

INITIAL ENVIRONMENTAL EVALUATION  
OF THE  
NORTH WARNING SYSTEM PROJECT  
ELEVEN LONG RANGE RADAR SITES  
AND THE  
SHORT RANGE RADAR DEVELOPMENT SITE  
VOLUME ONE

MONENCO-EYRETECHNICS GROUP

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ANNEX F

FOX-MAIN

HALL BEACH, N.W.T.

ANNEX F

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## PART 1

### INTRODUCTION

- 1.1 Hall Beach (FOX-Main) is an original radar station built about 1957 and in continuous operation since. FOX-Main will become a LRR when renovations are completed late in 1988. FOX-Main is a main radar station somewhat larger than the majority of DEW Line stations. Personnel and supplies enroute to other DEW stations interconnect either at FOX-Main or CAM-Main between the air transport from Winnipeg and the lateral air charter which moves east and westward across the DEW line each week.
- 1.2 FOX-Main is also scheduled to become one of the five LSSs on the NWS. Necessary renovations will be completed by 1992.

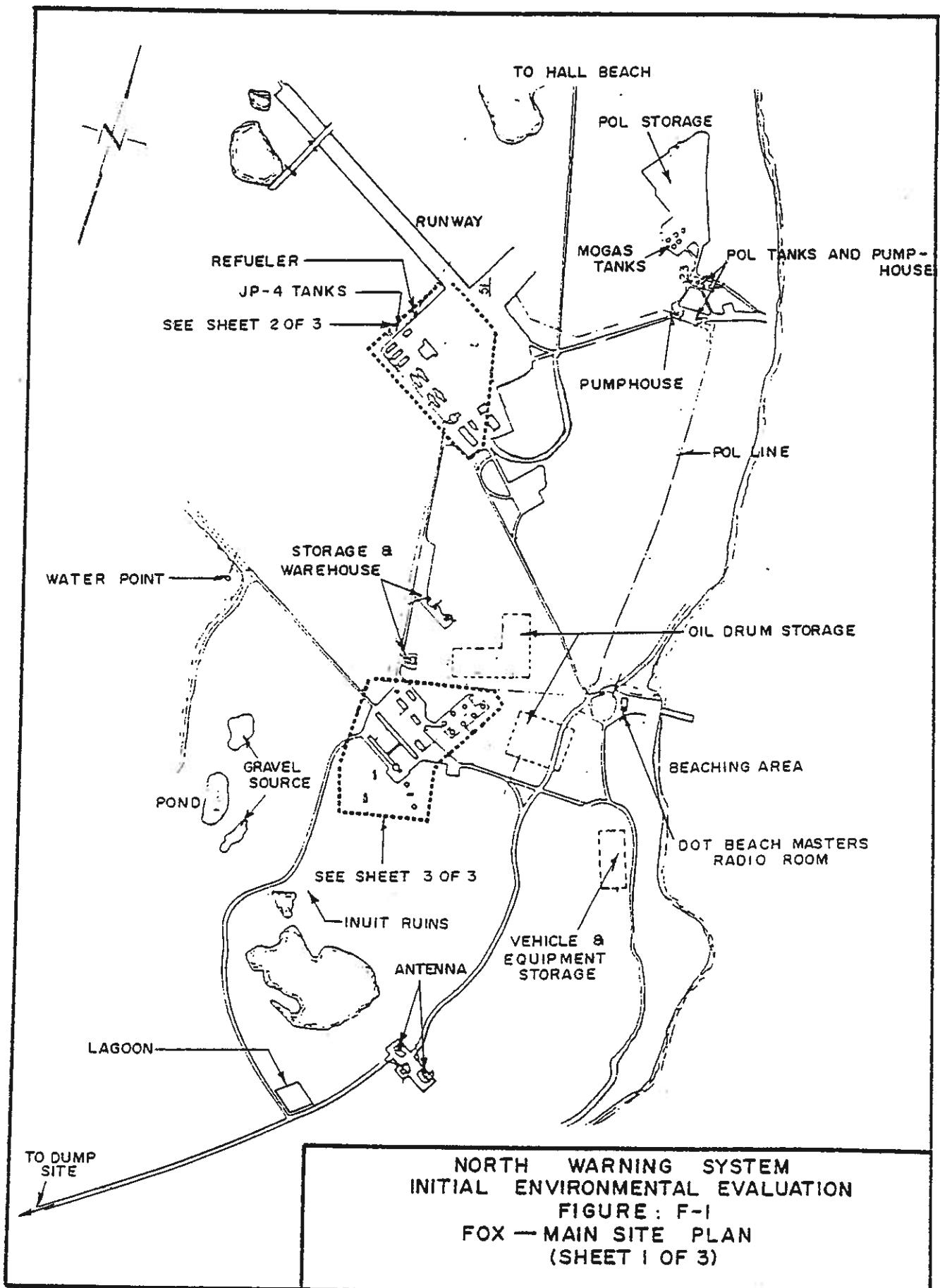
PART 2

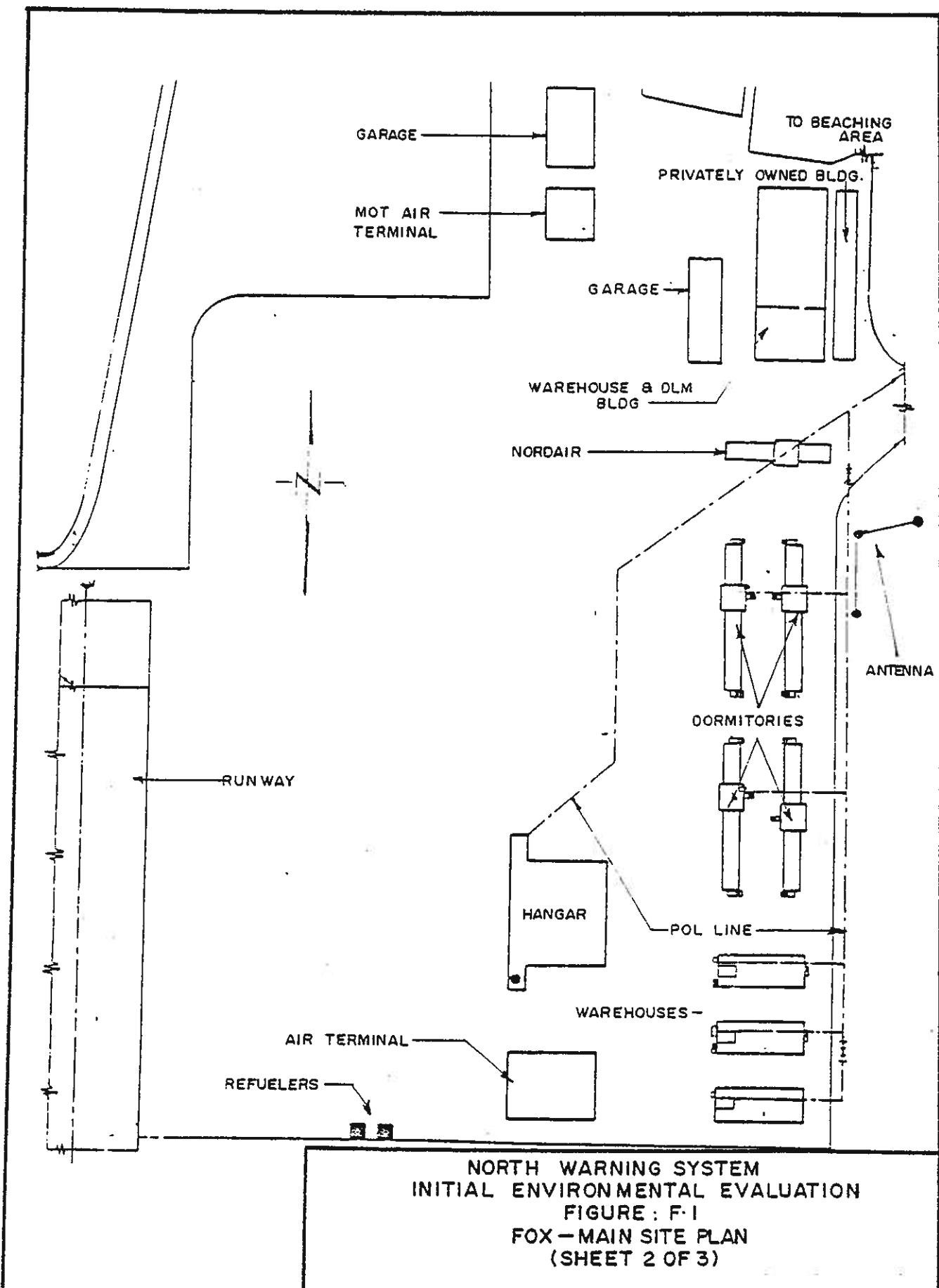
PROJECT DESCRIPTION

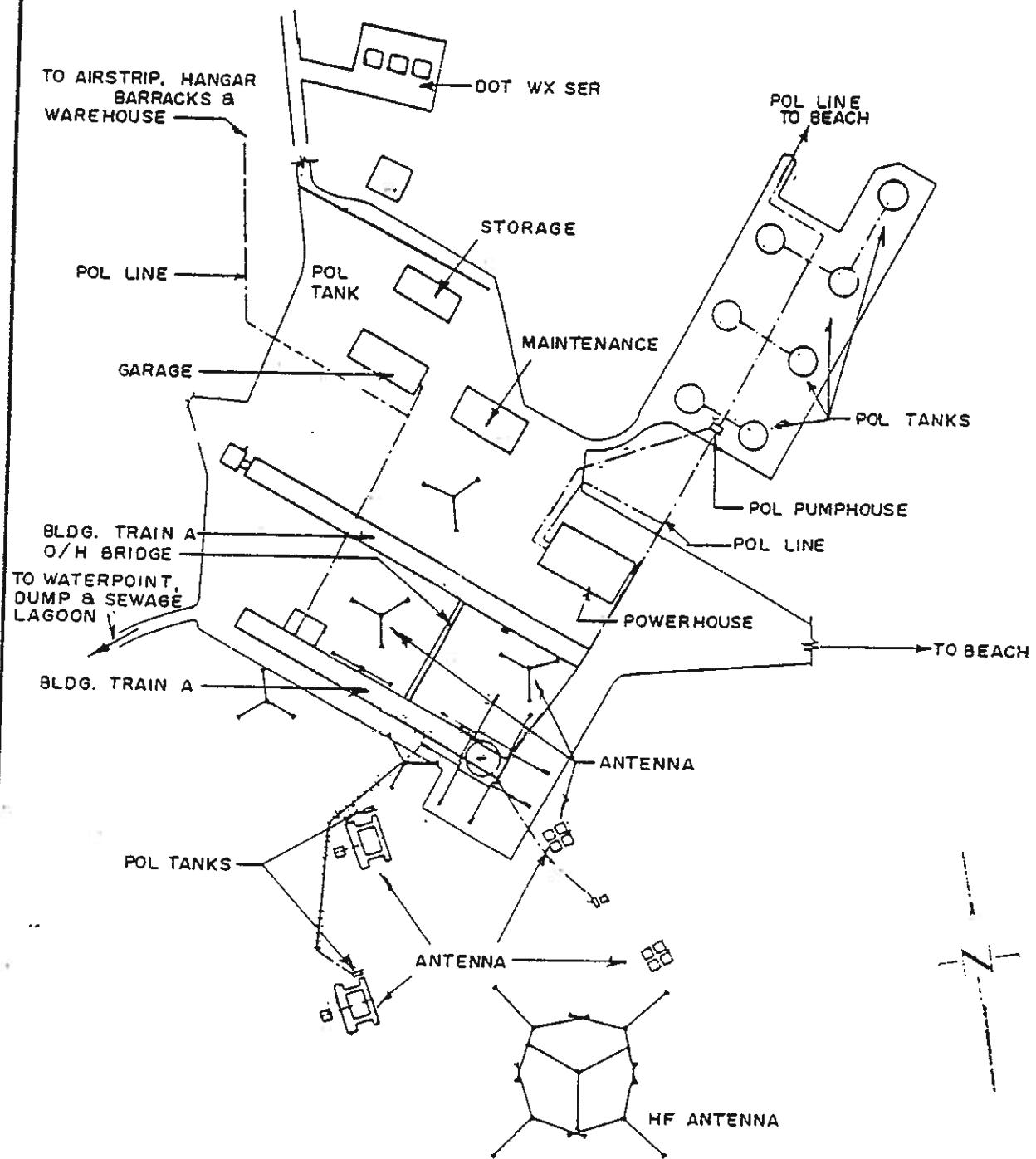
2.1 FOX-Main is located on the broad coastal plain which characterizes the eastern side of Melville Peninsula. As a main radar station it is the operational and administrative center for the auxiliary stations in the DEW Line sector to the east. FOX-Main is located at 68°-45'-34" N and 81°-11'-41" W.

