

Point Lake Dewatering Plan Version 2.0, September 2021

1. Introduction

As per Part E, Item 1 of Water Licence W2012L2-0001 (Conditions Applying to Dewatering and Drawdown), Arctic Canadian Diamond Company Ltd. (Arctic) is submitting this Dewatering Plan for Point Lake prior to the commencement of dewatering for approval by the Wek'èezhii Land and Water Board (WLWB).

Arctic is proposing to develop the Point Lake open pit located approximately 2 km northeast of the existing Misery Pit and Camp location. The project will use the existing infrastructure at Misery Camp and kimberlite will be processed in the Process Plant located at the Main Ekati Camp. Concurrent with submission of this Plan, Arctic has submitted applications for a Water Licence Amendment and two new Land Use Permits to enable development of the Point Lake open pit (the "Project"). Dewatering of Point Lake is a critical path activity that is required to be completed during summer 2022 to make the Project viable. To reduce schedule risk, Arctic has requested that this Plan be approved as part of the Water Licence Amendment process rather than as a subsequent condition of the amended Water Licence.

In advance of the development of the Point Lake open pit, Point Lake will be fished out and dewatered. A Point Lake Fish-Out Plan is required to be separately approved by Fisheries and Oceans Canada prior to the scheduled dewatering and fish-out in summer 2022. Arctic's application to Fisheries and Oceans Canada will schedule the fish-out concurrent with Stage 1 Dewatering.

Arctic engaged professional advice to evaluate dewatering configurations and to assist with dewatering design. Since the development of Version 1.0 of this Plan in May 2021, Arctic has advanced its planning and Version 2.0 reflects those advancements. The design takes into consideration water volume, pipe and pump sizes, pumping locations, flow rates, and potential erosion and mitigation measures. The amount of water to be displaced from the lake and the short period of time to complete this were the main considerations for selection of the system. The Project Water Licence Amendment application addresses potential surface water quality and hydrology effects in the natural environment, finding that this dewatering plan can be conducted without adverse negative effects on the natural environment.

This Dewatering Plan for Point Lake is based on the success of previous lake dewatering programs at the Ekati Diamond Mine and will be conducted as approved by the WLWB.

2. Water Licence Requirements for the Dewatering Plan

The specific requirements for a Dewatering Plan as listed in Schedule 4, Item 1 of Water Licence W2012L2-0001 are addressed as follows:

a) Volume of water produced by Dewatering:

The total volume of Point Lake is estimated at 7,800,000 m³ with a maximum depth of 58 m based on bathymetric data collected in 2019 (Figure 1). The estimated volume of water to be pumped to Lac de Sauvage in Stage 1 is 5,850,000 m³ and the estimated volume of water to be pumped to King Pond Settling Facility (KPSF) and Lynx open pit in Stage 2 is 1,950,000 m³. Some water may be pumped from KPSF to Lynx open pit during the Dewatering period per established procedures.

