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PRELIMINARY ASSESSMENT REPORT

NAVAL OCEAN SYSTEMS CENTER
SPECIAL AREAS, ALASKA

EPA IDENTIFICATION: NONE

NEESA 13-205
JULY 1991

NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY

Port Hueneme, California 93043-5014

PRELIMINARY ASSESSMENT REPORT

NAVAL OCEAN SYSTEMS CENTER
SPECIAL AREAS, ALASKA

EPA IDENTIFICATION: NONE

NEESA 13-205
JULY 1991

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
	NA

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
White Alice Site, Tin City	NA				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Tin City	AK	--	Nome	200	36
09 COORDINATES LATITUDE: 65°35'02."N	LONGITUDE: 167°56'26."W				

10 DIRECTIONS TO SITE (Starting from nearest public road)

Follow gravel road north of airfield and Air Force Base at Tin City. Tin City is located about 100 miles north of Nome.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)			
Naval Ocean Systems Center	Arctic Submarine Lab Code 19			
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 TELEPHONE NUMBER**	
San Diego	CA	92152-5000	(619) 553-7458	
07 OPERATOR (If known and different from owner)	**08 STREET** (Business, mailing, residential)			
Same				
09 CITY	**10 STATE**	**11 ZIP CODE**	**12 TELEPHONE NUMBER**	
Same			( )	

13 TYPE OF OWNERSHIP (Check one)

☐ A. PRIVATE ☒ B. FEDERAL: U.S. Navy (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL

☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☐ A. RCRA 3001 DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☒ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

☒ YES ☐ NO DATE 7/16-22/89 (MONTH DAY YEAR)

BY (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR

☐ E. LOCAL HEALTH OFFICIAL ☒ F. OTHER: Naval Energy & Environmental Support Activity (Specify)

CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)	03 YEARS OF OPERATION		
☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN	1954 (BEGINNING YEAR)	1975 (ENDING YEAR)	☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED

In the substation of Building 1001, the floor is contaminated with PCBs.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

PCBs could migrate from the building to the soils outside the building.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)

☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency Organization)	03 TELEPHONE NUMBER
Michael Hacking	Naval Ocean Systems Center, Arctic Submarine Lab	(619) 553-7458

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Sherry Van Duyn/Joe Vogel	Navy	NEESA, Port Hueneme, CA	(805) 982-2634	3/12/90 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

White Alice Site, Tin City, AK

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
	NA

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS: unknown
- CUBIC YARDS: unknown
- NO. OF DRUMS: unknown

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☒ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	unknown		PCBs
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	PCBs	1336-36-3	Spill	0.14-1.5	$mg/100cm^2$

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Base records, interviews, sampling results. See PA report.

EPA FORM 2070-12 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
	NA

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 11
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

A very small potential exists for migration of PCBs to groundwater.

01 [X] B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 12
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

PCBs could migrate from the building and transported via erosion and sediment transport to Cape Creek. The Bering Strait is 1.7 miles from the facility.

01 [ ] C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

NA

01 [ ] D. FIRE/EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

NA

01 [X] E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: 2-3
02 [ ] OBSERVED (DATE: _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

A very small potential exists for direct contact with PCBs. There are very few people in the area.

01 [X] F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: 0.02 (Acres)
02 [ ] OBSERVED (DATE _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

Contaminants could migrate from the building or may have been disposed outside the building in the past.

01 [X] G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 23
02 [ ] OBSERVED (DATE _____) [X] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

The miners sometime drink water out of Cape Creek. The Air Force drinks water from a well next to their base.

01 [ ] H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

NA

01 [ ] I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: _____
02 [ ] OBSERVED (DATE: _____) [ ] POTENTIAL [ ] ALLEGED
04 NARRATIVE DESCRIPTION

NA

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE: | 02 SITE NUMBER: NA

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Migration of contaminants could potentially affect the sparse vegetation in the area.

01 ☒ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
Animals could try to seek shelter in the building and come into contact with the PCBs.

01 ☒ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Very little potential of contamination of food chain. However, if contaminants migrated to surface water could contaminate fish, although unlikely.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills, runoff, standing liquids, leaking drums) — 02 ☒ OBSERVED (DATE: 7/17/89) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 2-3 — 04 NARRATIVE DESCRIPTION
The water on the floor of the substation was contaminated with PCBs. The doors were open to the room.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
NA

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
NA

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
NA

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS
NA

III. TOTAL POPULATION POTENTIALLY AFFECTED: 23

IV. COMMENTS
There is one contaminated site at the facility:
Site 1, Building 1001 PCB Contamination.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)
Base records, interviews, Air Force records. See supporting documentation at the end of PA Report.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
	NA

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER
Navy Field Station	P.O. Box 50

03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Cape Prince of Wales	AK	99783	Nome	200	36

09 COORDINATES LATITUDE	LONGITUDE
65°36'30"N	168°03'50"W

10 DIRECTIONS TO SITE (Starting from nearest public road)

Wales is located about 100 miles north of Nome, AK. The facility is located south of the Landing Air Strip off of Access Road.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)
Wales Native Cooperation	

03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Wales	AK	99783	( )

07 OPERATOR (If known and different from owner)	08 STREET (Business, mailing, residential)
Naval Ocean Systems Center	Arctic Submarine Lab Code 19

09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
San Diego	CA	92152-5000	(619) 553-7458

13 TYPE OF OWNERSHIP (Check one)

☐ A. PRIVATE ☒ B. FEDERAL: U.S. Navy (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL

☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)

☐ A. RCRA 3001 DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☒ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION

☒ YES ☐ NO DATE 7/16-22/89 (MONTH DAY YEAR)

BY (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR

☐ E. LOCAL HEALTH OFFICIAL ☒ F. OTHER: Naval Energy & Environmental Support Activity (Specify)

CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)	03 YEARS OF OPERATION		
☒ A. ACTIVE ☐ B. INACTIVE ☐ C. UNKNOWN	1951 (BEGINNING YEAR)	Present (ENDING YEAR)	☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN OR ALLEGED

This activity handles small quantities of batteries, paints, waste oils, and solvents.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION

Contaminants could migrate through the sand to shallow groundwater to the Bering Strait located 500-700 feet away from the facility. The fish are harvested commercially by the eskimos.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)

☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency Organization)	03 TELEPHONE NUMBER
Michael Hacking	Naval Ocean Systems Center Arctic Submarine Lab	(619) 553-7458

04 PERSON RESPONSIBLE FOR ASSESSMENT	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NUMBER	08 DATE
Sherry Van Duyn/Joe Vogel	Navy	NEESA Port Hueneme, CA	(805) 982-2634	3 / 12 / 90 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

Navy Field Station, Wales

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
	NA

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [X] E. SLURRY
- [X] F. LIQUID
- [ ] G. GAS
- [ ] D. OTHER _____ (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

- TONS: unknown
- CUBIC YARDS: unknown
- NO. OF DRUMS: unknown

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [X] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [ ] D. PERSISTENT
- [X] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE	unknown		waste oil
SOL	SOLVENTS	unknown		paint thinners
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	unknown		paint
IOC	INORGANIC CHEMICALS			
ACD	ACIDS	unknown		battery acid
BAS	BASES			
MES	HEAVY METALS	unknown		lead from batteries and paint

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OLW	waste oil	999	OD, burned	unknown	unknown
SOL	paint thinners	999	spills, leaks	unknown	unknown
ACD	battery acid	999	OD	unknown	unknown
MES	lead from paint	999	OD	unknown	unknown
MES	lead from batteries	999	OD	unknown	unknown
OCC	paint	999	OD	unknown	unknown

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Base records, interviews. See PA Report.

EPA FORM 2070-12 (7-81)

Navy Field Station, Wales

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
	NA

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A. GROUNDWATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION
Contaminants could potentially migrate to shallow groundwater through the sand matrix.

01 [X] B. SURFACE WATER CONTAMINATION — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 150 — 04 NARRATIVE DESCRIPTION
If contaminants migrate to shallow groundwater they could be discharged to the Bering Strait located 500-700 feet away from the facility.

01 [ ] C. CONTAMINATION OF AIR — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
NA

01 [ ] D. FIRE EXPLOSIVE CONDITIONS — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
NA

01 [X] E. DIRECT CONTACT — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 150 — 04 NARRATIVE DESCRIPTION
The facility has no fence so that access is not restricted.

01 [X] F. CONTAMINATION OF SOIL — 02 [ ] OBSERVED (DATE: _____) — [X] POTENTIAL — [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED: 1.2 (Acres) — 04 NARRATIVE DESCRIPTION
Soil could be potentially contaminated from past disposal.

01 [ ] G. DRINKING WATER CONTAMINATION — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
NA

01 [ ] H. WORKER EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
NA

01 [ ] I. POPULATION EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION
NA

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION
01 STATE | 02 SITE NUMBER: NA

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☐ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

NA

01 ☒ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

If contaminants are transported to the Bering Strait, several species of whales could potentially be contaminated as well as fish and other sealife.

01 ☒ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potential migration of contaminants to surface water could contaminate the fish.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills runoff standing liquids leaking drums) — 02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 2-3
04 NARRATIVE DESCRIPTION

Paint thinners have leaked through the floor boards in the paint shed to the sand.

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

NA

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

NA

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION

NA

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

NA

III. TOTAL POPULATION POTENTIALLY AFFECTED: 150

IV. COMMENTS

There are three potentially contaminated sites at the facility: Site 2, Paint Shed; Site 3, Burn Area and Battery Disposal and, Site 4, Drum Disposal Area.

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Base Records, interviews. See Preliminary Assessment Supporting Documentation.

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

I. IDENTIFICATION
01 STATE: | 02 SITE NUMBER: NA

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
White Alice Site	Northeast Cape				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
St. Lawrence Island	AK	--	Nome	--	--
09 COORDINATES LATITUDE: 63°17'30"N	LONGITUDE: 168°58'47"W				

10 DIRECTIONS TO SITE (Starting from nearest public road)
The facility is located 118 miles west of the Seward Peninsula. The White Alice Site is located on Northeast Cape. Travel is by air or sea only.

III. RESPONSIBLE PARTIES

01 OWNER (If known)	02 STREET (Business, mailing, residential)			
Naval Ocean Systems Center	Arctic Submarine Lab Code 19			
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 TELEPHONE NUMBER**	
San Diego	CA	92152-5000	(619) 553-7458	
07 OPERATOR (If known and different from owner)	**08 STREET** (Business, mailing, residential)			
Same				
09 CITY	**10 STATE**	**11 ZIP CODE**	**12 TELEPHONE NUMBER**	
Same			( )	

13 TYPE OF OWNERSHIP (Check one)
☐ A. PRIVATE ☒ B. FEDERAL: U.S. Navy (Agency name) ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER: _____ (Specify) ☐ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)
☐ A. RCRA 3001 DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☐ B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) ☒ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
☒ YES ☐ NO DATE 7/16-22/89 (MONTH DAY YEAR)

BY (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR ☐ C. STATE ☐ D. OTHER CONTRACTOR
☐ E. LOCAL HEALTH OFFICIAL ☒ F. OTHER: Naval Energy & Environmental Support Activity (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS (Check one)	03 YEARS OF OPERATION		
☐ A. ACTIVE ☒ B. INACTIVE ☐ C. UNKNOWN	1952 (BEGINNING YEAR)	1975 (ENDING YEAR)	☐ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Substances possibly present include PCBs, TCE, and other solvents, jet fuel, asbestos, sulfuric acid, waste oil, fuel oil, ethylene glycol and others.

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Leaking drums pose a threat to surface water and drinking water of seasonal eskimo fisherman, vegetation and wildlife. Bulging drums pose a potential fire and explosion hazard.

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)
☐ A. HIGH (Inspection required promptly) ☐ B. MEDIUM (Inspection required) ☒ C. LOW (Inspect on time available basis) ☐ D. NONE (No further action needed, complete current disposition form)

VI. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)		03 TELEPHONE NUMBER
Michael Hacking	Naval Ocean Systems Center Arctic Submarine Lab		(619) 553-7458
04 PERSON RESPONSIBLE FOR ASSESSMENT	**05 AGENCY**	**06 ORGANIZATION**	**07 TELEPHONE NUMBER**	**08 DATE**
Sherry Van Duyn/Joe Vogel	Navy	NEESA Port Hueneme, CA	(805) 982-2634	3 / 12 / 90 (MONTH DAY YEAR)

EPA FORM 2070-12 (7-81)

White Alice Site, Northeast Cape, St. Lawrence Island, AK

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
	NA

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [ ] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] E. SLURRY
- [X] F. LIQUID
- [X] G. GAS
- [X] D. OTHER fibers (Specify)

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

TONS: unknown
CUBIC YARDS: unknown
NO. OF DRUMS: 1000

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [X] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [X] D. PERSISTENT
- [X] E. SOLUBLE
- [ ] F. INFECTIOUS
- [X] G. FLAMMABLE
- [X] H. IGNITABLE
- [X] I. HIGHLY VOLATILE
- [X] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE	unknown		Aviation fuel, diesel, waste oil
SOL	SOLVENTS	unknown		TCE, carbon tetrachloride
PSD	PESTICIDES	unknown		DDT
OCC	OTHER ORGANIC CHEMICALS	unknown		PCBs, antifreeze, leaded gas
IOC	INORGANIC CHEMICALS	unknown		Asbestos (Friable and nonfriable)
ACD	ACIDS	unknown		Sulfuric acid
BAS	BASES			
MES	HEAVY METALS	unknown		Leaded gasoline

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
IOC	Chrysotile asbestos	999		0.62-1.47	mgm/kgm
IOC	Amosite asbestos	999		0.62-1.47	mgm/kgm
OCC	PCBs	1336-36-3		unknown	
OLW	Waste oil	999	DR	unknown	
OLW	Turbine aviation fuel	999	DR	unknown	
OLW	Fuel oil diesel	999	DR	unknown	
OLW	Engine oil crankcase	999	DR	unknown	
OCC	Antifreeze arctic grade	999	DR	unknown	
OCC	Leaded gasoline	999	DR	unknown	
OCC	Deicing fluid	999	DR	unknown	
SOL	TCE	79-01-6	DR	unknown	
OCC	Ethyleneglycol	628-96-6	unknown	unknown	
OCC	Dibenzofuran	999	unknown	unknown	
SOL	Carbon tetrachloride	56-23-5	unknown	unknown	
PSD	DDT	50-29-3	unknown	unknown	
ACD	Sulfuric Acid	7664-93-9	unknown	unknown	

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports.)

EPA FORM 2070-12 (7-81)

White Alice Site, Northeast Cape, St. Lawrence Island, AK

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
	NA

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS _____

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☐ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			Alcohols
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			2, 4, 5-T, Sulfuric acid
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
ACD	Trichlorophenoxy	93-72-1	unknown	unknown	
	acetic acid	(2, 4, 5-T)	unknown	unknown	
OCC	Alcohols	999	unknown	unknown	

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis reports)

Base records, interviews, sampling results. See PA Report.

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
	NA

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 0
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Little information is known about the groundwater. The potential for migration is probably low for groundwater and high for surface water.

01 ☒ B. SURFACE WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 10-20
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Surface water run off could potentially carry contaminants off site and to small ponds, lakes or to the Bering Sea 1.5 miles away from the facility.

01 ☒ C. CONTAMINATION OF AIR
03 POPULATION POTENTIALLY AFFECTED: 10-20
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Wind transport could potentially allow asbestos particles to migrate. However, only seasonal eskimo fisherman occupy an area 1.5 miles away from the facility.

01 ☒ D. FIRE EXPLOSIVE CONDITIONS
03 POPULATION POTENTIALLY AFFECTED: 10-20
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
There is a potential for fire/explosion hazards due to jet fuel, solvents and compressed gas cylinders.

01 ☒ E. DIRECT CONTACT
03 POPULATION POTENTIALLY AFFECTED: 2-3
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
There is a potential for direct contact if the eskimos go to the area contaminated.

01 ☒ F. CONTAMINATION OF SOIL
03 AREA POTENTIALLY AFFECTED: 15 (Acres)
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Soil is sparse in the area. The terrain is mostly mountainous, however soil in the area could be potentially contaminated.

01 ☒ G. DRINKING WATER CONTAMINATION
03 POPULATION POTENTIALLY AFFECTED: 10-20
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Surface water run off in the streams and ponds are used as the primary source of drinking water by the seasonal tenants of the eskimo fishing village located 1.5 miles away.

01 ☐ H. WORKER EXPOSURE/INJURY
03 WORKERS POTENTIALLY AFFECTED: _____
02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
NA

01 ☒ I. POPULATION EXPOSURE/INJURY
03 POPULATION POTENTIALLY AFFECTED: 10-20
02 ☐ OBSERVED (DATE: _____) ☒ POTENTIAL ☐ ALLEGED
04 NARRATIVE DESCRIPTION
The only population affected is the seasonal eskimo fishing camp.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
	NA

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Surface water is critical for vegetation in the area. A Category 2 candidate taxa, the few flowered primula Primula tschuktschorum could potentially be in the area.

01 ☒ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)
Sightings of peregrine falcons have been observed on the island, however it is not considered a critical habitat. Other animals that are in the area included foxes, squirrels, shrew, weasels, etc.

01 ☒ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
Ths fish and animals of the Bering Sea are commercially harvested by the eskimos.

01 ☒ M. UNSTABLE CONTAINMENT OF WASTES (Spills, runoff, standing liquids, leaking drums) — 02 ☒ OBSERVED (DATE: 7/16-22/89) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 10-20 — 04 NARRATIVE DESCRIPTION
There are leaking drums that contain TCE, arctic grade antifreeze, waste oil, fuel oil, diesel, and deicing fluid exposed to the environment.

01 ☒ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
If contaminants migrate off-site they could contaminate off-site property.

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
NA

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION
NA

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 10-20

IV. COMMENTS

There are four potentially contaminated sites at the facility: Site 5, Asbestos hazard; Site 6, Abandoned electrical system; Site 7, Storage drums, and Site 8, Main transmitter area storage building.

V. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Base records, interviews. See Preliminary Assessment Supporting Documentation.

PRELIMINARY ASSESSMENT
REPORT

Activity Names: Naval Ocean Systems Center (NOSC)
Special Areas, Alaska including:
White Alice Site, Tin City, AK
Navy Field Station, Cape Prince of Wales, AK
White Alice Site, Northeast Cape,
St. Lawrence Island (SLI), AK

Address: NOSC Arctic Submarine Lab, San Diego, CA 92152
UIC: N66001

EPA Region: 10 **EPA Identification:** None

Activity Location:	**Latitude:**	**Longitude:**
Tin City	65° 35' 02" N	167° 56' 26" W
Wales	65° 36' 30" N	168° 03' 50" W
Northeast Cape	63° 17' 30" N	168° 58' 47" W

Preliminary Assessment Team Members
Sherry K. Van Duyn, Environmental Engineer
Joseph E. Vogel, P.E., Environmental Engineer
Kevin L. Coons, Environmental Engineer
Ronald E. Tickle, P.E., Environmental Engineer
Jai L. Jeffery, Environmental Engineer

Prepared By:
Naval Energy and Environmental Support Activity
Port Hueneme, CA 93043-5014

NEESA 13-205PA
July 1991

Priority for Site Inspection: Low
Eight potential hazardous waste disposal sites were investigated during the Preliminary Assessment. A Site Inspection is required for the following sites:

White Alice Site, Tin City
- Site 1, Building 1001 PCB Contamination (Tin City)

Navy Field Station, Cape Prince of Wales
- Site 2, Paint Shed (Wales)
- Site 3, Burn Area and Battery Disposal (Wales)
- Site 4, Drum Disposal Area (Wales)

White Alice Site, Northeast Cape, St. Lawrence Island
- Site 5, Asbestos Hazards (SLI)
- Site 6, Abandoned Electrical System (SLI)
- Site 7, Storage Drums (SLI)
- Site 8, Main Transmitter Area Storage Building (SLI)

A removal action was conducted in July and August, 1990 at sites 6,7, and 8 to remove electrical equipment, storage drums, and gas cylinders.

