equipment and egress facilities, standards for fire extinguishers, etc. In addition, the NFC establishes the standard for prevention, containment and fighting of fires originating outside buildings which may present a hazard to a nearby community, and sets the standards for the storage and handling of dangerous goods, flammable liquids and combustible liquids.

.2 The following guidelines were used as reference in the development of the DEW Line Clean Up Protocol and Contract Specifications. These guidelines are identified as reference materials only.

.1 Guidelines for Effluent Quality and Wastewater Treatment at Federal Establishments indicate the degree of treatment and effluent quality that will be applicable to all wastewater discharged from existing and proposed Federal installations.

.2 National Guidelines for the Landfilling of Hazardous Waste (CCME Report, April 1991) are to be used by regulators, designers, owners, and operators of hazardous waste facilities. They cover site selection, design, construction, closure and post-closure care, monitoring, and operation. They are intended for new, not existing facilities.

.3 Guidelines for Preparation of Hazardous Material Spill Contingency Plans identify factors that should be considered in the development of hazardous material spill contingency plans and the information that should be incorporated into a comprehensive contingency plan.

.4 Code of Good Practice on Dump Closing or Conversion to Sanitary Landfill at Federal Establishments (1977) outlines the guidelines to improve operation and properly close existing dumps. It is intended to promote a consistent approach to the clean up of existing dumps to prevent contamination of water, air and land and to ensure that the best particular control technology is used.

.5 Code of Practice for Used Oil Management in Canada describes environmentally sound options for the handling, storage, collection, transportation, recycling, reuse and disposal of used oils in Canada. It is intended to provide guidance for used oil generators and to regulatory authorities in the formulation of provincial or regional used oil management strategies.

.6 Canadian Environmental Quality Criteria for Contaminated Sites compiled by the Canadian Council of Ministers of the Environment (CCME) provide numerical limits for contaminants in soil and water intended to maintain, improve, or protect environmental quality and human health at contaminated sites. The criteria are intended to provide general technical and scientific guidance to provincial, federal, territorial, and non-governmental agencies in the assessment and remediation of contaminated sites across Canada. They serve as bench marks against which to assess the degree of contamination at a site.

3.4 NUNAVUT

.1 In 1990, leaders of the federal and territorial governments, and the president of the Tungavik Federation of Nunavut (TFN) signed an Agreement-in-Principle establishing Nunavut, a land claim settlement area incorporating almost two million square kilometres of the present NWT. Inuit ratification of the document was achieved in November 1992, and the Land Claim Agreement was signed by the Federal government, GNWT and TFN in May 1993. Nunavut Tunngavik Incorporated (NTI), established on April 1, 1993, is an Inuit corporation in charge of implementing the Nunavut Land Claims Agreement.

.2 There are no Nunavut specific requirements for work being conducted within the DND DEW Line site reservation. As a partner in the clean up process, there will be, however, representatives from the NTI present on the site. It should be noted that certain activities may result in reporting requirements. These would include reporting any archaeological finds to the Inuit Heritage Trust. The Contractor shall comply with any reporting requirements outlined in the Nunavut Land Claims Agreement.

3.5 OTHER

.1 Transportation and disposal of hazardous wastes is to be conducted by licensed waste handlers, in compliance with the appropriate legislation.

3.6 PERMITS

.1 The Contractor involved in the site clean up process will be required to acquire and pay for all necessary permits, approvals and authorizations associated with the Contractor's site operations, and with the handling, transport and disposal of hazardous material. A partial list of these requirements is presented in Table 3.1.

