ANNEX A

Description of Project Location

ANNEX I

BAF-3

BREVOORT ISLAND, N.W.T.

ANNEX I

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PART 1

INTRODUCTION

1.1 A new LRR is being built at Brevoort Island, N.W.T., off the east coast of Baffin Island. The Brevoort LRR (BAF-3) is on the same site as an abandoned USAF relay station. The LRR will consist of the main site at the summit with a radome and communications module, an accommodations complex, a technical service module, and fuel and water storage facilities. An airfield and a beach landing area, which were built for the original relay station, will be upgraded to present standards and used again.

1.2 As part of the NWS, BAF-3 is one of three attended LRRs being constructed on the east coast of Canada. The other two are at Saglek and Cartwright, in Labrador.

1.3 The potential sources of environmental disturbance will originate from construction activities during the summers of 1986 and 1987. During seasonal construction, about 120 persons will be on site. There will be little potential for environmental disturbance during normal station operation. The permanent O&M staff will be about 10 persons.

1.4 The environmental impact as a result of construction and O&M activities is moderated by the fact that this has long been an active site. In addition to the original site of the abandoned relay station the airport and beach area have seen many users over the past 30 years. Accommodation facilities and large fuel storage tanks still exist at the airstrip and beach from previous oil industry supply base activities in support of offshore exploration drilling in Davis Strait.

1.5 Environmental concerns center on the marine resources of the area. Terrestrial wildlife is not abundant because of the limited food resources on this small and rugged island.

1.6 This text is an abridged version of the site-specific Environmental Screening Report, Brevoort, NWT, 86-06-03 completed by New North Consultants, St. John's Newfoundland. The reader is referred to the original report for more detailed text.