2.2 Site access is primarily by aircraft with direct flights to and from Winnipeg. The airport is operated by the Ministry of Transport. Sealift site access is via Hudson Bay from eastern Canada.

2.3 FOX-Main consists of dual 25 module building trains interconnected with an overhead walkway which together house the accommodation, kitchen, dining facilities, C&E modules and all services. The radome stands astride one of the building trains. The station has numerous other warehouse, storage, maintenance buildings and a separate power generation building. The site which occupies about 1165 ha, consists of 24 buildings of various sizes and purposes. Figure F-1 illustrates the specific site layout and major features of FOX-Main.







NORTH WARNING SYSTEM  
INITIAL ENVIRONMENTAL EVALUATION  
FIGURE: F-1  
FOX-MAIN SITE PLAN  
(SHEET 3 OF 3)

2.4 On an annual basis, the average daily number of staff for O&M at FOX-Main is 110. The NWS LRR and LSS O&M functions will require a staff of 16 to 18. Additional system support functions may require more staff, however.

2.5 FOX-Main is a point of delivery for bulk supplies of fuel for use on the DEW Line. Consequently, it has a large number of bulk fuel storage tanks. There are 5 jet fuel tanks, 9 diesel fuel tanks and 4 motor gasoline (mogas) tanks with a combined total storage capacity of 3,634,000 gallons US.

2.6 FOX-Main will be modernized to become a LRR. This modernization will include modifications to the radar and electronics facilities, new communication systems (i.e., 2 SGTs) and some change in site staffing. Power supply will be increased to meet new service requirements.

2.7 The construction personnel on site are expected to number less than 20 and will be readily accommodated by the existing services at FOX-Main. As is the present DEW Line practice, NWS personnel enroute to other radar stations will lay-over at Hall Beach, particularly when the flying weather is unfavourable.

2.8 The Inuit community of Hall Beach is located by road about two kilometres north along the beach from the station. Some residents are presently on staff at FOX-Main.

## PART 3

### EXISTING ENVIRONMENT

#### **3.1 Biophysical Resources**

3.1.1 Foxe Basin which lies north of Hudson Bay in eastern Canada separates Baffin Island from mainland Canada. The land which forms the western shore of Foxe Basin is the Melville Peninsula, a broad gravelly coastal plain. FOX-Main, at an elevation of 5 m above sea level, is the most prominent feature on this otherwise flat landmass. It is surrounded by the ocean to the east and numerous lakes to the west, the largest of which is Hall Lake some 32 km to the west.

3.1.2 Total annual precipitation is 18 cm of which 90 cm is snow. The maximum and minimum temperatures recorded are 23.5°C and -50°C, respectively.

3.1.3 The shallow wetlands of the coastal plain provide breeding habitat for many species of birds. Gyrfalcons, snowy owls and rough-legged hawks have been seen at FOX-Main. On the tundra of the Melville Peninsula caribou, arctic fox, arctic hare and the occasional polar bear have been seen. In the Foxe Basin seals, walrus and beluga are seen. Hall Lake and most lakes in the region support lake trout and arctic char.

### **3.2 Socio-economic Setting**

3.2.1 The community of Hall Beach (Napakot) is located along the beach to the north of the station. The population of Hall Beach is 349. The present day community was established at about the time the DEW Line station was built in 1955.