TABLE 3.1
LIST OF APPLICABLE AUTHORIZATIONS FOR CLEAN UP ACTIVITIES

Authorization	Authority	Activity to Which Authorization Applies	Contact	Minimum Turnaround Time	Responsibility for Permit Application
Land Use Permit	Territorial Land Use Regulations (NWT)	Camps, heavy equipment, explosives, new roads, fuel storage and use, landfill, terrain protection, waste disposal.	Indian and Northern Affairs Canada P.O. Box 1500 Yellowknife, NT X1A 2R3 (867) 920-8165	42 days	DND
Quarrying Permit/ License	Territorial Quarry Regulations (NWT)	Extraction, staking, dimensions.	Indian and Northern Affairs Canada P.O. Box 1500 Yellowknife, NT X1A 2R3 (867) 920-8165	42 days	DND
Authorization for Works or Undertakings Affecting Fish Habitat	Fisheries and Oceans Canada (NWT)	Stream crossing, culverts, drainage, siltation and erosion control, effluent discharge.	Government of Canada - Dept. of Fisheries and Oceans (867) 920-6640	1 week	Contractor
Transportation Permits	Transportation of Dangerous Goods Act	Shipping.		Advance notification 30 days	Contractor
Transportation Permits	International Air Transport Association Dangerous Goods Regulations	Air transport.		Advance notification 30 days	Contractor

TABLE 3.1
LIST OF APPLICABLE AUTHORIZATIONS FOR CLEAN UP ACTIVITIES

Authorization	Authority	Activity to Which Authorization Applies	Contact	Minimum Turnaround Time	Responsibility for Permit Application
Water Use and Waste Disposal Licenses	Northwest Territories Water Act	Water use and waste disposal.	NWT Water Board (867) 920-8191	8 weeks	Contractor - for camp operation requirements and clean up activities, as required.
Archaeological Research Permit [1]	Northwest Territories Act, Archaeological Sites Regulations	Investigation of archaeological sites, mitigation, monitoring.	Prince of Wales Northern Heritage Centre (867) 920-8084	3 weeks	DND
Fishing Licenses	Department of Renewable Resources	Recreational fishing.			Personal applications only.
Firearms Acquisition Certificates	RCMP	Use and storage of firearms.	Any RCMP detachment	6 weeks	Personal applications only.

[1] Only required in the event that heritage resources are discovered during clean up activities.

4.0 GENERAL ENVIRONMENTAL PROTECTION MEASURES

4.1 GENERAL

.1 The lands associated with the CAM-M, Cambridge Bay site, have distinctive biophysical characteristics associated with arctic environments. Potential impacts related to the clean up of the site include degradation of the permafrost regime, disturbance of existing vegetation, uncontrolled erosion, point source contamination, and disruption of terrestrial and wildlife populations, as well as human health impacts. The procedures and requirements provided in this section are intended to be protective of these ecosystem components.

4.2 CONSTRUCTION CAMP

.1 Siting

.1 At the CAM-M site, the Contractor can elect to use commercial facilities in the Hamlet of Cambridge Bay, or establish a separate construction camp on the site.

.2 Locate the camp site in an area with minimal ground cover. A potential construction camp site has been identified on the Construction Drawings.

.3 Locate the construction camp in an area that is as close as practical to the main area(s) of clean up and where possible, on an existing gravel pad or former borrow area.

.4 Do not impede surface drainage, and maintain a distance of at least 30 metres from the nearest water body.

.5 Avoid ice-rich substrates and protect permafrost by construction of gravel pads and/or elevation of heated buildings on wooden supports.

.6 Avoid areas containing archaeological resources.

.7 Do not interfere with LRR/LSS activities in accordance with provisions of the Site Use Restrictions (SUR).

.2 Equipment and Vehicle Use and Maintenance

.1 Restrict vehicle and mobile equipment travel at the site to established roads, stream crossings and work pads.

.2 Overland movement of equipment and vehicles is not allowed where damage to the vegetation or underlying soils may occur.

.3 Following heavy rains, vehicle and heavy equipment use outside of road and work pad areas is not permitted until the soil has drained sufficiently to prevent excessive rutting, and until authorized by the Engineer.

.4 Mobile equipment and vehicle operators shall yield the right-of-way to wildlife where safe to do so. Do not operate vehicles in a manner which harasses any species of wildlife.

