P.O. Box 119
Gjoa Haven, NU X0B 1J0
Tel: (867) 360-6338
Fax: (867) 360-6369

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI

File No: NWB5FRA----/TR

April 25, 2002

Suzanne Belanger-Fontaine
Environmental Officer
Defense Construction Canada
Place de Ville, Tower B
112 Kent Street
Ottawa, ON K1A 0K3
Email: belangsu@dcc-cdc.gc.ca
-and-
Eva Schulz, P. Ag.
Environmental Scientist
UMA Engineering Ltd.
Calgary, AB T2N 3S3
Email: eschulz@umagroup.com

RE: Water License Application for PIN 3, Lady Franklin Point

Dear Ms. Schulz,

The NWB has completed its review of the application filed in November 2001 for a water license for the reclamation of the Lady Franklin Point (PIN 3) DEW Line. Before finalizing our approval, I require clarification of the following:

i. The volume of water for the camp operations is 30 cu. M, which includes 12 cu. m for domestic use and 18 cu. m for contractor use. What is meant by contractor 'water' use?

ii. Spill Contingency Planning is generic to all DEW line clean up and is based on FRONTEC key involvement as contractor/consultant for implementation of the plan. Please confirm whether or not FRONTEC is still involved or if the contract will be allocated by tender? The Spill Contingency Plan will need to be revised to reflect current contact and site-specific information.

iii. Tier I soils are to be disposed into the Non Hazardous Waste (NHW) landfill. Drawing – 106 shows a drainage course through the center of the proposed site. Will diversion of the drainage course be undertaken or will final graded cover with positive drainage be sufficient to minimize infiltration and leachate? What monitoring (parameter/frequency) is proposed? Will thermal monitoring of the site be performed?

iv. Tier II soils will be disposed of in the Northern Disposal Facility; has the final design of the facility been completed? What monitoring is proposed to confirm leachate containment? (i.e., ongoing water sampling, geothermal assessment of depth of active layer). What are the specifics (location, parameter, frequency)?

v. Section 5.1 The application indicates that the exact location of the landfills is undefined and therefore drainage characteristics of the sites are unknown. Final design plans for the proposed sites shall be submitted to the NWB for review and shall include at least a description of watershed characteristics, details of drainage alteration (if, applicable) and details on the monitoring proposed for the site to evaluate containment, contamination or treatment efficiency. (i.e., analysis of past/present depth of active layer relative to the proposed depth of cover.)

vi. Section 5.1.3 Type B soils: Will leachate containment be achieved? If not, what monitoring is proposed for this site? How will the accumulation of meltwater within the bermed area be dealt with during spring freshet?

vii. Specific details on operation and maintenance of the proposed landfarm should be provided (i.e., type nutrients, frequency of tilling, and monitoring proposed to evaluate efficiency of the system).

viii. Section 5.2.2 Landfill closures: for the South Landfill, the application indicates that there are areas of visible debris with localized depressions, which fill with water. We have concerns about voids considering the localized depressions and visible debris. The application does not mention measures, such as excavation or additional compaction, to eliminate voids which could yield frost jacking and ice lenses. Please clarify closure details.

ix. Engineering and implementation details on the dewatering in the area of the South Landfill will need to be submitted. Discharge rate and erosion control measures, and monitoring shall be outlined. When would this information be available?

x. For the South Beach landfill closure, the plan is to excavate and backfill the area with type 2 granular fill. What mitigation measures are proposed to prevent sedimentation or disposal of 'deleterious materials' to the aquatic environment? Will rip-rap be needed to minimize erosion and sedimentation at the shoreline?

xi. Section 5.2.5 Numerous areas of piles of buried or partially buried non hazardous debris may be regraded with gravel material. Why not excavate these unspecified areas to the non-hazardous waste landfill?

xii. Section 5.9 of the application: reference is made to sewage being handled using at minimum primary treatment (settling tank and lagoon) with discharge to the ground surface. Please provide additional details of settling tank and lagoon. Given the volumes being proposed, I assume this is not an engineered lagoon but simply a sump (man-made pit, trench hollow or natural depression)? What reclamation measures are proposed for this waste disposal area? What will be the minimum cover? Will there be positive drainage, and what type of monitoring are you proposing?

