Freshet Action Plan, Version 1

AGNICO EAGLE

MEADOWBANK GOLD MINE

FRESHET ACTION AND INCIDENT RESPONSE PLAN

WHALE TAIL PROJECT

MARCH 2019

VERSION 1

EXECUTIVE SUMMARY

The purpose of this Action and Response Plan is to identify areas of concern around the Whale Tail Pit mine site and the associated Hauling road that need to be managed in an organized and timely manner during the annual freshet period to prevent adverse environmental and operational impacts. The Incident Response section of the Plan outlines any future incidents that have the potential to affect off site water or land will be added and would include any specific mitigation and monitoring actions.

The freshet period typically occurs during the annual snow and ice melt sometime around mid-May and extends until the end of July. During this period excess water is created and must be managed through additional pumping and management practices at vulnerable areas around the site. Mitigation techniques, timeframes and specified roles and responsibilities are outlined in this document for each area of concern.

The main areas of concern are the mining pit and pit wall.

It is important that all dewatering and associated infrastructure be in good working order and adequate to manage the expected water flows associated with the freshet period; this includes but is not limited to pumps, ditch, culvert and sump maintenance, critical piping system installation and inspection, adequate resource allocation for preparative work and establishing a viable monitoring program for the areas of concern and incident response locations. A summary of the 2019 preparation works and roles and responsibilities is presented in the attached Appendix 1 (2019 Freshet Action Plan Procedures). Appendix 1 will be updated yearly to reflect changes in conditions at the Whale Tail site. .

DOCUMENT CONTROL

Revision				Pages Revised	Remarks
#	Prep.	Rev.	Date		
01	Agnico	Internal	March 2019	All	Initial Version

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1 INTRODUCTION

The purpose of this Whale Tail (WT) Freshet Action and Incident Response Plan is to ensure that Agnico can address and manage excess water associated with the freshet season at the Whale Tail site and to ensure Agnico has implemented specific management and mitigation measures in response to environmental incidents with potential for off site impacts to water or land.

The freshet season is loosely defined as being a period of time from approximately May 15 – July 30; in some cases this period of time can extend up to early fall when freezing re-occurs (October 15). There are many areas around the site that are vulnerable to this excess water; the goal is to identify these areas and develop a clear plan with defined roles and responsibilities (among Agnico Departments), and to manage the freshet flows.

In addition, several guiding principles are applicable to the formation of this plan. The highest priority principles are:

1) to ensure that mine contact water from runoff or seepage is managed to prevent adverse environmental impacts;
2) to ensure that the health and safety of Agnico employees is protected, especially with respect to mining operations when excess water is present; and
3) to make sure the site is in compliance with the Nunavut Water Board (NWB) License, Part D, Item 21 and Part E, Item 11.

The plan will identify the areas of concern and discuss the potential risks as well as mitigation measures necessary to address the identified issues. An adaptive strategy had been designed at the Whale Tail site to ensure sufficient mitigation measured are in place to prevent potential issues. The overall site footprint has increased and experience needs to be gained in indenfying key location; lessons learned from the Meadowbank site will provide the necessary guidance. Appendix 1 contains the defined 2019 procedures, the roles and responsibilities and associated timelines. Agnico's intent is to update the Procedural Appendix on a yearly basis. For example, there may be additional mitigation measures for a defined problem area or in some cases a previously defined issue may be permanently rectified.

The main areas of concern are:

- Mining pits and pit walls;
- WRF pond;
- A53 pond;
- East channel;;
- North-East dike;
- Attenuation pond;
- WT Tank farm;
- Haul road culverts and bridges.

Each area identified above will be discussed in detail below. All areas of concern are considered priorities based on the guiding principles.