PART 2

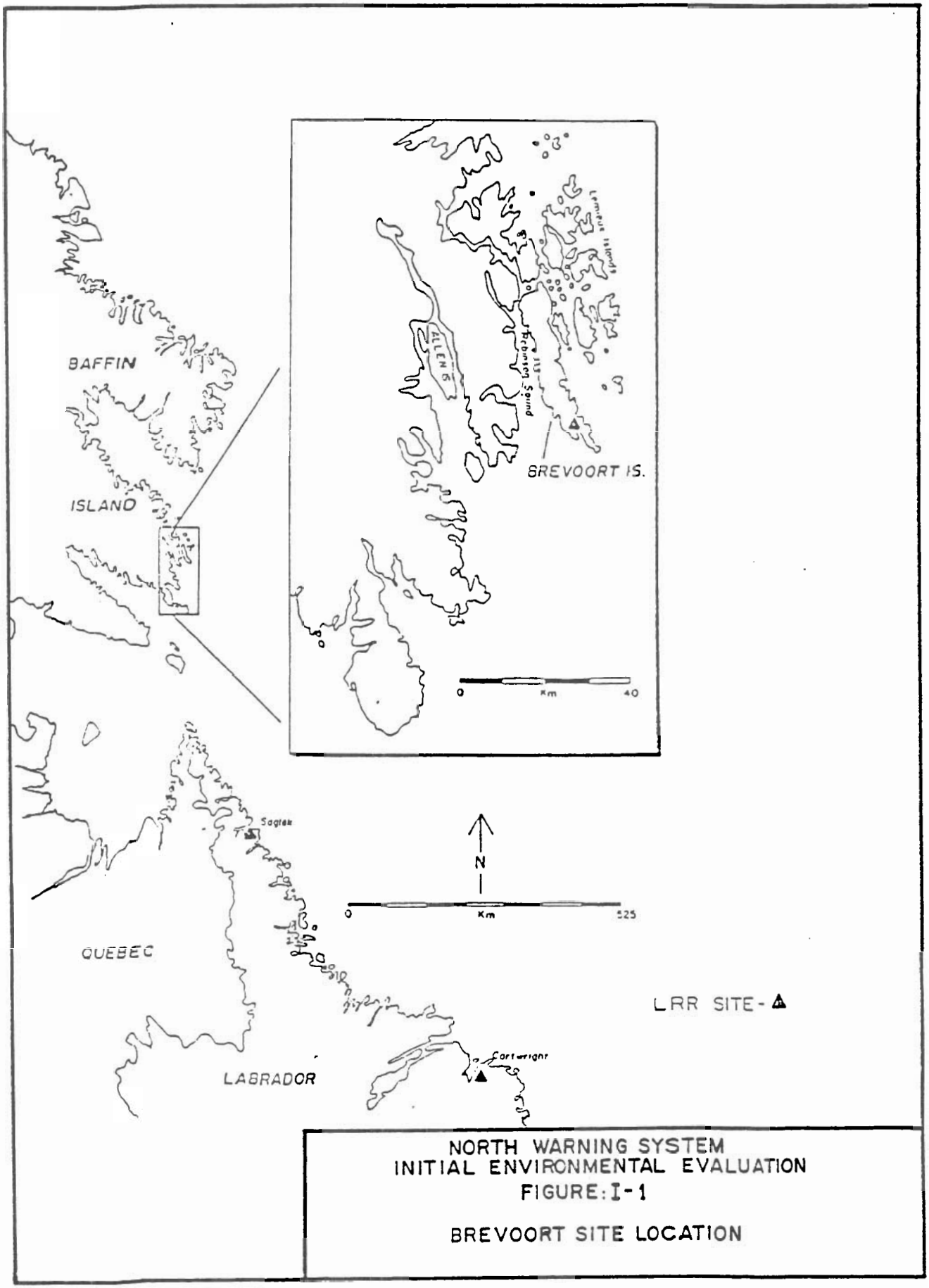
PROJECT DESCRIPTION

2.1 Brevoort Island is a 40-km long, 10-km wide island off the east coast of Baffin Island, approximately 230 km east of Iqaluit (Frobisher Bay). The LRR site is located at 63°20'23" N, 66°08'45" W on the southern end of the island overlooking Brevoort Harbour.

2.2 Brevoort Island is remote: access is only by sea and by air and Inuit communities are very distant along a rugged coast line. Figure I-1 shows the project location.

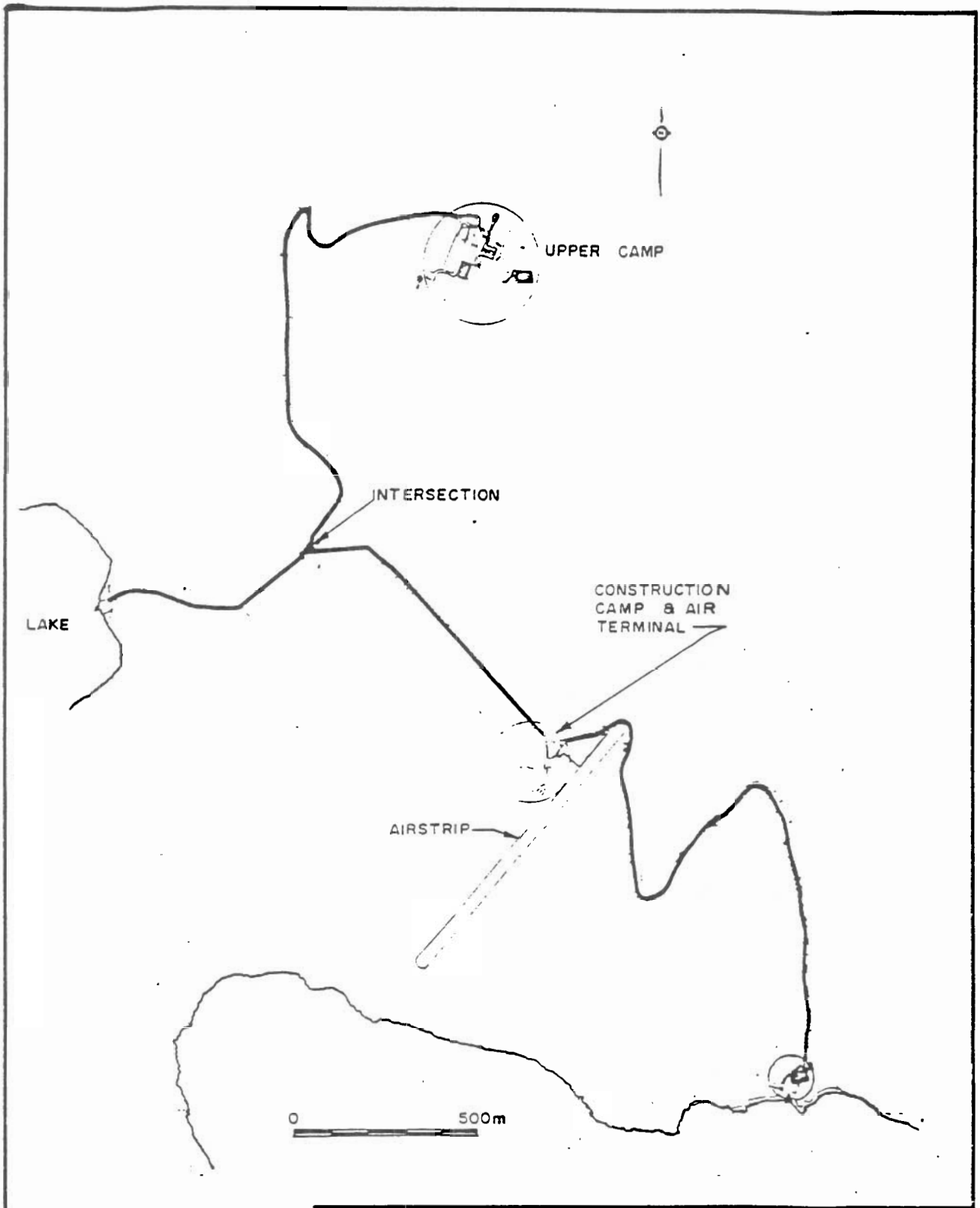
2.3 The Brevoort Island relay station was abandoned by the military in 1963. The beach and airstrip have been used as logistics support for offshore oil exploration but these were abandoned most recently in July, 1985. For the purposes of the NWS, it was necessary to completely demolish the original summit facilities to build the new LRR facilities on the same site. The new construction will utilize current design and construction standards but will not enlarge the area previously disturbed. Debris removed from the site during construction has been buried in an adjacent landfill site.