1. INTRODUCTION.

1.1 ACTIVITY DESCRIPTION AND LOCATION.

1.1.1 White Alice Site, Tin City. The Tin City White Alice Radio Relay Site is located about 7,000 feet northeast of the Tin City Airport, and about two miles north of the Bering Sea (**Figure 1**). The White Alice Site is about 50 miles southeast of Mys Uelen (Cape Chaplin), Siberia. There are no roads leading to the area so access is either by sea or air, weather permitting.

The White Alice Radio Relay Site covers 6.3 acres on the south side of Cape mountain and overlooks the Bering Sea. The site consists of two abandoned buildings, four abandoned radio antennas, and four abandoned fuel tanks.

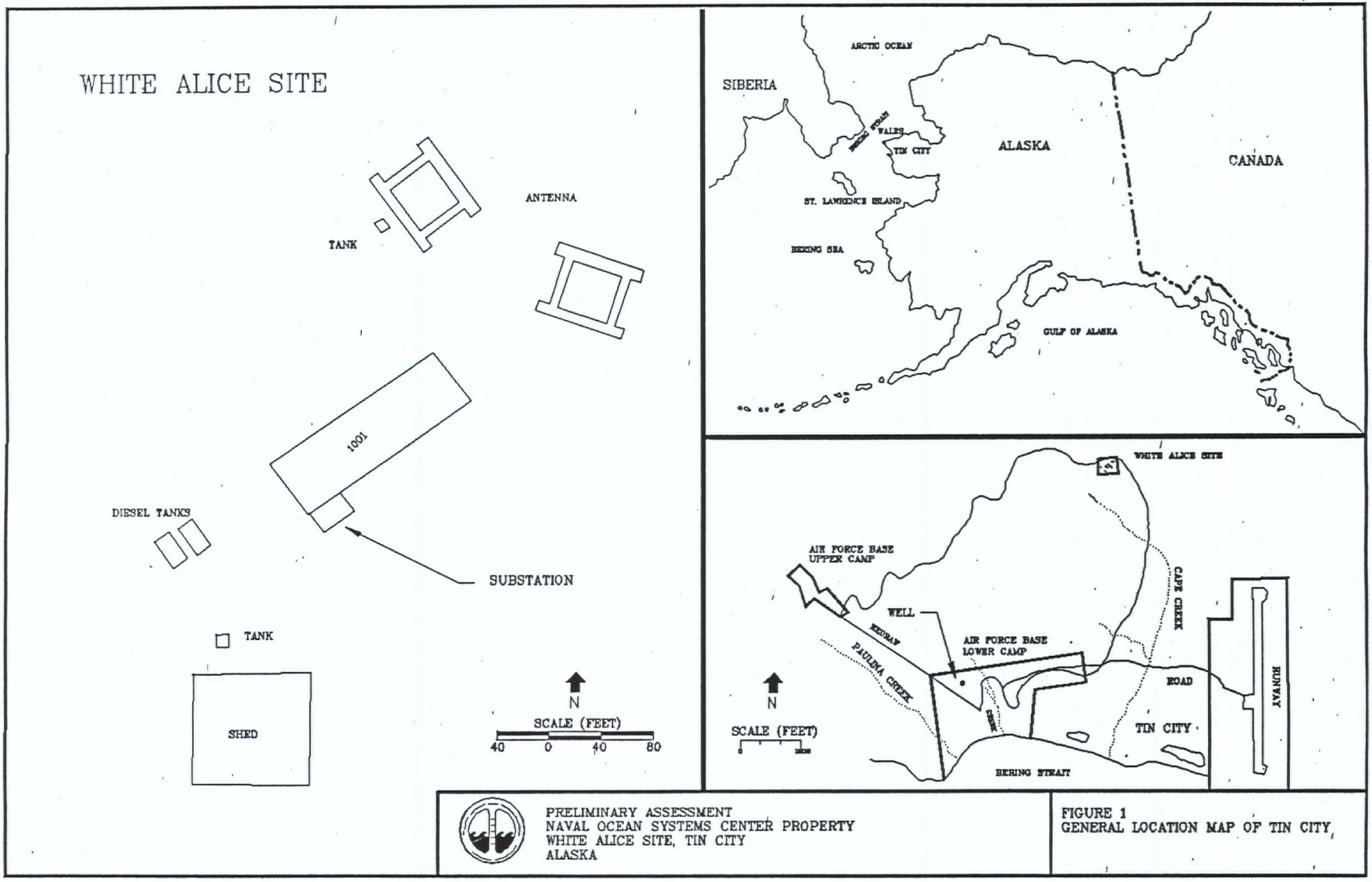
1.1.2 Navy Field Station, Cape Prince of Wales. The Navy Field Station is located on the Cape Prince of Wales of the Seward Peninsula bounded by the Bering Sea to the south, the Bering Strait to the west and the Chukotsk [Chukchi] Sea to the north. It is located on the north side of Cape mountain on flat marshy land as shown in **Figure 2**. The Navy Field Station is on the north side of the city of Wales and 200 yards east of the Bering Strait. The Navy Field Station is about seven miles northwest of Tin City, and like Tin City, access is either by sea or air.

The Navy Field Station covers approximately 5 acres and consists of two housing quarters, one large vehicle and miscellaneous storage buildings, generator/weather building, four small storage sheds, 13 large diesel fuel storage tanks, and two small gasoline tanks as shown in **Figure 2**.

The land that the Navy Field Station resides on is leased property owned by the Wales Native Corporation.

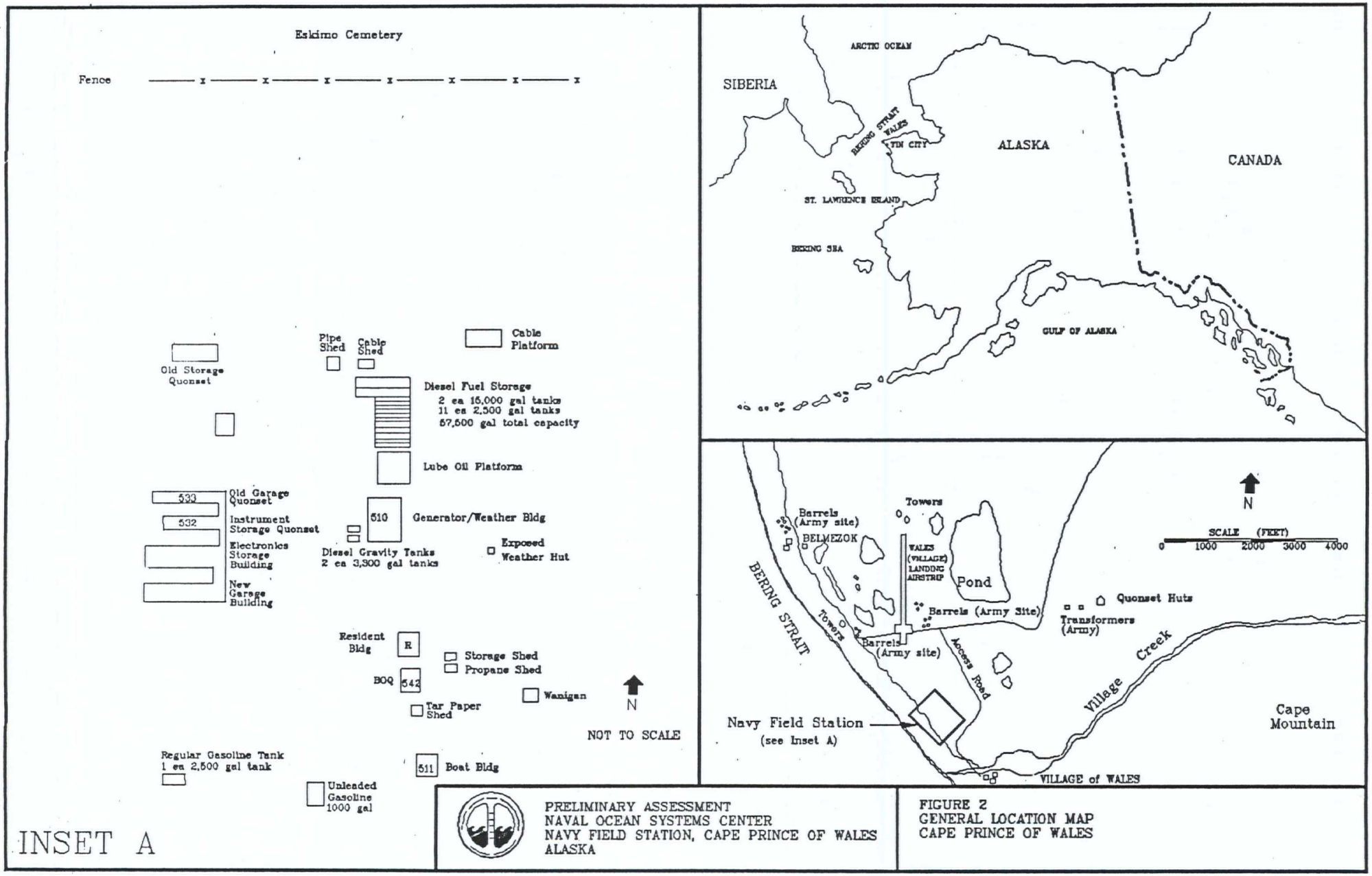
1.1.3 White Alice Site, Northeast Cape, St. Lawrence Island. The White Alice Site at Northeast Cape is located on Saint Lawrence Island (SLI), Alaska. The island is approximately 100 miles in length and averages about 20 miles in width. The distance to the nearest point in Siberia, Cape Chaplin, is about 40 miles, while the distance to the nearest point on the Alaskan mainland at Cape Rodney on the Seward Peninsula is 118 miles. All travel to or from the area is accomplished by either sea or air if weather permits. **Figure 3** shows the general location of the navy facilities at Northeast Cape.

The White Alice Site encompasses approximately 26 acres and consists of seven abandoned buildings, four abandoned radio antennas, an abandoned tramway leading up Kangukhsam Mountain, and four abandoned above-ground fuel tanks as shown in **Figure 4**.



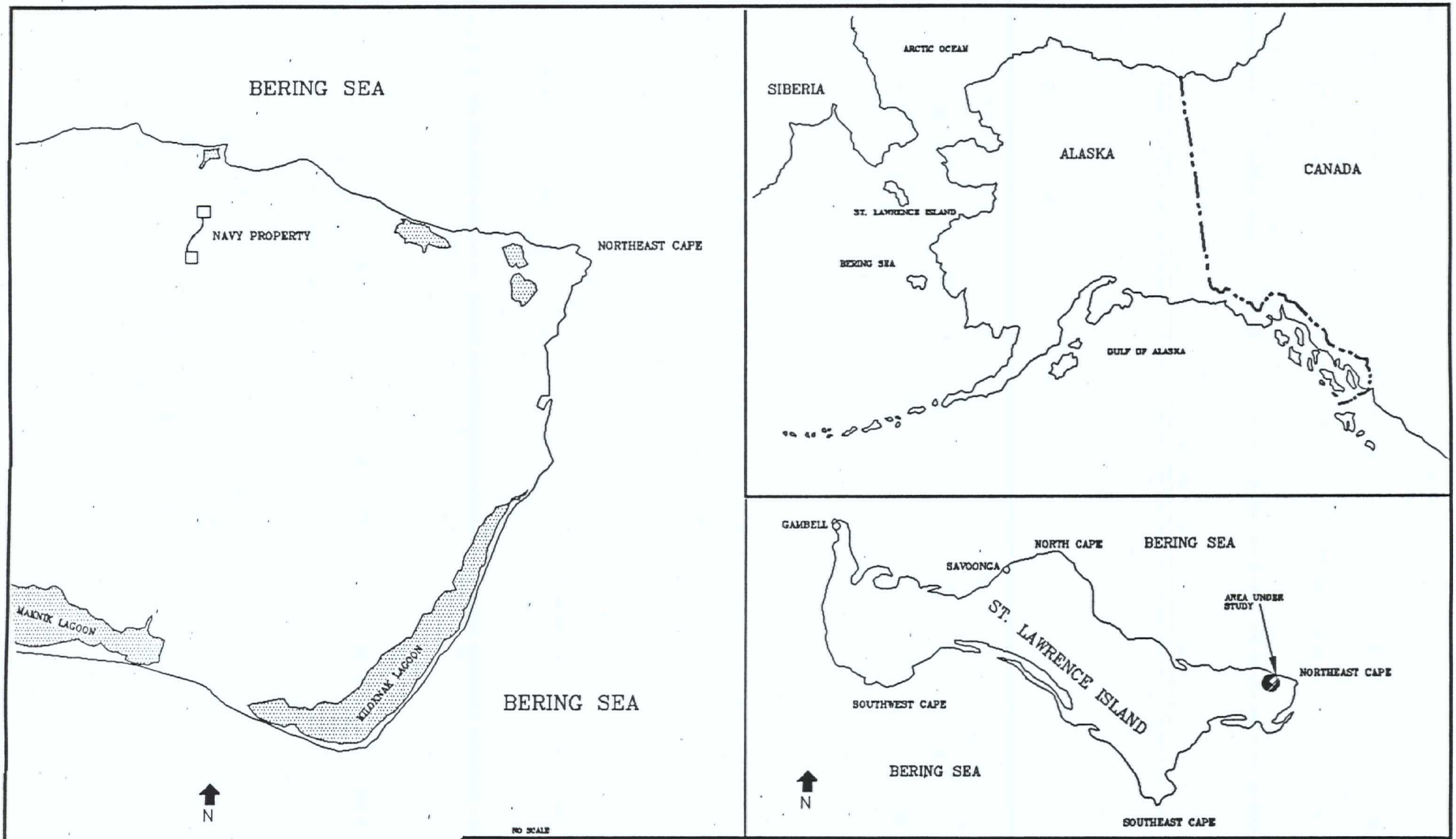
PRELIMINARY ASSESSMENT
NAVAL OCEAN SYSTEMS CENTER PROPERTY
WHITE ALICE SITE, TIN CITY
ALASKA

FIGURE 1
GENERAL LOCATION MAP OF TIN CITY



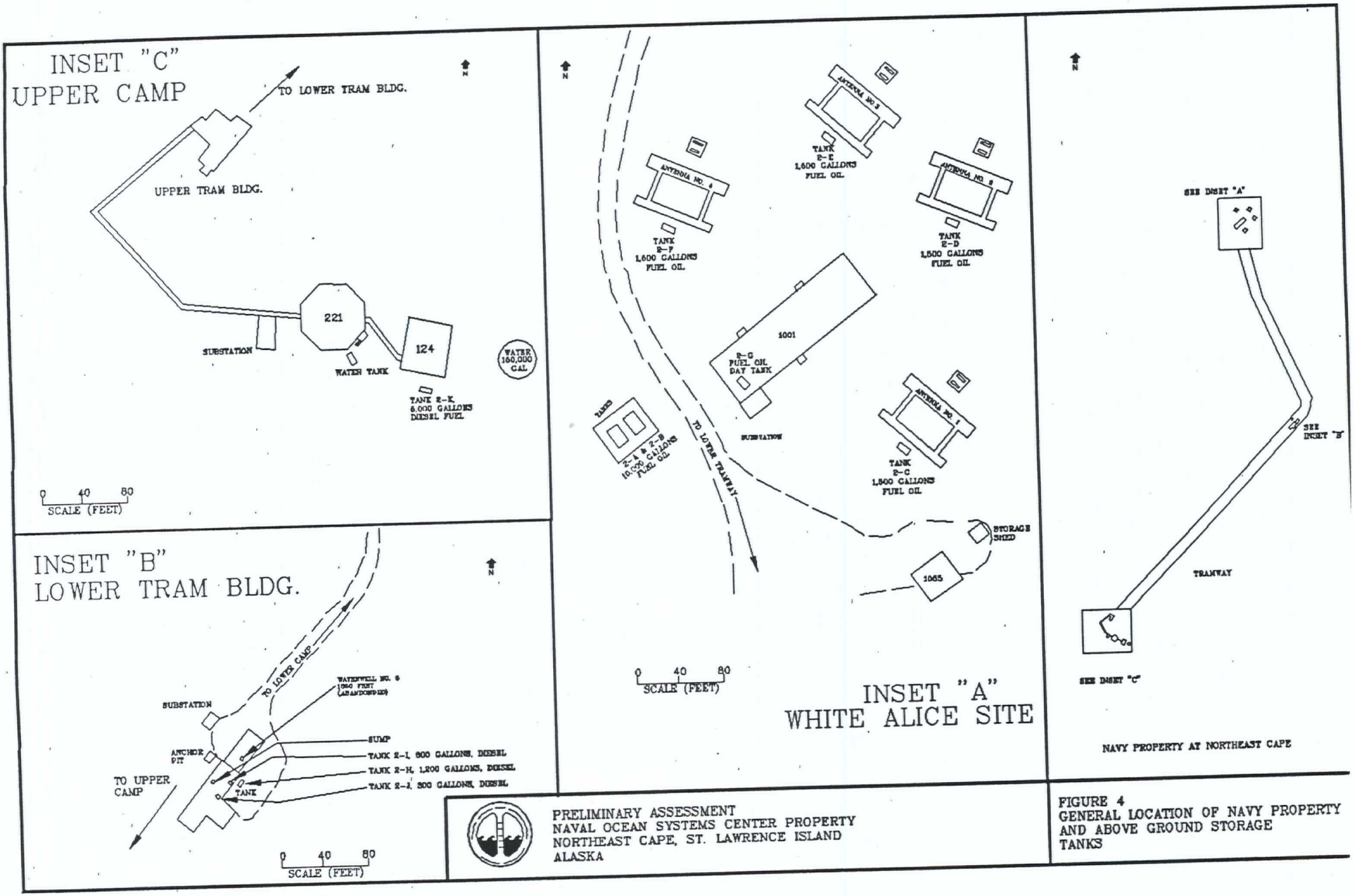
PRELIMINARY ASSESSMENT
NAVAL OCEAN SYSTEMS CENTER
NAVY FIELD STATION, CAPE PRINCE OF WALES
ALASKA

FIGURE 2
GENERAL LOCATION MAP
CAPE PRINCE OF WALES



PRELIMINARY ASSESSMENT
NAVAL OCEAN SYSTEMS CENTER PROPERTY
NORTHEAST CAPE, ST. LAWRENCE ISLAND
ALASKA

FIGURE 3
GENERAL LOCATION MAP
NORTHEAST CAPE, ST. LAWRENCE ISLAND



PRELIMINARY ASSESSMENT
NAVAL OCEAN SYSTEMS CENTER PROPERTY
NORTHEAST CAPE, ST. LAWRENCE ISLAND
ALASKA

FIGURE 4
GENERAL LOCATION OF NAVY PROPERTY AND ABOVE GROUND STORAGE TANKS

1.2 ACTIVITY HISTORY AND MISSION.

1.2.1 White Alice Site, Tin City. Construction on the White Alice site began in 1952 on land that was transferred from the Bureau of Land Management (BLM) to the Air Force. The White Alice Site was completed by Air Force contractors in 1954. During the construction of the Tin City White Alice Site, other White Alice sites were being built by the Air Force throughout Alaska and nearby islands. The White Alice Sites were used for tropospheric scatter sites operating on high power pulse systems for communication purposes in desolate parts of Alaska.

