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NUNAVUT WATER BOARD
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File: 1BR-EKA

**Briefing Note – WATER LICENCE AMENDMENT APPLICATION FOR THE EKALUGAD FJORD
FOX-C DEW LINE SITE REMEDIATION**

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Technical Summary –

Introduction

This water licence amendment application submitted by Indian and Northern Affairs Canada (INAC) is for the amendment of water licence N^o. 1BR-EKA0607 to allow for the expansion and modification of the existing landfarm constructed as part of remediation activities at the former FOX-C DEW Line Site located near Ekalugad Fjord, in Qikitaní (Baffin) Region, Nunavut. The proposed expansion of the landfarm is to accommodate additional petroleum hydrocarbon impacted soil discovered and delineated during the course of remediation activities at the site. The proposed landfarm modification will involve relocation of the eastern berm to mitigate further movement and erosion of the berm, and expand capacity by shifting the southern berm further south.

Background

In the summer of 2004 INAC applied for a water licence in order to conduct a detailed site assessment of the former FOX-C DEW Line Site. The primary purpose of the assessment was to identify the types of waste present at the site that would require remediation and to quantify their respective volumes. Assessments of ecological risk and of borrow material sources were also completed as part of the project. Remediation activities would be limited at this point to a limited barrel cleanup and crushing program.

The following year, in 2005, the proponent applied for a new water licence to allow for remediation activities to commence at the site. The remediation activities included the following:

- Demolition of existing structures on-site
- Clean-up of scattered debris
- Construction of a landfarm facility to treat petroleum hydrocarbon impacted soil
- Construction of an engineered non-hazardous waste landfill
- Repair of existing roads
- Disposal of non-hazardous waste and waste soil into on-site engineered landfill
- Treatment of petroleum hydrocarbon impacted soil in the landfarm facility
- Off-site shipment and subsequent disposal of hazardous waste
- Excavation, cleaning, crushing, and on-site disposal of buried barrels

The proposed project start date is September 2005 with a projected completion date of October 2007.

As part of the remediation activities a camp was constructed to house personnel during the working season from July to October each year until the completion of the project. The camp was designed to accommodate a maximum of 35 people for up to 75 days each year of operation. Camp sewage was to be treated in a two independently operated lagoons constructed for the project. Discharge criteria for Oil and Grease, Total Suspended Solids, Biochemical Oxygen Demand, and Fecal Coliforms were provided with the original 2005 application. All combustible solid waste was to be incinerated and disposed of along with scrap metal and non-combustible wastes in the on-site engineered non-hazardous waste

landfill constructed for the project. All hazardous wastes generated during camp activities were to be shipped off-site for disposal.

A Contingency Plan was provided with the original 2004 application. This plan could be more accurately described as a commitment to provide a plan, rather than a complete plan in itself. It provides a generalized outline of what *will be* included in the plan, such as response procedures, training, response team personnel, equipment, and reporting procedures for three separate categories of emergency situations (i.e. fuel and hazardous materials spills, wildlife encounters, and discovery of heritage resources). These procedures, personnel, and equipment lists were not provided in this initial submission, but only identified as being required as part of a complete Contingency Plan.

A more complete Contingency Plan was provided with the 2005 renewal application. This plan described in more detail the items identified in the original plan.

In 2006 an emergency amendment application was submitted to the NWB in order to carry out the repair of a road embankment that had been damaged by wash out. To prevent the problem from recurring, the proponent installed a series of culverts through the road to allow water to pass more freely.

Current Amendment Application

During the course of remediation activities conducted at the FOX-C DEW Line Site the proponent encountered a larger quantity of petroleum hydrocarbon impacted soil than originally anticipated. In order to treat this greater volume of contaminated soil it will be necessary to expand the landfarm facility that was constructed as part of the remediation program. The current amendment application includes a brief summary of the proposed work along with a plan drawing of the proposed landfarm expansion.

