7 EFFECTS OF THE ENVIRONMENT ON THE BEAVER DAM MINE PROJECT

7.1 Introduction

7.1.1 Summary of Effects of the Environment on the Beaver Dam Mine Project Before the Updates

Section 7 described the effects of the environment on the Project that includes how local conditions, natural hazards, climate change and external events could affect the Project.

The Beaver Dam Mine Site infrastructure are designed to accommodate the conditions imposed by the natural environment and to accommodate the effects of external events on the Project, as much as possible. Climate change is not anticipated to have a significant effect on the Project, based on the relatively short duration of the Project.

There are no significant adverse environmental effects anticipated due to the changing environmental conditions. Potential effects of the environment on the Project will be reduced as much as practicable through proper design and planning and mitigation measures. Extreme weather events cannot be predicted, but through proper design and planning the majority of the effects of these events on the Project may be minimized.

7.1.2 Summary of Updates to Effects of the Environment on the Beaver Dam Mine Project

The effects of the environment on the Project has been updated to reflect updates of the Project Description (Section 2) and to address Round 2, Information Requests (IR2) issued by the Impact Assessment Agency of Canada (IAAC, formerly the Canadian Environmental Assessment Agency [CEAA 2019]) and Nova Scotia Environment (NSE 2019). This includes:

- Update of the data set that was used for the precipitation and temperature profiles at Middle Musquodoboit Station.
- Updated the climate data set to include lake evaporation climate normals (1981–2010) which were taken from the Truro climate station.
- Effects of the environment, specifically climate change, was considered in the design of settling ponds and ditches that were designed as a result of the update of the Project Description.

The changing environment is not an assessment endpoint in themselves but rather an assessment of how these conditions have been considered in project design, predictive modelling, mitigation, monitoring and management plans.

An outline of updates to the effects of the environment on the Beaver Dam Mine Project are summarized in Table 7.1-1.

Table 7.1-1: Updated Subsections from the 2019 Revised Environmental Impact Statement – Effects of the Environment on the Beaver Dam Mine Project

2019 Revised EIS Submission (February 28, 2019)	Updated in 2021	Corresponding 2021 EIS Update Section Number	Reason for Update
-	-	7.1 Introduction	• New
7.1 Environmental Considerations	No	7.2 Environmental Considerations	• N/A
7.1.1 Climate	Yes	7.2.1 Climate	• Updated to reflect changes in data set. Lake evaporation climate normal data (1981 – 2010) was used in the assessment which was taken from the Truro climate station (ID#8205990). • Temperature and Precipitation subsections and tables updated to reflect changes in data set.
7.1.2 Extreme Weather	Yes	7.2.2 Extreme Weather	• Flood and Drought Conditions and Extreme Temperatures, Storms, and Wind subsections updated to reflect changes in data set.
7.1.3 Climate Change	Yes	7.2.3 Climate Change	• Regional Future Projections subsection Updated to reflect changes in data set. • Climate Change Mitigation and Adaptation subsection updated to reflect contingency to water management facility and collection ponds designs.
7.1.4 Slope Stability	Yes	7.2.4 Slope Stability	• Updated to reflect information from the geotechnical stability of permanent and temporary stockpiles undertaken by Golder (Appendix A.2a).
7.1.5 Seismic Events	Yes	7.2.5 Seismic Events	• Updated to reflect information from the geotechnical stability of permanent and temporary stockpiles undertaken by Golder (Appendix A.2a).
7.2 Mitigations	No	7.3 Mitigation	• Updated to include monitoring to be conducted during construction, operations, and active closure of engineered structures.
7.3 Residual Effects	Yes	Section removed	• N/A
-	-	7.4 Summary	• New

7.2 Environmental Considerations

The changing environment is not an assessment endpoint in themselves but rather an assessment of how these conditions have been considered in project design, predictive modelling, mitigation, monitoring and management plans.

Environmental conditions include, natural hazards, climate change and external events could affect the Project. Additionally, the accidents or malfunctions (Section 6.18) considers these conditions when developing mitigation measures and contingencies in the event of upset conditions.

The natural environment has the ability to potentially adversely impact the Project through events which may include the following:

- flooding;
- drought;
- extreme temperatures;
- severe weather events, including snow, ice, rain, and windstorms;
- lightning strikes;
- landslides, erosion, or subsidence;
- fire; and
- seismic events.