Before the Air Force built the White Alice Site and the Tin City Air Force base, the surrounding land belonged to the Bureau of Land Management (BLM) or local mining companies. The Tin City White Alice Site went into operation in 1954. While in operation the Tin City White Alice Site was operated by seven to twelve civil service and contractor personnel. Personnel who worked at the White Alice Site were stationed about one mile south at the Tin City Air Force base. In 1975, the White Alice sites were decommissioned and replaced by satellite communications.

In February 1979, the Air Force transferred ownership of the 6.3 acre White Alice Site to the Navy, but control of the area was not accepted by the Navy until 1982. The Navy originally planned to use the old White Alice Site for arctic experiments, but to this date the Navy has never used the facility. In 1984, the Air Force removed the majority of electrical equipment and drained all of the fuel tanks. Since then, the facility has been vacant.

1.2.2 Navy Field Station, Cape Prince of Wales. The exact date that the village of Wales was founded is unknown, but archaeological evidence from house pits and middens in the area date back to as far as 500 A.D. More recent reports by the Russian Navy in 1827 cited the village of "Eidamoo", and in 1880 Captain Smith of the U.S. Revenue Cutter Service reported "Kingigamute", a village with 400 inhabitants. In 1890 the American Missionary Association established a mission and in 1902 the Wales post office was opened (Native Health Service, 1983).

Wales was a major center for whaling due to its strategic location along the migratory path of whales. The whaling culture was destroyed in 1918 by an influenza epidemic which claimed the lives of Wales "finest whalers" (Native Health Service, 1983).

The Army established a post in Wales in the 1940s to help supply the Russian Army during WWII. In 1947 the National Weather Service built a small weather station consisting of two houses for families who worked there. The weather station was turned over to the Navy Electronics Laboratory (NEL) in 1951 for use in conducting arctic experiments. NEL has since changed its name to

the Arctic Submarine Lab (ASL) under the Naval Ocean Systems Center (NOSC).

The Station was transferred to the Polar Research Lab in July of 1977 and returned to ASL in August of 1979. During the period of time that PRL was at the station the climatological records were discontinued. As of March 1987, the location of the instruments remain unchanged from the time they were set up in April 1947, with the exception of the anemometer, which is no longer located atop the engine-generator building because it was blown down by severe winds during the winter of 1984-1985.

The main objective of the field station has always been to conduct arctic experiments and gather weather information.

1.2.3 White Alice Site, Northeast Cape, St. Lawrence Island. The facilities on St. Lawrence Island were constructed in 1952 for the Department of the Air Force and used as part of the high energy pulse system tropospheric scatter sites located throughout coastal Alaska. Excess property of the original Air Force base, 16,213 acres, was relinquished to BLM on 14 March 1958 and conveyed to the native corporations; Sivuqaq' Inc. of the village of Gamble and Savoonga Inc. of the village of Savoonga, on June 27, 1979. Northeast Cape was used by the Air Force until it was closed in 1975 when the White Alice sites became obsolete with the introduction of communication satellites. After its closure, 4854.93 acres, were relinquished to BLM on 20 August 1975, and then conveyed to Sivuqaq' Inc. (Gamble) and Savoonga Inc. (Savoonga) on June 27, 1979. Together, the two corporations own St. Lawrence Island.

On July 12, 1982, 25.96 acres of property were transferred from the Department of Air Force to the Department of Navy. The Navy property consisted of the White Alice Site, the lower tram terminal, the tramway up Mount Kangukhsam, and the upper tram complex as shown in Figure 4.

On July 29, 1982 the Naval Ocean Systems Center (NOSC) accepted control of the 26 acres of property. NOSC originally planned to use the facilities at Northeast Cape as part of experiments run by the Arctic Submarine Laboratory; however, to date no Navy use of the property has occurred.

1.3 SURROUNDING AREA.

1.3.1 White Alice Site, Tin City. The White Alice Site is on the west side of Cape mountain which is an area characterized as tundra. In the surrounding area there is a mining camp, the Tin City trading post, and the Tin City Air Force Base. The mining camp, located 1.75 miles south, is a temporary summer residence for a dozen miners. In Tin City, there is only one permanent

resident, living at the trading post located about 1.25 miles from the facility. Six to ten temporary personnel live at the Tin City Air Force Base during the summer months. Wales, an Eskimo village with 150 residents is about six miles to the northwest. Nome is about 100 miles to the south.

1.3.2 Navy Field Station, Cape Prince of Wales. The Navy Field Station is located in Wales, which is on the north side of Cape Mountain and south of Lopp Lagoon. The facility is operated by three Navy personnel. Wales has a population of approximately 130, and is situated on coastal sand on the east shore of the Bering Strait. About 80% of the residents live within a half mile of the facility, and all are within a one mile radius. There are no commercial or industrial facilities in Wales, but there is a small school located approximately a quarter mile from the facility. Tin City is located about six miles southeast, and Nome is about 100 miles to the south.

1.3.3 White Alice Site, Northeast Cape, St. Lawrence Island. The White Alice Site at Northeast Cape is located on St. Lawrence Island at the northern base of Mount Kangukhsam. Of the 21,504 acres that encompassed the original Air Force base, 25.96 acres are under Department of Navy jurisdiction. The remaining property has been conveyed to the Saviqaq' and Savoonga Native Corporations. The area surrounding the Navy property is characterized by isolated tundra-like wilderness. The nearest permanently inhabited village, Savoonga, is approximately 57 miles to the northwest. An Eskimo fishing camp, located approximately 2.5 miles north of the White Alice Site, is not permanently inhabited and reported to be used infrequently during the summer months.

1.4 BIOLOGICAL FEATURES.

1.4.1 White Alice Site, Tin City, and Navy Field Station, Cape Prince of Wales.

Flora. This area is characterized by a wet and moist tundra biome, especially wet tundra in the low land areas of Wales. The wet tundra area is typified by little topographic relief, with standing water and numerous shallow lakes present during the summer (U.S. Army, 1989). Moss, grasses, and occasional scrub willows are found from sea level up to about 800 feet, but the mountains are bare, and no trees are found in the area (Mulligan, 1964). In Wales, the important plant types of the wet tundra community include shrubs, herbs, grasses and sedges, lichens, mosses and liverworts (Native Health Service, 1983).

Fauna.

Terrestrial Mammals. Arctic fox range far out on pack ice during

the winter and may be found considerable distances inland year around. The area is within the known range of the gray wolf, grizzly bear, moose, wolverine, red fox, lynx, mink, short-tailed and least weasel, land otter, muskrat, arctic ground squirrel, tundra and snowshoe hare. The inland area is also part of the musk ox summer range (U.S. Army, 1989).

Fish. Arctic char/Dolly Varden, grayling and whitefish occur or may occur in nearshore waters in this area during the summer. They winter in streams and lakes. Five species of Pacific salmon also are found in this area, but coho, sockeye, and chinook salmon are less common. The general timing of spawning runs are July through September. Herring spawn in shallow bays, beaches or slough areas where eelgrass is common and the bottom is mud and/or sand, usually in water depths of less than two meters (U.S. Army, 1989).

Avifauna. Bering Strait and nearby coastal areas are major spring and fall migratory bird routes. Lopp Lagoon, located northeast of the Cape is a major area for nesting, molting, and staging waterfowl during the summer and fall. Pintails comprise more than three-quarters of the dabbling ducks and scaups are the most numerous diving ducks which use the area. The marine waters are a major seabird concentration and foraging area. There are two seabird colonies located in the area; one at Tin City and the other at Cape Mountain. The Tin City colony supports pelagic cormorants while Kittlitz's murrelet nests at Cape Mountain. Willow and rock ptarmigan are present throughout the area (U.S. Army, 1989).

A Peregrine Falcon nesting area was observed by an Air Force contractor (no date given for the sighting), approximately one mile southeast of the Tin City Air Force Base (Upper Camp), at a point located on the southward-facing cliffs overlooking the Bering Sea. Therefore, it is assumed that the falcon could be a transient in the Tin City area at any time. These conclusions are based on a records search conducted at the offices of the Endangered Species Section, U.S. Fish and Wildlife Service, Region 7, Anchorage, Alaska (U.S. Air Force, 1985).

Marine Mammals. Twenty-four species of marine mammals range, or may range into or near the Cape Prince of Wales area. Several of these, including Stellar sea lion, harbor seal, walrus, beluga and gray whales appear at predictable times and places. Bowhead, beluga and gray whales migrate through the area following breakup of ice in spring (April-May) and prior to freezeup in the fall (November-December). Fin, humpback, sei, and right whales may be present occasionally in the summer. Bearded, harbor, ribbon and ringed seals are present with floating sea ice. Ringed seals breed and pup on shorefast ice, late winter (March-April). Polar bears are likely to be present in winter on pack ice. Walrus are

present on pack ice from approximately November-December through May (U.S. Army, 1989).

Endangered Species. Six species of whales (gray, right, sei, bowhead, humpback, and fin) may occur to varing extent in or near the waters of Cape Prince of Wales. Peregrine falcons occur in the spring and summer throughout the area. Cape Prince of Wales is in an area classified as "Peregrine historical occurrence/potential habitat". Prior to any activity in this area an evaluation under the Endangered Species Act would be required. Three rare plant taxa (Category 2) are known to occur in or adjacent to the Cape, including the primula, Primula tschuktschorum; and an arctic sorrel, Rumex krausei. The following are endemic to Alaska, vulnerable but not currently threatened (Category 2, Part 2) which occur in the Cape Prince of Wales area: Artemisia senjavinensis; Colpodium wrightii; Papaver walpolei; and Primula anvilensis. Formal listing of Category 2 species could occur at any time (U.S. Army, 1989).

1.4.2 White Alice Site, Northeast Cape, St. Lawrence Island.

Flora. The vegetation of the Northeast Cape area is classified as alpine tundra. This type of vegetation is dominated by white mountain avens, mat forming herbs, grasses, and sedges. Indigenous shrubs include; alpine bearberry, dwarf birch, Labrador tea, willows, heaths, and cassiopes. The lowland area is mainly wet tundra with lakes, bogs, and generally poorly drained soils. Vegetation at higher, drier areas become sparse to almost nonexistent. Steep slopes, lack of soils, and harsh climate make plant populations and densities low (U.S. Army, 1989).

Fauna.

Terrestrial Mammals. Arctic fox are found at sea on pack ice during the winter and are present on St. Lawrence Island year-around. Red fox are occasionally present. Short-tailed weasels (ermine) and arctic ground squirrels are permanent residents. Smaller mammals are numerous and provide the primary spring diet to migratory raptors, foxes, and jaegers when the snow first begins to leave the tundra. These small mammals include; the tundra shrew, Greenland collared lemming, the red-backed vole, and the tundra vole (U.S. Army, 1989).

Marine Mammals. Walrus, sea lion, minke, beluga and killer whales, harbor porpoise, bearded seals, and possibly ribbon seals are present during open water (July - September). Walrus frequently haul out at Northeast Cape which is also a minor hauling out area for sea lions. Ringed seals breed and pup on shorefast ice during late winter (March - April) at Northeast Cape between Kangighsak Point and Apvawook Cape. Polar bears are likely to be present in winter on ice pack and/or on shore.

There is a minor bowhead whale (April - May) and gray whale (May - June) northern migrations off the eastern coast of St. Lawrence Island. A Gray Whale summer feeding area is located northeast of the island. Walrus and bearded, ringed, and spotted seals are harvested in this area (U.S. Army, 1989).

Avifauna. Most of St. Lawrence Island provides important summer/fall nesting and molting habitat for migratory waterfowl. It also provides habitat for a major part of the seabird population in the northern Bering Sea. The marine waters surrounding the island are major seabird concentration and foraging areas. The seabird colonies at the Northeast Cape area are limited. Three seabird colonies (Kinipaghulghat Mountain, Punuk Island, and Seevookhan Mountain) each support only a few pairs of a handful of species (U.S. Army, 1989).

Endangered Species. There have been sightings of peregrine falcons on St. Lawrence Island and it is listed as an irregular visitant and an accidental on the island. There is no known nesting of peregrines on the island and the habitat is not considered to be critical for their well being (U.S. Army, 1989).

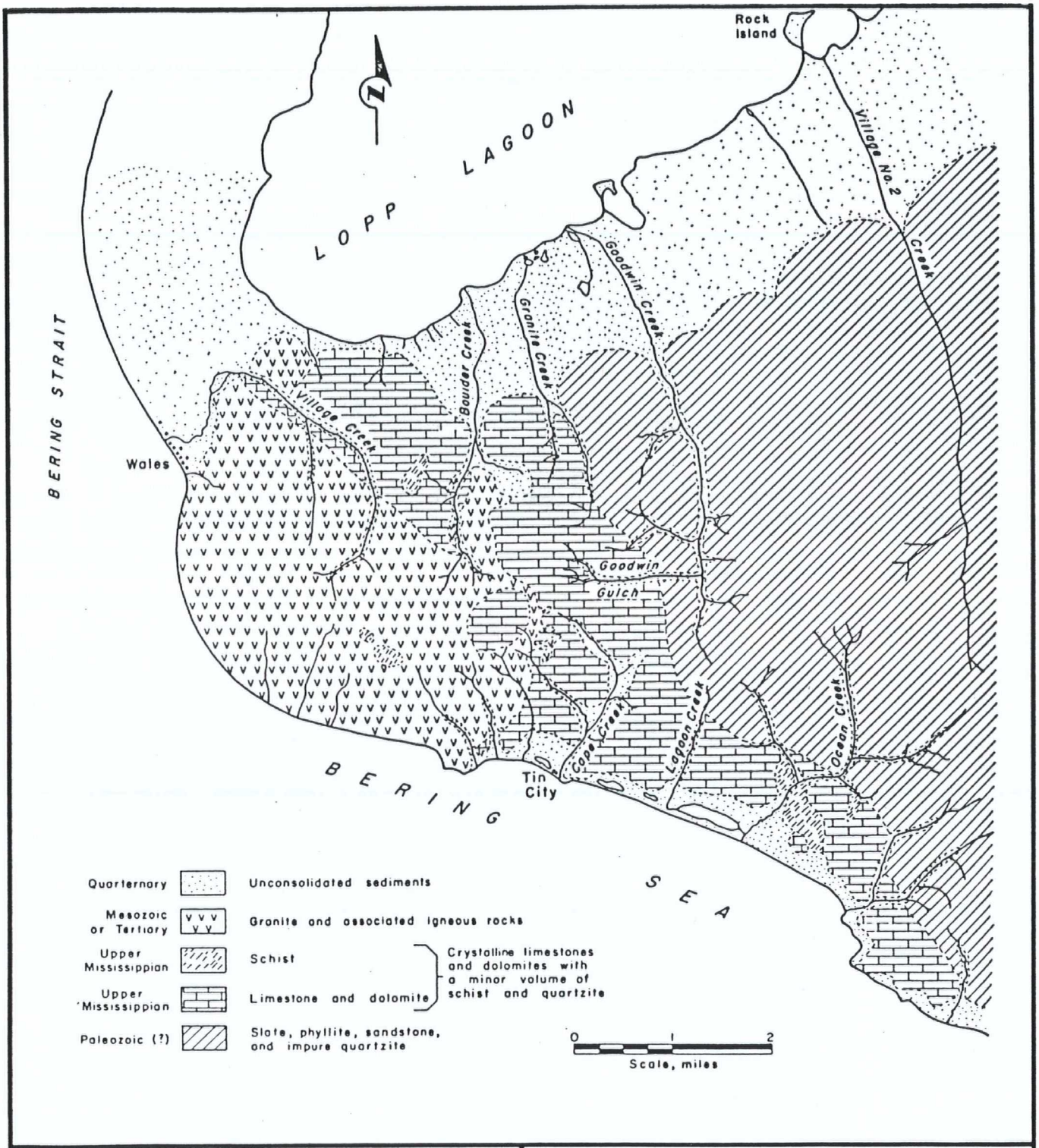
A small, few-flowered primula (Primula tschuktschorum) restricted to the Chukchi and Seward peninsulas and St. Lawrence Island is listed as a Category 2 candidate taxa. Category 2 includes those taxa for which current knowledge suggests that proposals for listing as threatened or endangered are appropriate, although data to fully support the proposals are not yet available (U.S. Army, 1989).

1.5 GEOLOGY AND SOILS.

1.5.1 White Alice Site, Tin City, and Navy Field Station, Cape Prince of Wales. The oldest rocks in the Tin City, Wales area are the metasedimentary series of early Paleozoic or pre-Paleozic shales, fealties, schists, quartzites, and limy shales commonly referred to as "black slates" (**Figure 5**). The Black slates are overlain by a series of gray middle to late Paleozoic metalimestone and marbles that either include or are overlain by relatively thin schist and quartzite beds (Mulligan, 1964).

Also, three distinct periods of igneous activity are present. The first is represented by mafic dikes, sills, and stocks, locally termed "greenstones" that intrude the black slates but apparently do not intrude the limestones. The greenstones are abundant a few miles east of Cape mountain. The second period of igneous activity is represented by granitic stocks, sills, and dikes that intruded both the slate and limestones. Being more resistant to erosion than the surrounding rocks, the granitic stocks and the associated halo of dikes, sills, and contact metamorphosed sediments tend to form mountains with an exposed

granitic core. Cape mountain is a prominent and typical example. The third period of igneous activity is represented by hard black mafic dikes, up to 10 feet in width, that cut both the limestone



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ALASKA

FIGURE 5
GEOLOGICAL FORMATIONS
OF TIN CITY AND WALES

SOURCE: MULLIGAN, 1964

and the granite near the head of cape creek. These mafic dikes do not appear to be either abundant or of great linear extent (Mulligan, 1964).

The Tin City area is mainly comprised of Precambrian volcanic and metamorphic bedrock. Gold, tin, beryllium, copper, lead, silver, antimony, zinc, bismuth, mercury, and molybdenum mines are widespread in the area. Approximately 2,000 tons of tin are mined from Cape Mountain and the Lost River areas. Fluorite, a nonmetallic mineral is mined in the Tin City/Lost Creek area (U.S. Army, 1989). The soils at Tin City are typified as silt, gravel, sand and loam that comprise steep ridges and knolls. The soils are poorly drained with moderate permeability. Permafrost occurs at shallow depths (U.S. Air Force, 1985).

Cape Prince of Wales is divided into unconsolidated deposits to the north and bedrock to the south. The unconsolidated deposits are classified as coastal plain. These are older deposits of interstratified marine and alluvial sediments with some local glacial materials. These formations were laid down in shallow, nearshore shelf environments where frequent sea level changes alternately exposed and submerged portions of the gently sloping terrain. A thin layer of poorly drained surface peat layers or soil mantles comprise most of these deposits. The extreme tip of the Seward Peninsula (the southern portion of Cape Prince of Wales) is characterized by intrusive granitic rock (U.S. Army, 1989).

Soils in the Wales township are generally well drained sandy or gravelly loams. Well logs reveal that the city is underlain by 25 to 45 feet of beach and dune sand; coarse gravel and clay underlie the sand. Bedrock in the area is limestone. Permafrost is continuous in the Wales area with an active layer from four to six feet in most areas (Native Health Service, 1983).

1.5.2 <u>White Alice Site, Northeast Cape, St. Lawrence Island</u>. The eastern part of St. Lawrence Island is a broad, wave-cut bedrock platform now elevated a few feet to nearly 100 feet above sea level. The surface of the platform is dotted with countless small shallow lakes and blanketed by a thin veneer of water-soaked mossy turf and peat. Several isolated groups of talus-covered hills, which are bounded by ancient sea cliffs and probably represent former islands, rise 1,000 to 2,000 feet above the surface platform.