3.2.2 The local economy is sustained by polar bear, walrus and seal hunting, and fur trapping. Occasional work is derived from the government or the tourist trade, supported by arctic fishing expeditions or hunting. A few Inuit are employed at FOX-Main.

3.2.3 The airport is a common user facility operated by the Ministry of Transport, consequently, there is perhaps more interaction between the personnel associated with the station and the members of the local community than at most DEW Line sites. Station personnel and visitors shop at the community to purchase local artifacts, souvenirs, etc.

### **3.3 Land Use**

3.3.1 The Inuit hunt, fish and trap in the the region. The Inuit community of Igloolik (pop. 746) is about 50 km north of Hall Beach and between them the two communities put considerable hunting pressure on the limited resources of the coastal plain and nearshore waters of Foxe Basin. They also hunt on

the ice in winter. Other than the DEW station and community, there are no designated lands in the locale.

### 3.4 Heritage Resources

3.4.1 Archaeological sites found on the coastal plain around Hall Beach are unique in that they provide a record of continuous human habitation for about 4000 years. There is a protected Inuit archaeological site marked by a sign, located close to the station. DEW staff are prohibited from salvaging or otherwise disturbing this site, which is from the Thule Inuit culture of the region dating back about 700 to 1000 years before the present.

## PART 4

### PROJECT IMPACTS AND MITIGATIVE MEASURES

#### 4.1 Potential Impacts

4.1.1 The following discussion of potential impacts is predicated upon the assumption that FOX-Main is presently operated in an environmentally acceptable manner. Thus the evaluation addresses the incremental effects of construction activities required to convert the existing DEW Line station to a NWS LRR and LSS, and the effects of subsequent O&M over the expected 20-year lifespan.

4.1.2 FOX-Main is one of the most active stations on the DEW Line because of its logistical function for other stations. Consequently, because the modifications to the station to transform it to a LRR and LSS are so minimal it is not anticipated that an appreciable environmental disturbance shall occur. Any changes will be to the station operations themselves. No issues relative to the Valued Ecosystem Components in Table 3-1 have been identified for these activities.

4.1.3 Any potential sources of environmental impacts at FOX-Main will result from the presence of additional construction equipment, the seasonal presence of more personnel on site

and increased levels of daily, summer activities.

Construction activity will be limited to the extent that the radome tower and existing modular buildings will be modified and two SGTs will be added. All activities and new facilities are within the area presently occupied by the station.

- 4.1.4 Any environmental change then would originate from the incremental changes introduced to the site and normal O&M activities as a result of modification to the existing station.
- 4.1.5 In the future, the site size is expected to remain constant: the numbers of personnel on site are expected to be reduced and the activities should remain consistent with what has occurred over the past 30 years. Consequently, the O&M and decommissioning and abandonment phases of FOX-Main do not represent significant sources of environmental concern.
- 4.1.6 The following table lists the site alterations which will be required to upgrade FOX-Main to a LRR and LSS.

Site: HALL BEACH FOX-Main

EXISTING SITE COMPONENTS	EXPECTED ALTERATIONS	NET CHANGES
<b>1. TERRAIN</b>		
General Features	. No change	. No change
Prominent Features		
Roads/Culverts	. No change	. No change
Surface Drainage		
<b>2. AIRPORT/RUNWAY</b>		
Buildings	. No change - MOT	. No change
Landing Strip	owned and operated	
Cut & Fill		
Refuelling Facility		
<b>3. CAMP SYSTEMS</b>	. No general changes	. Stiffen, strength
General Site	Modification to	radome tower
Buildings	two modules	. Modify C&E module
		internally.
		. Increase power supply
Construction Buildings	. None - present accommodation is adequate	. None
Water Supply/Source	. No change. Adequate as is	. Increase in use rate
Water Treatment		during construction
Sewage Disposal	. Adequate as is.	. Increase in use rate
Sewage Treatment		during construction
Garbage/Waste Disposal		
Heating System	. Power generation capacity will be increased	. Install additional generators
Power Systems		. Increased fuel comsumption
<b>4. STORAGE</b>		
Fuel Tanks/Berms	. Adequate as is	. No change
Drums/Pipelines		
Other Liquids		
<b>5. SCRAP</b>		
Materials/Vehicles	. Debris from module conversions to be disposed	. Disposal of scrap material by landfill or sealift

