	0.032	0	7.7E-04	7.8E-05	1.1E-04	2.8E-04	8.0E-04	6.5E-04
Wesmeg Open Pit	**83**	**4**	**2018**	**October**	3.1E-04	1.8E-04	1.2E-03	3.8E-05	3.8E-05	1.6	0.035	0	9.1E-05	2.6E-04	0.78	3.7E-05	0.19	0.023	0	5.5E-04	5.6E-05	7.7E-05	2.0E-04	5.8E-04	4.9E-04
Wesmeg Open Pit	**91**	**5**	**2019**	**June**	3.2E-03	1.7E-03	3.0E-03	3.3E-04	4.0E-04	17	0.36	0	8.2E-04	2.6E-03	7.9	6.1E-05	1.7	0.24	0	5.7E-03	5.8E-04	7.9E-04	2.1E-03	5.8E-03	4.4E-03
Wesmeg Open Pit	**92**	**5**	**2019**	**July**	2.8E-03	1.5E-03	3.0E-03	3.0E-04	3.5E-04	15	0.32	0	7.3E-04	2.3E-03	7.1	6.5E-05	1.5	0.21	0	5.1E-03	5.1E-04	7.1E-04	1.8E-03	5.2E-03	3.9E-03
Wesmeg Open Pit	**93**	**5**	**2019**	**August**	9.8E-04	5.4E-04	1.6E-03	1.1E-04	1.2E-04	5.1	0.11	0	2.6E-04	8.0E-04	2.5	4.1E-05	0.54	0.073	0	1.7E-03	1.8E-04	2.4E-04	6.4E-04	1.8E-03	1.4E-03
Wesmeg Open Pit	**94**	**5**	**2019**	**September**	4.3E-04	2.4E-04	1.2E-03	5.0E-05	5.4E-05	2.3	0.048	0	1.2E-04	3.6E-04	1.1	3.4E-05	0.25	0.032	0	7.7E-04	7.8E-05	1.1E-04	2.8E-04	8.0E-04	6.5E-04
Wesmeg Open Pit	**95**	**5**	**2019**	**October**	3.1E-04	1.8E-04	1.2E-03	3.8E-05	3.8E-05	1.6	0.035	0	9.1E-05	2.6E-04	0.78	3.7E-05	0.19	0.023	0	5.5E-04	5.6E-05	7.7E-05	2.0E-04	5.8E-04	4.9E-04
Wesmeg Open Pit	**103**	**6**	**2020**	**June**	3.0E-03	1.6E-03	3.1E-03	3.2E-04	3.8E-04	16	0.34	0	7.8E-04	2.4E-03	7.6	6.6E-05	1.6	0.23	0	5.4E-03	5.5E-04	7.5E-04	2.0E-03	5.6E-03	4.2E-03
Wesmeg Open Pit	**104**	**6**	**2020**	**July**	2.7E-03	1.5E-03	3.1E-03	2.9E-04	3.4E-04	14	0.30	0	7.0E-04	2.2E-03	6.8	6.9E-05	1.5	0.20	0	4.8E-03	4.9E-04	6.8E-04	1.8E-03	5.0E-03	3.8E-03
Wesmeg Open Pit	**105**	**6**	**2020**	**August**	9.3E-04	5.2E-04	1.7E-03	1.0E-04	1.2E-04	4.9	0.10	0	2.5E-04	7.7E-04	2.4	4.4E-05	0.52	0.070	0	1.7E-03	1.7E-04	2.3E-04	6.1E-04	1.7E-03	1.3E-03
Wesmeg Open Pit	**106**	**6**	**2020**	**September**	4.1E-04	2.3E-04	1.2E-03	4.9E-05	5.1E-05	2.2	0.046	0	1.2E-04	3.4E-04	1.0	3.7E-05	0.24	0.031	0	7.4E-04	7.5E-05	1.0E-04	2.7E-04	7.7E-04	6.3E-04
Wesmeg Open Pit	**107**	**6**	**2020**	**October**	3.0E-04	1.7E-04	1.3E-03	3.8E-05	3.7E-05	1.6	0.033	0	8.9E-05	2.5E-04	0.75	4.0E-05	0.19	0.022	0	5.3E-04	5.4E-05	7.4E-05	1.9E-04	5.6E-04	4.8E-04
Wesmeg Open Pit	**115**	**7**	**2021**	**June**	3.1E-03	1.7E-03	3.1E-03	3.3E-04	3.9E-04	16	0.35	0	8.1E-04	2.5E-03	7.8	6.6E-05	1.7	0.23	0	5.6E-03	5.7E-04	7.8E-04	2.0E-03	5.8E-03	4.4E-03
Wesmeg Open Pit	**116**	**7**	**2021**	**July**	2.8E-03	1.5E-03	3.1E-03	3.0E-04	3.5E-04	15	0.31	0	7.3E-04	2.3E-03	7.0	6.9E-05	1.5	0.21	0	5.0E-03	5.1E-04	7.0E-04	1.8E-03	5.2E-03	3.9E-03
Wesmeg Open Pit	**117**	**7**	**2021**	**August**	9.7E-04	5.3E-04	1.7E-03	1.1E-04	1.2E-04	5.1	0.11	0	2.6E-04	7.9E-04	2.4	4.4E-05	0.54	0.072	0	1.7E-03	1.8E-04	2.4E-04	6.3E-04	1.8E-03	1.4E-03
Wesmeg Open Pit	**118**	**7**	**2021**	**September**	4.3E-04	2.4E-04	1.3E-03	5.0E-05	5.3E-05	2.2	0.048	0	1.2E-04	3.6E-04	1.1	3.7E-05	0.25	0.032	0	7.6E-04	7.7E-05	1.1E-04	2.8E-04	7.9E-04	6.4E-04
Wesmeg Open Pit	**119**	**7**	**2021**	**October**	3.1E-04	1.8E-04	1.3E-03	3.9E-05	3.8E-05	1.6	0.034	0	9.2E-05	2.6E-04	0.78	4.0E-05	0.19	0.023	0	5.5E-04	5.5E-05	7.6E-05	2.0E-04	5.7E-04	4.9E-04
Wesmeg Open Pit	**127**	**8**	**2022**	**June**	3.1E-03	1.7E-03	3.1E-03	3.3E-04	3.9E-04	16	0.35	0	8.1E-04	2.5E-03	7.8	6.6E-05	1.7	0.23	0	5.6E-03	5.7E-04	7.8E-04	2.0E-03	5.8E-03	4.4E-03
Wesmeg Open Pit	**128**	**8**	**2022**	**July**	2.8E-03	1.5E-03	3.1E-03	3.0E-04	3.5E-04	15	0.31	0	7.3E-04	2.3E-03	7.0	6.9E-05	1.5	0.21	0	5.0E-03	5.1E-04	7.0E-04	1.8E-03	5.2E-03	3.9E-03
Wesmeg Open Pit	**129**	**8**	**2022**	**August**	9.7E-04	5.3E-04	1.7E-03	1.1E-04	1.2E-04	5.1	0.11	0	2.6E-04	7.9E-04	2.4	4.4E-05	0.54	0.072	0	1.7E-03	1.8E-04	2.4E-04	6.3E-04	1.8E-03	1.4E-03
Wesmeg Open Pit	**130**	**8**	**2022**	**September**	4.3E-04	2.4E-04	1.3E-03	5.0E-05	5.3E-05	2.2	0.048	0	1.2E-04	3.6E-04	1.1	3.7E-05	0.25	0.032	0	7.6E-04	7.7E-05	1.1E-04	2.8E-04	7.9E-04	6.4E-04
Wesmeg Open Pit	**131**	**8**	**2022**	**October**	3.1E-04	1.8E-04	1.3E-03	3.9E-05	3.8E-05	1.6	0.034	0	9.2E-05	2.6E-04	0.78	4.0E-05	0.19	0.023	0	5.5E-04	5.5E-05	7.6E-05	2.0E-04	5.7E-04	4.9E-04
Wesmeg Open Pit	**139**	**9**	**2023**	**June**	3.1E-03	1.7E-03	3.1E-03	3.3E-04	3.9E-04	16	0.35	0	8.1E-04	2.5E-03	7.8	6.6E-05	1.7	0.23	0	5.6E-03	5.7E-04	7.8E-04	2.0E-03	5.8E-03	4.4E-03
Wesmeg Open Pit	**140**	**9**	**2023**	**July**	2.8E-03	1.5E-03	3.1E-03	3.0E-04	3.5E-04	15	0.31	0	7.3E-04	2.3E-03	7.0	6.9E-05	1.5	0.21	0	5.0E-03	5.1E-04	7.0E-04	1.8E-03	5.2E-03	3.9E-03
Wesmeg Open Pit	**141**	**9**	**2023**	**August**	9.7E-04	5.3E-04	1.7E-03	1.1E-04	1.2E-04	5.1	0.11	0	2.6E-04	7.9E-04	2.4	4.4E-05	0.54	0.072	0	1.7E-03	1.8E-04	2.4E-04	6.3E-04	1.8E-03	1.4E-03
Wesmeg Open Pit	**142**	**9**	**2023**	**September**	4.3E-04	2.4E-04	1.3E-03	5.0E-05	5.3E-05	2.2	0.048	0	1.2E-04	3.6E-04	1.1	3.7E-05	0.25	0.032	0	7.6E-04	7.7E-05	1.1E-04	2.8E-04	7.9E-04	6.4E-04
Wesmeg Open Pit	**143**	**9**	**2023**	**October**	3.1E-04	1.8E-04	1.3E-03	3.9E-05	3.8E-05	1.6	0.034	0	9.2E-05	2.6E-04	0.78	4.0E-05	0.19	0.023	0	5.5E-04	5.5E-05	7.6E-05	2.0E-04	5.7E-04	4.9E-04
Wesmeg Open Pit	**151**	**10**	**2024**	**June**	3.0E-03	1.6E-03	3.2E-03	3.2E-04	3.7E-04	16	0.34	0	7.8E-04	2.4E-03	7.5	7.1E-05	1.6	0.23	0	5.4E-03	5.5E-04	7.5E-04	2.0E-03	5.5E-03	4.2E-03
Wesmeg Open Pit	**152**	**10**	**2024**	**July**	2.7E-03	1.5E-03	3.2E-03	2.9E-04	3.4E-04	14	0.30	0	7.1E-04	2.2E-03	6.8	7.4E-05	1.5	0.20	0	4.9E-03	4.9E-04	6.8E-04	1.8E-03	5.0E-03	3.8E-03
Wesmeg Open Pit	**153**	**10**	**2024**	**August**	9.3E-04	5.2E-04	1.7E-03	1.0E-04	1.2E-04	4.9	0.10	0	2.5E-04	7.7E-04	2.4	4.7E-05	0.52	0.070	0	1.7E-03	1.7E-04	2.3E-04	6.1E-04	1.7E-03	1.4E-03
Wesmeg Open Pit	**154**	**10**	**2024**	**September**	4.1E-04	2.3E-04	1.3E-03	4.9E-05	5.1E-05	2.2	0.046	0	1.2E-04	3.5E-04	1.0	3.9E-05	0.25	0.031	0	7.4E-04	7.5E-05	1.0E-04	2.7E-04	7.7E-04	6.3E-04
Wesmeg Open Pit	**155**	**10**	**2024**	**October**	2.9E-04	1.7E-04	1.4E-03	3.8E-05	3.7E-05	1.6	0.033	0	9.0E-05	2.5E-04	0.75	4.3E-05	0.19	0.022	0	5.3E-04	5.4E-05	7.4E-05	1.9E-04	5.6E-04	4.8E-04
Wesmeg Open Pit	**163**	**11**	**2025**	**June**	3.1E-03	1.7E-03	3.3E-03	3.3E-04	3.9E-04	16	0.35	0	8.0E-04	2.5E-03	7.7	7.1E-05	1.7	0.23	0	5.5E-03	5.6E-04	7.7E-04	2.0E-03	5.7E-03	4.3E-03
Wesmeg Open Pit	**164**	**11**	**2025**	**July**	2.8E-03	1.5E-03	3.2E-03	2.9E-04	3.5E-04	14	0.31	0	7.2E-04	2.3E-03	7.0	7.4E-05	1.5	0.21	0	5.0E-03	5.0E-04	6.9E-04	1.8E-03	5.1E-03	3.9E-03
Wesmeg Open Pit	**165**	**11**	**2025**	**August**	9.6E-04	5.3E-04	1.8E-03	1.1E-04	1.2E-04	5.0	0.11	0	2.6E-04	7.9E-04	2.4	4.7E-05	0.54	0.072	0	1.7E-03	1.7E-04	2.4E-04	6.2E-04	1.8E-03	1.4E-03
Wesmeg Open Pit	**166**	**11**	**2025**	**September**	4.2E-04	2.4E-04	1.3E-03	5.0E-05	5.3E-05	2.2	0.047	0	1.2E-04	3.5E-04	1.1	3.9E-05	0.25	0.032	0	7.5E-04	7.6E-05	1.1E-04	2.7E-04	7.9E-04	6.4E-04
Wesmeg Open Pit	**167**	**11**	**2025**	**October**	3.0E-04	1.8E-04	1.4E-03	3.9E-05	3.8E-05	1.6	0.034	0	9.2E-05	2.6E-04	0.77	4.3E-05	0.19	0.023	0	5.4E-04	5.5E-05	7.6E-05	2.0E-04	5.7E-04	4.9E-04
Wesmeg Open Pit	**175**	**12**	**2026**	**June**	3.0E-03	1.6E-03	3.2E-03	3.2E-04	3.8E-04	16	0.34	0	7.8E-04	2.4E-03	7.5	6.8E-05	1.6	0.23	0	5.4E-03	5.5E-04	7.5E-04	2.0E-03	5.5E-03	4.2E-03
Wesmeg Open Pit	**176**	**12**	**2026**	**July**	2.7E-03	1.5E-03	3.1E-03	2.8E-04	3.3E-04	14	0.30	0	6.9E-04	2.2E-03	6.7	7.0E-05	1.4	0.20	0	4.8E-03	4.8E-04	6.7E-04	1.7E-03	4.9E-03	3.7E-03
Wesmeg Open Pit	**177**	**12**	**2026**	**August**	9.3E-04	5.1E-04	1.7E-03	1.0E-04	1.2E-04	4.9	0.10	0	2.5E-04	7.6E-04	2.3	4.5E-05	0.52	0.070	0	1.7E-03	1.7E-04	2.3E-04	6.1E-04	1.7E-03	1.3E-03
Wesmeg Open Pit	**178**	**12**	**2026**	**September**	4.1E-04	2.3E-04	1.3E-03	4.9E-05	5.1E-05	2.2	0.046	0	1.2E-04	3.4E-04	1.0	3.8E-05	0.24	0.031	0	7.3E-04	7.4E-05	1.0E-04	2.7E-04	7.6E-04	6.2E-04
Wesmeg Open Pit	**179**	**12**	**2026**	**October**	2.9E-04	1.7E-04	1.3E-03	3.8E-05	3.7E-05	1.6	0.033	0	8.9E-05	2.5E-04	0.75	4.1E-05	0.19	0.022	0	5.2E-04	5.3E-05	7.3E-05	1.9E-04	5.5E-04	4.7E-04
Wesmeg Open Pit	**187**	**13**	**2034**	**June**	3.1E-03	1.7E-03	3.2E-03	3.3E-04	3.9E-04	16	0.35	0	8.0E-04	2.5E-03	7.8	6.8E-05	1.7	0.23	0	5.6E-03	5.7E-04	7.8E-04	2.0E-03	5.7E-03	4.3E-03
				MINIMUM	1.2E-04	7.6E-05	1.1E-03	1.9E-05	1.4E-05	0.63	0.013	0	4.3E-05	1.1E-04	0.30	3.4E-05	0.092	8.7E-03	0	2.1E-04	2.1E-05	2.9E-05	7.6E-05	2.3E-04	2.3E-04
				MAXIMUM	3.2E-03	1.7E-03	3.3E-03	3.3E-04	4.0E-04	17	0.36	0	8.2E-04	2.6E-03	7.9	7.4E-05	1.7	0.24	0	5.7E-03	5.8E-04	7.9E-04	2.1E-03	5.8E-03	4.4E-03
				AVERAGE	1.4E-03	7.9E-04	2.1E-03	1.6E-04	1.8E-04	7.6	0.16	0	3.8E-04	1.2E-03	3.6	5.1E-05	0.79	0.11	0	2.6E-03	2.6E-04	3.6E-04	9.4E-04	2.7E-03	2.1E-03

Table C-2.6 - Wesmeg Open Pit
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12			13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)																	0.5							
	Model	**Mine**	**Date**		**TDS**	**Total Alkalinity**	**Cl**	**F**	**SO4**	**NH4 (as N)**	**NO3**	**TKN**	**P_dissolved[6]**	**PO4**	**Al[5]**	**Sb**	**As**	**Ba**	**Be**	**Bi**	**B**	**Cd[4]**	**Ca**	**Cr[3]**
LOCATION	**Month**	**Year**	**Year**	**Month**	**mg/L**	**mg/L as CaCO3**	**mg/L**	**mg/L**	**mg/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**
Pit Lake Water Quality When Full (Year 23)																								
Wesmeg Open Pit	**306**	**23**	**2153**	**May**	37	17	6.9	2.1E-05	3.8	0.68	0.75	0.22	4.1E-03	1.2E-03	4.0E-03	3.5E-05	8.6E-04	6.2E-03	2.1E-09	1.0E-09	3.1E-03	1.8E-08	2.1	6.6E-04
Wesmeg Open Pit	**307**	**23**	**2154**	**June**	36	17	6.8	2.1E-05	3.8	0.68	0.75	0.21	4.1E-03	1.2E-03	3.9E-03	3.5E-05	8.5E-04	6.1E-03	2.0E-09	1.0E-09	3.1E-03	1.8E-08	2.1	6.6E-04
Wesmeg Open Pit	**308**	**23**	**2155**	**July**	36	17	6.8	2.1E-05	3.8	0.68	0.75	0.21	4.0E-03	1.2E-03	3.9E-03	3.5E-05	8.5E-04	6.1E-03	2.0E-09	1.0E-09	3.1E-03	1.8E-08	2.0	6.5E-04
Wesmeg Open Pit	**309**	**23**	**2156**	**August**	36	17	6.7	2.1E-05	3.8	0.68	0.75	0.21	4.0E-03	1.2E-03	3.9E-03	3.4E-05	8.4E-04	6.1E-03	2.0E-09	1.0E-09	3.1E-03	1.8E-08	2.0	6.5E-04
Wesmeg Open Pit	**310**	**23**	**2157**	**September**	36	17	6.7	2.1E-05	3.7	0.68	0.75	0.21	4.0E-03	1.2E-03	3.9E-03	3.4E-05	8.4E-04	6.0E-03	2.0E-09	1.0E-09	3.1E-03	1.8E-08	2.0	6.5E-04
Wesmeg Open Pit	**311**	**23**	**2158**	**October**	35	17	6.6	2.1E-05	3.7	0.68	0.75	0.21	4.0E-03	1.2E-03	3.8E-03	3.4E-05	8.3E-04	6.0E-03	2.0E-09	1.0E-09	3.0E-03	1.8E-08	2.0	6.4E-04
Long Term Pit Lake Water Quality (Years 26+)																								
Notes:				SUMMER AVERAGE	20	9.3	3.6	1.2E-05	2.1	0.67	0.74	0.12	2.2E-03	6.3E-04	2.2E-03	2.0E-05	4.8E-04	3.3E-03	1.2E-09	6.1E-10	1.7E-03	1.0E-08	1.1	3.5E-04

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.6 - Wesmeg Open Pit
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						**0.002**	**0.3**	**0.001**				**0.000026**	**0.073**	**0.038**		**1.0E-03**			**0.0008**				**0.015**		**0.03**
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						**0.3**	**3.0**	**0.2**						**0.5**										**0.5**
	Model	**Mine**	**Date**		**Co**	**Cu[4]**	**Fe**	**Pb[4]**	**Li**	**Mg**	**Mn**	**Hg**	**Mo**	**Ni[4]**	**K**	**Se**	**Na**	**Sr**	**Tl**	**Sn**	**Ti**	**W**	**U**	**V**	**Zn**
LOCATION	**Month**	**Year**	**Year**	**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**	**mg/L**	**mg/L**	**mg/L**
Pit Lake Water Quality When Full (Year 23)																								
Wesmeg Open Pit	**306**	**23**	**2153**	**May**	5.9E-06	1.2E-03	7.0E-03	1.7E-04	8.4E-07	0.47	1.9E-03	1.0E-08	2.8E-04	5.2E-04	0.38	2.7E-06	1.8	0.025	4.2E-10	1.1E-05	1.1E-06	1.5E-06	6.6E-05	3.1E-04	1.5E-03
Wesmeg Open Pit	**307**	**23**	**2154**	**June**	5.8E-06	1.2E-03	7.0E-03	1.7E-04	8.3E-07	0.47	1.8E-03	1.0E-08	2.8E-04	5.2E-04	0.38	2.9E-06	1.7	0.025	4.1E-10	1.1E-05	1.1E-06	1.5E-06	6.5E-05	3.0E-04	1.5E-03
Wesmeg Open Pit	**308**	**23**	**2155**	**July**	5.8E-06	1.2E-03	7.0E-03	1.7E-04	8.3E-07	0.46	1.8E-03	1.0E-08	2.8E-04	5.2E-04	0.38	2.9E-06	1.7	0.025	4.1E-10	1.0E-05	1.1E-06	1.5E-06	6.5E-05	3.0E-04	1.5E-03
Wesmeg Open Pit	**309**	**23**	**2156**	**August**	5.7E-06	1.2E-03	6.9E-03	1.7E-04	8.2E-07	0.46	1.8E-03	1.0E-08	2.8E-04	5.1E-04	0.38	2.9E-06	1.7	0.025	4.1E-10	1.0E-05	1.1E-06	1.5E-06	6.5E-05	3.0E-04	1.5E-03
Wesmeg Open Pit	**310**	**23**	**2157**	**September**	5.7E-06	1.2E-03	6.9E-03	1.7E-04	8.2E-07	0.46	1.8E-03	1.0E-08	2.7E-04	5.1E-04	0.37	2.9E-06	1.7	0.025	4.1E-10	1.0E-05	1.1E-06	1.5E-06	6.4E-05	3.0E-04	1.5E-03
Wesmeg Open Pit	**311**	**23**	**2158**	**October**	5.7E-06	1.2E-03	6.8E-03	1.6E-04	8.1E-07	0.46	1.8E-03	9.9E-09	2.7E-04	5.1E-04	0.37	2.9E-06	1.7	0.024	4.0E-10	1.0E-05	1.0E-06	1.5E-06	6.4E-05	3.0E-04	1.5E-03
Long Term Pit Lake Water Quality (Years 26+)																								
Notes:				SUMMER AVERAGE	3.3E-06	6.3E-04	3.8E-03	9.0E-05	4.8E-07	0.25	1.0E-03	6.1E-09	1.5E-04	2.8E-04	0.20	2.7E-06	0.93	0.013	2.5E-10	6.0E-06	6.2E-07	8.5E-07	3.5E-05	1.6E-04	8.0E-04

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

CCME aquatic life (long-term)[1] (mg/L)							120	0.12			13.00		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)																	0.5							
LOCATION	Model Month	Mine Year	Date Year	Month	TDS mg/L	Total Alkalinity mg/L as CaCO3	Cl mg/L	F mg/L	SO4 mg/L	NH4 (as N) mg N/L	NO3 mg/L	TKN mg/L	P_dissolved[6] mg/L	PO4 mg/L	Al[5] mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd[4] mg/L	Ca mg/L	Cr[3] mg/L
Operations Water Quality (Years 3 to 13)																								
F-Zone Open Pit	68	3	2017	July	63	54	2.6	1.1E-03	20	0.86	0.94	0.21	2.5E-03	3.5E-04	0.093	2.4E-03	**0.032**	0.023	0	0	0.015	2.6E-06	16	0
F-Zone Open Pit	69	3	2017	August	42	34	2.0	6.8E-04	13	0.85	0.93	0.16	2.0E-03	2.7E-04	0.056	1.5E-03	**0.019**	0.014	0	0	0.011	1.5E-06	10	0
F-Zone Open Pit	70	3	2017	September	24	18	1.4	3.0E-04	5.8	0.82	0.90	0.11	1.4E-03	1.9E-04	0.025	6.5E-04	**8.5E-03**	6.6E-03	0	0	6.9E-03	6.8E-07	4.8	0
F-Zone Open Pit	71	3	2017	October	20	15	1.4	2.1E-04	4.3	0.84	0.92	0.11	1.4E-03	1.9E-04	0.018	4.6E-04	**6.0E-03**	5.0E-03	0	0	6.4E-03	4.8E-07	3.6	0
F-Zone Open Pit	80	4	2018	July	109	100	2.0	2.5E-03	43	0.90	0.99	0.16	2.0E-03	2.8E-04	**0.21**	5.4E-03	**0.070**	0.047	0	0	0.019	5.7E-06	34	0
F-Zone Open Pit	81	4	2018	August	58	52	1.3	1.3E-03	22	0.85	0.94	0.10	1.3E-03	1.8E-04	**0.10**	2.7E-03	**0.036**	0.024	0	0	0.011	2.9E-06	17	0
F-Zone Open Pit	82	4	2018	September	29	24	0.87	5.6E-04	9.8	0.82	0.90	0.070	8.6E-04	1.2E-04	0.046	1.2E-03	**0.016**	0.011	0	0	5.9E-03	1.3E-06	7.8	0
F-Zone Open Pit	83	4	2018	October	23	19	0.87	4.0E-04	7.2	0.83	0.92	0.069	8.5E-04	1.2E-04	0.033	8.6E-04	**0.011**	8.0E-03	0	0	5.2E-03	9.0E-07	5.7	0
F-Zone Open Pit	92	5	2019	July	194	185	2.0	4.9E-03	83	0.90	0.99	0.16	2.0E-03	2.8E-04	**0.40**	0.010	**0.14**	0.090	0	0	0.029	1.1E-05	65	0
F-Zone Open Pit	93	5	2019	August	105	99	1.3	2.6E-03	44	0.85	0.94	0.10	1.3E-03	1.8E-04	**0.21**	5.5E-03	**0.072**	0.048	0	0	0.016	5.8E-06	34	0
F-Zone Open Pit	94	5	2019	September	50	45	0.88	1.1E-03	20	0.82	0.90	0.070	8.6E-04	1.2E-04	0.092	2.4E-03	**0.032**	0.021	0	0	8.4E-03	2.6E-06	15	0
F-Zone Open Pit	95	5	2019	October	38	33	0.87	8.1E-04	14	0.83	0.92	0.070	8.5E-04	1.2E-04	0.066	1.7E-03	**0.023**	0.015	0	0	7.0E-03	1.8E-06	11	0
F-Zone Open Pit	104	6	2020	July	195	185	2.0	4.9E-03	83	0.90	0.99	0.16	2.0E-03	2.8E-04	**0.40**	0.010	**0.14**	0.090	0	0	0.029	1.1E-05	65	0
F-Zone Open Pit	105	6	2020	August	106	99	1.3	2.6E-03	44	0.85	0.94	0.10	1.3E-03	1.8E-04	**0.21**	5.5E-03	**0.072**	0.048	0	0	0.016	5.8E-06	35	0
F-Zone Open Pit	106	6	2020	September	50	45	0.88	1.1E-03	20	0.82	0.90	0.070	8.6E-04	1.2E-04	0.093	2.4E-03	**0.032**	0.021	0	0	8.4E-03	2.6E-06	15	0
F-Zone Open Pit	107	6	2020	October	38	34	0.87	8.1E-04	14	0.83	0.92	0.070	8.5E-04	1.2E-04	0.067	1.8E-03	**0.023**	0.016	0	0	7.0E-03	1.8E-06	11	0
F-Zone Open Pit	116	7	2021	July	195	185	2.0	4.9E-03	83	0.90	0.99	0.16	2.0E-03	2.8E-04	**0.40**	0.010	**0.14**	0.090	0	0	0.029	1.1E-05	65	0
F-Zone Open Pit	117	7	2021	August	106	99	1.3	2.6E-03	44	0.85	0.94	0.10	1.3E-03	1.8E-04	**0.21**	5.5E-03	**0.072**	0.048	0	0	0.016	5.8E-06	35	0
F-Zone Open Pit	118	7	2021	September	50	45	0.88	1.1E-03	20	0.82	0.90	0.070	8.6E-04	1.2E-04	0.093	2.4E-03	**0.032**	0.021	0	0	8.4E-03	2.6E-06	15	0
F-Zone Open Pit	119	7	2021	October	38	34	0.87	8.1E-04	14	0.83	0.92	0.070	8.5E-04	1.2E-04	0.067	1.8E-03	**0.023**	0.016	0	0	7.0E-03	1.8E-06	11	0
F-Zone Open Pit	128	8	2022	July	195	185	2.0	4.9E-03	83	0.90	0.99	0.16	2.0E-03	2.8E-04	**0.40**	0.010	**0.14**	0.090	0	0	0.029	1.1E-05	65	0
F-Zone Open Pit	129	8	2022	August	106	99	1.3	2.6E-03	44	0.85	0.94	0.10	1.3E-03	1.8E-04	**0.21**	5.5E-03	**0.072**	0.048	0	0	0.016	5.8E-06	35	0
F-Zone Open Pit	130	8	2022	September	50	45	0.88	1.1E-03	20	0.82	0.90	0.070	8.6E-04	1.2E-04	0.093	2.4E-03	**0.032**	0.021	0	0	8.4E-03	2.6E-06	15	0
F-Zone Open Pit	131	8	2022	October	38	34	0.87	8.1E-04	14	0.83	0.92	0.070	8.5E-04	1.2E-04	0.067	1.8E-03	**0.023**	0.016	0	0	7.0E-03	1.8E-06	11	0
F-Zone Open Pit	140	9	2023	July	195	185	2.0	4.9E-03	83	0.90	0.99	0.16	2.0E-03	2.8E-04	**0.40**	0.010	**0.14**	0.090	0	0	0.029	1.1E-05	65	0
F-Zone Open Pit	141	9	2023	August	106	99	1.3	2.6E-03	44	0.85	0.94	0.10	1.3E-03	1.8E-04	**0.21**	5.5E-03	**0.072**	0.048	0	0	0.016	5.8E-06	35	0
F-Zone Open Pit	142	9	2023	September	50	45	0.88	1.1E-03	20	0.82	0.90	0.070	8.6E-04	1.2E-04	0.093	2.4E-03	**0.032**	0.021	0	0	8.4E-03	2.6E-06	15	0
F-Zone Open Pit	143	9	2023	October	38	34	0.87	8.1E-04	14	0.83	0.92	0.070	8.5E-04	1.2E-04	0.067	1.8E-03	**0.023**	0.016	0	0	7.0E-03	1.8E-06	11	0
F-Zone Open Pit	152	10	2024	July	195	185	2.0	4.9E-03	83	0.90	0.99	0.16	2.0E-03	2.8E-04	**0.40**	0.010	**0.14**	0.090	0	0	0.029	1.1E-05	65	0
F-Zone Open Pit	153	10	2024	August	106	99	1.3	2.6E-03	44	0.85	0.94	0.10	1.3E-03	1.8E-04	**0.21**	5.5E-03	**0.072**	0.048	0	0	0.016	5.8E-06	35	0
F-Zone Open Pit	154	10	2024	September	50	45	0.88	1.1E-03	20	0.82	0.90	0.070	8.6E-04	1.2E-04	0.093	2.4E-03	**0.032**	0.021	0	0	8.4E-03	2.6E-06	15	0
F-Zone Open Pit	155	10	2024	October	38	34	0.87	8.1E-04	14	0.83	0.92	0.070	8.5E-04	1.2E-04	0.067	1.8E-03	**0.023**	0.016	0	0	7.0E-03	1.8E-06	11	0
F-Zone Open Pit	164	11	2025	July	195	185	2.0	4.9E-03	83	0.90	0.99	0.16	2.0E-03	2.8E-04	**0.40**	0.010	**0.14**	0.090	0	0	0.029	1.1E-05	65	0
F-Zone Open Pit	165	11	2025	August	106	99	1.3	2.6E-03	44	0.85	0.94	0.10	1.3E-03	1.8E-04	**0.21**	5.5E-03	**0.072**	0.048	0	0	0.016	5.8E-06	35	0
F-Zone Open Pit	166	11	2025	September	50	45	0.88	1.1E-03	20	0.82	0.90	0.070	8.6E-04	1.2E-04	0.093	2.4E-03	**0.032**	0.021	0	0	8.4E-03	2.6E-06	15	0
F-Zone Open Pit	167	11	2025	October	38	34	0.87	8.1E-04	14	0.83	0.92	0.070	8.5E-04	1.2E-04	0.067	1.8E-03	**0.023**	0.016	0	0	7.0E-03	1.8E-06	11	0
F-Zone Open Pit	176	12	2026	July	195	185	2.0	4.9E-03	83	0.90	0.99	0.16	2.0E-03	2.8E-04	**0.40**	0.010	**0.14**	0.090	0	0	0.029	1.1E-05	65	0
F-Zone Open Pit	177	12	2026	August	106	99	1.3	2.6E-03	44	0.85	0.94	0.10	1.3E-03	1.8E-04	**0.21**	5.5E-03	**0.072**	0.048	0	0	0.016	5.8E-06	35	0
F-Zone Open Pit	178	12	2026	September	50	45	0.88	1.1E-03	20	0.82	0.90	0.070	8.6E-04	1.2E-04	0.093	2.4E-03	**0.032**	0.021	0	0	8.4E-03	2.6E-06	15	0
F-Zone Open Pit	179	12	2026	October	38	34	0.87	8.1E-04	14	0.83	0.92	0.070	8.5E-04	1.2E-04	0.067	1.8E-03	**0.023**	0.016	0	0	7.0E-03	1.8E-06	11	0
				MINIMUM	20	15	0.87	2.1E-04	4.3	0.82	0.90	0.069	8.5E-04	1.2E-04	0.018	4.6E-04	**6.0E-03**	5.0E-03	0	0	5.2E-03	4.8E-07	3.6	0
				MAXIMUM	195	185	2.6	4.9E-03	83	0.90	0.99	0.21	2.5E-03	3.5E-04	**0.40**	0.010	**0.14**	0.090	0	0	0.029	1.1E-05	65	0
				AVERAGE	87	80	1.3	2.1E-03	35	0.85	0.94	0.11	1.3E-03	1.8E-04	**0.17**	4.4E-03	**0.058**	0.039	0	0	0.014	4.6E-06	28	0

CCME aquatic life (long-term)[1] (mg/L)						0.002	0.3	0.001				0.000026	0.073	0.038		0.001			0.0008				0.015		0.03
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						0.3	3.0	0.2						0.5											0.5
LOCATION	Model Month	Mine Year	Date Year	Month	Co mg/L	Cu[4] mg/L	Fe mg/L	Pb[4] mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg mg/L	Mo mg/L	Ni[4] mg/L	K mg/L	Se mg/L	Na mg/L	Sr mg/L	Tl mg/L	Sn mg/L	Ti mg/L	W mg/L	U mg/L	V mg/L	Zn mg/L
Operations Water Quality (Years 3 to 13)																									
F-Zone Open Pit	68	3	2017	July	2.7E-04	1.7E-04	9.8E-03	7.6E-05	1.4E-03	3.9	0.19	0	2.5E-04	6.8E-04	2.9	2.7E-04	0.94	0.032	0	3.4E-04	1.2E-04	1.0E-04	2.3E-04	8.5E-04	1.7E-03
F-Zone Open Pit	69	3	2017	August	1.7E-04	1.2E-04	7.3E-03	5.5E-05	8.6E-04	2.3	0.11	0	1.7E-04	4.2E-04	1.8	2.1E-04	0.60	0.019	0	2.0E-04	7.0E-05	6.2E-05	1.4E-04	5.3E-04	1.1E-03
F-Zone Open Pit	70	3	2017	September	7.3E-05	7.5E-05	4.8E-03	3.4E-05	3.8E-04	1.1	0.050	0	9.6E-05	2.1E-04	0.79	1.4E-04	0.31	8.6E-03	0	9.0E-05	3.1E-05	2.7E-05	6.0E-05	2.5E-04	6.0E-04
F-Zone Open Pit	71	3	2017	October	5.1E-05	6.9E-05	4.6E-03	3.2E-05	2.7E-04	0.78	0.035	0	8.3E-05	1.6E-04	0.57	1.4E-04	0.26	6.1E-03	0	6.4E-05	2.2E-05	1.9E-05	4.3E-05	2.0E-04	5.0E-04
F-Zone Open Pit	80	4	2018	July	6.1E-04	2.4E-04	0.010	9.6E-05	3.1E-03	8.3	0.41	0	4.1E-04	1.3E-03	6.2	2.1E-04	1.7	0.072	0	7.5E-04	2.6E-04	2.3E-04	5.0E-04	1.7E-03	3.1E-03
F-Zone Open Pit	81	4	2018	August	3.1E-04	1.3E-04	6.1E-03	5.4E-05	1.6E-03	4.2	0.21	0	2.2E-04	6.9E-04	3.2	1.3E-04	0.90	0.036	0	3.8E-04	1.3E-04	1.2E-04	2.5E-04	8.9E-04	1.6E-03
F-Zone Open Pit	82	4	2018	September	1.4E-04	7.0E-05	3.6E-03	3.0E-05	7.0E-04	1.9	0.092	0	1.1E-04	3.2E-04	1.4	9.0E-05	0.42	0.016	0	1.7E-04	5.7E-05	5.1E-05	1.1E-04	4.0E-04	7.7E-04
F-Zone Open Pit	83	4	2018	October	9.7E-05	6.0E-05	3.3E-03	2.6E-05	5.0E-04	1.4	0.066	0	8.8E-05	2.4E-04	1.0	8.9E-05	0.33	0.011	0	1.2E-04	4.1E-05	3.6E-05	8.0E-05	3.0E-04	6.0E-04
F-Zone Open Pit	92	5	2019	July	1.2E-03	3.9E-04	0.014	1.5E-04	6.1E-03	16	0.80	0	7.3E-04	2.5E-03	12	2.1E-04	3.2	0.14	0	1.5E-03	5.0E-04	4.4E-04	9.7E-04	3.3E-03	5.6E-03
F-Zone Open Pit	93	5	2019	August	6.2E-04	2.2E-04	8.3E-03	8.3E-05	3.2E-03	8.5	0.42	0	3.9E-04	1.4E-03	6.4	1.3E-04	1.7	0.073	0	7.7E-04	2.6E-04	2.3E-04	5.1E-04	1.7E-03	3.0E-03
F-Zone Open Pit	94	5	2019	September	2.7E-04	1.1E-04	4.6E-03	4.3E-05	1.4E-03	3.7	0.19	0	1.9E-04	6.1E-04	2.8	9.0E-05	0.78	0.032	0	3.4E-04	1.2E-04	1.0E-04	2.3E-04	7.8E-04	1.4E-03
F-Zone Open Pit	95	5	2019	October	2.0E-04	8.6E-05	4.0E-03	3.5E-05	1.0E-03	2.7	0.13	0	1.4E-04	4.5E-04	2.0	8.9E-05	0.58	0.023	0	2.4E-04	8.3E-05	7.4E-05	1.6E-04	5.7E-04	1.0E-03
F-Zone Open Pit	104	6	2020	July	1.2E-03	3.9E-04	0.014	1.5E-04	6.1E-03	16	0.81	0	7.3E-04	2.5E-03	12	2.1E-04	3.2	0.14	0	1.5E-03	5.0E-04	4.4E-04	9.7E-04	3.3E-03	5.6E-03
F-Zone Open Pit	105	6	2020	August	6.2E-04	2.2E-04	8.3E-03	8.3E-05	3.2E-03	8.5	0.43	0	4.0E-04	1.4E-03	6.4	1.3E-04	1.7	0.073	0	7.7E-04	2.6E-04	2.3E-04	5.2E-04	1.8E-03	3.0E-03
F-Zone Open Pit	106	6	2020	September	2.7E-04	1.1E-04	4.6E-03	4.3E-05	1.4E-03	3.7	0.19	0	1.9E-04	6.1E-04	2.8	9.0E-05	0.78	0.032	0	3.4E-04	1.2E-04	1.0E-04	2.3E-04	7.8E-04	1.4E-03
F-Zone Open Pit	107	6	2020	October	2.0E-04	8.6E-05	4.0E-03	3.5E-05	1.0E-03	2.7	0.13	0	1.4E-04	4.5E-04	2.0	8.9E-05	0.58	0.023	0	2.4E-04	8.3E-05	7.4E-05	1.6E-04	5.7E-04	1.0E-03
F-Zone Open Pit	116	7	2021	July	1.2E-03	3.9E-04	0.014	1.5E-04	6.1E-03	16	0.81	0	7.3E-04	2.5E-03	12	2.1E-04	3.2	0.14	0	1.5E-03	5.0E-04	4.4E-04	9.8E-04	3.3E-03	5.6E-03
F-Zone Open Pit	117	7	2021	August	6.2E-04	2.2E-04	8.3E-03	8.3E-05	3.2E-03	8.5	0.43	0	4.0E-04	1.4E-03	6.4	1.3E-04	1.7	0.073	0	7.7E-04	2.6E-04	2.3E-04	5.2E-04	1.8E-03	3.0E-03
F-Zone Open Pit	118	7	2021	September	2.7E-04	1.1E-04	4.6E-03	4.3E-05	1.4E-03	3.7	0.19	0	1.9E-04	6.1E-04	2.8	9.0E-05	0.78	0.032	0	3.4E-04	1.2E-04	1.0E-04	2.3E-04	7.8E-04	1.4E-03
F-Zone Open Pit	119	7	2021	October	2.0E-04	8.6E-05	4.0E-03	3.5E-05	1.0E-03	2.7	0.13	0	1.4E-04	4.5E-04	2.0	8.9E-05	0.58	0.023	0	2.4E-04	8.3E-05	7.4E-05	1.6E-04	5.7E-04	1.0E-03
F-Zone Open Pit	128	8	2022	July	1.2E-03	3.9E-04	0.014	1.5E-04	6.1E-03	16	0.81	0	7.3E-04	2.5E-03	12	2.1E-04	3.2	0.14	0	1.5E-03	5.0E-04	4.4E-04	9.8E-04	3.3E-03	5.6E-03
F-Zone Open Pit	129	8	2022	August	6.2E-04	2.2E-04	8.3E-03	8.3E-05	3.2E-03	8.5	0.43	0	4.0E-04	1.4E-03	6.4	1.3E-04	1.7	0.073	0	7.7E-04	2.6E-04	2.3E-04	5.2E-04	1.8E-03	3.0E-03
F-Zone Open Pit	130	8	2022	September	2.7E-04	1.1E-04	4.6E-03	4.3E-05	1.4E-03	3.7	0.19	0	1.9E-04	6.1E-04	2.8	9.0E-05	0.78	0.032	0	3.4E-04	1.2E-04	1.0E-04	2.3E-04	7.8E-04	1.4E-03
F-Zone Open Pit	131	8	2022	October	2.0E-04	8.6E-05	4.0E-03	3.5E-05	1.0E-03	2.7	0.13	0	1.4E-04	4.5E-04	2.0	8.9E-05	0.58	0.023	0	2.4E-04	8.3E-05	7.4E-05	1.6E-04	5.7E-04	1.0E-03
F-Zone Open Pit	140	9	2023	July	1.2E-03	3.9E-04	0.014	1.5E-04	6.1E-03	16	0.81	0	7.3E-04	2.5E-03	12	2.1E-04	3.2	0.14	0	1.5E-03	5.0E-04	4.4E-04	9.8E-04	3.3E-03	5.6E-03
F-Zone Open Pit	141	9	2023	August	6.2E-04	2.2E-04	8.3E-03	8.3E-05	3.2E-03	8.5	0.43	0	4.0E-04	1.4E-03	6.4	1.3E-04	1.7	0.073	0	7.7E-04	2.6E-04	2.3E-04	5.2E-04	1.8E-03	3.0E-03
F-Zone Open Pit	142	9	2023	September	2.7E-04	1.1E-04	4.6E-03	4.3E-05	1.4E-03	3.7	0.19	0	1.9E-04	6.1E-04	2.8	9.0E-05	0.78	0.032	0	3.4E-04	1.2E-04	1.0E-04	2.3E-04	7.8E-04	1.4E-03
F-Zone Open Pit	143	9	2023	October	2.0E-04	8.6E-05	4.0E-03	3.5E-05	1.0E-03	2.7	0.13	0	1.4E-04	4.5E-04	2.0	8.9E-05	0.58	0.023	0	2.4E-04	8.3E-05	7.4E-05	1.6E-04	5.7E-04	1.0E-03
F-Zone Open Pit	152	10	2024	July	1.2E-03	3.9E-04	0.014	1.5E-04	6.1E-03	16	0.81	0	7.3E-04	2.5E-03	12	2.1E-04	3.2	0.14	0	1.5E-03	5.0E-04	4.4E-04	9.8E-04	3.3E-03	5.6E-03
F-Zone Open Pit	153	10	2024	August	6.2E-04	2.2E-04	8.3E-03	8.3E-05	3.2E-03	8.5	0.43	0	4.0E-04	1.4E-03	6.4	1.3E-04	1.7	0.073	0	7.7E-04	2.6E-04	2.3E-04	5.2E-04	1.8E-03	3.0E-03
F-Zone Open Pit	154	10	2024	September	2.7E-04	1.1E-04	4.6E-03	4.3E-05	1.4E-03	3.7	0.19	0	1.9E-04	6.1E-04	2.8	9.0E-05	0.78	0.032	0	3.4E-04	1.2E-04	1.0E-04	2.3E-04	7.8E-04	1.4E-03
F-Zone Open Pit	155	10	2024	October	2.0E-04	8.6E-05	4.0E-03	3.5E-05	1.0E-03	2.7	0.13	0	1.4E-04	4.5E-04	2.0	8.9E-05	0.58	0.023	0	2.4E-04	8.3E-05	7.4E-05	1.6E-04	5.7E-04	1.0E-03
F-Zone Open Pit	164	11	2025	July	1.2E-03	3.9E-04	0.014	1.5E-04	6.1E-03	16	0.81	0	7.3E-04	2.5E-03	12	2.1E-04	3.2	0.14	0	1.5E-03	5.0E-04	4.4E-04	9.8E-04	3.3E-03	5.6E-03
F-Zone Open Pit	165	11	2025	August	6.2E-04	2.2E-04	8.3E-03	8.3E-05	3.2E-03	8.5	0.43	0	4.0E-04	1.4E-03	6.4	1.3E-04	1.7	0.073	0	7.7E-04	2.6E-04	2.3E-04	5.2E-04	1.8E-03	3.0E-03
F-Zone Open Pit	166	11	2025	September	2.7E-04	1.1E-04	4.6E-03	4.3E-05	1.4E-03	3.7	0.19	0	1.9E-04	6.1E-04	2.8	9.0E-05	0.78	0.032	0	3.4E-04	1.2E-04	1.0E-04	2.3E-04	7.8E-04	1.4E-03
F-Zone Open Pit	167	11	2025	October	2.0E-04	8.6E-05	4.0E-03	3.5E-05	1.0E-03	2.7	0.13	0	1.4E-04	4.5E-04	2.0	8.9E-05	0.58	0.023	0	2.4E-04	8.3E-05	7.4E-05	1.6E-04	5.7E-04	1.0E-03
F-Zone Open Pit	176	12	2026	July	1.2E-03	3.9E-04	0.014	1.5E-04	6.1E-03	16	0.81	0	7.3E-04	2.5E-03	12	2.1E-04	3.2	0.14	0	1.5E-03	5.0E-04	4.4E-04	9.8E-04	3.3E-03	5.6E-03
F-Zone Open Pit	177	12	2026	August	6.2E-04	2.2E-04	8.3E-03	8.3E-05	3.2E-03	8.5	0.43	0	4.0E-04	1.4E-03	6.4	1.3E-04	1.7	0.073	0	7.7E-04	2.6E-04	2.3E-04	5.2E-04	1.8E-03	3.0E-03
F-Zone Open Pit	178	12	2026	September	2.7E-04	1.1E-04	4.6E-03	4.3E-05	1.4E-03	3.7	0.19	0	1.9E-04	6.1E-04	2.8	9.0E-05	0.78	0.032	0	3.4E-04	1.2E-04	1.0E-04	2.3E-04	7.8E-04	1.4E-03
F-Zone Open Pit	179	12	2026	October	2.0E-04	8.6E-05	4.0E-03	3.5E-05	1.0E-03	2.7	0.13	0	1.4E-04	4.5E-04	2.0	8.9E-05	0.58	0.023	0	2.4E-04	8.3E-05	7.4E-05	1.6E-04	5.7E-04	1.0E-03
				MINIMUM	5.1E-05	6.0E-05	3.3E-03	2.6E-05	2.7E-04	0.78	0.035	0	8.3E-05	1.6E-04	0.57	8.9E-05	0.26	6.1E-03	0	6.4E-05	2.2E-05	1.9E-05	4.3E-05	2.0E-04	5.0E-04
				MAXIMUM	1.2E-03	3.9E-04	0.014	1.5E-04	6.1E-03	16	0.81	0	7.3E-04	2.5E-03	12	2.7E-04	3.2	0.14	0	1.5E-03	5.0E-04	4.4E-04	9.8E-04	3.3E-03	5.6E-03
				AVERAGE	5.0E-04	1.8E-04	7.5E-03	7.2E-05	2.6E-03	6.8	0.34	0	3.3E-04	1.1E-03	5.1	1.4E-04	1.4	0.059	0	6.2E-04	2.1E-04	1.9E-04	4.1E-04	1.4E-03	2.4E-03