Preliminary geologic investigations in the eastern part of St. Lawrence Island indicate the presence of a heretofore unreported sedimentary sequence possibly as much as 8,000 feet thick. The oldest strata are a thick sequence of Devonian dolomite and dolomitic limestone exposed along the Seknak River. On the Ongoveyuk River these strata appear to be succeeded

disconformably by at least 1,000 feet of Upper Mississippian limestone and cherty limestone which in turn are overlain disconformably by a 400 foot shaly sequence that is definitely of Middle to Late Triassic age in the upper part and probably of Early Triassic or Permian age in the lower part. The youngest sedimentary rocks appear to be a thick section of Graywacke and mudstone along the Ongoveyuk River, tentatively assigned a Jurassic or Cretaceous age. The Paleozoic and Mesozoic sequences show strong lithologic and faunal similarities to coeval rocks in the Brooks Range; and some counterparts appear also to be present on the Seward and Chukotsky Peninsulas. **Table 1** gives the suggested correlation of Paleozoic and Mesozoic sequences on eastern St. Lawrence Island, western Alaska, and the Chukotsky Peninsula in the USSR. **Figure 6** shows the location of geologic units on the eastern part of St. Lawrence Island.

Soils at the eastern part of St. Lawrence Island consist of loose, well rounded, medium course granitic sand and gravel. Sand, silt and peat are found at lower elevations and along the coast. In the higher elevations, the Kangukhsam and Kinipaghulghat Mountains, quartz monzonite is present, and some small areas of undifferentiated volcanic rocks exist around Northeast Cape.

1.6 TOPOGRAPHY AND HYDROLOGY.

1.6.1 White Alice Site, Tin City.

1.6.1.1 Topography. Regional topography generally consists of steep rolling hills, intensifying into steep mountainous terrain approaching Cape Mountain as shown in **Figure 7**.

Cape Mountain is an isolated peak that rises 2,289 feet from sea level to form a prominent landmark on the east side of the Bering Strait (Mulligan, 1964).

1.6.1.2 Surface Water. Cape Mountain is drained by a number of small creeks that flow a few miles to the Bering Sea or Lopp Lagoon on the Wales side of the mountain (Mulligan, 1964).

During the summer, surface water is present on the slopes of Cape Mountain almost to the summit. The water usually is not visible on the surface but trickles through the frost broken detritus in the bottom of gulches and gullies (Mulligan, 1964).

The White Alice Site at Tin City is located at the top of a hill, and is therefore neither located in standing water nor a floodplain. Surface water drainage from the facility flows approximately 1000 feet at a 20% grade into the Cape Creek, which discharges into the Bering Strait about 11,500 feet downstream. The Bering Strait is used for subsistence fishing by the local

SYSTEM	SERIES	EASTERN ST. LAWRENCE IS.[1]	WESTERN AND CENTRAL BROOKS RANGE[2]		SEWARD PENINSULA AND ADJACENT PARTS OF YUKON-KOYUKUK BASIN[3]	CHUKOTSKY PENINSULA (U.S.S.R.)[4]
JURASSIC AND CRETACEOUS	undivided	Graywacke and mudstone	Fortress Mountain, Torok, and Okpikruak Formations (graywacke and mudstone)		Graywacke, mudstone and andesitic volcanic rocks in the Yukon-Koyukuk basin	Sandstone and shale; volcanic rocks of acid and intermediate composition
TRIASSIC	U	Shale, limestone and chert	Shublik Fm	Limestone Memb. (ls., ch., sh.)		Ss., sls., cgl., and coquina
	M	?---?---?---?---?		Chert Memb. (ch., sh.)		Clay sh., sls., ss., and cgl.
	L	Siltstone and chert		Shale Memb. (sh., ls., ch.)		Clay shale, siltstone, sandstone, conglomerate and limestone
PERMIAN	undivided	? ? ? ?	Siksikpuk Formation (shale, siltstone, and chert)			Sandstone, clay shale, siltstone and conglomerate
MISSISSIPPIAN	Upper	Limestone and chert	Lisburne Gp.	Alapah Ls. (ls., chert)	Limestone near Cape Prince of Wales	Limestone, siltstone shale, and sandstone
	Lower			Wachsmuth Ls. (ls., dol., ch.)		? ? ?
				Kayak Shale (sh., ls., ss.)		
DEVONIAN	undivided	Dolomite and dolomitic limestone	Baird Group (dolomite, dolomitic limestone, and limestone)		Dolomite, limestone and black slate near Council and Kougarok River	Limestone, dolomite, phyllitic carbonaceous shale, siltstone, sandstone, and calcareous, chloritic and sericitic slates

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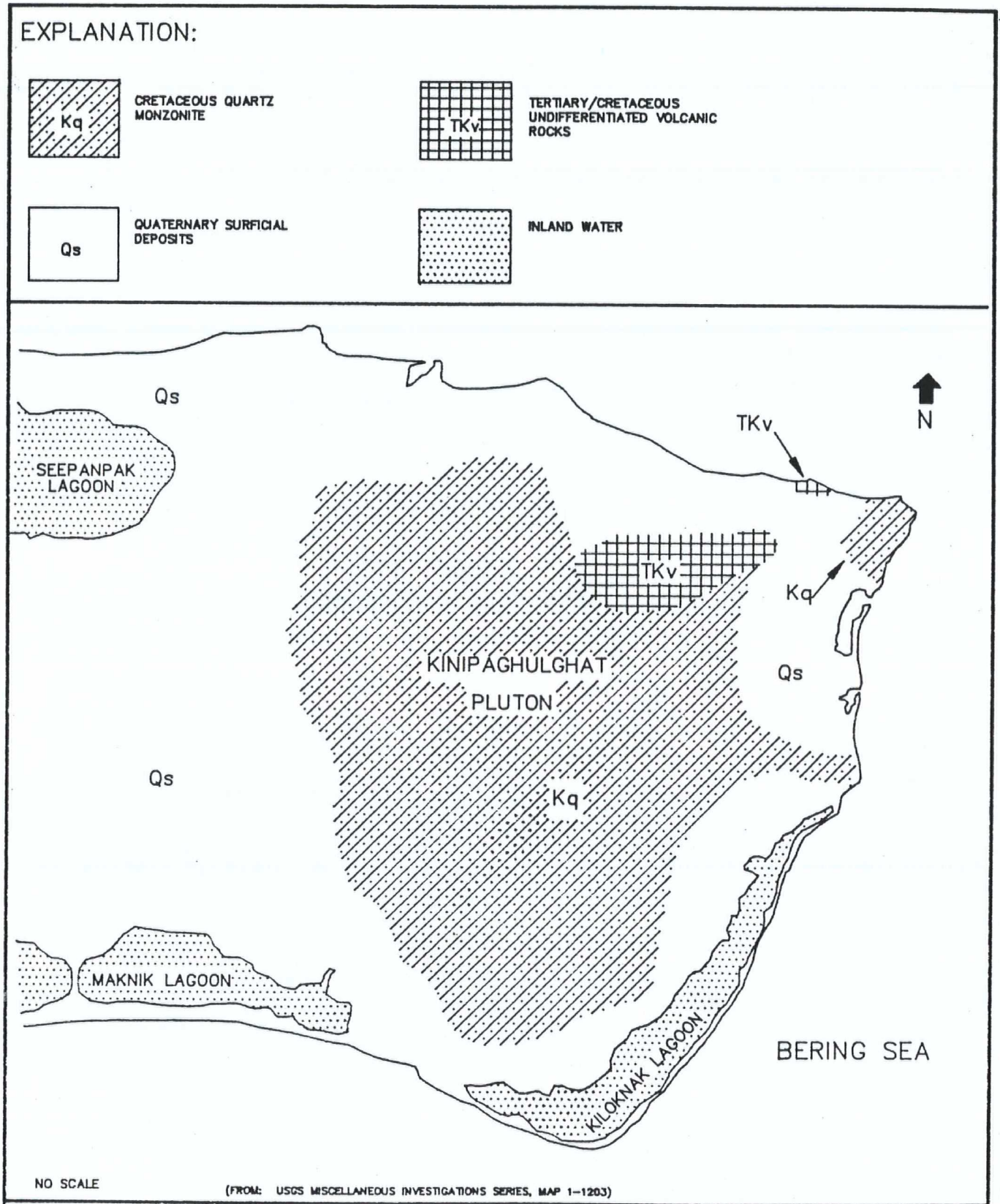
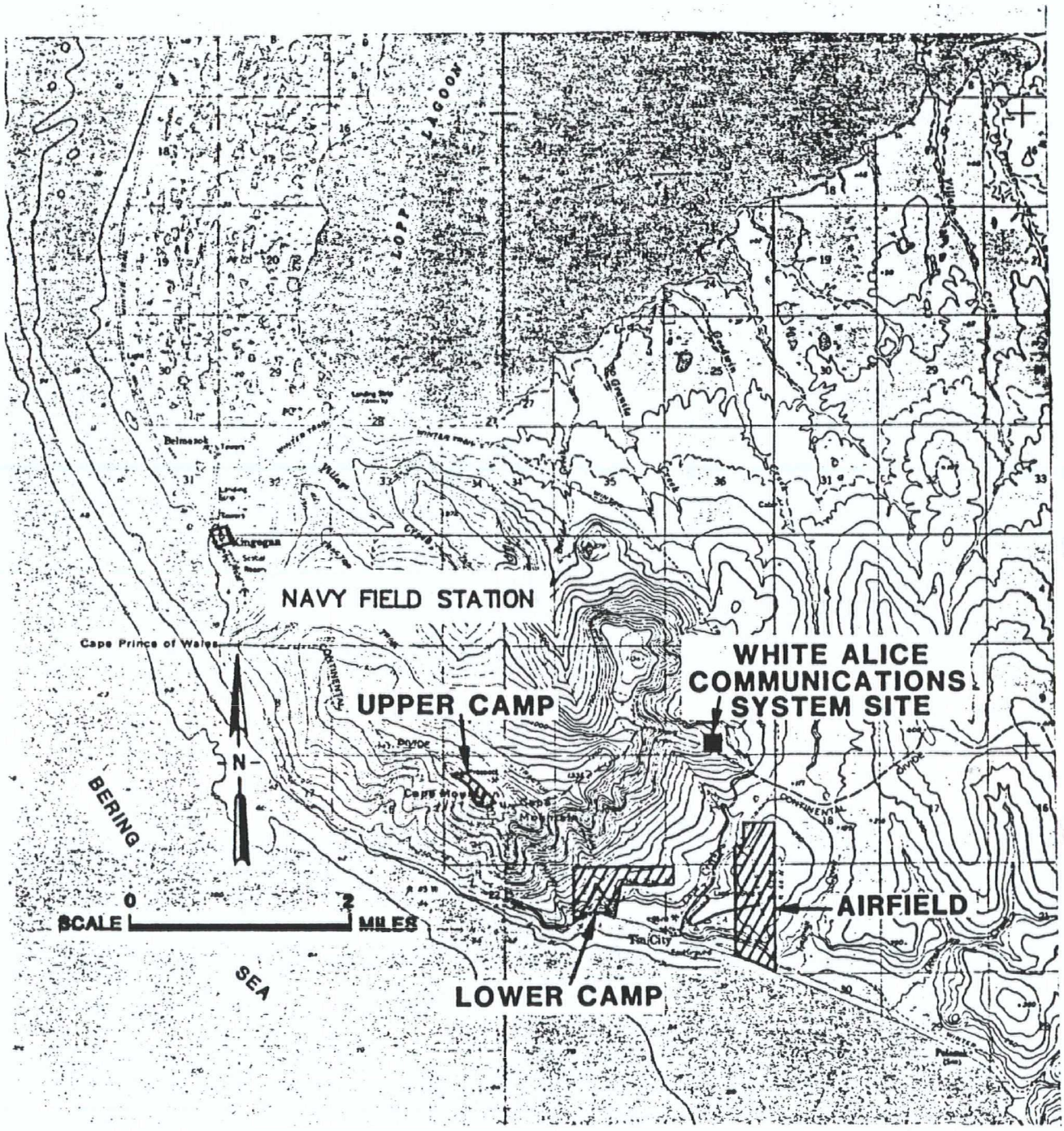
TABLE 1
GEOLOGICAL FORMATIONS
OF NORTHEAST CAPE
SOURCE: PATTON AND DUTRO, 1969



PRELIMINARY ASSESSMENT
NAVAL OCEAN SYSTEMS CENTER
NORTHEAST CAPE
ST. LAWRENCE ISLAND
ALASKA

FIGURE 6
GEOLOGICAL FORMATIONS
OF NORTHEAST CAPE



SOURCE: USGS TOPOGRAPHIC MAPS 1:63,360 SERIES TELLER C-6 AND C-7, ALASKA, 1950 (C-6 REVISED 1973 AND C-7 REVISED 1974) AND INSTALLATION DOCUMENTS.

PRELIMINARY ASSESSMENT
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FIGURE 7
TOPOGRAPHY
OF TIN CITY AND WALES

residents (National Marine Fisheries Service, 1990).

1.6.1.3 Ground Water. The hydrogeology of the Air Force's Lower Camp consists of a thin layer of mixed talus and alluvium overlying bedrock at relatively shallow depths. Virtually all the materials present are silt, sand, gravel, cobbles and boulders that have been deposited downslope from Cape Mountain. The Upper Camp area is underlain by a thin veneer of residium including sand, gravel and cobbles and bedrock (Feulner, 1966). See **Figure 1** for location of the Air Force's Upper and Lower Camps.

Subsequent discharge from the shallow aquifer to the local surface waters (Bering Strait) is considered probable. The community of Tin City is located approximately 2000 feet southeast of the Air Force's installation (U.S. Air Force, 1985).

1.6.2 Navy Field Station, Cape Prince of Wales.

1.6.2.1 Topography. The area is typically a flat, coastal plain with well drained loamy to gravelly gray soils, and a shallow to deep permafrost layer. The immediate habitat is beach adjoining wet tundra (U.S. Army, 1986). **Figure 7** illustrates the topography of the area. The U.S. Army Corps of Engineers considers flood hazards at Wales to be low. Storm-driven waves are the major cause of coastal flooding at Wales. Major floods in 1933 and 1969 submerged low areas such as the Village Creek estuary and some homes on the south end of the village.

1.6.2.2 Surface Water. Surface water in the area includes Village Creek which flows from Cape Mountain and also the Lopp Lagoon and the various ponds and lakes adjacent to the lagoon. Wales is bordered on the west by the Bering Strait.

1.6.2.3 Ground Water. No information was found on the ground water in Wales. It is assumed because of the proximity to surface water that the ground water would be very shallow in the area. More investigation should be conducted.

The Indian Health Service attempted to drill a well; however, no successful well has ever been established. There is an old shallow (33 foot) well constructed by the Bureau of Indian Affairs, however its condition does not appear to be economical or reliable (Native Health Service, 1983).

1.6.3 White Alice Site, Northeast Cape, St. Lawrence Island.

1.6.3.1 Topography. The topography of Northeast Cape begins with a coastal plain at the Bering Sea. A transition of rolling terrain leads to the Kinipaghulghat Mountains with Kangukshaw Mountain at 1,820 feet above sea level as the highest local peak.

The mountain side is steep, highly exposed and weathered talus slopes. The topographic features of Northeast Cape are shown in **Figure 8.**

1.6.3.2 Surface Water. The principle surface water feature of St. Lawrence Island is the Bering Sea, located approximately 1.5 miles to the north and east of the Transmitter Building.

All surface water run-off from the area investigated in this report is expected to discharge to the Bering Sea. Flooding of potentially contaminated areas is unlikely, since they do not lie in a floodplain, and it is improbable that storm-driven waves would reach that far inland.

The lowland areas of Northeast Cape are typical of a subarctic coastal plain where flat topography, frozen soils, and wet tundra have created numerous shallow thaw lake basins and peat-filled thaw lake basins. These lakes are clear and tanic in appearance. In addition, there are numerous glacial run-off streams traversing the area. They have vegetated, incised banks, sandy gravelly streambeds, and are clear. The streams range from a few feet in width to streams 20 to 30 feet wide. These streams are beaded in the lowlands in contrast to high velocity streams in the mountainous areas.

1.6.3.3 Ground Water. No information was found concerning the ground water at Northeast Cape. In Section 2.4.3, there is some information pertaining to wells in the area. Additional investigation for information concerning ground water will be required.

1.7 CLIMATE.

1.7.1 White Alice Site, Tin City, and Navy Field Station, Cape Prince of Wales. Tin City and Wales are located in a transitional climatic zone which is characterized by fewer days of cloudiness, less precipitation and humidity, and a more pronounced temperature variation than found in local maritime climatic zones. **Table 2** lists the average monthly temperature, precipitation and snow fall for Tin City and Wales.

1.7.2 White Alice Site, Northeast Cape, St. Lawrence Island. The weather on St. Lawrence Island is characterized by typical arctic maritime climate, with a relatively milder winter than arctic continental areas and a relatively cooler summer. Precipitation as rain or snow is recorded on 300 days out of the year. The greatest precipitation is recorded during the months of August and September. The means for these months are 1.82 and

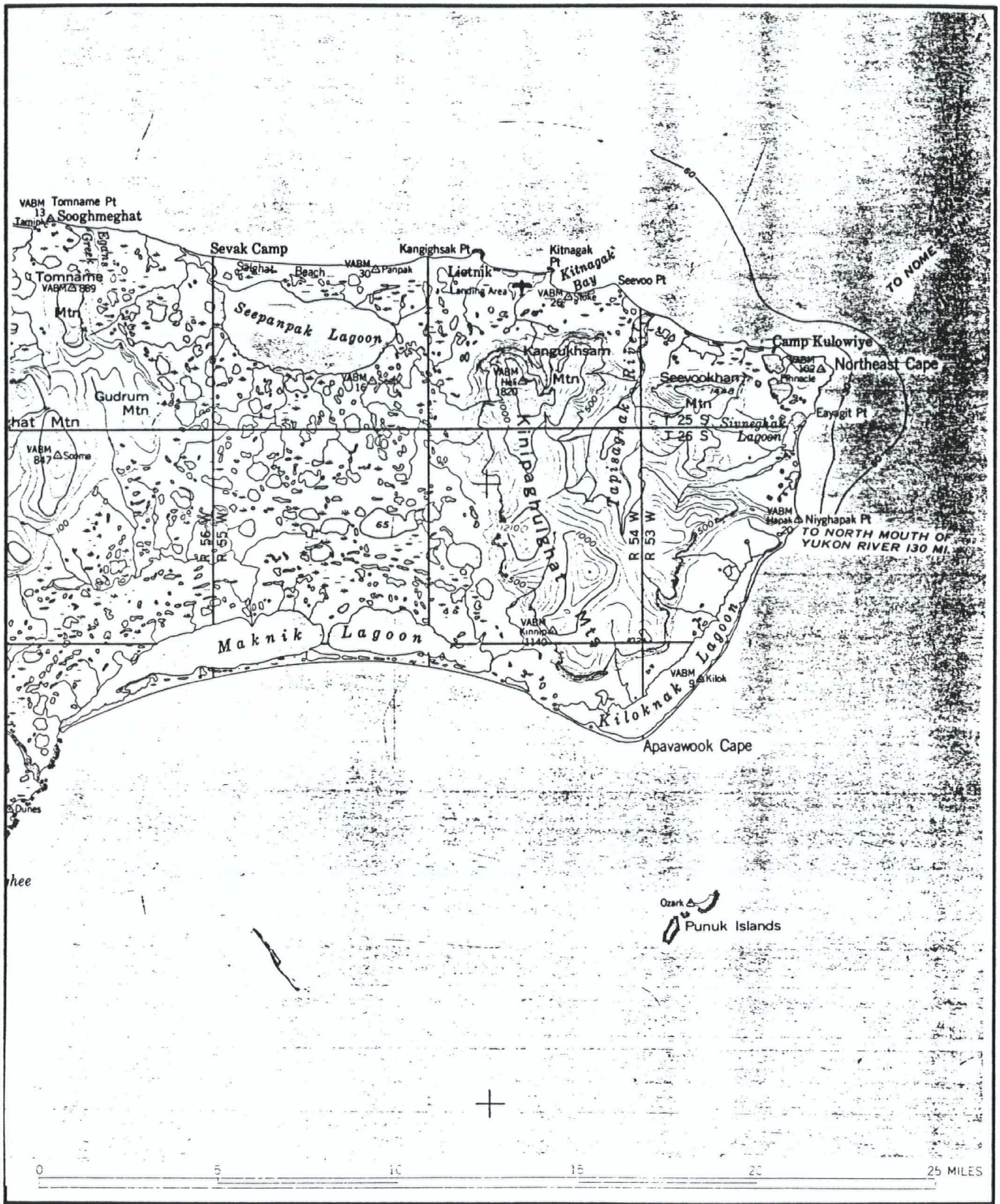

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FIGURE 8
TOPOGRAPHY OF NORTHEAST CAPE

TABLE 2
Mean monthly amounts for Tin City and Wales

	Tin City			Wales		
	Temp.	Precip.	Snow	Temp.	Precip.	Snow
Jan	2.7	0.56	5.7	2.0	0.46	5.2
Feb	-5.3	0.29	2.6	-4.1	0.40	4.5
Mar	-1.0	0.36	3.4	-1.5	0.32	4.3
Apr	8.5	0.41	4.0	9.9	0.28	3.5
May	26.8	0.33	2.4	27.2	0.46	2.1
June	38.5	0.65	0.7	38.4	0.67	0.3
July	45.9	1.78	0.2	46.3	1.43	0.2
Aug	45.6	2.41	0.3	46.3	2.73	0.0
Sept	39.8	1.50	1.7	40.2	2.26	1.2
Oct	27.6	1.86	13.4	29.0	1.23	6.3
Nov	15.7	1.42	15.4	17.2	0.61	6.9
Dec	3.0	0.51	4.9	3.7	0.39	5.3
TOTAL	20.6	12.07	54.8	21.2	11.23	39.8

Temperature is in Degrees F, Precipitation and snow are in inches

Source: Arctic Environmental Information and Data Center, University of Alaska. For periods (Tin City, 1966-1985), (Wales, 1925-1929 and 1944-1987).

