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Via Email: [licensing@nunavutwaterboard.org](mailto:licensing@nunavutwaterboard.org)

**Re: NWB 3BM-CLY0308 – Hamlet of Clyde River – “Type B” Water License  
Renewal**

On behalf of Environment Canada (EC), I have reviewed the information submitted with the above-mentioned application. The following specialist advice has been provided pursuant to Environment Canada’s mandated responsibilities under the *Canadian Environmental Protection Act*, and Section 36(3) of the *Fisheries Act*.

The Hamlet of Whale Cove (Hamlet) is applying to renew their water license to allow for the municipal use of water and the deposit of waste. The Hamlet’s water supply comes from Fish Lake located approximately 3.5 km from the Hamlet. Sewage is pumped out of sewage holding tanks by Hamlet trucks and transported to the Sewage Treatment Facility. The sewage treatment system consists of a lagoon with an exfiltration berm which allows sewage to slowly discharge into a natural wetland, with eventual discharge into the Hudson Bay. Solid waste is collected by the Hamlet and deposited in the Solid Waste Management Facility located approximately 1.2 km from the Hamlet. Bulky waste is segregated from the solid waste and stored on the west side of the landfill.

There are currently no plans for upgrades for the water supply system or for the Sewage Treatment Facility. The Hamlet is investigating the possibility of a new access road on the east side of the Solid Waste Facility because the current entry point is inadequate. Waste is currently being deposited at the entrance of the site because the grade of the slope is too steep and because there is an accumulation of loose materials at the entrance. The Hamlet is also currently looking into purchasing a sealift container for the temporary storage of hazardous waste prior to proper disposal.

Environment Canada recommends that the following conditions be applied throughout the duration of the license:

## **General**

- The Hamlet must ensure that any effluent discharged must be in compliance with Section 36(3) of the *Fisheries Act*. According to the *Fisheries Act*, Section 36(3), the deposition of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.
- Any stockpiled material should be stored above the high water mark of any water body and in such a manner as to prevent sedimentation of surrounding water bodies.
- A Closure and Reclamation Plan for the existing solid waste and sewage treatment facilities should be submitted for approval as a condition of the water licence, no later than 9 months prior to closure of the facilities.

## **Fuel Storage and Spill Contingency**

- All spills must be documented and reported to the NWT/NU Spill Line at (867) 920-8130.
- Secondary containment or surface liners (drip pans, fold a tanks, etc.) should be placed under all containers or vehicle fuel tank inlet and outlet points, hose connections and hose ends during fuel or hazardous substance transfers. Secondary containment should be of adequate size and volume to contain and hold fluids for the purpose of preventing spills (the worst-case scenario).

## **Sewage Treatment Facility**

- Appropriate limits should be set at the last point of control, this being the discharge structure from the lagoon, not the end of the wetlands. Monitoring should include the quality of effluent leaving the wetland in order to determine the performance of the wetland as a secondary treatment system.
- The Hamlet should be aware of the work being done to develop a Canada-wide Strategy for the Management of Municipal Wastewater Effluents, under the aegis of the Canadian Council of Ministers of the Environment (CCME). The latest version of the Canada-wide Strategy, which addresses specific parameters and governance, was approved by the CCME February 17, 2009 ([http://www.ccme.ca/assets/pdf/cda\\_wide\\_strategy\\_mwwe\\_final\\_e.pdf](http://www.ccme.ca/assets/pdf/cda_wide_strategy_mwwe_final_e.pdf)). As part of the federal government's implementation of the CCME Canada-wide Strategy, it is EC's stated intention to develop a regulation under the *Fisheries Act*. The Canada-wide Strategy will more clearly define regulatory requirements related to the release or discharge of wastewater into surface waters. Environment Canada's goal is to ensure that effluents from wastewater systems are treated before being discharged to the receiving environment so that effluents do not pose unacceptable risks to ecosystem and human health, or to fisheries resources.
  - The focus is on setting maximum allowable limits for BOD<sub>5</sub>, residual chlorine and TSS in municipal wastewater effluent. There will be a period of up to five years during which northern issues are examined and practical limits put forth for wastewater quality. For the Hamlet, this may eventually impact the BOD and TSS discharge criteria.

- A minimum 1 m of freeboard should be maintained within the sewage lagoon at all times, or as specified by a geotechnical engineer.
- Environment Canada recommends that a Sludge Management Plan be submitted for approval. EC recommends the following on sewage sludge disposal:
  - Maintenance should include periodic removal and disposal of sewage sludge. Estimates should be made of the quantities of sludge likely to be produced, the required frequency of extraction from the lagoons; and operational procedures developed for environmentally sound removal and disposal. These procedures should include characterization to ensure disposal options are appropriate. Environment Canada recommends that prior to desludging occurring, the proponent submit for approval a Sewage Sludge Management Plan that clearly outlines the chemical composition.
- Environment Canada recommends that proper signage is in place indicating the locations of the sewage lagoon and wetland treatment areas.

### **Monitoring**

- Appropriate signage should be erected identifying all Surveillance Network Program (SNP) stations.
- Monitoring frequency performed by the Hamlet should be sufficient to inform how the system can best be managed to optimize treatment. For example, timing of discharge will be a factor in how effectively the wetland can take up nutrients and incorporate solids; discharge should occur gradually over the warmer months to ensure that the effluent has enough treatment time in the wetland system.

### **Solid Waste Disposal Facility**

- Environment Canada supports implementation of procedures outlined in the proponent's new Operations and Maintenance Manual, including the segregation of hazardous wastes, including batteries and waste oil, from the general waste stream in a sealift container.
- Drainage management will be needed to minimize leachate generation from the solid waste facility. According to the *Water License Annual Report 2008*, ponding was observed in the landfill area. It is noted that water quality guidelines were exceeded in the ponded area for arsenic (0.006 mg/L), iron (2.01 mg/L) and toluene (1.2 ug/L). This area should be graded to minimize pooling and the amount of water leaving the landfill area. The Hamlet should test and dispose of any collected leachate. These issues should be addressed prior to any discharge to ensure the requirements of the *Fisheries Act* will be met.
- EC recommends that waste oil and/or fuel barrels should be stored in a lined and bermed area. Please note that all hazardous materials should be neutralized (if applicable) and stored in sealed and labeled containers. Effluent that has accumulated within the hazardous waste storage containment area should be treated as hazardous waste and decanting of snow or water from the area of the hazardous waste storage area should proceed only if the appropriate chemical analysis has determined the contents meet the requirements of Section 36(3) of the *Fisheries Act*.
- The open burning of waste oil is discouraged by EC as waste oil may contain

metals and other contaminants. Appropriately designed waste oil burners can be used, provided the waste oil is of appropriate quality (it would need to be tested and meet standards such as in the NWT Used Oil and Waste Fuel Management Regulations). Waste oil furnaces or other options to re-use the waste oil for heating or other such uses should be explored. EC recommends that waste oil and/or fuel barrels should be stored in a lined and bermed area.

- Open burning of municipal waste is strongly discouraged by EC, as this results in the formation and spread of some extremely toxic compounds due to incomplete combustion of plastics and other household materials.
- Fencing of the solid waste site should be repaired to facilitate control of access to the landfill and to prevent the spread of debris.

If there are any changes in the proposed activities, EC should be notified, as further review may be necessary. If you have any questions regarding the foregoing please contact Carrie Spavor at (867) 975-4631 or via email at [carrie.spavor@ec.gc.ca](mailto:carrie.spavor@ec.gc.ca).

Yours truly,

Original signed by

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