Table C-2.7 - F-Zone Open Pit
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12			13.00		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)																	0.5							
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	SO4	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/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
Pit Lake Water Quality When Full (Year 15)																								
F-Zone Open Pit	**234**	**15**	**2031**	**May**	30	17	3.9	4.9E-03	4.9	0.70	0.77	0.13	2.4E-03	6.7E-04	0.017	4.1E-04	4.9E-03	7.3E-03	3.1E-07	1.6E-07	4.6E-03	2.9E-07	3.3	3.8E-04
F-Zone Open Pit	**235**	**15**	**2031**	**June**	30	16	4.1	4.2E-03	4.6	0.70	0.77	0.14	2.5E-03	7.1E-04	0.015	3.7E-04	4.3E-03	7.0E-03	2.7E-07	1.3E-07	4.4E-03	2.6E-07	3.2	4.0E-04
F-Zone Open Pit	**236**	**15**	**2031**	**July**	29	16	4.1	4.1E-03	4.5	0.71	0.78	0.14	2.5E-03	7.0E-04	0.015	3.5E-04	4.2E-03	6.9E-03	2.6E-07	1.3E-07	4.3E-03	2.5E-07	3.1	3.9E-04
F-Zone Open Pit	**237**	**15**	**2031**	**August**	29	16	4.1	3.8E-03	4.4	0.72	0.80	0.14	2.5E-03	7.1E-04	0.014	3.4E-04	4.1E-03	6.8E-03	2.4E-07	1.2E-07	4.2E-03	2.4E-07	3.0	3.9E-04
F-Zone Open Pit	**238**	**15**	**2031**	**September**	29	15	4.1	3.6E-03	4.2	0.74	0.81	0.14	2.5E-03	7.0E-04	0.014	3.3E-04	3.9E-03	6.6E-03	2.3E-07	1.2E-07	4.1E-03	2.4E-07	2.9	3.9E-04
F-Zone Open Pit	**239**	**15**	**2031**	**October**	29	15	4.0	3.7E-03	4.2	0.75	0.83	0.13	2.4E-03	6.9E-04	0.014	3.3E-04	3.9E-03	6.6E-03	2.4E-07	1.2E-07	4.1E-03	2.4E-07	2.9	3.8E-04
Long Term Pit Lake Water Quality (Years 26+)																								
Notes:				SUMMER AVERAGE	36	16	6.7	5.4E-07	2.7	1.3	1.4	0.21	4.0E-03	1.2E-03	2.2E-03	3.1E-06	2.8E-04	6.0E-03	3.3E-11	1.6E-11	3.0E-03	2.5E-09	2.0	6.5E-04

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.7 - F-Zone Open Pit
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)						0.002	0.3	0.001				0.000026	0.073	0.038		0.001			0.0008				0.015		0.03
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						0.3	3.0	0.2						0.5											0.5
LOCATION	**Model Month**	**Mine Year**	**Date Year**	**Month**	**Co mg/L**	**Cu[4] mg/L**	**Fe mg/L**	**Pb[4] mg/L**	**Li mg/L**	**Mg mg/L**	**Mn mg/L**	**Hg mg/L**	**Mo mg/L**	**Ni[4] mg/L**	**K mg/L**	**Se mg/L**	**Na mg/L**	**Sr mg/L**	**Tl mg/L**	**Sn mg/L**	**Ti mg/L**	**W mg/L**	**U mg/L**	**V mg/L**	**Zn mg/L**
Pit Lake Water Quality When Full (Year 15)																									
F-Zone Open Pit	**234**	**15**	**2031**	**May**	3.6E-05	6.7E-04	4.6E-03	9.9E-05	2.4E-04	0.87	0.022	1.6E-06	2.2E-04	3.8E-04	0.87	7.0E-05	2.6	0.019	5.0E-11	6.4E-05	2.2E-05	3.6E-05	6.4E-05	3.2E-04	1.0E-03
F-Zone Open Pit	**235**	**15**	**2031**	**June**	3.2E-05	7.0E-04	4.8E-03	1.0E-04	2.1E-04	0.81	0.020	1.3E-06	2.2E-04	3.8E-04	0.80	6.3E-05	2.4	0.019	4.4E-11	5.6E-05	1.9E-05	3.1E-05	6.3E-05	3.1E-04	1.0E-03
F-Zone Open Pit	**236**	**15**	**2031**	**July**	3.1E-05	7.0E-04	4.7E-03	1.0E-04	2.1E-04	0.79	0.019	1.3E-06	2.2E-04	3.8E-04	0.78	6.0E-05	2.4	0.019	4.3E-11	5.5E-05	1.8E-05	3.0E-05	6.1E-05	3.0E-04	1.0E-03
F-Zone Open Pit	**237**	**15**	**2031**	**August**	3.0E-05	7.0E-04	4.8E-03	1.0E-04	2.0E-04	0.77	0.019	1.2E-06	2.2E-04	3.8E-04	0.76	5.7E-05	2.3	0.019	4.2E-11	5.2E-05	1.8E-05	2.9E-05	6.1E-05	3.0E-04	1.0E-03
F-Zone Open Pit	**238**	**15**	**2031**	**September**	2.9E-05	7.0E-04	4.7E-03	1.0E-04	1.9E-04	0.75	0.018	1.2E-06	2.1E-04	3.7E-04	0.73	5.5E-05	2.2	0.018	4.1E-11	5.0E-05	1.7E-05	2.7E-05	6.0E-05	2.9E-04	1.0E-03
F-Zone Open Pit	**239**	**15**	**2031**	**October**	2.9E-05	6.8E-04	4.6E-03	1.0E-04	1.9E-04	0.75	0.018	1.2E-06	2.1E-04	3.7E-04	0.74	5.7E-05	2.2	0.018	4.0E-11	5.1E-05	1.7E-05	2.8E-05	5.9E-05	2.9E-04	9.9E-04
Long Term Pit Lake Water Quality (Years 26+)																									
Notes:				SUMMER AVERAGE	3.3E-07	1.2E-03	6.9E-03	1.7E-04	1.8E-06	0.44	1.4E-03	1.6E-10	2.7E-04	5.1E-04	0.36	8.3E-07	1.7	0.024	4.2E-14	4.0E-07	1.5E-07	1.3E-07	6.1E-05	2.9E-04	1.5E-03

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.8 - Pump Open Pit
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)			120	0.12			13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L													0.5							
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	SO4	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/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
Operations Water Quality (Years 6 to 13)																								
Pump Open Pit	**103**	**6**	**2020**	**June**	93	32	1.4	2.6E-04	66	0.67	0.73	0.11	1.4E-03	1.9E-04	0.041	7.3E-04	**0.010**	2.9E-03	0	0	9.3E-03	1.5E-07	13	0
Pump Open Pit	**104**	**6**	**2020**	**July**	1.4E+03	527	32	3.8E-03	972	0.80	0.78	2.6	**0.031**	4.3E-03	**0.61**	0.011	**0.15**	0.051	0	0	0.18	2.2E-06	195	0
Pump Open Pit	**105**	**6**	**2020**	**August**	48	20	2.2	9.6E-05	25	0.67	0.73	0.17	2.1E-03	2.9E-04	0.015	2.7E-04	3.8E-03	2.4E-03	0	0	9.9E-03	5.6E-08	5.6	0
Pump Open Pit	**106**	**6**	**2020**	**September**	28	13	1.8	4.2E-05	11	0.67	0.73	0.14	1.7E-03	2.4E-04	6.9E-03	1.2E-04	1.7E-03	1.7E-03	0	0	7.5E-03	2.5E-08	2.9	0
Pump Open Pit	**107**	**6**	**2020**	**October**	25	12	1.9	3.0E-05	8.5	0.67	0.73	0.15	1.8E-03	2.5E-04	5.1E-03	8.5E-05	1.3E-03	1.7E-03	0	0	7.9E-03	1.8E-08	2.5	0
Pump Open Pit	**115**	**7**	**2021**	**June**	227	75	1.4	7.0E-04	175	0.67	0.73	0.12	1.4E-03	1.9E-04	**0.11**	2.0E-03	**0.027**	5.9E-03	0	0	0.016	4.1E-07	33	0
Pump Open Pit	**116**	**7**	**2021**	**July**	3.4E+03	1.1E+03	32	0.010	2.6E+03	0.80	0.78	2.6	**0.032**	4.4E-03	**1.6**	0.029	**0.40**	0.095	0	0	0.27	6.0E-06	490	0
Pump Open Pit	**117**	**7**	**2021**	**August**	97	35	2.2	2.6E-04	65	0.67	0.73	0.17	2.1E-03	2.9E-04	0.041	7.2E-04	**1.0E-02**	3.5E-03	0	0	0.012	1.5E-07	13	0
Pump Open Pit	**118**	**7**	**2021**	**September**	50	19	1.8	1.1E-04	29	0.67	0.73	0.14	1.7E-03	2.4E-04	0.018	3.2E-04	4.4E-03	2.1E-03	0	0	8.5E-03	6.6E-08	6.2	0
Pump Open Pit	**119**	**7**	**2021**	**October**	41	17	1.9	8.1E-05	21	0.67	0.73	0.15	1.9E-03	2.6E-04	0.013	2.3E-04	3.2E-03	2.0E-03	0	0	8.6E-03	4.7E-08	4.8	0
Pump Open Pit	**127**	**8**	**2022**	**June**	227	75	1.4	7.0E-04	175	0.67	0.73	0.12	1.4E-03	1.9E-04	**0.11**	2.0E-03	**0.027**	5.9E-03	0	0	0.016	4.1E-07	33	0
Pump Open Pit	**128**	**8**	**2022**	**July**	3.4E+03	1.1E+03	32	0.010	2.6E+03	0.80	0.78	2.6	**0.032**	4.4E-03	**1.6**	0.029	**0.40**	0.095	0	0	0.27	6.0E-06	491	0
Pump Open Pit	**129**	**8**	**2022**	**August**	97	35	2.2	2.6E-04	65	0.67	0.73	0.17	2.1E-03	2.9E-04	0.041	7.2E-04	**1.0E-02**	3.5E-03	0	0	0.012	1.5E-07	13	0
Pump Open Pit	**130**	**8**	**2022**	**September**	50	20	1.8	1.1E-04	29	0.67	0.73	0.14	1.7E-03	2.4E-04	0.018	3.2E-04	4.4E-03	2.1E-03	0	0	8.5E-03	6.6E-08	6.2	0
Pump Open Pit	**131**	**8**	**2022**	**October**	41	17	1.9	8.1E-05	21	0.67	0.73	0.15	1.9E-03	2.6E-04	0.013	2.3E-04	3.2E-03	2.0E-03	0	0	8.6E-03	4.7E-08	4.8	0
Pump Open Pit	**139**	**9**	**2023**	**June**	227	75	1.4	7.0E-04	175	0.67	0.73	0.12	1.4E-03	1.9E-04	**0.11**	2.0E-03	**0.027**	5.9E-03	0	0	0.016	4.1E-07	33	0
Pump Open Pit	**140**	**9**	**2023**	**July**	3.4E+03	1.1E+03	32	0.010	2.6E+03	0.80	0.78	2.6	**0.032**	4.4E-03	**1.6**	0.029	**0.40**	0.095	0	0	0.27	6.0E-06	491	0
Pump Open Pit	**141**	**9**	**2023**	**August**	97	35	2.2	2.6E-04	65	0.67	0.73	0.17	2.1E-03	2.9E-04	0.041	7.2E-04	**1.0E-02**	3.5E-03	0	0	0.012	1.5E-07	13	0
Pump Open Pit	**142**	**9**	**2023**	**September**	59	24	3.5	1.1E-04	30	0.67	0.74	0.21	2.8E-03	5.4E-04	0.019	3.2E-04	4.5E-03	3.7E-03	0	0	1.0E-02	6.6E-08	6.8	1.5E-04
Pump Open Pit	**143**	**9**	**2023**	**October**	53	23	4.2	8.1E-05	22	0.67	0.74	0.23	3.3E-03	6.6E-04	0.014	2.3E-04	3.3E-03	4.1E-03	0	0	0.010	4.7E-08	5.5	2.1E-04
Pump Open Pit	**151**	**10**	**2024**	**June**	331	105	4.4	9.0E-04	246	0.67	0.74	0.22	3.2E-03	7.1E-04	**0.14**	2.5E-03	**0.034**	9.9E-03	0	0	0.021	5.3E-07	50	2.8E-04
Pump Open Pit	**152**	**10**	**2024**	**July**	3.5E+03	1.2E+03	36	0.011	2.7E+03	0.81	0.79	2.7	**0.034**	5.0E-03	**1.7**	0.029	**0.41**	0.100	0	0	0.28	6.1E-06	509	3.1E-04
Pump Open Pit	**153**	**10**	**2024**	**August**	208	69	5.7	4.7E-04	140	0.68	0.74	0.29	4.3E-03	9.0E-04	0.075	1.3E-03	**0.018**	8.0E-03	0	0	0.018	2.7E-07	31	3.3E-04
Pump Open Pit	**154**	**10**	**2024**	**September**	153	51	5.2	3.1E-04	98	0.68	0.74	0.26	3.9E-03	8.4E-04	0.050	8.2E-04	**0.011**	6.5E-03	0	0	0.014	1.8E-07	22	3.2E-04
Pump Open Pit	**155**	**10**	**2024**	**October**	131	45	5.3	2.5E-04	80	0.68	0.74	0.26	3.9E-03	8.4E-04	0.040	6.6E-04	**9.3E-03**	6.1E-03	0	0	0.013	1.5E-07	19	3.1E-04
Pump Open Pit	**163**	**11**	**2025**	**June**	260	87	4.6	7.4E-04	190	0.68	0.74	0.22	3.4E-03	7.5E-04	**0.12**	2.1E-03	**0.029**	9.0E-03	0	0	0.018	4.3E-07	37	3.0E-04
Pump Open Pit	**164**	**11**	**2025**	**July**	3.4E+03	1.2E+03	36	0.010	2.6E+03	0.81	0.79	2.7	**0.034**	5.0E-03	**1.6**	0.029	**0.40**	0.098	0	0	0.28	6.0E-06	495	3.2E-04
Pump Open Pit	**165**	**11**	**2025**	**August**	133	49	5.8	3.0E-04	80	0.68	0.74	0.30	4.3E-03	9.2E-04	0.048	8.2E-04	**0.012**	6.9E-03	0	0	0.015	1.7E-07	17	3.3E-04
Pump Open Pit	**166**	**11**	**2025**	**September**	84	33	5.3	1.5E-04	43	0.68	0.74	0.26	3.9E-03	8.5E-04	0.025	4.1E-04	**5.9E-03**	5.6E-03	0	0	0.011	8.8E-08	10	3.3E-04
Pump Open Pit	**167**	**11**	**2025**	**October**	73	30	5.4	1.1E-04	34	0.68	0.74	0.27	4.0E-03	8.6E-04	0.019	3.1E-04	4.5E-03	5.3E-03	0	0	0.011	6.7E-08	8.5	3.2E-04
Pump Open Pit	**175**	**12**	**2026**	**June**	249	84	4.7	7.1E-04	181	0.68	0.74	0.22	3.4E-03	7.6E-04	**0.11**	2.0E-03	**0.028**	8.9E-03	0	0	0.018	4.2E-07	35	3.0E-04
Pump Open Pit	**176**	**12**	**2026**	**July**	3.4E+03	1.2E+03	36	0.010	2.6E+03	0.81	0.79	2.7	**0.034**	5.0E-03	**1.6**	0.029	**0.40**	0.098	0	0	0.28	6.0E-06	493	3.2E-04
Pump Open Pit	**177**	**12**	**2026**	**August**	120	46	5.8	2.7E-04	71	0.68	0.74	0.30	4.3E-03	9.2E-04	0.044	7.5E-04	**0.011**	6.7E-03	0	0	0.015	1.6E-07	15	3.3E-04
Pump Open Pit	**178**	**12**	**2026**	**September**	73	30	5.3	1.2E-04	34	0.68	0.74	0.26	3.9E-03	8.5E-04	0.021	3.5E-04	5.0E-03	5.4E-03	0	0	0.011	7.2E-08	8.2	3.3E-04
Pump Open Pit	**179**	**12**	**2026**	**October**	63	27	5.4	9.2E-05	26	0.68	0.74	0.27	4.0E-03	8.6E-04	0.016	2.5E-04	3.7E-03	5.2E-03	0	0	0.011	5.3E-08	6.7	3.2E-04
Pump Open Pit	**187**	**13**	**2027**	**June**	246	84	4.7	7.1E-04	178	0.68	0.74	0.23	3.4E-03	7.6E-04	**0.11**	2.0E-03	**0.027**	8.8E-03	0	0	0.018	4.1E-07	34	3.0E-04
				MINIMUM	25	12	1.4	3.0E-05	8.5	0.67	0.73	0.11	1.4E-03	1.9E-04	5.1E-03	8.5E-05	1.3E-03	1.7E-03	0	0	7.5E-03	1.8E-08	2.5	1.5E-04
				MAXIMUM	3.5E+03	1.2E+03	36	0.011	2.7E+03	0.81	0.79	2.7	**0.034**	5.0E-03	**1.7**	0.029	**0.41**	0.100	0	0	0.28	6.1E-06	509	3.3E-04
				AVERAGE	711	243	9.4	2.1E-03	525	0.70	0.75	0.67	8.6E-03	1.3E-03	**0.33**	5.8E-03	**0.080**	0.022	0	0	0.061	1.2E-06	102	0

Table C-2.8 - Pump Open Pit
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001			0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L		0.3	3.0	0.2						0.5											0.5
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L
Operations Water Quality (Years 6 to 13)																									
Pump Open Pit	**103**	**6**	**2020**	**June**	5.9E-05	5.7E-05	5.5E-03	3.1E-05	1.5E-05	1.9	0.027	0	1.1E-04	6.0E-05	0.96	1.5E-04	0.28	0.011	0	2.1E-04	1.4E-05	1.3E-05	1.1E-04	3.4E-04	1.1E-03
Pump Open Pit	**104**	**6**	**2020**	**July**	8.6E-04	1.3E-03	0.11	6.7E-04	2.1E-04	29	0.40	0	2.0E-03	1.3E-03	14	**3.3E-03**	5.1	0.16	0	3.1E-03	2.0E-04	1.9E-04	1.6E-03	5.4E-03	0.018
Pump Open Pit	**105**	**6**	**2020**	**August**	2.1E-05	8.6E-05	7.1E-03	4.4E-05	5.3E-06	0.81	0.010	0	1.0E-04	8.7E-05	0.41	2.2E-04	0.25	4.0E-03	0	7.6E-05	5.1E-06	4.7E-06	3.9E-05	1.9E-04	7.2E-04
Pump Open Pit	**106**	**6**	**2020**	**September**	9.5E-06	6.9E-05	5.6E-03	3.5E-05	2.3E-06	0.40	4.8E-03	0	7.8E-05	7.0E-05	0.21	1.8E-04	0.18	1.7E-03	0	3.4E-05	2.2E-06	2.1E-06	1.7E-05	1.1E-04	4.7E-04
Pump Open Pit	**107**	**6**	**2020**	**October**	6.8E-06	7.5E-05	5.9E-03	3.8E-05	1.7E-06	0.33	3.7E-03	0	8.0E-05	7.5E-05	0.18	1.9E-04	0.19	1.3E-03	0	2.4E-05	1.6E-06	1.5E-06	1.2E-05	1.1E-04	4.6E-04
Pump Open Pit	**115**	**7**	**2021**	**June**	1.6E-04	6.1E-05	7.4E-03	3.6E-05	3.9E-05	5.1	0.072	0	2.0E-04	6.8E-05	2.5	1.5E-04	0.53	0.029	0	5.6E-04	3.7E-05	3.5E-05	2.9E-04	8.1E-04	2.4E-03
Pump Open Pit	**116**	**7**	**2021**	**July**	2.3E-03	1.3E-03	0.14	7.5E-04	5.7E-04	75	1.1	0	3.3E-03	1.4E-03	37	**3.3E-03**	8.8	0.43	0	8.2E-03	5.5E-04	5.1E-04	4.2E-03	0.012	**0.037**
Pump Open Pit	**117**	**7**	**2021**	**August**	5.7E-05	8.8E-05	7.8E-03	4.6E-05	1.4E-05	1.9	0.027	0	1.4E-04	9.0E-05	0.97	2.2E-04	0.34	0.011	0	2.0E-04	1.4E-05	1.3E-05	1.0E-04	3.6E-04	1.2E-03
Pump Open Pit	**118**	**7**	**2021**	**September**	2.5E-05	7.0E-05	5.9E-03	3.6E-05	6.2E-06	0.90	0.012	0	9.2E-05	7.1E-05	0.46	1.8E-04	0.22	4.7E-03	0	9.0E-05	6.0E-06	5.6E-06	4.6E-05	1.9E-04	6.9E-04
Pump Open Pit	**119**	**7**	**2021**	**October**	1.8E-05	7.5E-05	6.2E-03	3.8E-05	4.5E-06	0.69	8.8E-03	0	9.0E-05	7.6E-05	0.35	1.9E-04	0.22	3.3E-03	0	6.5E-05	4.3E-06	4.0E-06	3.3E-05	1.6E-04	6.2E-04
Pump Open Pit	**127**	**8**	**2022**	**June**	1.6E-04	6.1E-05	7.4E-03	3.6E-05	3.9E-05	5.1	0.072	0	2.0E-04	6.8E-05	2.5	1.5E-04	0.53	0.029	0	5.6E-04	3.7E-05	3.5E-05	2.9E-04	8.1E-04	2.4E-03
Pump Open Pit	**128**	**8**	**2022**	**July**	2.3E-03	1.3E-03	0.14	7.5E-04	5.7E-04	75	1.1	0	3.3E-03	1.4E-03	37	**3.3E-03**	8.8	0.43	0	8.2E-03	5.5E-04	5.1E-04	4.2E-03	0.012	**0.037**
Pump Open Pit	**129**	**8**	**2022**	**August**	5.8E-05	8.8E-05	7.8E-03	4.6E-05	1.4E-05	1.9	0.027	0	1.4E-04	9.0E-05	0.97	2.2E-04	0.34	0.011	0	2.0E-04	1.4E-05	1.3E-05	1.0E-04	3.6E-04	1.2E-03
Pump Open Pit	**130**	**8**	**2022**	**September**	2.5E-05	7.0E-05	5.9E-03	3.6E-05	6.3E-06	0.91	0.012	0	9.2E-05	7.1E-05	0.46	1.8E-04	0.22	4.7E-03	0	9.0E-05	6.0E-06	5.6E-06	4.6E-05	1.9E-04	6.9E-04
Pump Open Pit	**131**	**8**	**2022**	**October**	1.8E-05	7.5E-05	6.2E-03	3.8E-05	4.5E-06	0.69	8.8E-03	0	9.1E-05	7.6E-05	0.35	1.9E-04	0.22	3.4E-03	0	6.5E-05	4.3E-06	4.0E-06	3.3E-05	1.6E-04	6.2E-04
Pump Open Pit	**139**	**9**	**2023**	**June**	1.6E-04	6.1E-05	7.4E-03	3.6E-05	3.9E-05	5.1	0.072	0	2.0E-04	6.8E-05	2.5	1.5E-04	0.53	0.029	0	5.6E-04	3.7E-05	3.5E-05	2.9E-04	8.1E-04	2.4E-03
Pump Open Pit	**140**	**9**	**2023**	**July**	2.3E-03	1.3E-03	0.14	7.5E-04	5.7E-04	75	1.1	0	3.3E-03	1.4E-03	37	**3.3E-03**	8.8	0.43	0	8.2E-03	5.5E-04	5.1E-04	4.2E-03	0.012	**0.037**
Pump Open Pit	**141**	**9**	**2023**	**August**	5.8E-05	8.8E-05	7.8E-03	4.6E-05	1.4E-05	1.9	0.027	0	1.4E-04	9.0E-05	0.97	2.2E-04	0.34	0.011	0	2.0E-04	1.4E-05	1.3E-05	1.0E-04	3.6E-04	1.2E-03
Pump Open Pit	**142**	**9**	**2023**	**September**	2.5E-05	3.5E-04	8.1E-03	7.9E-05	6.3E-06	1.0	0.012	0	1.6E-04	2.0E-04	0.55	2.0E-04	0.64	0.010	0	9.0E-05	6.0E-06	5.6E-06	6.0E-05	2.7E-04	1.1E-03
Pump Open Pit	**143**	**9**	**2023**	**October**	1.8E-05	4.6E-04	8.8E-03	9.5E-05	4.5E-06	0.84	9.2E-03	0	1.9E-04	2.5E-04	0.47	2.1E-04	0.79	0.011	0	6.5E-05	4.3E-06	4.0E-06	5.3E-05	2.6E-04	1.1E-03
Pump Open Pit	**151**	**10**	**2024**	**June**	2.1E-04	5.7E-04	0.011	1.1E-04	5.0E-05	7.5	0.100	0	3.7E-04	2.9E-04	3.3	1.6E-04	1.4	0.049	0	7.4E-04	5.6E-05	4.4E-05	4.0E-04	1.1E-03	4.1E-03
Pump Open Pit	**152**	**10**	**2024**	**July**	2.4E-03	1.9E-03	0.15	8.4E-04	5.8E-04	78	1.1	0	3.5E-03	1.7E-03	38	**3.3E-03**	9.8	0.45	0	8.4E-03	5.7E-04	5.2E-04	4.3E-03	0.013	**0.039**
Pump Open Pit	**153**	**10**	**2024**	**August**	1.1E-04	6.8E-04	0.013	1.3E-04	2.6E-05	4.5	0.056	0	3.3E-04	3.5E-04	1.8	2.4E-04	1.3	0.033	0	3.9E-04	3.3E-05	2.3E-05	2.3E-04	7.2E-04	3.1E-03
Pump Open Pit	**154**	**10**	**2024**	**September**	7.6E-05	6.5E-04	0.011	1.2E-04	1.7E-05	3.3	0.039	0	2.8E-04	3.3E-04	1.3	2.0E-04	1.2	0.026	0	2.6E-04	2.4E-05	1.5E-05	1.6E-04	5.3E-04	2.5E-03
Pump Open Pit	**155**	**10**	**2024**	**October**	6.1E-05	6.4E-04	0.011	1.2E-04	1.4E-05	2.7	0.032	0	2.7E-04	3.3E-04	1.1	2.1E-04	1.1	0.023	0	2.1E-04	2.0E-05	1.2E-05	1.4E-04	4.7E-04	2.2E-03
Pump Open Pit	**163**	**11**	**2025**	**June**	1.7E-04	6.0E-04	0.011	1.1E-04	4.1E-05	5.7	0.077	0	3.3E-04	3.0E-04	2.8	1.6E-04	1.4	0.042	0	5.9E-04	4.1E-05	3.7E-05	3.3E-04	9.8E-04	3.3E-03
Pump Open Pit	**164**	**11**	**2025**	**July**	2.3E-03	1.9E-03	0.15	8.4E-04	5.7E-04	76	1.1	0	3.5E-03	1.7E-03	37	**3.3E-03**	9.7	0.44	0	8.3E-03	5.5E-04	5.1E-04	4.2E-03	0.012	**0.038**
Pump Open Pit	**165**	**11**	**2025**	**August**	6.8E-05	6.9E-04	0.012	1.3E-04	1.6E-05	2.6	0.033	0	2.9E-04	3.6E-04	1.3	2.4E-04	1.3	0.025	0	2.4E-04	1.7E-05	1.5E-05	1.5E-04	5.5E-04	2.2E-03
Pump Open Pit	**166**	**11**	**2025**	**September**	3.5E-05	6.7E-04	0.010	1.2E-04	8.3E-06	1.5	0.018	0	2.5E-04	3.3E-04	0.77	2.0E-04	1.1	0.019	0	1.2E-04	9.4E-06	7.3E-06	9.3E-05	3.8E-04	1.7E-03
Pump Open Pit	**167**	**11**	**2025**	**October**	2.7E-05	6.6E-04	0.010	1.2E-04	6.4E-06	1.3	0.014	0	2.4E-04	3.3E-04	0.64	2.1E-04	1.1	0.017	0	9.4E-05	7.4E-06	5.6E-06	7.8E-05	3.4E-04	1.5E-03
Pump Open Pit	**175**	**12**	**2026**	**June**	1.6E-04	6.1E-04	0.011	1.2E-04	4.0E-05	5.4	0.074	0	3.3E-04	3.1E-04	2.7	1.6E-04	1.4	0.041	0	5.7E-04	3.8E-05	3.5E-05	3.2E-04	9.6E-04	3.2E-03
Pump Open Pit	**176**	**12**	**2026**	**July**	2.3E-03	1.9E-03	0.15	8.4E-04	5.7E-04	75	1.1	0	3.5E-03	1.7E-03	37	**3.3E-03**	9.7	0.44	0	8.2E-03	5.5E-04	5.1E-04	4.2E-03	0.012	**0.038**
Pump Open Pit	**177**	**12**	**2026**	**August**	6.1E-05	6.9E-04	0.012	1.3E-04	1.5E-05	2.3	0.029	0	2.9E-04	3.6E-04	1.2	2.4E-04	1.2	0.024	0	2.2E-04	1.5E-05	1.3E-05	1.4E-04	5.3E-04	2.0E-03
Pump Open Pit	**178**	**12**	**2026**	**September**	2.8E-05	6.7E-04	9.9E-03	1.2E-04	6.9E-06	1.3	0.014	0	2.4E-04	3.3E-04	0.68	2.0E-04	1.1	0.018	0	1.0E-04	7.1E-06	6.1E-06	8.2E-05	3.5E-04	1.5E-03
Pump Open Pit	**179**	**12**	**2026**	**October**	2.1E-05	6.6E-04	0.010	1.2E-04	5.1E-06	1.0	0.011	0	2.4E-04	3.3E-04	0.57	2.1E-04	1.1	0.016	0	7.4E-05	5.3E-06	4.5E-06	6.8E-05	3.2E-04	1.4E-03
Pump Open Pit	**187**	**13**	**2027**	**June**	1.6E-04	6.2E-04	0.011	1.2E-04	3.9E-05	5.3	0.073	0	3.3E-04	3.1E-04	2.7	1.6E-04	1.4	0.041	0	5.6E-04	3.8E-05	3.5E-05	3.2E-04	9.5E-04	3.1E-03
				MINIMUM	6.8E-06	5.7E-05	5.5E-03	3.1E-05	1.7E-06	0.33	3.7E-03	0	7.8E-05	6.0E-05	0.18	1.5E-04	0.18	1.3E-03	0	2.4E-05	1.6E-06	1.5E-06	1.2E-05	1.1E-04	4.6E-04
				MAXIMUM	2.4E-03	1.9E-03	0.15	8.4E-04	5.8E-04	78	1.1	0	3.5E-03	1.7E-03	38	**3.3E-03**	9.8	0.45	0	8.4E-03	5.7E-04	5.2E-04	4.3E-03	0.013	**0.039**
				AVERAGE	4.7E-04	5.9E-04	0.034	2.2E-04	1.2E-04	15	0.22	0	7.8E-04	4.6E-04	7.6	8.0E-04	2.3	0.092	0	1.7E-03	1.1E-04	1.0E-04	8.6E-04	2.6E-03	8.2E-03

Table C-2.8 - Pump Open Pit
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)			120	0.12			13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L																	0.5						
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	SO4	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/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
Pit Lake Water Quality When Full (Year 22)																								
Pump Open Pit	295	22	2036	June	39	19	6.5	1.1E-03	4.7	0.68	0.75	0.25	4.2E-03	1.1E-03	3.7E-03	3.6E-05	6.2E-04	5.9E-03	1.3E-07	8.0E-08	6.0E-03	6.1E-08	2.6	5.5E-04
Pump Open Pit	296	22	2036	July	39	19	6.5	1.1E-03	4.7	0.68	0.75	0.25	4.2E-03	1.1E-03	3.8E-03	3.6E-05	6.3E-04	5.9E-03	1.3E-07	8.1E-08	6.0E-03	6.2E-08	2.6	5.5E-04
Pump Open Pit	297	22	2036	August	39	19	6.5	1.1E-03	4.7	0.68	0.75	0.25	4.2E-03	1.1E-03	3.8E-03	3.6E-05	6.2E-04	5.9E-03	1.3E-07	8.1E-08	6.1E-03	6.2E-08	2.6	5.5E-04
Pump Open Pit	298	22	2036	September	39	19	6.5	1.1E-03	4.7	0.68	0.75	0.25	4.2E-03	1.1E-03	3.7E-03	3.6E-05	6.2E-04	5.9E-03	1.3E-07	8.0E-08	6.1E-03	6.1E-08	2.6	5.5E-04
Pump Open Pit	299	22	2036	October	39	19	6.5	1.1E-03	4.7	0.68	0.75	0.25	4.2E-03	1.1E-03	3.7E-03	3.5E-05	6.2E-04	5.9E-03	1.3E-07	7.9E-08	6.1E-03	6.1E-08	2.6	5.5E-04
Long Term Pit Lake Water Quality (Years 26+)																								
				SUMMER AVERAGE	37	19	6.4	1.3E-05	3.9	0.68	0.75	0.25	4.2E-03	1.1E-03	2.7E-03	1.4E-05	4.4E-04	5.7E-03	2.2E-09	1.1E-09	6.3E-03	4.1E-09	2.4	5.3E-04

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.8 - Pump Open Pit
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001			0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L		0.3	3.0	0.2						0.5											0.5
LOCATION	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
	Month	Year	Year	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	mg/L	mg/L
Pit Lake Water Quality When Full (Year 22)																								
Pump Open Pit	**295**	**22**	**2036**	**June**	3.4E-06	1.0E-03	8.5E-03	1.6E-04	1.2E-05	0.48	2.3E-03	6.4E-07	2.9E-04	4.7E-04	0.45	1.0E-04	1.7	0.021	5.1E-08	1.8E-05	3.8E-06	2.8E-06	5.6E-05	2.9E-04	1.4E-03
Pump Open Pit	**296**	**22**	**2036**	**July**	3.4E-06	1.0E-03	8.5E-03	1.6E-04	1.2E-05	0.49	2.3E-03	6.5E-07	2.9E-04	4.7E-04	0.45	1.0E-04	1.7	0.021	5.2E-08	1.8E-05	3.8E-06	2.8E-06	5.6E-05	2.9E-04	1.4E-03
Pump Open Pit	**297**	**22**	**2036**	**August**	3.4E-06	1.0E-03	8.5E-03	1.6E-04	1.2E-05	0.49	2.3E-03	6.4E-07	2.9E-04	4.7E-04	0.45	1.0E-04	1.7	0.021	5.2E-08	1.8E-05	3.8E-06	2.8E-06	5.6E-05	2.9E-04	1.4E-03
Pump Open Pit	**298**	**22**	**2036**	**September**	3.4E-06	1.0E-03	8.5E-03	1.6E-04	1.2E-05	0.48	2.3E-03	6.4E-07	2.9E-04	4.7E-04	0.45	1.0E-04	1.7	0.021	5.1E-08	1.8E-05	3.8E-06	2.8E-06	5.6E-05	2.9E-04	1.4E-03
Pump Open Pit	**299**	**22**	**2036**	**October**	3.4E-06	1.0E-03	8.5E-03	1.6E-04	1.2E-05	0.48	2.3E-03	6.3E-07	2.9E-04	4.7E-04	0.45	1.0E-04	1.7	0.021	5.1E-08	1.8E-05	3.7E-06	2.7E-06	5.6E-05	2.9E-04	1.4E-03
Long Term Pit Lake Water Quality (Years 26+)																								
				SUMMER AVERAGE	1.1E-06	9.9E-04	8.6E-03	1.5E-04	3.9E-07	0.44	1.8E-03	1.1E-08	2.6E-04	4.5E-04	0.35	1.0E-04	1.5	0.020	4.9E-10	4.1E-06	3.1E-07	2.5E-07	5.1E-05	2.8E-04	1.4E-03

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

CCME aquatic life (long-term)[1] (mg/L)							120	0.12			13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)																	0.5							
LOCATION	Model Month	Mine Year	Date Year	Month	TDS mg/L	Total Alkalinity mg/L as CaCO3	Cl mg/L	F mg/L	SO4 mg/L	NH4 (as N) mg N/L	NO3 mg/L	TKN mg/L	P_dissolved[6] mg/L	PO4 mg/L	Al[5] mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd[4] mg/L	Ca mg/L	Cr[3] mg/L
Operations Water Quality (Years 6 to 13)																								
Discovery Open Pit	104	6	2020	July	113	112	3.2	**0.24**	46	0.67	0.73	0.26	3.2E-03	4.4E-04	**0.17**	9.5E-04	**0.16**	0.038	0	0	0.021	**2.3E-04**	31	0
Discovery Open Pit	105	6	2020	August	59	56	2.0	0.12	23	0.67	0.73	0.16	1.9E-03	2.7E-04	0.082	4.6E-04	**0.080**	0.019	0	0	0.012	**1.1E-04**	15	0
Discovery Open Pit	106	6	2020	September	30	27	1.3	0.051	10	0.67	0.73	0.10	1.3E-03	1.8E-04	0.036	2.0E-04	**0.035**	8.6E-03	0	0	6.8E-03	**5.0E-05**	6.9	0
Discovery Open Pit	107	6	2020	October	25	21	1.3	0.037	7.5	0.67	0.73	0.10	1.3E-03	1.7E-04	0.026	1.5E-04	**0.025**	6.5E-03	0	0	6.2E-03	**3.6E-05**	5.1	0
Discovery Open Pit	116	7	2021	July	257	274	3.3	**0.64**	121	0.67	0.73	0.26	3.2E-03	4.4E-04	**0.45**	2.5E-03	**0.44**	0.098	0	0	0.034	**6.2E-04**	79	0
Discovery Open Pit	117	7	2021	August	128	135	2.0	**0.31**	59	0.67	0.73	0.16	2.0E-03	2.7E-04	**0.22**	1.2E-03	**0.21**	0.048	0	0	0.018	**3.0E-04**	39	0
Discovery Open Pit	118	7	2021	September	61	61	1.3	**0.14**	26	0.67	0.73	0.11	1.3E-03	1.8E-04	0.096	5.4E-04	**0.094**	0.021	0	0	9.6E-03	**1.3E-04**	17	0
Discovery Open Pit	119	7	2021	October	47	46	1.3	0.098	19	0.67	0.73	0.10	1.3E-03	1.7E-04	0.069	3.9E-04	**0.068**	0.016	0	0	8.2E-03	**9.5E-05**	13	0
Discovery Open Pit	128	8	2022	July	257	275	3.3	**0.64**	122	0.67	0.73	0.26	3.2E-03	4.4E-04	**0.45**	2.5E-03	**0.44**	0.098	0	0	0.034	**6.2E-04**	79	0
Discovery Open Pit	129	8	2022	August	129	135	2.0	**0.31**	59	0.67	0.73	0.16	2.0E-03	2.7E-04	**0.22**	1.2E-03	**0.21**	0.048	0	0	0.018	**3.0E-04**	39	0
Discovery Open Pit	130	8	2022	September	61	62	1.3	**0.14**	26	0.67	0.73	0.11	1.3E-03	1.8E-04	0.096	5.4E-04	**0.094**	0.021	0	0	9.6E-03	**1.3E-04**	17	0
Discovery Open Pit	131	8	2022	October	47	46	1.3	0.098	19	0.67	0.73	0.10	1.3E-03	1.7E-04	0.069	3.9E-04	**0.068**	0.016	0	0	8.2E-03	**9.5E-05**	13	0
Discovery Open Pit	140	9	2023	July	257	275	3.3	**0.64**	122	0.67	0.73	0.26	3.2E-03	4.4E-04	**0.45**	2.5E-03	**0.44**	0.098	0	0	0.034	**6.2E-04**	79	0
Discovery Open Pit	141	9	2023	August	129	135	2.0	**0.31**	59	0.67	0.73	0.16	2.0E-03	2.7E-04	**0.22**	1.2E-03	**0.21**	0.048	0	0	0.018	**3.0E-04**	39	0
Discovery Open Pit	142	9	2023	September	61	62	1.3	**0.14**	26	0.67	0.73	0.11	1.3E-03	1.8E-04	0.096	5.4E-04	**0.094**	0.021	0	0	9.6E-03	**1.3E-04**	17	0
Discovery Open Pit	143	9	2023	October	47	46	1.3	0.098	19	0.67	0.73	0.10	1.3E-03	1.7E-04	0.069	3.9E-04	**0.068**	0.016	0	0	8.2E-03	**9.5E-05**	13	0
Discovery Open Pit	152	10	2024	July	257	275	3.3	**0.64**	122	0.67	0.73	0.26	3.2E-03	4.4E-04	**0.45**	2.5E-03	**0.44**	0.098	0	0	0.034	**6.2E-04**	79	0
Discovery Open Pit	153	10	2024	August	129	135	2.0	**0.31**	59	0.67	0.73	0.16	2.0E-03	2.7E-04	**0.22**	1.2E-03	**0.21**	0.048	0	0	0.018	**3.0E-04**	39	0
Discovery Open Pit	154	10	2024	September	61	62	1.3	**0.14**	26	0.67	0.73	0.11	1.3E-03	1.8E-04	0.096	5.4E-04	**0.094**	0.021	0	0	9.6E-03	**1.3E-04**	17	0
Discovery Open Pit	155	10	2024	October	47	46	1.3	0.098	19	0.67	0.73	0.10	1.3E-03	1.7E-04	0.069	3.9E-04	**0.068**	0.016	0	0	8.2E-03	**9.5E-05**	13	0
Discovery Open Pit	164	11	2025	July	257	275	3.3	**0.64**	122	0.67	0.73	0.26	3.2E-03	4.4E-04	**0.45**	2.5E-03	**0.44**	0.098	0	0	0.034	**6.2E-04**	79	0
Discovery Open Pit	165	11	2025	August	129	135	2.0	**0.31**	59	0.67	0.73	0.16	2.0E-03	2.7E-04	**0.22**	1.2E-03	**0.21**	0.048	0	0	0.018	**3.0E-04**	39	0
Discovery Open Pit	166	11	2025	September	61	62	1.3	**0.14**	26	0.67	0.73	0.11	1.3E-03	1.8E-04	0.096	5.4E-04	**0.094**	0.021	0	0	9.6E-03	**1.3E-04**	17	0
Discovery Open Pit	167	11	2025	October	47	46	1.3	0.098	19	0.67	0.73	0.10	1.3E-03	1.7E-04	0.069	3.9E-04	**0.068**	0.016	0	0	8.2E-03	**9.5E-05**	13	0
Discovery Open Pit	176	12	2026	July	257	275	3.3	**0.64**	122	0.67	0.73	0.26	3.2E-03	4.4E-04	**0.45**	2.5E-03	**0.44**	0.098	0	0	0.034	**6.2E-04**	79	0
Discovery Open Pit	177	12	2026	August	129	135	2.0	**0.31**	59	0.67	0.73	0.16	2.0E-03	2.7E-04	**0.22**	1.2E-03	**0.21**	0.048	0	0	0.018	**3.0E-04**	39	0
Discovery Open Pit	178	12	2026	September	61	62	1.3	**0.14**	26	0.67	0.73	0.11	1.3E-03	1.8E-04	0.096	5.4E-04	**0.094**	0.021	0	0	9.6E-03	**1.3E-04**	17	0
Discovery Open Pit	179	12	2026	October	47	46	1.3	0.098	19	0.67	0.73	0.10	1.3E-03	1.7E-04	0.069	3.9E-04	**0.068**	0.016	0	0	8.2E-03	**9.5E-05**	13	0
				MINIMUM	25	21	1.3	0.037	7.5	0.67	0.73	0.10	1.3E-03	1.7E-04	0.026	1.5E-04	**0.025**	6.5E-03	0	0	6.2E-03	**3.6E-05**	5.1	0
				MAXIMUM	257	275	3.3	**0.64**	122	0.67	0.73	0.26	3.2E-03	4.4E-04	**0.45**	2.5E-03	**0.44**	0.098	0	0	0.034	**6.2E-04**	79	0
				AVERAGE	114	119	2.0	**0.27**	52	0.67	0.73	0.16	1.9E-03	2.7E-04	**0.19**	1.1E-03	**0.19**	0.042	0	0	0.017	**2.6E-04**	34	0