1.63 inches, respectively. The months with the lowest mean precipitation are November, March, and April with means of 0.31, 0.34, and 0.43 inches respectively. Mean annual precipitation is estimated at approximately 11 inches.

Winter temperatures seldom fall below -10° Farenheit (F), and summer temperatures above 55° F are infrequent and of short duration. The record minimum temperature for the villages of Gamble and Savoonga is -31° F recorded in February, and the maximum is 65° F recorded in July.

Lying in a stormy sea that varies only a few degrees from 32° F. throughout the year, the island is characterized by cold winds of gale and occasionally hurricane force. Commonly, the chill factor caused by high winds, up to 100 miles per hour (mph), produce effective temperatures of 70° below zero, and severe winter blizzards cause whiteout conditions. Prevailing winds are southwest and northwest in summer and northerly in winter. The average annual hourly wind velocity is 17.8 mph. The average velocity in January is 19.4 mph and in July the average is 11.0 mph.

The growing season extends from early June through late August, but there may be snow and freezing temperatures in any month. The first autumnal snowfall and formation of fresh-water ice generally occurs in October and sea ice usually forms in late November. The spring icepack breakup occurs in the first two weeks of June, and some ice and snow may remain until July or later in certain localities (Fay and Cade, 1959).

1.8 ARCHAEOLOGICAL SIGNIFICANCE.

1.8.1 White Alice Site, Tin City. The record search did not reveal any archaeological significance at Tin City.

1.8.2 Navy Field Station, Cape Prince of Wales. There is a burial mound of the "Birnirk" culture near Wales which is now a national landmark. There are two archaeological sites in Wales listed on the Alaska Heritage Resource Survey. A survey of Wales conducted by an Indian Health Service archaeologist in 1978 noted "Since there are still intact remnants of the "Old Village" at Wales, all future construction by Federal or State agencies should consider the archaeological resources at Wales (Native Health Service, 1983)." A survey of the area will be required prior to sampling or construction.

In addition, on the north side of the Navy Field Station in Wales, there is an Eskimo burial ground about 60 feet from the fence line. Some wood coffins are visible through the sand dunes.

1.8.3 White Alice Site, Northeast Cape, St. Lawrence Island. There are eleven known historic and prehistoric areas of Eskimo and Punuk affiliation. Area features include house pits, house remains, middens, and artifacts. These areas are located on wet tundra areas along the coast. There are probably numerous other undiscovered areas throughout the area (U.S. Army, 1989).

2. FINDINGS.

2.1 GENERAL. Naval Ocean Systems Center, San Diego, California requested NEESA to perform a Preliminary Assessment at the White Alice Sites at Northeast Cape and at Tin City, and the Navy Field Station at Cape Prince of Wales by Commander, Naval Ocean Systems Center letter Ser 19/105 of 17 November 1988.

The Preliminary Assessment team visited the White Alice Sites and Navy Field Station on July 16 through 22, 1989.

2.2 PERMITS.

2.2.1 White Alice Site, Tin City. The White Alice Site at Tin City is an inactive facility and has no working population. The base has no permits.

2.2.2 Navy Field Station, Cape Prince of Wales. The facility generates only very small quantities of hazardous waste, so they are not required to have a permit for hazardous waste. The facility does not have any permits.

2.2.3 White Alice Site, Northeast Cape, St. Lawrence Island. The White Alice Site at Northeast Cape is an inactive facility and has no working population. The base has no permits.

2.3 STORAGE TANKS AND FUEL SPILLS.

2.3.1 White Alice Site, Tin City. The White Alice Site has two above ground 25,000 gallon diesel tanks that were used for heating fuel and for the generator in case of a power outage at the Air Force Base. Occasionally the fuel was used for vehicles while at the White Alice Site. There were also two above ground 1000 gallon diesel fuel tanks each located at an antennae, although since the site visit one tank has been removed.

In 1980, a valve failure on one of the tanks caused 850 gallons of diesel fuel to spill onto the ground at the White Alice Site. It is unknown whether the spill was cleaned up or not. During the site visit, there was no evidence of a spill. In addition, since diesel fuel is not considered a hazardous waste in Alaska no further action is required.

2.3.2 Navy Field Station, Cape Prince of Wales. The Navy Field Station has a total of 17 above ground storage tanks as shown in **Figure 2**. The following is a list of the capacity and contents of the tanks: two 15,000-gallon diesel fuel tanks, eleven 2,500-gallon diesel fuel tanks, two 3,300-gallon diesel gravity tanks, one 2,500-gallon regular gasoline tank and one 1000-gallon unleaded gasoline tank.

On March 21, 1989, during the routine monthly transfer of arctic grade diesel fuel (DFA), there was an apparent failure in an underground transfer pipe resulting in the loss of approximately 3,800 gallons of fuel. The transfer was from fuel storage tanks to gravity feed tanks for the field station's diesel-driven generators and the residence furnaces. The fuel oil spill was under about 40 inches of snow (U.S. Navy, 1989). The National Response Center and the State of Alaska, Environmental Conservation, Fairbanks area office were notified of the spill. The spill was cleaned up as soon as weather permitted. All contaminated sand was removed and replaced with clean sand. All contaminated soil and oil was properly disposed of according to applicable State of Alaska and Federal Regulations. For additional information on the spill see Appendix A.

2.3.3 White Alice Site, Northeast Cape, St. Lawrence Island. Eleven above ground fuel tanks were identified on the present Navy property during the site visit and from drawings obtained from the Army Corps of Engineers. **Table 3** summarizes the current available information regarding each tank. A sump was located on Riblet Tramway Company drawing number 8837 of the lower tram terminal as shown in **Figure 4**. The sump was not located by the NEESA site visit team. It is assumed this sump received oil and diesel fuel waste from the motor room of the building. The presence of the sump and any possible outfall from the sump should be investigated.

2.4 DRINKING WATER, SEWER, AND SOLID WASTE.

2.4.1 White Alice Site, Tin City. The Air Force's water supply consists of one supply well that is 67 feet deep. The well has been installed into fractured zones of the granitic bedrock. The gallery has been constructed to intercept ground water flowing along a fault zone (Feulner, 1966). Water is pumped from the well to storage and later used as required (U.S. Air Force, 1985). The one permanent resident gets his water from the Air Force Base. See **Figure 1** for the location of the well.

The miners of Tin City obtain their water supply from one of the creeks in the area. They have been known to get their water from

White Alice Site, Northeast Cape, St. Lawrence Island.

TABLE 3
SUMMARY OF STORAGE TANK SURVEY

TANK ID NUMBER	LOCATION	CONTENTS	CONSTRUCTION INFORMATION	ESTIMATED AGE	COMMENTS AND CURRENT TANK CONDITION
2-A	Transmitter Area	Fuel Oil	Steel-10,000 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.
2-B	Transmitter Area	Fuel Oil	Steel-10,000 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.
2-C	Transmitter Area	Fuel Oil	Steel-1,500 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.
2-D	Transmitter Area	Fuel Oil	Steel-1,500 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.
2-E	Transmitter Area	Fuel Oil	Steel-1,500 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.
2-F	Transmitter Area	Fuel Oil	Steel-1,500 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.
2-G	Transmitter Area	unknown	unknown (day tank)	unknown	Tank was not located during the site visit. Tank is specified as "day tank" is Army Corps drawing somewhere inside of Bldg. 1001.
2-H	Lower Tram Terminal	Diesel Fuel	Steel-1,200 gallons	38 years	Tank is currently empty and in good condition. See Figure 4 for exact location.
2-I	Lower Tram Terminal	Diesel Fuel	Steel-600 gallons	38 years	The tank is located inside Tram terminal bldg. See Figure 4 for exact location.
2-J	Lower Tram Terminal	Diesel Fuel	Steel-300 gallons	38 years	The tank is located inside Tram terminal bldg. See Figure 4 for exact location.
2-K	Upper Camp	Diesel Fuel	Steel-5,000	38 years	The tank is in good condition and located south of Bldg 124. See Figure 4 for exact location.

the Cape Creek or an unnamed creek located next to the Air Force Base. Streamflow is expected to be greatest in the springtime, in contrast to the winter months, when no water flows in the area streams. Snow could be considered as an alternative winter water supply source.

Domestic sewage is discharged to septic leachfields. There is also a domestic sewage leachfield located at the White Alice Site. Solid waste from the Air Force Base and residents of Tin City is disposed in the landfill located east of the airfield.

2.4.2 Navy Field Station, Cape Prince of Wales. Gilbert Creek, located one half mile south of town, and an unnamed, spring-fed creek, located two miles from town on the Razorback mountain, supply the community with a summer source of water. Gilbert Creek has a low but steady flow of good quality water (Native Health Service, 1983). The Eskimos melt snow and ice for water in the winter, when streamflow ceases.

The Eskimos dispose of domestic sewage either through septic leachfields, outhouses or on the ice of the Bering Strait during the winter. The Navy facility treats solid sewage by incineration with a Destroilet and liquid sewage is discharged to a leachfield. Solid waste is disposed in the city landfill north of Wales.

2.4.3 White Alice Site, Northeast Cape, St. Lawrence Island. Northeast Cape's water needs were provided by five wells located on the original Air Force facility. Only one of these wells is located on present Navy property as shown in **Figure 4.** Well No. 5 is emplaced in the northern end of the Lower Tram Terminal at a depth of 1,550 feet. All of the wells have been abandoned since the facility was closed in the late 1970s. It is possible to obtain drinking water from snow in the winter.

There was no wastewater treatment facility at Northeast Cape. All domestic sewage went to individual building septic tanks or was incinerated. All domestic solid wastes were hauled to a landfill located on excessed Air Force property.

2.5 HAZARDOUS WASTE GENERATION.

2.5.1 White Alice Site, Tin City. Since the mid 1970s, no generation of hazardous waste has taken place at the Tin City White Alice Site. In addition, there were no industrial operations at the White Alice Site prior to the mid 1970s. All industrial operations or operations dealing with hazardous waste were located at the Air Force Base one mile downhill from the White Alice Site.

2.5.2 Navy Field Station, Cape Prince of Wales. The Navy Field

Station generates about 240 gallons of waste oil per year and about 2 car batteries per year.

All transformers containing polychlorinated biphenyls (PCBs) have been removed from the activity. No spills of PCBs are known or suspected to have occurred.

2.5.3 White Alice Site, Northeast Cape, St. Lawrence Island. Since Northeast Cape was abandoned in the late 1970s, there has been no hazardous waste generation.

3. SITE SPECIFIC FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

3.1 INTRODUCTION. This chapter summarizes the Preliminary Assessment team's significant findings, conclusions, and recommendations on potential contaminant migration pathways, the potential contaminant receptors, and characteristics of past disposal sites identified at the Navy Field Station and the White Alice Sites at Tin City and Northeast Cape. The general location of the areas under study is shown in **Figure 1, 2 and 3.**

3.2 POTENTIAL FOR CONTAMINANT MIGRATION.

3.2.1 White Alice Site, Tin City. Contaminants at the White Alice Site at Tin City may potentially migrate in the surface water and possibly in the shallow ground water, although there is no evidence at this time to suggest that such migration has occurred. The Bering Strait is located about 1.7 miles from the White Alice Site and the Air Force Base is located about 1.4 miles. Erosion and sediment transport in the surface water has the greatest potential to transport contaminants off the facility. However, the main contaminant of concern is polychlorinated biphenyls (PCBs). PCBs tend to bind to the soil matrix and are generally not very mobile.

3.2.2 Navy Field Station, Cape Prince of Wales. Contaminants at the Navy Field Station may potentially migrate to the shallow ground water and possibly discharge to the Bering Strait due to the close proximity of the facility to the surface water (about 500 to 700 feet). The sand matrix will allow contaminants to move faster to the shallow ground water and eventually to the Bering Strait. There is no evidence that any such migration of contaminants to the ground water has occurred. Area ground water is not used for any purpose.

The drinking water supply, Gilbert Creek, is located about one-half mile upgradient of the facility and there is no potential of this becoming contaminated from the Navy Field Station. It is estimated that there are approximately 160 acres of drainage area upgradient of the facility. Any surface runoff from the site

would likely travel approximately 600 feet at a grade of 1% to the Bering Sea. There is no evidence of surface water contamination at this time.

3.2.3 White Alice Site, Northeast Cape, St. Lawrence Island. Contaminants at the White Alice Site on St. Lawrence Island may potentially migrate in the surface water, ground water, and air. Of the three, erosion and sediment transport in the surface water has the greatest potential to transport contaminants off-site.

3.2.3.1 Surface Water. At Northeast Cape, numerous natural drainage channels receive rapid flow from snow melt and summer storms. In the winter, these channels carry no running water. The surface water run-off from the area investigated in this report potentially could carry hazardous materials off-site where the contaminants have been exposed and/or released to the environment.

The drainage channels either discharge to multiple, seasonal small ponds and lakes in the low-lying coastal plain where the water evaporates or percolates down to the ground water or to the Bering Sea approximately 1.5 miles north of the White Alice Site.

3.2.3.2 Ground Water. Little is known about the ground water in the Northeast Cape area. Further investigations need to be conducted. There is no evidence at this time to suggest that a contaminant release to area ground water has occurred.

3.2.3.3 Air. Wind transport potentially could move contaminants off-site at locations where they are exposed to open air. Friable asbestos thermal system insulation and siding shingles were noted throughout the area and potentially could release fibers to the environment.

3.3 POTENTIAL CONTAMINANT RECEPTORS.

3.3.1 White Alice Site, Tin City.

3.3.1.1 Receptors of Surface Water. Any contaminants reaching the Bering Strait from surface water run-off potentially could contaminate the food chain. The Eskimos of Wales harvest the fish and animals in the Bering Strait for subsistence. The Bering Sea is fished commercially, but not in the vicinity of Wales (National Marine Fisheries Service, 1990). About a dozen temporary miners work and live in Tin City and sometimes drink water from Cape Creek. Contaminants reaching the creek could possibly contaminate the drinking water of the miners.

By 1980 Official U.S. Census, 133 people reside in the village of Wales, located approximately 4.5 miles northwest of the facility.

The residents obtain their drinking water from surface supplies, but it is highly unlikely that these waters would receive contaminants from the White Alice Site at Tin City.

There are no commercial or industrial uses of the area surface waters within 15 miles.

3.3.1.2 Receptors of Ground Water. A maximum of about 11 people, one permanent resident and six to ten temporary base personnel, drink water from the Air Force Base supply well. It is unknown if the ground water under the White Alice Site is continuous with the ground water that is used for drinking purposes. Any contaminants that reach the ground water could potentially contaminate the drinking water. Fractures in the bedrock may allow much faster transport of contaminants. It is unknown if the fracture zone that supplies the well at the Air Force Base is connected in any way to the bedrock below the White Alice Site.

3.3.2 Navy Field Station, Cape Prince of Wales.

3.3.2.1 Receptors of Surface Water. All residents of Wales (approximately 130) receive drinking water from surface supplies. It is unlikely that these supplies could become contaminated from the Navy Field Station or the White Alice Site at Tin City. The temporary miners living about five miles southeast, near Tin City, also use surface water as a drinking supply, but it is highly unlikely that contaminants from the Field Station would reach this supply.

However, the fish and animals of the Bering Strait are harvested as the primary source of food and livelihood for the Eskimos of Wales. Any contaminants reaching the sea from surface water run-off could contaminate the food chain.

Surface water in the area is not used for any commercial or industrial purpose.

3.3.2.2 Receptors of Ground Water. Any contaminants reaching the Bering Strait from shallow ground water discharge potentially could contaminate the food chain from fish and animals that are harvested by the Eskimos of Wales.

3.3.3 White Alice Site, Northeast Cape, St. Lawrence Island.

3.3.3.1 Receptors of Surface Water. Users of surface water at Northeast Cape include several species of vegetation and indigenous animals. Surface water run-off in the streams and ponds are used as the primary source of drinking water by the seasonal tenants of the Eskimo fishing village located about 1.5 miles north of the White Alice Site on the coast of the Bering

Sea.

The fish and animals of the Bering Sea are commercially harvested and are the primary source of food and livelihood for the Eskimos of St. Lawrence Island. Any contaminants reaching the sea from surface water run-off potentially could contaminate the food chain.

3.3.3.2 Receptors of Ground Water. Ground water is not utilized as a potable source within a sixty mile radius of Northeast Cape.

3.3.3.3 Receptors of the Air Exposure Route. The White Alice Site at Northeast Cape has no permanent base personnel; however, there is evidence that the island natives may be conducting salvaging operations on abandoned equipment. Anyone entering the buildings would be a possible receptor of known asbestos contamination.