The Beaver Dam Mine Site infrastructure will be designed to accommodate the conditions imposed by the natural environment and to accommodate the effects of external events on the Project, as much as possible.

7.2.1 Climate

Climate refers to average long-term (typically minimum 30-year record) weather patterns within a particular area (NASA, 2005). Average weather patterns that define a climate include measures of temperature, humidity, precipitation, evaporation and wind velocity. Phenomena such as frost, fog and hail storms are also considered when defining the climate of an area (NASA, 2005).

As stated in Section 6.2.4 (Air – Baseline Conditions), the nearest climate station with historical data is the Middle Musquodoboit climate station (ID# 8203535) operated by the Co-operative Climate Network (CCN). The station is located approximately 15 km northwest of the Mine Site, near Middle Musquodoboit (45° 04'N, 63° 06'N). The following is a summary of average climate conditions at the Middle Musquodoboit station, based daily rainfall, snowfall and mean temperature data published by Environment and Climate Change Canada for the 41 year period of record including 1968 to 2005, 2009, 2014 and 2016. Wind data is taken from the Halifax Airport climate station (MSC ID# 202250), which is located approximately 45 km west of the Mine Site. This is the closest station to the site for which wind data exists. Lake evaporation climate normals (1981–2010) are taken from the Truro climate station (ID# 8205990), the closest climate station to the site which collects lake evaporation data.

7.2.1.1 Temperature

Temperature data for the Middle Musquodoboit Station is provided in Table 7.2-1. The annual mean temperature is estimated as 6.4ºC. The mean summer high temperature is 18.5ºC for July, while the winter mean low temperature is -6.2ºC in January. The lowest extreme minimum temperature was -34.0ºC January 1993 and December 1989, and the highest extreme maximum was in August of 1976 at 35.6ºC (Table 7.2-2) There is an average of 312 days per year with an average temperature above 0ºC.

7.2.1.2 Precipitation

The mean climate normal monthly precipitation data are provided in Table 7.2-3. The mean annual average precipitation is 1,356 mm. Approximately 87.5% of the total precipitation was in the form of rain and 12.5% as snowfall. The extreme daily precipitation amounts are shown in Table 7.2-4. The highest rainfall experienced was 172.2 mm in 1971 and the highest snowfall experienced was 70.0 cm in 1981. The highest precipitation generally occurs in the months of November and December, with lowest precipitation in the month of June. Measurable precipitation occurs on an average of 164 days per year, with 141 days of measurable rainfall and 31 days of measurable snowfall. Hurricanes are also possible in this region. The largest hurricane on record, recorded at Halifax International Airport (approximately 80 kilometres [km] west of the Site), was Hurricane Beth in 1971 with 296.4 mm of rainfall over 48 hours.

7.2.1.3 Wind

Wind direction is generally westerly to northerly in November through April and southerly in May through October. Wind speeds average approximately 16.5 km/h, with an average range of 13.3 km/h in August to 18.5 km/h in March.

Table 7.2-1: Mean Temperature Profiles at Middle Musquodoboit Station

Value	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Daily Average (ºC)	-6.2	-5.3	-1.1	4.3	9.9	15.0	18.5	18.3	13.9	8.3	3.4	-2.5	6.4
Daily Maximum (ºC)	-1.0	-0.1	3.9	9.5	15.9	21.3	24.7	24.5	20.2	13.9	7.8	2.1	12.0
Daily Minimum (ºC)	-11.5	-10.9	-6.2	-1.0	3.6	8.4	12.2	12.1	7.7	2.9	-1.0	-7.1	0.8

Source: ECCC 1971 to 2000 Canadian Climate Normals (climate ID: 8203535).

Table 7.2-2: Minimum and Maximum Temperature Extremes

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Extreme Maximum (ºC)	16.5	17.0	26.0	30.5	33.3	33.9	34.5	35.6	33.0	26.7	23.5	15.6
Year	1995	1994	1998	2009	1977	1975	1999	1976	2001	1968	1994	1969
Extreme Minimum (ºC)	-34.0	-33.0	-31.0	-12.0	-6.7	-3.0	1.7	-1.5	-4.5	-10.6	-21.0	-34.0
Year	1993	1993	1985	2016	1972	1997	1972	1978	1978	1974	1989	1989

Source: ECCC 1971 to 2000 Canadian Climate Normals (climate ID: 8203535).

