

- To confirm the structural and environmental status for buildings and other facilities that are to be demolished;
- To re-confirm the baseline environment of the site prior to implementation; and
- To examine landfills, where required, to confirm details pertaining to the remediation of these areas.

PCB's in Paint

During the final site investigations conducted in 1996 at Tuktoyaktuk and Cape Parry, the DND investigation team discovered that the paint on many of the buildings contained PCBs in excess of 50 ppm. Materials containing such concentrations of PCBs are currently regulated under the *Canadian Environmental Protection Act*. Painted materials containing PCB levels higher than 50 ppm constitute a PCB solid waste and must be disposed of in accordance with the existing legislation. It is not permissible under Canadian law to landfill solid PCB waste.

The PCBs in the paint is chemically bound in the paint itself and, in tests conducted to date by scientists at the Royal Military College of Canada and the University of British Columbia, there is evidence that PCBs do not leach out of the paint to escape into the environment. If PCBs do not leach out, it is probable that there would be no risk to the environment or to public health and safety, if these waste construction materials are isolated in a suitably engineered and monitored landfill.

Further study has revealed that PCBs in paint are common throughout the world, including Canada. DND has therefore requested that Environment Canada review these scientific studies and consider revising the regulatory definition of a PCB solid in order to permit the landfilling of construction debris that contains PCB paint. Environment Canada is examining the issue and will make a decision in due course. In June, 1998, there will be a scientific and technical conference on this issue. The NTI, on behalf of the Inuit, are being kept up to date on developments related to this issue.

Until a decision on the PCB in paint issue is rendered, construction materials containing PCBs in excess of 50 ppm will not be landfilled. At some sites, the material may be containerised and stored in accordance with the *PCB Waste Storage Regulations*.

Inclusion of Traditional Knowledge

One of the guiding principles of the DEW Line Clean Up project is to ensure the meaningful participation of local residents in both the planning and execution phases. One way of ensuring this is to incorporate traditional knowledge into site specific planning. Traditional and local knowledge is being collected as part of the site-specific pre-construction phase (described immediately above) of the project. An Inuit representative who is familiar with both the DEW

Line site and traditional use of the area will be chosen by the relevant Regional Inuit Association to be on-site during the pre-construction delineation phase of each clean up. The Inuit representative will work closely with the EWG to identify Inuit use of the area, wildlife patterns and past activities and occurrences that may have impacted on landfills (i.e., dumping, hazardous waste storage, natural occurrences). This information will be used in order to assist in the scoring of the landfill matrix (the scoring methodology is described in the EWG reports included with this submission).

Additionally, DND and the NTI will attempt to establish a community DEW Line Clean Up committee which will facilitate the flow of local knowledge to the EWG prior to and during each site visit. To effect this, the EWG will visit local communities most affected by each DEW Line site and conduct one on one interviews with a number of residents, the Hamlet Administrative Officer and/or Mayor, the local HTA and other relevant community organizations.

Project Design - Development of the DEW Line Clean Up Criteria and Protocol and DND/NTI Agreement on the Environmental Provisions for the project

The purpose of the DEW Line Clean Up project is to:

- Demolish and remove existing facilities that are not required for the operation of the North Warning System;
- Remove contaminated soils from the sensitive Arctic food chain;
- Clean up surface debris; and
- Physically restore the unused portion of the site to as natural a state as possible.

In cooperation with several federal departments (Environment Canada, Fisheries and Oceans, Indian and Northern Affairs) and the Government of the Northwest Territories (Renewable Resources and Health departments), DND initially drafted the *General Protocol for DEW Line Clean Up*. This protocol served as the basis for the DND/NTI Agreement on environmental provisions for the clean up of these sites (Annex D). As there are no established standards for the Arctic, existing federal guidelines, such as the Interim Canadian Environmental Quality Criteria for Contaminated Sites, have been modified to account for the unique northern environment. These adjustments to existing guidelines reflect both the sensitivity of the Arctic food chain to ecological processes such as biomagnification and the close dependence of the Inuit on the land for food. In addition, a secondary, barrel specific, protocol has been promulgated. The barrel protocol outlines the process for dealing with barrels and barrel contents found on the DEW Line sites.

The protocol outlined in the DND/NTI Agreement (Annex D), was developed from the conclusions and recommendations resulting from the biophysical, socio-economic, and engineering site assessments (mediated through the DND/NTI EWG). The end result of the

protocol development process is the documenting of contaminant clean up criteria and specific physical actions that are to be undertaken, if required at a particular site. These criteria have been developed based on existing federal and provincial criteria in conjunction with studies that show the functional relationships and/or pathways for biological uptake from soil. The resulting protocol defines two concentration tiers of soil contamination (see Appendix E of Annex D). Soil substrates containing Tier I concentrations may be placed in appropriate on-site landfills while those soils in excess of the Tier II standard are to be disposed of in a manner that provides additional measures to permanently segregate these contaminants from the Arctic ecosystem. Soils exceeding federal legislative limits (i.e., *Canadian Environmental Protection Act* and *Chlorobiphenyl Regulations*) will be disposed of off-site at a licensed disposal or destruction facility. On-site containment measures are discussed below.