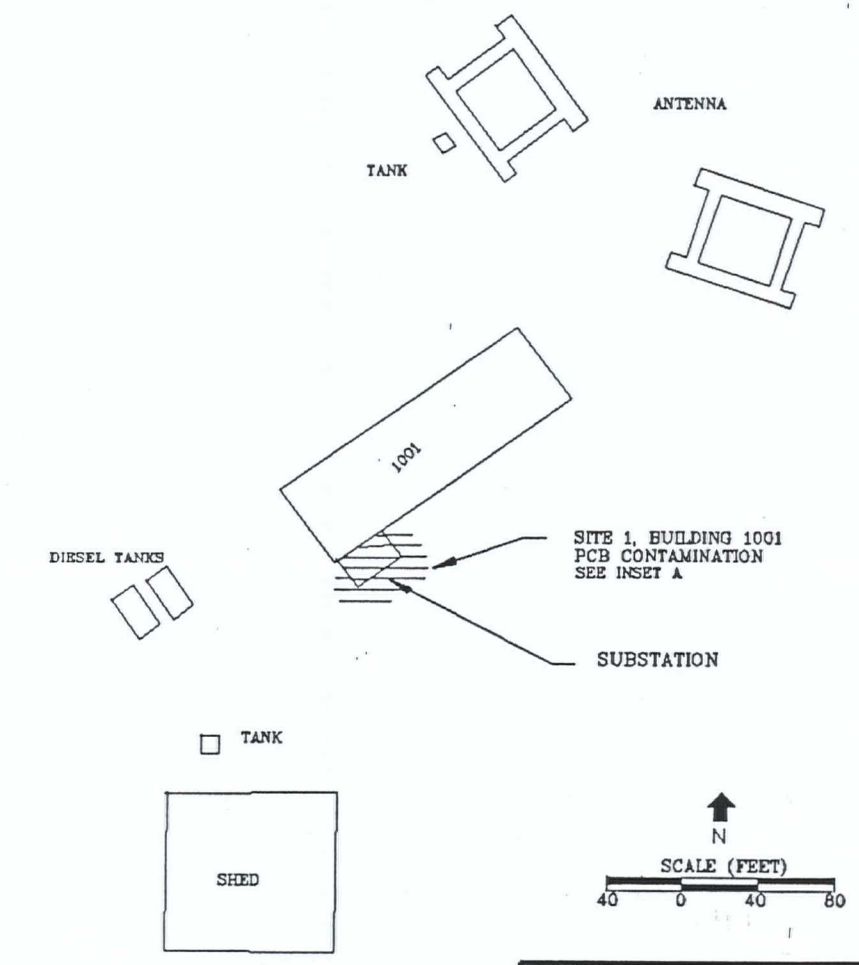
3.4 SITE SPECIFIC FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS FOR WHITE ALICE SITE, TIN CITY. Discussions and correspondence with Air Force personnel indicate that the sampling and cleanup of potentially hazardous waste sites at the White Alice Site in Tin City could be accomplished under the Air Force's Installation Restoration program during the sampling and cleanup of the Air Force Base at Tin City. Further discussions should be conducted to facilitate this opportunity.

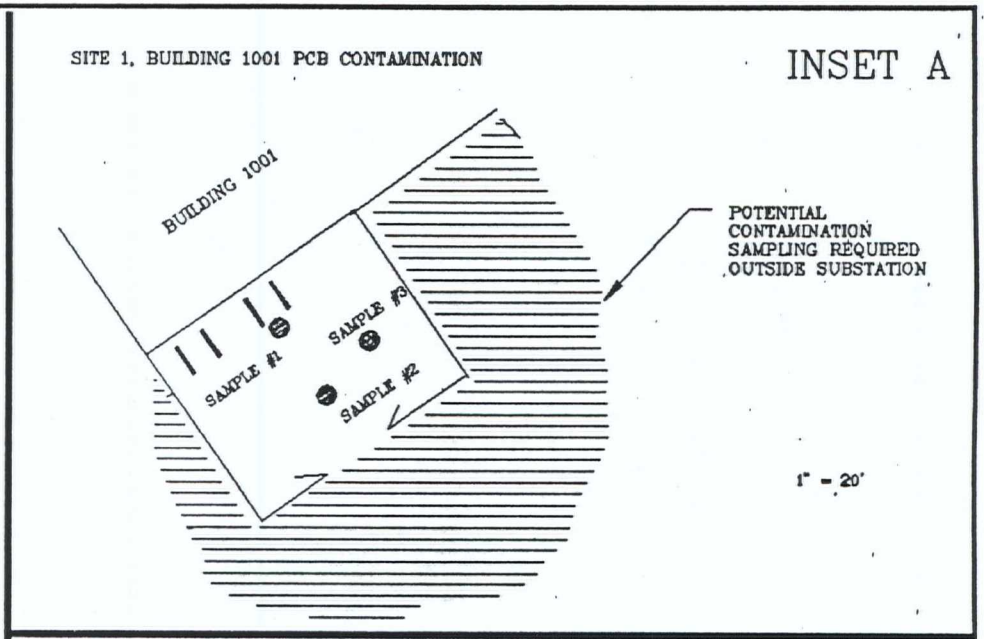
3.4.1 Site 1, Building 1001 PCB Contamination (Tin City).

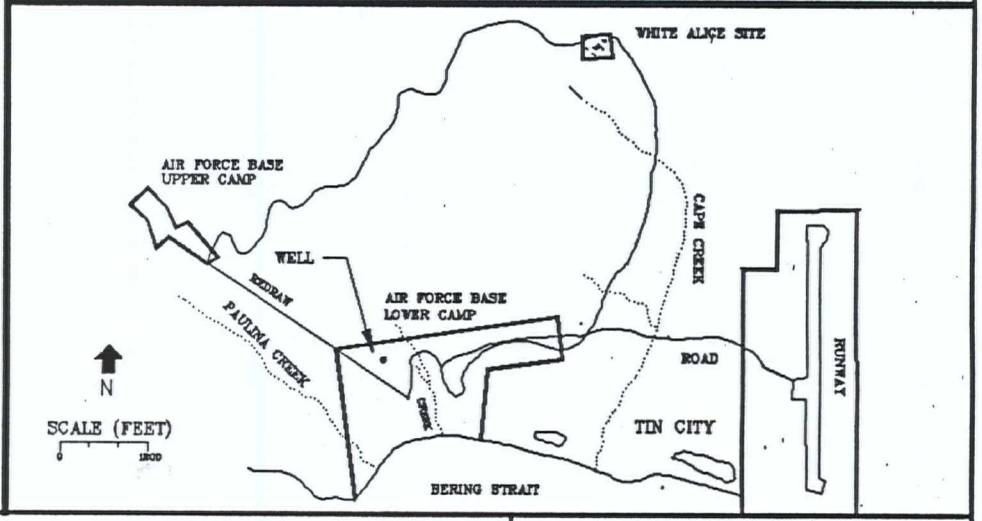
3.4.1.1 Findings. In June 1984, the Air Force removed the majority of electrical equipment including the transformers in the substation attached to Building 1001. The dielectric fluid in the transformers contained polychlorinated biphenyls (PCBs). They also removed fuel from the storage tanks. However, few records of this cleanup are available and little is known as to the extent of cleanup.

In August 1988, a visual inspection of the facility was conducted by NOSC personnel. This inspection revealed that most of the doors were off the hinges and most of the plywood covering the doors and windows were gone. All of the transformers, switchboxes and oil fused disconnects had been removed. Although a handmade sign in the transformer room warned that the area was "PCB Contaminated Area" and noted "(Ran out of Freon)." The origin of the sign is unknown and according to NOSC personnel and Air Force personnel the area supposedly was cleaned up.

During the site visit three samples were taken inside the substation of Building 1001 along with a field blank for quality control. The samples were taken in the locations shown on **Figure 9**. An area of 10 square centimeters was taped off and a







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NAVAL OCEAN SYSTEMS CENTER PROPERTY
WHITE ALICE SITE, TIN CITY
ALASKA

FIGURE 9
SITE 1, BUILDING 1001
PCB CONTAMINATION

wipe sample was collected and analyzed for total extractable PCBs. Sample #1 was taken next to the location of marks indicating the location of the transformer. Sample #2 was taken from the exposed cable post. Sample #3 was taken towards the corner of the room nearest the doorway. Sample #4 was the field blank. The results revealed PCB 1260 in all samples except for the field blank. The results are shown below in **Table 4** and Appendix B.

Table 4. Sampling Results for PCBs White Alice Site, Tin City

Sample #	Results ($mg/100cm^2$)	Federal Cleanup Standard[a] ($mg/100cm^2$)
1	1.535[b]	0.01
2	0.141	
3	1.205	
4	Not detected	

[a] Toxic Substance Control Act (TSCA) 40CFR761.125

[b] Sample #1 needed to be recalculated because the sample was taken over a 12 by 12 centimeter area rather than the recommended 10 by 10 cm area.

There also was no door on the substation room, which increases the potential for exposure to the PCB contamination. The floor of the substation was about three feet above ground level. The concrete appeared to be free of cracks except for the cable post in the center of the room.

In addition, White Alice Sites were high power pulse systems. Reportedly, the systems would occasionally overheat or a transformer fire would occur. When this would happen, the burned dielectric fluid was disposed onto the ground outside the building. Other than this testimony, however, there is no evidence of this type of disposal occurring at this site. See Figure 9 for the estimated location of disposal.

During the site visit the condition of the building was considered unsafe due to aging equipment. There were no doors on the building, so people or animals could enter the building. Equipment was hanging from its structural supports, and ceiling panels were falling due to exposure to the environment. In addition, the piping insulation and ceiling tiles could possibly contain friable asbestos.

3.4.1.2 Conclusions. Federal law mandates PCB compounds are prohibited in any discharge from any manufacturer of PCBs, electrical capacitors or electrical transformers. PCBs are designated hazardous substances, and the United States Environmental Protection Agency (EPA) considers PCBs to be a Class 2B carcinogen (U.S. Air Force, 1989).

Aroclor (PCB) 1260 is expected to be highly immobile in the soil/ground water system due to rapid and strong sorption, although pathways of concern include migration to the ground water drinking water supply and migration to surface water and contamination of fish and the food chain (U.S. Air Force, 1989).

Site 1, Building 1001 PCB Contamination (Tin City) is recommended for further action under the Navy Installation Restoration program due to PCB contamination from the transformers and possible PCB releases to the environment at Tin City.

3.4.1.3 Recommendations. The floor of the substation must be cleaned and all cables that contain PCBs must be removed. Two to three soil samples should be taken in the area just outside the building to determine if the PCBs migrated from the building due to disposing of PCB oil on the ground or from storms or thawing of snow that may have transported the contaminants. The samples should be taken at depths of zero to six inches, two to three feet and at five feet.

The building should be checked for capacitors or other electrical equipment that may contain PCBs. If any PCB equipment is discovered it should be removed. Asbestos should also be removed and the building should be boarded up or demolished due to its unsafe condition. See Sections 3.6.1.2 and 3.6.1.3 for regulations and recommendations for asbestos removal. See also Section 3.6.2 for additional discussions on PCBs.

3.5 SITE SPECIFIC FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS FOR NAVY FIELD STATION, CAPE PRINCE OF WALES. Discussions and correspondence with Army personnel indicate that the sampling and cleanup of the potentially hazardous waste sites located at the Navy Field Station, Cape Prince of Wales could be accomplished under the Army's Installation Restoration Program during the sampling and cleanup of the Army facility in Wales. Further discussions should be conducted to facilitate this opportunity.

3.5.1 Site 2, Paint Shed (Wales).

3.5.1.1 Findings. A small paint shed, not more than six feet by six feet has containers of paint thinners leaking through the floor of the shed into the sand. The shed is located about 700 feet from the Bering Strait as shown in **Figure 10.** The shed is made of wood with wood floor boards. The floor boards are rotting away either from spilled chemicals or from the adverse weather conditions of the tundra.

During the site visit, there were leaking cans, mostly paint thinners. The solvent smell when entering the shed was obvious. There was also about ten 1-gallon paint cans, twenty 5-gallon paint thinner containers, sulfuric acid, mineral spirits, adhesives, about twenty 5-gallon containers of grease and two 5-gallon containers of transformer oil stored in the shed. It is unknown if the oil is PCB contaminated. To the north side of the shed there are about 20 empty compressed propane cylinders. There are also about 3 oxygen cylinders and 2 acetylene cylinders. There may be others buried under the sand beneath the other cylinders.

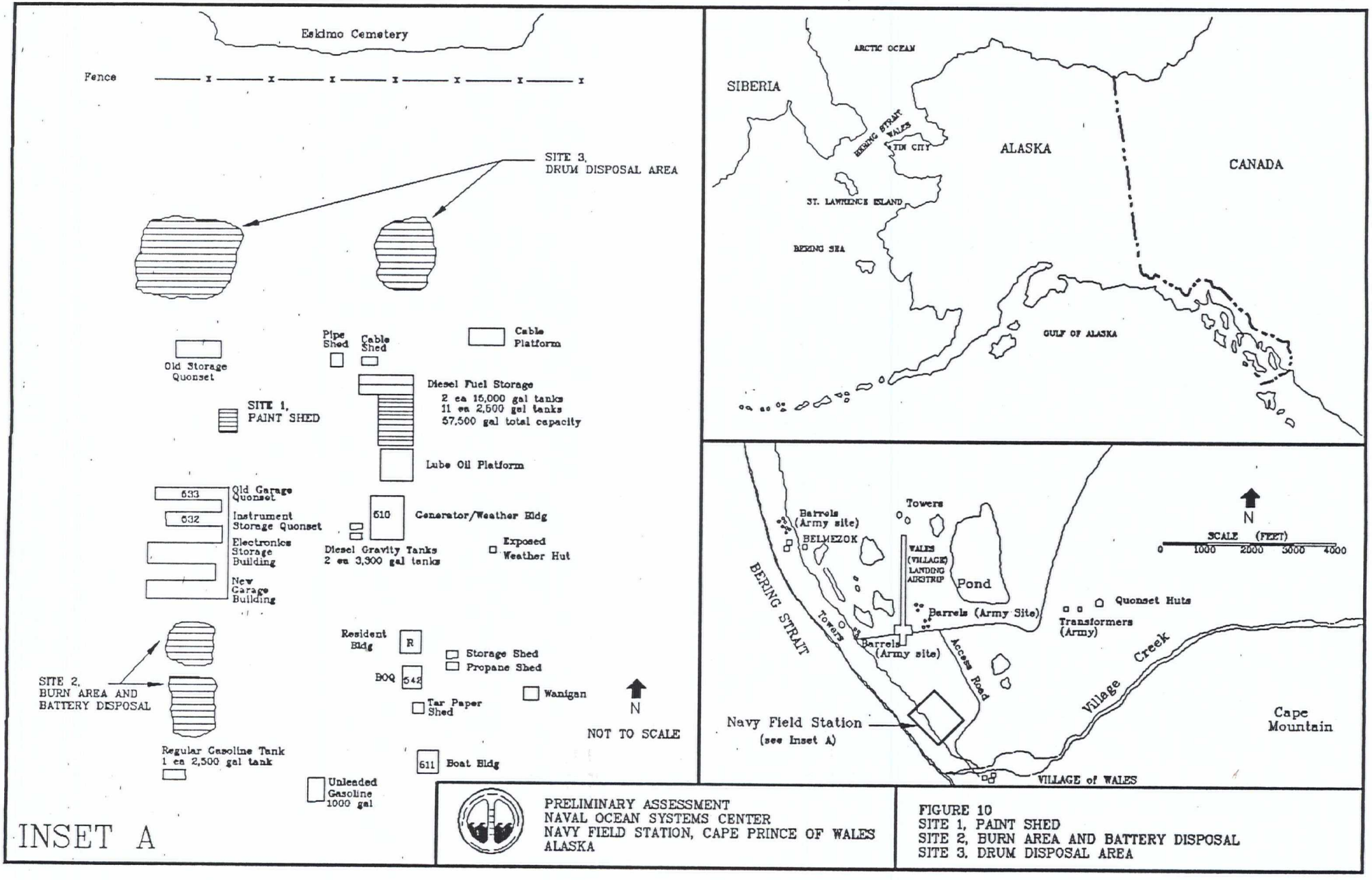
3.5.1.2 Conclusions. The sand matrix allows chemicals to be transported much faster and could potentially have contaminated the shallow ground water which due to proximity probably discharges to the Bering Strait. Although shallow ground water is not used for drinking water, if contaminants migrate to the Bering Strait the potential is present that fish, sea life and the food chain could become contaminated. The Eskimos also eat the fish.

The soil under Site 2, Paint Shed (Wales) is recommended for further action under the Navy Installation Restoration program. No evidence of soil contamination exists, but the opportunity for the release of paint thinners and other contaminants to the environment is evident.

3.5.1.3 Recommendations. All chemicals in the cans and containers should be identified and either disposed of in accordance with State of Alaska and Federal Regulations or stored in a proper facility. All containers should be checked for signs of deterioration before transporting them. Soil and ground water samples should be taken in this area for volatile organic compounds, semivolatile organics compounds, and lead. In addition, all compressed gas cylinders should be disposed of properly.

3.5.2 Site 3, Burn Area and Battery Disposal (Wales).

3.5.2.1 Findings. Since the 1940s, household trash has been



PRELIMINARY ASSESSMENT
NAVAL OCEAN SYSTEMS CENTER
NAVY FIELD STATION, CAPE PRINCE OF WALES
ALASKA

FIGURE 10
SITE 1, PAINT SHED
SITE 2, BURN AREA AND BATTERY DISPOSAL
SITE 3, DRUM DISPOSAL AREA

burned with waste oil in two small areas in the sand dunes in between the new garage building and the gasoline tank as shown in **Figure 10.** There were also empty paint cans, batteries and an empty acetylene cylinder in the burn areas. There are two burn areas. The north burn area is approximately 20 feet by 20 feet and the south burn area is about 50 feet by 50 feet.

3.5.2.2 Conclusions. Site 3, Burn Area and Battery Disposal (Wales) is recommended for further action under the Navy Installation Restoration program due to the release of waste oil and possible lead contamination from the paint and batteries.

3.5.2.3 Recommendations. Soil samples should be taken in the two burn areas and analyzed for total petroleum hydrocarbons and priority pollutant metals. Soil samples should be taken down to a depth of 10 feet or down to the water table.

3.5.3 Site 4, Drum Disposal Area (Wales).

3.5.3.1 Findings. There are two locations where empty drums were disposed at the facility as shown in **Figure 10.** Disposal took place from early to late 1950s until the facility put in the fuel storage tanks. In the smaller disposal area there are about 100 empty 55-gallon drums, a few paint cans and some batteries. West of the smaller disposal area is another area where about 200 empty drums were disposed of as well as some batteries. The drums at one time contained diesel fuel, gasoline--both leaded and unleaded and lubricating oil. The drums are empty.

The empty drum disposal areas are only about 200 feet from an Eskimo cemetery in the sand dunes. The cemetery is about 60 feet from the fence line.

3.5.3.2 Conclusions. Site 4, Drum Disposal Area (Wales) is recommended for further action under the Navy Installation Restoration program due to the potential release of oils, lead from paints and batteries and any other residual contaminants that might have leaked from the drums.

3.5.3.3 Recommendations. Soil samples should be taken and analyzed for total petroleum hydrocarbons, priority pollutant metals, and volatile and semivolatile organic compounds. The drums should be properly disposed of in accordance with State of Alaska and Federal Regulations.

Special precautions will need to be taken during investigations so as not to disturb the burial ground.

3.6 SITE SPECIFIC FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS FOR WHITE ALICE SITE, NORTHEAST CAPE, ST. LAWRENCE ISLAND.

Discussions and correspondence with Army personnel indicate that

the sampling and cleanup of the potentially hazardous waste sites located at the White Alice Site, Northeast Cape, St. Lawrence Island could be accomplished under the Army's Installation Restoration program during the sampling and cleanup of the Air Force Base at Northeast Cape, St. Lawrence Island. Further discussions should be conducted to facilitate this opportunity.

3.6.1 Site 5, Asbestos Hazards (SLI).

3.6.1.1 Findings. Due to harsh year-round environmental conditions experienced at Northeast Cape, most of the buildings at the White Alice Site were insulated. The current facilities at Northeast Cape were constructed in 1952 for the United States Air Force.