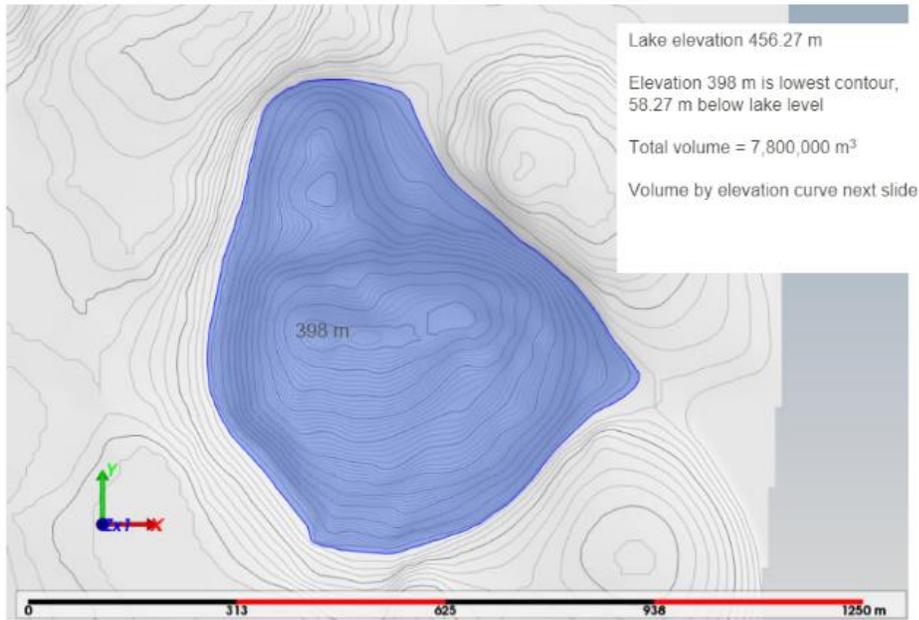


Figure 1. Point Lake Bathymetry

b) A schedule for Dewatering and maximum pump rates:

Dewatering of Point Lake is a critical path Project activity that is scheduled for summer 2022.

The schedule plans to remove the water from Point Lake after 2022 spring freshet. The pumps and barges are planned to be placed on the lake ice prior to freshet. Pumping is expected to begin mid-June and will be conducted in two stages. Stage 1 will continue until the threshold for total suspended solids (TSS) in the pumped water is reached (anticipated to be approximately 80 days, see Section 3 below). This is anticipated to represent approximately the upper 40 m of the lake. During Stage 1 pumping, water will be pumped to Lac du Sauvage. Stage 2 will be the pumping of the lower portion of Point Lake to KPSF and Lynx open pit. Stage 2 pumping will proceed until the lake is dewatered (anticipated to be approximately an additional 30 days). Water may be pumped from KPSF to Lynx open pit during the Dewatering period for operational reasons. The pipeline routes are illustrated on Figure 2. There are two alternative pipeline routes around the Misery site to Lynx open pit and the selection of a preferred route is to be based on operational preference as there is no difference in environmental protection.

The approach to dewatering consists of barge-mounted pumps anchored over the deepest part of the lake. The barge-based pumps will pump from the lake to the pumping destination (i.e., Lac du Sauvage, Lynx open pit or KPSF) It is likely that four barge-mounted pumps will be used, 3 in operation and one spare. The total pumping rate is estimated to average approximately 3,000 m³/hour with a maximum of 3,500 m³/hr. These are pumping rates apply to both Stage 1 and Stage 2.

Dewatering is scheduled to be complete by September 30, 2022.



The pipelines along the Point Lake access road and the Lac du Sauvage Road (formerly Jay Road) will be removed at the completion of dewatering, prioritizing retrieval of the pipeline east of Point Lake as soon as reasonably achievable after completion of Stage 1 pumping. The lake pumps and barge will be removed once mining has reached a level that enables safe and efficient retrieval.



Figure 2. Pipeline Routes

c) Pumping methods including locations of intake and outflow structures:

The pumping and pipeline configuration, including intake locations, is described in item b above.

All pumps will be powered by an onsite diesel generator, which will be a portable power plant housed in a trailer with a double walled on-board fuel tank. The area will be visually inspected during refueling operations. Fuel will be trucked to the site from Misery using the existing fuel truck fleet.

Barge-mounted pumps will be equipped with appropriately sized fish screens as required in the Water Licence.

Stage 1 pumping outflow to Lac du Sauvage will occur near the northeast extent of the Lac du Sauvage Road as illustrated on Figure 3. The final outflow location will be authorized by the Inspector prior to use. This location offers good accessibility for pipeline installation and monitoring without additional road construction and a near shore boulder zone that will reduce erosion risk (see item d below).