EXISTING SITE COMPONENTS	EXPECTED ALTERATIONS	NET CHANGES
6. HARBOUR/BEACH		
Shoreline	. Adequate as is	. None
Dock/Landing Area		
Staging Area		
Boats, Other Vessels		
7. QUARRIES/GRAVEL SOURCE		
Land Use	. No changes	. None
Stock Pile		
8. NOISE SOURCES		
Machinery/Buildings	. Construction activity	. Minor increase in
Vehicles/Aircraft		noise during
Activities		construction period
only		
9. WILDLIFE		
Animals/Habitat	. No habitat conflicts	. None
Birds/Habitat	expected: no changes	
Marine Animals	beyond existing site	
10. VEGETATION		
General Features	. No change	. No change
Plants etc.		
11. ASTHETIC/VISUAL		
Towers	. No change	None
Lights		
12. COMMUNITY		
Village	. Hall Beach (Napakot)	Job opportunities
Resource Use	residents should	not yet entirely
Activities	still have job	quantified for NWS
Other	opportunities at site.	relative to DEW Line.
13. PEOPLE		
NWS	. Fewer regular staff	. Reduced staff for O&M
Others	. Seasonal increase of	. Seasonal staff
	10-20 construction	increased for 2
	staff for 2 summers	summers.
14. HISTORICAL RESOURCES		
Archaeological Sites	. Known Thule Inuit	. No change
Artifacts	. site will not be	
	disturbed	

Site: HALL BEACH

FOX-Main

EXISTING SITE COMPONENTS	EXPECTED ALTERATIONS	NET CHANGES
15. PROTECTED AREAS Parks etc.	. Archeological site	. No change
16. ENVIR./SOCIO-ECONOMIC ISSUES Type	. Possible change in available jobs for local residents	. Not yet quantified.
17. OTHER	. Department of Transport Airport	. None

#### 4.1.1 Biophysical Resources

4.1.1.1 The wildlife in the region of FOX-Main is recognized as an important resource to the residents of the community of Hall Beach, particularly the caribou and the whales and seals offshore. None of these come near the DEW site or community without risk of being hunted by the resident Inuit. No V.E.C. or serious issue has been identified.

4.1.1.2 It is therefore anticipated, given the level of normal activities and the size of the existing station, that any biophysical impacts can be characterized as being negligible.

#### 4.1.2 Socio-economics

4.1.2.1 There will be no direct socio-economic impacts as a result of the FOX-Main LRR construction. Most construction staff are skilled tradesmen brought to site by the contractors responsible for the radar installation because of their specialized knowledge, skills, equipment and security clearances. No new construction is likely to be required for the LSS.

4.1.2.2 Operation of the LRR with a reduced staff should have little incremental socio-economic impact on local economics or subsistence activities. There may be a small change in employment opportunities for local residents during the O&M phase, but staffing has not been entirely quantified and, in any case, would be the responsibility of the O&M contractor.

#### 4.1.3 Heritage Resources

4.1.3.1 There are known archaeological sites at and near FOX-Main. Construction activities have been and will be restricted to the existing site area so there is no potential for disturbance of the known sites. Personnel and visitors are advised that it is illegal to disturb these heritage sites.

#### 4.2 Residual Effects

4.2.1 It is not anticipated that there will be any incremental residual impacts from the FOX-Main LRR and LSS construction

or O&M because except for a reduction in staff, there will be no discernible change in the size, layout, or level of activities of the site.

4.3 Monitoring Programs

4.3.1 As part of current ongoing O&M, equipment is maintained at a high level of reliability. No monitoring programs are anticipated at this time but, as required by future circumstances, appropriate programs could be implemented to define unanticipated environmental changes or monitor the success of some mitigative efforts.

4.4 Trade-offs and Alternatives

4.4.1 Site location and standard operating practices will be maintained, consequently there are no relevant alternatives to the proposed facility modifications at FOX-Main.