Friable and nonfriable asbestos containing materials (ACM) were located throughout the base facilities during the site visit. Six of the nine buildings located on Navy property contain possible asbestos hazards. The Automobile Maintenance Shop (Building 1055), the Lower Tram Terminal Transformer Building, the Upper Camp Transformer Building, and the Upper Camp Tram Building contain no asbestos.

Possible sources of asbestos include thermal system insulation (TSI) on the steam and hot water lines, asbestos mud on the steam and hot water pipe elbows, transite wall board, ceiling tiles, asphalt-asbestos floor tiles, floor glue, batt insulation in the ceiling and walls, fire doors, cement-asbestos siding shingles, flooring felts, and heating, ventilation and air-conditioning (HVAC) system insulation.

On 22 September 1988, Naval Ocean Systems Center (NOSC) personnel obtained samples from the TSI on the steam pipes in Building 1001, the Main Transmitter Building. The samples were analyzed by a Navy laboratory by polarized light microscopy (PLM) and were determined to be positive for chrysotile and amosite. A copy of these results are included in **Appendix C.**

Due to safety, time, and equipment constraints no samples were collected during the NEESA site visit. The majority of the suspected ACM was matrix bonded composite surfacing materials and was nonfriable. However, severe water damage observed on the asbestos TSI has created a potentially dangerous situation inside buildings 1001, 124, and 221. Some of the buildings appear to have been forcibly entered by unknown parties. Reportedly, island natives conduct salvaging operations on the abandoned facilities and would expose themselves to the carcinogenic effects of asbestos upon entering any buildings containing friable ACM.

3.6.1.2 Conclusions. Any Naval building containing asbestos

building materials is regulated by the Occupational Health and Safety Administration, 29 CFR 1910.1001 and OPNAV 5100.23V. This also includes possible exposure to occupants of buildings which contain ACM. Site 5 is recommended for further action under the Navy Installation Restoration program due to the possible exposure of trespassers to airborne asbestos fibers at the White Alice Site on Northeast Cape.

At present most of the suspected asbestos identified is nonfriable matrix bonded composite surfacing materials and therefore, is not a direct hazard to human health or the environment. However, if the buildings are demolished or the asbestos is disturbed or physically damaged, it will become friable and an environmental hazard. The National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 61 Part M mandates the removal of friable ACM before a building may be demolished. Under NESHAP, no visible emissions of dust to the outside environment are permitted during removal, renovation, demolition, collection, transportation, or deposition of ACM waste.

3.6.1.3 Recommendations. With special approval from the Environmental Protection Agency (EPA) dry removal of ACM is permitted under certain circumstances. Due to the relative isolation of the facilities at Northeast Cape and the large cost savings associated with dry removal, this option should be investigated. The specific recommendations include the following:

1) Due to the significant and continuing water damage to the TSI on all exposed steam and hot water lines in Buildings 1001, 124, and 221, immediate removal or encapsulation is recommended to effectively prevent further exposure to trespassers entering the building.

2) Seal all openings from all buildings to the outside environment, restrict access, and post signs warning of asbestos contamination hazards. The signs should be posted so that they can be easily seen and read from all directions around all buildings.

3) Random sampling of suspected "homogeneous" ACM to determine the extent of the contamination. A homogeneous area contains asbestos material that is uniform in texture and color and appears identical in every other respect. The number of samples to be collected depends on the size of the area to be sampled.

Size of Area	Number of Asbestos Samples to be Collected
Less than 1000 square feet	3
Between 1000 & 5000 square feet	5
Greater than 5000 square feet	7

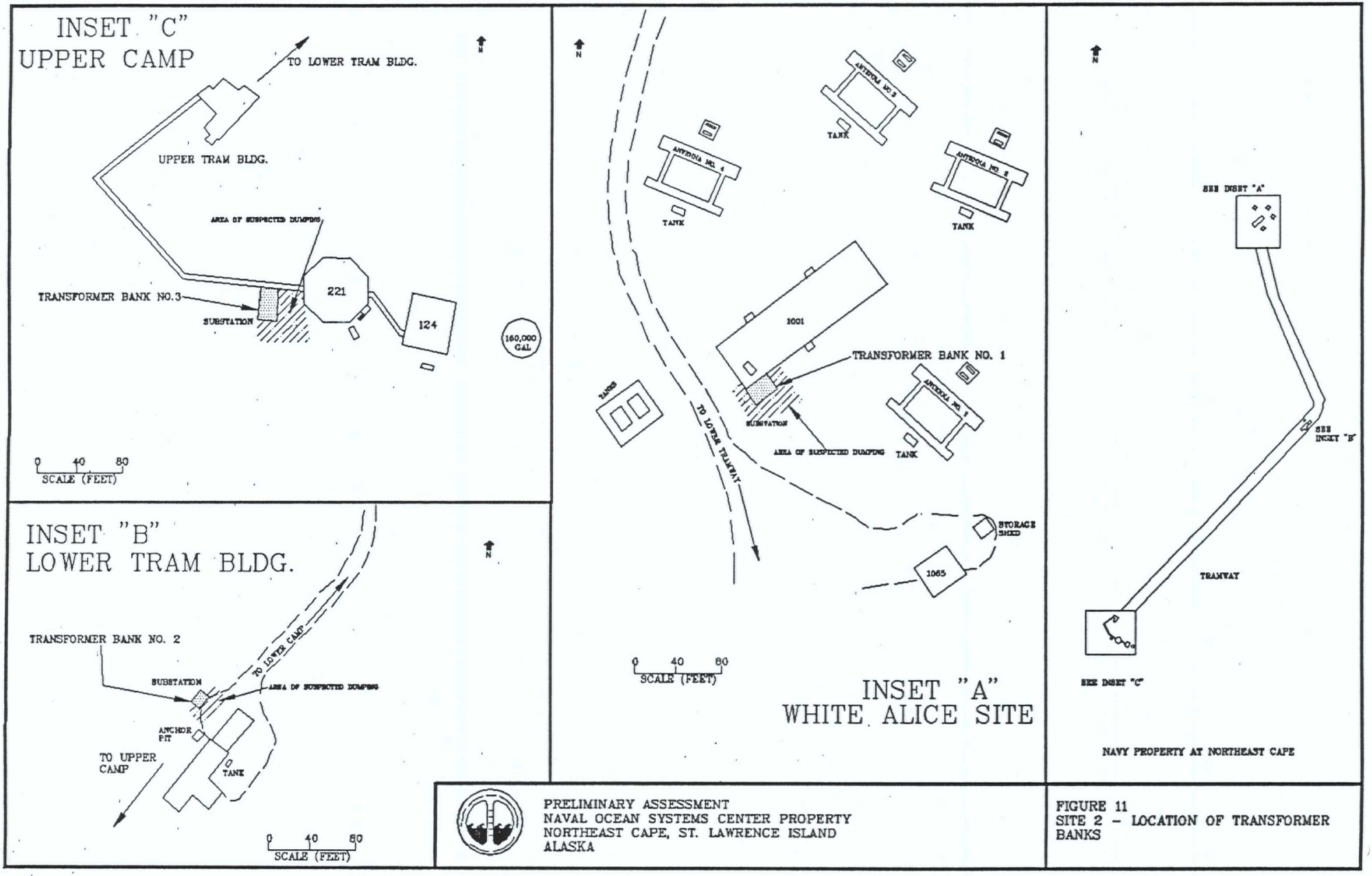
The number of samples and sample location for TSI will depend on the local circumstances of the insulation. At least three samples must be taken in each sample area. For long pipe runs or risers, more samples should be taken. All sampling must be done in accordance with the appropriate OSHA and OPNAV regulations.

4) The cement-asbestos shingles on the outside walls and those lying on the ground should be collected and disposed of in accordance with 29 CFR 1910.1001 and 40 CFR 61 Part M.

3.6.2 Site 6, Abandoned Electrical System (SLI).

3.6.2.1 Findings. A relatively simple electrical system was installed when the White Alice facilities at Northeast Cape were constructed for the Air Force in 1952. A drawing indicating the primary distribution of electrical services (Department of the Air Force, 1963) shows that a total of fourteen transformers were installed on the present Navy property during the establishment of the base. All transformers were mounted inside of permanent structures on concrete floors to protect them from the outside environment. Additionally, it was indicated by a NOSC representative that there were oil-filled capacitors located in the buildings which may contain PCBs.

Electricity for the White Alice Site was obtained from the main power plant located in the housing and operations area on excessed government property. On the present Navy property, power was delivered to three separate transformer banks located in the substation of Building 1001, the Lower Tram Transformer Building, and the Upper Camp Transformer Building as shown in **Figure 11**. For emergency service in case of normal power source failure there were two diesel-engine-driven emergency alternators located near each of the transformer banks. The electrical system was abandoned in place in 1975 when the Air Force ceased operations at Northeast Cape. **Table 5** details the different transformer banks, their supporting dielectric fluid-filled equipment, and their condition during the NEESA site visit.



PRELIMINARY ASSESSMENT
NAVAL OCEAN SYSTEMS CENTER PROPERTY
NORTHEAST CAPE, ST. LAWRENCE ISLAND
ALASKA

FIGURE 11
SITE 2 – LOCATION OF TRANSFORMER BANKS

TABLE 5
TRANSFORMER DATA
FROM
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA

Transformer Bank No. 1, White Alice Substation Site

3 ea Transformers:

SER NUM:	142525, 142524, 1425290	Hill Transformer Co.
KVA:	100 KVA (Single Phase)	San Carlos, CA
TYPE:	DA 2	
FORM:	S-1	
IMP:	75 Deg 3.3	
OIL:	62 gals	
WEIGHT:	1960 lb.	

1 ea Oil Fused Disconnects:

CAT NUM:	FC61BK-FC	G&W Electric Speciality Co.
SER NUM:	6-57	3500 W. 127th Street
VOLTS:	8000 VAC	Blue Island, IL
AMP:	1000 Amps	

1 Set Pot Heads:

CAT NUM:	3BXFC61B-EC-T	G&W Electric Speciality Co.
SER NUM:	C8096-293	
VOLTS:	8000 VAC	
AMPS:	100 Amps	

Transformer Bank No. 2, Lower Tram Terminal

3 ea Transformers:

SER NUM:	9730748, ?, ?	G.E. Spirakore Transformers
KVA:	37.5 KVA	
TYPE:	HS	
WEIGHT:	850 lb.	
OIL:	?	

1 ea Transformer:

SER NUM:	?	Moloney Electric
KVA	15 KVA	
TYPE:	CL-2	
WEIGHT:	335 lb.	
OIL:	12.5 gal M-2I oil	

1 ea G&W Oil Fused Disconnect and set of Pot Heads as described for Transformer Bank No. 1.

TABLE 5 (cont.)
TRANSFORMER DATA
FROM
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA

Transformer Bank No. 3, Upper Camp

3 ea Transformers: G.E. Spirakore Transformers
SER NUM: B 511418A, ?, ?
KVA: 37.5 KVA
TYPE: HS
WEIGHT: 850 lb.
OIL: ?

4 ea Transformers: G.E. Spirakore Transformers
SER NUM: 9669460, ?, ?, ?
KVA: 75 KVA
TYPE: HS
WEIGHT: 1400 lb.
OIL: ?

2 ea G&W Oil Fused Disconnects and two sets of Pot Heads as described for Transformer Bank No. 1.

The White Alice Sites were high power pulse systems. Reportedly, the system would occasionally overheat or a transformer fire would occur. When this would happen, the burned dielectric fluid was "dumped onto the ground outside the building" and the transformer was flushed with a solvent (trichloroethylene) and refilled with oil. It is not known if any of the dielectric fluid contained polychlorinated biphenyls (PCBs) or the amount(s) or location(s) of these reported releases.

PCBs are inert, thermally and chemically stable compounds with dielectric properties. In 1974, use of PCBs in the United States was limited to closed systems with approximately seventy percent of the PCBs produced used in capacitors and the remaining thirty percent were utilized in transformers (U.S. Air Force, 1989).

The environmental behavior of PCB mixtures is a direct function of their relative composition with respect to the individual chlorinated biphenyl species. In general, as chlorine content increases, sorption increases while transport and transformation processes decrease. Absorption into soils and sediments is the major fate process affecting PCBs in the environment. In general, the rate of absorption in soil materials is rapid. Soil material absorption capacity was highly correlated with organic content, surface area, and clay content (U.S. Air Force, 1989).

Trichloroethylene (TCE) was widely used as an industrial solvent.

It is highly volatile in aqueous solutions, moderately soluble in water, and not strongly absorbed or bioaccumulated. TCE on the soil surface is likely to volatilize, but that portion not removed by volatilization is likely to become mobile in ground water.

3.6.2.2 Conclusions. Federal law mandates PCB compounds are prohibited in any discharge from any manufacturer of PCBs, electrical capacitors or electrical transformers. Both PCBs and TCE are designated hazardous substances, and the United States Environmental Protection Agency (EPA) considers PCBs to be a Class 2B carcinogen (U.S. Air Force, 1989). Site 6 is recommended for further action under the Navy Installation Restoration program due to the possible PCB contamination from leaking transformers and capacitors and possible PCB and TCE releases to the environment at Northeast Cape.

3.6.2.3 Recommendations. A grid coordinate should be established over the areas indicated in **Figure 11** to allow for the random selection of sampling points. No specific regions were designated as the areas where burned dielectric fluid and solvents were disposed. Therefore, areas were chosen where oil could have been easily disposed of from the transformer rooms.

Once the grid is established a statistically viable number, eighty percent confidence level, of soil core samples should be collected at the 0 to 6 inch and 6 to 12 inch levels. Variation can only be accounted for with random sampling since most wastes are heterogeneous with regards to chemical composition and their on-site distribution (EPA SW846, 1982). This method is appropriate when the area to be sampled is large, contamination is evenly dispersed, or when there is no information to indicate where the areas of contamination might be located.

Care should be exercised to prevent losses during sample collection and storage. Samples should be collected in glass containers; extraction of samples should be completed within seven days of sampling and analysis completed within 40 days for PCBs. In addition to targeted samples, field blanks and duplicates should be obtained for Quality Assurance/Quality Control (QA/QC) purposes. At a minimum, the samples collected from Site 6 should be analyzed for PCBs, EPA Method 8080 and 8250, and TCE, EPA Methods 8010 and 8240.

The dielectric equipment and the surrounding concrete located in Building 1001, the Lower Tram Transformer Building, and the Upper Camp Transformer Building should be sampled for PCBs by the appropriate EPA methods, drained, and disposed of in accordance with applicable State of Alaska and Federal Laws.

Also see section 4.0, Removal Action.

3.6.3 Site 7, Storage Drums (SLI).

3.6.3.1 Findings. Due to the remote and isolated location of Northeast Cape, virtually all supplies were shipped to the base in 55 gallon drums. When the base was closed in 1975 it was abandoned in place and all storage and waste disposal drums were left behind. Site 7, Storage Drums (SLI), consists of four separate areas as shown in **Figure 12.**

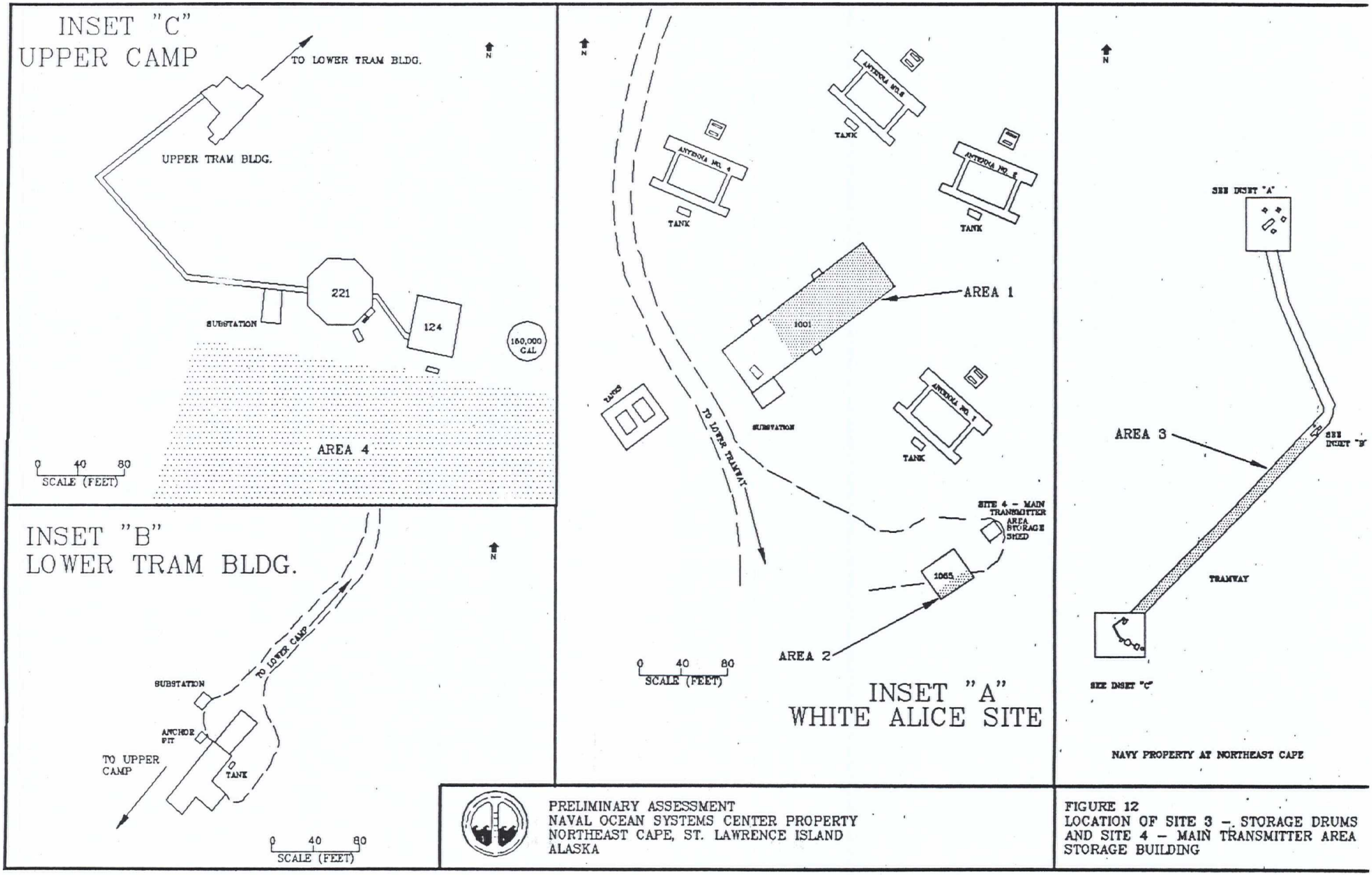
Area 1 is located in Building 1001, Main Transmitter Building, and consists of 132 55-gallon drums. All of the drums are full of product and stored on their sides. The drums were marked turbine fuel aviation, fuel oil diesel, engine oil crankcase, and antifreeze arctic grade. None of the drums were leaking; however, five were bulging and show signs of corrosion damage.

Area 2 is located in the rear of Building 1055, Automobile Maintenance Shop, and embodies ten 55-gallon drums labeled engine oil crankcase, and two 55-gallon drums marked leaded gasoline. Both of the gasoline storage drums and eight of the crankcase oil drums were full of product. All of the drums are in good condition and show no signs of leaking.

Area 3 is defined as the Navy property beneath the tramway leading up the mountain. During the NEESA site visit, greater than two hundred 55-gallon storage drums were noted littering the entire length of the tramway. Based on the location of these drums, it is probable that they originated from the top of the hill. All of the drums were severely damaged and bullet holes were observed in some of the drums. Approximately forty percent of the storage drums investigated still contained liquid, and fifteen of the drums showed signs of bulging and rupturing. A majority of the drums were rusted and the labels could not be read to determine the contents; however, labels that could be read were trichloroethylene, arctic grade antifreeze, fuel oil diesel, and de-icing fluid.