2 AREAS OF CONCERN

2.1 SITE MAPS

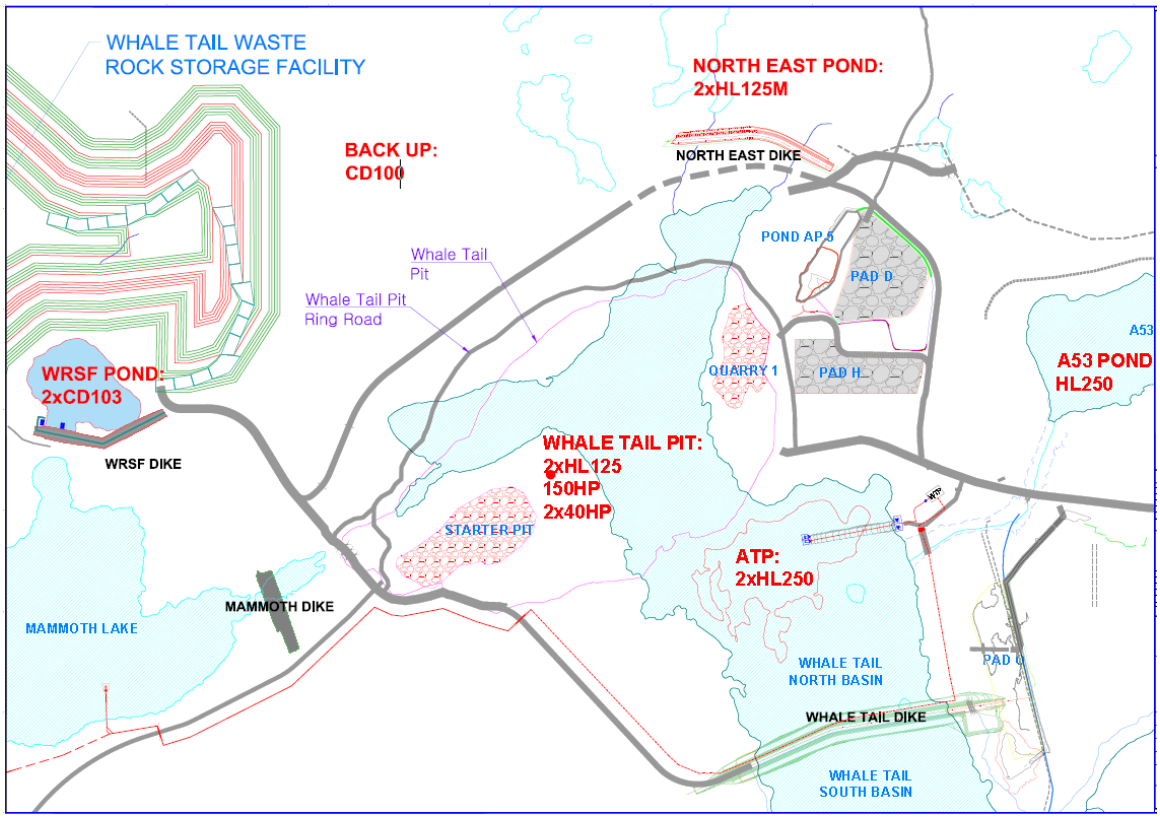

Figure 2-1: View of Whale Tail area with the associated pumps and trenches

2.2 MINING PITS AND PIT WALLS

All permanent ramps, jump ramps, ditches and sumps must be cleaned of all ice and snow before May in order to contain any water resulting from the snow melt. All pumps must be checked and serviced before the month of May. In addition, a check must be completed confirming that all piping systems starting from the different pits leading to the Whale Tail attenuation pond are free of ice by validating pumping values (if pumping systems are active) and/or performing an air test in the pipe with a compressor.

Water management in the Whale Tail pit has been simplified since the mining is it's early sequences of operation.

- A pond and ditch system is planned in the pit. Runoff water accumulated in this pond will be pumped into the attenuation pond. Infrastructures might be modified or added within the actual trench and sumps footprint in such a way to prevent water from ponding against the pit crest;

2.3 WHALE TAIL ROCK STORAGE FACILITY

The Whale Tail Rock Storage Facility (RSF) will require weekly inspections around the perimeter beginning as soon as the freshet starts (May) until freeze up to identify any seepage. In the event that seepage is observed from the RSF, it must be reported to the Engineering and Environment Departments and samples must be taken to determine the water quality and source. A mitigation plan will be prepared and implemented if necessary. A sump is located at the toe of the RSF and water will be pumped to the WT Attenuation pond when required.

