7. IDENTIFICATION OF ENVIRONMENTAL EFFECTS

An environmental assessment of the clean up of CAM-3 was completed in 1998. As part of this assessment, potential interactions between the project components and the environment were identified. The focus of the assessment was on the location, sensitivity, seasonal presence and abundance of these components. Through this assessment Valued Ecosystem Components (VECs) were identified, which can include physical, biological, socio-economic, historical or cultural components.

7.1 Environmental Effects

7.1.1 Value Ecosystem Components vs Project Components

The following summarizes the interaction and potential impacts between VECs and the various activities associated with the clean up.

VEC	Activity	Description of Impact
Air Quality	Hazardous Materials Removal	The removal of the contaminated soil from the environment will reduce the risk of impacting air quality.
	Site Grading / Borrow Source Development	The extractions of granular materials and grading activities have the potential to create dust and impact air quality.
Soil Quality	Landfill Development/ Landfill Closure	The migration of contaminants from the new landfills has the potential to degrade soil quality if not constructed properly. The closure of the existing landfills will reduce the risk of impacting soil quality.
	Contaminated Soil Disposal/Hazardous Materials Removal	The removal of the contaminated soil and hazardous materials from contact with the environment will improve soil quality.

VEC	Activity	Description of Impact
	Removal and Transport of Hazardous Material, Fuel and Contaminated Soil	The potential exists for accidental release of hazardous materials, contaminated soil and/or fuels could impact soil quality.
	Contractor Support	The operation of the construction camp will include treatment and disposal of waste, and could negatively impact soil quality.
Water Quality	Landfill Development/ Landfill Closure	The migration of leachate from the new landfills and siltation of waterways during construction/closure has the potential to degrade water quality, both surface and active layer water, if not constructed according to the specifications. The development and closure of the landfills has the potential to disrupt drainage at the site.
	Contaminated Soil Disposal / Hazardous Materials Removal	The removal of the contaminated soil and hazardous materials from the environment will reduce the risk of contamination of surface and active layer water.
	Removal and Transport of Hazardous Material, Fuel and Contaminated Soil	The potential exists for accidental release of hazardous materials, contaminated soil, and/or fuels. An accidental release could impact water quality.
	Site Grading/Borrow Source Development	Erosion and sedimentation of waterbodies during grading and gravel extraction activities has the potential to negatively impact water quality. Drainage to be improved as a result of grading disturbed areas. The extraction of granular material will alter the terrain of the borrow area and has the potential to disturb drainage.
	Contractor Support	The operation of the construction camp will include treatment and disposal of waste. The potential exists for waste to impact water quality.

VEC	Activity	Description of Impact
Terrain	Landfill Development	Excavation required for the development of new landfills and closure of existing landfills has the potential to degrade permafrost.
	Landfill Closure / Site Debris Disposal	The development of new landfills and removal of site debris has the potential to disturb the existing terrain.
	Site Regrading	Terrain and drainage will be improved as a result of grading disturbed areas. Previously disturbed areas will blend into the natural environment
	Borrow Source Development	The extraction of granular material will alter the terrain of the borrow area.
	Contractor Support	Movement of contractor's equipment and personnel around the site has the potential to disturb the tundra.
	Contaminated Soil Excavation	The excavation of contaminated soil has the potential to degrade permafrost
Terrestrial Animals	General Clean Up Activities	The use of heavy equipment during the clean up has the potential to disturb wildlife.
	Contaminated Soil Disposal/Hazardous Materials Removal	The removal of hazardous materials and contaminated soil from the environment reduces the risk of exposure to terrestrial animals.
Terrestrial Habitat	Landfill Development	Loss of habitat may occur as a result of the development of the new landfills in previously undisturbed areas.
	Facility Demolition	The existing facilities may be used by wildlife as habitat (i.e. nests in structures). The demolition of these facilities has the potential to impact availability of habitat.
	Borrow Source Development	The extraction of granular material will require the disturbance of the ground and has the potential to impact terrestrial habitat.

VEC	Activity	Description of Impact
Aquatic habitat and animals	Landfill Closure	The proximity of the Beach landfill to the marine environment has the potential to impact aquatic habitat, thereby affecting aquatic animals, due to sediment or hazardous materials entering the water. The remediation of landfills in close proximity to the ocean would reduce or remove the potential for impact.
	Site Regrading/ Borrow Source Development	The extraction of granular material and grading adjacent to waterbodies (both fresh and marine) has the potential to impact aquatic habitat, and thereby affecting aquatic animals, due to sediment entering the water.
	Contaminated Soil Disposal/Hazardous Materials Removal	The removal of contaminated soil and other hazardous materials from areas close to waterbodies, reduces the risk of exposure to aquatic animals.
	Removal and Transport of Hazardous Material, Fuel and Contaminated Soil	The excavation of contaminated soil from the beach POL area has the potential to degrade the aquatic environment in the event of an accidental release and impact aquatic animals due to close proximity to the marine environment.
	Contractor Support	The transportation to/from the site has the potential to disturb aquatic animals.
Health and Safety	General Clean Up Activities	The excavation of potential hazardous materials from the landfills, the collection and disposal of potential hazardous debris, the removal of hazardous materials from the facilities and the general handling of hazardous materials has the potential to impact health and safety of workers.
	Contaminated Soil Disposal/Hazardous Materials Removal	The removal of contaminated soil and other hazardous materials from the environment reduces the risk of exposure to people.
Archaeological	General Clean Up Activities	The presence and movement of people around the site has the potential to disturb the archaeological resources identified around the site.
Land Use	General Clean Up Activities	Clean up activities may disturb traditional land use, i.e. hunting and fishing activities that would occur during the summer months.

VEC	Activity	Description of Impact
Aesthetics	General Clean Up Activities	Generally, the clean up will improve the aesthetics of the site by removing unsightly debris and restoring the site to a more natural state.
Economy	Contractor Support	The contractor will be required to have a minimum Inuit content in the workforce for the clean up. This will provide employment benefits and related economic benefits.

7.1.2 Impact of the Environment on the Project

The implementation of a clean up project, such as the clean up of CAM-3, in an Arctic environment brings unique logistical issues. The potential exists for delays in the clean up associated with bad weather. These delays may include work stoppage on-site or delays in the transportation to and from the site of personnel and supplies. Conditions related to the Arctic climate, such as ice and frozen ground may also delay clean up activities. Ice may delay marine transport to and from the site. Clean up activities which are best completed at maximum thaw may be delayed depending on seasonal climate changes.

The Department of National Defence (DND) and Nunavut Tunngavik Incorporated (NTI) have signed the DND/NTI Agreement for the Clean Up and Restoration of the DEW Line Sites within the Nunavut Settlement Area outlining the economic provisions. The agreement includes a Minimum Inuit Content (MIC) for the clean up contract and requirements for training, specifically related to the clean up activities. Generally, the contracts for the clean up of DEW Line site include clauses requiring the contractor to maximize Inuit involvement. Inuit involvement in the clean up will include both employment and business (contracting) opportunities.

Typically, labour required for the clean up includes heavy equipment operators and general labourers, as well as environmental and engineering specialists. Other opportunities include cleaning and cooking staff and transportation. The main beneficiaries of the economic input from the clean

up will primarily affect the communities of Cambridge Bay, Taloyoak, Gjoa Haven, and Kugaruuk. During the clean up there will likely be increased employment and business opportunities for members of the community. As the contract for the clean up of CAM-3 has not been awarded, the requirements of the communities are not confirmed. A temporary self-sufficient construction camp will be established at the site to accommodate the contractor and other personnel.