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Fox-M DEW Line Water Licence Application

On behalf of Indian and Northern Affairs Canada (INAC), I am pleased to submit the following comments on the water licence application for the clean-up of the Fox-M Distant Early Warning (DEW) Line site.

1. Introduction

These comments, on the application for a water licence by UMA Engineering Ltd. on behalf of Defense Construction Canada (DCC), are submitted on behalf of the Water Resources division of INAC.

This submission will be based on the water licence application - including attached documents and designs - received by the Nunavut Water Board (NWB) on January 29, 2003.

2. Conditions Applying to Water Use

The DEW Line clean-up camp expects to draw their water from Water Supply Lake. Within that lake is a bermed area called the Water Reservoir that has a capacity of 600,000 m^3. The Water Reservoir historically served as the water source for the old DEW Line station and the nearby Municipality of Hall Beach. The Municipality of Hall Beach has recently constructed is own reservoir, which INAC will call the Municipal Reservoir, situated adjacent to the Water Reservoir. Water is pumped from the Water Reservoir into the Municipal Reservoir.

For the clean-up camp to use the Municipal Reservoir or other municipal facilities, it will obviously require authorization from the Municipality of Hall Beach. As mentioned, however, the application indicates that the camp plans on retrieving its own water directly from the Water Reservoir/Water Supply Lake. Regardless of whether or not the municipal facilities are used, INAC recommends that the water licence include a clause to allow for

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camp to retrieve its own water.

Based on the water licence application, the DEW Line clean-up project will required approximately 30 m^3 of water per day. This translates into roughly 900 m^3/month. Assuming a five and a half month working season, that would translate into roughly 5000 m^3/year. INAC therefore recommends that the annual volume of water pumped from the Water Supply Lake and Water Reservoir not exceed 5000 m^3/year for the term of the licence. If the proponent plans on working through the winter season, this amount should obviously be increased accordingly.

SNP station 1 should be designated as "raw water supply from Water Reservoir," to be measured at the truck fill point. It should be used to measure the monthly quantity of water pumped from the Water Reservoir, and thus Water Supply Lake.

INAC also recommends the installation of warning signs along Water Supply Lake indicating that the lake is the source of the camp's (and Municipality's) drinking water.

3. Conditions Applying to Waste Disposal

3.1 Sewage Treatment Facilities

With respect to sewage, the proponent indicates that they plan on using the Municipality of Hall Beach's sewage lagoon. However, the proponent also mentions a contingency of creating its own two-cell sewage lagoon should the camp fail to obtain permission from the Municipality to use their facilities.

Should the Municipality grant authorization to use their sewage treatment facilities, INAC encourages the proponent to use those facilities since it would limit the number of sewage-impacted sites. However, INAC also does not see any reason to prevent the proponent from creating its own two-cell sewage lagoon. In fact, granting authorization to create a sewage lagoon in the licence can avoid the hassles of requiring an application for an amendment in the future should, for some reason, the Municipality facilities no longer be available.

As such, since the potential creation of a sewage lagoon is mentioned in the current application, INAC recommends that the option be approved. However, since no specific designs of the lagoon are provided with the application other than the mention of a two-cell lagoon, INAC recommends that a condition of this approval be that the designs of the lagoon must be approved by the NWB prior to its implementation. The review of the lagoon designs, if they are ever required, could therefore be undertaken as a simple review and comments by stakeholders rather than a full amendment application, much like the review of an A&R plan that can be done without the need for a full amendment application.

INAC recommends that SNP station 2 be designated as "raw sewage from the

pumpout truck." Station 2 should be used for the monthly measure of sewage generated by the clean-up camp. Should the camp be using the Municipality of Hall Beach's sewage treatment facilities, these values should be provided to the Municipality so that they are aware of the extra volume of sewage entering into their system.

Also, SNP station 3 should read as "runoff below the sewage disposal area prior to discharge into the marine environment." This should include sampling of the sewage effluent prior to reaching the marine environment in the area of greatest flow. The sewage effluent at SNP station 3 should be sampled monthly during periods of flow for the following parameters and limitations:

Total Suspended Solids	180 mg/L
BOD	120 mg/L
Fecal Coliform	10,000 CFU/100 mL
pH	6 to 9
Oil and Grease	no visible sheen
Ammonia	monitor only

Of course, sampling at SNP station 3 is only required should the proponent actually create its own sewage lagoon. If the camp is instead using the Municipality facilities, then monitoring of the effluent will be the Municipality's responsibility.