xiii. General: Are any steps being taken to promote re-vegetation in the area? Is acid rock drainage an issue on site?

xiv. Drawing H-L13/1-9101-101 shows water body within Borrow Area 1. Will this water require discharge? In the area of the Hunting/fishing camp, scattered debris are present near the shoreline. Will these debris be excavated? Are erosion control measures and monitoring proposed?

xv. Drawing H-L13/1-9101-103 shows a body of water adjacent to the sewage lagoon. The drawing shows a second water body adjacent to the gravel pad and completely surrounded by unspecified debris. What are the general characteristics of these water bodies? Will the excavation at the sewage lagoon have an impact on the water body? Is monitoring proposed for the two water bodies?

xvi. Drawing H-L13/1-9101-104 shows a body of water completely surrounded by debris and located NE of the burn pits and several areas to be excavated for and treated as DCC Tier II contaminated soils. What are the general characteristics of the water body? It is difficult to determine if the water body is down gradient of the fore mentioned areas. Please clarify and indicate if special monitoring is proposed?

xvii. Drawing H-L13/1-9101-109 indicates sewage lagoon sludge excavated to dept of .30 m and a water depth of 0.3m. Will effluent be discharged from the lagoon? Will this lagoon be used as noted above (iii)? Or is the lagoon to be reclaimed? If the lagoon will be used during the remediation activities, please provide details on type of lagoon and receiving environment such that the NWB can establish appropriate site-specific discharge parameters. The proposed reclamation option for the lagoon sludge is to treat them as a DCC tier II Contaminated soil. Have landfarming and hydrocarbon remediation been explored?

Annex D-Proposed Landfill Monitoring Plan-Revision 4

In general, the majority of clarification needed relates to monitoring on site. While there is a monitoring plan in place (Annex D), it appears very generic.

The water sampling frequency is not given. The location of thermal monitoring stations is not provided. Do the parameters proposed on pg 50 represent total or dissolved. The NWB does not have baseline data collected by Royal Roads for comparison purposes. It may be useful for this information to be filed with the NWB. What parameter for ICP analysis, ions are proposed? When does the applicant propose to submit results and to whom? Site-specific information on thermistor strings is needed (i.e. location, monitoring frequency).

What monitoring is proposed during construction/operation phase? When should results be submitted? Given previous sampling and monitoring of the site does the applicant have a Quality Assurance/Quality Control plan in place?

I would require a detailed monitoring plan be submitted for approval. The monitoring plan should address monitoring while on site as well as post-construction (water quality and thermal analysis, description of location of sampling points, frequency of sample, and list of parameters to be sampled) with an annual review of results (i.e., comparative analysis of the results to baseline monitoring which

may have been undertaken for water quality and analysis of the thermal monitoring compared to past thermal trends).

I recommend a three-phase approach to monitoring: terms of reference QA/QC, monitoring plan and finally annual reporting. This could eliminate the need to provide detailed clarification as outlined above on monitoring prior to licence issuance.

When could you provide the terms of reference for the monitoring plan, outlining also QA/QC measures?

Following a geotechnical investigation, detailed design plans for the new infrastructure and closure plans for existing landfills shall be submitted for review.

When do you expect these plans to be available for review? Based on the actual design plans, when could you provide a site-specific monitoring plan, which would be a follow-up to the terms of reference previously submitted?

During operation and post construction, stability issues are to be addressed by a Geotechnical Engineer. I recommend that monitoring results be submitted annually with comparative analysis to baseline and geotechnical engineers inspection, with a cover letter from the applicant indicating how concerns will be addressed.

I propose inspection in the summer with a follow-up report to be submitted with the Annual Report to be submitted by March 31 following the calendar year being reported. Is this feasible for the applicant?

The annual report would also provide analysis as per monitoring plan.

The Spill Contingency Plan should be revised and resubmitted to reflect current operation and site-specific information following award of contact. **When would you be able to provide this updated plan?**

Please provide the required information at your earliest convenience. Meanwhile, should you have any questions, do not hesitate to contact me by telephone at 867-360-6338, by fax at 867-360-6369 or by email (dionne@polarnet.ca).

Sincerely,

Original Signed by

Dionne Filiatrault, P. Eng.,
Senior Technical Advisor