Points of Interest –

- All concerns raised by the NWB regarding the FOX-C DEW Line Remediation, up to the current amendment application, appear to have been addressed by the proponent.

Deficiencies and Line of Action –

- It is not clear from the current amendment application what, if any, change in water use will occur as a result of the proposed expansion of the landfarm facility; it appears that the changes required would constitute a modification of the original landfarm design rather than a fundamental change to the water licence itself;
- There were no proposed timelines provided regarding the proposed landfarm modification (will an extension of the licence expiry date be required?);
- It appears that only one annual report was submitted to the NWB for 2006; however, it was a requirement of the original licence issued for the assessment as well as the licence issued for the remediation work;
- The drawings provided with the original 2005 application for remediation activities were not signed or sealed by a professional engineer;
- As-built drawings of the waste disposal facilities constructed as part of the original remediation project have not been provided, hence, there is no way to know if the facilities constructed as part of the remediation program have been built according to the plans originally approved by the NWB;
- As-built drawings of the culvert installations constructed as part of the emergency repair work completed in 2006 were required to be submitted to the NWB as a condition of the amendment; however, these drawings do not appear to have been submitted;
- A design report or summary identifying the limitations, discussing the suitability, and analyzing the effectiveness (i.e. in terms of structural integrity, containment, and contaminant migration) of each of the waste disposal facilities constructed was not provided with the original application;
- A report or discussion detailing the modeling performed to predict the thermal behaviour of each of the waste disposal facilities constructed was not provided with the original application.

Interconnectivity –

The following files were reviewed in order to compose this briefing note:

- **Water Licence Amendment Application** – Indian and Northern Affairs Canada – *FOX-C DEW Line Remediation, Ekalugad Fjord* (dated: March 8, 2007; received: March 8, 2007)
- **Emergency Amendment Application** – Indian and Northern Affairs Canada – *FOX-C DEW Line Remediation, Ekalugad Fjord* (dated: August 18, 2006; received: August 18, 2006)
- **Water Licence Application for the FOX-C (Ekalugad Fjord) Intermediate DEW Line Site** – Indian and Northern Affairs Canada – *FOX-C DEW Line Remediation, Ekalugad Fjord* (dated: March 22, 2005 ; received: March 24, 2005)
- **Environmental Screening of the Proposed Site Remediation at the Former FOX-C DEW Line Site at Ekalugad Fjord, Nunavut** – Public Works and Government Services Canada – *FOX-C DEW Line Remediation, Ekalugad Fjord* (dated: March 31, 2005; received: May 9, 2005)
- **Water Use Licence Application for the Clean Up of FOX-C Intermediate DEW Line Site** – Indian and Northern Affairs Canada – *FOX-C DEW Line Remediation, Ekalugad Fjord* (dated: June 2004; received: June 12, 2004)
- **Contingency Plans for the Clean Up of FOX-C Intermediate DEW Line Site** – Indian and Northern Affairs Canada – *FOX-C DEW Line Remediation, Ekalugad Fjord* (dated: June 2004; received: June 12, 2004)

Conclusion –

As a stand alone application the current amendment application leaves much to be desired. There was not enough information provided to quickly and effectively understand what the proponent was requesting within the scope of the original remediation project. Fortunately, the NWB files are relatively comprehensive for this project, however, this style of application puts the onus on the NWB to do all the background research on a project in order to gain an understanding of any subsequent amendment requests or changes. That being said, this amendment application does not appear to require any changes to the use of water or disposal of wastes as part of the overall remediation project. Only a modification of an existing facility is required, and thus, changes to the original licence granted may not be required.

As far as past performance is concerned, this remediation project appears to suffer the same deficiencies as many of the other DEW Line Site cleanups. Information, such as design and decision-making rationale, signed and sealed design drawings and as-built drawings, thermal modeling, and limitations may exist, but are never provided to the NWB. The lack of proper documentation in these matters allows licence holders to execute projects without any accountability.

Provided that the responses to the NWB review are adequately addressed, this file should be acceptable for approval.