

ABANDONMENT AND RESTORATION PLAN

ENVIRONMENTAL WASTE PROCESSING FACILITY 2019 AMENDMENT TO 1BR-THI1722

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Environmental Waste Processing Facility 2019 Amendment to 1BR-THI1722

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1. INTRODUCTION

On May 4, 2017, Qikiqtaaluk Environmental (QE) obtained a Nunavut Water Board (NWB) Renewal Amendment Licence No. 1BR-TH1722 for the operation of an Environmental Waste Processing Facility (EWPF) in Iqaluit, Nunavut. The EWPF's activities include management of hazardous and non-hazardous waste as well as storage and treatment of hydrocarbon contaminated water and soils that originate from various clients within the municipality of Iqaluit. QE's operations also generate some waste during its activities.

This reviewed Abandonment and Restoration Plan is part of an amendment approval request to expand QE's EWPF temporary storage and treatment capacity. Such an increase is necessary, considering QE's growth in business over the last few years. The nature of QE's activities conducted at its EWPF does not change. The amendment solely aims at increasing the volumes of contaminated soil and water storage and treatment capacity through the construction of a new lined waterproof cell and a review of the waste management.

2. ABANDONMENT AND RESTORATION PLAN OBJECTIVES

The general goals of this plan are to:

- Ensure the long-term physical and chemical stability of the project areas to protect the public's health and safety;
- Enhance natural recovery of the disturbed areas to a state that is compatible with original conditions to allow for future use by people and wildlife;
- Ensure that the requirement for long-term maintenance and monitoring is minimized.

The purpose of this Abandonment and Restoration Plan is to address all EWPF activities.

3. EWPF ACTIVITIES DESCRIPTION

An amendment to 1BR-TH1722 for an increase in temporary storage and treatment capacity is being submitted to the NWB for review and approval. The nature of the changes requested within the amendment is explained per sector of activity as presented below.

3.1 Water Treatment

The water treatment unit (WTU) will continue to be powered by electricity. Petroleum products recovered from water treatment activities are placed in drums, labelled and shipped to an authorized disposal facility in southern Canada. The treated water effluent is tested for water quality parameters included in the licence and disposed of at a pre-approved discharge location within the EWPF footprint, following compliance with discharge criteria. The previous system consisting of 4 holding tanks each with capacity ranging from 8,000 to 15,000 L, has been replaced with one larger holding basin with a capacity of 120,000 L. All factors have been taken into consideration by the engineering team to ensure the ideal flow rate for the water treatment and the proper management of the system pressure.

3.2 Soil Treatment

The temporary storage/pre-treatment capacity of contaminated soil on-site will be increased to 9,290 m³ and will be treated using the same biological, chemical, and physical treatment techniques.

Soils contaminated with hydrocarbons will be temporarily stockpiled in a lined and bermed processing area with a capacity of 9,290 m³. There is also a 650 m² processing area that will be used for the physical treatment of soils and will involve soil screening, to remove coarse materials, followed by washing of the screening rejects. Water from the washing process will be redirected to the WTU. The contaminated soils will continue to be treated using the same biological, chemical, and physical treatment techniques that involve biological degradation methods (landfarming or biopiles) in a lined and bermed treatment area.

Hazardous Waste Management

Hazardous waste management activities conducted at the waste transfer facility include:

- Waste identification, segregation and consolidation;
- Volume reduction;
- Waste packaging and labelling; and,
- Temporary safe storage.

Annually, stored waste containers are shipped south to an authorized facility for final disposal.

4. FINAL ABANDONMENT

In the unlikely event that QE's treatment systems stop functioning or if QE decides to cease these activities and/or withdraw from this market, the water and soil treatment systems will be dismantled and removed from the site.

Spent water treatment filtration media will be containerized and shipped south for disposal in an authorized facility. If untreated water or soils remain once the activities are ceased, they will be transferred into drums or larger containers and shipped to an authorized facility in Iqaluit and/or in the south for final disposal.

Upon final abandonment, soils at the following locations will be sampled and analyzed to assess the quality and determine management options:

- Treated water discharge point;
- Area beneath the contaminated soil storage and processing area;
- Area beneath the contaminated soil treatment area;
- Hazardous waste storage and processing areas; and,
- Sediments at the bottom of the water holding basin.

The sediments at the bottom of the water holding basin will be sampled and analyzed. If contaminated soils or sediments are present, they will be excavated, containerized and shipped south for disposal at an authorized facility.

Stored hazardous waste containers will be shipped south to an authorized facility for final disposal. The empty hazardous waste storage containers will be cleaned, and, if required, decontaminated before removal from the site.

All other structures, including trailers and containers, will also be removed from the site.

5. MONITORING

Once activities on the site have ceased and all stored waste, contaminated water and contaminated soils have been removed from the site, no further monitoring will be required, as there will no longer be a source of contamination on the site.



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