CCME aquatic life (long-term)[1] (mg/L)						0.002	0.3	0.001				0.000026	0.073	0.038		1.0E-03			0.0008				0.015		0.03
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)						0.3	3.0	0.2						0.5											0.5
LOCATION	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
	Month	Year	Year	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	mg/L	mg/L
Operations Water Quality (Years 6 to 13)																									
Discovery Open Pit	104	6	2020	July	1.3E-03	1.1E-03	0.024	3.7E-04	6.7E-03	2.3	0.026	0	4.2E-03	3.1E-03	9.1	3.3E-04	1.2	0.12	0	7.0E-04	8.3E-04	3.6E-04	3.4E-03	1.8E-03	5.5E-03
Discovery Open Pit	105	6	2020	August	6.4E-04	5.3E-04	0.013	1.9E-04	3.3E-03	1.1	0.013	0	2.0E-03	1.5E-03	4.4	2.0E-04	0.61	0.060	0	3.4E-04	4.0E-04	1.7E-04	1.7E-03	9.1E-04	2.7E-03
Discovery Open Pit	106	6	2020	September	2.8E-04	2.5E-04	7.0E-03	9.2E-05	1.4E-03	0.53	5.7E-03	0	9.1E-04	6.9E-04	2.0	1.3E-04	0.31	0.026	0	1.5E-04	1.8E-04	7.6E-05	7.3E-04	4.2E-04	1.3E-03
Discovery Open Pit	107	6	2020	October	2.0E-04	1.9E-04	6.0E-03	7.2E-05	1.0E-03	0.40	4.2E-03	0	6.7E-04	5.1E-04	1.4	1.3E-04	0.25	0.019	0	1.1E-04	1.3E-04	5.5E-05	5.3E-04	3.1E-04	9.9E-04
Discovery Open Pit	116	7	2021	July	3.5E-03	**2.6E-03**	0.047	8.9E-04	0.018	5.9	0.068	0	0.011	8.1E-03	24	3.4E-04	2.7	0.33	0	1.9E-03	2.2E-03	9.6E-04	9.2E-03	4.7E-03	0.014
Discovery Open Pit	117	7	2021	August	1.7E-03	1.3E-03	0.024	4.4E-04	8.7E-03	2.9	0.033	0	5.3E-03	3.9E-03	12	2.1E-04	1.3	0.16	0	9.2E-04	1.1E-03	4.6E-04	4.5E-03	2.3E-03	6.7E-03
Discovery Open Pit	118	7	2021	September	7.5E-04	5.8E-04	0.012	2.0E-04	3.8E-03	1.3	0.015	0	2.4E-03	1.8E-03	5.2	1.4E-04	0.63	0.070	0	4.0E-04	4.7E-04	2.0E-04	2.0E-03	1.0E-03	3.0E-03
Discovery Open Pit	119	7	2021	October	5.4E-04	4.3E-04	9.6E-03	1.5E-04	2.7E-03	0.95	0.011	0	1.7E-03	1.3E-03	3.7	1.3E-04	0.48	0.050	0	2.9E-04	3.4E-04	1.5E-04	1.4E-03	7.6E-04	2.2E-03
Discovery Open Pit	128	8	2022	July	3.5E-03	**2.6E-03**	0.047	8.9E-04	0.018	5.9	0.068	0	0.011	8.1E-03	24	3.4E-04	2.7	0.33	0	1.9E-03	2.2E-03	9.6E-04	9.2E-03	4.7E-03	0.014
Discovery Open Pit	129	8	2022	August	1.7E-03	1.3E-03	0.024	4.4E-04	8.7E-03	2.9	0.033	0	5.3E-03	4.0E-03	12	2.1E-04	1.3	0.16	0	9.2E-04	1.1E-03	4.7E-04	4.5E-03	2.3E-03	6.7E-03
Discovery Open Pit	130	8	2022	September	7.6E-04	5.8E-04	0.012	2.0E-04	3.8E-03	1.3	0.015	0	2.4E-03	1.8E-03	5.2	1.4E-04	0.63	0.070	0	4.0E-04	4.8E-04	2.0E-04	2.0E-03	1.0E-03	3.0E-03
Discovery Open Pit	131	8	2022	October	5.4E-04	4.3E-04	9.6E-03	1.5E-04	2.8E-03	0.95	0.011	0	1.7E-03	1.3E-03	3.7	1.3E-04	0.48	0.051	0	2.9E-04	3.4E-04	1.5E-04	1.4E-03	7.6E-04	2.2E-03
Discovery Open Pit	140	9	2023	July	3.5E-03	**2.6E-03**	0.047	8.9E-04	0.018	5.9	0.068	0	0.011	8.1E-03	24	3.4E-04	2.7	0.33	0	1.9E-03	2.2E-03	9.6E-04	9.2E-03	4.7E-03	0.014
Discovery Open Pit	141	9	2023	August	1.7E-03	1.3E-03	0.024	4.4E-04	8.7E-03	2.9	0.033	0	5.3E-03	4.0E-03	12	2.1E-04	1.3	0.16	0	9.2E-04	1.1E-03	4.7E-04	4.5E-03	2.3E-03	6.7E-03
Discovery Open Pit	142	9	2023	September	7.6E-04	5.8E-04	0.012	2.0E-04	3.8E-03	1.3	0.015	0	2.4E-03	1.8E-03	5.2	1.4E-04	0.63	0.070	0	4.0E-04	4.8E-04	2.0E-04	2.0E-03	1.0E-03	3.0E-03
Discovery Open Pit	143	9	2023	October	5.4E-04	4.3E-04	9.6E-03	1.5E-04	2.8E-03	0.95	0.011	0	1.7E-03	1.3E-03	3.7	1.3E-04	0.48	0.051	0	2.9E-04	3.4E-04	1.5E-04	1.4E-03	7.6E-04	2.2E-03
Discovery Open Pit	152	10	2024	July	3.5E-03	**2.6E-03**	0.047	8.9E-04	0.018	5.9	0.068	0	0.011	8.1E-03	24	3.4E-04	2.7	0.33	0	1.9E-03	2.2E-03	9.6E-04	9.2E-03	4.7E-03	0.014
Discovery Open Pit	153	10	2024	August	1.7E-03	1.3E-03	0.024	4.4E-04	8.7E-03	2.9	0.033	0	5.3E-03	4.0E-03	12	2.1E-04	1.3	0.16	0	9.2E-04	1.1E-03	4.7E-04	4.5E-03	2.3E-03	6.7E-03
Discovery Open Pit	154	10	2024	September	7.6E-04	5.8E-04	0.012	2.0E-04	3.8E-03	1.3	0.015	0	2.4E-03	1.8E-03	5.2	1.4E-04	0.63	0.070	0	4.0E-04	4.8E-04	2.0E-04	2.0E-03	1.0E-03	3.0E-03
Discovery Open Pit	155	10	2024	October	5.4E-04	4.3E-04	9.6E-03	1.5E-04	2.8E-03	0.95	0.011	0	1.7E-03	1.3E-03	3.7	1.3E-04	0.48	0.051	0	2.9E-04	3.4E-04	1.5E-04	1.4E-03	7.6E-04	2.2E-03
Discovery Open Pit	164	11	2025	July	3.5E-03	**2.6E-03**	0.047	8.9E-04	0.018	5.9	0.068	0	0.011	8.1E-03	24	3.4E-04	2.7	0.33	0	1.9E-03	2.2E-03	9.6E-04	9.2E-03	4.7E-03	0.014
Discovery Open Pit	165	11	2025	August	1.7E-03	1.3E-03	0.024	4.4E-04	8.7E-03	2.9	0.033	0	5.3E-03	4.0E-03	12	2.1E-04	1.3	0.16	0	9.2E-04	1.1E-03	4.7E-04	4.5E-03	2.3E-03	6.7E-03
Discovery Open Pit	166	11	2025	September	7.6E-04	5.8E-04	0.012	2.0E-04	3.8E-03	1.3	0.015	0	2.4E-03	1.8E-03	5.2	1.4E-04	0.63	0.070	0	4.0E-04	4.8E-04	2.0E-04	2.0E-03	1.0E-03	3.0E-03
Discovery Open Pit	167	11	2025	October	5.4E-04	4.3E-04	9.6E-03	1.5E-04	2.8E-03	0.95	0.011	0	1.7E-03	1.3E-03	3.7	1.3E-04	0.48	0.051	0	2.9E-04	3.4E-04	1.5E-04	1.4E-03	7.6E-04	2.2E-03
Discovery Open Pit	176	12	2026	July	3.5E-03	**2.6E-03**	0.047	8.9E-04	0.018	5.9	0.068	0	0.011	8.1E-03	24	3.4E-04	2.7	0.33	0	1.9E-03	2.2E-03	9.6E-04	9.2E-03	4.7E-03	0.014
Discovery Open Pit	177	12	2026	August	1.7E-03	1.3E-03	0.024	4.4E-04	8.7E-03	2.9	0.033	0	5.3E-03	4.0E-03	12	2.1E-04	1.3	0.16	0	9.2E-04	1.1E-03	4.7E-04	4.5E-03	2.3E-03	6.7E-03
Discovery Open Pit	178	12	2026	September	7.6E-04	5.8E-04	0.012	2.0E-04	3.8E-03	1.3	0.015	0	2.4E-03	1.8E-03	5.2	1.4E-04	0.63	0.070	0	4.0E-04	4.8E-04	2.0E-04	2.0E-03	1.0E-03	3.0E-03
Discovery Open Pit	179	12	2026	October	5.4E-04	4.3E-04	9.6E-03	1.5E-04	2.8E-03	0.95	0.011	0	1.7E-03	1.3E-03	3.7	1.3E-04	0.48	0.051	0	2.9E-04	3.4E-04	1.5E-04	1.4E-03	7.6E-04	2.2E-03
				MINIMUM	2.0E-04	1.9E-04	6.0E-03	7.2E-05	1.0E-03	0.40	4.2E-03	0	6.7E-04	5.1E-04	1.4	1.3E-04	0.25	0.019	0	1.1E-04	1.3E-04	5.5E-05	5.3E-04	3.1E-04	9.9E-04
				MAXIMUM	3.5E-03	**2.6E-03**	0.047	8.9E-04	0.018	5.9	0.068	0	0.011	8.1E-03	24	3.4E-04	2.7	0.33	0	1.9E-03	2.2E-03	9.6E-04	9.2E-03	4.7E-03	0.014
				AVERAGE	1.5E-03	1.1E-03	0.022	3.9E-04	7.6E-03	2.5	0.029	0	4.7E-03	3.4E-03	10	2.0E-04	1.2	0.14	0	8.0E-04	9.4E-04	4.0E-04	3.9E-03	2.0E-03	5.9E-03

Table C-2.9 - Discovery Open Pit
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12			13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)																	0.5							
LOCATION	**Model Month**	**Mine Year**	**Date Year**	**Month**	**TDS mg/L**	**Total Alkalinity mg/L as CaCO3**	**Cl mg/L**	**F mg/L**	**SO4 mg/L**	**NH4 (as N) mg N/L**	**NO3 mg/L**	**TKN mg/L**	**P_dissolved[6] mg/L**	**PO4 mg/L**	**Al[5] mg/L**	**Sb mg/L**	**As mg/L**	**Ba mg/L**	**Be mg/L**	**Bi mg/L**	**B mg/L**	**Cd[4] mg/L**	**Ca mg/L**	**Cr[3] mg/L**
Pit Lake Water Quality When Full (Year 24)																								
Discovery Open Pit	**318**	**24**	**2055**	**May**	36	17	6.9	4.3E-04	2.8	0.68	0.75	0.22	4.1E-03	1.2E-03	2.4E-03	1.7E-06	5.4E-04	6.2E-03	3.9E-10	2.0E-10	3.2E-03	4.0E-07	2.1	6.6E-04
Discovery Open Pit	**319**	**24**	**2056**	**June**	36	17	6.9	4.3E-04	2.8	0.68	0.75	0.22	4.1E-03	1.2E-03	2.4E-03	1.7E-06	5.4E-04	6.2E-03	3.9E-10	2.0E-10	3.2E-03	4.0E-07	2.1	6.6E-04
Discovery Open Pit	**320**	**24**	**2057**	**July**	36	17	6.9	4.3E-04	2.8	0.68	0.75	0.22	4.1E-03	1.2E-03	2.4E-03	1.7E-06	5.4E-04	6.2E-03	3.9E-10	2.0E-10	3.2E-03	4.0E-07	2.1	6.6E-04
Discovery Open Pit	**321**	**24**	**2058**	**August**	36	17	6.9	4.3E-04	2.8	0.68	0.75	0.22	4.1E-03	1.2E-03	2.4E-03	1.7E-06	5.4E-04	6.2E-03	3.9E-10	2.0E-10	3.2E-03	4.0E-07	2.1	6.6E-04
Discovery Open Pit	**322**	**24**	**2059**	**September**	36	17	6.9	4.3E-04	2.8	0.68	0.75	0.22	4.1E-03	1.2E-03	2.4E-03	1.7E-06	5.4E-04	6.2E-03	3.9E-10	2.0E-10	3.2E-03	4.0E-07	2.1	6.6E-04
Discovery Open Pit	**323**	**24**	**2060**	**October**	36	17	6.9	4.3E-04	2.8	0.68	0.75	0.22	4.1E-03	1.2E-03	2.4E-03	1.7E-06	5.4E-04	6.2E-03	3.9E-10	2.0E-10	3.2E-03	4.0E-07	2.1	6.6E-04
Long Term Pit Lake Water Quality (Years 26+)																								
				SUMMER AVERAGE	36	17	6.9	4.3E-04	2.8	0.68	0.75	0.22	4.1E-03	1.2E-03	2.4E-03	1.7E-06	5.4E-04	6.2E-03	3.9E-10	2.0E-10	3.2E-03	4.0E-07	2.1	6.6E-04

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.9 - Discovery Open Pit
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		1.0E-03			0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3.0	0.2						0.5											0.5
LOCATION	Model Month	Mine Year	Date Year	Month	Co mg/L	Cu[4] mg/L	Fe mg/L	Pb[4] mg/L	Li mg/L	Mg mg/L	Mn mg/L	Hg mg/L	Mo mg/L	Ni[4] mg/L	K mg/L	Se mg/L	Na mg/L	Sr mg/L	Tl mg/L	Sn mg/L	Ti mg/L	W mg/L	U mg/L	V mg/L	Zn mg/L
Pit Lake Water Quality When Full (Year 24)																								
Discovery Open Pit	**318**	**24**	**2055**	**May**	2.3E-06	1.2E-03	7.1E-03	1.7E-04	1.2E-05	0.45	1.3E-03	2.0E-09	2.9E-04	5.2E-04	0.39	5.0E-06	1.8	0.025	4.5E-10	1.2E-06	1.5E-06	7.3E-07	6.8E-05	3.0E-04	1.5E-03
Discovery Open Pit	**319**	**24**	**2056**	**June**	2.3E-06	1.2E-03	7.1E-03	1.7E-04	1.2E-05	0.45	1.3E-03	2.0E-09	2.9E-04	5.2E-04	0.38	5.3E-06	1.8	0.025	4.4E-10	1.2E-06	1.5E-06	7.3E-07	6.8E-05	3.0E-04	1.5E-03
Discovery Open Pit	**320**	**24**	**2057**	**July**	2.3E-06	1.2E-03	7.1E-03	1.7E-04	1.2E-05	0.45	1.3E-03	2.0E-09	2.9E-04	5.2E-04	0.39	5.3E-06	1.8	0.025	4.4E-10	1.2E-06	1.5E-06	7.3E-07	6.8E-05	3.0E-04	1.5E-03
Discovery Open Pit	**321**	**24**	**2058**	**August**	2.3E-06	1.2E-03	7.1E-03	1.7E-04	1.2E-05	0.45	1.3E-03	2.0E-09	2.9E-04	5.2E-04	0.39	5.4E-06	1.8	0.025	4.5E-10	1.2E-06	1.5E-06	7.3E-07	6.8E-05	3.0E-04	1.5E-03
Discovery Open Pit	**322**	**24**	**2059**	**September**	2.3E-06	1.2E-03	7.1E-03	1.7E-04	1.2E-05	0.45	1.3E-03	2.0E-09	2.9E-04	5.2E-04	0.39	5.5E-06	1.8	0.025	4.4E-10	1.2E-06	1.5E-06	7.3E-07	6.8E-05	3.0E-04	1.5E-03
Discovery Open Pit	**323**	**24**	**2060**	**October**	2.3E-06	1.2E-03	7.1E-03	1.7E-04	1.2E-05	0.45	1.3E-03	2.0E-09	2.9E-04	5.2E-04	0.39	5.5E-06	1.8	0.025	4.4E-10	1.2E-06	1.5E-06	7.3E-07	6.8E-05	3.0E-04	1.5E-03
Long Term Pit Lake Water Quality (Years 26+)																								
				SUMMER AVERAGE	2.3E-06	1.2E-03	7.2E-03	1.7E-04	1.2E-05	0.45	1.3E-03	2.0E-09	2.9E-04	5.2E-04	0.39	6.2E-06	1.8	0.025	4.4E-10	1.2E-06	1.5E-06	7.3E-07	6.8E-05	3.0E-04	1.5E-03

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.10 - B7 Rock Storage Facility
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)								120	0.12				13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)																			0.5							
	Model	Mine	Date		H+	TDS	Total Alkalinity	Cl	F	Si	SO4	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month		mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/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
Operations Seepage Water Quality (Years 3-13)																										
B7 Rock Storage Facility	**67**	**3**	**2017**	**June**	1.3E-08	5.5	5.2	0	0	0	1.7	0.66	0.73	0	0	0	0.014	2.7E-04	4.7E-03	8.3E-04	0	0	2.8E-04	9.4E-07	1.7	0
B7 Rock Storage Facility	**68**	**3**	**2017**	**July**	2.0E-08	7.9	8.3	0	0	0	2.6	0.66	0.73	0	0	0	0.022	4.2E-04	**7.4E-03**	1.3E-03	0	0	4.4E-04	1.5E-06	2.8	0
B7 Rock Storage Facility	**69**	**3**	**2017**	**August**	2.0E-08	7.8	8.2	0	0	0	2.6	0.66	0.73	0	0	0	0.022	4.2E-04	**7.4E-03**	1.3E-03	0	0	4.4E-04	1.5E-06	2.7	0
B7 Rock Storage Facility	**70**	**3**	**2017**	**September**	0	1.4	1.7E-09	0	0	0	5.4E-10	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	5.7E-10	0
B7 Rock Storage Facility	**71**	**3**	**2017**	**October**	0	1.4	3.4E-09	0	0	0	1.1E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.1E-09	0
B7 Rock Storage Facility	**79**	**4**	**2018**	**June**	3.4E-08	13	14	0	0	0	4.5	0.66	0.73	0	0	0	0.039	7.3E-04	**0.013**	2.3E-03	0	0	7.6E-04	2.6E-06	4.8	0
B7 Rock Storage Facility	**80**	**4**	**2018**	**July**	4.1E-08	15	17	0	0	0	5.4	0.66	0.73	0	0	0	0.046	8.6E-04	**0.015**	2.7E-03	0	0	9.0E-04	3.1E-06	5.6	0
B7 Rock Storage Facility	**81**	**4**	**2018**	**August**	4.0E-08	15	17	0	0	0	5.3	0.66	0.73	0	0	0	0.046	8.6E-04	**0.015**	2.7E-03	0	0	8.9E-04	3.0E-06	5.6	0
B7 Rock Storage Facility	**82**	**4**	**2018**	**September**	0	1.4	1.7E-09	0	0	0	5.4E-10	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	5.6E-10	0
B7 Rock Storage Facility	**83**	**4**	**2018**	**October**	0	1.4	3.4E-09	0	0	0	1.1E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.1E-09	0
B7 Rock Storage Facility	**91**	**5**	**2019**	**June**	3.4E-08	13	14	0	0	0	4.5	0.66	0.73	0	0	0	0.039	7.3E-04	**0.013**	2.3E-03	0	0	7.6E-04	2.6E-06	4.8	0
B7 Rock Storage Facility	**92**	**5**	**2019**	**July**	4.1E-08	15	17	0	0	0	5.4	0.66	0.73	0	0	0	0.046	8.6E-04	**0.015**	2.7E-03	0	0	9.0E-04	3.1E-06	5.6	0
B7 Rock Storage Facility	**93**	**5**	**2019**	**August**	4.0E-08	15	17	0	0	0	5.3	0.66	0.73	0	0	0	0.046	8.5E-04	**0.015**	2.7E-03	0	0	9.0E-04	3.0E-06	5.6	0
B7 Rock Storage Facility	**94**	**5**	**2019**	**September**	0	1.4	1.7E-09	0	0	0	5.4E-10	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	5.7E-10	0
B7 Rock Storage Facility	**95**	**5**	**2019**	**October**	0	1.4	3.4E-09	0	0	0	1.1E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.1E-09	0
B7 Rock Storage Facility	**103**	**6**	**2020**	**June**	3.5E-08	13	14	0	0	0	4.5	0.66	0.73	0	0	0	0.039	7.2E-04	**0.013**	2.3E-03	0	0	7.6E-04	2.6E-06	4.8	0
B7 Rock Storage Facility	**104**	**6**	**2020**	**July**	4.1E-08	15	17	0	0	0	5.4	0.66	0.73	0	0	0	0.046	8.6E-04	**0.015**	2.7E-03	0	0	9.0E-04	3.0E-06	5.7	0
B7 Rock Storage Facility	**105**	**6**	**2020**	**August**	4.1E-08	15	17	0	0	0	5.3	0.66	0.73	0	0	0	0.046	8.5E-04	**0.015**	2.7E-03	0	0	9.0E-04	3.0E-06	5.6	0
B7 Rock Storage Facility	**106**	**6**	**2020**	**September**	0	1.4	1.7E-09	0	0	0	5.4E-10	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	5.7E-10	0
B7 Rock Storage Facility	**107**	**6**	**2020**	**October**	0	1.4	3.4E-09	0	0	0	1.1E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.1E-09	0
B7 Rock Storage Facility	**115**	**7**	**2021**	**June**	3.5E-08	13	14	0	0	0	4.5	0.66	0.73	0	0	0	0.039	7.2E-04	**0.013**	2.3E-03	0	0	7.7E-04	2.6E-06	4.8	0
B7 Rock Storage Facility	**116**	**7**	**2021**	**July**	4.1E-08	15	17	0	0	0	5.4	0.66	0.73	0	0	0	0.046	8.5E-04	**0.015**	2.7E-03	0	0	9.1E-04	3.0E-06	5.7	0
B7 Rock Storage Facility	**117**	**7**	**2021**	**August**	4.1E-08	15	17	0	0	0	5.3	0.66	0.73	0	0	0	0.046	8.5E-04	**0.015**	2.7E-03	0	0	9.0E-04	3.0E-06	5.7	0
B7 Rock Storage Facility	**118**	**7**	**2021**	**September**	0	1.4	1.7E-09	0	0	0	5.4E-10	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	5.7E-10	0
B7 Rock Storage Facility	**119**	**7**	**2021**	**October**	0	1.4	3.4E-09	0	0	0	1.1E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.1E-09	0
B7 Rock Storage Facility	**127**	**8**	**2022**	**June**	3.5E-08	13	14	0	0	0	4.5	0.66	0.73	0	0	0	0.039	7.1E-04	**0.012**	2.2E-03	0	0	7.7E-04	2.5E-06	4.8	0
B7 Rock Storage Facility	**128**	**8**	**2022**	**July**	4.1E-08	15	17	0	0	0	5.3	0.66	0.73	0	0	0	0.046	8.3E-04	**0.015**	2.6E-03	0	0	9.1E-04	2.9E-06	5.7	0
B7 Rock Storage Facility	**129**	**8**	**2022**	**August**	4.1E-08	15	17	0	0	0	5.3	0.66	0.73	0	0	0	0.046	8.3E-04	**0.015**	2.6E-03	0	0	9.0E-04	2.9E-06	5.7	0
B7 Rock Storage Facility	**130**	**8**	**2022**	**September**	0	1.4	1.7E-09	0	0	0	5.3E-10	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	5.7E-10	0
B7 Rock Storage Facility	**131**	**8**	**2022**	**October**	0	1.4	3.4E-09	0	0	0	1.1E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.1E-09	0
B7 Rock Storage Facility	**139**	**9**	**2023**	**June**	3.4E-08	12	14	0	0	0	4.4	0.66	0.73	0	0	0	0.039	6.8E-04	**0.012**	2.2E-03	0	0	7.6E-04	2.4E-06	4.8	0
B7 Rock Storage Facility	**140**	**9**	**2023**	**July**	4.1E-08	15	17	0	0	0	5.2	0.66	0.73	0	0	0	0.046	8.1E-04	**0.014**	2.6E-03	0	0	9.0E-04	2.8E-06	5.7	0
B7 Rock Storage Facility	**141**	**9**	**2023**	**August**	4.0E-08	14	17	0	0	0	5.2	0.66	0.73	0	0	0	0.046	8.0E-04	**0.014**	2.6E-03	0	0	9.0E-04	2.8E-06	5.7	0
B7 Rock Storage Facility	**142**	**9**	**2023**	**September**	0	1.4	1.7E-09	0	0	0	5.3E-10	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	5.8E-10	0
B7 Rock Storage Facility	**143**	**9**	**2023**	**October**	0	1.4	3.4E-09	0	0	0	1.0E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.1E-09	0
B7 Rock Storage Facility	**151**	**10**	**2024**	**June**	3.5E-08	13	15	0	0	0	4.5	0.66	0.73	0	0	0	0.040	6.7E-04	**0.012**	2.2E-03	0	0	7.8E-04	2.3E-06	4.9	0
B7 Rock Storage Facility	**152**	**10**	**2024**	**July**	4.1E-08	15	17	0	0	0	5.3	0.66	0.73	0	0	0	0.047	7.9E-04	**0.014**	2.6E-03	0	0	9.2E-04	2.7E-06	5.8	0
B7 Rock Storage Facility	**153**	**10**	**2024**	**August**	4.1E-08	15	17	0	0	0	5.2	0.66	0.73	0	0	0	0.047	7.9E-04	**0.014**	2.5E-03	0	0	9.1E-04	2.7E-06	5.8	0
B7 Rock Storage Facility	**154**	**10**	**2024**	**September**	0	1.4	1.7E-09	0	0	0	5.3E-10	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	5.9E-10	0
B7 Rock Storage Facility	**155**	**10**	**2024**	**October**	0	1.4	3.5E-09	0	0	0	1.1E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.2E-09	0
B7 Rock Storage Facility	**163**	**11**	**2025**	**June**	3.6E-08	13	15	0	0	0	4.5	0.66	0.73	0	0	0	0.041	6.7E-04	**0.012**	2.2E-03	0	0	7.9E-04	2.3E-06	5.1	0
B7 Rock Storage Facility	**164**	**11**	**2025**	**July**	4.3E-08	15	18	0	0	0	5.4	0.66	0.73	0	0	0	0.048	7.9E-04	**0.014**	2.6E-03	0	0	9.4E-04	2.7E-06	6.0	0
B7 Rock Storage Facility	**165**	**11**	**2025**	**August**	4.2E-08	15	18	0	0	0	5.3	0.66	0.73	0	0	0	0.048	7.9E-04	**0.014**	2.6E-03	0	0	9.3E-04	2.7E-06	6.0	0
B7 Rock Storage Facility	**166**	**11**	**2025**	**September**	0	1.4	1.8E-09	0	0	0	5.4E-10	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	6.1E-10	0
B7 Rock Storage Facility	**167**	**11**	**2025**	**October**	0	1.4	3.5E-09	0	0	0	1.1E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.2E-09	0
B7 Rock Storage Facility	**175**	**12**	**2026**	**June**	3.8E-08	13	15	0	0	0	4.6	0.66	0.73	0	0	0	0.041	6.6E-04	**0.012**	2.3E-03	0	0	8.0E-04	2.3E-06	5.2	0
B7 Rock Storage Facility	**176**	**12**	**2026**	**July**	4.5E-08	15	18	0	0	0	5.4	0.66	0.73	0	0	0	0.049	7.9E-04	**0.014**	2.7E-03	0	0	9.5E-04	2.8E-06	6.2	0
B7 Rock Storage Facility	**177**	**12**	**2026**	**August**	4.5E-08	15	18	0	0	0	5.4	0.66	0.73	0	0	0	0.049	7.8E-04	**0.014**	2.7E-03	0	0	9.4E-04	2.8E-06	6.1	0
B7 Rock Storage Facility	**178**	**12**	**2026**	**September**	0	1.4	1.8E-09	0	0	0	5.4E-10	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	6.2E-10	0
B7 Rock Storage Facility	**179**	**12**	**2026**	**October**	0	1.4	3.6E-09	0	0	0	1.1E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.2E-09	0
B7 Rock Storage Facility	**187**	**13**	**2027**	**June**	3.8E-08	13	15	0	0	0	4.6	0.66	0.73	0	0	0	0.041	6.6E-04	**0.012**	2.3E-03	0	0	8.0E-04	2.3E-06	5.2	0
				MINIMUM	0	1.4	1.7E-09	0	0	0	5.3E-10	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	5.6E-10	0
				MAXIMUM	4.5E-08	15	18	0	0	0	5.4	0.66	0.73	0	0	0	0.049	8.6E-04	**0.015**	2.7E-03	0	0	9.5E-04	3.1E-06	6.2	0
				AVERAGE	1.2E-08	5.3	5.0	0	0	0	1.6	0.66	0.73	0	0	0	0.014	2.4E-04	4.2E-03	7.7E-04	0	0	2.7E-04	8.4E-07	1.7	0
Long Term RSF Seepage Water Quality (Years 26+)																										
Notes:				SUMMER AVERAGE	2.3E-08	8.4	9.2	0	0	0	2.8	0.66	0.73	0	0	0	0.025	4.0E-04	**7.1E-03**	1.4E-03	0	0	4.9E-04	1.4E-06	3.2	0

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.10 - B7 Rock Storage Facility
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				2.6E-05	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3	0.2						0.5												0.5
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Ag	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L	mg/L
Operations Seepage Water Quality (Years 3-13)																									
B7 Rock Storage Facility	**67**	**3**	**2017**	**June**	8.7E-05	4.6E-05	1.1E-03	8.3E-06	4.5E-05	0.44	2.9E-03	0	1.1E-04	8.8E-05	0.21	0	0	0.044	0.011	0	6.9E-05	3.2E-05	5.8E-06	8.4E-05	3.1E-05	7.8E-05
B7 Rock Storage Facility	**68**	**3**	**2017**	**July**	1.4E-04	7.3E-05	1.7E-03	1.3E-05	7.1E-05	0.69	4.5E-03	0	1.8E-04	1.4E-04	0.33	0	0	0.070	0.018	0	1.1E-04	5.0E-05	9.2E-06	1.3E-04	4.9E-05	1.2E-04
B7 Rock Storage Facility	**69**	**3**	**2017**	**August**	1.4E-04	7.2E-05	1.7E-03	1.3E-05	7.1E-05	0.69	4.5E-03	0	1.8E-04	1.4E-04	0.33	0	0	0.070	0.017	0	1.1E-04	5.0E-05	9.1E-06	1.3E-04	4.9E-05	1.2E-04
B7 Rock Storage Facility	**70**	**3**	**2017**	**September**	0	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**71**	**3**	**2017**	**October**	0	0	0	0	0	2.8E-10	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**79**	**4**	**2018**	**June**	2.4E-04	1.3E-04	3.0E-03	2.3E-05	1.2E-04	1.2	7.8E-03	0	3.1E-04	2.4E-04	0.58	0	0	0.12	0.030	0	1.9E-04	8.7E-05	1.6E-05	2.3E-04	8.5E-05	2.1E-04
B7 Rock Storage Facility	**80**	**4**	**2018**	**July**	2.8E-04	1.5E-04	3.5E-03	2.7E-05	1.5E-04	1.4	9.2E-03	0	3.6E-04	2.9E-04	0.68	0	0	0.14	0.036	0	2.2E-04	1.0E-04	1.9E-05	2.7E-04	1.0E-04	2.5E-04
B7 Rock Storage Facility	**81**	**4**	**2018**	**August**	2.8E-04	1.5E-04	3.5E-03	2.7E-05	1.4E-04	1.4	9.2E-03	0	3.6E-04	2.8E-04	0.68	0	0	0.14	0.036	0	2.2E-04	1.0E-04	1.9E-05	2.7E-04	1.0E-04	2.5E-04
B7 Rock Storage Facility	**82**	**4**	**2018**	**September**	0	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**83**	**4**	**2018**	**October**	0	0	0	0	0	2.8E-10	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**91**	**5**	**2019**	**June**	2.4E-04	1.3E-04	2.9E-03	2.3E-05	1.2E-04	1.2	7.8E-03	0	3.1E-04	2.4E-04	0.58	0	0	0.12	0.030	0	1.9E-04	8.7E-05	1.6E-05	2.3E-04	8.5E-05	2.1E-04
B7 Rock Storage Facility	**92**	**5**	**2019**	**July**	2.8E-04	1.5E-04	3.5E-03	2.7E-05	1.4E-04	1.4	9.2E-03	0	3.6E-04	2.9E-04	0.68	0	0	0.14	0.036	0	2.2E-04	1.0E-04	1.9E-05	2.7E-04	1.0E-04	2.5E-04
B7 Rock Storage Facility	**93**	**5**	**2019**	**August**	2.8E-04	1.5E-04	3.5E-03	2.7E-05	1.4E-04	1.4	9.2E-03	0	3.6E-04	2.8E-04	0.68	0	0	0.14	0.036	0	2.2E-04	1.0E-04	1.9E-05	2.7E-04	9.9E-05	2.5E-04
B7 Rock Storage Facility	**94**	**5**	**2019**	**September**	0	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**95**	**5**	**2019**	**October**	0	0	0	0	0	2.8E-10	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**103**	**6**	**2020**	**June**	2.4E-04	1.2E-04	2.9E-03	2.3E-05	1.2E-04	1.2	7.8E-03	0	3.1E-04	2.4E-04	0.58	0	0	0.12	0.031	0	1.9E-04	8.6E-05	1.6E-05	2.3E-04	8.4E-05	2.1E-04
B7 Rock Storage Facility	**104**	**6**	**2020**	**July**	2.8E-04	1.5E-04	3.5E-03	2.7E-05	1.4E-04	1.4	9.2E-03	0	3.6E-04	2.8E-04	0.68	0	0	0.14	0.036	0	2.2E-04	1.0E-04	1.9E-05	2.7E-04	1.0E-04	2.5E-04
B7 Rock Storage Facility	**105**	**6**	**2020**	**August**	2.8E-04	1.5E-04	3.4E-03	2.7E-05	1.4E-04	1.4	9.2E-03	0	3.6E-04	2.8E-04	0.68	0	0	0.14	0.036	0	2.2E-04	1.0E-04	1.9E-05	2.7E-04	9.9E-05	2.5E-04
B7 Rock Storage Facility	**106**	**6**	**2020**	**September**	0	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**107**	**6**	**2020**	**October**	0	0	0	0	0	2.8E-10	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**115**	**7**	**2021**	**June**	2.4E-04	1.2E-04	2.9E-03	2.3E-05	1.2E-04	1.2	7.8E-03	0	3.0E-04	2.4E-04	0.57	0	0	0.12	0.031	0	1.9E-04	8.6E-05	1.6E-05	2.3E-04	8.4E-05	2.1E-04
B7 Rock Storage Facility	**116**	**7**	**2021**	**July**	2.8E-04	1.5E-04	3.5E-03	2.7E-05	1.4E-04	1.4	9.2E-03	0	3.6E-04	2.8E-04	0.68	0	0	0.14	0.036	0	2.3E-04	1.0E-04	1.9E-05	2.7E-04	9.9E-05	2.5E-04
B7 Rock Storage Facility	**117**	**7**	**2021**	**August**	2.8E-04	1.5E-04	3.4E-03	2.7E-05	1.4E-04	1.4	9.2E-03	0	3.6E-04	2.8E-04	0.67	0	0	0.14	0.036	0	2.2E-04	1.0E-04	1.9E-05	2.7E-04	9.9E-05	2.5E-04
B7 Rock Storage Facility	**118**	**7**	**2021**	**September**	0	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**119**	**7**	**2021**	**October**	0	0	0	0	0	2.8E-10	0	0	0	0	1.3E-10	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**127**	**8**	**2022**	**June**	2.3E-04	1.2E-04	2.9E-03	2.2E-05	1.2E-04	1.2	7.8E-03	0	3.0E-04	2.3E-04	0.56	0	0	0.12	0.031	0	1.9E-04	8.4E-05	1.6E-05	2.2E-04	8.3E-05	2.0E-04
B7 Rock Storage Facility	**128**	**8**	**2022**	**July**	2.7E-04	1.4E-04	3.4E-03	2.6E-05	1.4E-04	1.4	9.2E-03	0	3.5E-04	2.8E-04	0.66	0	0	0.14	0.037	0	2.3E-04	9.9E-05	1.9E-05	2.6E-04	9.7E-05	2.4E-04
B7 Rock Storage Facility	**129**	**8**	**2022**	**August**	2.7E-04	1.4E-04	3.4E-03	2.6E-05	1.4E-04	1.4	9.2E-03	0	3.5E-04	2.7E-04	0.66	0	0	0.14	0.037	0	2.3E-04	9.8E-05	1.9E-05	2.6E-04	9.7E-05	2.4E-04
B7 Rock Storage Facility	**130**	**8**	**2022**	**September**	0	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**131**	**8**	**2022**	**October**	0	0	0	0	0	2.8E-10	0	0	0	0	1.3E-10	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**139**	**9**	**2023**	**June**	2.2E-04	1.2E-04	2.8E-03	2.2E-05	1.2E-04	1.2	7.7E-03	0	2.9E-04	2.2E-04	0.55	0	0	0.11	0.031	0	2.0E-04	8.0E-05	1.6E-05	2.2E-04	8.0E-05	2.0E-04
B7 Rock Storage Facility	**140**	**9**	**2023**	**July**	2.6E-04	1.4E-04	3.3E-03	2.6E-05	1.4E-04	1.4	9.2E-03	0	3.4E-04	2.6E-04	0.64	0	0	0.13	0.037	0	2.3E-04	9.5E-05	1.9E-05	2.6E-04	9.5E-05	2.3E-04
B7 Rock Storage Facility	**141**	**9**	**2023**	**August**	2.6E-04	1.4E-04	3.3E-03	2.6E-05	1.4E-04	1.4	9.1E-03	0	3.4E-04	2.6E-04	0.64	0	0	0.13	0.037	0	2.3E-04	9.4E-05	1.9E-05	2.5E-04	9.4E-05	2.3E-04
B7 Rock Storage Facility	**142**	**9**	**2023**	**September**	0	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**143**	**9**	**2023**	**October**	0	0	0	0	0	2.7E-10	0	0	0	0	1.3E-10	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**151**	**10**	**2024**	**June**	2.1E-04	1.2E-04	2.7E-03	2.2E-05	1.2E-04	1.2	7.8E-03	0	2.8E-04	2.2E-04	0.54	0	0	0.11	0.032	0	2.0E-04	7.9E-05	1.7E-05	2.1E-04	7.9E-05	1.9E-04
B7 Rock Storage Facility	**152**	**10**	**2024**	**July**	2.5E-04	1.4E-04	3.2E-03	2.6E-05	1.4E-04	1.4	9.3E-03	0	3.3E-04	2.6E-04	0.64	0	0	0.13	0.038	0	2.4E-04	9.3E-05	2.0E-05	2.5E-04	9.4E-05	2.2E-04
B7 Rock Storage Facility	**153**	**10**	**2024**	**August**	2.5E-04	1.4E-04	3.2E-03	2.6E-05	1.4E-04	1.4	9.2E-03	0	3.3E-04	2.6E-04	0.63	0	0	0.13	0.038	0	2.4E-04	9.3E-05	1.9E-05	2.5E-04	9.3E-05	2.2E-04
B7 Rock Storage Facility	**154**	**10**	**2024**	**September**	0	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**155**	**10**	**2024**	**October**	0	0	0	0	0	2.8E-10	0	0	0	0	1.3E-10	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**163**	**11**	**2025**	**June**	2.1E-04	1.2E-04	2.7E-03	2.2E-05	1.1E-04	1.2	8.0E-03	0	2.8E-04	2.2E-04	0.55	0	0	0.11	0.034	0	2.1E-04	7.9E-05	1.7E-05	2.1E-04	7.9E-05	1.9E-04
B7 Rock Storage Facility	**164**	**11**	**2025**	**July**	2.5E-04	1.4E-04	3.2E-03	2.7E-05	1.4E-04	1.4	9.4E-03	0	3.3E-04	2.6E-04	0.65	0	0	0.13	0.040	0	2.5E-04	9.3E-05	2.0E-05	2.5E-04	9.3E-05	2.2E-04
B7 Rock Storage Facility	**165**	**11**	**2025**	**August**	2.5E-04	1.4E-04	3.2E-03	2.6E-05	1.3E-04	1.4	9.3E-03	0	3.3E-04	2.6E-04	0.64	0	0	0.13	0.040	0	2.5E-04	9.2E-05	2.0E-05	2.5E-04	9.2E-05	2.2E-04
B7 Rock Storage Facility	**166**	**11**	**2025**	**September**	0	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**167**	**11**	**2025**	**October**	0	0	0	0	0	2.8E-10	0	0	0	0	1.3E-10	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**175**	**12**	**2026**	**June**	2.2E-04	1.1E-04	2.7E-03	2.3E-05	1.1E-04	1.2	7.9E-03	0	2.9E-04	2.2E-04	0.56	0	0	0.11	0.035	0	2.2E-04	7.8E-05	1.8E-05	2.3E-04	7.6E-05	1.9E-04
B7 Rock Storage Facility	**176**	**12**	**2026**	**July**	2.6E-04	1.3E-04	3.1E-03	2.7E-05	1.3E-04	1.4	9.4E-03	0	3.4E-04	2.6E-04	0.67	0	0	0.13	0.042	0	2.6E-04	9.2E-05	2.1E-05	2.7E-04	9.0E-05	2.3E-04
B7 Rock Storage Facility	**177**	**12**	**2026**	**August**	2.5E-04	1.3E-04	3.1E-03	2.7E-05	1.3E-04	1.4	9.3E-03	0	3.4E-04	2.6E-04	0.66	0	0	0.13	0.041	0	2.6E-04	9.2E-05	2.1E-05	2.6E-04	8.9E-05	2.3E-04
B7 Rock Storage Facility	**178**	**12**	**2026**	**September**	0	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**179**	**12**	**2026**	**October**	0	0	0	0	0	2.8E-10	0	0	0	0	1.3E-10	0	0	0	0	0	0	0	0	0	0	0
B7 Rock Storage Facility	**187**	**13**	**2027**	**June**	2.2E-04	1.1E-04	2.7E-03	2.3E-05	1.1E-04	1.2	7.9E-03	0	2.9E-04	2.2E-04	0.56	0	0	0.11	0.035	0	2.2E-04	7.8E-05	1.8E-05	2.3E-04	7.6E-05	1.9E-04
				MINIMUM	0	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				MAXIMUM	2.8E-04	1.5E-04	3.5E-03	2.7E-05	1.5E-04	1.4	9.4E-03	0	3.6E-04	2.9E-04	0.68	0	0	0.14	0.042	0	2.6E-04	1.0E-04	2.1E-05	2.7E-04	1.0E-04	2.5E-04
				AVERAGE	7.8E-05	4.2E-05	9.7E-04	7.7E-06	4.1E-05	0.41	2.7E-03	0	1.0E-04	7.9E-05	0.19	0	0	0.040	0.011	0	6.8E-05	2.8E-05	5.6E-06	7.7E-05	2.8E-05	7.0E-05
Long Term RSF Seepage Water Quality (Years 26+)																										
Notes:				SUMMER AVERAGE	1.3E-04	6.8E-05	1.6E-03	1.4E-05	6.7E-05	0.71	4.8E-03	0	1.7E-04	1.3E-04	0.34	0	0	0.067	0.021	0	1.3E-04	4.7E-05	1.1E-05	1.4E-04	4.6E-05	1.2E-04

