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NUNAVUT WATER BOARD

NUNAVUT IMALIRIYIN KATIMAYINGI

January 12, 2004

File No:

Your File No:

Mr. Alain Carriere
Nunatta Environmental Services Inc.
P.O. Box 267
Iqaluit, NU X0A 0H0
Email: a.carriere@sympatico.ca

Dear Mr. Carriere:

Background

Nunatta Environmental Services Inc. (the “Applicant” or “Nunatta”) filed an application for a water licence (the “Application”) with the Nunavut Water Board (the “NWB” or “Board”) on August 5, 2004. The NWB determined Nunatta’s Application to be for a “Type B” water licence as *per* s. 3, column IV of Schedule VI of the *Northwest Territories Waters Regulations*. Pursuant to s. 55(1) of the *Act*, the NWB gave notice of the Application on September 9, 2004. Notice of the Application was also published in Nunatsiaq News and posted in local bulletin boards throughout the City of Iqaluit (“the City”). Interventions were submitted by a number of Interested Parties (“the Parties”), including Indian and Northern Affairs Canada (“INAC”), Environment Canada (“EC”), the Department of the Environment-Government of Nunavut (“DOE-GN”), and the City. These submissions have been placed on the NWB’s FTP site and can be obtained from the following Internet link:

<http://ftp.nunavut.ca/nwb/NWB4%20OTHER/NWB4NUN/Application/>

The NWB has reviewed all interventions and considered all comments made by interested persons, and has decided the following:

I. General

a. Scope of the Application

The scope of the license application will include any matter generally or specifically related to the objects of the NWB, which include, but are not limited

to: the use of water for industrial or other purposes; the treatment and disposal of liquid waste; the landfarm treatment of hydrocarbon-impacted soil; the abandonment and restoration of any existing or decommissioned facilities utilized in landfarming operations, as well as any other undertaking related to the use of water or the direct or indirect deposit of waste into water.

II. Water Use

The Applicant is requested to provide the NWB with the estimated water usage (in cubic meters *per annum*) at the landfarm facility, which is obtained from the City of Iqaluit, for all purposes.

III. Waste Disposal

a. Landfarm Treatment Cell and Monitoring Well Design and Construction

The Applicant is requested to provide to the NWB a comprehensive description of the Landfarm Facility, which should contain, but not be limited to, the following information:

- i. A detailed topographical site survey map (stamped by a Professional Engineer licensed to practice in Nunavut) which clearly illustrates the location (including GPS coordinates) of groundwater monitoring wells, as well as containment berm locations, site drainage patterns, the location of any adjacent watercourses and water bodies, and the 25 year floodplain (if applicable);
- ii. A description the physical and chemical characteristics of the materials utilized in the construction of the containment berms and treatment area infrastructure;
- iii. A discussion of the design criteria of the groundwater monitoring wells;
- iv. A discussion of the appropriateness of the depth of placement of the monitoring wells; and
- v. A discussion of the installation methodology of the groundwater monitoring wells, including measures implemented to prevent surface water infiltration.

b. Landfarm Treatment Cell Operation and Maintenance

The Applicant is requested to provide to the NWB a detailed description of the soil characterization process, which occurs prior to acceptance at the Landfarm facility. The description should provide, but not be limited to, the following information:

- i. The criteria utilized by the Applicant to determine the suitability of a soil for biological treatment, including:
 - a. Maximum Total Petroleum Hydrocarbon (TPH) concentration;
 - b. Hydrocarbon fractions present;
 - c. Inorganic (heavy metal) contaminant present;
 - d. PH; and
 - e. Moisture levels
- ii. Chemical, physical and biological parameters to be monitored;
- iii. Sampling frequency and number of samples *per* volume of soil accepted; and
- iv. Treatability studies to determine the feasibility of bioremediation as a treatment option for the soils to be accepted.

The Applicant is additionally requested to provide to the NWB, an updated Operations and Maintenance Plan for the Landfarm Facility (including an implementation schedule for the delivery of the O&M Plan), which should contain, but not be limited to, the following information:

- i. Contaminated soil thickness in treatment cells;
- ii. Method of mechanical aeration in treatment cells;
- iii. Soil amendments (including fertilizers and pH control amendments) added to soils undergoing biological remediation;
- iv. Oversized material management procedures and disposal options;
- v. Surface water management, leachate containment and/or treatment, and site grade planning;
- vi. Site volume and operational monitoring programs, including the criteria against which successful remediation of the soils under treatment is assessed;
- vii. Ultimate disposal options for any remediated soils;
- viii. Dust control programs; and
- ix. Staff operational training programs.

c. Hazardous Waste

The Applicant is requested to provide the NWB with information regarding the amounts of batteries and waste antifreeze currently stored on the premises of the Landfarm Facility.

d. Monitoring

The Applicant is requested to provide the NWB with detailed information concerning any monitoring which has been carried out since the Landfarm Facility was commissioned. Additionally, the Applicant is requested to provide the NWB with a proposed monitoring plan, which would include, but not be limited to, the following information:

- i. Locations (including GPS coordinates) of all current, and proposed, surface and sub-surface Monitoring Stations;
- ii. Chemical, physical and biological parameters to be monitored at each Monitoring Station;
- iii. Sampling frequency at each Monitoring Station;
- iv. Baseline monitoring programs currently in progress, or contemplated during the term of the license under consideration; and
- v. Any QA/QC Programs currently being implemented as part of the Monitoring Program, or any such QA/QC Plan which is contemplated.

The Applicant is requested to provide to the NWB, **by Friday, February 18, 2005**, a schedule for the provision of information required in this letter. To facilitate a more efficient review, the Applicant is requested to respond to those information requests in the order that they appear in this letter.

Please do not hesitate to contact the undersigned, should you have any questions or concerns.

Sincerely,

Original Signed By:

Philippe di Pizzo
Executive Director
Cc. Distribution List