Table 7.2-3: Mean Monthly Precipitation Profiles at Middle Musquodoboit Station

Value	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Precipitation (mm)	128.8	103.3	125.6	105.1	102.6	94.8	97.8	97.7	103.0	123.9	137.1	136.0	1,355.7
Rainfall (mm)	82.9	62.1	94.7	94.5	101.8	94.8	97.8	97.7	103.0	122.7	129.7	103.8	1,185.5
Snowfall (cm)	45.9	41.2	30.9	10.6	0.8	0.0	0.0	0.0	0.0	1.2	7.4	32.2	170.2

Source: ECCC 1971 to 2000 Canadian Climate Normals (climate ID: 8203535).

Table 7.2-4: Precipitation Extremes

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Extreme Daily Precipitation (mm)	80.8	86.8	76.0	78.2	61.9	64.0	90.0	172.7	75.6	74.0	66.0	71.4
Year	1978	1981	1979	1982	2001	1990	1983	1971	2014	1988	1972	1990
Extreme Daily Rainfall (mm)	80.8	51.1	76.0	78.2	61.9	64.0	90.0	172.7	75.6	74.0	66.0	71.4
Year	1978	1971	1979	1982	2001	1990	1983	1971	2014	1988	1972	1990
Extreme Daily Snowfall (cm)	36.0	70.0	34.0	22	11.4	0.0	0.0	0.0	0.0	18.0	23.0	33.0
Year	2005	1981	2014	2016	1972	1962	1961	1961	1961	1972	1989	1970

Source: ECCC 1971 to 2000 Canadian Climate Normals (climate ID: 8203535).

7.2.2 Extreme Weather

7.2.2.1 Flood and Drought Conditions

Flooding or drought conditions may occur during the lifespan of the Project. These events can generally be accommodated in the Project design and construction. As stated above, the historical mean annual total precipitation for the Middle Musquodoboit climate station is 1,356 mm. Approximately 87.5% (1,186 mm) falls as rain, while 12.5% (170 cm) falls as snow. Although extreme precipitation events may occur at any time during the year, rainfall in the Project area is generally highest during autumn months (September to November). The largest historical extreme one- day precipitation events recorded at the Middle Musquodoboit station includes 173 mm of rainfall on August 15, 1971 and 70 cm of snowfall on February 8, 1981 (Table 7.2-4).

The effects of a drought or flood on the Project may include increased dust and decreased availability of water for site operations or an excess of water on the Mine Site and Haul Road. Potable groundwater will be brought to the site and therefore a reduction in the availability of potable groundwater is not anticipated to be an adverse effect. Minimal volumes of water from the settling ponds are anticipated to be re-used on Site for dust suppression purposes, as required. The majority of water collected in the settling pond will be released to Cameron Flowage. A reduction in water being collected by the settling ponds will result in less water being released to Cameron Flowage and is not anticipated to affect site operations. Should a storm event larger than 1 in 100-year precipitation occur that creates volumes in excess of the capacity available in ponds and ditching, or infrastructure failure, a spillway into the pit will be used for overflow. In the case of a storm event or infrastructure failure, settling ponds will be monitored regularly. The Haul Roads could also become flooded and the transportation of ore may temporarily be suspended.

7.2.2.2 Extreme Temperatures, Storms, and Wind

Air temperatures vary seasonally. As stated above, average local temperatures range between from -6.2ºC to 18.5ºC. Temperature extremes can range between -34ºC to 35.6ºC (Table 7.2-2). The Project will be designed to accommodate these temperature ranges.

Extreme temperatures and storms (ice, snow) could cause damage to site infrastructure or could directly impact site workers. An Occupational Health and Safety Plan will be implemented to ensure worker safety during extreme temperature events and storm events.

Maximum hourly speeds can range from 56 km/h in August to 89 km/h in February, with maximum gusts of up to 132 km/h recorded. The Project will be designed to accommodate these wind speed ranges.

7.2.2.3 Lighting Strikes

Thunderstorms are not overly common in the Project area. In Nova Scotia, cloud to ground lightning typically occurs between the months of March to November (ECCC 2016e). The average number of days with lightning (years 1999 to 2013) was 12.1 days in Halifax, and 12.6 days in Truro.

In the event of a lightning strike, damage to site infrastructure or injury to site workers could occur. A power surge or outage could also occur. Designing infrastructure with proper grounding circuits, as per standard practice, would help to prevent damage or injury.