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.11 - B4 Rock Storage Facility
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12				13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001	
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)																		0.5								
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	Si	SO4	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]	Co
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/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
Operations Seepage Water Quality (Years 3-13)																										
B4 Rock Storage Facility	**68**	**3**	**2017**	**July**	20	10.0	0	0	0	17	0.66	0.73	0	0	0	0.027	5.6E-04	**8.9E-03**	7.6E-04	0	0	8.7E-04	1.7E-07	0.75	0	9.3E-05
B4 Rock Storage Facility	**69**	**3**	**2017**	**August**	10	4.9	0	0	0	8.3	0.66	0.73	0	0	0	0.013	2.8E-04	4.4E-03	3.7E-04	0	0	4.3E-04	8.5E-08	0.37	0	4.6E-05
B4 Rock Storage Facility	**70**	**3**	**2017**	**September**	1.9	0.26	0	0	0	0.44	0.66	0.73	0	0	0	7.0E-04	1.5E-05	2.3E-04	2.0E-05	0	0	2.2E-05	4.5E-09	0.020	0	2.4E-06
B4 Rock Storage Facility	**71**	**3**	**2017**	**October**	1.4	7.2E-09	0	0	0	1.2E-08	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	5.5E-10	0	0
B4 Rock Storage Facility	**79**	**4**	**2018**	**June**	38	20	0	0	0	34	0.66	0.73	0	0	0	0.054	1.1E-03	**0.018**	1.5E-03	0	0	1.7E-03	3.5E-07	1.5	0	1.9E-04
B4 Rock Storage Facility	**80**	**4**	**2018**	**July**	27	14	0	0	0	24	0.66	0.73	0	0	0	0.038	7.8E-04	**0.012**	1.0E-03	0	0	1.2E-03	2.4E-07	1.0	0	1.3E-04
B4 Rock Storage Facility	**81**	**4**	**2018**	**August**	12	6.0	0	0	0	10	0.66	0.73	0	0	0	0.016	3.4E-04	**5.3E-03**	4.5E-04	0	0	5.2E-04	1.0E-07	0.45	0	5.5E-05
B4 Rock Storage Facility	**82**	**4**	**2018**	**September**	3.0	0.86	0	0	0	1.5	0.66	0.73	0	0	0	2.3E-03	4.9E-05	7.7E-04	6.5E-05	0	0	7.5E-05	1.5E-08	0.065	0	8.0E-06
B4 Rock Storage Facility	**83**	**4**	**2018**	**October**	1.4	8.5E-09	0	0	0	1.4E-08	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	6.4E-10	0	0
B4 Rock Storage Facility	**91**	**5**	**2019**	**June**	69	35	0	0	0	62	0.66	0.73	0	0	0	0.090	1.8E-03	**0.029**	2.7E-03	0	0	3.4E-03	4.9E-07	3.6	0	2.8E-04
B4 Rock Storage Facility	**92**	**5**	**2019**	**July**	82	41	0	0	0	73	0.66	0.73	0	0	0	**0.11**	2.2E-03	**0.034**	3.2E-03	0	0	4.1E-03	5.7E-07	4.4	0	3.2E-04
B4 Rock Storage Facility	**93**	**5**	**2019**	**August**	82	41	0	0	0	73	0.66	0.73	0	0	0	**0.10**	2.1E-03	**0.033**	3.2E-03	0	0	4.1E-03	5.6E-07	4.3	0	3.2E-04
B4 Rock Storage Facility	**94**	**5**	**2019**	**September**	1.4	4.1E-09	0	0	0	7.6E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	5.4E-10	0	0
B4 Rock Storage Facility	**95**	**5**	**2019**	**October**	1.4	8.2E-09	0	0	0	1.5E-08	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.1E-09	0	0
B4 Rock Storage Facility	**103**	**6**	**2020**	**June**	79	36	0	0	0	69	0.66	0.73	0	0	0	0.083	1.7E-03	**0.025**	2.9E-03	0	0	4.3E-03	2.9E-07	5.6	0	2.0E-04
B4 Rock Storage Facility	**104**	**6**	**2020**	**July**	93	42	0	0	0	81	0.66	0.73	0	0	0	0.098	2.0E-03	**0.029**	3.4E-03	0	0	5.1E-03	3.4E-07	6.6	0	2.4E-04
B4 Rock Storage Facility	**105**	**6**	**2020**	**August**	92	42	0	0	0	81	0.66	0.73	0	0	0	0.097	2.0E-03	**0.029**	3.4E-03	0	0	5.0E-03	3.4E-07	6.6	0	2.3E-04
B4 Rock Storage Facility	**106**	**6**	**2020**	**September**	1.4	4.2E-09	0	0	0	8.1E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	6.4E-10	0	0
B4 Rock Storage Facility	**107**	**6**	**2020**	**October**	1.4	8.5E-09	0	0	0	1.6E-08	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.3E-09	0	0
B4 Rock Storage Facility	**115**	**7**	**2021**	**June**	74	36	0	0	0	65	0.66	0.73	0	0	0	0.090	1.8E-03	**0.028**	2.8E-03	0	0	3.8E-03	4.4E-07	4.3	0	2.6E-04
B4 Rock Storage Facility	**116**	**7**	**2021**	**July**	87	42	0	0	0	77	0.66	0.73	0	0	0	**0.11**	2.2E-03	**0.033**	3.3E-03	0	0	4.4E-03	5.3E-07	5.0	0	3.1E-04
B4 Rock Storage Facility	**117**	**7**	**2021**	**August**	86	42	0	0	0	77	0.66	0.73	0	0	0	**0.11**	2.2E-03	**0.033**	3.3E-03	0	0	4.4E-03	5.2E-07	5.0	0	3.1E-04
B4 Rock Storage Facility	**118**	**7**	**2021**	**September**	1.4	4.3E-09	0	0	0	7.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	4.2E-10	0	0
B4 Rock Storage Facility	**119**	**7**	**2021**	**October**	1.4	8.5E-09	0	0	0	1.5E-08	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	8.1E-10	0	0
B4 Rock Storage Facility	**127**	**8**	**2022**	**June**	68	36	0	0	0	61	0.66	0.73	0	0	0	0.097	2.0E-03	**0.032**	2.7E-03	0	0	3.1E-03	6.2E-07	2.7	0	3.3E-04
B4 Rock Storage Facility	**128**	**8**	**2022**	**July**	80	42	0	0	0	72	0.66	0.73	0	0	0	**0.12**	2.4E-03	**0.038**	3.2E-03	0	0	3.7E-03	7.4E-07	3.2	0	4.0E-04
B4 Rock Storage Facility	**129**	**8**	**2022**	**August**	80	42	0	0	0	72	0.66	0.73	0	0	0	**0.11**	2.4E-03	**0.037**	3.2E-03	0	0	3.7E-03	7.3E-07	3.2	0	3.9E-04
B4 Rock Storage Facility	**130**	**8**	**2022**	**September**	1.4	4.2E-09	0	0	0	7.2E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	3.3E-10	0	0
B4 Rock Storage Facility	**131**	**8**	**2022**	**October**	1.4	8.4E-09	0	0	0	1.4E-08	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	6.5E-10	0	0
B4 Rock Storage Facility	**139**	**9**	**2023**	**June**	73	36	0	0	0	65	0.66	0.73	0	0	0	0.089	1.9E-03	**0.028**	2.8E-03	0	0	3.7E-03	4.6E-07	4.2	0	2.7E-04
B4 Rock Storage Facility	**140**	**9**	**2023**	**July**	87	42	0	0	0	77	0.66	0.73	0	0	0	**0.11**	2.2E-03	**0.033**	3.3E-03	0	0	4.5E-03	5.3E-07	5.1	0	3.1E-04
B4 Rock Storage Facility	**141**	**9**	**2023**	**August**	86	42	0	0	0	76	0.66	0.73	0	0	0	**0.10**	2.2E-03	**0.032**	3.3E-03	0	0	4.4E-03	5.2E-07	5.1	0	3.1E-04
B4 Rock Storage Facility	**142**	**9**	**2023**	**September**	1.4	4.2E-09	0	0	0	8.1E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	6.5E-10	0	0
B4 Rock Storage Facility	**143**	**9**	**2023**	**October**	1.4	8.4E-09	0	0	0	1.6E-08	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.3E-09	0	0
B4 Rock Storage Facility	**151**	**10**	**2024**	**June**	71	33	0	0	0	60	0.66	0.73	0	0	0	0.074	1.5E-03	**0.021**	2.8E-03	0	0	4.0E-03	5.2E-07	6.0	0	1.8E-04
B4 Rock Storage Facility	**152**	**10**	**2024**	**July**	82	38	0	0	0	70	0.66	0.73	0	0	0	0.087	1.7E-03	**0.025**	3.3E-03	0	0	4.6E-03	6.5E-07	7.0	0	2.2E-04
B4 Rock Storage Facility	**153**	**10**	**2024**	**August**	82	38	0	0	0	70	0.66	0.73	0	0	0	0.086	1.7E-03	**0.025**	3.3E-03	0	0	4.6E-03	6.5E-07	7.0	0	2.1E-04
B4 Rock Storage Facility	**154**	**10**	**2024**	**September**	1.4	3.5E-09	0	0	0	5.9E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	6.1E-10	0	0
B4 Rock Storage Facility	**155**	**10**	**2024**	**October**	1.4	7.0E-09	0	0	0	1.1E-08	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.2E-09	0	0
B4 Rock Storage Facility	**163**	**11**	**2025**	**June**	48	26	0	0	0	39	0.66	0.73	0	0	0	0.065	1.2E-03	**0.019**	2.6E-03	0	0	2.6E-03	1.2E-06	5.1	0	2.2E-04
B4 Rock Storage Facility	**164**	**11**	**2025**	**July**	56	31	0	0	0	46	0.66	0.73	0	0	0	0.076	1.5E-03	**0.022**	3.0E-03	0	0	3.1E-03	1.4E-06	6.1	0	2.6E-04
B4 Rock Storage Facility	**165**	**11**	**2025**	**August**	56	31	0	0	0	45	0.66	0.73	0	0	0	0.075	1.5E-03	**0.022**	3.0E-03	0	0	3.1E-03	1.4E-06	6.1	0	2.5E-04
B4 Rock Storage Facility	**166**	**11**	**2025**	**September**	1.4	3.0E-09	0	0	0	4.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	6.9E-10	0	0
B4 Rock Storage Facility	**167**	**11**	**2025**	**October**	1.4	6.0E-09	0	0	0	9.0E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.4E-09	0	0
B4 Rock Storage Facility	**175**	**12**	**2026**	**June**	48	25	0	0	0	38	0.66	0.73	0	0	0	0.055	9.9E-04	**0.015**	2.6E-03	0	0	2.9E-03	1.2E-06	6.5	0	1.5E-04
B4 Rock Storage Facility	**176**	**12**	**2026**	**July**	57	29	0	0	0	44	0.66	0.73	0	0	0	0.065	1.2E-03	**0.017**	3.1E-03	0	0	3.4E-03	1.5E-06	7.7	0	1.8E-04
B4 Rock Storage Facility	**177**	**12**	**2026**	**August**	56	29	0	0	0	44	0.66	0.73	0	0	0	0.064	1.2E-03	**0.017**	3.1E-03	0	0	3.4E-03	1.5E-06	7.7	0	1.8E-04
B4 Rock Storage Facility	**178**	**12**	**2026**	**September**	1.4	2.9E-09	0	0	0	4.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	7.7E-10	0	0
B4 Rock Storage Facility	**179**	**12**	**2026**	**October**	1.4	5.9E-09	0	0	0	8.9E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.5E-09	0	0
B4 Rock Storage Facility	**187**	**13**	**2027**	**June**	48	25	0	0	0	38	0.66	0.73	0	0	0	0.055	9.9E-04	**0.015**	2.6E-03	0	0	2.9E-03	1.2E-06	6.5	0	1.5E-04
				MINIMUM	1.4	2.9E-09	0	0	0	4.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	3.3E-10	0	0
				MAXIMUM	93	42	0	0	0	81	0.66	0.73	0	0	0	**0.12**	2.4E-03	**0.038**	3.4E-03	0	0	5.1E-03	1.5E-06	7.7	0	4.0E-04
				AVERAGE	39	19	0	0	0	33	0.66	0.73	0	0	0	0.047	9.5E-04	**0.014**	1.6E-03	0	0	2.0E-03	4.0E-07	2.8	0	1.4E-04
Long Term RSF Seepage Water Quality (Years 26+)																										
				SUMMER AVERAGE	21	10	0	0	0	16	0.47	0.52	0	0	0	0.023	4.3E-04	**6.4E-03**	1.1E-03	0	0	1.2E-03	4.9E-07	2.6	0	6.6E-05

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

[5] CEQG Freshwater Aquatic Life Criterion for aluminun is pH dependant; assumes

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

Table C-2.11 - B4 Rock Storage Facility
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.002	0.3	0.001				0.000026	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)	0.3	3	0.2						0.5												0.5
	Model	Mine	Date		Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Ag	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L
Operations Seepage Water Quality (Years 3-13)																									
B4 Rock Storage Facility	**68**	**3**	**2017**	**July**	5.1E-05	0	9.3E-06	0	0.45	9.8E-03	0	2.1E-05	7.5E-05	0.22	0	0	0.047	6.4E-03	0	1.7E-04	1.7E-05	2.1E-05	5.8E-05	1.5E-04	1.2E-04
B4 Rock Storage Facility	**69**	**3**	**2017**	**August**	2.5E-05	0	4.6E-06	0	0.22	4.8E-03	0	1.0E-05	3.7E-05	0.11	0	0	0.023	3.2E-03	0	8.3E-05	8.2E-06	1.1E-05	2.8E-05	7.2E-05	5.7E-05
B4 Rock Storage Facility	**70**	**3**	**2017**	**September**	1.3E-06	0	2.4E-07	0	0.012	2.6E-04	0	5.4E-07	1.9E-06	5.7E-03	0	0	1.2E-03	1.7E-04	0	4.4E-06	4.3E-07	5.5E-07	1.5E-06	3.8E-06	3.0E-06
B4 Rock Storage Facility	**71**	**3**	**2017**	**October**	0	0	0	0	3.3E-10	0	0	0	0	1.6E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**79**	**4**	**2018**	**June**	1.0E-04	0	1.9E-05	0	0.91	0.020	0	4.2E-05	1.5E-04	0.44	0	0	0.093	0.013	0	3.4E-04	3.4E-05	4.3E-05	1.2E-04	2.9E-04	2.3E-04
B4 Rock Storage Facility	**80**	**4**	**2018**	**July**	7.0E-05	0	1.3E-05	0	0.63	0.014	0	2.9E-05	1.0E-04	0.31	0	0	0.064	8.9E-03	0	2.3E-04	2.3E-05	3.0E-05	8.0E-05	2.0E-04	1.6E-04
B4 Rock Storage Facility	**81**	**4**	**2018**	**August**	3.0E-05	0	5.6E-06	0	0.27	5.9E-03	0	1.2E-05	4.5E-05	0.13	0	0	0.028	3.9E-03	0	1.0E-04	1.0E-05	1.3E-05	3.5E-05	8.7E-05	6.9E-05
B4 Rock Storage Facility	**82**	**4**	**2018**	**September**	4.4E-06	0	8.0E-07	0	0.039	8.5E-04	0	1.8E-06	6.5E-06	0.019	0	0	4.0E-03	5.6E-04	0	1.4E-05	1.4E-06	1.8E-06	5.0E-06	1.3E-05	1.0E-05
B4 Rock Storage Facility	**83**	**4**	**2018**	**October**	0	0	0	0	3.8E-10	0	0	0	0	1.9E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**91**	**5**	**2019**	**June**	1.4E-04	3.7E-04	2.7E-05	0	1.6	0.034	0	7.1E-05	2.1E-04	0.92	0	0	0.18	0.021	0	5.3E-04	4.9E-05	6.5E-05	1.9E-04	5.1E-04	4.1E-04
B4 Rock Storage Facility	**92**	**5**	**2019**	**July**	1.7E-04	4.7E-04	3.2E-05	0	1.9	0.040	0	8.4E-05	2.5E-04	1.1	0	0	0.21	0.025	0	6.3E-04	5.7E-05	7.5E-05	2.3E-04	6.0E-04	4.8E-04
B4 Rock Storage Facility	**93**	**5**	**2019**	**August**	1.7E-04	4.7E-04	3.1E-05	0	1.9	0.039	0	8.4E-05	2.4E-04	1.1	0	0	0.21	0.025	0	6.2E-04	5.6E-05	7.5E-05	2.3E-04	6.0E-04	4.8E-04
B4 Rock Storage Facility	**94**	**5**	**2019**	**September**	0	0	0	0	1.9E-10	0	0	0	0	1.3E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**95**	**5**	**2019**	**October**	0	0	0	0	3.8E-10	0	0	0	0	2.6E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**103**	**6**	**2020**	**June**	8.4E-05	1.1E-03	1.8E-05	0	1.6	0.033	0	7.1E-05	1.2E-04	1.3	0	0	0.22	0.019	0	4.5E-04	3.1E-05	4.7E-05	1.8E-04	5.2E-04	4.2E-04
B4 Rock Storage Facility	**104**	**6**	**2020**	**July**	1.0E-04	1.3E-03	2.1E-05	0	2.0	0.039	0	8.4E-05	1.5E-04	1.5	0	0	0.26	0.022	0	5.3E-04	3.7E-05	5.6E-05	2.2E-04	6.2E-04	5.0E-04
B4 Rock Storage Facility	**105**	**6**	**2020**	**August**	9.9E-05	1.3E-03	2.1E-05	0	1.9	0.039	0	8.4E-05	1.5E-04	1.5	0	0	0.26	0.022	0	5.3E-04	3.7E-05	5.6E-05	2.2E-04	6.1E-04	5.0E-04
B4 Rock Storage Facility	**106**	**6**	**2020**	**September**	0	0	0	0	2.0E-10	0	0	0	0	1.4E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**107**	**6**	**2020**	**October**	0	0	0	0	3.9E-10	0	0	0	0	2.9E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**115**	**7**	**2021**	**June**	1.3E-04	6.1E-04	2.5E-05	0	1.6	0.034	0	7.3E-05	1.9E-04	1.0	0	0	0.20	0.021	0	5.2E-04	4.4E-05	6.1E-05	1.9E-04	5.2E-04	4.2E-04
B4 Rock Storage Facility	**116**	**7**	**2021**	**July**	1.5E-04	6.8E-04	3.0E-05	0	1.9	0.040	0	8.6E-05	2.3E-04	1.2	0	0	0.23	0.025	0	6.2E-04	5.3E-05	7.2E-05	2.3E-04	6.2E-04	5.0E-04
B4 Rock Storage Facility	**117**	**7**	**2021**	**August**	1.5E-04	6.8E-04	3.0E-05	0	1.9	0.040	0	8.6E-05	2.3E-04	1.2	0	0	0.23	0.025	0	6.2E-04	5.3E-05	7.2E-05	2.3E-04	6.1E-04	4.9E-04
B4 Rock Storage Facility	**118**	**7**	**2021**	**September**	0	0	0	0	1.9E-10	0	0	0	0	1.1E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**119**	**7**	**2021**	**October**	0	0	0	0	3.9E-10	0	0	0	0	2.1E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**127**	**8**	**2022**	**June**	1.8E-04	6.9E-06	3.3E-05	0	1.6	0.036	0	7.5E-05	2.7E-04	0.80	0	0	0.17	0.023	0	6.1E-04	6.0E-05	7.6E-05	2.1E-04	5.2E-04	4.2E-04
B4 Rock Storage Facility	**128**	**8**	**2022**	**July**	2.2E-04	8.8E-06	4.0E-05	0	1.9	0.042	0	8.9E-05	3.2E-04	0.94	0	0	0.20	0.027	0	7.2E-04	7.1E-05	9.0E-05	2.5E-04	6.1E-04	4.9E-04
B4 Rock Storage Facility	**129**	**8**	**2022**	**August**	2.2E-04	8.8E-06	3.9E-05	0	1.9	0.042	0	8.8E-05	3.2E-04	0.94	0	0	0.20	0.027	0	7.1E-04	7.1E-05	9.0E-05	2.5E-04	6.1E-04	4.9E-04
B4 Rock Storage Facility	**130**	**8**	**2022**	**September**	0	0	0	0	1.9E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**131**	**8**	**2022**	**October**	0	0	0	0	3.8E-10	0	0	0	0	1.9E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**139**	**9**	**2023**	**June**	1.3E-04	5.5E-04	2.6E-05	0	1.6	0.034	0	7.4E-05	2.0E-04	1.0	0	0	0.19	0.021	0	5.3E-04	4.6E-05	6.1E-05	2.0E-04	5.1E-04	4.2E-04
B4 Rock Storage Facility	**140**	**9**	**2023**	**July**	1.5E-04	7.1E-04	3.0E-05	0	1.9	0.041	0	8.7E-05	2.3E-04	1.2	0	0	0.23	0.025	0	6.2E-04	5.3E-05	7.1E-05	2.3E-04	6.0E-04	5.0E-04
B4 Rock Storage Facility	**141**	**9**	**2023**	**August**	1.5E-04	7.0E-04	2.9E-05	0	1.9	0.040	0	8.6E-05	2.3E-04	1.2	0	0	0.23	0.024	0	6.2E-04	5.3E-05	7.0E-05	2.3E-04	6.0E-04	5.0E-04
B4 Rock Storage Facility	**142**	**9**	**2023**	**September**	0	0	0	0	1.9E-10	0	0	0	0	1.5E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**143**	**9**	**2023**	**October**	0	0	0	0	3.9E-10	0	0	0	0	3.0E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**151**	**10**	**2024**	**June**	7.3E-05	1.5E-03	1.6E-05	1.7E-05	1.6	0.029	0	1.0E-04	1.1E-04	1.2	0	0	0.21	0.020	0	3.9E-04	3.4E-05	3.7E-05	1.8E-04	4.5E-04	3.9E-04
B4 Rock Storage Facility	**152**	**10**	**2024**	**July**	8.9E-05	1.8E-03	1.9E-05	2.2E-05	1.9	0.034	0	1.2E-04	1.4E-04	1.4	0	0	0.25	0.024	0	4.6E-04	4.1E-05	4.5E-05	2.2E-04	5.2E-04	4.6E-04
B4 Rock Storage Facility	**153**	**10**	**2024**	**August**	8.9E-05	1.8E-03	1.9E-05	2.1E-05	1.8	0.034	0	1.2E-04	1.4E-04	1.4	0	0	0.25	0.024	0	4.6E-04	4.1E-05	4.4E-05	2.2E-04	5.2E-04	4.6E-04
B4 Rock Storage Facility	**154**	**10**	**2024**	**September**	0	0	0	0	1.8E-10	0	0	0	0	1.2E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**155**	**10**	**2024**	**October**	0	0	0	0	3.5E-10	0	0	0	0	2.3E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**163**	**11**	**2025**	**June**	1.1E-04	1.7E-03	2.1E-05	5.2E-05	1.4	0.022	0	1.7E-04	1.8E-04	0.89	0	0	0.17	0.026	0	3.6E-04	5.6E-05	3.6E-05	2.0E-04	3.1E-04	3.2E-04
B4 Rock Storage Facility	**164**	**11**	**2025**	**July**	1.3E-04	2.1E-03	2.5E-05	6.2E-05	1.7	0.026	0	2.0E-04	2.1E-04	1.1	0	0	0.20	0.031	0	4.2E-04	6.5E-05	4.1E-05	2.4E-04	3.7E-04	3.7E-04
B4 Rock Storage Facility	**165**	**11**	**2025**	**August**	1.2E-04	2.1E-03	2.5E-05	6.2E-05	1.7	0.026	0	2.0E-04	2.1E-04	1.1	0	0	0.20	0.030	0	4.1E-04	6.5E-05	4.1E-05	2.4E-04	3.7E-04	3.7E-04
B4 Rock Storage Facility	**166**	**11**	**2025**	**September**	0	0	0	0	1.7E-10	0	0	0	0	1.2E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**167**	**11**	**2025**	**October**	0	0	0	0	3.3E-10	0	0	0	0	2.3E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**175**	**12**	**2026**	**June**	6.0E-05	2.4E-03	1.4E-05	5.8E-05	1.4	0.019	0	1.8E-04	1.2E-04	1.1	0	0	0.18	0.026	0	2.7E-04	4.5E-05	2.0E-05	2.0E-04	2.8E-04	3.0E-04
B4 Rock Storage Facility	**176**	**12**	**2026**	**July**	7.1E-05	2.8E-03	1.7E-05	6.9E-05	1.7	0.022	0	2.2E-04	1.4E-04	1.3	0	0	0.22	0.031	0	3.1E-04	5.3E-05	2.3E-05	2.3E-04	3.3E-04	3.6E-04
B4 Rock Storage Facility	**177**	**12**	**2026**	**August**	7.0E-05	2.8E-03	1.7E-05	6.9E-05	1.6	0.022	0	2.2E-04	1.4E-04	1.3	0	0	0.21	0.030	0	3.1E-04	5.3E-05	2.3E-05	2.3E-04	3.3E-04	3.6E-04
B4 Rock Storage Facility	**178**	**12**	**2026**	**September**	0	0	0	0	1.7E-10	0	0	0	0	1.3E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**179**	**12**	**2026**	**October**	0	0	0	0	3.3E-10	0	0	0	0	2.5E-10	0	0	0	0	0	0	0	0	0	0	0
B4 Rock Storage Facility	**187**	**13**	**2027**	**June**	6.0E-05	2.4E-03	1.4E-05	5.8E-05	1.4	0.019	0	1.8E-04	1.2E-04	1.1	0	0	0.18	0.026	0	2.7E-04	4.5E-05	2.0E-05	2.0E-04	2.8E-04	3.0E-04
				MINIMUM	0	0	0	0	1.7E-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				MAXIMUM	2.2E-04	2.8E-03	4.0E-05	6.9E-05	2.0	0.042	0	2.2E-04	3.2E-04	1.5	0	0	0.26	0.031	0	7.2E-04	7.1E-05	9.0E-05	2.5E-04	6.2E-04	5.0E-04
				AVERAGE	6.8E-05	7.4E-04	1.3E-05	3.1E-05	0.92	0.018	0	6.1E-05	1.0E-04	0.60	0	0	0.11	0.013	0	2.7E-04	2.7E-05	3.0E-05	1.2E-04	2.6E-04	2.3E-04
Long Term RSF Seepage Water Quality (Years 26+)																									
				SUMMER AVERAGE	2.6E-05	9.2E-04	6.1E-06	2.2E-05	0.58	8.1E-03	0	7.2E-05	4.9E-05	0.44	0	0	0.075	0.010	0	1.2E-04	1.8E-05	9.2E-06	8.0E-05	1.2E-04	1.3E-04

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

[5] CEQG Freshwater Aquatic Life Criterion for aluminun is pH dependant; assumes

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

Table C-2.12 - A45-2 (F-Zone) Rock Storage Facility
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)				120	0.12				13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)															0.5							
	Model	Mine	Date		H+	TDS	Total Alkalinity	Cl	F	Si	SO4	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month		mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/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
Operations Seepage Water Quality (Years 3-13)																									
A45-2 Rock Storage Facility	**68**	**3**	**2017**	**July**	5.4E-09	4.7	3.5	0	0	0	1.4	0.66	0.73	0	0	0	7.9E-03	2.2E-04	2.7E-03	1.8E-03	0	0	4.3E-04	1.7E-07	1.3	0
A45-2 Rock Storage Facility	**69**	**3**	**2017**	**August**	1.7E-09	2.4	1.1	0	0	0	0.44	0.66	0.73	0	0	0	2.4E-03	6.6E-05	8.4E-04	5.6E-04	0	0	1.3E-04	5.3E-08	0.39	0
A45-2 Rock Storage Facility	**70**	**3**	**2017**	**September**	0	1.4	0.048	0	0	0	0.020	0.66	0.73	0	0	0	1.1E-04	3.0E-06	3.8E-05	2.5E-05	0	0	5.9E-06	2.4E-09	0.018	0
A45-2 Rock Storage Facility	**71**	**3**	**2017**	**October**	0	1.4	3.1E-09	0	0	0	1.3E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.1E-09	0
A45-2 Rock Storage Facility	**79**	**4**	**2018**	**June**	1.4E-08	9.9	8.9	0	0	0	3.7	0.66	0.73	0	0	0	0.020	5.5E-04	**6.9E-03**	4.7E-03	0	0	1.1E-03	4.4E-07	3.2	0
A45-2 Rock Storage Facility	**80**	**4**	**2018**	**July**	1.5E-08	11	9.9	0	0	0	4.1	0.66	0.73	0	0	0	0.023	6.1E-04	**7.8E-03**	5.2E-03	0	0	1.2E-03	4.9E-07	3.6	0
A45-2 Rock Storage Facility	**81**	**4**	**2018**	**August**	1.5E-08	11	9.8	0	0	0	4.1	0.66	0.73	0	0	0	0.022	6.1E-04	**7.7E-03**	5.1E-03	0	0	1.2E-03	4.8E-07	3.6	0
A45-2 Rock Storage Facility	**82**	**4**	**2018**	**September**	1.0E-09	2.0	0.66	0	0	0	0.28	0.66	0.73	0	0	0	1.5E-03	4.1E-05	5.2E-04	3.5E-04	0	0	8.2E-05	3.3E-08	0.24	0
A45-2 Rock Storage Facility	**83**	**4**	**2018**	**October**	0	1.4	3.5E-09	0	0	0	1.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.3E-09	0
A45-2 Rock Storage Facility	**91**	**5**	**2019**	**June**	1.6E-08	11	10	0	0	0	4.2	0.66	0.73	0	0	0	0.023	6.3E-04	**7.9E-03**	5.3E-03	0	0	1.2E-03	5.0E-07	3.7	0
A45-2 Rock Storage Facility	**92**	**5**	**2019**	**July**	1.7E-08	12	11	0	0	0	4.6	0.66	0.73	0	0	0	0.025	6.9E-04	**8.7E-03**	5.8E-03	0	0	1.4E-03	5.5E-07	4.0	0
A45-2 Rock Storage Facility	**93**	**5**	**2019**	**August**	1.7E-08	12	11	0	0	0	4.6	0.66	0.73	0	0	0	0.025	6.8E-04	**8.6E-03**	5.8E-03	0	0	1.4E-03	5.4E-07	4.0	0
A45-2 Rock Storage Facility	**94**	**5**	**2019**	**September**	1.9E-09	2.6	1.2	0	0	0	0.52	0.66	0.73	0	0	0	2.8E-03	7.7E-05	9.8E-04	6.5E-04	0	0	1.5E-04	6.1E-08	0.45	0
A45-2 Rock Storage Facility	**95**	**5**	**2019**	**October**	0	1.4	3.5E-09	0	0	0	1.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.3E-09	0
A45-2 Rock Storage Facility	**103**	**6**	**2020**	**June**	1.7E-08	12	11	0	0	0	4.4	0.66	0.73	0	0	0	0.024	6.6E-04	**8.3E-03**	5.6E-03	0	0	1.3E-03	5.2E-07	3.9	0
A45-2 Rock Storage Facility	**104**	**6**	**2020**	**July**	1.8E-08	12	12	0	0	0	4.8	0.66	0.73	0	0	0	0.026	7.2E-04	**9.1E-03**	6.1E-03	0	0	1.4E-03	5.7E-07	4.2	0
A45-2 Rock Storage Facility	**105**	**6**	**2020**	**August**	1.8E-08	12	11	0	0	0	4.8	0.66	0.73	0	0	0	0.026	7.1E-04	**9.0E-03**	6.0E-03	0	0	1.4E-03	5.7E-07	4.2	0
A45-2 Rock Storage Facility	**106**	**6**	**2020**	**September**	2.7E-09	3.0	1.7	0	0	0	0.72	0.66	0.73	0	0	0	3.9E-03	1.1E-04	1.3E-03	9.0E-04	0	0	2.1E-04	8.5E-08	0.63	0
A45-2 Rock Storage Facility	**107**	**6**	**2020**	**October**	0	1.4	3.5E-09	0	0	0	1.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.3E-09	0
A45-2 Rock Storage Facility	**115**	**7**	**2021**	**June**	1.7E-08	12	11	0	0	0	4.6	0.66	0.73	0	0	0	0.025	6.8E-04	**8.6E-03**	5.8E-03	0	0	1.4E-03	5.4E-07	4.0	0
A45-2 Rock Storage Facility	**116**	**7**	**2021**	**July**	1.9E-08	13	12	0	0	0	5.0	0.66	0.73	0	0	0	0.027	7.4E-04	**9.4E-03**	6.3E-03	0	0	1.5E-03	5.9E-07	4.4	0
A45-2 Rock Storage Facility	**117**	**7**	**2021**	**August**	1.9E-08	13	12	0	0	0	4.9	0.66	0.73	0	0	0	0.027	7.4E-04	**9.3E-03**	6.2E-03	0	0	1.5E-03	5.9E-07	4.3	0
A45-2 Rock Storage Facility	**118**	**7**	**2021**	**September**	3.3E-09	3.4	2.1	0	0	0	0.88	0.66	0.73	0	0	0	4.8E-03	1.3E-04	1.7E-03	1.1E-03	0	0	2.6E-04	1.0E-07	0.77	0
A45-2 Rock Storage Facility	**119**	**7**	**2021**	**October**	0	1.4	3.5E-09	0	0	0	1.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.3E-09	0
A45-2 Rock Storage Facility	**127**	**8**	**2022**	**June**	1.8E-08	12	11	0	0	0	4.7	0.66	0.73	0	0	0	0.026	7.0E-04	**8.9E-03**	6.0E-03	0	0	1.4E-03	5.6E-07	4.1	0
A45-2 Rock Storage Facility	**128**	**8**	**2022**	**July**	1.9E-08	13	12	0	0	0	5.1	0.66	0.73	0	0	0	0.028	7.6E-04	**9.7E-03**	6.5E-03	0	0	1.5E-03	6.1E-07	4.5	0
A45-2 Rock Storage Facility	**129**	**8**	**2022**	**August**	1.9E-08	13	12	0	0	0	5.1	0.66	0.73	0	0	0	0.028	7.6E-04	**9.6E-03**	6.4E-03	0	0	1.5E-03	6.0E-07	4.4	0
A45-2 Rock Storage Facility	**130**	**8**	**2022**	**September**	3.8E-09	3.7	2.4	0	0	0	1.0	0.66	0.73	0	0	0	5.6E-03	1.5E-04	1.9E-03	1.3E-03	0	0	3.0E-04	1.2E-07	0.88	0
A45-2 Rock Storage Facility	**131**	**8**	**2022**	**October**	0	1.4	3.5E-09	0	0	0	1.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.3E-09	0
A45-2 Rock Storage Facility	**139**	**9**	**2023**	**June**	1.8E-08	13	12	0	0	0	4.8	0.66	0.73	0	0	0	0.027	7.2E-04	**9.1E-03**	6.1E-03	0	0	1.4E-03	5.7E-07	4.2	0
A45-2 Rock Storage Facility	**140**	**9**	**2023**	**July**	2.0E-08	14	13	0	0	0	5.2	0.66	0.73	0	0	0	0.029	7.8E-04	**9.9E-03**	6.6E-03	0	0	1.6E-03	6.2E-07	4.6	0
A45-2 Rock Storage Facility	**141**	**9**	**2023**	**August**	2.0E-08	13	12	0	0	0	5.2	0.66	0.73	0	0	0	0.028	7.7E-04	**9.8E-03**	6.6E-03	0	0	1.5E-03	6.2E-07	4.5	0
A45-2 Rock Storage Facility	**142**	**9**	**2023**	**September**	4.2E-09	4.0	2.7	0	0	0	1.1	0.66	0.73	0	0	0	6.2E-03	1.7E-04	2.1E-03	1.4E-03	0	0	3.3E-04	1.3E-07	0.98	0
A45-2 Rock Storage Facility	**143**	**9**	**2023**	**October**	0	1.4	3.5E-09	0	0	0	1.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.3E-09	0
A45-2 Rock Storage Facility	**151**	**10**	**2024**	**June**	1.9E-08	13	12	0	0	0	4.9	0.66	0.73	0	0	0	0.027	7.3E-04	**9.3E-03**	6.2E-03	0	0	1.5E-03	5.8E-07	4.3	0
A45-2 Rock Storage Facility	**152**	**10**	**2024**	**July**	2.0E-08	14	13	0	0	0	5.3	0.66	0.73	0	0	0	0.029	8.0E-04	**0.010**	6.7E-03	0	0	1.6E-03	6.3E-07	4.7	0
A45-2 Rock Storage Facility	**153**	**10**	**2024**	**August**	2.0E-08	14	13	0	0	0	5.3	0.66	0.73	0	0	0	0.029	7.9E-04	**1.0E-02**	6.7E-03	0	0	1.6E-03	6.3E-07	4.6	0
A45-2 Rock Storage Facility	**154**	**10**	**2024**	**September**	4.6E-09	4.2	2.9	0	0	0	1.2	0.66	0.73	0	0	0	6.6E-03	1.8E-04	2.3E-03	1.5E-03	0	0	3.6E-04	1.4E-07	1.1	0
A45-2 Rock Storage Facility	**155**	**10**	**2024**	**October**	0	1.4	3.5E-09	0	0	0	1.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.3E-09	0
A45-2 Rock Storage Facility	**163**	**11**	**2025**	**June**	1.9E-08	13	12	0	0	0	5.0	0.66	0.73	0	0	0	0.027	7.5E-04	**9.4E-03**	6.3E-03	0	0	1.5E-03	5.9E-07	4.4	0
A45-2 Rock Storage Facility	**164**	**11**	**2025**	**July**	2.0E-08	14	13	0	0	0	5.4	0.66	0.73	0	0	0	0.030	8.1E-04	**0.010**	6.8E-03	0	0	1.6E-03	6.4E-07	4.7	0
A45-2 Rock Storage Facility	**165**	**11**	**2025**	**August**	2.0E-08	14	13	0	0	0	5.4	0.66	0.73	0	0	0	0.029	8.0E-04	**0.010**	6.8E-03	0	0	1.6E-03	6.4E-07	4.7	0
A45-2 Rock Storage Facility	**166**	**11**	**2025**	**September**	4.8E-09	4.4	3.1	0	0	0	1.3	0.66	0.73	0	0	0	7.1E-03	1.9E-04	2.4E-03	1.6E-03	0	0	3.8E-04	1.5E-07	1.1	0
A45-2 Rock Storage Facility	**167**	**11**	**2025**	**October**	0	1.4	3.5E-09	0	0	0	1.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.3E-09	0
A45-2 Rock Storage Facility	**175**	**12**	**2026**	**June**	1.9E-08	13	12	0	0	0	5.1	0.66	0.73	0	0	0	0.028	7.5E-04	**9.5E-03**	6.4E-03	0	0	1.5E-03	6.0E-07	4.4	0
A45-2 Rock Storage Facility	**176**	**12**	**2026**	**July**	2.1E-08	14	13	0	0	0	5.5	0.66	0.73	0	0	0	0.030	8.2E-04	**0.010**	6.9E-03	0	0	1.6E-03	6.5E-07	4.8	0
A45-2 Rock Storage Facility	**177**	**12**	**2026**	**August**	2.0E-08	14	13	0	0	0	5.4	0.66	0.73	0	0	0	0.030	8.1E-04	**0.010**	6.8E-03	0	0	1.6E-03	6.4E-07	4.7	0
A45-2 Rock Storage Facility	**178**	**12**	**2026**	**September**	5.1E-09	4.5	3.2	0	0	0	1.3	0.66	0.73	0	0	0	7.4E-03	2.0E-04	2.5E-03	1.7E-03	0	0	4.0E-04	1.6E-07	1.2	0
A45-2 Rock Storage Facility	**179**	**12**	**2026**	**October**	0	1.4	3.5E-09	0	0	0	1.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.3E-09	0
A45-2 Rock Storage Facility	**187**	**13**	**2027**	**June**	1.9E-08	13	12	0	0	0	5.1	0.66	0.73	0	0	0	0.028	7.6E-04	**9.6E-03**	6.5E-03	0	0	1.5E-03	6.1E-07	4.5	0
				MINIMUM	0	1.4	3.1E-09	0	0	0	1.3E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.1E-09	0
				MAXIMUM	2.1E-08	14	13	0	0	0	5.5	0.66	0.73	0	0	0	0.030	8.2E-04	**0.010**	6.9E-03	0	0	1.6E-03	6.5E-07	4.8	0
				AVERAGE	1.1E-08	8.2	7.0	0	0	0	2.9	0.66	0.73	0	0	0	0.016	4.4E-04	**5.5E-03**	3.7E-03	0	0	8.7E-04	3.5E-07	2.6	0
Long Term RSF Seepage Water Quality (Years 26+)																										
				SUMMER AVERAGE	9.9E-09	7.1	6.3	0	0	0	2.6	0.47	0.52	0	0	0	0.014	3.9E-04	5.0E-03	3.3E-03	0	0	7.8E-04	3.1E-07	2.3	0

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.12 - A45-2 (F-Zone) Rock Storage Facility
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3	0.2						0.5												0.5
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Ag	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L	mg/L
Operations Seepage Water Quality (Years 3-13)																									
A45-2 Rock Storage Facility	**68**	**3**	**2017**	**July**	2.3E-05	6.0E-06	1.5E-04	2.1E-06	1.2E-04	0.32	0.016	0	1.2E-05	5.0E-05	0.24	0	0	0.063	2.7E-03	0	2.8E-05	1.0E-05	8.9E-06	1.7E-05	6.5E-05	9.7E-05
A45-2 Rock Storage Facility	**69**	**3**	**2017**	**August**	7.1E-06	1.8E-06	4.5E-05	6.4E-07	3.8E-05	0.098	4.9E-03	0	3.7E-06	1.5E-05	0.075	0	0	0.019	8.2E-04	0	8.6E-06	3.1E-06	2.7E-06	5.4E-06	2.0E-05	3.0E-05
A45-2 Rock Storage Facility	**70**	**3**	**2017**	**September**	3.2E-07	8.3E-08	2.1E-06	2.9E-08	1.7E-06	4.4E-03	2.2E-04	0	1.7E-07	7.0E-07	3.4E-03	0	0	8.7E-04	3.7E-05	0	3.9E-07	1.4E-07	1.2E-07	2.4E-07	9.0E-07	1.3E-06
A45-2 Rock Storage Facility	**71**	**3**	**2017**	**October**	0	0	0	0	0	2.8E-10	0	0	0	0	2.1E-10	0	0	0	0	0	0	0	0	0	0	0
A45-2 Rock Storage Facility	**79**	**4**	**2018**	**June**	5.9E-05	1.5E-05	3.8E-04	5.3E-06	3.2E-04	0.82	0.041	0	3.1E-05	1.3E-04	0.62	0	0	0.16	6.8E-03	0	7.1E-05	2.6E-05	2.3E-05	4.5E-05	1.7E-04	2.5E-04
A45-2 Rock Storage Facility	**80**	**4**	**2018**	**July**	6.6E-05	1.7E-05	4.2E-04	6.0E-06	3.5E-04	0.91	0.045	0	3.4E-05	1.4E-04	0.69	0	0	0.18	7.6E-03	0	8.0E-05	2.9E-05	2.5E-05	5.0E-05	1.8E-04	2.8E-04
A45-2 Rock Storage Facility	**81**	**4**	**2018**	**August**	6.5E-05	1.7E-05	4.2E-04	5.9E-06	3.5E-04	0.90	0.045	0	3.4E-05	1.4E-04	0.69	0	0	0.18	7.5E-03	0	7.9E-05	2.8E-05	2.5E-05	4.9E-05	1.8E-04	2.7E-04
A45-2 Rock Storage Facility	**82**	**4**	**2018**	**September**	4.4E-06	1.1E-06	2.8E-05	4.0E-07	2.4E-05	0.061	3.0E-03	0	2.3E-06	9.6E-06	0.047	0	0	0.012	5.1E-04	0	5.4E-06	1.9E-06	1.7E-06	3.3E-06	1.2E-05	1.9E-05
A45-2 Rock Storage Facility	**83**	**4**	**2018**	**October**	0	0	0	0	0	3.2E-10	0	0	0	0	2.4E-10	0	0	0	0	0	0	0	0	0	0	0
A45-2 Rock Storage Facility	**91**	**5**	**2019**	**June**	6.8E-05	1.7E-05	4.3E-04	6.1E-06	3.6E-04	0.93	0.046	0	3.5E-05	1.5E-04	0.71	0	0	0.18	7.8E-03	0	8.2E-05	2.9E-05	2.6E-05	5.1E-05	1.9E-04	2.8E-04
A45-2 Rock Storage Facility	**92**	**5**	**2019**	**July**	7.4E-05	1.9E-05	4.7E-04	6.7E-06	3.9E-04	1.0	0.051	0	3.8E-05	1.6E-04	0.78	0	0	0.20	8.5E-03	0	8.9E-05	3.2E-05	2.8E-05	5.6E-05	2.1E-04	3.1E-04
A45-2 Rock Storage Facility	**93**	**5**	**2019**	**August**	7.3E-05	1.9E-05	4.7E-04	6.6E-06	3.9E-04	1.0	0.050	0	3.8E-05	1.6E-04	0.77	0	0	0.20	8.4E-03	0	8.8E-05	3.2E-05	2.8E-05	5.5E-05	2.0E-04	3.1E-04
A45-2 Rock Storage Facility	**94**	**5**	**2019**	**September**	8.3E-06	2.1E-06	5.3E-05	7.5E-07	4.4E-05	0.12	5.7E-03	0	4.3E-06	1.8E-05	0.087	0	0	0.023	9.6E-04	0	1.0E-05	3.6E-06	3.2E-06	6.3E-06	2.3E-05	3.5E-05
A45-2 Rock Storage Facility	**95**	**5**	**2019**	**October**	0	0	0	0	0	3.2E-10	0	0	0	0	2.4E-10	0	0	0	0	0	0	0	0	0	0	0
A45-2 Rock Storage Facility	**103**	**6**	**2020**	**June**	7.1E-05	1.8E-05	4.5E-04	6.4E-06	3.8E-04	0.98	0.049	0	3.7E-05	1.5E-04	0.74	0	0	0.19	8.2E-03	0	8.6E-05	3.1E-05	2.7E-05	5.3E-05	2.0E-04	3.0E-04
A45-2 Rock Storage Facility	**104**	**6**	**2020**	**July**	7.7E-05	2.0E-05	4.9E-04	7.0E-06	4.1E-04	1.1	0.053	0	4.0E-05	1.7E-04	0.81	0	0	0.21	8.9E-03	0	9.3E-05	3.4E-05	3.0E-05	5.8E-05	2.2E-04	3.2E-04
A45-2 Rock Storage Facility	**105**	**6**	**2020**	**August**	7.7E-05	2.0E-05	4.9E-04	6.9E-06	4.1E-04	1.1	0.052	0	4.0E-05	1.7E-04	0.80	0	0	0.21	8.8E-03	0	9.2E-05	3.3E-05	2.9E-05	5.8E-05	2.1E-04	3.2E-04
A45-2 Rock Storage Facility	**106**	**6**	**2020**	**September**	1.2E-05	3.0E-06	7.3E-05	1.0E-06	6.1E-05	0.16	7.9E-03	0	6.0E-06	2.5E-05	0.12	0	0	0.031	1.3E-03	0	1.4E-05	5.0E-06	4.4E-06	8.7E-06	3.2E-05	4.8E-05
A45-2 Rock Storage Facility	**107**	**6**	**2020**	**October**	0	0	0	0	0	3.2E-10	0	0	0	0	2.4E-10	0	0	0	0	0	0	0	0	0	0	0
A45-2 Rock Storage Facility	**115**	**7**	**2021**	**June**	7.4E-05	1.9E-05	4.7E-04	6.6E-06	3.9E-04	1.0	0.050	0	3.8E-05	1.6E-04	0.77	0	0	0.20	8.5E-03	0	8.9E-05	3.2E-05	2.8E-05	5.5E-05	2.1E-04	3.1E-04
A45-2 Rock Storage Facility	**116**	**7**	**2021**	**July**	8.0E-05	2.1E-05	5.1E-04	7.2E-06	4.3E-04	1.1	0.055	0	4.2E-05	1.7E-04	0.84	0	0	0.22	9.2E-03	0	9.7E-05	3.5E-05	3.1E-05	6.0E-05	2.2E-04	3.4E-04
A45-2 Rock Storage Facility	**117**	**7**	**2021**	**August**	7.9E-05	2.0E-05	5.1E-04	7.2E-06	4.2E-04	1.1	0.054	0	4.1E-05	1.7E-04	0.83	0	0	0.21	9.1E-03	0	9.6E-05	3.5E-05	3.0E-05	6.0E-05	2.2E-04	3.3E-04
A45-2 Rock Storage Facility	**118**	**7**	**2021**	**September**	1.4E-05	3.6E-06	9.0E-05	1.3E-06	7.5E-05	0.20	9.7E-03	0	7.3E-06	3.1E-05	0.15	0	0	0.038	1.6E-03	0	1.7E-05	6.1E-06	5.4E-06	1.1E-05	3.9E-05	5.9E-05
A45-2 Rock Storage Facility	**119**	**7**	**2021**	**October**	0	0	0	0	0	3.2E-10	0	0	0	0	2.4E-10	0	0	0	0	0	0	0	0	0	0	0
A45-2 Rock Storage Facility	**127**	**8**	**2022**	**June**	7.6E-05	1.9E-05	4.8E-04	6.8E-06	4.0E-04	1.0	0.052	0	3.9E-05	1.6E-04	0.80	0	0	0.21	8.7E-03	0	9.2E-05	3.3E-05	2.9E-05	5.7E-05	2.1E-04	3.2E-04
A45-2 Rock Storage Facility	**128**	**8**	**2022**	**July**	8.2E-05	2.1E-05	5.3E-04	7.4E-06	4.4E-04	1.1	0.056	0	4.3E-05	1.8E-04	0.86	0	0	0.22	9.5E-03	0	9.9E-05	3.6E-05	3.2E-05	6.2E-05	2.3E-04	3.5E-04
A45-2 Rock Storage Facility	**129**	**8**	**2022**	**August**	8.2E-05	2.1E-05	5.2E-04	7.4E-06	4.4E-04	1.1	0.056	0	4.2E-05	1.8E-04	0.86	0	0	0.22	9.4E-03	0	9.8E-05	3.5E-05	3.1E-05	6.1E-05	2.3E-04	3.4E-04
A45-2 Rock Storage Facility	**130**	**8**	**2022**	**September**	1.6E-05	4.2E-06	1.0E-04	1.5E-06	8.7E-05	0.22	0.011	0	8.4E-06	3.5E-05	0.17	0	0	0.044	1.9E-03	0	2.0E-05	7.1E-06	6.2E-06	1.2E-05	4.5E-05	6.8E-05
A45-2 Rock Storage Facility	**131**	**8**	**2022**	**October**	0	0	0	0	0	3.2E-10	0	0	0	0	2.4E-10	0	0	0	0	0	0	0	0	0	0	0
A45-2 Rock Storage Facility	**139**	**9**	**2023**	**June**	7.8E-05	2.0E-05	5.0E-04	7.0E-06	4.1E-04	1.1	0.053	0	4.0E-05	1.7E-04	0.81	0	0	0.21	8.9E-03	0	9.4E-05	3.4E-05	3.0E-05	5.8E-05	2.2E-04	3.3E-04
A45-2 Rock Storage Facility	**140**	**9**	**2023**	**July**	8.4E-05	2.2E-05	5.4E-04	7.6E-06	4.5E-04	1.2	0.058	0	4.4E-05	1.8E-04	0.88	0	0	0.23	9.7E-03	0	1.0E-04	3.7E-05	3.2E-05	6.3E-05	2.4E-04	3.5E-04
A45-2 Rock Storage Facility	**141**	**9**	**2023**	**August**	8.3E-05	2.1E-05	5.3E-04	7.5E-06	4.5E-04	1.2	0.057	0	4.3E-05	1.8E-04	0.87	0	0	0.23	9.6E-03	0	1.0E-04	3.6E-05	3.2E-05	6.3E-05	2.3E-04	3.5E-04
A45-2 Rock Storage Facility	**142**	**9**	**2023**	**September**	1.8E-05	4.6E-06	1.1E-04	1.6E-06	9.6E-05	0.25	0.012	0	9.3E-06	3.9E-05	0.19	0	0	0.049	2.1E-03	0	2.2E-05	7.8E-06	6.9E-06	1.4E-05	5.0E-05	7.6E-05
A45-2 Rock Storage Facility	**143**	**9**	**2023**	**October**	0	0	0	0	0	3.2E-10	0	0	0	0	2.4E-10	0	0	0	0	0	0	0	0	0	0	0
A45-2 Rock Storage Facility	**151**	**10**	**2024**	**June**	7.9E-05	2.0E-05	5.0E-04	7.1E-06	4.2E-04	1.1	0.054	0	4.1E-05	1.7E-04	0.83	0	0	0.21	9.1E-03	0	9.6E-05	3.4E-05	3.0E-05	6.0E-05	2.2E-04	3.3E-04
A45-2 Rock Storage Facility	**152**	**10**	**2024**	**July**	8.6E-05	2.2E-05	5.5E-04	7.8E-06	4.6E-04	1.2	0.059	0	4.5E-05	1.9E-04	0.90	0	0	0.23	9.9E-03	0	1.0E-04	3.7E-05	3.3E-05	6.5E-05	2.4E-04	3.6E-04
A45-2 Rock Storage Facility	**153**	**10**	**2024**	**August**	8.5E-05	2.2E-05	5.4E-04	7.7E-06	4.5E-04	1.2	0.058	0	4.4E-05	1.8E-04	0.89	0	0	0.23	9.8E-03	0	1.0E-04	3.7E-05	3.3E-05	6.4E-05	2.4E-04	3.6E-04
A45-2 Rock Storage Facility	**154**	**10**	**2024**	**September**	1.9E-05	5.0E-06	1.2E-04	1.8E-06	1.0E-04	0.27	0.013	0	1.0E-05	4.2E-05	0.20	0	0	0.053	2.2E-03	0	2.4E-05	8.5E-06	7.5E-06	1.5E-05	5.4E-05	8.2E-05
A45-2 Rock Storage Facility	**155**	**10**	**2024**	**October**	0	0	0	0	0	3.2E-10	0	0	0	0	2.4E-10	0	0	0	0	0	0	0	0	0	0	0
A45-2 Rock Storage Facility	**163**	**11**	**2025**	**June**	8.0E-05	2.1E-05	5.1E-04	7.3E-06	4.3E-04	1.1	0.055	0	4.2E-05	1.7E-04	0.84	0	0	0.22	9.3E-03	0	9.7E-05	3.5E-05	3.1E-05	6.0E-05	2.2E-04	3.4E-04
A45-2 Rock Storage Facility	**164**	**11**	**2025**	**July**	8.7E-05	2.2E-05	5.6E-04	7.9E-06	4.7E-04	1.2	0.060	0	4.5E-05	1.9E-04	0.91	0	0	0.24	0.010	0	1.1E-04	3.8E-05	3.3E-05	6.6E-05	2.4E-04	3.7E-04
A45-2 Rock Storage Facility	**165**	**11**	**2025**	**August**	8.6E-05	2.2E-05	5.5E-04	7.8E-06	4.6E-04	1.2	0.059	0	4.5E-05	1.9E-04	0.90	0	0	0.23	9.9E-03	0	1.0E-04	3.7E-05	3.3E-05	6.5E-05	2.4E-04	3.6E-04
A45-2 Rock Storage Facility	**166**	**11**	**2025**	**September**	2.1E-05	5.3E-06	1.3E-04	1.9E-06	1.1E-04	0.29	0.014	0	1.1E-05	4.5E-05	0.22	0	0	0.056	2.4E-03	0	2.5E-05	9.0E-06	7.9E-06	1.6E-05	5.8E-05	8.7E-05
A45-2 Rock Storage Facility	**167**	**11**	**2025**	**October**	0	0	0	0	0	3.2E-10	0	0	0	0	2.4E-10	0	0	0	0	0	0	0	0	0	0	0
A45-2 Rock Storage Facility	**175**	**12**	**2026**	**June**	8.1E-05	2.1E-05	5.2E-04	7.3E-06	4.3E-04	1.1	0.056	0	4.2E-05	1.8E-04	0.85	0	0	0.22	9.4E-03	0	9.8E-05	3.5E-05	3.1E-05	6.1E-05	2.3E-04	3.4E-04
A45-2 Rock Storage Facility	**176**	**12**	**2026**	**July**	8.8E-05	2.3E-05	5.6E-04	8.0E-06	4.7E-04	1.2	0.060	0	4.6E-05	1.9E-04	0.92	0	0	0.24	0.010	0	1.1E-04	3.8E-05	3.4E-05	6.6E-05	2.5E-04	3.7E-04
A45-2 Rock Storage Facility	**177**	**12**	**2026**	**August**	8.7E-05	2.2E-05	5.6E-04	7.9E-06	4.7E-04	1.2	0.060	0	4.5E-05	1.9E-04	0.91	0	0	0.24	0.010	0	1.1E-04	3.8E-05	3.3E-05	6.6E-05	2.4E-04	3.7E-04
A45-2 Rock Storage Facility	**178**	**12**	**2026**	**September**	2.2E-05	5.6E-06	1.4E-04	2.0E-06	1.2E-04	0.30	0.015	0	1.1E-05	4.7E-05	0.23	0	0	0.059	2.5E-03	0	2.6E-05	9.4E-06	8.3E-06	1.6E-05	6.1E-05	9.1E-05
A45-2 Rock Storage Facility	**179**	**12**	**2026**	**October**	0	0	0	0	0	3.2E-10	0	0	0	0	2.4E-10	0	0	0	0	0	0	0	0	0	0	0
A45-2 Rock Storage Facility	**187**	**13**	**2027**	**June**	8.2E-05	2.1E-05	5.2E-04	7.4E-06	4.4E-04	1.1	0.056	0	4.3E-05	1.8E-04	0.86	0	0	0.22	9.5E-03	0	9.9E-05	3.6E-05	3.2E-05	6.2E-05	2.3E-04	3.4E-04
				MINIMUM	0	0	0	0	0	2.8E-10	0	0	0	0	2.1E-10	0	0	0	0	0	0	0	0	0	0	0
				MAXIMUM	8.8E-05	2.3E-05	5.6E-04	8.0E-06	4.7E-04	1.2	0.060	0	4.6E-05	1.9E-04	0.92	0	0	0.24	0.010	0	1.1E-04	3.8E-05	3.4E-05	6.6E-05	2.5E-04	3.7E-04
				AVERAGE	4.7E-05	1.2E-05	3.0E-04	4.3E-06	2.5E-04	0.65	0.032	0	2.4E-05	1.0E-04	0.49	0	0	0.13	5.4E-03	0	5.7E-05	2.1E-05	1.8E-05	3.5E-05	1.3E-04	2.0E-04
Long Term RSF Seepage Water Quality (Years 26+)																									
				SUMMER AVERAGE	4.2E-05	1.1E-05	2.7E-04	3.8E-06	2.3E-04	0.58	0.029	0	2.2E-05	9.2E-05	0.44	0	0	0.11	4.9E-03	0	5.1E-05	1.8E-05	1.6E-05	3.2E-05	1.2E-04	1.8E-04