2.4 Figure I-2 illustrates the specific site layout and major features of the BAF-3 LRR installation.



NORTH WARNING SYSTEM
INITIAL ENVIRONMENTAL EVALUATION
FIGURE: I-1

BREVOORT SITE LOCATION



NORTH WARNING SYSTEM
INITIAL ENVIRONMENTAL EVALUATION
FIGURE: I-2

BREVOORT SITE PLAN

2.5 The existing and proposed site facilities are described as follows:

a. Main Site

The Main Site is located on an island summit at an elevation of approximately 375 m above sea level. The operations portion of the abandoned site comprises two pairs of tropospheric scatter communications antennae and an operations/communications building. Support facilities included an accommodations/service module, warehouse, vehicle garage, diesel tank, and helipad. Except for the warehouse, which was previously dismantled, all the structures left standing will be demolished, removed from site and landfilled. The new LRR will be constructed on the same location as the existing abandoned station. The LRR site layout is illustrated in Figure I-2 and has the following facilities:

(1) The radar will be free standing, independently supported with a height of approximately 15.2 metres above grade to the radar platform. The radome enclosure will be a 16.3 m diameter geodesic structure.

(2) The radar/communications module is an independently supported, two-storey structure, situated within the

radar tower support columns. This module contains a radar equipment room, communication facilities, operations consoles, workshop/maintenance space and associated building mechanical/electrical services.

(3) The accommodations complex is a two-storey structure, measuring 36.8 m long by 16.45 m wide, containing a total floor area of 1141 m^2. The building will house base personnel and all necessary amenities. It will have a capacity to house a maximum of 20 persons.

(4) The technical services module measures approximately 42.8 m long by 19.2 m wide, with an overall height of 9 m. The total developed floor area is about 1229 m^2 including the second floor mezzanine. This building houses all industrial needs to support summit facilities such as the power and heating plant, water pumping/treatment systems, vehicle storage and repair bays, incineration facilities, base stores and industrial maintenance support.

(5) The modules are linked via an enclosed heated access corridor, which also serves as a utilidor for mechanical/ electrical distribution services, such as power, heating, sprinkler piping, water and waste drainage piping.

(6) The main site emergency shelter is a separate structure, measuring approximately 15.8 m long by 7.5 m wide, providing an overall floor area of 119 m^2. The sleeping emergency shelter contains space for up to 20 personnel and is equipped with food, potable water, lighting and heat to survive a major disaster for up to one week.

(7) Two water storage tanks, each with a capacity of 783,000 L have been provided at the main site. These storage tanks will be inside an enclosed heated structure measuring 30.8 m long by 16.6 m wide by 9 m high.