7.2.3 Climate Change

Climate change is anticipated to cause an increase in frequency and intensity of extreme weather events, warmer average temperatures, higher sea levels, and more extreme rainfall and flooding events (DeRomilly and DeRomilly Limited et al. 2005). More frequent and intense extreme weather events could cause an increased risk of flooding and snow and ice storms. Increased flood events would also increase the risk of erosion. Existing infrastructure in Canada was generally not intended to withstand the more extreme and frequent storms that may be experienced in coming years; however, new construction, such as the construction of the Project is designed for these changing weather patterns and extreme events into consideration. In particular, Nova Scotia Environment's *Guide to Considering Climate Change in Environmental Assessments in Nova Scotia* states the importance of environmental assessments as planning tools for the consideration of climate change into project planning, development, operation and decommission (NSE, 2011c).

Over the last several decades, Nova Scotia has already experienced a significant number of adverse impacts of extreme weather events and is experiencing changes in its historical climate. It is very likely that a further increase in temperature, precipitation and other climate drivers will continue to occur throughout the 21st century. It is forecasted that temperature will rise by 2ºC to 4ºC and that storm surges that happened only once in the 20th century could happen up to ten times in the 21st century (NSE, 2009a).

To prepare for adaption to climate change, the NSE Climate Change Unit has published scenarios of possible future climate for 13 regions within Nova Scotia. For each region, historical climate data (1961-1990) and future projections generated using the statistical downscaling method are available. Climate data provided in future projections includes minimum and maximum temperatures, precipitation, extreme precipitation and growing season length. Although advancements in climate modelling projections have occurred over the last decade, the results are not meant to be interpreted as absolutes, but rather used as guidance in the design and planning stages to facilitate climate change adaptation (W. Richards Climate Consulting, 2011).

7.2.3.1 <u>Regional Future Projections</u>

The closest of the 13 regions to the Project is the HRM. Future projections are provided for 2020s, 2050s and 2080s. Since the duration for the Project is relatively short, approximately 8 years including active reclamation but excluding passive pit-refilling and ongoing monitoring) the future climate projections for the 2020s were used for the assessment of the effects of climate change on the Project.

While a significant change in the range of average monthly temperatures is not anticipated for the HRM, it is very likely average temperatures will increase by a maximum of approximately 1.5ºC on average across all seasons in the 2020s (W. Richards Climate Consulting, 2011). Approximately 2 days a year are projected to be over 30ºC with no days reaching a temperature higher than 35ºC. Approximately 243 days a year are projected to have daily mean temperature is greater than 0ºC and two days a year are projected to be less than -10ºC compared to the historical average of 224 days and 3 days respectively (W. Richards Climate Consulting, 2011). The average growing season length in the 2020s is projected to be approximately 209 days, which is 11 days longer than the average historical growing season (W. Richards Climate Consulting, 2011).

Annual precipitation amounts are projected to be 1,453 mm a year, which is a 97 mm increase from the historical average (W. Richards Climate Consulting, 2011). Warmer winter temperatures (14 more days with a daily mean temperature is greater than 0°C) will lead to more precipitation falling as rain instead of snow. Rainstorm events are projected to be more extreme with a 5 percent change in the current 20-year return value of the 24-hour precipitation rate used in building design (W. Richards Climate Consulting, 2011).

7.2.3.2 Effects of Climate Change on the Project

Key potential effects of climate change that could impact the Project include:

- Increasing frequency of unusually high or low daily temperature extremes.
- Long-term increasing or decreasing mean annual temperatures and/or precipitation.
- Increasing or decreasing frequency of storm events (e.g., rainfall, snowfall, extreme wind).

Although the Project is relatively short in duration (approximately 8 years including construction, operations and active closure and not including ongoing monitoring [post-closure]) and therefore the effects of climate change on the Project will likely be insignificant, climate change was still considered for each phase of the Project: construction, operations, and active closure.

7.2.3.2.1 Construction – 1 Year

Since site construction will occur during the first year of the Project and is planned to commence within the near future, rather than considering long term effects of climate change it is more appropriate to consider the potential effects of current weather extremes and variabilities during construction. For the effects of extreme weather events on the Project (Section 7.2.2).