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.13 - Discovery Rock Storage Facility
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)			120	0.12				13		0.004 to 0.01		0.1		0.005				1.5	0.000012	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)														0.5						
	Model	Mine	Date	Month	TDS	Total Alkalinity	Cl	F	Si	SO4	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca
Operations Seepage Water Quality (Years 6-13)																								
Discovery Rock Storage Facility	**105**	**6**	**2020**	**August**	1.9	0.66	0	1.7E-03	0	0.25	0.66	0.73	0	0	0	1.2E-03	6.0E-06	1.0E-03	3.1E-04	0	0	5.4E-05	1.4E-06	0.20
Discovery Rock Storage Facility	**106**	**6**	**2020**	**September**	1.5	0.11	0	3.0E-04	0	0.044	0.66	0.73	0	0	0	2.1E-04	1.0E-06	1.8E-04	5.5E-05	0	0	9.4E-06	2.5E-07	0.034
Discovery Rock Storage Facility	**107**	**6**	**2020**	**October**	1.4	3.5E-09	0	0	0	1.4E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.0E-09
Discovery Rock Storage Facility	**115**	**7**	**2021**	**June**	8.3	8.5	0	0.022	0	3.2	0.66	0.73	0	0	0	0.015	7.7E-05	**0.013**	4.2E-03	0	0	7.0E-04	**1.8E-05**	2.5
Discovery Rock Storage Facility	**116**	**7**	**2021**	**July**	4.5	3.8	0	9.9E-03	0	1.4	0.66	0.73	0	0	0	6.8E-03	3.4E-05	**5.7E-03**	1.9E-03	0	0	3.1E-04	8.0E-06	1.1
Discovery Rock Storage Facility	**117**	**7**	**2021**	**August**	3.6	2.6	0	6.9E-03	0	1.0	0.66	0.73	0	0	0	4.8E-03	2.4E-05	4.0E-03	1.3E-03	0	0	2.2E-04	5.6E-06	0.78
Discovery Rock Storage Facility	**118**	**7**	**2021**	**September**	1.9	0.68	0	1.8E-03	0	0.26	0.66	0.73	0	0	0	1.2E-03	6.2E-06	1.0E-03	3.4E-04	0	0	5.6E-05	1.4E-06	0.20
Discovery Rock Storage Facility	**119**	**7**	**2021**	**October**	1.4	4.1E-09	0	0	0	1.6E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.2E-09
Discovery Rock Storage Facility	**127**	**8**	**2022**	**June**	7.8	7.9	0	0.021	0	3.0	0.66	0.73	0	0	0	0.014	7.2E-05	**0.011**	4.1E-03	0	0	6.6E-04	**1.6E-05**	2.3
Discovery Rock Storage Facility	**128**	**8**	**2022**	**July**	6.7	6.5	0	0.017	0	2.4	0.66	0.73	0	0	0	0.012	5.9E-05	**9.4E-03**	3.3E-03	0	0	5.4E-04	**1.3E-05**	1.9
Discovery Rock Storage Facility	**129**	**8**	**2022**	**August**	6.6	6.4	0	0.017	0	2.4	0.66	0.73	0	0	0	0.012	5.8E-05	**9.2E-03**	3.3E-03	0	0	5.3E-04	**1.3E-05**	1.9
Discovery Rock Storage Facility	**130**	**8**	**2022**	**September**	3.1	2.1	0	5.4E-03	0	0.78	0.66	0.73	0	0	0	3.8E-03	1.9E-05	3.0E-03	1.1E-03	0	0	1.7E-04	4.2E-06	0.61
Discovery Rock Storage Facility	**131**	**8**	**2022**	**October**	1.4	4.2E-09	0	0	0	1.6E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.2E-09
Discovery Rock Storage Facility	**139**	**9**	**2023**	**June**	8.7	9.0	0	0.023	0	3.3	0.66	0.73	0	0	0	0.016	8.2E-05	**0.013**	4.6E-03	0	0	7.4E-04	**1.8E-05**	2.6
Discovery Rock Storage Facility	**140**	**9**	**2023**	**July**	7.6	7.7	0	0.020	0	2.9	0.66	0.73	0	0	0	0.014	7.0E-05	**0.011**	4.0E-03	0	0	6.4E-04	**1.5E-05**	2.3
Discovery Rock Storage Facility	**141**	**9**	**2023**	**August**	7.5	7.5	0	0.020	0	2.8	0.66	0.73	0	0	0	0.014	6.9E-05	**0.011**	3.9E-03	0	0	6.2E-04	**1.5E-05**	2.2
Discovery Rock Storage Facility	**142**	**9**	**2023**	**September**	4.0	3.2	0	8.4E-03	0	1.2	0.66	0.73	0	0	0	5.8E-03	2.9E-05	4.6E-03	1.6E-03	0	0	2.7E-04	6.5E-06	0.94
Discovery Rock Storage Facility	**143**	**9**	**2023**	**October**	1.4	4.1E-09	0	0	0	1.5E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.2E-09
Discovery Rock Storage Facility	**151**	**10**	**2024**	**June**	9.3	9.8	0	0.026	0	3.7	0.66	0.73	0	0	0	0.018	8.9E-05	**0.014**	5.0E-03	0	0	8.1E-04	**2.0E-05**	2.9
Discovery Rock Storage Facility	**152**	**10**	**2024**	**July**	8.4	8.6	0	0.022	0	3.2	0.66	0.73	0	0	0	0.016	7.8E-05	**0.012**	4.4E-03	0	0	7.1E-04	**1.7E-05**	2.5
Discovery Rock Storage Facility	**153**	**10**	**2024**	**August**	8.2	8.4	0	0.022	0	3.2	0.66	0.73	0	0	0	0.015	7.7E-05	**0.012**	4.3E-03	0	0	7.0E-04	**1.7E-05**	2.5
Discovery Rock Storage Facility	**154**	**10**	**2024**	**September**	4.7	4.1	0	0.011	0	1.5	0.66	0.73	0	0	0	7.5E-03	3.8E-05	**6.0E-03**	2.1E-03	0	0	3.4E-04	8.4E-06	1.2
Discovery Rock Storage Facility	**155**	**10**	**2024**	**October**	1.4	4.1E-09	0	0	0	1.6E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.2E-09
Discovery Rock Storage Facility	**163**	**11**	**2025**	**June**	10.0	11	0	0.028	0	4.0	0.66	0.73	0	0	0	0.019	9.6E-05	**0.015**	5.4E-03	0	0	8.8E-04	**2.2E-05**	3.1
Discovery Rock Storage Facility	**164**	**11**	**2025**	**July**	9.1	9.5	0	0.025	0	3.5	0.66	0.73	0	0	0	0.017	8.6E-05	**0.014**	4.9E-03	0	0	7.8E-04	**1.9E-05**	2.8
Discovery Rock Storage Facility	**165**	**11**	**2025**	**August**	8.9	9.3	0	0.024	0	3.5	0.66	0.73	0	0	0	0.017	8.5E-05	**0.013**	4.8E-03	0	0	7.7E-04	**1.9E-05**	2.7
Discovery Rock Storage Facility	**166**	**11**	**2025**	**September**	5.4	4.9	0	0.013	0	1.8	0.66	0.73	0	0	0	8.9E-03	4.5E-05	**7.1E-03**	2.5E-03	0	0	4.1E-04	1.0E-05	1.4
Discovery Rock Storage Facility	**167**	**11**	**2025**	**October**	1.4	4.2E-09	0	0	0	1.6E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.2E-09
Discovery Rock Storage Facility	**175**	**12**	**2026**	**June**	11	11	0	0.029	0	4.2	0.66	0.73	0	0	0	0.021	1.0E-04	**0.016**	5.9E-03	0	0	9.3E-04	**2.2E-05**	3.3
Discovery Rock Storage Facility	**176**	**12**	**2026**	**July**	9.7	10	0	0.027	0	3.8	0.66	0.73	0	0	0	0.019	9.3E-05	**0.015**	5.3E-03	0	0	8.5E-04	**2.0E-05**	3.0
Discovery Rock Storage Facility	**177**	**12**	**2026**	**August**	9.5	10	0	0.026	0	3.7	0.66	0.73	0	0	0	0.018	9.1E-05	**0.014**	5.2E-03	0	0	8.3E-04	**2.0E-05**	2.9
Discovery Rock Storage Facility	**178**	**12**	**2026**	**September**	5.9	5.5	0	0.014	0	2.1	0.66	0.73	0	0	0	0.010	5.0E-05	**8.0E-03**	2.9E-03	0	0	4.6E-04	1.1E-05	1.6
Discovery Rock Storage Facility	**179**	**12**	**2026**	**October**	1.4	4.2E-09	0	0	0	1.6E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.2E-09
Discovery Rock Storage Facility	**187**	**13**	**2027**	**June**	11	12	0	0.031	0	4.4	0.66	0.73	0	0	0	0.022	1.1E-04	**0.017**	6.2E-03	0	0	9.8E-04	**2.3E-05**	3.5
				MINIMUM	1.4	3.5E-09	0	0	0	1.4E-09	0.66	0.73	0	0	0	0	0	0	0	0	0	0	0	1.0E-09
				MAXIMUM	11	12	0	0.031	0	4.4	0.66	0.73	0	0	0	0.022	1.1E-04	**0.017**	6.2E-03	0	0	9.8E-04	**2.3E-05**	3.5
				AVERAGE	5.7	5.3	0	0.014	0	2.0	0.66	0.73	0	0	0	9.6E-03	4.8E-05	**7.7E-03**	2.7E-03	0	0	4.4E-04	1.1E-05	1.6
Long Term RSF Seepage Water Quality (Years 26+)																								
				SUMMER AVERAGE	6.6	6.9	0	0.018	0	2.6	0.47	0.52	0	0	0	0.013	6.3E-05	**9.8E-03**	3.6E-03	0	0	5.7E-04	**1.4E-05**	2.0

Notes:
[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only
[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells
[3] 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.
[4] CEQG Freshwater Aquatic Life Criteria are hardness dependant; assumes a hardness of 30 mg/L.
[5] CEQG Freshwater Aquatic Life Criterion for aluminun is pH dependant; assumes pH>6.5
[6] CEQG Freshwater Aquatic Life Trigger Ranges are dependent on trophic status; oligotrophic status assumed

Table C-2.13 - Discovery Rock Storage Facility
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)					0.001		0.002	0.3	0.001				3E-05	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)							0.3	3	0.2						0.5												0.5
	Model	Mine	Date	Month	Cr[3]	Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Ag	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
Operations Seepage Water Quality (Years 6-13)																											
Discovery Rock Storage Facility	**105**	**6**	**2020**	**August**	0	8.1E-06	5.7E-06	9.9E-05	1.9E-06	6.0E-05	0.012	1.0E-04	0	2.5E-05	1.8E-05	0.073	0	0	5.9E-03	9.6E-04	0	5.3E-06	5.1E-06	2.9E-06	2.5E-05	1.1E-05	3.7E-05
Discovery Rock Storage Facility	**106**	**6**	**2020**	**September**	0	1.4E-06	9.9E-07	1.7E-05	3.3E-07	1.0E-05	2.1E-03	1.8E-05	0	4.3E-06	3.2E-06	0.013	0	0	1.0E-03	1.7E-04	0	9.1E-07	8.9E-07	5.0E-07	4.3E-06	1.8E-06	6.5E-06
Discovery Rock Storage Facility	**107**	**6**	**2020**	**October**	0	0	0	0	0	0	0	0	0	0	0	3.9E-10	0	0	0	0	0	0	0	0	0	0	0
Discovery Rock Storage Facility	**115**	**7**	**2021**	**June**	0	1.0E-04	7.1E-05	1.3E-03	2.4E-05	8.0E-04	0.16	1.3E-03	0	3.1E-04	2.3E-04	0.95	0	0	0.076	0.013	0	6.9E-05	6.4E-05	3.8E-05	3.2E-04	1.3E-04	4.9E-04
Discovery Rock Storage Facility	**116**	**7**	**2021**	**July**	0	4.5E-05	3.2E-05	5.7E-04	1.1E-05	3.6E-04	0.070	6.0E-04	0	1.4E-04	1.0E-04	0.42	0	0	0.034	5.6E-03	0	3.1E-05	2.8E-05	1.7E-05	1.4E-04	5.9E-05	2.2E-04
Discovery Rock Storage Facility	**117**	**7**	**2021**	**August**	0	3.2E-05	2.2E-05	4.0E-04	7.4E-06	2.5E-04	0.049	4.2E-04	0	9.7E-05	7.1E-05	0.30	0	0	0.024	3.9E-03	0	2.1E-05	2.0E-05	1.2E-05	9.9E-05	4.1E-05	1.5E-04
Discovery Rock Storage Facility	**118**	**7**	**2021**	**September**	0	8.2E-06	5.7E-06	1.0E-04	1.9E-06	6.4E-05	0.013	1.1E-04	0	2.5E-05	1.8E-05	0.077	0	0	6.1E-03	1.0E-03	0	5.5E-06	5.1E-06	3.0E-06	2.5E-05	1.1E-05	3.9E-05
Discovery Rock Storage Facility	**119**	**7**	**2021**	**October**	0	0	0	0	0	0	0	0	0	0	0	4.7E-10	0	0	0	0	0	0	0	0	0	0	0
Discovery Rock Storage Facility	**127**	**8**	**2022**	**June**	0	9.2E-05	6.4E-05	1.2E-03	2.1E-05	7.8E-04	0.14	1.3E-03	0	2.8E-04	2.1E-04	0.91	0	0	0.070	0.012	0	6.6E-05	5.7E-05	3.6E-05	2.9E-04	1.2E-04	4.7E-04
Discovery Rock Storage Facility	**128**	**8**	**2022**	**July**	0	7.5E-05	5.2E-05	9.8E-04	1.7E-05	6.3E-04	0.12	1.0E-03	0	2.3E-04	1.7E-04	0.75	0	0	0.057	9.8E-03	0	5.4E-05	4.7E-05	3.0E-05	2.4E-04	9.8E-05	3.8E-04
Discovery Rock Storage Facility	**129**	**8**	**2022**	**August**	0	7.4E-05	5.1E-05	9.6E-04	1.7E-05	6.2E-04	0.12	1.0E-03	0	2.3E-04	1.7E-04	0.73	0	0	0.056	9.7E-03	0	5.3E-05	4.6E-05	2.9E-05	2.4E-04	9.6E-05	3.8E-04
Discovery Rock Storage Facility	**130**	**8**	**2022**	**September**	0	2.4E-05	1.7E-05	3.1E-04	5.6E-06	2.0E-04	0.038	3.3E-04	0	7.4E-05	5.4E-05	0.24	0	0	0.018	3.1E-03	0	1.7E-05	1.5E-05	9.4E-06	7.7E-05	3.1E-05	1.2E-04
Discovery Rock Storage Facility	**131**	**8**	**2022**	**October**	0	0	0	0	0	0	0	0	0	0	0	4.9E-10	0	0	0	0	0	0	0	0	0	0	0
Discovery Rock Storage Facility	**139**	**9**	**2023**	**June**	0	1.0E-04	7.2E-05	1.4E-03	2.4E-05	8.9E-04	0.16	1.4E-03	0	3.1E-04	2.3E-04	1.0	0	0	0.079	0.014	0	7.5E-05	6.4E-05	4.1E-05	3.3E-04	1.3E-04	5.3E-04
Discovery Rock Storage Facility	**140**	**9**	**2023**	**July**	0	8.9E-05	6.1E-05	1.2E-03	2.0E-05	7.6E-04	0.14	1.2E-03	0	2.7E-04	2.0E-04	0.89	0	0	0.067	0.012	0	6.4E-05	5.5E-05	3.5E-05	2.9E-04	1.2E-04	4.5E-04
Discovery Rock Storage Facility	**141**	**9**	**2023**	**August**	0	8.7E-05	6.0E-05	1.1E-03	2.0E-05	7.4E-04	0.14	1.2E-03	0	2.6E-04	1.9E-04	0.87	0	0	0.066	0.011	0	6.3E-05	5.4E-05	3.5E-05	2.8E-04	1.1E-04	4.5E-04
Discovery Rock Storage Facility	**142**	**9**	**2023**	**September**	0	3.7E-05	2.6E-05	4.8E-04	8.6E-06	3.1E-04	0.058	5.1E-04	0	1.1E-04	8.3E-05	0.37	0	0	0.028	4.9E-03	0	2.7E-05	2.3E-05	1.5E-05	1.2E-04	4.8E-05	1.9E-04
Discovery Rock Storage Facility	**143**	**9**	**2023**	**October**	0	0	0	0	0	0	0	0	0	0	0	4.8E-10	0	0	0	0	0	0	0	0	0	0	0
Discovery Rock Storage Facility	**151**	**10**	**2024**	**June**	0	1.1E-04	7.9E-05	1.5E-03	2.6E-05	9.5E-04	0.18	1.5E-03	0	3.5E-04	2.5E-04	1.1	0	0	0.086	0.015	0	8.1E-05	7.1E-05	4.5E-05	3.6E-04	1.5E-04	5.7E-04
Discovery Rock Storage Facility	**152**	**10**	**2024**	**July**	0	1.0E-04	6.9E-05	1.3E-03	2.3E-05	8.4E-04	0.16	1.4E-03	0	3.0E-04	2.2E-04	0.98	0	0	0.076	0.013	0	7.1E-05	6.2E-05	3.9E-05	3.2E-04	1.3E-04	5.0E-04
Discovery Rock Storage Facility	**153**	**10**	**2024**	**August**	0	9.8E-05	6.8E-05	1.3E-03	2.3E-05	8.2E-04	0.15	1.3E-03	0	3.0E-04	2.2E-04	0.97	0	0	0.074	0.013	0	7.0E-05	6.1E-05	3.8E-05	3.1E-04	1.3E-04	5.0E-04
Discovery Rock Storage Facility	**154**	**10**	**2024**	**September**	0	4.8E-05	3.3E-05	6.2E-04	1.1E-05	4.0E-04	0.075	6.5E-04	0	1.5E-04	1.1E-04	0.47	0	0	0.036	6.3E-03	0	3.4E-05	3.0E-05	1.9E-05	1.5E-04	6.2E-05	2.4E-04
Discovery Rock Storage Facility	**155**	**10**	**2024**	**October**	0	0	0	0	0	0	0	0	0	0	0	4.7E-10	0	0	0	0	0	0	0	0	0	0	0
Discovery Rock Storage Facility	**163**	**11**	**2025**	**June**	0	1.2E-04	8.5E-05	1.6E-03	2.9E-05	1.0E-03	0.19	1.7E-03	0	3.8E-04	2.8E-04	1.2	0	0	0.093	0.016	0	8.8E-05	7.7E-05	4.8E-05	3.9E-04	1.6E-04	6.2E-04
Discovery Rock Storage Facility	**164**	**11**	**2025**	**July**	0	1.1E-04	7.6E-05	1.4E-03	2.5E-05	9.2E-04	0.17	1.5E-03	0	3.4E-04	2.5E-04	1.1	0	0	0.083	0.014	0	7.8E-05	6.8E-05	4.3E-05	3.5E-04	1.4E-04	5.6E-04
Discovery Rock Storage Facility	**165**	**11**	**2025**	**August**	0	1.1E-04	7.5E-05	1.4E-03	2.5E-05	9.1E-04	0.17	1.5E-03	0	3.3E-04	2.4E-04	1.1	0	0	0.082	0.014	0	7.7E-05	6.7E-05	4.2E-05	3.5E-04	1.4E-04	5.5E-04
Discovery Rock Storage Facility	**166**	**11**	**2025**	**September**	0	5.7E-05	3.9E-05	7.4E-04	1.3E-05	4.8E-04	0.089	7.8E-04	0	1.7E-04	1.3E-04	0.56	0	0	0.043	7.4E-03	0	4.1E-05	3.5E-05	2.2E-05	1.8E-04	7.4E-05	2.9E-04
Discovery Rock Storage Facility	**167**	**11**	**2025**	**October**	0	0	0	0	0	0	0	0	0	0	0	4.9E-10	0	0	0	0	0	0	0	0	0	0	0
Discovery Rock Storage Facility	**175**	**12**	**2026**	**June**	0	1.3E-04	8.9E-05	1.7E-03	3.0E-05	1.1E-03	0.20	1.8E-03	0	3.9E-04	2.9E-04	1.3	0	0	0.099	0.017	0	9.4E-05	8.0E-05	5.2E-05	4.2E-04	1.7E-04	6.7E-04
Discovery Rock Storage Facility	**176**	**12**	**2026**	**July**	0	1.2E-04	8.1E-05	1.5E-03	2.7E-05	1.0E-03	0.18	1.6E-03	0	3.6E-04	2.6E-04	1.2	0	0	0.089	0.016	0	8.5E-05	7.3E-05	4.7E-05	3.8E-04	1.5E-04	6.0E-04
Discovery Rock Storage Facility	**177**	**12**	**2026**	**August**	0	1.1E-04	7.9E-05	1.5E-03	2.7E-05	9.9E-04	0.18	1.6E-03	0	3.5E-04	2.6E-04	1.2	0	0	0.088	0.015	0	8.4E-05	7.1E-05	4.6E-05	3.7E-04	1.5E-04	5.9E-04
Discovery Rock Storage Facility	**178**	**12**	**2026**	**September**	0	6.4E-05	4.4E-05	8.4E-04	1.5E-05	5.5E-04	0.10	8.8E-04	0	2.0E-04	1.4E-04	0.64	0	0	0.049	8.4E-03	0	4.6E-05	4.0E-05	2.5E-05	2.1E-04	8.3E-05	3.3E-04
Discovery Rock Storage Facility	**179**	**12**	**2026**	**October**	0	0	0	0	0	0	0	0	0	0	0	4.9E-10	0	0	0	0	0	0	0	0	0	0	0
Discovery Rock Storage Facility	**187**	**13**	**2027**	**June**	0	1.3E-04	9.3E-05	1.8E-03	3.1E-05	1.2E-03	0.21	1.9E-03	0	4.1E-04	3.0E-04	1.4	0	0	0.10	0.018	0	9.9E-05	8.4E-05	5.4E-05	4.4E-04	1.8E-04	7.0E-04
				MINIMUM	0	0	0	0	0	0	0	0	0	0	0	3.9E-10	0	0	0	0	0	0	0	0	0	0	0
				MAXIMUM	0	1.3E-04	9.3E-05	1.8E-03	3.1E-05	1.2E-03	0.21	1.9E-03	0	4.1E-04	3.0E-04	1.4	0	0	0.10	0.018	0	9.9E-05	8.4E-05	5.4E-05	4.4E-04	1.8E-04	7.0E-04
				AVERAGE	0	6.2E-05	4.3E-05	8.0E-04	1.4E-05	5.2E-04	0.097	8.4E-04	0	1.9E-04	1.4E-04	0.61	0	0	0.047	8.0E-03	0	4.4E-05	3.8E-05	2.4E-05	2.0E-04	8.0E-05	3.1E-04
Long Term RSF Seepage Water Quality (Years 26+)																											
				SUMMER AVERAGE	0	7.9E-05	5.4E-05	1.0E-03	1.8E-05	6.9E-04	0.12	1.1E-03	0	2.4E-04	1.7E-04	0.81	0	0	0.060	0.011	0	5.8E-05	4.9E-05	3.2E-05	2.6E-04	1.0E-04	4.1E-04

Notes:
[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only
[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells
[3] 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.
[4] CEQG Freshwater Aquatic Life Criteria are hardness dependant; assumes a hardness of 30 mg/L.
[5] CEQG Freshwater Aquatic Life Criterion for aluminun is pH dependant; assumes pH>6.5
[6] CEQG Freshwater Aquatic Life Trigger Ranges are dependent on trophic status; oligotrophic status assumed

Table C-2.14 - Tailings Storage Facility Outflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)			120	0.12						13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)							1								0.5							
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	Si	SO4	CN_Total	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/L	mg/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
Pre-Development and Operations Water Quality (Years -3 to 13)																										
TSF Outflow	**0**	**-3**	**2011**	**November**	263	17	27	0	2.6	4.9	8.2E-04	70	0.043	0.81	1.2E-05	6.6E-04	2.2E-04	0	1.3E-03	0.056	0	0	3.2E-03	**1.4E-05**	57	**1.7E-03**
TSF Outflow	**1**	**-3**	**2011**	**December**	254	17	26	0	2.5	4.7	7.8E-04	70	0.041	0.78	1.2E-05	6.3E-04	2.2E-04	0	1.2E-03	0.054	0	0	3.1E-03	**1.3E-05**	55	**1.7E-03**
TSF Outflow	**2**	**-3**	**2012**	**January**	247	17	25	0	2.4	4.5	7.5E-04	70	0.040	0.74	1.2E-05	6.0E-04	2.2E-04	0	1.2E-03	0.052	0	0	2.9E-03	**1.3E-05**	52	**1.6E-03**
TSF Outflow	**3**	**-3**	**2012**	**Febraury**	240	17	24	0	2.3	4.3	7.2E-04	70	0.038	0.71	1.2E-05	5.8E-04	2.2E-04	0	1.1E-03	0.050	0	0	2.8E-03	**1.2E-05**	50	**1.5E-03**
TSF Outflow	**4**	**-3**	**2012**	**March**	233	17	23	0	2.2	4.1	6.9E-04	70	0.036	0.69	1.2E-05	5.5E-04	2.2E-04	0	1.1E-03	0.048	0	0	2.7E-03	1.2E-05	48	**1.5E-03**
TSF Outflow	**5**	**-3**	**2012**	**April**	227	17	22	0	2.1	4.0	6.6E-04	70	0.035	0.66	1.2E-05	5.3E-04	2.2E-04	0	1.0E-03	0.046	0	0	2.6E-03	1.1E-05	46	**1.4E-03**
TSF Outflow	**6**	**-3**	**2012**	**May**	91	16	5.8	0	0.56	1.0	1.8E-04	50	9.2E-03	0.17	1.2E-05	1.4E-04	2.2E-04	0	2.8E-04	0.012	0	0	6.8E-04	3.0E-06	12	3.7E-04
TSF Outflow	**7**	**-3**	**2012**	**June**	87	17	5.1	0	0.39	1.3	1.2E-04	50	8.0E-03	0.21	1.2E-05	2.4E-04	2.2E-04	0	2.5E-04	9.3E-03	0	0	4.8E-03	2.1E-06	9.1	2.6E-04
TSF Outflow	**8**	**-3**	**2012**	**July**	65	17	5.5	0	0.40	1.4	1.3E-04	25	8.5E-03	0.23	1.2E-05	2.7E-04	2.2E-04	0	2.7E-04	9.7E-03	0	0	5.5E-03	2.2E-06	9.5	2.7E-04
TSF Outflow	**9**	**-3**	**2012**	**August**	60	17	5.5	0	0.39	1.5	1.2E-04	20	8.5E-03	0.24	1.2E-05	3.0E-04	2.2E-04	0	2.7E-04	9.5E-03	0	0	6.4E-03	2.1E-06	9.3	2.6E-04
TSF Outflow	**10**	**-3**	**2012**	**September**	74	17	5.4	0	0.36	1.5	1.1E-04	35	8.3E-03	0.24	1.2E-05	3.1E-04	2.2E-04	0	2.7E-04	9.0E-03	0	0	6.9E-03	1.9E-06	8.8	2.4E-04
TSF Outflow	**11**	**-3**	**2012**	**October**	73	17	5.2	0	0.34	1.5	1.1E-04	35	8.0E-03	0.24	1.2E-05	3.1E-04	2.2E-04	0	2.6E-04	8.7E-03	0	0	7.0E-03	1.8E-06	8.4	2.3E-04
TSF Outflow	**12**	**-2**	**2012**	**November**	230	17	22	0	1.4	6.2	4.5E-04	70	0.034	1.0	1.2E-05	1.3E-03	2.2E-04	0	1.1E-03	0.036	0	0	0.029	7.7E-06	35	9.5E-04
TSF Outflow	**13**	**-2**	**2012**	**December**	223	17	21	0	1.4	5.9	4.3E-04	70	0.032	0.96	1.2E-05	1.2E-03	2.2E-04	0	1.0E-03	0.035	0	0	0.028	7.3E-06	34	9.1E-04
TSF Outflow	**14**	**-2**	**2013**	**January**	217	17	20	0	1.3	5.7	4.1E-04	70	0.031	0.92	1.2E-05	1.2E-03	2.2E-04	0	9.9E-04	0.033	0	0	0.027	7.0E-06	32	8.7E-04
TSF Outflow	**15**	**-2**	**2013**	**Febraury**	211	17	19	0	1.3	5.4	3.9E-04	70	0.029	0.88	1.2E-05	1.1E-03	2.2E-04	0	9.5E-04	0.032	0	0	0.026	6.7E-06	31	8.4E-04
TSF Outflow	**16**	**-2**	**2013**	**March**	205	17	18	0	1.2	5.2	3.8E-04	70	0.028	0.85	1.2E-05	1.1E-03	2.2E-04	0	9.1E-04	0.031	0	0	0.025	6.5E-06	30	8.0E-04
TSF Outflow	**17**	**-2**	**2013**	**April**	200	17	18	0	1.2	5.0	3.6E-04	70	0.027	0.81	1.2E-05	1.1E-03	2.2E-04	0	8.8E-04	0.030	0	0	0.024	6.2E-06	29	7.7E-04
TSF Outflow	**18**	**-2**	**2013**	**May**	84	16	4.7	0	0.31	1.3	9.6E-05	50	7.2E-03	0.21	1.2E-05	2.8E-04	2.2E-04	0	2.3E-04	7.8E-03	0	0	6.2E-03	1.6E-06	7.5	2.0E-04
TSF Outflow	**19**	**-2**	**2013**	**June**	82	17	4.3	0	0.22	1.5	6.7E-05	50	6.6E-03	0.24	1.2E-05	3.4E-04	2.2E-04	0	2.2E-04	6.3E-03	0	0	8.6E-03	1.1E-06	5.9	1.4E-04
TSF Outflow	**20**	**-2**	**2013**	**July**	60	17	4.6	0	0.22	1.6	7.0E-05	25	7.0E-03	0.25	1.2E-05	3.7E-04	2.2E-04	0	2.4E-04	6.6E-03	0	0	9.4E-03	1.2E-06	6.2	1.5E-04
TSF Outflow	**21**	**-2**	**2013**	**August**	55	17	4.7	0	0.22	1.7	6.8E-05	20	7.1E-03	0.26	1.2E-05	3.9E-04	2.2E-04	0	2.4E-04	6.7E-03	0	0	9.9E-03	1.2E-06	6.2	1.5E-04
TSF Outflow	**22**	**-2**	**2013**	**September**	70	17	4.7	0	0.21	1.7	6.5E-05	35	7.0E-03	0.26	1.2E-05	3.9E-04	2.2E-04	0	2.4E-04	6.5E-03	0	0	0.010	1.1E-06	6.0	1.4E-04
TSF Outflow	**23**	**-2**	**2013**	**October**	69	17	4.6	0	0.20	1.6	6.3E-05	35	6.9E-03	0.26	1.2E-05	3.8E-04	2.2E-04	0	2.3E-04	6.3E-03	0	0	1.0E-02	1.1E-06	5.8	1.3E-04
TSF Outflow	**24**	**-1**	**2013**	**November**	201	17	17	0	0.77	6.2	2.4E-04	70	0.026	0.99	1.2E-05	1.5E-03	2.2E-04	0	8.9E-04	0.024	0	0	0.038	4.1E-06	22	5.1E-04
TSF Outflow	**25**	**-1**	**2013**	**December**	198	17	17	0	0.76	6.1	2.4E-04	70	0.026	0.97	1.2E-05	1.4E-03	2.2E-04	0	8.7E-04	0.023	0	0	0.037	4.0E-06	22	5.0E-04
TSF Outflow	**26**	**-1**	**2014**	**January**	195	17	17	0	0.74	5.9	2.3E-04	70	0.025	0.95	1.2E-05	1.4E-03	2.2E-04	0	8.5E-04	0.023	0	0	0.036	3.9E-06	21	4.9E-04
TSF Outflow	**27**	**-1**	**2014**	**Febraury**	192	17	16	0	0.72	5.8	2.2E-04	70	0.024	0.93	1.2E-05	1.4E-03	2.2E-04	0	8.3E-04	0.022	0	0	0.035	3.8E-06	21	4.8E-04
TSF Outflow	**28**	**-1**	**2014**	**March**	189	17	16	0	0.70	5.7	2.2E-04	70	0.024	0.90	1.2E-05	1.3E-03	2.2E-04	0	8.1E-04	0.022	0	0	0.035	3.8E-06	20	4.7E-04
TSF Outflow	**29**	**-1**	**2014**	**April**	187	17	16	0	0.69	5.5	2.1E-04	70	0.023	0.88	1.2E-05	1.3E-03	2.2E-04	0	7.9E-04	0.021	0	0	0.034	3.7E-06	20	4.6E-04
TSF Outflow	**30**	**-1**	**2014**	**May**	83	17	4.4	0	0.19	1.6	6.1E-05	50	6.6E-03	0.25	1.2E-05	3.7E-04	2.2E-04	0	2.2E-04	6.0E-03	0	0	9.5E-03	1.0E-06	5.6	1.3E-04
TSF Outflow	**31**	**-1**	**2014**	**June**	79	16	3.8	1.2E-05	0.14	1.5	4.3E-05	50	0.072	0.23	1.2E-05	3.5E-04	2.2E-04	1.1E-05	4.0E-04	4.9E-03	0	0	9.4E-03	7.8E-07	4.5	9.3E-05
TSF Outflow	**32**	**-1**	**2014**	**July**	55	16	3.9	1.9E-05	0.14	1.6	4.4E-05	25	0.100	0.24	1.2E-05	3.6E-04	2.2E-04	1.8E-05	5.3E-04	5.0E-03	0	0	9.7E-03	8.1E-07	4.6	9.3E-05
TSF Outflow	**33**	**-1**	**2014**	**August**	49	16	3.8	2.3E-05	0.13	1.7	4.2E-05	20	0.13	0.23	1.2E-05	3.6E-04	2.2E-04	2.2E-05	6.0E-04	4.8E-03	0	0	9.7E-03	7.9E-07	4.5	8.9E-05
TSF Outflow	**34**	**-1**	**2014**	**September**	63	16	3.6	2.3E-05	0.13	1.6	3.9E-05	35	0.14	0.23	1.2E-05	3.5E-04	2.2E-04	2.3E-05	6.0E-04	4.6E-03	0	0	9.4E-03	7.5E-07	4.2	8.3E-05
TSF Outflow	**35**	**-1**	**2014**	**October**	63	15	3.6	2.3E-05	0.12	1.6	3.8E-05	35	0.15	0.22	1.2E-05	3.4E-04	2.2E-04	2.2E-05	5.9E-04	4.5E-03	0	0	9.2E-03	7.2E-07	4.1	8.1E-05
TSF Outflow	**36**	**1**	**2014**	**November**	161	17	12	7.6E-05	0.40	5.2	1.2E-04	70	0.49	0.73	1.2E-05	1.1E-03	2.2E-04	7.3E-05	1.9E-03	0.015	0	0	0.030	2.4E-06	14	2.7E-04
TSF Outflow	**37**	**1**	**2014**	**December**	160	17	12	7.5E-05	0.40	5.2	1.2E-04	70	0.48	0.72	1.2E-05	1.1E-03	2.2E-04	7.2E-05	1.9E-03	0.015	0	0	0.030	2.4E-06	13	2.6E-04
TSF Outflow	**38**	**1**	**2015**	**January**	159	17	11	7.4E-05	0.39	5.1	1.2E-04	70	0.48	0.71	1.2E-05	1.1E-03	2.2E-04	7.1E-05	1.9E-03	0.014	0	0	0.030	2.3E-06	13	2.6E-04
TSF Outflow	**39**	**1**	**2015**	**Febraury**	157	17	11	7.3E-05	0.39	5.0	1.2E-04	70	0.47	0.70	1.2E-05	1.1E-03	2.2E-04	7.0E-05	1.9E-03	0.014	0	0	0.029	2.3E-06	13	2.6E-04
TSF Outflow	**40**	**1**	**2015**	**March**	156	17	11	7.2E-05	0.38	5.0	1.2E-04	70	0.46	0.70	1.2E-05	1.1E-03	2.2E-04	7.0E-05	1.8E-03	0.014	0	0	0.029	2.3E-06	13	2.5E-04
TSF Outflow	**41**	**1**	**2015**	**April**	155	17	11	7.1E-05	0.38	4.9	1.2E-04	70	0.46	0.69	1.2E-05	1.1E-03	2.2E-04	6.9E-05	1.8E-03	0.014	0	0	0.029	2.2E-06	13	2.5E-04
TSF Outflow	**42**	**1**	**2015**	**May**	321	17	90	3.5E-03	0.12	81	0.50	50	0.26	0.21	1.2E-05	3.5E-04	2.2E-04	1.5E-03	**0.100**	7.4E-03	0	0	0.021	9.5E-07	44	9.2E-05
TSF Outflow	**43**	**1**	**2015**	**June**	547	17	**167**	7.0E-03	0.094	157	0.50	50	0.39	0.20	1.2E-05	3.6E-04	2.2E-04	3.0E-03	**0.100**	0.010	0	3.3E-07	0.031	1.2E-06	82	9.4E-05
TSF Outflow	**44**	**1**	**2015**	**July**	879	17	**301**	0.012	0.094	269	0.50	25	0.59	0.20	1.2E-05	3.6E-04	2.2E-04	5.2E-03	**0.100**	0.015	0	4.0E-07	0.049	1.7E-06	139	9.1E-05
TSF Outflow	**45**	**1**	**2015**	**August**	1.2E+03	17	**400**	0.016	0.091	358	0.50	20	0.74	0.20	1.2E-05	3.7E-04	2.2E-04	7.0E-03	**0.100**	0.018	0	4.9E-07	0.063	2.2E-06	184	9.8E-05
TSF Outflow	**46**	**1**	**2015**	**September**	1.4E+03	17	**475**	0.019	0.087	427	0.50	35	0.85	0.19	1.2E-05	3.7E-04	2.2E-04	8.3E-03	**0.100**	0.021	0	5.3E-07	0.073	2.6E-06	219	1.0E-04
TSF Outflow	**47**	**1**	**2015**	**October**	1.6E+03	17	**546**	0.022	0.084	490	0.50	35	0.95	0.19	1.2E-05	3.7E-04	2.2E-04	9.6E-03	**0.100**	0.023	0	5.4E-07	0.082	3.0E-06	252	1.1E-04
TSF Outflow	**48**	**2**	**2015**	**November**	4.9E+03	17	**1.7E+03**	0.069	0.23	1.5E+03	0.50	70	2.9	0.51	1.2E-05	1.1E-03	2.2E-04	0.030	**0.100**	0.070	0	1.4E-06	0.25	9.7E-06	785	3.2E-04
TSF Outflow	**49**	**2**	**2015**	**December**	5.1E+03	17	**1.8E+03**	0.071	0.22	1.6E+03	0.50	70	3.0	0.48	1.2E-05	1.0E-03	2.2E-04	0.031	**0.100**	0.071	0	1.3E-06	0.26	1.0E-05	823	3.3E-04
TSF Outflow	**50**	**2**	**2016**	**January**	5.1E+03	17	**1.8E+03**	0.073	0.20	1.6E+03	0.50	70	3.0	0.45	1.2E-05	1.0E-03	2.2E-04	0.031	**0.100**	0.072	0	1.2E-06	0.27	1.1E-05	841	3.5E-04
TSF Outflow	**51**	**2**	**2016**	**Febraury**	5.2E+03	17	**1.8E+03**	0.075	0.19	1.6E+03	0.50	70	3.0	0.42	1.2E-05	1.0E-03	2.2E-04	0.032	**0.100**	0.073	0	1.0E-06	0.27	1.2E-05	855	3.7E-04
TSF Outflow	**52**	**2**	**2016**	**March**	5.4E+03	17	**1.9E+03**	0.076	0.18	1.6E+03	0.50	70	3.1	0.40	1.2E-05	1.0E-03	2.2E-04	0.032	**0.100**	0.073	0	5.3E-06	0.28	**1.3E-05**	891	3.7E-04
TSF Outflow	**53**	**2**	**2016**	**April**	5.5E+03	17	**2.0E+03**	0.076	0.18	1.7E+03	0.50	70	3.2	0.39	1.2E-05	9.8E-04	2.2E-04	0.033	**0.100**	0.073	0	1.3E-05	0.29	**1.4E-05**	925	3.7E-04
TSF Outflow	**54**	**2**	**2016**	**May**	2.6E+03	17	**944**	0.034	0.079	740	0.50	50	1.5	0.17	1.2E-05	4.3E-04	2.2E-04	0.015	**0.100**	0.032	0	1.1E-05	0.14	6.8E-06	426	1.6E-04
TSF Outflow	**55**	**2**	**2016**	**June**	2.5E+03	17	**902**	0.042	0.071	719	0.50	50	1.4	0.15	1.2E-05	4.0E-04	2.2E-04	0.015	**0.100**	0.034	0	2.1E-05	0.13	7.8E-06	417	1.5E-04