(8) Two arctic diesel bulk fuel storage tanks will be required, having a storage capacity of about 1,200,000 L. A pumping station, measuring 4.2 m long by 3.6 m wide is provided at the bulk fuel storage site for delivery of fuel from storage to the technical services module.

(9) A 6000 L insulated septic tank will be installed underground, sited remote from the main site structures.

(10) Solid waste will be incinerated in a controlled-air, grateless-type, multiple-chamber thermal destruction

unit, capable of disposing of a normal day's solid waste production in one 5-hour cycle. The incinerator will be designed to operate free of smoke, fly ash, soot or odour. Start up and shut down of the unit will be completely automatic.

(11) A helicopter landing pad, measuring 20 m long by 20 m wide will be built in the main site area. The gravel helipad will be equipped with perimeter lighting.

(12) Two SGTs are required for communications. The antennae will each be in the order of 7.3 m in diameter, will have 13 m radome enclosures, and will be mounted on a raised platform.

b. Airstrip

The airstrip is located on a wide ledge between the main site and Brevoort Harbour at an elevation of about 198 m above sea level. An 830 m long by 33 m wide gravel runway covers most of the airfield site. A level filled area 240 m by 80 m is located along the northwest side of the airstrip. Temporary trailers and other semi-permanent structures and facilities formerly used to support offshore oil exploration occupy about three-quarters of this storage area. The airstrip will be upgraded as follows:

(1) An airfield services building will be constructed, measuring 24.8 m long by 9 m wide, containing a floor area of 223 m^2. The building height will be 6.7 m. The building will house airfield electrical equipment, runway maintenance equipment, and a standby power plant. A small passenger waiting area and cargo room will also be included.

(2) The airstrip gravelled surface will be upgraded to 300 mm thick. Medium intensity runway and taxiway lighting, rotating beacon, illuminated wind cone, and precision approach path indicator will also be installed.

(3) An emergency fuel supply for the power plant will consist of an above ground 7500 L skid-mounted dyked storage tank.

(4) The primary electrical power supply to the airfield services building will be from the summit by a power cable, laid on the ground and protected in areas of vehicular traffic.

(5) The existing access road from airfield to summit will be upgraded with gravel surfacing and improved ditches.

(6) A dyked area will be developed for storage of aviation fuel in drums (maximum 100 drums total storage) adjacent to the airstrip taxiway.

c. Beach Site

This area consists of the cleared beach site itself, an empty 946,000 L diesel tank, and two groups of seven aircraft fuel tanks with a total capacity of 127,300 L.

The following facilities will be constructed at the Brevoort beach site.

(1) Civil construction improvements are to be undertaken at the beach site to accommodate marine landing craft. A prepared landing craft area, at least 30 m wide, is to be developed.

(2) A storage area, approximately 14,000 m^2, is to be prepared by site grading at, or adjacent, to the beachhead.

(3) The existing diesel fuel tank is to be recommissioned, and a second new tank of 630,000 L capacity is to be erected.

(4) Containment dykes with impermeable liners are to be constructed for both installations.

(5) An arctic diesel pumping station, measuring 6.0 m by 3.6 m, is to be built, including a tanker loading pipeline to the beachhead.

(6) An existing arctic diesel transfer pipeline to the summit, comprised of 50 mm diameter steel pipe suitably supported above the ground, will be upgraded as required and recommissioned.

(7) The gravel access road from the beach site to the airstrip is to be upgraded, including drainage channel improvements.

d. Lake Site

The following water supply facilities will be constructed at the lake site located southwest of the main site.

(1) A 3.6 m by 3.8 m pump station will be constructed at the end of the jetty to deliver water to the main site.

(2) The water transmission line to the main site will be a 50 mm diameter galvanized steel pipe, laid over the natural terrain, suitably supported. It will be used only during the summer months.

(3) The water supply pump station will be accessible by vehicles during the summer months over a gravel surface road. A road link to the water supply source exists and only requires nominal upgrading.

2.6 The following Table is a summary list of the expected site changes which will occur as a result of demolition of the existing summit facilities and construction of the LRR.