7.2.3.2.2 Operations – 5 Years

Average temperatures and precipitation amounts and intensities projected in the future climate scenario for the 2020s as described above is unlikely to impact the operation of the Beaver Dam Mine as mines are successful operated in areas with higher/lower mean and extreme temperatures and more frequent precipitation than is outlined in this scenario. However, the Project may be affected by climate change-induced events, such as extreme precipitation events. The Project will be designed to withstand these events, including effects of these events such as flooding and erosion. For details of the effects of extreme weather events on the Project (Section 7.2.2).

7.2.3.2.3 Active Closure – 2 Years

The Active Closure of the mine is not anticipated to be affected by higher or lower mean and extreme temperatures or more frequent precipitation. However, the removal of equipment and infrastructure has the potential to be delayed as a result of periods of high precipitation and extreme weather events. The re-vegetated area could be affected from periods of drought, flooding or erosion.

7.2.3.3 Forest Fires

Since the limited duration of the Project on a whole indicates that warming air temperatures will not affect the Project, and as the Beaver Dam Mine Site will be primarily cleared land, the potential for forest fires is considered to be low.

7.2.3.4 Climate Change Mitigation and Adaptation

7.2.3.4.1 Mitigation

To minimize or offset the effects of the Project on climate change, in particular to reduce the greenhouse gas (GHG) emissions associated with the construction, operation and active reclamation of the mine, mitigation measures will be implemented. The federal guidance document *Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for*

Practitioners defines mitigation measures as "Measures to eliminate, reduce or control the adverse environmental effects of a project, including restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means" (CCCEAC, 2003, Page 23). Mitigation measures include actions such as utilizing different technologies and construction materials. Impact Management Measures and BMPs to reduce the Project's effect on the environment will be determined and implemented at the onset of each stage of the Project. Possible BMP/ Mitigation measures include:

- Implement and enforce an anti-idling policy for all vehicles and machinery on-site during the construction and operations;
- Try to utilize materials that have a lower carbon footprint and a long lifespan; and,
- Replace and plant additional native vegetation to create a carbon sink.

Further mitigation measures to reduce the potential effects of the environment on the Project are discussed in Section 7.3.

7.2.3.4.2 Adaptation

Climate change adaptation is focused on addressing effects of climate change on the Project. The federal guide defines adaptation as an "Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities" (CCCEAC, 2003, Page 23). Although it was determined that climate change will have no significant adverse effects on the Project due to the relatively short duration of the Project, the identification of possible adaptation measures was undertaken to increase both Project and ecosystem resilience to climate change.

Adaptation measures, as noted in the Mine Water Management Plan (Appendix P.4) are strengthen and increase the resilience of the Project and include:

- designing comprehensive water management measures;
- to add contingency to the water management facility designs, the impacts due to climate change were considered in the development of the settling ponds and drainage system. As such, a 5% increase to the historic IDF curve was incorporated to account for potential impacts due to climate change.
- collection ponds have been designed with the capacity to convey runoff from Hurricane Beth, modelled as a 48-hour storm event, through an emergency spillway.
- choosing vegetation known to withstand erosion and climatic stressors such as extreme heat, drought tolerance, and flood resistance; and
- planting additional vegetation as required.

The above is not a comprehensive list of the additional adaption measures that will be considered. The development of Best Management Practices will be implemented at the mine to prepared for a changing climate.

7.2.4 Slope Stability

All phases of the Project have the potential for slope failures within the footprint of the open pit, the topsoil, till, organics, and waste rock stockpiles. The slopes are designed at an angle determined by geotechnical analysis and acceptable safety factors. However, in the event of an extreme weather event or seismic event, slope failure may be possible.

Features constructed from site materials such as permanent waste rock stockpiles and temporary (i.e., till, organic and topsoil) stockpiles will stored at the mine site. The temporary stockpiles will be used as part of final reclamation. A geotechnical stability assessment of permanent and temporary stockpiles has been undertaken by Golder (2021; included as Appendix A.2a) with the exception of the topsoil stockpile because of the small size and height. The assessment undertaken by Golder (2021; included as Appendix A.2a) evaluated the design by assessing the following:

- Seismic site classification and seismic hazard parameters;
- Liquefaction potential;
- Design parameters for foundation and stockpiled materials;
- Equilibrium slope stability (static and seismic) load conditions, and
- Assessment on site preparation and placement.

Recommendations have been incorporated into the final design and operational procedural manual/work instructions will be developed before construction. The outcomes of the assessment is that the design are within an appropriate safety factor. Monitoring will be undertaken during construction, operation and active closure to ensure slope stability is maintained.