Figure 3. Stage 1 Outflow Location

d) The design of any erosion prevention structures in the areas where water or Waste is Discharged:

Erosion prevention for the Stage 1 pump outflow at Lac du Sauvage includes selection of a natural boulder zone to the extent practicable and accessible, with enhancement through placement of additional armour rock and/or other protective materials to the satisfaction of the Inspector. Non-natural materials would be removed following completion of the dewatering program. The volume of additional armour rock that may be placed at the outflow location is estimated at approximately 20 m³ and will not exceed 50 m³.

Daily monitoring of the Stage 1 outflow location at Lac du Sauvage will be undertaken. If monitoring identifies erosion requiring mitigation (see item e below), potential end of pipe structures to reduce velocities, disperse flow, and mitigate erosion may include building an end of pipe riprap pad or the adjustment of boulders to allow for appropriate flow. Additional measures may include adjusting the flow rate to decrease potential erosion or relocating the outflow location. Alternately, flow could be switched to KPSF or Lynx open pit to avoid erosion at the Lac du Sauvage outflow location. The need for mitigation will be determined based on the monitoring and inspection program.

No erosion protection structures are required for the Stage 2 dewatering to KPSF and Lynx open pit beyond those desired by Arctic for good operational implementation. KPSF is an authorized mine water management



facility with monitoring and control on releases regulated through the Water Licence. Lynx open pit is a secure storage location for settlement of suspended solids.

e) The description of procedures for inspecting any erosion along the affected watercourse;

For all stages of dewatering, operations personnel will perform daily visual inspections of the active dewatering pipeline and the active outflow location to identify significant or unexpected erosional issues. Observations of erosion will trigger mitigative work where necessary as described in item d above.

f) A description of, and mitigation measures for, any predicted hydrological or water quality impacts to downstream water bodies:

There are no predicted hydrological impacts to Lac du Sauvage as a result of Stage 1 dewatering. Previous analyses of Lac du Sauvage conducted for the 2016 Jay Project Environmental Assessment demonstrate that the volumes and inflow rates of water pumped from Point Lake are less than those assessed for the Jay Project and do not represent a Project risk. Specifically, the assessed dewatering inflow to Lac du Sauvage for the Jay Project was 14.8 Mm³ over six months duration at an average flow rate of 6,500 m³/hr at a similar location, which is approximately twice the volume and flow rate over a similar timeframe and at a similar inflow location as the Point Lake Project.

There are no predicted water quality effects to Lac du Sauvage as a result of Stage 1 dewatering. Both lakes are representative of pristine local waters and outflow from Point Lake naturally flows to Lac du Sauvage. The volume of water to be pumped from Point Lake into Lac du Sauvage during dewatering is a small percentage (1%) of the volume of water in Lac du Sauvage (estimated 575 Mm³).

Water quality and water levels in KPSF are actively monitored and managed through routine operating procedures. Water chemistry within KPSF will be improved by the inflow of Point Lake water and pond water levels will be maintained within acceptable elevations through pumping to Lynx pit (per existing procedures). Adequate capacity is present in Lynx pit to contain water pumped from Point Lake and KPSF during dewatering of Point Lake. Water level monitoring in Lynx pit is conducted on an operational basis and is not a requirement of the dewatering plan.

g) The schedule and locations for water quality monitoring:

During the Stage 1 pumping program (anticipated to be approximately 90 days), water quality samples will be collected and analysed consistent with Surveillance Network Program (SNP) Part A.1. Grab samples of the dewatering outflow to Lac du Sauvage will be collected daily for analysis of pH, TSS, and turbidity. The SNP location will be near the intake to the outflow within Point Lake. Samples from the end-of-pipe will be collected weekly to verify outflow results for pH, TSS, and turbidity. Should TSS concentrations from the daily grab sample at the SNP location reach 15 mg/L, then collection and analysis of samples at the end-of-pipe would be increased to a daily frequency (i.e., increase from weekly to daily). Additionally, grab samples of the dewatering outflow to Lac du Sauvage will be collected at the SNP location once prior to commencement of dewatering and once on the final day of dewatering for analysis of TSS, total ammonia as nitrogen, major ions, physical parameters, and total metals. All water quality data will be reported to the WLWB in the Dewatering Summary Report, which will be provided within 60 days following completion of Dewatering per Water Licence condition E.7.



