

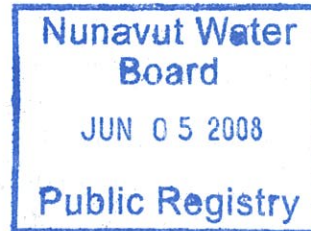


Water Resources Division
Nunavut Regional Office
Iqaluit, NU X0A 0H0

Our File: 9545-3-3QIK / 163300
Your File: 3BM-QIK0712

August 23, 2007

Richard Dwyer
Licensing Trainee
Nunavut Water Board
Gjoa Haven, NU X0B 1J0



Re: 3BM-QIK0712 / Municipality of Qikiqtarjuaq / Qikiqtani Region / licence amendment / contaminated soil land farm construction

On behalf of Indian and Northern Affairs Canada (INAC), I have reviewed the licence amendment application by the Municipality of Qikiqtarjuaq for the construction of a contaminated soil land farm. The following advice has been provided pursuant to INAC's mandated responsibilities for the enforcement of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNST) and the *Department of Indian Affairs and Northern Development Act* (DIAND Act).

The construction of a land farm facility is planned for the Municipality of Qikiqtarjuaq to treat soils contaminated with petroleum hydrocarbons of a diesel/heating fuel variety. The Municipality has authorized the Government of Nunavut's Department of Community and Government Services to apply for an amendment to its municipal water licence on its behalf.

Indian and Northern Affairs Canada recommends that the following comments be considered when reviewing the submitted licence amendment application:

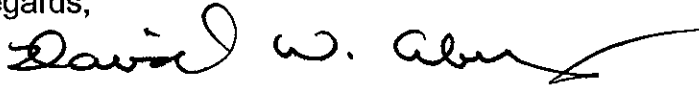
1. The submitted water licence application is considered to be incomplete. The proponent's application consists of a contract document for the construction of a land farm facility and construction drawings. The contract document is not informative for licence application reviewers and does not provide a discussion on the actual design of the facility and its potential impact to water quality within its surrounding environment.
2. The proponent should familiarize itself with the NWB's *Supplementary Information Requirements for Hydrocarbon-impacted Soil Storage and Landfarm Treatment Facilities* (March 2005) document available on the Public Registry and provide a written response.

3. The submitted Water Licence Application Form contains certain responses which may require clarification. These are as follows:
- Section 7 – Quantity of Water Involved
 - The proponent has not indicated the quantity of water to be used and the quality of water to be returned to source. This information concerning the use of water should be provided within this licence amendment application. INAC understands that although precipitation will collect within the land farm facility's retention basin, moisture is an integral component to the treatment of hydro-carbon contaminated soils and water may need to be added or discharged from the land farm facility into the surrounding environment on a periodic basis.
 - Section 10 – Predicted Environmental Impacts of Undertaking and Proposed Mitigation Measures
 - The proponent has indicated that a Nunavut Impact Review Board (NIRB) screening of its licence amendment application has occurred but has not confirmed this screening by providing the NIRB screening file code. INAC cannot find the project's screening application and report on the NIRB registry site.
 - Section 15 – Proposed Time Schedule
 - The start and completion dates for the requested licence amendment have not been provided. INAC recommends that these dates correspond with the existing 3BM-QIK0712 licence.
4. The submitted construction drawings are labeled as being applicable to the Government of Nunavut Qikiqtarjuaq Landfill Construction Project. The proponent should confirm that all construction drawings submitted for the current licence application are applicable to the construction of a land farm treatment facility. The construction drawings should be relabeled with an appropriate project name and resubmitted for review.
5. Construction drawing numbers 101 and 102 do not identify the contaminated sites and new land farm location sites as specified within their titles. These drawings should be revised in a manner which clearly identifies these sites.
6. The proposed land farm facility's proximity to freshwater sources and contour lines should be provided on the drawings (construction drawing number 103, Lagoon Plan). The current licence amendment application also does not describe site specific conditions, therefore potential impact on freshwater quality cannot be assessed.
7. The proponent should describe the volume and quality of contaminated soils/snow that it expects to treat within a land farm facility.

8. The proponent should describe the source, properties, and volume of aggregate materials required to construct a land farm facility. INAC recommends that mitigation measures designed to prevent sediment loading within nearby freshwater sources be implemented when acquiring and placing such materials and throughout the land farm facility's construction.
9. The proponent should only treat petroleum hydrocarbon contaminated soil and snow within a land farm facility. Other contaminants such as heavy metals, glycol, and heavy oils that are not bio-remedial using land farming procedures should not be mixed with soils and snow taken to the land farm facility. This is a necessary to preserve the remedial performance of the land farm facility and to prevent the accumulation of large quantities of contaminated soils that cannot be successfully bio-remediated.
10. The proponent should indicate its treatment objectives for recovered petroleum hydrocarbon contaminated soils and collected precipitation runoff. INAC recommends that the either the Government of Nunavut's *Environmental Guideline for Site Remediation* or the Canadian Council of Minister's of the Environment (CCME) *Canada Wide Standards for Petroleum Hydrocarbons (PHC) in Soil Tier 1 F1-F4 Fractions* be adhered to for the treatment of contaminated soils, using the parkland/residential classification. Any water discharged from the land farm facility should comply with the CCME *Canadian Water Quality Guidelines for the Protection of Aquatic Life* in freshwater environments.
11. The proponent should indicate how it will treat collected precipitation runoff that does not meet treatment objectives and before discharge to the receiving environment.
12. An Inspector designated by the Minister under Section 85(1) of the NWNSRT should be notified at least ten (10) working days in advance of any planned release of water or soil from the land farm facility.
13. The operation of a land farm facility requires an individual(s) and equipment capable of providing effective treatment to petroleum hydrocarbon contaminated soils. The proponent should provide an operations and maintenance manual specific to the proposed land farm facility. The addition of nutrients must be carefully managed. Over-dosage, or low moisture content with an otherwise optimal dosage will inhibit microbial activity. If nutrient addition is planned, someone with experience in bioremediation should be authorized to manage this activity.
14. The proponent should provide a detailed Quality Assurance / Quality Control program for the construction of a liner system within the land farm facility to ensure minimal leakage.

Indian and Northern Affairs Canada requests notification of any changes in the proposed project, as further review may be necessary. Please contact me to discuss any questions or comments with regards to the foregoing. I can be reached by telephone at (867) 975-4555 or by email at AbernethyD@inac-ainc.gc.ca.

Regards,

A handwritten signature in black ink, appearing to read "David W. Abernethy", with a long horizontal flourish extending to the right.

David W. Abernethy
Water Resources Coordinator

Cc. Jim Rogers, Manager of Water Resources – Indian and Northern Affairs Canada,
Nunavut Regional Office