2.4 A53 LAKE

Water management around A53 will required regular inspection to ensure impacts are limited, to maintain integrity of structure and to prevent any adverse environmental impacts. Inlfows of water will be monitored for the lake immediate watershed to ensure, erosion and sediments are not impacting the waterbody.

2.5 EAST CHANNEL

The east channel structure is planned to be built subsequently to the 2019 freshet season and therefore water will be management by maintaining a pumping strategy from it's planned source (lake A53), ensuring that water from upstream won't impact surrounding water bodies by erosion and TSS.

2.6 NORTH-EAST DIKE

Water collecting at North-East Dike will be managed according by letting water raise behind the dike thus redirecting the non-contact water naturally towards Nemo lake. A pumping strategy could also be used to ensure no impacts are directed towards Nemo Lake if erosion and dike stability are affected depending on water quality and quantities observed around the area.

2.7 ATTENUATION POND

Water from the WT Attenuation pond will be management as contact water and treated, if necessary, through the AsWTP and the water discharged towards Mammoth Lake. Representing the main water collection structure in 2019, the attenuation water levels will be managed closely and be inspected regularly at freshet.

Discharge from the WT attenuation pond to Mammoth Lake may require treatment at the AsWTP if the water quality did not meet discharge criteria, Water License and MDMER criteria, for the Attenuation Pond discharge. The Actiflo treatment plant was designed to remove TSS and arsenic. All piping and the discharge diffuser must be inspected in April in order to have all installations in place to proceed with pumping and/or treatment activities during freshet.

2.8 WHALE TAIL FUEL TANK FARMS

The main fuel fuel farm constainment is in the process of being built and will be monitored at freshet. Snow and ice accumulation within the fuel tank farm must be adequately managed to prevent overflow to the environment and/or damage to the fuel handling systems. The Energy and Infrastructure Department will advise the Environmental Department of their intent to pump the containment area once ice/snow begins to melt. Water samples will be taken in accordance with the Water License to ensure compliance prior to its release. A notice must be provided to the Inspector 10 days prior to this pumping activity. Once sample results have been obtained, the Environmental Department will advise the Energy and Infrastructure Department if pumping can begin. If sample results permit, the pumping may begin; to direct water to the tundra/ground in a way to prevent erosion. In the event that the water sample results do not meet discharge criteria the water could be trucked in a tanker and transported to the Meadowbank site to be disposed of in the TSF or placed in containers for shipment south as hazmat.

2.9 HAUL ROAD CULVERTS AND BRIDGES

Daily and Weekly inspections will be undertaken starting in May at all culverts along the Haul road to ensure that water during freshet is flowing freely and no erosion is occurring. If elevated TSS/Turbidity levels are observed sampling will occur and the results assessed. Turbidity barrier will be installed if required. The Energy and Infrastructure department will also be advised if severe erosion/scouring is observed. In addition snow and ice removal may be required to allow the water to flow as per design specifications. Daily inspections will be performed during the freshet period by the Environment department.

3 INCIDENT RESPONSE

No incidents require a specific response plan to be impleted for the Whale Tail site at this moment.

4 SNOW MANAGEMENT

Similarly to the Meadowbank site, a snow management procedure has been developed internally in 2018 and will be updated annually. Temporary snow storage dumps and snow accumulation areas of concern were identified on a map. Removal will be managed accordingly.