Water quality is measured in KPSF as part of the routine requirements of the Water Licence and as part of the SNP. Monitoring of water quality in the Receiving Environment downstream of KPSF (Cujo Lake) is measured as part of the Aquatic Effects Monitoring Program. The results of these programs are reported to the WLWB monthly (SNP) and annually (AEMP/Water Licence Annual Report). No additional monitoring is required in King Pond.

Water quality in Lynx pit is monitored on an operational basis and is not a requirement of the Dewatering Plan.

h) The frequency, location, and procedures for monitoring flow rates in the Discharge stream and where appropriate, in the receiving water body:

Flow rates and total volumetric flows will be monitored daily by way of flow meters in the pipelines. Flow rates and total volumes will be reported to the WLWB in the Dewatering Report. Flow rates from KPSF to Lynx pit are monitored on an operational basis and not a requirement of the Dewatering Plan. Monitoring within Lac du Sauvage is not required.

i) The design of the pipeline and related facilities;

HDPE pipe with a planned diameter of 30" will be used for both Stage 1 and Stage 2 dewatering. Discharge lines will be placed on existing roads and covered with crushed rock at prescribed intervals to facilitate caribou passage over the pipelines and to prevent movement during dewatering periods. Pipeline routes are described in item b above. Prescriptions for pipeline covering to facilitate caribou passage are specified in the authorizing Land Use Permit.

j) The procedures and rates for Dewatering to minimize erosion of the downstream water bodies, adjacent shorelines and, in winter, damage to spawning habitat from the development of icings, overflows, or glaciation.

Items c, d, e, and f above describe location selection, design, inspection and mitigation procedures for managing the risk of erosion at the Lac du Sauvage shoreline. Dewatering is planned for the open-water season such that there is no risk of glaciation, icings, or overflows.

3. Water Quality Action Level

Water will be pumped to the Receiving Environment (Lac du Sauvage) only during Stage 1. The indicator to end Stage 1 pumping is the concentration of TSS in the pumped water. The Water Licence Effluent Quality Criteria for TSS (25 mg/L, grab sample and 15 mg/L average of four consecutive weekly samples) will be used as the action threshold. Daily sampling of Stage 1 pumped water for TSS analysis is described in item 2g above. Analysis for TSS is conducted at the Ekati Mine Environment laboratory such that the actual concentrations will be known within several hours of sample collection. Pumping to Lac du Sauvage will stop before TSS exceeds the EQC maximum average or grab sample limit. At that time, Arctic will conduct a thorough inspection of the lake basin to identify possible causes of a temporary spike in TSS concentration.



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TSS concentrations in the pumped water are expected to generally increase as the lake level is lowered. However, the increase is not anticipated to be linear. Natural variability or transient events such as sloughing within the lake basin may result in temporary increases in TSS concentration. TSS concentrations may vary above and below 25 mg/L for some period of time. It is advantageous to maximize the volume of water pumped to Lac du Sauvage to minimize the mixing of pristine lake water with poorer quality mine waters and to facilitate operation of mine water management facilities. Therefore, Arctic may choose to continue to collect daily samples for TSS analysis after an initial sample has triggered cessation of pumping to Lac du Sauvage. If two such consecutive daily samples (collected at the Dewatering outflow to KPSF or Lynx open pit) return results of less than 25 mg/L, pumping to Lac du Sauvage may resume with continued daily analysis.

No water quality action levels are required for the Stage 2 pumping to KPSF and Lynx open pit. KPSF is part of the internal minewater management facilities and, as such, provides protection to the Receiving Environment through the Effluent Quality Criteria defined in the Water Licence. Lynx open pit is a contained facility.