

Environmental Protection Branch  
Qimugjuk Building 969 P.O. Box 1870  
Iqaluit, NU X0A 0H0  
Tel: (867) 975-4631  
Fax: (867) 975-4645

26 July 2010

EC File: 4517 000 012  
NWB File: 1BR-SHE0510

Richard Dwyer  
Licensing Administrator  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU X0B 1J0

*Via email: [licensingadmin@nunavutwaterboard.org](mailto:licensingadmin@nunavutwaterboard.org)*

**RE: 1BR-SHE0510 Shepherd Bay Project Renewal**

Environment Canada (EC) has reviewed the information submitted with the above-mentioned application to the Nunavut Water Board (NWB). The following specialist advice has been provided pursuant to the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

AECOM, on behalf of Defense Construction Canada and the Department of National Defense, is applying to renew the water license at the Shepherd Bay CAM-3 DEW Line site. CAM-3 is located at 68° 46' N, 93° 30' W, on the mainland near Boothia Peninsula and about 10 km from Shepherd Bay. The purpose of the project activities is to collect sufficient information to assess the performance of the seven landfills on the site from a geotechnical and environmental perspective. The landfill monitoring plan specifies the requirements for visual, soil and groundwater, and thermal monitoring of the landfills. On-site project activities include visual inspections with documented observations, the collection of surface soil and groundwater samples and the monitoring of ground temperatures.

EC provides the following comments and recommendations for the NWB's consideration:

**Spill Contingency Plan**

- A section should be included in the Plan that provides direction regarding response action for spills on various types of terrain (e.g. spills on land, water, snow/ice, muskeg, etc.)
- The proponent should provide a general list of substances that could potentially be spilled at the CAM-3 site. Personnel should be made aware of the properties of the products that they handle and have access to material safety data sheets (MSDS) and other sources of information. This information should be included in the Plan. A copy of the Plan should be posted at any location where these products are stored and at each fuel cache and refuel station.
- EC recommends that drip pans be used when refueling equipment on site in order to help prevent spills from occurring.
- Refuelling shall not take place below the high water mark of any water body and shall be done in such a manner as to prevent any hydrocarbons from entering any water body frequented by fish.
- A spill kit, including shovels, barrels, absorbents, etc. should be readily available at all

- locations where fuel is being stored or transferred and with the ATVs in order to provide immediate response in the event of a spill.
- EC recommends the use of secondary containment, such as self-supporting insta-berms, for storage of all barrelled fuel rather than relying on natural depressions to contain spills.
  - The Plan should include the following statement, “all spills of oil, fuel, or other deleterious materials, regardless of size, are to be reported to the NWT-NU 24hr Spill Line (867) 920-8130.
  - EC recommends that the Plan be updated to include location of nearest medical facilities and all site personnel information prior to site activities.
  - EC recommends that a 24 Hour NWT/NU Spill Response Form be attached to the Plan.

Comments previously submitted regarding water license 1BR-SHE0510 on behalf of EC by C. Meloche on 7 October 2004 would still apply to this project (see attached). If there are any changes in the project EC should be notified as further review may be necessary. Please do not hesitate to contact me with any questions or comments with regards to the foregoing at (867) 975-4631 or by email at paula.c.smith@ec.gc.ca

Yours truly,



Paula C. Smith  
Environmental Assessment Coordinator

cc: Carey Ogilvie (Head, Environmental Assessment-North, EPO, EC, Yellowknife, NT)  
Ron Bujold (Environmental Assessment Technician, EPO, EC, Yellowknife, NT)



**Environment Environnement  
Canada Canada**

Environmental Protection Branch  
Qimugjuk Building 969 P.O. Box 1870  
Iqaluit, NU X0A 0H0  
Tel: (867) 975-4639  
Fax: (867) 975-4645

October 7, 2004

Our file: 4517 000 012

Jorgen Komak  
Environmental Assessment Officer  
Nunavut Impact Review Board  
P.O. Box 2379  
Cambridge Bay, NU  
Tel: (867) 983-4612  
Fax: (867) 983-2594

*Via Facsimile*

Phyllis Beaulieu  
Manager of Licensing  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU X0B 1J0  
Tel: (867) 360-6338  
Fax: (867) 360-6369

*Via Email at [licensing@nwb.nunavut.ca](mailto:licensing@nwb.nunavut.ca)*

**RE: NIRB 04DN105 / NWB5SHE – Defense Construction Canada – CAM-3, Shepherd Bay DEW Line Site Clean-up**

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 for the enforcement of the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Defense Construction Canada (DCC), for the Department of National Defense, is proposing to clean-up the former CAM-3 Shepherd Bay DEW Line Site, located approximately 50 km south of Taloyoak, NU. The proposed project will consist of the demolition and removal of existing facilities not required for the operation of the North Warning System; the disposal of contaminated soils in engineered landfill facilities; the removal of hazardous materials; the remediation of existing landfills; the clean-up of surface debris; and the physical restoration of the site to as natural of a state as possible. This work will require the creation of 50-60 person camp, which will be occupied seasonally from 2005-2008.

Environment Canada recommends that the following conditions be applied throughout all stages of the project:

***General***

- The proponent shall not deposit, nor permit the deposit of any fuel, drill cuttings, chemicals, wastes or sediment into any water body. 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.
- Materials shall not be stored on the surface ice of lakes or streams, except that which is



- for immediate use.
- Environment Canada recommends the use of an approved incinerator for the disposal of combustible camp wastes. The proponent shall ensure that all hazardous materials, including waste oil, receive proper treatment and disposal at an approved facility.