Project Design – Engineering

The elements of the engineering design are directly related to specific clean up requirements as established by the DND/NTI Agreement.

Visible debris in the vicinity of each station will be removed and sorted. Non-hazardous debris will be placed in an on-site engineered landfill. Hazardous materials will be removed from the site and disposed of at a licensed hazardous material disposal facility. All facilities at the site which are not required for the operation of the North Warning System will be wither sold (where building conditions permit and if a suitable buyer can be identified) demolished and placed on-site in suitable landfills (in accordance with the limitations placed by federal legislation). Portions of the previously disturbed areas of the site will also be recontoured to establish natural drainage patterns.

Specific activities for the 15 DEW Line sites include the following:

Landfill Development

- Landfills will be developed at this site to accommodate non-hazardous site and demolition debris. Where available, existing landfills are to be used.

Landfill Closure

- Closure of all former DEW Line landfills not being used by the North Warning System will be in accordance with Section 6.0 and Appendix B of the DND/NTI Agreement (Annex D).

Disposal of Site Debris

- All visible debris will be collected and sorted. Non-hazardous debris will be placed in an engineered landfill on-site provided a suitable location and sufficient borrow materials can be found. Materials suitable for landfill have been examined by the EWG and are shown in the

DND/NTI Agreement. This listing is summarised in Appendix C of Annex D. Hazardous debris will be shipped disposed of in accordance with federal legislation.

- All debris which is attributable to the operation of each DEW Line site and is within two metres of the surface at low tide or within two meters of the surface on an inland water body will be removed by DND.
- Where there is reasonable evidence of additional off site contamination and/or debris which is solely attributable to the operation of the DEW site, DND will undertake testing to determine the extent of contamination in consultation with the NTI and remediate the site in accordance with the DND/NTI Agreement.

Disposition of Contaminated Soils

- Soils containing DCC-I and DCC-II contamination are present at all DEW Line sites within the Nunavut Settlement Area. They will be disposed of in accordance with the DND/NTI Agreement.

Removal of Hazardous Materials

- Materials identified in the DND/NTI Agreement as not suitable for landfill or are otherwise designated as hazardous (see Appendix C of Annex D of this submission) are to be disposed of in an appropriate (licensed if required) disposal facility off-site.

Demolition of Facilities

- All structures not required for the operation of the North Warning System are to be demolished and /or removed to the top of their concrete foundations, sorted into non-hazardous and hazardous components and treated as described in subsections above (Disposal of Site Debris and Removal of Hazardous Materials).
- Prior to demolition, DND will attempt to sell or otherwise transfer ownership of certain facilities through the Crown Assets Disposal Corporation (CADC). These transactions will occur in accordance with existing legislation or CADC policies governing these activities. Normally, other federal government departments, followed by territorial and municipal governments are offered these facilities before they are put up for sale to private individuals or organisations.

Transportation of Hazardous Materials Off Site

- Hazardous materials are to be removed by air or searift in compliance with the *Transportation of Dangerous Goods Act* and the *Transportation of Dangerous Goods Regulations*. These materials may be temporarily stored in order to transport them in

conjunction with other material. Storage will meet the requirements of applicable legislation, such as the *Storage of PCB Materials Regulation*.

General Site Grading

- The purpose of site grading is to restore the natural landscape of areas that have been disturbed as a result of either previous DEW Line operations or the clean up itself. Site grading will serve to restore the natural contours of the area in order to re-establish drainage.
- Areas to be graded include:

- Landfills that are to be closed.
- All areas disturbed by demolition activities.
- Debris and contaminated soil excavation areas.
- Borrow areas for granular material.
- Locations disturbed by the contractor during on-site operations.

Development of Borrow Sources

- Existing on-site gravel sources are to be used where sufficient gravel of the proper quality is available. Otherwise, off-site or commercial sources will be used. Where required, the project will obtain appropriate land use and/or quarrying permits in order to use off site sources.

Contractor Support Activities

- Beach landing areas, roads and existing airstrips/airports will be used for equipment and personnel transport, as well as on-site movement between work areas.
- Potential equipment storage areas are to be shown on the contract drawings, accounting for sensitive biophysical, social and/or cultural sensitivities.
- All labour and equipment will be demobilised from the site following the termination of the project.
- Potential construction camp areas are shown on the site plans included with this submission (Annex D).

Decommissioning Activities