Table C-2.14 - Tailings Storage Facility Outflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3	0.2						0.5												0.5
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Ag	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L	mg/L
Pre-Development and Operations Water Quality (Years -3 to 13)																									
TSF Outflow	0	-3	2011	November	0	0.15	4.3E-04	1.3E-04	0.022	5.5	0.072	0	2.5E-04	2.1E-03	3.1	0	0	8.1	0.34	0	0	0	0	7.3E-05	0	1.5E-03
TSF Outflow	1	-3	2011	December	0	0.15	4.3E-04	1.2E-04	0.021	5.3	0.068	0	2.4E-04	2.0E-03	3.0	0	0	7.7	0.33	0	0	0	0	7.0E-05	0	1.4E-03
TSF Outflow	2	-3	2012	January	0	0.15	4.3E-04	1.2E-04	0.020	5.1	0.065	0	2.3E-04	2.0E-03	2.8	0	0	7.4	0.32	0	0	0	0	6.7E-05	0	1.4E-03
TSF Outflow	3	-3	2012	Febraury	0	0.15	4.3E-04	1.1E-04	0.019	4.9	0.063	0	2.2E-04	1.9E-03	2.7	0	0	7.1	0.30	0	0	0	0	6.5E-05	0	1.3E-03
TSF Outflow	4	-3	2012	March	0	0.15	4.3E-04	1.1E-04	0.018	4.7	0.060	0	2.1E-04	1.8E-03	2.6	0	0	6.8	0.29	0	0	0	0	6.2E-05	0	1.2E-03
TSF Outflow	5	-3	2012	April	0	0.15	4.3E-04	1.0E-04	0.018	4.5	0.058	0	2.1E-04	1.7E-03	2.5	0	0	6.6	0.28	0	0	0	0	6.0E-05	0	1.2E-03
TSF Outflow	6	-3	2012	May	0	0.15	4.3E-04	2.7E-05	4.6E-03	1.2	0.015	0	5.4E-05	4.6E-04	0.66	0	0	1.7	0.074	0	0	0	0	1.6E-05	0	3.2E-04
TSF Outflow	7	-3	2012	June	0	0.15	4.3E-04	4.0E-05	3.2E-03	0.89	0.011	0	8.1E-05	3.6E-04	0.50	1.1E-04	0	1.3	0.051	0	0	0	0	1.1E-05	4.3E-05	4.3E-04
TSF Outflow	8	-3	2012	July	0	0.15	4.3E-04	4.4E-05	3.3E-03	0.93	0.011	0	8.9E-05	3.8E-04	0.53	1.3E-04	0	1.4	0.053	0	0	0	0	1.1E-05	5.0E-05	4.8E-04
TSF Outflow	9	-3	2012	August	0	0.15	4.3E-04	4.8E-05	3.2E-03	0.90	0.011	0	9.7E-05	3.7E-04	0.51	1.6E-04	0	1.3	0.051	0	0	0	0	1.1E-05	6.0E-05	5.2E-04
TSF Outflow	10	-3	2012	September	0	0.15	4.3E-04	5.0E-05	3.0E-03	0.85	0.010	0	1.0E-04	3.6E-04	0.49	1.7E-04	0	1.3	0.047	0	0	0	0	1.0E-05	6.5E-05	5.3E-04
TSF Outflow	11	-3	2012	October	0	0.15	4.3E-04	4.9E-05	2.8E-03	0.82	9.9E-03	0	9.9E-05	3.5E-04	0.47	1.7E-04	0	1.2	0.045	0	0	0	0	9.6E-06	6.5E-05	5.2E-04
TSF Outflow	12	-2	2012	November	0	0.15	4.3E-04	2.1E-04	0.012	3.4	0.041	0	4.1E-04	1.4E-03	2.0	7.1E-04	0	5.0	0.19	0	0	0	0	4.0E-05	2.7E-04	2.2E-03
TSF Outflow	13	-2	2012	December	0	0.15	4.3E-04	2.0E-04	0.011	3.3	0.039	0	3.9E-04	1.4E-03	1.9	6.8E-04	0	4.8	0.18	0	0	0	0	3.8E-05	2.6E-04	2.1E-03
TSF Outflow	14	-2	2013	January	0	0.15	4.3E-04	1.9E-04	0.011	3.1	0.038	0	3.8E-04	1.3E-03	1.8	6.5E-04	0	4.6	0.17	0	0	0	0	3.7E-05	2.5E-04	2.0E-03
TSF Outflow	15	-2	2013	Febraury	0	0.15	4.3E-04	1.8E-04	0.010	3.0	0.036	0	3.6E-04	1.3E-03	1.7	6.3E-04	0	4.4	0.17	0	0	0	0	3.5E-05	2.4E-04	1.9E-03
TSF Outflow	16	-2	2013	March	0	0.15	4.3E-04	1.7E-04	0.010	2.9	0.035	0	3.5E-04	1.2E-03	1.7	6.0E-04	0	4.3	0.16	0	0	0	0	3.4E-05	2.3E-04	1.8E-03
TSF Outflow	17	-2	2013	April	0	0.15	4.3E-04	1.7E-04	9.6E-03	2.8	0.034	0	3.4E-04	1.2E-03	1.6	5.8E-04	0	4.1	0.15	0	0	0	0	3.3E-05	2.2E-04	1.8E-03
TSF Outflow	18	-2	2013	May	0	0.15	4.3E-04	4.4E-05	2.5E-03	0.74	8.8E-03	0	8.8E-05	3.1E-04	0.42	1.5E-04	0	1.1	0.040	0	0	0	0	8.6E-06	5.9E-05	4.7E-04
TSF Outflow	19	-2	2013	June	0	0.15	4.3E-04	5.2E-05	1.8E-03	0.58	6.5E-03	0	1.0E-04	2.6E-04	0.33	2.2E-04	0	0.85	0.028	0	0	0	0	6.0E-06	8.3E-05	5.4E-04
TSF Outflow	20	-2	2013	July	0	0.15	4.3E-04	5.6E-05	1.9E-03	0.61	6.8E-03	0	1.1E-04	2.7E-04	0.35	2.4E-04	0	0.90	0.029	0	0	0	0	6.3E-06	9.1E-05	5.8E-04
TSF Outflow	21	-2	2013	August	0	0.15	4.3E-04	5.9E-05	1.8E-03	0.61	6.7E-03	0	1.2E-04	2.8E-04	0.35	2.5E-04	0	0.89	0.029	0	0	0	0	6.1E-06	9.7E-05	6.1E-04
TSF Outflow	22	-2	2013	September	0	0.15	4.3E-04	5.9E-05	1.7E-03	0.59	6.5E-03	0	1.2E-04	2.7E-04	0.34	2.6E-04	0	0.87	0.027	0	0	0	0	5.9E-06	9.8E-05	6.1E-04
TSF Outflow	23	-2	2013	October	0	0.15	4.3E-04	5.8E-05	1.7E-03	0.58	6.3E-03	0	1.2E-04	2.6E-04	0.33	2.5E-04	0	0.84	0.027	0	0	0	0	5.7E-06	9.7E-05	6.0E-04
TSF Outflow	24	-1	2013	November	0	0.15	4.3E-04	2.2E-04	6.4E-03	2.2	0.024	0	4.5E-04	1.0E-03	1.3	9.7E-04	0	3.2	0.10	0	0	0	0	2.2E-05	3.7E-04	2.3E-03
TSF Outflow	25	-1	2013	December	0	0.15	4.3E-04	2.2E-04	6.3E-03	2.1	0.023	0	4.4E-04	9.8E-04	1.2	9.4E-04	0	3.1	0.099	0	0	0	0	2.1E-05	3.6E-04	2.2E-03
TSF Outflow	26	-1	2014	January	0	0.15	4.3E-04	2.1E-04	6.1E-03	2.1	0.023	0	4.2E-04	9.6E-04	1.2	9.2E-04	0	3.1	0.097	0	0	0	0	2.1E-05	3.5E-04	2.2E-03
TSF Outflow	27	-1	2014	Febraury	0	0.15	4.3E-04	2.1E-04	6.0E-03	2.0	0.022	0	4.2E-04	9.3E-04	1.2	9.0E-04	0	3.0	0.095	0	0	0	0	2.0E-05	3.5E-04	2.1E-03
TSF Outflow	28	-1	2014	March	0	0.15	4.3E-04	2.0E-04	5.8E-03	2.0	0.022	0	4.1E-04	9.1E-04	1.2	8.8E-04	0	2.9	0.092	0	0	0	0	2.0E-05	3.4E-04	2.1E-03
TSF Outflow	29	-1	2014	April	0	0.15	4.3E-04	2.0E-04	5.7E-03	2.0	0.021	0	4.0E-04	8.9E-04	1.1	8.6E-04	0	2.9	0.090	0	0	0	0	1.9E-05	3.3E-04	2.0E-03
TSF Outflow	30	-1	2014	May	0	0.15	4.3E-04	5.6E-05	1.6E-03	0.55	6.0E-03	0	1.1E-04	2.5E-04	0.32	2.4E-04	0	0.81	0.025	0	0	0	0	5.4E-06	9.3E-05	5.7E-04
TSF Outflow	31	-1	2014	June	3.4E-06	0.15	4.3E-04	5.3E-05	1.2E-03	0.46	4.7E-03	0	1.1E-04	2.1E-04	0.26	2.4E-04	0	0.64	0.019	0	3.2E-06	1.3E-06	2.9E-07	7.0E-06	9.4E-05	5.4E-04
TSF Outflow	32	-1	2014	July	5.4E-06	0.15	4.3E-04	5.5E-05	1.2E-03	0.47	4.9E-03	0	1.2E-04	2.2E-04	0.27	2.5E-04	0	0.65	0.019	0	5.0E-06	2.1E-06	4.6E-07	8.8E-06	9.8E-05	5.6E-04
TSF Outflow	33	-1	2014	August	6.6E-06	0.15	4.3E-04	5.5E-05	1.1E-03	0.47	4.7E-03	0	1.2E-04	2.1E-04	0.27	2.5E-04	0	0.63	0.018	0	6.1E-06	2.5E-06	5.6E-07	9.7E-06	9.8E-05	5.6E-04
TSF Outflow	34	-1	2014	September	6.7E-06	0.15	4.3E-04	5.3E-05	1.0E-03	0.45	4.5E-03	0	1.1E-04	2.0E-04	0.25	2.4E-04	0	0.60	0.017	0	6.2E-06	2.6E-06	5.7E-07	9.6E-06	9.6E-05	5.4E-04
TSF Outflow	35	-1	2014	October	6.6E-06	0.15	4.3E-04	5.2E-05	1.0E-03	0.44	4.4E-03	0	1.1E-04	2.0E-04	0.25	2.4E-04	0	0.58	0.017	0	6.1E-06	2.5E-06	5.6E-07	9.4E-06	9.4E-05	5.3E-04
TSF Outflow	36	1	2014	November	2.2E-05	0.15	4.3E-04	1.7E-04	3.3E-03	1.4	0.014	0	3.6E-04	6.5E-04	0.81	7.8E-04	0	1.9	0.055	0	2.0E-05	8.4E-06	1.9E-06	3.1E-05	3.1E-04	1.7E-03
TSF Outflow	37	1	2014	December	2.1E-05	0.15	4.3E-04	1.7E-04	3.3E-03	1.4	0.014	0	3.6E-04	6.4E-04	0.80	7.7E-04	0	1.9	0.055	0	2.0E-05	8.3E-06	1.8E-06	3.1E-05	3.1E-04	1.7E-03
TSF Outflow	38	1	2015	January	2.1E-05	0.15	4.3E-04	1.7E-04	3.2E-03	1.4	0.014	0	3.6E-04	6.3E-04	0.79	7.6E-04	0	1.9	0.054	0	2.0E-05	8.2E-06	1.8E-06	3.0E-05	3.0E-04	1.7E-03
TSF Outflow	39	1	2015	Febraury	2.1E-05	0.15	4.3E-04	1.6E-04	3.2E-03	1.4	0.014	0	3.5E-04	6.2E-04	0.78	7.5E-04	0	1.8	0.053	0	1.9E-05	8.1E-06	1.8E-06	3.0E-05	3.0E-04	1.7E-03
TSF Outflow	40	1	2015	March	2.1E-05	0.15	4.3E-04	1.6E-04	3.2E-03	1.4	0.014	0	3.5E-04	6.2E-04	0.77	7.4E-04	0	1.8	0.053	0	1.9E-05	8.0E-06	1.8E-06	3.0E-05	2.9E-04	1.7E-03
TSF Outflow	41	1	2015	April	2.0E-05	0.15	4.3E-04	1.6E-04	3.1E-03	1.3	0.014	0	3.4E-04	6.1E-04	0.77	7.3E-04	0	1.8	0.052	0	1.9E-05	7.9E-06	1.7E-06	2.9E-05	2.9E-04	1.6E-03
TSF Outflow	42	1	2015	May	3.0E-03	0.15	4.3E-04	7.3E-05	0.033	1.8	4.8E-03	0	2.1E-03	6.2E-04	3.3	6.0E-04	0	34	0.58	0	4.3E-05	2.4E-06	2.8E-04	1.3E-04	2.3E-04	5.4E-04
TSF Outflow	43	1	2015	June	5.8E-03	0.15	4.3E-04	9.5E-05	0.062	3.0	5.4E-03	0	4.0E-03	1.0E-03	6.4	1.0E-03	0	66	1.1	0	1.0E-04	7.0E-06	5.5E-04	2.5E-04	3.5E-04	5.6E-04
TSF Outflow	44	1	2015	July	1.0E-02	0.15	4.3E-04	1.3E-04	0.11	5.0	6.5E-03	0	6.8E-03	1.6E-03	11	1.6E-03	0	113	1.9	0	1.6E-04	9.2E-06	9.5E-04	4.2E-04	5.5E-04	5.8E-04
TSF Outflow	45	1	2015	August	0.013	0.15	4.3E-04	1.6E-04	0.15	6.5	7.3E-03	0	9.1E-03	2.1E-03	14	2.0E-03	0	152	2.6	0	2.1E-04	1.1E-05	1.3E-03	5.6E-04	7.0E-04	6.0E-04
TSF Outflow	46	1	2015	September	0.016	0.15	4.3E-04	1.8E-04	0.18	7.7	7.7E-03	0	0.011	2.5E-03	17	2.4E-03	0	181	3.1	0	2.4E-04	1.1E-05	1.5E-03	6.6E-04	8.1E-04	6.0E-04
TSF Outflow	47	1	2015	October	0.019	0.15	4.3E-04	2.0E-04	0.20	8.7	8.1E-03	0	0.013	2.8E-03	20	2.7E-03	0	209	3.5	0	2.7E-04	1.1E-05	1.7E-03	7.6E-04	9.2E-04	6.1E-04
TSF Outflow	48	2	2015	November	0.058	0.15	4.3E-04	5.9E-04	0.64	27	0.023	0	0.039	8.7E-03	62	8.2E-03	0	651	11	0	8.3E-04	3.0E-05	5.4E-03	2.3E-03	2.8E-03	1.7E-03
TSF Outflow	49	2	2015	December	0.060	0.15	4.3E-04	6.0E-04	0.67	28	0.023	0	0.040	8.9E-03	64	8.4E-03	0	672	12	0	8.4E-04	2.7E-05	5.6E-03	2.4E-03	2.9E-03	1.7E-03
TSF Outflow	50	2	2016	January	0.062	0.15	4.3E-04	6.0E-04	0.68	29	0.022	0	0.042	9.1E-03	65	8.5E-03	0	689	12	0	8.5E-04	2.4E-05	5.7E-03	2.5E-03	2.9E-03	1.6E-03
TSF Outflow	51	2	2016	Febraury	0.063	0.15	4.3E-04	6.1E-04	0.69	29	0.022	0	0.042	9.2E-03	67	8.6E-03	0	702	12	0	8.6E-04	2.2E-05	5.8E-03	2.5E-03	3.0E-03	1.6E-03
TSF Outflow	52	2	2016	March	0.064	0.15	4.3E-04	6.1E-04	0.72	31	0.022	0	0.043	9.3E-03	68	8.7E-03	0	715	13	0	8.6E-04	2.1E-05	5.9E-03	2.5E-03	3.0E-03	1.6E-03
TSF Outflow	53	2	2016	April	0.065	0.15	4.3E-04	6.1E-04	0.76	32	0.022	0	0.044	9.3E-03	70	8.8E-03	0	727	13	0	8.6E-04	2.0E-05	6.0E-03	2.6E-03	3.1E-03	1.5E-03
TSF Outflow	54	2	2016	May	0.030	0.15	4.3E-04	2.7E-04	0.35	15	0.010	0	0.020	4.2E-03	32	3.9E-03	0	329	6.1	0	3.9E-04	8.4E-06	2.7E-03	1.2E-03	1.4E-03	6.8E-04
TSF Outflow	55	2	2016	June	0.029	0.15	4.3E-04	3.3E-04	0.34	15	0.020	0	0.020	4.2E-03	32	5.0E-03	0	313	5.9	0	6.6E-04	5.6E-05	2.6E-03	1.3E-03	1.4E-03	1.0E-03

Table C-2.14 - Tailings Storage Facility Outflow
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12					13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											1								0.5							
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	Si	SO4	CN_Total	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/L	mg/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
TSF Outflow	56	2	2016	July	2.7E+03	17	989	0.045	0.074	778	0.50	25	1.6	0.16	1.2E-05	4.0E-04	2.2E-04	0.016	0.100	0.037	0	3.0E-05	0.14	9.3E-06	453	1.5E-04
TSF Outflow	57	2	2016	August	2.8E+03	17	1.0E+03	0.048	0.075	808	0.50	20	1.6	0.15	1.2E-05	4.0E-04	2.2E-04	0.017	0.100	0.038	0	4.0E-05	0.15	1.1E-05	474	1.5E-04
TSF Outflow	58	2	2016	September	2.8E+03	17	1.1E+03	0.049	0.073	818	0.50	35	1.7	0.15	1.2E-05	3.8E-04	2.2E-04	0.017	0.100	0.039	0	5.0E-05	0.15	1.2E-05	484	1.4E-04
TSF Outflow	59	2	2016	October	2.9E+03	17	1.1E+03	0.049	0.073	830	0.50	35	1.7	0.14	1.2E-05	3.7E-04	2.2E-04	0.018	0.100	0.039	0	6.1E-05	0.16	1.3E-05	496	1.4E-04
TSF Outflow	60	3	2016	November	6.0E+03	17	2.3E+03	0.098	0.15	1.7E+03	0.50	70	3.6	0.29	1.2E-05	7.3E-04	2.2E-04	0.036	0.100	0.078	0	1.5E-04	0.33	2.9E-05	1.0E+03	2.7E-04
TSF Outflow	61	3	2016	December	6.1E+03	17	2.4E+03	0.097	0.15	1.7E+03	0.50	70	3.7	0.28	1.2E-05	7.3E-04	2.2E-04	0.036	0.100	0.077	0	1.8E-04	0.34	3.2E-05	1.1E+03	2.7E-04
TSF Outflow	62	3	2017	January	6.2E+03	17	2.5E+03	0.095	0.15	1.7E+03	0.50	70	3.8	0.28	1.2E-05	7.3E-04	2.2E-04	0.035	0.100	0.076	0	2.0E-04	0.35	3.4E-05	1.1E+03	2.8E-04
TSF Outflow	63	3	2017	Febraury	6.3E+03	17	2.5E+03	0.092	0.15	1.6E+03	0.50	70	3.9	0.27	1.2E-05	7.3E-04	2.2E-04	0.035	0.100	0.074	0	2.3E-04	0.36	3.7E-05	1.1E+03	2.8E-04
TSF Outflow	64	3	2017	March	6.4E+03	17	2.6E+03	0.091	0.14	1.6E+03	0.50	70	4.0	0.26	1.2E-05	7.3E-04	2.2E-04	0.035	0.100	0.073	0	2.6E-04	0.37	4.0E-05	1.1E+03	2.9E-04
TSF Outflow	65	3	2017	April	6.5E+03	17	2.7E+03	0.089	0.14	1.6E+03	0.50	70	4.0	0.26	1.2E-05	7.3E-04	2.2E-04	0.034	0.100	0.072	0	2.8E-04	0.37	4.1E-05	1.2E+03	2.9E-04
TSF Outflow	66	3	2017	May	3.2E+03	17	1.3E+03	0.042	0.069	782	0.50	50	2.0	0.12	1.2E-05	3.5E-04	2.2E-04	0.017	0.100	0.034	0	1.4E-04	0.19	2.1E-05	567	1.4E-04
TSF Outflow	67	3	2017	June	3.0E+03	17	1.2E+03	0.061	0.060	758	0.50	50	1.8	0.11	1.2E-05	3.1E-04	2.2E-04	0.018	0.100	0.039	0	1.4E-04	0.17	2.5E-05	539	1.3E-04
TSF Outflow	68	3	2017	July	3.1E+03	17	1.3E+03	0.065	0.063	806	0.50	25	2.0	0.11	1.2E-05	3.2E-04	2.2E-04	0.019	0.100	0.041	0	1.6E-04	0.18	2.7E-05	571	1.3E-04
TSF Outflow	69	3	2017	August	3.2E+03	17	1.3E+03	0.068	0.062	825	0.50	20	2.0	0.11	1.2E-05	3.1E-04	2.2E-04	0.020	0.100	0.043	0	1.6E-04	0.18	2.8E-05	584	1.2E-04
TSF Outflow	70	3	2017	September	3.2E+03	17	1.3E+03	0.069	0.061	828	0.50	35	2.1	0.10	1.2E-05	3.0E-04	2.2E-04	0.020	0.100	0.043	0	1.6E-04	0.19	2.9E-05	585	1.2E-04
TSF Outflow	71	3	2017	October	3.3E+03	17	1.3E+03	0.069	0.061	838	0.50	35	2.1	0.10	1.2E-05	2.9E-04	2.2E-04	0.020	0.100	0.043	0	1.6E-04	0.19	2.9E-05	591	1.1E-04
TSF Outflow	72	4	2017	November	6.8E+03	17	2.8E+03	0.14	0.13	1.7E+03	0.50	70	4.4	0.21	1.2E-05	5.9E-04	2.2E-04	0.041	0.100	0.089	0	3.5E-04	0.40	6.0E-05	1.3E+03	2.3E-04
TSF Outflow	73	4	2017	December	6.9E+03	17	2.9E+03	0.14	0.13	1.7E+03	0.50	70	4.5	0.20	1.2E-05	6.0E-04	2.2E-04	0.041	0.100	0.088	0	3.4E-04	0.40	5.9E-05	1.3E+03	2.4E-04
TSF Outflow	74	4	2018	January	6.9E+03	17	2.9E+03	0.14	0.13	1.7E+03	0.50	70	4.5	0.20	1.2E-05	6.0E-04	2.2E-04	0.040	0.100	0.087	0	3.4E-04	0.41	5.8E-05	1.3E+03	2.4E-04
TSF Outflow	75	4	2018	Febraury	7.0E+03	17	2.9E+03	0.13	0.13	1.7E+03	0.50	70	4.5	0.20	1.2E-05	6.0E-04	2.2E-04	0.040	0.100	0.086	0	3.3E-04	0.41	5.7E-05	1.3E+03	2.5E-04
TSF Outflow	76	4	2018	March	7.0E+03	17	3.0E+03	0.13	0.13	1.7E+03	0.50	70	4.6	0.19	1.2E-05	6.0E-04	2.2E-04	0.040	0.100	0.085	0	3.2E-04	0.42	5.6E-05	1.3E+03	2.5E-04
TSF Outflow	77	4	2018	April	7.1E+03	17	3.0E+03	0.13	0.12	1.7E+03	0.50	70	4.6	0.19	1.2E-05	6.1E-04	2.2E-04	0.039	0.100	0.084	0	3.2E-04	0.42	5.5E-05	1.3E+03	2.6E-04
TSF Outflow	78	4	2018	May	3.6E+03	17	1.5E+03	0.063	0.062	866	0.50	50	2.3	0.094	1.2E-05	3.0E-04	2.2E-04	0.019	0.100	0.041	0	1.5E-04	0.21	2.7E-05	661	1.3E-04
TSF Outflow	79	4	2018	June	3.4E+03	17	1.4E+03	0.081	0.055	860	0.50	50	2.1	0.084	1.2E-05	2.8E-04	2.2E-04	0.021	0.100	0.047	0	1.5E-04	0.20	3.8E-05	630	1.2E-04
TSF Outflow	80	4	2018	July	3.5E+03	17	1.4E+03	0.085	0.057	907	0.50	25	2.2	0.087	1.2E-05	2.8E-04	2.2E-04	0.022	0.100	0.050	0	1.5E-04	0.21	4.0E-05	658	1.2E-04
TSF Outflow	81	4	2018	August	3.6E+03	17	1.4E+03	0.088	0.057	924	0.50	20	2.3	0.086	1.2E-05	2.7E-04	2.2E-04	0.022	0.100	0.052	0	1.5E-04	0.21	4.2E-05	665	1.1E-04
TSF Outflow	82	4	2018	September	3.6E+03	17	1.4E+03	0.088	0.056	922	0.50	35	2.3	0.083	1.2E-05	2.6E-04	2.2E-04	0.022	0.100	0.052	0	1.4E-04	0.21	4.2E-05	658	1.1E-04
TSF Outflow	83	4	2018	October	3.6E+03	17	1.5E+03	0.087	0.056	929	0.50	35	2.3	0.081	1.2E-05	2.5E-04	2.2E-04	0.022	0.100	0.051	0	1.4E-04	0.21	4.2E-05	663	1.0E-04
TSF Outflow	84	5	2018	November	7.6E+03	17	3.2E+03	0.19	0.12	1.7E+03	0.50	70	5.1	0.17	1.2E-05	5.4E-04	2.2E-04	0.048	0.100	0.11	0	2.9E-04	0.46	8.8E-05	1.5E+03	2.2E-04
TSF Outflow	85	5	2018	December	7.6E+03	17	3.3E+03	0.18	0.12	1.7E+03	0.50	70	5.2	0.17	1.2E-05	5.5E-04	2.2E-04	0.047	0.100	0.11	0	2.8E-04	0.47	8.5E-05	1.5E+03	2.3E-04
TSF Outflow	86	5	2019	January	7.6E+03	17	3.3E+03	0.18	0.12	1.7E+03	0.50	70	5.2	0.17	1.2E-05	5.5E-04	2.2E-04	0.046	0.100	0.11	0	2.7E-04	0.47	8.2E-05	1.5E+03	2.3E-04
TSF Outflow	87	5	2019	Febraury	7.7E+03	17	3.3E+03	0.17	0.12	1.7E+03	0.50	70	5.2	0.17	1.2E-05	5.6E-04	2.2E-04	0.045	0.100	0.10	0	2.6E-04	0.47	7.9E-05	1.5E+03	2.4E-04
TSF Outflow	88	5	2019	March	7.7E+03	17	3.3E+03	0.17	0.12	1.7E+03	0.50	70	5.2	0.17	1.2E-05	5.6E-04	2.2E-04	0.044	0.100	0.10	0	2.5E-04	0.47	7.6E-05	1.5E+03	2.5E-04
TSF Outflow	89	5	2019	April	7.7E+03	17	3.4E+03	0.17	0.12	1.7E+03	0.50	70	5.2	0.16	1.2E-05	5.7E-04	2.2E-04	0.043	0.100	0.099	0	2.4E-04	0.48	7.3E-05	1.5E+03	2.5E-04
TSF Outflow	90	5	2019	May	3.9E+03	17	1.6E+03	0.078	0.059	932	0.50	50	2.5	0.078	1.2E-05	2.8E-04	2.2E-04	0.021	0.100	0.047	0	1.1E-04	0.23	3.4E-05	716	1.2E-04
TSF Outflow	91	5	2019	June	3.6E+03	17	1.5E+03	0.096	0.053	917	0.50	50	2.3	0.069	1.2E-05	2.5E-04	2.2E-04	0.022	0.100	0.053	0	1.1E-04	0.21	5.7E-05	675	1.1E-04
TSF Outflow	92	5	2019	July	3.7E+03	17	1.5E+03	0.10	0.055	964	0.50	25	2.4	0.073	1.2E-05	2.5E-04	2.2E-04	0.023	0.100	0.057	0	1.1E-04	0.22	6.1E-05	701	1.1E-04
TSF Outflow	93	5	2019	August	3.7E+03	17	1.5E+03	0.10	0.055	976	0.50	20	2.4	0.072	1.2E-05	2.4E-04	2.2E-04	0.023	0.100	0.058	0	1.1E-04	0.22	6.4E-05	704	1.1E-04
TSF Outflow	94	5	2019	September	3.7E+03	17	1.5E+03	0.10	0.054	967	0.50	35	2.4	0.069	1.2E-05	2.3E-04	2.2E-04	0.023	0.100	0.058	0	1.0E-04	0.22	6.4E-05	694	9.9E-05
TSF Outflow	95	5	2019	October	3.7E+03	17	1.5E+03	0.100	0.054	971	0.50	35	2.4	0.068	1.2E-05	2.3E-04	2.2E-04	0.023	0.100	0.057	0	9.9E-05	0.22	6.3E-05	693	9.4E-05
TSF Outflow	96	6	2019	November	7.4E+03	17	3.2E+03	0.20	0.11	1.7E+03	0.50	70	5.0	0.14	1.2E-05	4.6E-04	2.2E-04	0.047	0.100	0.12	0	2.0E-04	0.45	1.3E-04	1.4E+03	1.9E-04
TSF Outflow	97	6	2019	December	7.5E+03	17	3.2E+03	0.20	0.11	1.7E+03	0.50	70	5.0	0.14	1.2E-05	4.7E-04	2.2E-04	0.046	0.100	0.11	0	1.9E-04	0.46	1.2E-04	1.4E+03	2.0E-04
TSF Outflow	98	6	2020	January	7.5E+03	17	3.2E+03	0.19	0.11	1.7E+03	0.50	70	5.0	0.14	1.2E-05	4.7E-04	2.2E-04	0.046	0.100	0.11	0	1.8E-04	0.46	1.2E-04	1.4E+03	2.0E-04
TSF Outflow	99	6	2020	Febraury	7.5E+03	17	3.2E+03	0.19	0.11	1.7E+03	0.50	70	5.0	0.14	1.2E-05	4.8E-04	2.2E-04	0.045	0.100	0.11	0	1.7E-04	0.46	1.1E-04	1.4E+03	2.1E-04
TSF Outflow	100	6	2020	March	7.6E+03	17	3.3E+03	0.18	0.11	1.7E+03	0.50	70	5.0	0.14	1.2E-05	4.9E-04	2.2E-04	0.044	0.100	0.11	0	1.7E-04	0.46	1.1E-04	1.4E+03	2.2E-04
TSF Outflow	101	6	2020	April	7.6E+03	17	3.3E+03	0.18	0.12	1.7E+03	0.50	70	5.0	0.14	1.2E-05	4.9E-04	2.2E-04	0.044	0.100	0.11	0	1.6E-04	0.47	1.1E-04	1.5E+03	2.2E-04
TSF Outflow	102	6	2020	May	4.0E+03	17	1.7E+03	0.089	0.058	968	0.50	50	2.5	0.068	1.2E-05	2.5E-04	2.2E-04	0.022	0.100	0.052	0	7.8E-05	0.24	5.2E-05	731	1.1E-04
TSF Outflow	103	6	2020	June	3.5E+03	17	1.4E+03	0.099	0.048	889	0.50	50	2.2	0.065	1.2E-05	2.3E-04	2.2E-04	0.021	0.100	0.054	0	7.6E-05	0.20	6.4E-05	645	9.6E-05
TSF Outflow	104	6	2020	July	3.6E+03	17	1.4E+03	0.11	0.050	929	0.50	25	2.3	0.073	1.2E-05	2.4E-04	2.2E-04	0.022	0.100	0.058	0	7.7E-05	0.21	6.8E-05	668	9.5E-05
TSF Outflow	105	6	2020	August	3.4E+03	17	1.4E+03	0.10	0.048	906	0.50	20	2.3	0.077	1.2E-05	2.4E-04	2.2E-04	0.022	0.100	0.057	0	7.4E-05	0.20	6.8E-05	647	8.8E-05
TSF Outflow	106	6	2020	September	3.3E+03	17	1.3E+03	0.10	0.046	868	0.50	35	2.2	0.077	1.2E-05	2.3E-04	2.2E-04	0.021	0.100	0.055	0	6.9E-05	0.19	6.6E-05	618	8.1E-05
TSF Outflow	107	6	2020	October	3.3E+03	17	1.3E+03	0.098	0.046	866	0.50	35	2.2	0.076	1.2E-05	2.2E-04	2.2E-04	0.020	0.100	0.054	0	6.7E-05	0.19	6.4E-05	615	7.7E-05
TSF Outflow	108	7	2020	November	6.9E+03	17	2.9E+03	0.20	0.099	1.7E+03	0.50	70	4.7	0.16	1.2E-05	4.6E-04	2.2E-04	0.043	0.100	0.11	0	1.4E-04	0.41	1.3E-04	1.3E+03	1.6E-04
TSF Outflow	109	7	2020	December	7.0E+03	17	2.9E+03	0.20	0.10	1.7E+03	0.50	70	4.8	0.16	1.2E-05	4.7E-04	2.2E-04	0.042	0.100	0.11	0	1.3E-04	0.42	1.3E-04	1.3E+03	1.7E-04
TSF Outflow	110	7	2021	January	7.0E+03	17	2.9E+03	0.19	0.10	1.7E+03	0.50	70	4.8	0.16	1.2E-05	4.7E-04	2.2E-04	0.041	0.100	0.11	0	1.3E-04	0.42	1.2E-04	1.3E+03	1.7E-04
TSF Outflow	111	7	2021	Febraury	7.1E+03	17	3.0E+03	0.19	0.10	1.7E+03	0.50	70	4.8	0.15	1.2E-05	4.8E-04	2.2E-04	0.041	0.100	0.11	0	1.2E-04	0.43	1.2E-04	1.3E+03	1.8E-04
TSF Outflow	112	7	2021	March	7.1E+03	17	3.0E+03	0.19	0.10	1.7E+03	0.50	70	4.8	0.15	1.2E-05	4.9E-04	2.2E-04	0.040	0.100	0.11	0	1.2E-04	0.43	1.1E-04	1.3E+03	1.9E-04
TSF Outflow	113	7	2021	April	7.2E+03	17	3.0E+03	0.18	0.11	1.7E+03	0.50	70	4.8	0.15	1.2E-05	4.9E-04	2.2E-04	0.039	0.100	0.10	0	1.1E-04	0.44	1.1E-04	1.4E+03	2.0E-04
TSF Outflow	114	7	2021	May	3.7E+03	17	1.5E+03	0.090	0.053	883	0.50	50	2.4	0.074	1.2E-05	2.5E-04	2.2E-04	0.019	0.100	0.051	0	5.3E-05	0.22	5.3E-05	676	1.0E-04

Table C-2.14 - Tailings Storage Facility Outflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3	0.2						0.5												0.5
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Ag	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L	mg/L
TSF Outflow	56	2	2016	July	0.031	0.15	4.3E-04	3.5E-04	0.37	17	0.022	0	0.022	4.5E-03	35	5.5E-03	0	341	6.4	0	7.3E-04	6.5E-05	2.8E-03	1.4E-03	1.5E-03	1.1E-03
TSF Outflow	57	2	2016	August	0.033	0.15	4.3E-04	3.8E-04	0.39	18	0.025	0	0.023	4.7E-03	37	5.9E-03	0	355	6.8	0	8.0E-04	7.4E-05	2.9E-03	1.5E-03	1.6E-03	1.1E-03
TSF Outflow	58	2	2016	September	0.034	0.15	4.3E-04	3.8E-04	0.40	18	0.026	0	0.024	4.8E-03	38	6.0E-03	0	362	6.9	0	8.3E-04	7.9E-05	2.9E-03	1.5E-03	1.6E-03	1.2E-03
TSF Outflow	59	2	2016	October	0.035	0.15	4.3E-04	3.9E-04	0.41	19	0.026	0	0.025	4.9E-03	39	6.1E-03	0	371	7.2	0	8.4E-04	8.0E-05	2.9E-03	1.5E-03	1.6E-03	1.2E-03
TSF Outflow	60	3	2016	November	0.073	0.15	4.3E-04	7.8E-04	0.87	39	0.052	0	0.051	1.0E-02	80	0.012	0	765	15	0	1.7E-03	1.6E-04	6.0E-03	3.1E-03	3.3E-03	2.3E-03
TSF Outflow	61	3	2016	December	0.074	0.15	4.3E-04	7.7E-04	0.90	40	0.052	0	0.052	9.9E-03	81	0.012	0	773	16	0	1.6E-03	1.5E-04	5.9E-03	3.1E-03	3.4E-03	2.3E-03
TSF Outflow	62	3	2017	January	0.075	0.15	4.3E-04	7.6E-04	0.93	41	0.051	0	0.052	9.8E-03	82	0.012	0	780	16	0	1.6E-03	1.4E-04	5.9E-03	3.0E-03	3.4E-03	2.2E-03
TSF Outflow	63	3	2017	Febraury	0.076	0.15	4.3E-04	7.5E-04	0.95	42	0.050	0	0.053	9.7E-03	82	0.012	0	786	16	0	1.6E-03	1.4E-04	5.8E-03	3.0E-03	3.5E-03	2.2E-03
TSF Outflow	64	3	2017	March	0.076	0.15	4.3E-04	7.4E-04	0.97	43	0.049	0	0.053	9.6E-03	83	0.012	0	793	17	0	1.5E-03	1.3E-04	5.7E-03	3.0E-03	3.5E-03	2.1E-03
TSF Outflow	65	3	2017	April	0.077	0.15	4.3E-04	7.3E-04	1.00	44	0.048	0	0.053	9.6E-03	84	0.012	0	799	17	0	1.5E-03	1.3E-04	5.7E-03	3.0E-03	3.5E-03	2.1E-03
TSF Outflow	66	3	2017	May	0.038	0.15	4.3E-04	3.5E-04	0.49	21	0.023	0	0.026	4.6E-03	41	5.6E-03	0	390	8.5	0	7.1E-04	5.8E-05	2.7E-03	1.4E-03	1.7E-03	9.9E-04
TSF Outflow	67	3	2017	June	0.035	0.15	4.3E-04	4.7E-04	0.45	23	0.067	0	0.026	4.7E-03	42	7.2E-03	0	355	7.8	0	1.3E-03	1.5E-04	2.6E-03	1.8E-03	1.7E-03	2.1E-03
TSF Outflow	68	3	2017	July	0.038	0.15	4.3E-04	5.0E-04	0.47	25	0.075	0	0.028	5.0E-03	45	7.7E-03	0	377	8.2	0	1.4E-03	1.7E-04	2.7E-03	1.9E-03	1.8E-03	2.3E-03
TSF Outflow	69	3	2017	August	0.039	0.15	4.3E-04	5.3E-04	0.49	26	0.083	0	0.029	5.2E-03	46	8.1E-03	0	384	8.4	0	1.5E-03	1.9E-04	2.8E-03	2.0E-03	1.9E-03	2.5E-03
TSF Outflow	70	3	2017	September	0.039	0.15	4.3E-04	5.3E-04	0.49	26	0.086	0	0.029	5.2E-03	46	8.2E-03	0	385	8.5	0	1.5E-03	1.9E-04	2.8E-03	2.0E-03	1.9E-03	2.6E-03
TSF Outflow	71	3	2017	October	0.040	0.15	4.3E-04	5.3E-04	0.50	27	0.085	0	0.029	5.3E-03	47	8.2E-03	0	390	8.6	0	1.5E-03	1.9E-04	2.8E-03	2.0E-03	1.9E-03	2.6E-03
TSF Outflow	72	4	2017	November	0.085	0.15	4.3E-04	1.1E-03	1.1	56	0.17	0	0.062	0.011	98	0.017	0	832	18	0	3.0E-03	3.8E-04	6.0E-03	4.2E-03	4.0E-03	5.2E-03
TSF Outflow	73	4	2017	December	0.085	0.15	4.3E-04	1.1E-03	1.1	56	0.17	0	0.061	0.011	98	0.017	0	837	19	0	2.9E-03	3.7E-04	6.0E-03	4.1E-03	4.0E-03	5.0E-03
TSF Outflow	74	4	2018	January	0.085	0.15	4.3E-04	1.0E-03	1.1	56	0.16	0	0.061	0.011	98	0.016	0	842	19	0	2.9E-03	3.5E-04	6.0E-03	4.0E-03	4.0E-03	4.8E-03
TSF Outflow	75	4	2018	Febraury	0.084	0.15	4.3E-04	1.0E-03	1.1	56	0.16	0	0.060	0.011	98	0.016	0	846	19	0	2.8E-03	3.4E-04	6.0E-03	4.0E-03	4.0E-03	4.7E-03
TSF Outflow	76	4	2018	March	0.084	0.15	4.3E-04	1.0E-03	1.1	56	0.15	0	0.060	0.011	98	0.016	0	851	19	0	2.7E-03	3.2E-04	6.0E-03	3.9E-03	4.0E-03	4.5E-03
TSF Outflow	77	4	2018	April	0.084	0.15	4.3E-04	9.8E-04	1.1	57	0.15	0	0.060	0.011	98	0.016	0	855	20	0	2.6E-03	3.1E-04	5.9E-03	3.9E-03	4.1E-03	4.4E-03
TSF Outflow	78	4	2018	May	0.042	0.15	4.3E-04	4.8E-04	0.57	28	0.071	0	0.030	5.3E-03	49	7.7E-03	0	428	9.8	0	1.3E-03	1.5E-04	3.0E-03	1.9E-03	2.0E-03	2.1E-03
TSF Outflow	79	4	2018	June	0.039	0.15	4.3E-04	6.2E-04	0.52	30	0.11	0	0.029	5.6E-03	50	9.8E-03	0	391	9.0	0	2.0E-03	2.6E-04	2.9E-03	2.2E-03	2.1E-03	3.8E-03
TSF Outflow	80	4	2018	July	0.041	0.15	4.3E-04	6.5E-04	0.54	32	0.13	0	0.031	5.9E-03	52	0.010	0	409	9.4	0	2.1E-03	2.8E-04	3.0E-03	2.4E-03	2.2E-03	4.1E-03
TSF Outflow	81	4	2018	August	0.042	0.15	4.3E-04	6.7E-04	0.54	33	0.14	0	0.031	6.1E-03	53	0.011	0	413	9.4	0	2.2E-03	3.0E-04	3.1E-03	2.4E-03	2.3E-03	4.3E-03
TSF Outflow	82	4	2018	September	0.042	0.15	4.3E-04	6.7E-04	0.54	32	0.14	0	0.031	6.0E-03	53	0.011	0	410	9.4	0	2.2E-03	3.0E-04	3.1E-03	2.4E-03	2.3E-03	4.4E-03
TSF Outflow	83	4	2018	October	0.042	0.15	4.3E-04	6.6E-04	0.55	33	0.13	0	0.031	6.0E-03	52	0.011	0	413	9.5	0	2.2E-03	3.0E-04	3.1E-03	2.4E-03	2.3E-03	4.3E-03
TSF Outflow	84	5	2018	November	0.094	0.15	4.3E-04	1.4E-03	1.2	71	0.28	0	0.068	0.013	114	0.023	0	914	21	0	4.7E-03	6.3E-04	6.8E-03	5.1E-03	4.9E-03	9.1E-03
TSF Outflow	85	5	2018	December	0.093	0.15	4.3E-04	1.4E-03	1.2	71	0.27	0	0.067	0.013	113	0.022	0	916	21	0	4.5E-03	6.0E-04	6.8E-03	5.0E-03	4.9E-03	8.8E-03
TSF Outflow	86	5	2019	January	0.093	0.15	4.3E-04	1.3E-03	1.2	70	0.26	0	0.066	0.013	112	0.022	0	918	21	0	4.3E-03	5.7E-04	6.7E-03	4.9E-03	4.9E-03	8.4E-03
TSF Outflow	87	5	2019	Febraury	0.092	0.15	4.3E-04	1.3E-03	1.2	70	0.25	0	0.065	0.013	111	0.021	0	921	22	0	4.2E-03	5.5E-04	6.7E-03	4.8E-03	4.9E-03	8.1E-03
TSF Outflow	88	5	2019	March	0.092	0.15	4.3E-04	1.3E-03	1.3	70	0.24	0	0.064	0.012	110	0.021	0	925	22	0	4.0E-03	5.2E-04	6.6E-03	4.7E-03	4.9E-03	7.8E-03
TSF Outflow	89	5	2019	April	0.091	0.15	4.3E-04	1.2E-03	1.3	70	0.23	0	0.064	0.012	110	0.020	0	928	22	0	3.9E-03	5.0E-04	6.6E-03	4.6E-03	4.8E-03	7.5E-03
TSF Outflow	90	5	2019	May	0.044	0.15	4.3E-04	5.7E-04	0.61	34	0.11	0	0.030	5.8E-03	53	9.6E-03	0	449	11	0	1.8E-03	2.3E-04	3.1E-03	2.2E-03	2.3E-03	3.5E-03
TSF Outflow	91	5	2019	June	0.041	0.15	4.3E-04	7.3E-04	0.55	36	0.15	0	0.030	6.2E-03	54	0.012	0	406	9.5	0	2.5E-03	3.4E-04	3.0E-03	2.5E-03	2.3E-03	5.7E-03
TSF Outflow	92	5	2019	July	0.043	0.15	4.3E-04	7.6E-04	0.56	37	0.17	0	0.031	6.6E-03	56	0.012	0	424	9.9	0	2.7E-03	3.6E-04	3.2E-03	2.6E-03	2.5E-03	6.1E-03
TSF Outflow	93	5	2019	August	0.044	0.15	4.3E-04	7.8E-04	0.57	38	0.18	0	0.032	6.7E-03	56	0.012	0	427	9.9	0	2.8E-03	3.7E-04	3.2E-03	2.6E-03	2.5E-03	6.4E-03
TSF Outflow	94	5	2019	September	0.044	0.15	4.3E-04	7.7E-04	0.56	38	0.18	0	0.031	6.6E-03	55	0.012	0	423	9.8	0	2.7E-03	3.7E-04	3.2E-03	2.6E-03	2.5E-03	6.4E-03
TSF Outflow	95	5	2019	October	0.045	0.15	4.3E-04	7.6E-04	0.56	38	0.17	0	0.032	6.6E-03	55	0.012	0	427	9.8	0	2.7E-03	3.6E-04	3.2E-03	2.6E-03	2.5E-03	6.3E-03
TSF Outflow	96	6	2019	November	0.094	0.15	4.3E-04	1.5E-03	1.2	78	0.34	0	0.066	0.014	114	0.025	0	899	20	0	5.4E-03	7.3E-04	6.7E-03	5.2E-03	5.1E-03	0.013
TSF Outflow	97	6	2019	December	0.094	0.15	4.3E-04	1.5E-03	1.2	77	0.33	0	0.065	0.013	113	0.024	0	903	21	0	5.2E-03	7.0E-04	6.6E-03	5.1E-03	5.1E-03	0.012
TSF Outflow	98	6	2020	January	0.094	0.15	4.3E-04	1.4E-03	1.2	77	0.32	0	0.065	0.013	112	0.024	0	907	21	0	5.1E-03	6.7E-04	6.6E-03	5.1E-03	5.0E-03	0.012
TSF Outflow	99	6	2020	Febraury	0.094	0.15	4.3E-04	1.4E-03	1.2	76	0.31	0	0.064	0.013	111	0.023	0	911	21	0	4.9E-03	6.4E-04	6.6E-03	5.0E-03	5.0E-03	0.011
TSF Outflow	100	6	2020	March	0.094	0.15	4.3E-04	1.4E-03	1.2	76	0.30	0	0.064	0.013	111	0.023	0	915	21	0	4.7E-03	6.2E-04	6.5E-03	4.9E-03	5.0E-03	0.011
TSF Outflow	101	6	2020	April	0.094	0.15	4.3E-04	1.3E-03	1.2	76	0.29	0	0.063	0.013	110	0.022	0	919	21	0	4.6E-03	5.9E-04	6.5E-03	4.8E-03	5.0E-03	0.010
TSF Outflow	102	6	2020	May	0.047	0.15	4.3E-04	6.6E-04	0.61	38	0.14	0	0.032	6.3E-03	55	0.011	0	464	11	0	2.2E-03	2.9E-04	3.2E-03	2.4E-03	2.5E-03	5.1E-03
TSF Outflow	103	6	2020	June	0.041	0.15	4.3E-04	7.4E-04	0.51	36	0.16	0	0.029	6.1E-03	52	0.012	0	390	9.0	0	2.7E-03	3.5E-04	2.9E-03	2.5E-03	2.3E-03	6.2E-03
TSF Outflow	104	6	2020	July	0.043	0.15	4.3E-04	7.7E-04	0.53	37	0.17	0	0.030	6.4E-03	54	0.012	0	406	9.2	0	2.8E-03	3.8E-04	3.0E-03	2.6E-03	2.5E-03	6.6E-03
TSF Outflow	105	6	2020	August	0.042	0.15	4.3E-04	7.6E-04	0.51	36	0.17	0	0.029	6.3E-03	53	0.012	0	394	8.9	0	2.8E-03	3.8E-04	2.9E-03	2.6E-03	2.4E-03	6.6E-03
TSF Outflow	106	6	2020	September	0.040	0.15	4.3E-04	7.2E-04	0.49	35	0.16	0	0.028	6.0E-03	50	0.011	0	377	8.5	0	2.6E-03	3.6E-04	2.8E-03	2.5E-03	2.3E-03	6.3E-03
TSF Outflow	107	6	2020	October	0.040	0.15	4.3E-04	7.1E-04	0.49	35	0.16	0	0.028	5.9E-03	50	0.011	0	379	8.6	0	2.6E-03	3.5E-04	2.8E-03	2.4E-03	2.3E-03	6.2E-03
TSF Outflow	108	7	2020	November	0.086	0.15	4.3E-04	1.4E-03	1.1	73	0.33	0	0.060	0.012	104	0.023	0	816	18	0	5.3E-03	7.2E-04	6.0E-03	5.1E-03	4.8E-03	0.013
TSF Outflow	109	7	2020	December	0.086	0.15	4.3E-04	1.4E-03	1.1	73	0.31	0	0.060	0.012	104	0.023	0	824	19	0	5.1E-03	7.0E-04	6.0E-03	5.0E-03	4.8E-03	0.012
TSF Outflow	110	7	2021	January	0.086	0.15	4.3E-04	1.4E-03	1.1	73	0.30	0	0.060	0.012	104	0.022	0	832	19	0	4.9E-03	6.7E-04	6.0E-03	4.9E-03	4.8E-03	0.012
TSF Outflow	111	7	2021	Febraury	0.086	0.15	4.3E-04	1.3E-03	1.1	73	0.29	0	0.059	0.012	103	0.022	0	839	19	0	4.8E-03	6.4E-04	5.9E-03	4.9E-03	4.8E-03	0.011
TSF Outflow	112	7	2021	March	0.086	0.15	4.3E-04	1.3E-03	1.1	72	0.28	0	0.059	0.012	103	0.021	0	847	19	0	4.6E-03	6.2E-04	5.9E-03	4.8E-03	4.8E-03	0.011
TSF Outflow	113	7	2021	April	0.086	0.15	4.3E-04	1.3E-03	1.1	72	0.27	0	0.059	0.012	103	0.021	0	853	20	0	4.5E-03	5.9E-04	5.9E-03	4.8E-03	4.7E-03	0.010
TSF Outflow	114	7	2021	May	0.043	0.15	4.3E-04	6.1E-04	0.56	36	0.13	0	0.029	5.7E-03	51	0.010	0	428	9.8	0	2.2E-03	2.8E-04	2.9E-03	2.4E-03	2.3E-03	5.0E-03