Warning signs should be posted along the flow path of the sewage effluent.

3.2 Solid Waste Disposal

As with the sewage treatment, the proponent plans on using Municipal facilities if authorization is granted. If not, domestic garbage generated by the camp will be incinerated in an enclosed container and the residual waste buried in an on-site landfill. Since the Municipal facilities are already regulated under a water licence (still pending as of April 2, 2003), and the burning of the waste does not involve the deposit of waste in such a manner as to impact water, INAC does not foresee the need to cover the solid waste disposal aspect of this project in the water licence. The mention of the deposit of domestic waste into an approved facility (i.e. the Municipal facilities) should be more than adequate.

3.3 Decommissioning Landfills

For the disposal of the waste and debris that will be gathered during the clean-up of the DEW line site, two landfills will be created. The first is a non-hazardous landfill, which will be located relatively close to the beach area. This landfill will not contain any materials that would produce leachate and thus will not have an impact on water.

The second landfill will be a secure landfill for Tier II materials. In this case, the landfill is designed in such a way as to be secure, meaning that it will be very unlikely for any

leachate or other contaminants to leave/be produced at the landfill.

As was acknowledged its Reasons for Decision for the Fox-5 clean-up (June 20, 2002), "the Board has confidence that the proposed decommissioning measures will be successful and that impacts on water will be unlikely." Since the criteria and methodology for both sites are the same, it is likely that water will not be impacted at Fox-M either. Provided that the proponent follows the plans as provided in the application, specific conditions regarding the decommissioning landfills are therefore not required in the water licence since there is no impact on waters.

Both landfills will be monitored according to the monitoring program provided by the proponent. This monitoring will help insure that the landfills are working according to design.

3.4 Hazardous Waste

The proponent plans on removing all hazardous waste and soils, as defined by the CEPA regulations, from the site and shipping them to a proper disposal facility. INAC agrees with this suggested method of disposal of these hazardous wastes.

3.5 Landfarm

Soils contaminated with hydrocarbons (type B) will be placed within a hydrocarbon landfarm. Nutrients will be added to the landfarm and the soil will be tilled to promote the breakdown of the hydrocarbons. Any water that accumulates in the perimeter collection system will be sampled prior to discharge.

INAC recommends that notes on the progress of the hydrocarbon remediation be included in the annual report to be submitted to the NWB. Also, final approval for the abandonment and restoration of the landfarm once the soil is completely remediated should be approved by the NWB.

INAC recommends the installation of SNP station 4 to monitor downslope of the landfarm. This station should be monitored for hydrocarbons to confirm that no hydrocarbons are leaching out of the landfarm. Alternatively, the proponent can provide leaching test results to prove that the hydrocarbon-contaminated soils within the landfill will not produce leachates.

4. Conditions Applying to Abandonment and Restoration

The entire application concerns the abandonment and restoration of the Fox-M DEW line site, and thus this is the main undertaking of the project. INAC has no concerns with the overall project, and believes that the end result will be beneficial to the area.

However, an abandonment and restoration plan will still have to be provided for the

demobilization and site remediation of the clean-up camp. This plan should be submitted at least 6 months prior to the start of demobilization.

5. Conditions Applying to the Undertaking

Overall, INAC is satisfied with the project description, the environmental protection plan, and the contingency plan provided with the application. INAC simply wishes to re-emphasize that care should be taken to avoid unnecessary disturbance to streams or water bodies, that waste treatment facilities be repaired as required, and that the site be returned as close as possible to its natural condition after demobilization. Otherwise, the proponent should conform to the plans and designs as provided with the application.

Also, according to the maps provide with the application, the only road to the southern-most borrow site is along the berm of the Water Reservoir. INAC would like the proponent to take the appropriate precautions to prevent contaminated vehicles from using that road and thus potentially contaminating the drinking water source.

6. Recommended Terms of Licence

The proponent requests a 4 year term, ending in October 2007. INAC agrees with the suggested term of licence.

Finally, INAC recommends allowing all interested parties to review and comment on the draft licence prior to it being issued. This will allow DCC to express any reservations they may have at this point. Hopefully, any reservations can be resolved early in the process and minimize any non-compliance issues in the future.

If you have any concerns or questions, please feel free to contact me.

Sincerely,

Original Signed By: Michael Roy

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