.5 Perform vehicle and equipment servicing in designated areas only, where special care can be taken to contain, handle and dispose of maintenance fluids, parts, and waste.

.6 Conduct fuelling and lubrication of equipment in a manner that avoids spillage of fuels, oils, greases and coolants. When refuelling equipment, operators shall use leak-free containers and reinforced rip- and puncture-proof hoses and nozzles. Operators are to be in attendance for the duration of the refuelling operation and are to ensure that all storage container outlets are properly sealed after use.

.3 Storage and Handling of Fuel and Other Hazardous Substances

.1 Locate fuel storage facilities such that there is no interference with LRR LSS activities.

.2 Store fuel in self-dyking containers, or position over an impervious liner and surround by an impervious dyke of sufficient height to contain not less than 110% of the capacity of the tank.

.3 Avoid sites that slope towards waterways or other environmentally sensitive areas; exhibit ponding or flooding; or have high groundwater tables, excessive seepage, or ice-rich (thaw-sensitive) soils. Avoid archaeological resources.

.4 Smoking is prohibited within 7.5 metres of the fuel storage facility. Provide appropriate signage as detailed in Section 01546 of the Contract Specifications.

.5 Inspect fuel storage facilities at least once each week for the duration of the project. Make available fire-fighting equipment for immediate access at each fuel storage facility.

.6 Store all barrels containing fuel and/or other hazardous materials in an elevated position either on their side with bungs facing the 9 and 3 o'clock position or on pallets, upright, banded and encased in overpack containers.

.7 All barrels shall be individually identified. The label shall be to industry standards and shall provide all information necessary for health and safety, and environmental purposes. Make available, to all personnel, Material Safety Data Sheets (MSDS) for all materials maintained in the construction camp.

.8 Treat all waste petroleum products including used oil filters as hazardous material, and handle and dispose of following the requirements detailed in Section 02090 of the Contract Specifications. Do not use waste oil for dust suppression. Report all fuel spills to the Engineer and, as provided by legislation, to the applicable government authorities, as indicated in Section 7.0.

.9 Conduct regular inspections of all machinery hydraulic, fuel, and cooling systems. Repair leaks immediately.

.10 Preassemble and maintain emergency spill equipment including at least two fuel pumps, empty 200 litre barrels and absorbent material sufficient to clean up a 1,000 litre spill at all permanent fuel storage sites and work camps (see Contingency Plans, Section 7.0).

.11 Remove all barrels, redundant fuel storage facilities and associated materials and equipment from the site at the conclusion of the work.

.4 Water Management

.1 The existing water supply at CAM-M may be used as a potable water source providing such use does not adversely affect fish habitats.

.2 Potable water must be treated where required to protect human health. The camp water supply shall be remote from sources of contamination.

.3 Provide a standard chlorination or iodisation unit for treatment of potable water, and test potable water for bacteria as required by the appropriate public health ordinances.

.4 Obtain a Water Use Licence from the NWT Water Board for the development of alternative water sources, as required, and comply with all conditions of the license.

.5 Water withdrawals must not endanger fish or draw down the water level so as to adversely affect fish habitat. Water withdrawal rates are not to exceed 10% of existing stream flow or 10% of total water body volume.

.6 Equip all water intake hoses with screens with a mesh size of 2.5 millimetres or less to prevent the intake of fish.

.5 Domestic Waste Management

.1 Dispose of all kitchen wastes and other non-hazardous wastes in an on-site landfill unless otherwise specified. The landfill selection is to be determined jointly by the Contractor and Engineer. The location is not to interfere with NWS Operations.

.2 Temporarily store kitchen wastes in metal, animal-proof containers to prevent scavenging of waste by wildlife and reduce scattering of debris.

.3 The Contractor, in consultation with the Engineer, will determine acceptable options for sewage disposal. Each construction camp shall provide primary sewage treatment, using a portable septic tank system or equivalent, prior to discharge.