Table C-2.14 - Tailings Storage Facility Outflow
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)							120	0.12					13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)											1								0.5							
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	Si	SO4	CN_Total	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/L	mg/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
TSF Outflow	115	7	2021	June	3.2E+03	17	1.3E+03	0.11	0.044	841	0.50	50	2.1	0.071	1.2E-05	2.2E-04	2.2E-04	0.020	0.100	0.057	0	6.2E-05	0.19	6.2E-05	608	8.6E-05
TSF Outflow	116	7	2021	July	3.2E+03	17	1.3E+03	0.14	0.044	855	0.50	25	2.1	0.086	1.2E-05	2.4E-04	2.2E-04	0.020	0.100	0.063	0	6.1E-05	0.19	9.2E-05	609	8.1E-05
TSF Outflow	117	7	2021	August	3.1E+03	17	1.2E+03	0.14	0.041	824	0.50	20	2.1	0.091	1.2E-05	2.4E-04	2.2E-04	0.019	0.100	0.062	0	5.9E-05	0.18	9.7E-05	581	7.3E-05
TSF Outflow	118	7	2021	September	2.9E+03	17	1.1E+03	0.14	0.039	789	0.50	35	2.0	0.090	1.2E-05	2.3E-04	2.2E-04	0.018	0.100	0.060	0	5.6E-05	0.17	9.3E-05	553	6.7E-05
TSF Outflow	119	7	2021	October	3.0E+03	17	1.2E+03	0.13	0.040	790	0.50	35	2.0	0.089	1.2E-05	2.3E-04	2.2E-04	0.018	0.100	0.059	0	5.4E-05	0.17	9.0E-05	552	6.3E-05
TSF Outflow	120	8	2021	November	6.2E+03	17	2.4E+03	0.27	0.083	1.6E+03	0.50	70	4.2	0.18	1.2E-05	4.5E-04	2.2E-04	0.037	0.100	0.12	0	1.1E-04	0.36	1.8E-04	1.1E+03	1.3E-04
TSF Outflow	121	8	2021	December	6.3E+03	17	2.5E+03	0.26	0.086	1.6E+03	0.50	70	4.3	0.18	1.2E-05	4.7E-04	2.2E-04	0.036	0.100	0.12	0	1.0E-04	0.37	1.7E-04	1.2E+03	1.4E-04
TSF Outflow	122	8	2022	January	6.4E+03	17	2.6E+03	0.25	0.088	1.6E+03	0.50	70	4.4	0.17	1.2E-05	4.8E-04	2.2E-04	0.035	0.100	0.12	0	9.9E-05	0.38	1.7E-04	1.2E+03	1.5E-04
TSF Outflow	123	8	2022	Febraury	6.5E+03	17	2.6E+03	0.25	0.090	1.6E+03	0.50	70	4.4	0.17	1.2E-05	4.9E-04	2.2E-04	0.035	0.100	0.11	0	9.5E-05	0.39	1.6E-04	1.2E+03	1.6E-04
TSF Outflow	124	8	2022	March	6.6E+03	17	2.7E+03	0.24	0.092	1.6E+03	0.50	70	4.5	0.17	1.2E-05	4.9E-04	2.2E-04	0.034	0.100	0.11	0	9.1E-05	0.39	1.5E-04	1.2E+03	1.7E-04
TSF Outflow	125	8	2022	April	6.6E+03	17	2.8E+03	0.24	0.094	1.6E+03	0.50	70	4.5	0.17	1.2E-05	5.0E-04	2.2E-04	0.034	0.100	0.11	0	8.7E-05	0.40	1.5E-04	1.2E+03	1.8E-04
TSF Outflow	126	8	2022	May	3.2E+03	17	1.4E+03	0.11	0.046	779	0.50	50	2.2	0.079	1.2E-05	2.4E-04	2.2E-04	0.016	0.100	0.053	0	4.0E-05	0.20	6.8E-05	600	8.9E-05
TSF Outflow	127	8	2022	June	2.9E+03	17	1.1E+03	0.13	0.038	770	0.50	50	1.9	0.074	1.2E-05	2.2E-04	2.2E-04	0.017	0.100	0.061	0	5.9E-05	0.17	7.4E-05	549	7.5E-05
TSF Outflow	128	8	2022	July	2.9E+03	17	1.1E+03	0.17	0.038	787	0.50	25	1.9	0.090	1.2E-05	2.4E-04	2.2E-04	0.017	0.100	0.068	0	5.8E-05	0.17	1.0E-04	552	7.1E-05
TSF Outflow	129	8	2022	August	2.8E+03	17	1.1E+03	0.17	0.036	761	0.50	20	1.9	0.094	1.2E-05	2.4E-04	2.2E-04	0.017	0.100	0.067	0	5.7E-05	0.16	1.1E-04	528	6.3E-05
TSF Outflow	130	8	2022	September	2.7E+03	17	1.0E+03	0.16	0.034	732	0.50	35	1.9	0.093	1.2E-05	2.3E-04	2.2E-04	0.016	0.100	0.065	0	5.5E-05	0.15	1.0E-04	504	5.7E-05
TSF Outflow	131	8	2022	October	2.7E+03	17	1.0E+03	0.16	0.035	736	0.50	35	1.9	0.091	1.2E-05	2.2E-04	2.2E-04	0.016	0.100	0.064	0	5.4E-05	0.15	9.9E-05	506	5.4E-05
TSF Outflow	132	9	2022	November	5.8E+03	17	2.2E+03	0.32	0.076	1.6E+03	0.50	70	4.0	0.19	1.2E-05	4.5E-04	2.2E-04	0.032	0.100	0.13	0	1.1E-04	0.33	2.0E-04	1.1E+03	1.1E-04
TSF Outflow	133	9	2022	December	5.9E+03	17	2.3E+03	0.31	0.078	1.6E+03	0.50	70	4.1	0.19	1.2E-05	4.6E-04	2.2E-04	0.032	0.100	0.13	0	1.1E-04	0.34	1.9E-04	1.1E+03	1.2E-04
TSF Outflow	134	9	2023	January	6.0E+03	17	2.4E+03	0.31	0.080	1.6E+03	0.50	70	4.1	0.18	1.2E-05	4.7E-04	2.2E-04	0.031	0.100	0.13	0	1.0E-04	0.35	1.9E-04	1.1E+03	1.3E-04
TSF Outflow	135	9	2023	Febraury	6.1E+03	17	2.4E+03	0.30	0.082	1.6E+03	0.50	70	4.2	0.18	1.2E-05	4.8E-04	2.2E-04	0.031	0.100	0.13	0	9.8E-05	0.36	1.8E-04	1.1E+03	1.4E-04
TSF Outflow	136	9	2023	March	6.1E+03	17	2.5E+03	0.30	0.084	1.6E+03	0.50	70	4.2	0.18	1.2E-05	4.9E-04	2.2E-04	0.030	0.100	0.13	0	9.4E-05	0.36	1.7E-04	1.1E+03	1.5E-04
TSF Outflow	137	9	2023	April	6.2E+03	17	2.5E+03	0.29	0.086	1.5E+03	0.50	70	4.3	0.18	1.2E-05	4.9E-04	2.2E-04	0.030	0.100	0.12	0	9.0E-05	0.37	1.7E-04	1.2E+03	1.6E-04
TSF Outflow	138	9	2023	May	3.2E+03	17	1.3E+03	0.14	0.044	771	0.50	50	2.2	0.087	1.2E-05	2.5E-04	2.2E-04	0.015	0.100	0.062	0	4.3E-05	0.19	8.1E-05	587	8.2E-05
TSF Outflow	139	9	2023	June	2.9E+03	17	1.1E+03	0.16	0.037	777	0.50	50	1.9	0.081	1.2E-05	2.3E-04	2.2E-04	0.016	0.100	0.070	0	6.6E-05	0.16	8.6E-05	549	7.1E-05
TSF Outflow	140	9	2023	July	2.9E+03	17	1.1E+03	0.19	0.037	794	0.50	25	1.9	0.095	1.2E-05	2.4E-04	2.2E-04	0.016	0.100	0.076	0	6.7E-05	0.17	1.2E-04	555	6.8E-05
TSF Outflow	141	9	2023	August	2.8E+03	17	1.0E+03	0.19	0.035	770	0.50	20	1.9	0.099	1.2E-05	2.4E-04	2.2E-04	0.015	0.100	0.075	0	6.6E-05	0.16	1.2E-04	534	6.1E-05
TSF Outflow	142	9	2023	September	2.7E+03	17	1.0E+03	0.18	0.034	739	0.50	35	1.9	0.100	1.2E-05	2.4E-04	2.2E-04	0.015	0.100	0.072	0	6.4E-05	0.15	1.1E-04	513	6.0E-05
TSF Outflow	143	9	2023	October	2.7E+03	17	1.0E+03	0.18	0.034	739	0.50	35	1.9	0.099	1.2E-05	2.4E-04	2.2E-04	0.014	0.100	0.070	0	6.3E-05	0.15	1.1E-04	515	6.0E-05
TSF Outflow	144	10	2023	November	5.6E+03	17	2.2E+03	0.35	0.072	1.5E+03	0.50	70	3.9	0.19	1.2E-05	4.8E-04	2.2E-04	0.029	0.100	0.14	0	1.2E-04	0.32	2.1E-04	1.1E+03	1.2E-04
TSF Outflow	145	10	2023	December	5.8E+03	17	2.2E+03	0.35	0.076	1.5E+03	0.50	70	4.0	0.19	1.2E-05	4.9E-04	2.2E-04	0.028	0.100	0.14	0	1.2E-04	0.34	2.1E-04	1.1E+03	1.3E-04
TSF Outflow	146	10	2024	January	5.9E+03	17	2.3E+03	0.33	0.078	1.5E+03	0.50	70	4.1	0.19	1.2E-05	5.0E-04	2.2E-04	0.028	0.100	0.13	0	1.1E-04	0.35	2.0E-04	1.1E+03	1.4E-04
TSF Outflow	147	10	2024	Febraury	6.0E+03	17	2.4E+03	0.33	0.081	1.5E+03	0.50	70	4.1	0.19	1.2E-05	5.1E-04	2.2E-04	0.027	0.100	0.13	0	1.1E-04	0.35	1.9E-04	1.1E+03	1.5E-04
TSF Outflow	148	10	2024	March	6.1E+03	17	2.5E+03	0.32	0.083	1.5E+03	0.50	70	4.2	0.19	1.2E-05	5.1E-04	2.2E-04	0.027	0.100	0.13	0	1.1E-04	0.36	1.8E-04	1.1E+03	1.6E-04
TSF Outflow	149	10	2024	April	6.1E+03	17	2.5E+03	0.31	0.085	1.5E+03	0.50	70	4.2	0.18	1.2E-05	5.2E-04	2.2E-04	0.026	0.100	0.12	0	1.0E-04	0.37	1.8E-04	1.2E+03	1.7E-04
TSF Outflow	150	10	2024	May	3.0E+03	17	1.2E+03	0.14	0.042	706	0.50	50	2.1	0.087	1.2E-05	2.5E-04	2.2E-04	0.012	0.100	0.059	0	4.6E-05	0.18	8.2E-05	569	8.6E-05
TSF Outflow	151	10	2024	June	2.7E+03	17	1.0E+03	0.16	0.034	711	0.50	50	1.8	0.089	1.2E-05	2.7E-04	2.2E-04	0.014	0.100	0.065	0	6.4E-05	0.16	9.6E-05	522	9.4E-05
TSF Outflow	152	10	2024	July	2.7E+03	17	1.0E+03	0.19	0.034	724	0.50	25	1.8	0.10	1.2E-05	2.9E-04	2.2E-04	0.014	0.100	0.071	0	6.3E-05	0.16	1.3E-04	527	8.9E-05
TSF Outflow	153	10	2024	August	2.6E+03	17	964	0.19	0.032	696	0.50	20	1.8	0.11	1.2E-05	3.1E-04	2.2E-04	0.014	0.100	0.069	0	6.1E-05	0.15	1.3E-04	501	9.2E-05
TSF Outflow	154	10	2024	September	2.4E+03	17	908	0.18	0.030	652	0.50	35	1.7	0.11	1.2E-05	3.1E-04	2.2E-04	0.013	0.100	0.064	0	5.7E-05	0.14	1.2E-04	470	9.3E-05
TSF Outflow	155	10	2024	October	2.5E+03	17	927	0.17	0.031	652	0.50	35	1.8	0.11	1.2E-05	3.0E-04	2.2E-04	0.013	0.100	0.062	0	5.6E-05	0.14	1.2E-04	472	9.1E-05
TSF Outflow	156	11	2024	November	5.5E+03	17	2.1E+03	0.35	0.071	1.4E+03	0.50	70	3.9	0.24	1.2E-05	6.4E-04	2.2E-04	0.028	0.100	0.13	0	1.2E-04	0.32	2.4E-04	1.0E+03	1.9E-04
TSF Outflow	157	11	2024	December	5.6E+03	17	2.2E+03	0.34	0.073	1.4E+03	0.50	70	4.0	0.23	1.2E-05	6.4E-04	2.2E-04	0.028	0.100	0.13	0	1.1E-04	0.33	2.3E-04	1.1E+03	2.0E-04
TSF Outflow	158	11	2025	January	5.7E+03	17	2.3E+03	0.33	0.076	1.4E+03	0.50	70	4.0	0.23	1.2E-05	6.4E-04	2.2E-04	0.027	0.100	0.12	0	1.1E-04	0.34	2.2E-04	1.1E+03	2.0E-04
TSF Outflow	159	11	2025	Febraury	5.8E+03	17	2.3E+03	0.32	0.078	1.4E+03	0.50	70	4.1	0.22	1.2E-05	6.4E-04	2.2E-04	0.027	0.100	0.12	0	1.0E-04	0.35	2.1E-04	1.1E+03	2.1E-04
TSF Outflow	160	11	2025	March	5.8E+03	17	2.4E+03	0.31	0.080	1.4E+03	0.50	70	4.2	0.22	1.2E-05	6.4E-04	2.2E-04	0.027	0.100	0.12	0	9.6E-05	0.35	2.1E-04	1.1E+03	2.2E-04
TSF Outflow	161	11	2025	April	5.9E+03	17	2.5E+03	0.30	0.083	1.4E+03	0.50	70	4.2	0.21	1.2E-05	6.4E-04	2.2E-04	0.027	0.100	0.11	0	9.2E-05	0.36	2.0E-04	1.1E+03	2.2E-04
TSF Outflow	162	11	2025	May	2.9E+03	17	1.2E+03	0.14	0.041	670	0.50	50	2.1	0.10	1.2E-05	3.1E-04	2.2E-04	0.013	0.100	0.054	0	4.3E-05	0.18	9.3E-05	557	1.1E-04
TSF Outflow	163	11	2025	June	2.6E+03	17	1.0E+03	0.17	0.034	659	0.50	50	1.8	0.10	1.2E-05	3.2E-04	2.2E-04	0.016	0.100	0.062	0	5.0E-05	0.15	1.0E-04	506	1.2E-04
TSF Outflow	164	11	2025	July	2.6E+03	17	1.0E+03	0.20	0.034	675	0.50	25	1.8	0.12	1.2E-05	3.3E-04	2.2E-04	0.016	0.100	0.067	0	4.9E-05	0.16	1.3E-04	511	1.1E-04
TSF Outflow	165	11	2025	August	2.5E+03	17	949	0.20	0.032	648	0.50	20	1.8	0.12	1.2E-05	3.4E-04	2.2E-04	0.016	0.100	0.066	0	4.7E-05	0.15	1.4E-04	486	1.1E-04
TSF Outflow	166	11	2025	September	2.3E+03	17	896	0.19	0.030	609	0.50	35	1.7	0.12	1.2E-05	3.4E-04	2.2E-04	0.015	0.100	0.061	0	4.3E-05	0.14	1.3E-04	456	1.1E-04
TSF Outflow	167	11	2025	October	2.4E+03	17	917	0.18	0.031	613	0.50	35	1.8	0.12	1.2E-05	3.4E-04	2.2E-04	0.015	0.100	0.059	0	4.2E-05	0.14	1.2E-04	458	1.1E-04
TSF Outflow	168	12	2025	November	5.3E+03	17	2.1E+03	0.37	0.069	1.4E+03	0.50	70	3.9	0.25	1.2E-05	7.0E-04	2.2E-04	0.033	0.100	0.12	0	8.6E-05	0.32	2.5E-04	1.0E+03	2.2E-04
TSF Outflow	169	12	2025	December	5.4E+03	17	2.1E+03	0.36	0.072	1.4E+03	0.50	70	4.0	0.25	1.2E-05	7.0E-04	2.2E-04	0.032	0.100	0.12	0	8.3E-05	0.33	2.4E-04	1.0E+03	2.3E-04
TSF Outflow	170	12	2026	January	5.5E+03	17	2.2E+03	0.35	0.075	1.4E+03	0.50	70	4.0	0.24	1.2E-05	7.0E-04	2.2E-04	0.032	0.100	0.12	0	7.9E-05	0.34	2.3E-04	1.1E+03	2.3E-04
TSF Outflow	171	12	2026	Febraury	5.6E+03	17	2.3E+03	0.34	0.077	1.4E+03	0.50	70	4.1	0.24	1.2E-05	7.0E-04	2.2E-04	0.032	0.100	0.12	0	7.6E-05	0.34	2.2E-04	1.1E+03	2.4E-04
TSF Outflow	172	12	2026	March	5.7E+03	17	2.4E+03	0.33	0.079	1.4E+03	0.50	70	4.1	0.23	1.2E-05	6.9E-04	2.2E-04	0.032	0.100	0.11	0	7.2E-05	0.35	2.1E-04	1.1E+03	2.4E-04
TSF Outflow	173	12	2026	April	5.8E+03	17	2.4E+03	0.32	0.081	1.4E+03	0.50	70	4.2	0.23	1.2E-05	6.9E-04	2.2E-04	0.031	0.100	0.11	0	6.9E-05	0.36	2.1E-04	1.1E+03	2.5E-04
TSF Outflow	174	12	2026	May	2.9E+03	17	1.2E+03	0.15	0.041	663	0.50	50	2.1	0.11	1.2E-05	3.4E-04	2.2E-04	0.015	0.100	0.053	0	3.2E-05	0.18	9.7E-05	547	1.2E-04

Table C-2.14 - Tailings Storage Facility Outflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3	0.2						0.5												0.5
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Ag	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L
TSF Outflow	115	7	2021	June	0.037	0.15	4.3E-04	7.1E-04	0.47	34	0.15	0	0.027	5.7E-03	51	0.011	0	362	8.3	0	2.6E-03	3.5E-04	2.6E-03	2.6E-03	2.3E-03	6.2E-03
TSF Outflow	116	7	2021	July	0.037	0.15	4.3E-04	7.5E-04	0.47	35	0.16	0	0.028	6.1E-03	52	0.011	0	363	8.2	0	2.8E-03	4.7E-04	2.7E-03	3.1E-03	2.5E-03	6.9E-03
TSF Outflow	117	7	2021	August	0.036	0.15	4.3E-04	7.4E-04	0.45	33	0.16	0	0.027	6.0E-03	50	0.011	0	347	7.8	0	2.7E-03	4.8E-04	2.6E-03	3.1E-03	2.5E-03	6.9E-03
TSF Outflow	118	7	2021	September	0.034	0.15	4.3E-04	7.0E-04	0.42	32	0.15	0	0.026	5.7E-03	48	0.010	0	332	7.5	0	2.5E-03	4.6E-04	2.5E-03	3.0E-03	2.4E-03	6.6E-03
TSF Outflow	119	7	2021	October	0.034	0.15	4.3E-04	6.8E-04	0.43	31	0.15	0	0.026	5.7E-03	48	0.010	0	336	7.5	0	2.5E-03	4.5E-04	2.5E-03	2.9E-03	2.3E-03	6.4E-03
TSF Outflow	120	8	2021	November	0.072	0.15	4.3E-04	1.4E-03	0.90	65	0.29	0	0.053	0.012	97	0.020	0	709	16	0	4.9E-03	8.9E-04	5.2E-03	5.9E-03	4.8E-03	0.013
TSF Outflow	121	8	2021	December	0.072	0.15	4.3E-04	1.3E-03	0.93	65	0.28	0	0.053	0.011	98	0.020	0	724	16	0	4.8E-03	8.6E-04	5.3E-03	5.8E-03	4.8E-03	0.012
TSF Outflow	122	8	2022	January	0.072	0.15	4.3E-04	1.3E-03	0.95	66	0.27	0	0.053	0.011	98	0.020	0	737	17	0	4.6E-03	8.2E-04	5.3E-03	5.8E-03	4.8E-03	0.012
TSF Outflow	123	8	2022	Febraury	0.073	0.15	4.3E-04	1.2E-03	0.98	66	0.26	0	0.053	0.011	98	0.019	0	750	17	0	4.4E-03	7.8E-04	5.3E-03	5.7E-03	4.8E-03	0.011
TSF Outflow	124	8	2022	March	0.073	0.15	4.3E-04	1.2E-03	1.00	66	0.25	0	0.054	0.011	98	0.019	0	762	17	0	4.3E-03	7.5E-04	5.3E-03	5.6E-03	4.7E-03	0.011
TSF Outflow	125	8	2022	April	0.073	0.15	4.3E-04	1.2E-03	1.0	66	0.24	0	0.054	0.011	98	0.019	0	774	18	0	4.1E-03	7.1E-04	5.4E-03	5.6E-03	4.7E-03	0.010
TSF Outflow	126	8	2022	May	0.035	0.15	4.3E-04	5.5E-04	0.50	32	0.11	0	0.026	5.1E-03	47	8.9E-03	0	378	8.6	0	1.9E-03	3.3E-04	2.6E-03	2.6E-03	2.3E-03	4.8E-03
TSF Outflow	127	8	2022	June	0.030	0.15	4.3E-04	6.7E-04	0.41	31	0.13	0	0.024	5.3E-03	50	9.9E-03	0	319	7.3	0	2.5E-03	3.9E-04	2.3E-03	3.0E-03	2.2E-03	6.2E-03
TSF Outflow	128	8	2022	July	0.031	0.15	4.3E-04	7.1E-04	0.41	31	0.15	0	0.025	5.7E-03	51	9.9E-03	0	322	7.2	0	2.6E-03	5.1E-04	2.4E-03	3.5E-03	2.5E-03	6.9E-03
TSF Outflow	129	8	2022	August	0.030	0.15	4.3E-04	7.0E-04	0.39	30	0.14	0	0.024	5.6E-03	50	9.6E-03	0	309	6.9	0	2.5E-03	5.2E-04	2.3E-03	3.5E-03	2.4E-03	6.9E-03
TSF Outflow	130	8	2022	September	0.028	0.15	4.3E-04	6.6E-04	0.38	29	0.14	0	0.024	5.4E-03	48	9.2E-03	0	299	6.6	0	2.4E-03	4.9E-04	2.2E-03	3.4E-03	2.3E-03	6.6E-03
TSF Outflow	131	8	2022	October	0.029	0.15	4.3E-04	6.5E-04	0.38	29	0.13	0	0.024	5.3E-03	48	9.1E-03	0	306	6.7	0	2.3E-03	4.8E-04	2.3E-03	3.4E-03	2.3E-03	6.4E-03
TSF Outflow	132	9	2022	November	0.062	0.15	4.3E-04	1.3E-03	0.83	61	0.27	0	0.051	0.011	100	0.019	0	667	14	0	4.7E-03	9.7E-04	4.8E-03	7.0E-03	4.7E-03	0.013
TSF Outflow	133	9	2022	December	0.063	0.15	4.3E-04	1.3E-03	0.85	61	0.26	0	0.052	0.011	100	0.019	0	682	15	0	4.6E-03	9.3E-04	4.9E-03	6.9E-03	4.7E-03	0.013
TSF Outflow	134	9	2023	January	0.063	0.15	4.3E-04	1.2E-03	0.87	61	0.25	0	0.052	0.011	101	0.019	0	696	15	0	4.4E-03	8.9E-04	4.9E-03	6.9E-03	4.7E-03	0.012
TSF Outflow	135	9	2023	Febraury	0.064	0.15	4.3E-04	1.2E-03	0.89	62	0.24	0	0.052	0.011	101	0.018	0	709	16	0	4.3E-03	8.6E-04	4.9E-03	6.8E-03	4.7E-03	0.012
TSF Outflow	136	9	2023	March	0.064	0.15	4.3E-04	1.2E-03	0.92	62	0.23	0	0.053	0.011	101	0.018	0	722	16	0	4.2E-03	8.2E-04	4.9E-03	6.7E-03	4.6E-03	0.011
TSF Outflow	137	9	2023	April	0.065	0.15	4.3E-04	1.1E-03	0.93	62	0.23	0	0.053	0.010	101	0.018	0	734	16	0	4.0E-03	7.9E-04	4.9E-03	6.7E-03	4.6E-03	0.011
TSF Outflow	138	9	2023	May	0.033	0.15	4.3E-04	5.6E-04	0.48	31	0.11	0	0.027	5.2E-03	51	9.0E-03	0	373	8.3	0	2.0E-03	3.8E-04	2.5E-03	3.3E-03	2.3E-03	5.2E-03
TSF Outflow	139	9	2023	June	0.029	0.15	4.3E-04	6.6E-04	0.41	31	0.13	0	0.025	5.3E-03	54	9.4E-03	0	320	7.1	0	2.4E-03	4.2E-04	2.2E-03	3.6E-03	2.2E-03	6.5E-03
TSF Outflow	140	9	2023	July	0.030	0.15	4.3E-04	7.0E-04	0.41	31	0.14	0	0.026	5.7E-03	55	9.5E-03	0	325	7.1	0	2.5E-03	5.2E-04	2.3E-03	4.1E-03	2.5E-03	7.2E-03
TSF Outflow	141	9	2023	August	0.030	0.15	4.3E-04	6.9E-04	0.39	30	0.14	0	0.025	5.6E-03	54	9.2E-03	0	313	6.8	0	2.5E-03	5.3E-04	2.2E-03	4.1E-03	2.4E-03	7.2E-03
TSF Outflow	142	9	2023	September	0.029	0.15	4.3E-04	6.6E-04	0.37	29	0.14	0	0.025	5.4E-03	52	8.9E-03	0	303	6.6	0	2.3E-03	5.0E-04	2.1E-03	3.9E-03	2.3E-03	6.9E-03
TSF Outflow	143	9	2023	October	0.030	0.15	4.3E-04	6.4E-04	0.38	29	0.13	0	0.025	5.3E-03	51	8.9E-03	0	309	6.6	0	2.3E-03	4.9E-04	2.1E-03	3.8E-03	2.3E-03	6.7E-03
TSF Outflow	144	10	2023	November	0.064	0.15	4.3E-04	1.3E-03	0.80	59	0.26	0	0.052	0.011	103	0.018	0	654	14	0	4.5E-03	9.6E-04	4.4E-03	7.7E-03	4.7E-03	0.013
TSF Outflow	145	10	2023	December	0.066	0.15	4.3E-04	1.2E-03	0.83	60	0.25	0	0.053	0.010	104	0.018	0	670	15	0	4.4E-03	9.3E-04	4.4E-03	7.6E-03	4.7E-03	0.013
TSF Outflow	146	10	2024	January	0.069	0.15	4.3E-04	1.2E-03	0.86	61	0.24	0	0.054	0.010	103	0.018	0	686	15	0	4.2E-03	8.9E-04	4.4E-03	7.4E-03	4.6E-03	0.012
TSF Outflow	147	10	2024	Febraury	0.072	0.15	4.3E-04	1.2E-03	0.89	61	0.24	0	0.054	0.010	103	0.018	0	701	15	0	4.1E-03	8.5E-04	4.4E-03	7.3E-03	4.6E-03	0.012
TSF Outflow	148	10	2024	March	0.074	0.15	4.3E-04	1.1E-03	0.91	61	0.23	0	0.055	1.0E-02	103	0.018	0	715	16	0	4.0E-03	8.2E-04	4.4E-03	7.2E-03	4.6E-03	0.011
TSF Outflow	149	10	2024	April	0.076	0.15	4.3E-04	1.1E-03	0.93	61	0.22	0	0.055	9.8E-03	102	0.018	0	728	16	0	3.9E-03	7.8E-04	4.4E-03	7.0E-03	4.6E-03	0.011
TSF Outflow	150	10	2024	May	0.038	0.15	4.3E-04	5.1E-04	0.46	30	0.10	0	0.027	4.7E-03	49	8.4E-03	0	358	8.0	0	1.8E-03	3.6E-04	2.1E-03	3.3E-03	2.2E-03	5.1E-03
TSF Outflow	151	10	2024	June	0.033	0.15	4.3E-04	6.4E-04	0.38	30	0.13	0	0.025	4.9E-03	51	8.5E-03	0	298	6.7	0	2.2E-03	3.8E-04	1.9E-03	3.5E-03	2.1E-03	6.9E-03
TSF Outflow	152	10	2024	July	0.034	0.15	4.3E-04	6.9E-04	0.38	31	0.15	0	0.026	5.3E-03	53	8.6E-03	0	302	6.7	0	2.3E-03	4.9E-04	2.0E-03	3.9E-03	2.4E-03	7.6E-03
TSF Outflow	153	10	2024	August	0.033	0.15	4.3E-04	6.8E-04	0.36	29	0.15	0	0.025	5.2E-03	51	8.2E-03	0	287	6.3	0	2.2E-03	5.0E-04	1.9E-03	3.9E-03	2.3E-03	7.7E-03
TSF Outflow	154	10	2024	September	0.032	0.15	4.3E-04	6.3E-04	0.34	28	0.14	0	0.024	4.9E-03	47	7.7E-03	0	272	5.9	0	2.1E-03	4.6E-04	1.8E-03	3.5E-03	2.2E-03	7.3E-03
TSF Outflow	155	10	2024	October	0.033	0.15	4.3E-04	6.2E-04	0.35	28	0.13	0	0.024	4.8E-03	46	7.6E-03	0	279	6.0	0	2.0E-03	4.4E-04	1.8E-03	3.4E-03	2.1E-03	7.0E-03
TSF Outflow	156	11	2024	November	0.076	0.15	4.3E-04	1.3E-03	0.78	60	0.28	0	0.054	0.010	100	0.017	0	637	14	0	4.1E-03	9.1E-04	4.2E-03	7.2E-03	4.6E-03	0.015
TSF Outflow	157	11	2024	December	0.078	0.15	4.3E-04	1.3E-03	0.81	61	0.27	0	0.054	0.010	100	0.017	0	652	14	0	4.0E-03	8.7E-04	4.2E-03	7.0E-03	4.6E-03	0.014
TSF Outflow	158	11	2025	January	0.080	0.15	4.3E-04	1.2E-03	0.83	61	0.26	0	0.054	9.9E-03	99	0.016	0	666	15	0	3.9E-03	8.3E-04	4.3E-03	6.8E-03	4.6E-03	0.013
TSF Outflow	159	11	2025	Febraury	0.082	0.15	4.3E-04	1.2E-03	0.86	61	0.25	0	0.055	9.8E-03	99	0.016	0	680	15	0	3.8E-03	8.0E-04	4.3E-03	6.6E-03	4.5E-03	0.013
TSF Outflow	160	11	2025	March	0.084	0.15	4.3E-04	1.2E-03	0.88	61	0.24	0	0.055	9.6E-03	99	0.016	0	693	15	0	3.6E-03	7.6E-04	4.4E-03	6.5E-03	4.5E-03	0.012
TSF Outflow	161	11	2025	April	0.085	0.15	4.3E-04	1.1E-03	0.91	62	0.23	0	0.055	9.5E-03	99	0.016	0	705	16	0	3.5E-03	7.3E-04	4.5E-03	6.3E-03	4.5E-03	0.012
TSF Outflow	162	11	2025	May	0.042	0.15	4.3E-04	5.4E-04	0.45	30	0.11	0	0.027	4.6E-03	48	7.6E-03	0	348	7.8	0	1.7E-03	3.4E-04	2.2E-03	3.0E-03	2.2E-03	5.6E-03
TSF Outflow	163	11	2025	June	0.036	0.15	4.3E-04	7.4E-04	0.37	31	0.14	0	0.025	4.8E-03	50	8.3E-03	0	291	6.5	0	2.0E-03	3.8E-04	2.0E-03	3.1E-03	2.1E-03	7.2E-03
TSF Outflow	164	11	2025	July	0.037	0.15	4.3E-04	7.9E-04	0.37	31	0.15	0	0.026	5.3E-03	51	8.4E-03	0	294	6.6	0	2.1E-03	4.9E-04	2.1E-03	3.6E-03	2.4E-03	7.9E-03
TSF Outflow	165	11	2025	August	0.035	0.15	4.3E-04	7.8E-04	0.35	30	0.15	0	0.025	5.2E-03	49	8.1E-03	0	280	6.2	0	2.1E-03	5.0E-04	2.1E-03	3.5E-03	2.3E-03	7.9E-03
TSF Outflow	166	11	2025	September	0.033	0.15	4.3E-04	7.4E-04	0.33	28	0.14	0	0.024	4.8E-03	46	7.6E-03	0	265	5.9	0	1.9E-03	4.6E-04	2.0E-03	3.2E-03	2.2E-03	7.4E-03
TSF Outflow	167	11	2025	October	0.034	0.15	4.3E-04	7.2E-04	0.34	28	0.13	0	0.024	4.8E-03	45	7.5E-03	0	273	6.0	0	1.8E-03	4.4E-04	2.0E-03	3.1E-03	2.1E-03	7.2E-03
TSF Outflow	168	12	2025	November	0.076	0.15	4.3E-04	1.5E-03	0.77	62	0.28	0	0.053	0.010	98	0.016	0	619	13	0	3.8E-03	9.2E-04	4.6E-03	6.5E-03	4.6E-03	0.015
TSF Outflow	169	12	2025	December	0.077	0.15	4.3E-04	1.5E-03	0.79	62	0.27	0	0.053	0.010	98	0.016	0	634	14	0	3.6E-03	8.8E-04	4.7E-03	6.3E-03	4.6E-03	0.014
TSF Outflow	170	12	2026	January	0.078	0.15	4.3E-04	1.4E-03	0.82	62	0.26	0	0.053	0.010	98	0.016	0	649	14	0	3.5E-03	8.4E-04	4.7E-03	6.1E-03	4.5E-03	0.014
TSF Outflow	171	12	2026	Febraury	0.078	0.15	4.3E-04	1.4E-03	0.85	62	0.25	0	0.053	9.9E-03	98	0.016	0	663	15	0	3.4E-03	8.0E-04	4.8E-03	6.0E-03	4.5E-03	0.013
TSF Outflow	172	12	2026	March	0.079	0.15	4.3E-04	1.4E-03	0.87	62	0.24	0	0.053	9.8E-03	98	0.015	0	676	15	0	3.3E-03	7.7E-04	4.9E-03	5.8E-03	4.5E-03	0.013
TSF Outflow	173	12	2026	April	0.079	0.15	4.3E-04	1.3E-03	0.89	63	0.23	0	0.053	9.7E-03	97	0.015	0	689	16	0	3.2E-03	7.4E-04	5.0E-03	5.7E-03	4.5E-03	0.012
TSF Outflow	174	12	2026	May	0.039	0.15	4.3E-04	6.4E-04	0.45	31	0.11	0	0.026	4.7E-03	47	7.3E-03	0	341	7.8	0	1.5E-03	3.4E-04	2.5E-03	2.7E-03	2.2E-03	5.7E-03

Table C-2.14 - Tailings Storage Facility Outflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)			120	0.12					13		0.004 to 0.01		0.1		0.005				1.5	0.000012		0.001
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)							1								0.5							
	Model	Mine	Date		TDS	Total Alkalinity	Cl	F	Si	SO4	CN_Total	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca	Cr[3]
LOCATION	Month	Year	Year	Month	mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	mg/L	mg/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
TSF Outflow	175	12	2026	June	2.6E+03	17	997	0.19	0.033	641	0.50	50	1.8	0.11	1.2E-05	3.3E-04	2.2E-04	0.018	0.100	0.063	0	3.7E-05	0.15	1.0E-04	495	1.2E-04
TSF Outflow	176	12	2026	July	2.6E+03	17	998	0.22	0.033	656	0.50	25	1.8	0.12	1.2E-05	3.5E-04	2.2E-04	0.019	0.100	0.069	0	3.7E-05	0.16	1.3E-04	500	1.2E-04
TSF Outflow	177	12	2026	August	2.4E+03	17	943	0.22	0.032	627	0.50	20	1.8	0.13	1.2E-05	3.6E-04	2.2E-04	0.019	0.100	0.068	0	3.5E-05	0.15	1.3E-04	476	1.2E-04
TSF Outflow	178	12	2026	September	2.3E+03	17	891	0.20	0.030	585	0.50	35	1.7	0.13	1.2E-05	3.6E-04	2.2E-04	0.018	0.100	0.063	0	3.2E-05	0.14	1.2E-04	446	1.2E-04
TSF Outflow	179	12	2026	October	2.3E+03	17	911	0.20	0.031	586	0.50	35	1.8	0.12	1.2E-05	3.5E-04	2.2E-04	0.018	0.100	0.061	0	3.1E-05	0.14	1.1E-04	449	1.1E-04
TSF Outflow	180	13	2026	November	5.2E+03	17	2.0E+03	0.41	0.069	1.3E+03	0.50	70	3.9	0.26	1.2E-05	7.2E-04	2.2E-04	0.038	0.100	0.13	0	6.4E-05	0.31	2.4E-04	985	2.3E-04
TSF Outflow	181	13	2026	December	5.3E+03	17	2.1E+03	0.39	0.071	1.3E+03	0.50	70	3.9	0.25	1.2E-05	7.2E-04	2.2E-04	0.038	0.100	0.13	0	6.1E-05	0.32	2.3E-04	1.0E+03	2.4E-04
TSF Outflow	182	13	2027	January	5.4E+03	17	2.2E+03	0.38	0.074	1.3E+03	0.50	70	4.0	0.25	1.2E-05	7.2E-04	2.2E-04	0.037	0.100	0.12	0	5.8E-05	0.33	2.2E-04	1.0E+03	2.4E-04
TSF Outflow	183	13	2027	Febraury	5.5E+03	17	2.3E+03	0.37	0.076	1.3E+03	0.50	70	4.1	0.24	1.2E-05	7.2E-04	2.2E-04	0.037	0.100	0.12	0	5.6E-05	0.34	2.2E-04	1.0E+03	2.5E-04
TSF Outflow	184	13	2027	March	5.6E+03	17	2.3E+03	0.35	0.078	1.2E+03	0.50	70	4.1	0.23	1.2E-05	7.1E-04	2.2E-04	0.036	0.100	0.12	0	5.4E-05	0.35	2.1E-04	1.1E+03	2.5E-04
TSF Outflow	185	13	2027	April	5.6E+03	17	2.4E+03	0.34	0.081	1.2E+03	0.50	70	4.2	0.23	1.2E-05	7.1E-04	2.2E-04	0.036	0.100	0.12	0	5.1E-05	0.36	2.0E-04	1.1E+03	2.6E-04
TSF Outflow	186	13	2027	May	2.8E+03	17	1.2E+03	0.16	0.040	591	0.50	50	2.1	0.11	1.2E-05	3.5E-04	2.2E-04	0.017	0.100	0.055	0	2.4E-05	0.18	9.6E-05	537	1.3E-04
TSF Outflow	187	13	2027	June	2.3E+03	17	993	0.14	0.033	502	0.50	50	1.8	0.11	1.2E-05	3.4E-04	2.2E-04	0.015	0.100	0.047	0	1.9E-05	0.15	7.5E-05	446	1.3E-04
				MINIMUM	49	15	3.6	1.2E-05	0.030	1.0	3.8E-05	20	6.6E-03	0.065	1.2E-05	1.4E-04	2.2E-04	1.1E-05	2.2E-04	4.5E-03	0	3.3E-07	6.8E-04	7.2E-07	4.1	5.4E-05
				MAXIMUM	7.7E+03	17	3.4E+03	0.41	2.6	1.7E+03	0.50	70	5.2	1.0	1.2E-05	1.5E-03	2.2E-04	0.048	0.100	0.14	0	3.5E-04	0.48	2.5E-04	1.5E+03	1.7E-03
				AVERAGE	3.6E+03	17	1.4E+03	0.16	0.24	889	0.39	53	2.4	0.25	1.2E-05	5.2E-04	2.2E-04	0.024	0.078	0.067	0	1.0E-04	0.21	8.0E-05	663	2.4E-04
Post-Closure Water Quality (Years 13-14)																										
TSF Outflow	188	13	2027	July	6.0E+03	17	2.6E+03	0.36	0.087	1.3E+03	0.50	25	4.7	0.28	1.2E-05	9.0E-04	2.2E-04	0.040	0.100	0.12	0	5.1E-05	0.39	2.0E-04	1.2E+03	3.4E-04
TSF Outflow	189	13	2027	August	1.8E+03	17	758	0.11	0.025	386	0.50	20	1.4	0.083	1.2E-05	2.6E-04	2.2E-04	0.012	0.100	0.037	0	1.5E-05	0.11	5.7E-05	343	9.8E-05
TSF Outflow	190	13	2027	September	76	17	0	0.031	0	19	0	35	0.027	0	0	0	2.2E-04	2.3E-03	0.100	7.3E-03	0	2.7E-06	1.7E-03	1.1E-06	14	0
TSF Outflow	191	13	2027	October	93	17	0	0.043	0	26	0	35	0.093	0	0	0	2.2E-04	3.2E-03	0.100	0.010	0	3.7E-06	2.3E-03	1.5E-06	20	0
TSF Outflow	192	13	2027	November	4.6E+03	17	0	4.8	0	1.7E+03	0	70	10	0	0	0	2.2E-04	0.35	0.100	1.1	0	4.1E-04	0.26	1.7E-04	1.6E+03	0
TSF Outflow	193	13	2027	December	4.6E+03	17	0	4.8	0	1.7E+03	0	70	10	0	0	0	2.2E-04	0.35	0.100	1.1	0	4.1E-04	0.26	1.7E-04	1.6E+03	0
TSF Outflow	194	14	2028	January	4.6E+03	17	0	4.8	0	1.7E+03	0	70	10	0	0	0	2.2E-04	0.35	0.100	1.1	0	4.1E-04	0.26	1.7E-04	1.6E+03	0
TSF Outflow	195	14	2028	Febraury	4.6E+03	17	0	4.8	0	1.7E+03	0	70	10	0	0	0	2.2E-04	0.35	0.100	1.1	0	4.1E-04	0.26	1.7E-04	1.6E+03	0
TSF Outflow	196	14	2028	March	4.6E+03	17	0	4.8	0	1.7E+03	0	70	10	0	0	0	2.2E-04	0.35	0.100	1.1	0	4.1E-04	0.26	1.7E-04	1.6E+03	0
TSF Outflow	197	14	2028	April	4.6E+03	17	0	4.8	0	1.7E+03	0	70	10	0	0	0	2.2E-04	0.35	0.100	1.1	0	4.1E-04	0.26	1.7E-04	1.6E+03	0
TSF Outflow	198	14	2028	May	108	17	0	0.043	0	26	0	50	0.093	0	0	0	2.2E-04	3.2E-03	0.100	0.010	0	3.7E-06	2.3E-03	1.5E-06	20	0
TSF Outflow	199	14	2028	June	133	17	0	0.061	0	37	0	50	0.095	0	0	0	2.2E-04	4.6E-03	0.100	0.015	0	5.3E-06	3.4E-03	2.4E-06	29	0
				MINIMUM	76	17	758	0.031	0.025	19	0.50	20	0.027	0.083	1.2E-05	2.6E-04	2.2E-04	2.3E-03	0.100	7.3E-03	0	2.7E-06	1.7E-03	1.1E-06	14	9.8E-05
				MAXIMUM	6.0E+03	17	2.6E+03	4.8	0.087	1.7E+03	0.50	70	10	0.28	1.2E-05	9.0E-04	2.2E-04	0.35	0.100	1.1	0	4.1E-04	0.39	2.0E-04	1.6E+03	3.4E-04
				AVERAGE	3.0E+03	17	1.7E+03	2.4	0.056	990	0.50	53	5.7	0.18	1.2E-05	5.8E-04	2.2E-04	0.18	0.100	0.57	0	2.1E-04	0.17	1.1E-04	933	2.2E-04