### ***Spill Contingency Planning***

- Once available, EC requests that the amount of the various fuels to be stored on site be submitted.
- When the contractor for the site has been established, EC requests that a site specific spill contingency plan be submitted, outlining a clear path of response in the event of a spill, including the names and contact information for key on-site personnel, as well as a map indicating the location of all fuel caches, fuel tanks, and spill kits on site.
- Environment Canada recommends that drip pans, or other similar preventative measures, be used when refueling equipment on site.
- Environment Canada supports DCC's use of secondary containment for the storage of fuels on site. All fuel caches shall be located above the high water mark of any water body and in such a manner as to prevent the contents from entering any water body frequented by fish.

### ***Sewage Treatment***

- The application makes reference to the use of a 2-cell lagoon for the treatment of sewage and grey water from the camp. The application notes that "the remaining settled solids will be buried on-site". Environment Canada requires further information regarding DCC's plans for sludge disposal from the lagoon upon decommissioning. Specifically, EC requests information regarding any planned chemical characterization of the sludge prior to the disposal, as well as the amount of sludge to be disposed of and where on site the settled solids would be buried. This information is required prior to the disposal of sewage sludge.
- Environment Canada requests information regarding the timing of the discharge from the sewage lagoon, and the location of the final water quality monitoring station.
- Environment Canada recommends that the proponent maintain a minimum of a 1 metre freeboard in the sewage lagoon at all times.
- Environment Canada recommends that the location of the sewage lagoon be indicated with appropriate signage.
- Environment Canada recommends that the proponent develop an operations and maintenance manual for the lagoon to help prevent the deposition of deleterious substances into the environment.

### ***Quarry/Excavation Activities***

- Environment Canada recommends that the proponent take measures to prevent erosion and sedimentation during site grading and excavation, especially near the intertidal zone.
- In order to help prevent the degradation of the permafrost regime, EC recommends that the proponent store any excavated materials on gravel pads.
- The proponent shall not deposit, nor permit the deposit of sediment into any water body. It is recommended that an undisturbed buffer zone of at least 100 metres be maintained between any proposed quarry operations and the normal high water mark of any water body.

### ***Migratory Birds and Species at Risk***

- The area in question is recognized as a key terrestrial habitat site for migratory birds in Nunavut (see Canadian Wildlife Service Occasional Paper 101). In its application, DCC also acknowledges the presence and use of the site by migratory birds. While the remediation of the CAM-3 site may result in the loss of habitat currently used by migratory birds, the Canadian Wildlife Service (CWS) of Environment Canada is of the



- opinion that the detrimental impacts of the loss of a small amount of habitat as a result of these activities is offset by the positive effects of removing and isolating contaminants from the environment.
- The CWS recommends that the following conditions be applied in order to help minimize impacts to migratory birds and species at risk:
    - CWS recommends that the proponent maintain a flight altitude of at least 610 m during horizontal (point to point) flight and a vertical distance of 1000 m and horizontal distance of 1500 m from any observed concentrations (flocks / groups) of birds.
    - The proponent plans to conduct activities during the migratory bird breeding season. Paragraph 6(a) of the Migratory Birds Regulations states that no one shall disturb or destroy the nests or eggs of migratory birds. Therefore, CWS recommends that all activities be conducted outside the migratory bird breeding season, which extends approximately June 1 to August 1. These dates are approximate, and if active nests (i.e., nests containing eggs or young) are encountered outside of these dates, the proponent should avoid the area until nesting is complete (i.e., the young have left the vicinity of the nest).
    - If activities are permitted to occur during the breeding season, CWS recommends the proponent confirm there are no active nests (i.e., nests containing eggs or young) in the vicinity of their operations before activities commence. If active nests of migratory birds are discovered, the proponent should halt all activities until nesting is completed (i.e., the young have left the vicinity of the nest).
    - Species at risk that may be encountered in this area include; wolverines, polar bear, and *tundrius* peregrine falcons, listed as species of Special Concern under Schedule 3 of the Species at Risk Act. While conducting their operations, the proponent should be aware of this special status and minimize disturbance or contact with these species.

#### ***Hydrocarbon Soil Treatment Facility***

- Section 5.4.3 of the "Project Description/Environmental Screening for the Clean-up of CAM-3, Shepherd Bay DEW Line Site" indicates that excavation of hydrocarbon contaminated soils is not permitted within 2 metres of the high water mark of the intertidal zone. Environment Canada requests information regarding any plans to address contamination within the marine environment.
- The proposed landfarm will be surrounded by a perimeter collection system to collect contact water. The Project Description states that the contact water will be tested prior to discharge to ensure it meets discharge criteria. If the contact water does not meet these criteria, it may be treated so that it meets the criteria, or shipping off-site as hazardous material. Environment Canada requests that the discharge guidelines for the contact water be submitted for review, and further information regarding proposed treatment options for the contact water if it does not meet the guidelines.

#### ***Disposal of Barrel Contents***

- When discarding barrel contents comprising of water only (less than 2% glycols or alcohols) on the land, EC recommends that erosion protection measures be employed at the discharge point to help dissipate the flow and prevent erosion from occurring.

#### ***Abandonment and Restoration***

- Environment Canada recommends that the groundwater monitoring wells that are being installed be removed upon completion of the monitoring as part of the final abandonment and restoration of the site.



**Environment Environnement  
Canada Canada**

If there are any changes in the proposed project, EC should be notified, as further review may be necessary. Please do not hesitate to contact me with any questions or comments with regards to the foregoing at (867) 975-4639 or by email at [colette.meloche@ec.gc.ca](mailto:colette.meloche@ec.gc.ca).

Yours truly,

***Original signed by***

Colette Meloche  
Environmental Assessment / Contaminated Sites Specialist

cc: (Mike Fournier, Northern Environmental Assessment Coordinator, Environment Canada, Yellowknife)