APPENDIX 1

2019 Freshet Action Plan Procedure

Section	Area of Concern	Role/Action	Responsbilities	Dates
2.1	**Mining Pits and Pit Walls**			
2.1	Mining Pit and Pit walls - General	1) Clean all ice, mud and snow on all permanent ramps, jump ramps, etc.	Mine Operations	Before May
		2) Check and service all pumps.	E&I (Energy and Infrastructure) and Maintenance	Before May
		3) Check that all piping systems starting from the pit leading to the Attenuation pond are free of ice by validating pumping values (if pumping systems is active) and/or performing an air test in the pipe with a compressor.	E&I	Before May
2.2	**WASTE ROCK STORAGE FACILITY**			
2.2.	WT RSF Inspection	1) Weekly inspection around the RSF perimeter to identify any seepage.	Env. Department	May - as soon as freshet starts until freeze up
		2) If seepage observed notify Eng and Env Department AND sample for Water License Parameters.	Env. Department	May - as soon as freshet starts until freeze up

2.3	**A53**			
2.3	A53	1) Daily inspection - keep record	Env. Department	May - until Freshet complete and after rain events
		2) Install turbidity barriers, if needed (elevated TSS observed), and maintain	Env. Department	May - until freshet complete and after rain events
		3) Sample monitoring for TSS, if excess turbidity observed - use external lab.	Env. Department	May - until freshet complete and after rain events
		4) Report any discharge of TSS to ECCC/NWB (if grab > 30 mg/L).	Env. Department	May - until freshet complete and after rain events
2.4	**East Channel**			
2.4	A53 to East channel	1) Daily inspection - keep record	Env. Department	May - until Freshet complete and after rain events
		2) Install turbidity barriers, if needed (elevated TSS observed), and maintain	Env. Department	May - until freshet complete and after rain events

		3) Sample monitoring for TSS, if excess turbidity observed - use external lab.	Env. Department	May - until freshet complete and after rain events
		4) Report any discharge of TSS to A56 to ECCC/NWB (if grab > 30 mg/L).	Env. Department	May - until freshet complete and after rain events
2.5	**North-East dike**			
2.5	North-East dike flow to Nemo	1) Daily inspection - keep record	Env. Department	May - until Freshet complete and after rain events
		2) Install turbidity barriers, if needed (elevated TSS observed), and maintain	Env. Department	May - until freshet complete and after rain events
		3) Sample monitoring for TSS, if excess turbidity observed - use external lab.	Env. Department	May - until freshet complete and after rain events
		4) Report any discharge of TSS to Nemo Tail to ECCC/NWB (if grab > 30 mg/L).	Env. Department	May - until freshet complete and after rain events

2.6	**WT Attenuation pond**		
2.6 WT Attenuation Pond	1) During the freshet period water management consists of making sure all sumps are pumped to the Attenuation Pond.	Mine Operations	May to Sept
	2) Set-up pumping Attenuation Pond to prevent water from flowing into the pit area.	Mine Operations	May
	3) Notify Environmental Department before discharging any water to Mammoth Lake. **NOTE: Any discharge of contact water must be through the Diffuser.**	Engineering	Freshet/Summer 2019
	4) Inspect all piping and discharge diffuser	E&I	May
2.7	**FUEL TANK FARMS**		
2.7 WT Tank Farm	1) E&I Dept to advise Env Dept in advance of intent to pump once ice melts in containment area.	E&I and Env. Department	Probably mid-June and September
	2) Sample water in accordance with Water License to ensure compliance with limits prior to release.	Env. Department	Probably mid-June and September
	3) Provide notice to Inspector 10 days prior to pumping.	Env. Department	Probably mid-June and September

		4) Advise Energy and Infrastructure Dept if pumping can begin based on sample results.	Env. Department	Probably mid-June and September
		5) Pump to tundra/ground or Meadowbank TSF. **NOTE: The water cannot be pumped out to the tundra if it does not meet the Water License criteria.**	E&I	Probably mid-June and September
2.8	**HAUL ROAD CULVERTS AND BRIDGES**			
2.8	Culverts and bridges	1) Weekly inspection of culverts along the haul road.	Env. Department	May
		2) Sample for TSS and Turbidity if elevated TSS observed.	Env. Department	May - until freeze up
		3) Notify E&I Dept if severe erosion/scouring observed - for repair action.	Env. Department	May - until freeze up
		4) Install turbidity barriers if required.	Env. Department	May - until freeze up
2.9	**INCIDENT RESPONSE**			
	To be determined			