7.2.5 Seismic Events

Although seismic activity is unpredictable, the Province of Nova Scotia as a whole is located in a next-to-lowest hazard zone, with moderate to high-hazard zones located offshore in the southern Bay of Fundy and along the Laurentian Slope (NRCAN 2015).

The Northern Appalachians Seismic Zone is located in southwest Nova Scotia. The Beaver Dam Mine Project is located east of this zone. The nearest earthquake to Marinette, Nova Scotia was recorded with a magnitude of 2.7 in 1999 and was located northeast approximately 20 km north of the Project area. If an earthquake occurs, seismic activity may affect the Beaver Dam Mine Project through primary impacts such as slope and mine wall failures, and infrastructure damage facilitated by ground vibrations and secondary impacts such as fires facilitated by damaged infrastructure. In the unlikely event that a Tsunami occur in relation to offshore earthquakes, impacts to the Project are highly unlikely. The Project is approximately 30 km from the coast and at an elevation of 140 masl. Given that Nova Scotia is located in a low-hazard zone, and given the limited extent and duration of the Project, the potential risk of seismic activity affecting the Project is very low and not considered significant.

Site infrastructure will be built to National Building Code of Canada standards to aid in mitigating damage to infrastructure or injury to site workers in the event of an earthquake in the Project area.

A geotechnical stability assessment (Golder 2021; included as Appendix A.2a) has been undertaken on stockpile design that considered potential exposure to seismic event on slope stability. The assess indicated that the design is with in professional safety standards (Appendix A.2c). A similar stability assessment is in Progress for the open pit and recommendations will be integrated into the final design.

7.3 Mitigation

The Beaver Dam Mine Site will be designed to use commonly utilized infrastructure which will be designed to consider extreme weather events. Climate change is not anticipated to have a significant effect on the Project, based on the relatively short duration of the Project and on the climatic scenarios and events outlined above.

The following mitigation measures will be applied to reduce the potential effects of the environment on the Project:

- Project design considers potential flood or drought conditions to minimize the impacts of these events on mine infrastructure.
- Project design accommodates temperature extremes, storms, and wind speed ranges identified for the Beaver Dam Mine Site.
- Project design will follow industry standards, including the National Building Code of Canada, to prevent damage to equipment or injury to site workers.
- Topsoil, till, and waste rock stockpiles will be designed with slopes designed at an angle determined by geotechnical analysis and acceptable safety factors. Stockpiles will be constructed using collected geological data for final design and reduce the possibility of landslides, slope erosion, and subsidence.
- An Emergency Response Plan will be implemented for the Mine Site and will consider measures that may be required during an extreme weather event to secure site infrastructure, mobile equipment, stockpiles, fuel storage, and electrical equipment.
- An Occupational Health and Safety Plan will be implemented for the Mine Site and will consider measures that may be required during an extreme weather or temperature event, flood or drought, or storm event.
- Ongoing monitoring will be undertaken during construction, operations and active closure of engineered structures.

Table 7.3-1: Mitigation for Effects of the Environment on the Beaver Dam Mine Project

Project Phase	Mitigation Measures
C	Project design to consider extreme weather events, temperature extremes, wind speed ranges, flood or drought conditions, lightning strikes. Project design will follow industry standards, including the National Building Code of Canada. An Emergency Response Plan will be implemented during the construction phase. An Occupational Health and Safety Plan will be implemented to protect worker health and safety
C	Stockpile design will consider collected geological data and will be designed with slopes at the angle determined by geotechnical analysis and acceptable safety factors. An Emergency Action Plan will be implemented during the construction phase
O	An Emergency Action Plan will be implemented during the operations phase. An Occupational Health and Safety Plan will be implemented to protect worker health and safety
O	Stockpile design will be re-assessed following material placement to ensure slopes are geotechnical stable and within acceptable safety factors An Emergency Action Plan will be implemented during the operation phase
CL	Stockpile design will consider collected geological data and will be designed with slopes at the angle determined by geotechnical analysis and acceptable safety factors.

Note: C = Construction Phase, O = Operations Phase, CL = Active Closure Phase

7.4 Summary

As noted above, consideration of environmental conditions is not a Value Component or an assessment end point. These conditions considered in the design, mitigation, monitoring and management of the Project.