Site: BREVOORT ISLAND BAF-3

EXISTING SITE COMPONENTS	EXPECTED ALTERATIONS	NET CHANGES
1. TERRAIN		
General Features Prominent Features	. Reshape site . New quarry and landfill required	. Fill and level gravel areas and install new foundations
Roads/Culverts Surface Drainage	. Upgrade road and culverts to new construction standards	. Upgrade existing road to provide slope protection, increase shoulders and provide better surface water run-off
2. AIRPORT/RUNWAY		
Buildings Landing Strip Cut & Fill Refuelling Facility	. Construct a new aircraft services building on existing level area . Provide fuel drum storage area	. New building, improve some ditch water drainage, install landing lights
3. CAMP SYSTEMS		
General Site Buildings	. New building foundations required . All new modules installed	. Install concrete foundation piles . Major module and radome installation

Site: BREVOORT ISLAND		BAF-3
EXISTING SITE COMPONENTS	EXPECTED ALTERATIONS	NET CHANGES
Construction Buildings	. Use existing temporary buildings by airstrip	. Buildings to be removed after construction period
Water Supply/Source Water Treatment	. Source adequate . New water storage tanks and pipeline required	. Upgrade services and supply pipeline
Sewage Disposal Sewage Treatment	. Install new system	. Install and utilize package sewage treatment system
Garbage/Waste Disposal	. Incineration and landfill required	. Install new incinerator and develop suitable landfill site
Heating System Power Systems	. New modular units required	. Install within technical services module
4. STORAGE Fuel Tanks/Berms Drums/Pipelines Other Liquids	. New bulk fuel storage required at beach and summit . New pumping station . Repair existing tanks and pipeline to current safety standards	. Install new bulk fuel storage and pumping facilities, utilize some existing tanks at beach . Recommission pipeline . Install dyked bulk fuel tanks, grade site and provide adequate surface water drainage and slope protection
5. SCRAP Materials/Vehicles	. Removal of hazardous wastes and usable equipment from site then landfill of demolished structures	. Landfill all demolished structures consisting of wood, steel, cables, glass and concrete, etc. . 1 m of ground cover; sloped and drained to prevent erosion . All PCB equipment removed from site

Site: BREVOORT ISLAND		BAF-3
EXISTING SITE COMPONENTS	EXPECTED ALTERATIONS	NET CHANGES
6. HARBOUR/BEACH Shoreline Dock/Landing Area Staging Area Boats, Other Vessels	. Site clean-up, new bulk fuel tank and enlarged staging area	. Install dyked bulk fuel tanks, grade site and provide adequate surface water drainage and slope protection
7. QUARRIES/GRAVEL SOURCE Land Use Stock Pile	. Fill required for site leveling . Concrete aggregate and road modifications	. Establish a rock quarry with crushing equipment near beach site . Blasting required
8. NOISE SOURCES Machinery/Buildings Vehicles/Aircraft Activities	. Construction activity . Aircraft noise . Vehicle traffic . Blasting	. Increase in type, level, and duration of noise during construction period
9. WILDLIFE Animals/Habitat Birds/Habitat Marine Animals	. No habitat loss expected	. Noise and activity disturbance possible but few marine mammals use the fiord at Brevoort and very few terrestrial mammals have been seen near the BAF-3 site
10. VEGETATION General Features Plants etc.	. No change	. No change
11. ASTHETIC/VISUAL Towers Lights	. Extensive site clean-up and modernization	. Improved site appearance with fewer buildings well maintained

Site: BREVOORT ISLAND		BAF-3
EXISTING SITE COMPONENTS	EXPECTED ALTERATIONS	NET CHANGES
12. COMMUNITY ·Village Resource Use Activities Other	. Iqaluit (Frobisher Bay) residents make occasional site visits for hunting purposes, no change	.disruption of native resource use during construction period or O&M extremely unlikely
13. PEOPLE NWS Others	. Regular < 10 persons . Construction peak < 120 persons	. Site will be permanently occupied for the next 25 years
14. HISTORICAL RESOURCES Archaeological Sites Artifacts	. Archaeological survey found no areas of concern	. No change
15. PROTECTED AREAS Parks etc.	. No designated lands nearby	. No change
16. ENVIR./SOCIO-ECONOMIC ISSUES Type	. Few if any jobs for Baffin Island residents during either construction or O&M	. No change
17. OTHER		

2.7 Site Activities

2.7.1 Before construction of the BAF-3 facilities could begin, demolition and clean-up of existing structures was required. This was partially completed in 1986 and further work will be done during 1987 and 1988. Hazardous materials and usable