

2019 APEX RIVER / UNNAMED LAKE WATER WITHDRAWAL: EROSION AND SEDIMENTATION CONTROL PLAN

PURPOSE

This Erosion and Sedimentation Control Plan (ESCP) provides guidance and mitigation to the City of Iqaluit (the City) and its contractor to avoid or minimize erosion or sedimentation from activities related to the City's withdrawal of water from the Apex (Niaqunguk) River for the purpose of supplementing the City's drinking water supply at Lake Geraldine. It is to be applied in conjunction with the Fish and Fish Habitat Protection Plan and Spill Contingency Plan and applicable authorizations.

REVISIONS

The ESCP Plan is to be finalized three days prior to implementation of supplementary withdrawal with input from the contractor(s) conducting site activities for the City.

Revision	Date	Summary
V1	July 31	Draft Plan to support water licence amendment application
Rev0		Plan Approved

APPROACH

This plan uses DFO pathways of effects, measures to avoid or mitigate against serious harm to fish, and professional judgement to determine where effects from erosion and sedimentation might occur and the appropriate mitigation measures to avoid or reduce these effects. This ESCP is in effect during all phases of withdrawal from the Apex River and Unnamed Lake in 2019, from the start of project set-up (including mobilization of equipment), through to the demobilization of project equipment.

TRAINING

The ESCP will be reviewed with the contractor that will be undertaking project installation, maintenance and removal. All project personnel are to be trained by the contractor in the purpose and requirements of the plan

MITIGATIONS

On-site activities, subsequent potential effects from these, and proposed mitigations for these activities are outlined in Table 1.

Table 1: Project Activities, Potential Effects, and Proposed Mitigation Measures

Activity	Potential effect	Mitigation Measures
Placement, removal, and operation of pumps	The placement of the water intake pumps using machinery, and the maintenance of the pumps, may cause bank and bed erosion leading to increased sediment entering the watercourse.	<ol style="list-style-type: none">1. Disturbance to the riparian vegetation will be minimized. Use existing roads and trails wherever possible. Rig mats are to be used when ground is excessively wet and prone to erosion.2. Equipment will avoid steep banks for entry and egress from water.3. The removal of rocks, sand or other materials from the banks, the shore and shoreline, or the bed of the

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Table 1: Project Activities, Potential Effects, and Proposed Mitigation Measures

Activity	Potential effect	Mitigation Measures
On-shore activities in work areas that are prone to erosion	On-shore activities, such as driving or maintenance activities in work areas prone to erosion (e.g., on sand or fine materials), may cause erosion leading to increased sediment entering the watercourse	<p>waterbody, below the ordinary high-water mark, will be minimized. If material is removed from the waterbody, it will be set aside and returned to the original location if practical to do so, once construction activities are completed.</p> <ol style="list-style-type: none"> 4. Site isolation measures (e.g., silt boom, silt curtain, silt fencing) will be used for containing suspended sediment where in-water work is required, and downgradient of erosion-prone on-shore work areas. 5. Waste material (e.g., construction waste and materials, accumulated debris) will be contained and stabilized above the high-water mark of the Apex River to prevent re-entry. 6. Regular inspection and maintenance of effectiveness of erosion and sediment control measures and structures will be conducted during the course of operations. 7. If the shoreline or banks are destabilized, re-stabilize them immediately to prevent erosion and/or sedimentation. 8. If replacement rock reinforcement/armouring is required to stabilize eroding or exposed areas, use appropriately-sized, clean rock. The rock will be installed at a similar slope to maintain a uniform bank/shoreline and natural stream/shoreline alignment. 9. All pumping materials will be removed from site upon project completion.
Use of machinery in water	The use of machinery in water can lead to sedimentation and erosion which may affect fish health.	<ol style="list-style-type: none"> 1. Machinery on-site will be in a clean condition and maintained free of fluid leaks, invasive species and noxious weeds. 2. Machinery used in the watercourse will be limited to placing and removing the intake pump. 3. Machinery will not be left in the watercourse.
Discharge of Water into Apex River	Potential increase in erosion and sediment loads in the river and degradation of fish habitat.	<ol style="list-style-type: none"> 4. Install effective erosion and sediment control measures such as a diffuser or splash pad before starting work to prevent erosion and sediment from entering the water body as directed by an Engineer. 5. Direct discharge directly into water at a deeper or rocky location as directed by an Engineer

MONITORING AND REPORTING

The implementation of erosion and sedimentation control measures shall be recorded daily by the contractor. This report should note aspects such as performance of silt curtains, days of in-water works, etc.

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