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.14 - Tailings Storage Facility Outflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)		0.002	0.3	0.001				0.000026	0.073	0.038		0.001	0.0001			0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)		0.3	3	0.2						0.5												0.5
	Model	Mine	Date		Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Ag	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L
TSF Outflow	175	12	2026	June	0.033	0.15	4.3E-04	8.7E-04	0.37	32	0.13	0	0.025	4.9E-03	51	8.7E-03	0	286	6.5	0	1.9E-03	4.0E-04	2.3E-03	3.0E-03	2.1E-03	7.1E-03
TSF Outflow	176	12	2026	July	0.034	0.15	4.3E-04	9.2E-04	0.37	32	0.14	0	0.026	5.3E-03	52	8.7E-03	0	290	6.5	0	2.0E-03	5.2E-04	2.4E-03	3.4E-03	2.4E-03	7.8E-03
TSF Outflow	177	12	2026	August	0.032	0.15	4.3E-04	9.1E-04	0.35	31	0.14	0	0.025	5.2E-03	50	8.4E-03	0	276	6.2	0	1.9E-03	5.3E-04	2.3E-03	3.4E-03	2.4E-03	7.7E-03
TSF Outflow	178	12	2026	September	0.030	0.15	4.3E-04	8.6E-04	0.33	29	0.13	0	0.023	4.8E-03	47	7.9E-03	0	261	5.8	0	1.8E-03	4.9E-04	2.2E-03	3.1E-03	2.2E-03	7.2E-03
TSF Outflow	179	12	2026	October	0.031	0.15	4.3E-04	8.4E-04	0.34	29	0.13	0	0.024	4.7E-03	47	7.8E-03	0	268	6.0	0	1.7E-03	4.7E-04	2.2E-03	3.0E-03	2.2E-03	7.0E-03
TSF Outflow	180	13	2026	November	0.069	0.15	4.3E-04	1.8E-03	0.76	63	0.26	0	0.052	0.010	100	0.017	0	603	13	0	3.6E-03	9.7E-04	5.0E-03	6.2E-03	4.7E-03	0.014
TSF Outflow	181	13	2026	December	0.070	0.15	4.3E-04	1.7E-03	0.78	63	0.25	0	0.053	1.0E-02	100	0.016	0	618	14	0	3.4E-03	9.3E-04	5.1E-03	6.0E-03	4.6E-03	0.014
TSF Outflow	182	13	2027	January	0.071	0.15	4.3E-04	1.7E-03	0.81	63	0.24	0	0.053	9.8E-03	100	0.016	0	632	14	0	3.3E-03	8.9E-04	5.2E-03	5.9E-03	4.6E-03	0.013
TSF Outflow	183	13	2027	Febraury	0.072	0.15	4.3E-04	1.6E-03	0.84	63	0.23	0	0.053	9.7E-03	100	0.016	0	646	15	0	3.2E-03	8.5E-04	5.2E-03	5.7E-03	4.6E-03	0.013
TSF Outflow	184	13	2027	March	0.071	0.15	4.3E-04	1.6E-03	0.86	63	0.22	0	0.053	9.5E-03	100	0.015	0	656	15	0	3.1E-03	8.1E-04	5.2E-03	5.6E-03	4.5E-03	0.012
TSF Outflow	185	13	2027	April	0.071	0.15	4.3E-04	1.6E-03	0.88	63	0.21	0	0.052	9.3E-03	99	0.015	0	663	15	0	3.0E-03	7.8E-04	5.2E-03	5.4E-03	4.5E-03	0.012
TSF Outflow	186	13	2027	May	0.034	0.15	4.3E-04	7.4E-04	0.44	31	0.10	0	0.025	4.4E-03	48	7.1E-03	0	327	7.7	0	1.4E-03	3.7E-04	2.5E-03	2.6E-03	2.2E-03	5.7E-03
TSF Outflow	187	13	2027	June	0.027	0.15	4.3E-04	6.5E-04	0.37	26	0.095	0	0.020	3.7E-03	41	5.9E-03	0	264	6.4	0	1.3E-03	3.2E-04	2.0E-03	2.2E-03	2.0E-03	4.9E-03
				MINIMUM	3.4E-06	0.15	4.3E-04	2.7E-05	1.0E-03	0.44	4.4E-03	0	5.4E-05	2.0E-04	0.25	1.1E-04	0	0.58	0.017	0	3.2E-06	1.3E-06	2.9E-07	5.4E-06	4.3E-05	3.2E-04
				MAXIMUM	0.094	0.15	4.3E-04	1.8E-03	1.3	78	0.34	0	0.068	0.014	114	0.025	0	928	22	0	5.4E-03	9.7E-04	6.8E-03	7.7E-03	5.1E-03	0.015
				AVERAGE	0.052	0.15	4.3E-04	7.3E-04	0.53	34	0.13	0	0.031	6.3E-03	56	0.010	0	421	9.3	0	2.5E-03	4.4E-04	3.7E-03	3.0E-03	2.6E-03	5.9E-03
Post-Closure Water Quality (Years 13-14)																										
TSF Outflow	188	13	2027	July	0.072	0.15	4.3E-04	1.7E-03	0.96	70	0.25	0	0.054	9.6E-03	107	0.016	0	692	17	0	3.5E-03	8.4E-04	5.4E-03	5.8E-03	5.3E-03	0.013
TSF Outflow	189	13	2027	August	0.021	0.15	4.3E-04	5.2E-04	0.28	20	0.074	0	0.016	2.8E-03	32	4.7E-03	0	202	4.9	0	1.0E-03	2.5E-04	1.6E-03	1.7E-03	1.5E-03	3.8E-03
TSF Outflow	190	13	2027	September	5.5E-04	0.15	4.3E-04	1.4E-04	1.1E-03	1.8	4.9E-03	0	1.4E-03	2.5E-04	4.8	1.0E-03	0	1.6	0.046	0	1.2E-04	4.5E-05	9.0E-05	2.9E-04	6.6E-05	3.6E-04
TSF Outflow	191	13	2027	October	7.6E-04	0.15	4.3E-04	1.9E-04	1.5E-03	2.5	6.8E-03	0	1.9E-03	3.5E-04	6.7	1.4E-03	0	2.2	0.065	0	1.6E-04	6.3E-05	1.2E-04	4.0E-04	9.1E-05	4.9E-04
TSF Outflow	192	13	2027	November	0.084	0.15	4.3E-04	0.021	0.17	274	0.74	0	0.21	0.038	733	0.16	0	246	7.1	0	0.018	6.9E-03	0.014	0.044	0.010	0.054
TSF Outflow	193	13	2027	December	0.084	0.15	4.3E-04	0.021	0.17	274	0.74	0	0.21	0.038	733	0.16	0	246	7.1	0	0.018	6.9E-03	0.014	0.044	0.010	0.054
TSF Outflow	194	14	2028	January	0.084	0.15	4.3E-04	0.021	0.17	274	0.74	0	0.21	0.038	733	0.16	0	246	7.1	0	0.018	6.9E-03	0.014	0.044	0.010	0.054
TSF Outflow	195	14	2028	Febraury	0.084	0.15	4.3E-04	0.021	0.17	274	0.74	0	0.21	0.038	733	0.16	0	246	7.1	0	0.018	6.9E-03	0.014	0.044	0.010	0.054
TSF Outflow	196	14	2028	March	0.084	0.15	4.3E-04	0.021	0.17	274	0.74	0	0.21	0.038	733	0.16	0	246	7.1	0	0.018	6.9E-03	0.014	0.044	0.010	0.054
TSF Outflow	197	14	2028	April	0.084	0.15	4.3E-04	0.021	0.17	274	0.74	0	0.21	0.038	733	0.16	0	246	7.1	0	0.018	6.9E-03	0.014	0.044	0.010	0.054
TSF Outflow	198	14	2028	May	7.6E-04	0.15	4.3E-04	1.9E-04	1.5E-03	2.5	6.8E-03	0	1.9E-03	3.5E-04	6.7	1.4E-03	0	2.2	0.065	0	1.6E-04	6.3E-05	1.2E-04	4.0E-04	9.1E-05	4.9E-04
TSF Outflow	199	14	2028	June	1.1E-03	0.15	4.3E-04	2.7E-04	2.1E-03	3.6	0.010	0	2.8E-03	5.2E-04	9.5	2.0E-03	0	3.2	0.095	0	2.5E-04	9.6E-05	1.8E-04	5.8E-04	1.4E-04	7.2E-04
				MINIMUM	5.5E-04	0.15	4.3E-04	1.4E-04	1.1E-03	1.8	4.9E-03	0	1.4E-03	2.5E-04	4.8	1.0E-03	0	1.6	0.046	0	1.2E-04	4.5E-05	9.0E-05	2.9E-04	6.6E-05	3.6E-04
				MAXIMUM	0.084	0.15	4.3E-04	0.021	0.96	274	0.74	0	0.21	0.038	733	0.16	0	692	17	0	0.018	6.9E-03	0.014	0.044	0.010	0.054
				AVERAGE	0.050	0.15	4.3E-04	0.011	0.19	145	0.40	0	0.11	0.020	380	0.081	0	198	5.4	0	9.3E-03	3.6E-03	7.5E-03	0.023	5.6E-03	0.029

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.15 - Salt Plant Treated Outflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	6.5-9.0				120	0.12				13		0.004 to 0.01		0.1		0.005				1.5	0.000012	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)	6.0 - 9.5							1								0.5						
	Model	Mine	Date		pH	H+	TDS	Total Alkalinity	Cl	F	SO4	CN_Total	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca
LOCATION	Month	Year	Year	Month			mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	Total (mg/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
Pre-Development and Operations Water Quality (Years -2 to 13)																									
Salt Plant Treated Outflow	14	-2	2013	January	7.0	9.4E-07	1.5E+03	1.4	1.0E+03	6.2E-04	19	0	1.4	1.5	2.3E-03	2.8E-05	3.9E-06	3.3E-03	0	1.6E-06	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	15	-2	2013	Febraury	10	9.5E-10	1.5E+03	1.4	1.0E+03	6.2E-04	19	0	1.4	1.5	1.2E-03	1.4E-05	2.0E-06	3.3E-03	0	7.9E-07	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	16	-2	2013	March	10	7.5E-10	1.5E+03	1.3	1.0E+03	6.2E-04	19	0	1.4	1.5	7.8E-04	9.5E-06	1.3E-06	3.3E-03	0	5.3E-07	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	17	-2	2013	April	10	6.9E-10	1.5E+03	1.3	1.0E+03	6.2E-04	19	0	1.4	1.5	5.8E-04	7.1E-06	9.8E-07	3.3E-03	0	4.0E-07	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	18	-2	2013	May	10	6.5E-10	1.5E+03	1.3	1.0E+03	6.2E-04	19	0	1.4	1.5	4.7E-04	5.7E-06	7.9E-07	3.3E-03	0	3.2E-07	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	19	-2	2013	June	10	6.3E-10	1.5E+03	1.7	1.0E+03	6.2E-04	19	0	1.4	1.5	6.8E-03	8.3E-05	1.1E-05	3.4E-03	0	4.6E-06	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	20	-2	2013	July	9.8	1.7E-09	1.5E+03	1.7	1.0E+03	6.2E-04	19	0	1.4	1.5	6.3E-03	7.7E-05	1.1E-05	3.4E-03	0	4.3E-06	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	21	-2	2013	August	9.8	1.6E-09	1.5E+03	1.7	1.0E+03	6.2E-04	19	0	1.4	1.5	6.5E-03	8.0E-05	1.1E-05	3.4E-03	0	4.4E-06	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	22	-2	2013	September	9.8	1.7E-09	1.5E+03	1.7	1.0E+03	6.2E-04	19	0	1.4	1.5	6.3E-03	7.7E-05	1.1E-05	3.4E-03	0	4.3E-06	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	23	-2	2013	October	9.8	1.6E-09	1.5E+03	1.5	1.0E+03	6.2E-04	19	0	1.4	1.5	3.8E-03	4.7E-05	6.5E-06	3.4E-03	0	2.6E-06	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	24	-1	2013	November	9.9	1.2E-09	1.5E+03	1.4	1.0E+03	6.2E-04	19	0	1.4	1.5	1.5E-03	1.8E-05	2.5E-06	3.3E-03	0	9.9E-07	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	25	-1	2013	December	10	8.0E-10	1.5E+03	1.3	1.0E+03	6.2E-04	19	0	1.4	1.5	5.6E-04	6.9E-06	9.5E-07	3.3E-03	0	3.8E-07	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	26	-1	2014	January	10	6.5E-10	1.5E+03	1.3	1.0E+03	6.2E-04	19	0	1.4	1.5	2.3E-04	2.8E-06	3.8E-07	3.3E-03	0	1.5E-07	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	27	-1	2014	Febraury	10	5.9E-10	1.5E+03	1.3	1.0E+03	6.2E-04	19	0	1.4	1.5	9.3E-05	1.1E-06	1.6E-07	3.3E-03	0	6.3E-08	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	28	-1	2014	March	10	5.7E-10	1.5E+03	1.3	1.0E+03	6.2E-04	19	0	1.4	1.5	3.8E-05	4.7E-07	6.5E-08	3.3E-03	0	2.6E-08	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	29	-1	2014	April	10	5.6E-10	1.5E+03	1.3	1.0E+03	6.2E-04	19	0	1.4	1.5	1.6E-05	2.0E-07	2.7E-08	3.3E-03	0	1.1E-08	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	30	-1	2014	May	10	5.6E-10	1.5E+03	1.3	1.0E+03	6.2E-04	19	0	1.4	1.5	6.6E-06	8.1E-08	1.1E-08	3.3E-03	0	4.5E-09	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	31	-1	2014	June	10	5.5E-10	1.5E+03	2.5	1.0E+03	6.2E-04	19	0	1.4	1.5	0.020	2.4E-04	3.4E-05	3.4E-03	0	1.4E-05	2.0E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	32	-1	2014	July	9.4	4.0E-09	1.5E+03	2.0	1.0E+03	6.2E-04	19	0	1.4	1.5	0.011	1.4E-04	1.9E-05	3.4E-03	0	7.8E-06	1.9E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	33	-1	2014	August	9.6	2.5E-09	1.5E+03	1.8	1.0E+03	6.2E-04	19	0	1.4	1.5	8.7E-03	1.1E-04	1.5E-05	3.4E-03	0	5.9E-06	1.9E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	34	-1	2014	September	9.7	2.1E-09	1.5E+03	1.7	1.0E+03	6.2E-04	19	0	1.4	1.5	7.2E-03	8.8E-05	1.2E-05	3.4E-03	0	4.9E-06	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	35	-1	2014	October	9.8	1.8E-09	1.5E+03	1.5	1.0E+03	6.2E-04	19	0	1.4	1.5	4.0E-03	4.9E-05	6.8E-06	3.4E-03	0	2.7E-06	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	36	0	2014	November	9.9	1.2E-09	1.5E+03	1.4	1.0E+03	6.2E-04	19	0	1.4	1.5	1.5E-03	1.8E-05	2.5E-06	3.3E-03	0	1.0E-06	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	37	0	2014	December	10	8.1E-10	1.5E+03	1.3	1.0E+03	6.2E-04	19	0	1.4	1.5	5.7E-04	6.9E-06	9.6E-07	3.3E-03	0	3.8E-07	1.8E-03	0	0	0.13	0	386
Salt Plant Treated Outflow	38	0	2015	January	10	6.5E-10	1.5E+03	1.3	1.0E+03	6.0E-04	21	0	1.3	1.4	2.2E-04	2.7E-06	3.8E-07	3.8E-03	0	1.5E-07	1.7E-03	0	0	0.13	0	376
Salt Plant Treated Outflow	39	0	2015	Febraury	10	6.6E-10	1.5E+03	1.3	1.0E+03	6.0E-04	22	0	1.3	1.4	9.2E-05	1.1E-06	1.5E-07	3.9E-03	0	6.2E-08	1.7E-03	0	0	0.13	0	372
Salt Plant Treated Outflow	40	0	2015	March	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	3.8E-05	4.6E-07	6.4E-08	4.0E-03	0	2.6E-08	1.7E-03	0	0	0.13	0	371
Salt Plant Treated Outflow	41	0	2015	April	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	1.6E-05	1.9E-07	2.6E-08	4.0E-03	0	1.1E-08	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	42	0	2015	May	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	6.5E-06	8.0E-08	1.1E-08	4.1E-03	0	4.4E-09	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	43	0	2015	June	10	6.7E-10	1.5E+03	2.5	1.0E+03	5.9E-04	23	0	1.3	1.4	0.019	2.3E-04	3.2E-05	4.1E-03	0	1.3E-05	1.9E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	44	0	2015	July	9.4	4.0E-09	1.5E+03	2.0	1.0E+03	5.9E-04	23	0	1.3	1.4	0.011	1.3E-04	1.9E-05	4.1E-03	0	7.5E-06	1.8E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	45	0	2015	August	9.6	2.6E-09	1.5E+03	1.8	1.0E+03	5.9E-04	23	0	1.3	1.4	8.3E-03	1.0E-04	1.4E-05	4.1E-03	0	5.7E-06	1.8E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	46	0	2015	September	9.7	2.1E-09	1.5E+03	1.7	1.0E+03	5.9E-04	23	0	1.3	1.4	6.8E-03	8.4E-05	1.2E-05	4.1E-03	0	4.6E-06	1.8E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	47	0	2015	October	9.7	1.9E-09	1.5E+03	1.5	1.0E+03	5.9E-04	23	0	1.3	1.4	3.9E-03	4.7E-05	6.5E-06	4.1E-03	0	2.6E-06	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	48	1	2015	November	9.9	1.3E-09	1.5E+03	1.4	1.0E+03	5.9E-04	23	0	1.3	1.4	1.4E-03	1.7E-05	2.4E-06	4.1E-03	0	9.7E-07	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	49	1	2015	December	10	9.2E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	5.5E-04	6.7E-06	9.2E-07	4.1E-03	0	3.7E-07	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	50	1	2016	January	10	7.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	2.2E-04	2.7E-06	3.7E-07	4.1E-03	0	1.5E-07	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	51	1	2016	Febraury	10	7.1E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	9.0E-05	1.1E-06	1.5E-07	4.1E-03	0	6.1E-08	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	52	1	2016	March	10	6.9E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	3.7E-05	4.5E-07	6.3E-08	4.1E-03	0	2.5E-08	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	53	1	2016	April	10	6.8E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	1.5E-05	1.9E-07	2.6E-08	4.1E-03	0	1.0E-08	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	54	1	2016	May	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	6.4E-06	7.8E-08	1.1E-08	4.1E-03	0	4.3E-09	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	55	1	2016	June	10	6.7E-10	1.5E+03	2.5	1.0E+03	5.9E-04	23	0	1.3	1.4	0.019	2.3E-04	3.2E-05	4.1E-03	0	1.3E-05	1.9E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	56	1	2016	July	9.4	4.0E-09	1.5E+03	2.0	1.0E+03	5.9E-04	23	0	1.3	1.4	0.011	1.3E-04	1.9E-05	4.1E-03	0	7.5E-06	1.8E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	57	1	2016	August	9.6	2.6E-09	1.5E+03	1.8	1.0E+03	5.9E-04	23	0	1.3	1.4	8.3E-03	1.0E-04	1.4E-05	4.1E-03	0	5.7E-06	1.8E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	58	1	2016	September	9.7	2.1E-09	1.5E+03	1.7	1.0E+03	5.9E-04	23	0	1.3	1.4	6.8E-03	8.4E-05	1.2E-05	4.1E-03	0	4.6E-06	1.8E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	59	1	2016	October	9.7	1.9E-09	1.5E+03	1.5	1.0E+03	5.9E-04	23	0	1.3	1.4	3.9E-03	4.7E-05	6.5E-06	4.1E-03	0	2.6E-06	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	60	2	2016	November	9.9	1.3E-09	1.5E+03	1.4	1.0E+03	5.9E-04	23	0	1.3	1.4	1.4E-03	1.7E-05	2.4E-06	4.1E-03	0	9.7E-07	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	61	2	2016	December	10	9.2E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	5.5E-04	6.7E-06	9.2E-07	4.1E-03	0	3.7E-07	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	62	2	2017	January	10	7.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	2.2E-04	2.7E-06	3.7E-07	4.1E-03	0	1.5E-07	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	63	2	2017	Febraury	10	7.1E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	9.0E-05	1.1E-06	1.5E-07	4.1E-03	0	6.1E-08	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	64	2	2017	March	10	6.9E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	3.7E-05	4.5E-07	6.3E-08	4.1E-03	0	2.5E-08	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	65	2	2017	April	10	6.8E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	1.5E-05	1.9E-07	2.6E-08	4.1E-03	0	1.0E-08	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	66	2	2017	May	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	6.4E-06	7.8E-08	1.1E-08	4.1E-03	0	4.3E-09	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	67	2	2017	June	10	6.7E-10	1.5E+03	2.1	1.0E+03	5.9E-04	23	0	1.3	1.4	0.014	1.7E-04	2.3E-05	4.1E-03	0	9.2E-06	1.8E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	68	2	2017	July	9.5	3.0E-09	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	69	2	2017	August	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	70	2	2017	September	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	71	2	2017	October	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370

Table C-2.15 - Salt Plant Treated Outflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.001		0.002	0.3	0.001				0.000026	0.073	0.038		0.001			0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)			0.3	3.0	0.2						0.5											0.5
	Model	Mine	Date		Cr[3]	Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L	mg/L
Pre-Development and Operations Water Quality (Years -2 to 13)																									
Salt Plant Treated Outflow	**14**	**-2**	**2013**	**January**	0	0	1.1E-06	0.028	5.7E-07	0.39	12	3.7E-03	0	1.1E-06	1.1E-06	16	3.0E-06	100	6.6	0	0	0	0	0	1.1E-03	5.7E-06
Salt Plant Treated Outflow	**15**	**-2**	**2013**	**Febraury**	0	0	5.7E-07	0.028	2.9E-07	0.39	12	3.7E-03	0	5.7E-07	5.7E-07	16	1.5E-06	100	6.6	0	0	0	0	0	1.1E-03	2.9E-06
Salt Plant Treated Outflow	**16**	**-2**	**2013**	**March**	0	0	3.8E-07	0.028	1.9E-07	0.39	12	3.7E-03	0	3.8E-07	3.8E-07	16	1.0E-06	100	6.6	0	0	0	0	0	1.1E-03	1.9E-06
Salt Plant Treated Outflow	**17**	**-2**	**2013**	**April**	0	0	2.9E-07	0.028	1.4E-07	0.39	12	3.7E-03	0	2.9E-07	2.9E-07	16	7.5E-07	100	6.6	0	0	0	0	0	1.1E-03	1.4E-06
Salt Plant Treated Outflow	**18**	**-2**	**2013**	**May**	0	0	2.3E-07	0.028	1.1E-07	0.39	12	3.7E-03	0	2.3E-07	2.3E-07	16	6.0E-07	100	6.6	0	0	0	0	0	1.1E-03	1.1E-06
Salt Plant Treated Outflow	**19**	**-2**	**2013**	**June**	0	0	3.3E-06	0.028	1.7E-06	0.39	12	3.7E-03	0	3.3E-06	3.3E-06	16	8.7E-06	100	6.6	0	0	0	0	0	1.1E-03	1.7E-05
Salt Plant Treated Outflow	**20**	**-2**	**2013**	**July**	0	0	3.1E-06	0.028	1.5E-06	0.39	12	3.7E-03	0	3.1E-06	3.1E-06	16	8.1E-06	100	6.6	0	0	0	0	0	1.1E-03	1.5E-05
Salt Plant Treated Outflow	**21**	**-2**	**2013**	**August**	0	0	3.2E-06	0.028	1.6E-06	0.39	12	3.7E-03	0	3.2E-06	3.2E-06	16	8.4E-06	100	6.6	0	0	0	0	0	1.1E-03	1.6E-05
Salt Plant Treated Outflow	**22**	**-2**	**2013**	**September**	0	0	3.1E-06	0.028	1.6E-06	0.39	12	3.7E-03	0	3.1E-06	3.1E-06	16	8.1E-06	100	6.6	0	0	0	0	0	1.1E-03	1.6E-05
Salt Plant Treated Outflow	**23**	**-2**	**2013**	**October**	0	0	1.9E-06	0.028	9.4E-07	0.39	12	3.7E-03	0	1.9E-06	1.9E-06	16	4.9E-06	100	6.6	0	0	0	0	0	1.1E-03	9.4E-06
Salt Plant Treated Outflow	**24**	**-1**	**2013**	**November**	0	0	7.2E-07	0.028	3.6E-07	0.39	12	3.7E-03	0	7.2E-07	7.2E-07	16	1.9E-06	100	6.6	0	0	0	0	0	1.1E-03	3.6E-06
Salt Plant Treated Outflow	**25**	**-1**	**2013**	**December**	0	0	2.8E-07	0.028	1.4E-07	0.39	12	3.7E-03	0	2.8E-07	2.8E-07	16	7.2E-07	100	6.6	0	0	0	0	0	1.1E-03	1.4E-06
Salt Plant Treated Outflow	**26**	**-1**	**2014**	**January**	0	0	1.1E-07	0.028	5.6E-08	0.39	12	3.7E-03	0	1.1E-07	1.1E-07	16	2.9E-07	100	6.6	0	0	0	0	0	1.1E-03	5.6E-07
Salt Plant Treated Outflow	**27**	**-1**	**2014**	**Febraury**	0	0	4.6E-08	0.028	2.3E-08	0.39	12	3.7E-03	0	4.6E-08	4.6E-08	16	1.2E-07	100	6.6	0	0	0	0	0	1.1E-03	2.3E-07
Salt Plant Treated Outflow	**28**	**-1**	**2014**	**March**	0	0	1.9E-08	0.028	9.5E-09	0.39	12	3.7E-03	0	1.9E-08	1.9E-08	16	4.9E-08	100	6.6	0	0	0	0	0	1.1E-03	9.5E-08
Salt Plant Treated Outflow	**29**	**-1**	**2014**	**April**	0	0	7.9E-09	0.028	3.9E-09	0.39	12	3.7E-03	0	7.9E-09	7.9E-09	16	2.0E-08	100	6.6	0	0	0	0	0	1.1E-03	3.9E-08
Salt Plant Treated Outflow	**30**	**-1**	**2014**	**May**	0	0	3.3E-09	0.028	1.6E-09	0.39	12	3.7E-03	0	3.3E-09	3.3E-09	16	8.5E-09	100	6.6	0	0	0	0	0	1.1E-03	1.6E-08
Salt Plant Treated Outflow	**31**	**-1**	**2014**	**June**	0	0	9.8E-06	0.028	4.9E-06	0.39	12	3.8E-03	0	9.8E-06	9.8E-06	16	2.6E-05	100	6.6	0	0	0	0	0	1.1E-03	4.9E-05
Salt Plant Treated Outflow	**32**	**-1**	**2014**	**July**	0	0	5.6E-06	0.028	2.8E-06	0.39	12	3.7E-03	0	5.6E-06	5.6E-06	16	1.5E-05	100	6.6	0	0	0	0	0	1.1E-03	2.8E-05
Salt Plant Treated Outflow	**33**	**-1**	**2014**	**August**	0	0	4.3E-06	0.028	2.1E-06	0.39	12	3.7E-03	0	4.3E-06	4.3E-06	16	1.1E-05	100	6.6	0	0	0	0	0	1.1E-03	2.1E-05
Salt Plant Treated Outflow	**34**	**-1**	**2014**	**September**	0	0	3.5E-06	0.028	1.8E-06	0.39	12	3.7E-03	0	3.5E-06	3.5E-06	16	9.2E-06	100	6.6	0	0	0	0	0	1.1E-03	1.8E-05
Salt Plant Treated Outflow	**35**	**-1**	**2014**	**October**	0	0	2.0E-06	0.028	9.9E-07	0.39	12	3.7E-03	0	2.0E-06	2.0E-06	16	5.2E-06	100	6.6	0	0	0	0	0	1.1E-03	9.9E-06
Salt Plant Treated Outflow	**36**	**0**	**2014**	**November**	0	0	7.3E-07	0.028	3.7E-07	0.39	12	3.7E-03	0	7.3E-07	7.3E-07	16	1.9E-06	100	6.6	0	0	0	0	0	1.1E-03	3.7E-06
Salt Plant Treated Outflow	**37**	**0**	**2014**	**December**	0	0	2.8E-07	0.028	1.4E-07	0.39	12	3.7E-03	0	2.8E-07	2.8E-07	16	7.3E-07	100	6.6	0	0	0	0	0	1.1E-03	1.4E-06
Salt Plant Treated Outflow	**38**	**0**	**2015**	**January**	0	0	1.1E-07	0.031	5.5E-08	0.38	14	4.2E-03	0	1.1E-07	1.1E-07	16	2.9E-07	112	6.5	0	0	0	0	0	1.0E-03	5.5E-07
Salt Plant Treated Outflow	**39**	**0**	**2015**	**Febraury**	0	0	4.5E-08	0.033	2.3E-08	0.38	14	4.4E-03	0	4.5E-08	4.5E-08	16	1.2E-07	116	6.4	0	0	0	0	0	1.0E-03	2.3E-07
Salt Plant Treated Outflow	**40**	**0**	**2015**	**March**	0	0	1.9E-08	0.033	9.3E-09	0.38	14	4.4E-03	0	1.9E-08	1.9E-08	16	4.9E-08	118	6.4	0	0	0	0	0	1.0E-03	9.3E-08
Salt Plant Treated Outflow	**41**	**0**	**2015**	**April**	0	0	7.7E-09	0.033	3.9E-09	0.38	14	4.5E-03	0	7.7E-09	7.7E-09	16	2.0E-08	119	6.4	0	0	0	0	0	1.0E-03	3.9E-08
Salt Plant Treated Outflow	**42**	**0**	**2015**	**May**	0	0	3.2E-09	0.034	1.6E-09	0.37	14	4.5E-03	0	3.2E-09	3.2E-09	16	8.4E-09	119	6.4	0	0	0	0	0	1.0E-03	1.6E-08
Salt Plant Treated Outflow	**43**	**0**	**2015**	**June**	0	0	9.4E-06	0.034	4.7E-06	0.37	15	4.6E-03	0	9.4E-06	9.4E-06	16	2.4E-05	119	6.4	0	0	0	0	0	1.0E-03	4.7E-05
Salt Plant Treated Outflow	**44**	**0**	**2015**	**July**	0	0	5.4E-06	0.034	2.7E-06	0.37	15	4.5E-03	0	5.4E-06	5.4E-06	16	1.4E-05	119	6.4	0	0	0	0	0	1.0E-03	2.7E-05
Salt Plant Treated Outflow	**45**	**0**	**2015**	**August**	0	0	4.1E-06	0.034	2.0E-06	0.37	15	4.5E-03	0	4.1E-06	4.1E-06	16	1.1E-05	119	6.4	0	0	0	0	0	1.0E-03	2.0E-05
Salt Plant Treated Outflow	**46**	**0**	**2015**	**September**	0	0	3.4E-06	0.034	1.7E-06	0.37	15	4.5E-03	0	3.4E-06	3.4E-06	16	8.8E-06	119	6.4	0	0	0	0	0	1.0E-03	1.7E-05
Salt Plant Treated Outflow	**47**	**0**	**2015**	**October**	0	0	1.9E-06	0.034	9.5E-07	0.37	15	4.5E-03	0	1.9E-06	1.9E-06	16	4.9E-06	119	6.4	0	0	0	0	0	1.0E-03	9.5E-06
Salt Plant Treated Outflow	**48**	**1**	**2015**	**November**	0	0	7.0E-07	0.034	3.5E-07	0.37	15	4.5E-03	0	7.0E-07	7.0E-07	16	1.8E-06	119	6.4	0	0	0	0	0	1.0E-03	3.5E-06
Salt Plant Treated Outflow	**49**	**1**	**2015**	**December**	0	0	2.7E-07	0.034	1.3E-07	0.37	15	4.5E-03	0	2.7E-07	2.7E-07	16	7.0E-07	119	6.4	0	0	0	0	0	1.0E-03	1.3E-06
Salt Plant Treated Outflow	**50**	**1**	**2016**	**January**	0	0	1.1E-07	0.034	5.4E-08	0.37	15	4.5E-03	0	1.1E-07	1.1E-07	16	2.8E-07	119	6.4	0	0	0	0	0	1.0E-03	5.4E-07
Salt Plant Treated Outflow	**51**	**1**	**2016**	**Febraury**	0	0	4.4E-08	0.034	2.2E-08	0.37	15	4.5E-03	0	4.4E-08	4.4E-08	16	1.2E-07	119	6.4	0	0	0	0	0	1.0E-03	2.2E-07
Salt Plant Treated Outflow	**52**	**1**	**2016**	**March**	0	0	1.8E-08	0.034	9.1E-09	0.37	15	4.5E-03	0	1.8E-08	1.8E-08	16	4.8E-08	119	6.4	0	0	0	0	0	1.0E-03	9.1E-08
Salt Plant Treated Outflow	**53**	**1**	**2016**	**April**	0	0	7.6E-09	0.034	3.8E-09	0.37	15	4.5E-03	0	7.6E-09	7.6E-09	16	2.0E-08	119	6.4	0	0	0	0	0	1.0E-03	3.8E-08
Salt Plant Treated Outflow	**54**	**1**	**2016**	**May**	0	0	3.1E-09	0.034	1.6E-09	0.37	15	4.5E-03	0	3.1E-09	3.1E-09	16	8.2E-09	119	6.4	0	0	0	0	0	1.0E-03	1.6E-08
Salt Plant Treated Outflow	**55**	**1**	**2016**	**June**	0	0	9.4E-06	0.034	4.7E-06	0.37	15	4.6E-03	0	9.4E-06	9.4E-06	16	2.4E-05	119	6.4	0	0	0	0	0	1.0E-03	4.7E-05
Salt Plant Treated Outflow	**56**	**1**	**2016**	**July**	0	0	5.4E-06	0.034	2.7E-06	0.37	15	4.5E-03	0	5.4E-06	5.4E-06	16	1.4E-05	119	6.4	0	0	0	0	0	1.0E-03	2.7E-05
Salt Plant Treated Outflow	**57**	**1**	**2016**	**August**	0	0	4.1E-06	0.034	2.0E-06	0.37	15	4.5E-03	0	4.1E-06	4.1E-06	16	1.1E-05	119	6.4	0	0	0	0	0	1.0E-03	2.0E-05
Salt Plant Treated Outflow	**58**	**1**	**2016**	**September**	0	0	3.4E-06	0.034	1.7E-06	0.37	15	4.5E-03	0	3.4E-06	3.4E-06	16	8.8E-06	119	6.4	0	0	0	0	0	1.0E-03	1.7E-05
Salt Plant Treated Outflow	**59**	**1**	**2016**	**October**	0	0	1.9E-06	0.034	9.5E-07	0.37	15	4.5E-03	0	1.9E-06	1.9E-06	16	4.9E-06	119	6.4	0	0	0	0	0	1.0E-03	9.5E-06
Salt Plant Treated Outflow	**60**	**2**	**2016**	**November**	0	0	7.0E-07	0.034	3.5E-07	0.37	15	4.5E-03	0	7.0E-07	7.0E-07	16	1.8E-06	119	6.4	0	0	0	0	0	1.0E-03	3.5E-06
Salt Plant Treated Outflow	**61**	**2**	**2016**	**December**	0	0	2.7E-07	0.034	1.3E-07	0.37	15	4.5E-03	0	2.7E-07	2.7E-07	16	7.0E-07	119	6.4	0	0	0	0	0	1.0E-03	1.3E-06
Salt Plant Treated Outflow	**62**	**2**	**2017**	**January**	0	0	1.1E-07	0.034	5.4E-08	0.37	15	4.5E-03	0	1.1E-07	1.1E-07	16	2.8E-07	119	6.4	0	0	0	0	0	1.0E-03	5.4E-07
Salt Plant Treated Outflow	**63**	**2**	**2017**	**Febraury**	0	0	4.4E-08	0.034	2.2E-08	0.37	15	4.5E-03	0	4.4E-08	4.4E-08	16	1.2E-07	119	6.4	0	0	0	0	0	1.0E-03	2.2E-07
Salt Plant Treated Outflow	**64**	**2**	**2017**	**March**	0	0	1.8E-08	0.034	9.1E-09	0.37	15	4.5E-03	0	1.8E-08	1.8E-08	16	4.8E-08	119	6.4	0	0	0	0	0	1.0E-03	9.1E-08
Salt Plant Treated Outflow	**65**	**2**	**2017**	**April**	0	0	7.6E-09	0.034	3.8E-09	0.37	15	4.5E-03	0	7.6E-09	7.6E-09	16	2.0E-08	119	6.4	0	0	0	0	0	1.0E-03	3.8E-08
Salt Plant Treated Outflow	**66**	**2**	**2017**	**May**	0	0	3.1E-09	0.034	1.6E-09	0.37	15	4.5E-03	0	3.1E-09	3.1E-09	16	8.2E-09	119	6.4	0	0	0	0	0	1.0E-03	1.6E-08
Salt Plant Treated Outflow	**67**	**2**	**2017**	**June**	0	0	6.7E-06	0.034	3.3E-06	0.37	15	4.6E-03	0	6.7E-06	6.7E-06	16	1.7E-05	119	6.4	0	0	0	0	0	1.0E-03	3.3E-05
Salt Plant Treated Outflow	**68**	**2**	**2017**	**July**	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	**69**	**2**	**2017**	**August**	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	**70**	**2**	**2017**	**September**	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	**71**	**2**	**2017**	**October**	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0

Table C-2.15 - Salt Plant Treated Outflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	6.5-9.0				120	0.12				13		0.004 to 0.01		0.1		0.005				1.5	0.000012	
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)					6.0 - 9.5							1								0.5						
	Model	Mine	Date		pH	H+	TDS	Total Alkalinity	Cl	F	SO4	CN_Total	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca
LOCATION	Month	Year	Year	Month			mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	Total (mg/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
Salt Plant Treated Outflow	72	3	2017	November	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	73	3	2017	December	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	74	3	2018	January	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	75	3	2018	Febraury	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	76	3	2018	March	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	77	3	2018	April	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	78	3	2018	May	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	79	3	2018	June	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	80	3	2018	July	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	81	3	2018	August	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	82	3	2018	September	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	83	3	2018	October	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	84	4	2018	November	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	85	4	2018	December	10	6.7E-10	1.5E+03	1.3	1.0E+03	5.9E-04	23	0	1.3	1.4	0	0	0	4.1E-03	0	0	1.7E-03	0	0	0.13	0	370
Salt Plant Treated Outflow	86	4	2019	January	10	6.7E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	87	4	2019	Febraury	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	88	4	2019	March	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	89	4	2019	April	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	90	4	2019	May	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	91	4	2019	June	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	92	4	2019	July	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	93	4	2019	August	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	94	4	2019	September	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	95	4	2019	October	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	96	5	2019	November	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	97	5	2019	December	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	98	5	2020	January	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	99	5	2020	Febraury	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	100	5	2020	March	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	101	5	2020	April	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	102	5	2020	May	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	103	5	2020	June	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	104	5	2020	July	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	105	5	2020	August	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	106	5	2020	September	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	107	5	2020	October	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	108	6	2020	November	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	109	6	2020	December	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	110	6	2021	January	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	111	6	2021	Febraury	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	112	6	2021	March	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	113	6	2021	April	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	114	6	2021	May	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	115	6	2021	June	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	116	6	2021	July	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	117	6	2021	August	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	118	6	2021	September	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	119	6	2021	October	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	120	7	2021	November	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	121	7	2021	December	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	122	7	2022	January	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	123	7	2022	Febraury	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	124	7	2022	March	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	125	7	2022	April	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	126	7	2022	May	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	127	7	2022	June	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	128	7	2022	July	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	129	7	2022	August	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	130	7	2022	September	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	131	7	2022	October	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357

Table C-2.15 - Salt Plant Treated Outflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	0.001		0.002	0.3	0.001				0.000026	0.073	0.038		0.001			0.0008				0.015		0.03
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)			0.3	3.0	0.2						0.5											0.5
	Model	Mine	Date		Cr[3]	Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
LOCATION	Month	Year	Year	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	mg/L	mg/L	mg/L	mg/L
Salt Plant Treated Outflow	72	3	2017	November	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	73	3	2017	December	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	74	3	2018	January	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	75	3	2018	Febraury	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	76	3	2018	March	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	77	3	2018	April	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	78	3	2018	May	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	79	3	2018	June	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	80	3	2018	July	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	81	3	2018	August	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	82	3	2018	September	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	83	3	2018	October	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	84	4	2018	November	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	85	4	2018	December	0	0	0	0.034	0	0.37	15	4.5E-03	0	0	0	16	0	119	6.4	0	0	0	0	0	1.0E-03	0
Salt Plant Treated Outflow	86	4	2019	January	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	87	4	2019	Febraury	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	88	4	2019	March	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	89	4	2019	April	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	90	4	2019	May	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	91	4	2019	June	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	92	4	2019	July	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	93	4	2019	August	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	94	4	2019	September	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	95	4	2019	October	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	96	5	2019	November	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	97	5	2019	December	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	98	5	2020	January	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	99	5	2020	Febraury	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	100	5	2020	March	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	101	5	2020	April	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	102	5	2020	May	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	103	5	2020	June	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	104	5	2020	July	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	105	5	2020	August	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	106	5	2020	September	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	107	5	2020	October	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	108	6	2020	November	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	109	6	2020	December	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	110	6	2021	January	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	111	6	2021	Febraury	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	112	6	2021	March	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	113	6	2021	April	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	114	6	2021	May	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	115	6	2021	June	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	116	6	2021	July	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	117	6	2021	August	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	118	6	2021	September	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	119	6	2021	October	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	120	7	2021	November	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	121	7	2021	December	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	122	7	2022	January	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	123	7	2022	Febraury	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	124	7	2022	March	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	125	7	2022	April	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	126	7	2022	May	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	127	7	2022	June	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	128	7	2022	July	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	129	7	2022	August	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	130	7	2022	September	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	131	7	2022	October	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0

Table C-2.15 - Salt Plant Treated Outflow
Water Quality Prediction
Meliadine Gold Project

				CCME aquatic life (long-term)[1] (mg/L)	6.5-9.0				120	0.12				13		0.004 to 0.01		0.1		0.005				1.5	0.000012	
				Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)	6.0 - 9.5							1								0.5						
	Model	Mine	Date		pH	H+	TDS	Total Alkalinity	Cl	F	SO4	CN_Total	NH4 (as N)	NO3	TKN	P_dissolved[6]	PO4	Al[5]	Sb	As	Ba	Be	Bi	B	Cd[4]	Ca
LOCATION	Month	Year	Year	Month			mg/L	mg/L as CaCO3	mg/L	mg/L	mg/L	Total (mg/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
Salt Plant Treated Outflow	132	8	2022	November	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	133	8	2022	December	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	134	8	2023	January	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	135	8	2023	Febraury	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	136	8	2023	March	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	137	8	2023	April	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	138	8	2023	May	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	139	8	2023	June	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	140	8	2023	July	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	141	8	2023	August	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	142	8	2023	September	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	143	8	2023	October	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	144	9	2023	November	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	145	9	2023	December	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	146	9	2024	January	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	147	9	2024	Febraury	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	148	9	2024	March	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	149	9	2024	April	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	150	9	2024	May	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	151	9	2024	June	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	152	9	2024	July	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	153	9	2024	August	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	154	9	2024	September	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	155	9	2024	October	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	156	10	2024	November	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	157	10	2024	December	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	158	10	2025	January	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	159	10	2025	Febraury	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	160	10	2025	March	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	161	10	2025	April	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	162	10	2025	May	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	163	10	2025	June	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	164	10	2025	July	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	165	10	2025	August	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	166	10	2025	September	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	167	10	2025	October	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	168	11	2025	November	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	169	11	2025	December	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	170	11	2026	January	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	171	11	2026	Febraury	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	172	11	2026	March	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	173	11	2026	April	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	174	11	2026	May	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	175	11	2026	June	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	176	11	2026	July	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	177	11	2026	August	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	178	11	2026	September	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	179	11	2026	October	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	180	12	2026	November	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	181	12	2026	December	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	182	12	2027	January	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	183	12	2027	Febraury	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	184	12	2027	March	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	185	12	2027	April	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	186	12	2027	May	10	7.6E-10	1.6E+03	1.3	1.0E+03	5.7E-04	26	0	1.3	1.4	0	0	0	4.6E-03	0	0	1.6E-03	0	0	0.13	0	357
Salt Plant Treated Outflow	187	12	2027	June	9.9	1.2E-09	1.6E+03	1.3	999	7.7E-04	27	4.7E-04	1.3	1.4	3.3E-04	2.7E-06	6.9E-07	4.6E-03	1.8E-05	1.0E-04	1.7E-03	0	3.4E-08	0.13	1.2E-07	357
				MINIMUM	7.0	5.5E-10	1.5E+03	1.3	999	5.7E-04	19	4.7E-04	1.3	1.4	6.4E-06	7.8E-08	1.1E-08	3.3E-03	1.8E-05	4.3E-09	1.6E-03	0	3.4E-08	0.13	1.2E-07	357
				MAXIMUM	10	9.4E-07	1.6E+03	2.5	1.0E+03	7.7E-04	27	4.7E-04	1.4	1.5	0.020	2.4E-04	3.4E-05	4.6E-03	1.8E-05	1.0E-04	2.0E-03	0	3.4E-08	0.13	1.2E-07	386
				AVERAGE	9.7	1.6E-08	1.5E+03	1.4	1000	5.8E-04	24	4.7E-04	1.3	1.4	3.8E-03	4.6E-05	6.4E-06	4.3E-03	1.8E-05	4.4E-06	1.7E-03	0	3.4E-08	0.13	1.2E-07	364

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

Table C-2.15 - Salt Plant Treated Outflow
Water Quality Prediction
Meliadine Gold Project

CCME aquatic life (long-term)[1] (mg/L)					0.001		0.002	0.3	0.001				0.000026	0.073	0.038		0.001			0.0008				0.015		0.03
Metal Mine Effluent Regulation (MMER) monthly mean concentration[2] (mg/L)							0.3	3.0	0.2						0.5											0.5
LOCATION	Model	Mine	Date		Cr[3]	Co	Cu[4]	Fe	Pb[4]	Li	Mg	Mn	Hg	Mo	Ni[4]	K	Se	Na	Sr	Tl	Sn	Ti	W	U	V	Zn
	Month	Year		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	mg/L	mg/L	mg/L	mg/L
Salt Plant Treated Outflow	132	8	2022	November	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	133	8	2022	December	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	134	8	2023	January	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	135	8	2023	Febraury	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	136	8	2023	March	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	137	8	2023	April	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	138	8	2023	May	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	139	8	2023	June	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	140	8	2023	July	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	141	8	2023	August	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	142	8	2023	September	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	143	8	2023	October	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	144	9	2023	November	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	145	9	2023	December	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	146	9	2024	January	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	147	9	2024	Febraury	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	148	9	2024	March	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	149	9	2024	April	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	150	9	2024	May	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	151	9	2024	June	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	152	9	2024	July	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	153	9	2024	August	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	154	9	2024	September	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	155	9	2024	October	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	156	10	2024	November	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	157	10	2024	December	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	158	10	2025	January	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	159	10	2025	Febraury	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	160	10	2025	March	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	161	10	2025	April	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	162	10	2025	May	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	163	10	2025	June	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	164	10	2025	July	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	165	10	2025	August	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	166	10	2025	September	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	167	10	2025	October	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	168	11	2025	November	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	169	11	2025	December	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	170	11	2026	January	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	171	11	2026	Febraury	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	172	11	2026	March	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	173	11	2026	April	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	174	11	2026	May	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	175	11	2026	June	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	176	11	2026	July	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	177	11	2026	August	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	178	11	2026	September	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	179	11	2026	October	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	180	12	2026	November	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	181	12	2026	December	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	182	12	2027	January	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	183	12	2027	Febraury	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	184	12	2027	March	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	185	12	2027	April	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	186	12	2027	May	0	0	0	0.038	0	0.36	17	5.1E-03	0	0	0	16	0	134	6.2	0	0	0	0	0	9.8E-04	0
Salt Plant Treated Outflow	187	12	2027	June	1.1E-07	3.2E-05	1.4E-04	0.038	9.3E-07	0.36	16	5.3E-03	0	2.4E-05	5.2E-06	16	8.5E-06	134	6.2	0	2.0E-06	5.2E-07	2.2E-06	3.3E-06	9.8E-04	8.0E-06
				MINIMUM	1.1E-07	3.2E-05	3.1E-09	0.028	1.6E-09	0.36	12	3.7E-03	0	3.1E-09	3.1E-09	16	8.2E-09	100	6.2	0	2.0E-06	5.2E-07	2.2E-06	3.3E-06	9.8E-04	1.6E-08
				MAXIMUM	1.1E-07	3.2E-05	1.4E-04	0.038	4.9E-06	0.39	17	5.3E-03	0	2.4E-05	9.8E-06	16	2.6E-05	134	6.6	0	2.0E-06	5.2E-07	2.2E-06	3.3E-06	1.1E-03	4.9E-05
				AVERAGE	1.1E-07	3.2E-05	4.4E-06	0.035	9.4E-07	0.37	15	4.8E-03	0	2.3E-06	2.0E-06	16	5.0E-06	125	6.3	0	2.0E-06	5.2E-07	2.2E-06	3.3E-06	1.0E-03	9.4E-06

Notes:

[1] CEQG (2002) freshwater guidelines. Exceedances to freshwater CEQG's shown in bold type for comparison purposes only

[2] MMER 2006 update. Maximum authorized monthly mean concentration. Exceedances of MMER's shown as shaded cells

[3] 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.

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

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

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

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