Area 4 is positioned eighty feet southwest of Building 221 and 224 in the Upper Camp Complex as shown in **Figure 12.** Greater than six hundred 55-gallon drums are scattered or stacked in an area encompassing approximately 60,000 square feet. A majority of the drums examined contained product, but were too rusted to read the labels. Labels that could be read were fuel oil diesel, trichloroethylene, antifreeze arctic grade, and waste oil. Some of the drums appear to have ruptured, and others have bullet holes in them.

In addition to the above mentioned chemicals, the station also reportedly handled PCB dielectric fluids, dibenzofuran, carbon tetrachloride, DDT, Trichlorophenoxy acetic acid (2,4,5-T), alcohols, and sulfuric acid. No drums or containers were noted



PRELIMINARY ASSESSMENT
NAVAL OCEAN SYSTEMS CENTER PROPERTY
NORTHEAST CAPE, ST. LAWRENCE ISLAND
ALASKA

FIGURE 12
LOCATION OF SITE 3 – STORAGE DRUMS AND SITE 4 – MAIN TRANSMITTER AREA STORAGE BUILDING

that were labeled as such. However, with the exception of Area 1, a majority (greater than ninety percent) of the drums were too rusted to read their labels and determine the contents.

The environmental behavior of the chemicals known to be at North East Cape (crankcase oil, TCE, ethyleneglycol, leaded gasoline, diesel fuel, and aviation fuel) are discussed below.

Crankcase oils are expected to be highly immobile in the soil/ground water environment. Bulk quantities of the oil from a spill or improper disposal might be carried slowly through the unsaturated zone to the top of the water table, but the high viscosity and low water solubility would mitigate this. Most likely, at least with moderate to small spills, the oil would remain entrained in the pores of the soil near the surface. This would be more likely for low porosity and high organic carbon content soils, and less likely for sandy, porous soils (U.S. Air Force, 1989).

Trichloroethylene (TCE) is highly volatile in aqueous solutions, moderately soluble in water, and not strongly absorbed or bioaccumulated. TCE on the soil surface is likely to volatilize, but that portion not removed by volatilization is likely to become mobile in ground water (U.S. Air Force, 1989).

Ethlyene glycol is expected to be highly mobile in the soil/ground water system when present at relatively low concentrations or as a separate organic phase resulting from a spill of significant quantities of the chemical. Data on ethylene glycol volatilization from soils is not available. Ethylene glycol is not strongly sorbed to soil and is highly soluble in water. Although some volatilization may occur at the surface, it is suggested that vapor concentrations in soil will be low whenever water is present and volatilization will be minimal (U.S. Air Force, 1989).

The environmental behavior of petroleum based fuels (gasoline, diesel fuel, and aviation fuel) will be limited to a discussion of the major hydrocarbon components and not to the many trace elements and diverse additives. The relative concentrations of constituents of the fuel will vary with time and distance from the site of contamination. This effect known as weathering is used to describe the changes following spills where differential volatilization, dissolution, and degradation are all involved. Lateral spreading along the surface increases the initial contaminated area while facilitating evaporative removal of the low molecular weight hydrocarbons. Vertical penetration mediated by gravitation and capillary forces decreases evaporation, reduces the importance of some transformation pathways, and may lead to ground water contamination (U.S. Air Force, 1989).

3.6.3.2 Conclusions. Site 7 is recommended for further action under the Navy Installation Restoration program due to the unknown nature of the majority of the substances stored in the drum areas.

3.6.3.3 Recommendations. A staging area should be established in an open region near each of the four drum storage areas. A fork-lift should be used to transfer the drums on pallets from where they are stored to the staging areas via a bermed corridor lined with plywood and plastic (Visqueen). The plywood will help protect the plastic from breakage due to rocks on the ground. The plastic will cover the plywood and protect against potential spills onto unprotected ground. The staging area should also be bermed and protected from potential spills.

Following rearrangement of the drums to allow unrestricted access to each drum, trained personnel should label each drum, open and monitor the headspace for volatile vapors, visually classify the contents, and collect a representative sample for later categorization. After sampling, each drum should be closed until analytical results have been reviewed and the proper disposal method has been determined. Additionally, the Hazardous Material Categorization (Hazcat) analysis will attempt to characterize the wastes for consolidation into bulk storage containers for disposal, recycling, or for other options identified during hazcatting operations.

In addition to the tasks associated with drum sampling and waste categorization, a grid should be established to allow for the random sampling of soil cores in Area 4 where the drums were stored. Surface water samples should be obtained in snow run-off directly below the tramway and Area 3. At a minimum, samples should be analyzed for the compounds determined to be present at the sites upon review of Hazcat results.

Also see section 4.0, Removal Action.

3.6.4 Site 8, Main Transmitter Area Storage Building (SLI).

3.6.4.1 Findings. Site 8, Main Transmitter Area Storage Building (SLI), is an eight foot by twelve foot structure located approximately 160 feet southeast of Building 1001, Main Transmitter Building, and 30 feet east of Building 1055, Automobile Shop, in the White Alice antenna area as shown in **Figure 4.**

The structure was constructed in 1952 for the United States Air Force and used to store various small containers of supplies for use in buildings 1001 and 1055. The door to the building is missing, allowing easy access to the contents inside.

Fifteen compressed gas cylinders were observed inside the structure and all are in good condition. The contents of the gas cylinders are unknown. Other potentially hazardous materials stored in the building include seven lead-acid type automobile batteries, two 5-gallon containers of creosote "C", five 5-gallon containers of grease, one 15-gallon drum of an unknown substance, and possible asbestos wallboard (see Site 5). All containers are in good shape and show no signs of leaking or damage. The possible asbestos wallboard is in poor condition and is falling apart.

3.6.4.2 Conclusions. Site 8 is recommended for further action under the Navy Installation Restoration program due to the unknown contents and associated explosive hazard of the compressed gas cylinders, and the easy accessibility to trespassers of other known hazardous materials stored in the building.

3.6.4.3 Recommendations. The compressed gas cylinders and all containers housed in the Main Transmitter Area Storage Building should be removed and disposed of in accordance with applicable State of Alaska and Federal regulations. The possible asbestos wallboard should be sampled in accordance with procedures outlined in Site 5 and disposed of properly depending on analytical results. The door to the structure should be replaced and secured to prevent entry by trespassers.

Also see section 4.0, Removal Action.

4.0 REMOVAL ACTION. During the course of preparation of this Preliminary Assessment, a removal action at the White Alice Site, Northeast Cape, St. Lawrence Island has taken place. This removal action, conducted in July and August of 1990, encompassed sites 6, 7, and 8. Electrical equipment, storage drums, gas cylinders, and other potentially hazardous materials were removed under the direction of Engineering Field Activity (EFA) Northwest. Asbestos materials were not removed from the facility. Samples of surface water and soils in the area were taken. See **SI Report, White Alice Site, N.E. Cape, St. Lawrence Island, Alaska, EFA Northwest, (not yet released)** for further information on testing conducted here. Also see **Removal Action Report, White Alice Site, N.E. Cape, St. Lawrence Island, Alaska, EFA Northwest, (not yet released)** for more detailed information on the materials removed from sites 6, 7, and 8.

5.0 AUTHORITY AND SCOPE.

Section 211 of the Superfund Amendments and Reauthorization Act of 1986 (SARA 211) provides continued authority for the

Department of Defense Environmental Restoration Program (DERP) and the Defense Environmental Restoration Account (DERA). The Navy Installation Restoration (IR) program is authorized by Chief of Naval Operations instruction (OPNAVINST) 5090.1 of 26 May 1983. The Naval Facilities Engineering Command (NAVFACENGCOM) manages the Navy program. NAVFACENGCOM tasked the Naval Energy and Environmental Support Activity (NEESA) to conduct a preliminary assessment (PA) for each Navy and Marine Corps facility listed on the Federal Agency Hazardous Waste Compliance Docket as required by SARA 120. NAVFACENGCOM may also request NEESA to conduct PAs at certain facilities not listed on the docket.

PAs are conducted in accordance with Environmental Protection Agency (EPA) draft guidance on "Pre-Remedial Activities at Federal Facilities" forwarded by EPA memorandum of 08 September 1987. PA recommendations are consistent with the National Contingency Plan (NCP).

Appendix D contains a completed Federal Facilities Checklist in accordance with EPA memorandum of 14 February 1990. This checklist will assist EPA's review of the Preliminary Assessment.

The PA begins with investigation and review of available records at NEESA and the cognizant NAVFACENGCOM Engineering Field Division. After the record search, the PA team visits the activity to complete documentation of past and present operations and disposal practices. With the assistance of the activity point of contact, the team tours the activity and interviews long term employees. If a potential threat to human health or the environment is suspected, further appropriate action is recommended.

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Supporting Documentation available at:

Naval Energy and Environmental Support Activity
Environmental Protection Department Code 112E
Port Hueneme, CA 93043

APPENDIX A

DEPARTMENT OF THE NAVY
NAVAL OCEAN SYSTEMS CENTER
SAN DIEGO, CALIFORNIA 92152-5000

IN REPLY REFER TO:
5090
Ser 006/67
1 JUN 1989

State of Alaska
Department of Environmental Conservation
Northern Regional Office
Attn: Thor Cutler
1001 Noble Street, Suite 350
Fairbanks, AK 99701

Gentlemen:

The initial notification of the fuel spill of 21 March 1989 was accomplished on 9 May 1989 in a telephone conversation between Mr. Thor Cutler of your office and Mr. T. D. Thielen, Environment Engineer, Code 0065, Naval Ocean Systems Center. The following is an interim report as is called for in the State of Alaska Oil Pollution Regulations 18 AAC 75, Articles 75.090, 75.100 and 75.110.

On 21 March 1989, at our Cape Prince of Wales field station during the routine monthly transfer of arctic grade diesel fuel (DFA), there was an apparent failure in an underground transfer pipe resulting in the loss of approximately 3,800 gallons of fuel. Dr. Loyd Hampton, the Resident Scientist in charge of the field station, discovered the loss of fuel while monitoring the levels in the tanks during the transfer.

The transfer was from fuel storage tanks to gravity feed tanks for the field station's diesel-driven generators and the residence furnaces. The fuel transfer system was secured and the ruptured underground fuel line was isolated to prevent further leakage. The one-inch fuel line suspected of failing is buried six to ten inches underground, and at the time of the spill was under approximately forty inches of snow.

The exact cause of the failure is still being investigated. The snow cover and frozen ground prevent a thorough inspection of the fuel transfer system. The system has been in use for many years without ever having a similar mishap. The timing of the incident, just after the extreme intense cold spell that the region experienced earlier this year, may suggest that these extended cold temperatures could have contributed to what is suspected to have been a mechanical failure of the underground fuel transfer line.

The general area of the spill was located by coring down through the snow to the sand level and sampling the snow and ice at the snow/sand interface. It was discovered that the spill occupies an area believed to be about sixty feet long and forty feet wide directly east of the fuel storage tanks in a natural depression in the sand. The location of the fuel represents no threat to either the village's potable water sources or to the water used by the field station. The site on the creek used by the village of Wales, Alaska as a winter source of water is located approximately one mile to the east and is elevated above the level of the field station. During the summer, the village uses a spring located due south of the village, over a mile away and elevated well above the

field station as a water supply. The field station uses water stored in storage tanks during the winter and uses the creek to the east during the summer.

The area is bounded on the east by a set of sand dunes preventing drainage out onto the tundra, on the north by a man-made dune, on the south by a man-made sand dune, and on the west by the fuel storage tanks, preventing any draining to the ocean. The level of the sand in the area of the spill is approximately two feet below the level of the fuel storage tanks, two to three feet below the level of the natural sand dunes on the east, and about a foot below the level of the man-made dunes on the north and south.

The fuel is trapped in a layer of ice, approximately four to six inches thick at the snow/sand interface. The sand is presently frozen solid, and therefore the immediate threat of fuel migrating from the area is minimal. Attempts have been made to create a sump in the sand to pool the fuel and pump it into an unused storage tank, but the fuel is effectively trapped in the ice layer. No natural draining has occurred. Because this was a spill of DFA, a very clean fuel, evaporation is anticipated as the surface area is exposed to the air and direct sunlight.

Our objective is to remove the sand from the affected area as soon as is practical and thus prevent the migration of any fuel. It is assumed that we will have to remove an area of sand, as was described above, down to a level of six inches (the estimated level that the ground should be thawed at the time of removal). This works out to a volume of sand equaling forty-five cubic yards. Once the contaminated sand has been removed, it will be replaced with clean sand to preserve the "lay of the land".

To accomplish this removal of the contaminated sand, we intend to transfer the sand to leak-proof metal storage containers already located on-site. The metal containers represent a significant storage capacity. The external dimensions of the containers are ten feet wide, twenty-eight feet long, and seven and one-half feet high. Assuming an internal storage capacity fifty percent of that volume, each container represents thirty-eight yards of storage area. We have six on hand representing a total of 228 yards of storage space. This insures complete containment of the sand.

The need for any further action will be assessed as soon as a complete inspection of the fuel transfer system can be completed.

Sincerely,

T F Bailey

T. F. BAILEY
Captain, U. S. Navy
Acting Commander

5090
Ser 006/67
1 JUN 1989

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Central Files (2)

Prepared by: M. R. Hacking, Code 19, x37458
Typed by: L. J. Ross, Code 006, 5/31/89

Reviewed by: 006 5/31
1901

APPENDIX B

From: Navy Public Works Center, Environmental Engineering Laboratory, Code 614
Naval Air Station, North Island, Building 788, San Diego, CA 92135
(619) ~~437-3307~~ 545-8431

Activity: NEESA

Type of Sample: WIPE

ID#: 90738-4

Date Sample Collected:	Date Analyzed: 31 JUL 89	Analyst: NAA	Date Sample Received: 27 JUL 89

Results Expressed As: TOTAL EXTRACTABLE PCB IN MILLIGRAMS

SAMPLE IDENTIFICATION AND RESULTS

SAMPLE ID	RESULTS	SAMPLE ID	RESULTS
SAMPLE #1	2.211	XXX	
SAMPLE #2	0.141	XXXX	
SAMPLE #3	1.205	XXXX	
SAMPLE #4	ND	XXXXX	

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX NONE FOLLOWS XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

REMARKS: ND= NONE DETECTED
DETECTION LIMIT= 0.001mg

REPORTED BY: [signature]
LABORATORY SUPERVISOR

DATE: 1 AUG 89

NAVY PUBLIC WORKS CENTER
ENVIRONMENTAL ENGINEERING LABORATORY
QUALITY CONTROL DATA

LABORATORY LOG NUMBER: 90738-4

ACTIVITY: NEESA

TYPE OF SAMPLE: WIPE

DATE OF ANALYSIS: 31 JUL 89

TYPE OF ANALYSIS: TOTAL EXTRACTABLE PCB

CALIBRATION STANDARD: PCB 1260

RELATIVE STANDARD DEVIATION: 3.69

CONTINUING CALIBRATION CURVE VERIFICATION

EXPECTED CONCENTRATION: 4.0 ng/ul
RECOVERED: 3.77 ng/ul
% RECOVERY: 94%

MATRIX(WIPE) RECOVERY

SPIKE AMOUNT: 200ng
RECOVERED: 191ng
% RECOVERY: 96%

PRECISION DATA

FIRST VALUE(SAMPLE #3): 1.205mg
DUPLICATE VALUE(SAMPLE #3): 1.264mg
% DIFFERENCE: 4.8%

CHECK SAMPLE DATA

STANDARD: PCB 1260
RECOVERED: 489 ppm
EXPECTED VALUE RANGE: 398-634 ppm

Narciso A. Ancog

NARCISO A. ANCOG
QUALITY CONTROL CHEMIST

APPENDIX C

REQUEST FOR AND RESULTS OF TESTS

PAGE NO. | NO. OF PAGES

SECTION A - REQUEST FOR TEST

1. TO:	2. FROM:
COMENPHIBGRU FIVE NAVAL STATION, BOX 140 SAN DIEGO, CA. 92136-5140	NOSC Code 19 San Diego 92152-5000

3. PRIME CONTRACTOR AND ADDRESS	4. MANUFACTURING PLANT NAME AND ADDRESS
CONTRACT NUMBER	P. O. NUMBER

5. END ITEM AND/OR PROJECT	6. SAMPLE NUMBER	7. LOT NO.	8. REASON FOR SUBMITTAL	9. DATE SUBMITTED
	3		P.O ASBESTOS	

10. MATERIAL TO BE TESTED	10a. QUANTITY SUBMITTED	11. QUANTITY REPRESENTED	12. SPEC. & AMEND AND/OR DRAWING NO. & REV. FOR SAMPLE & DATE
			ASBESTOS II

13. PURCHASED FROM OR SOURCE	14. SHIPMENT METHOD	15. DATE SAMPLED AND SUBMITTED BY
	HAND CARRIED	7 Nov 88 LCDR Cox/Wales

16. REMARKS AND/OR SPECIAL INSTRUCTIONS AND/OR WAIVERS.

1 1 — Nosc Facility, Northeast area, S. Lawrence Island, Bering Sea, Alaska

2 10 - Nosc Bldg 371

3 11 - Nosc Bldg 371

[illegible]

17. SEND REPORT OF TEST TO

NOSC

SECTION B - RESULTS OF TEST *(Continue on plain white paper if more space is required)*

1. DATE SAMPLE RECEIVED	2. DATE RESULTS REPORTED	3. LAB REPORT NUMBER
07 Nov 88	07 Nov 88	03-379-88

4 TEST PERFORMED	RESULTS OF TEST	SAMPLE RESULT	REQUIREMENTS
[illegible]			

1 Positive for chrysotile and amosite asbestos

2 Negative for asbestos. Positive for mineral wool

3 Positive for chrysotile and amosite asbestos

DATE	TYPED NAME AND TITLE OF PERSON CONDUCTING TEST	SIGNATURE
07 Nov 88	[illegible] NAVAL STATION, BOX 140 SAN DIEGO, CA. 92136-5140	[illegible] USN

DD FORM 1 FEB 62 1222

REPLACES DD FORM 1222, 1 JUL 58, WHICH IS OBSOLETE.

SAMPLES TAKEN FROM WHITE ALICE SITE
AT
NORTHEAST CAPE, ST. LAWRENCE ISLAND, ALASKA

Sample Number	Description/Location
1	Lagging sample taken from material which had fallen off of a pipe running thru the transformer room.
	RESULTS: Positive for chrysotile and amosite asbestos
2	Surface water just outside the transformer room.
	RESULTS: 0.0039 mgm/liter
3	Suspected fuel sample taken from leak in line leading into building.
	RESULTS: None Detected
4	Soil sample taken inside the garage building next to the furnace with possible fuel oil.
	RESULTS: 1.24 mgm/kgm **
5	Soil sample taken in front outside the garage building.
	RESULTS: 0.6168 mgm/kgm **
6	Water sample taken inside the Propane building.
	RESULTS: None detected
7	Soil sample taken outside main building on NE corner.
	RESULTS: 1.47 mgm/kgm **
8	Oil taken from leaky capacitor located in transmitters.
	RESULTS: Not measured
9	Drippings from insulator feedthrough in the transmitter cabinets.
	RESULTS: Not measured

** Level at which concentration considered hazardous is 5 mgm/kgm

APPENDIX D

WHITE ALICE, TIN CITY

9345.0-01
OSWER DIRECTIVE
PA CHECKLIST

REFERENCE (PAGE NO.)

I. SITE BACKGROUND INFORMATION

- O Site name — FORM 2070
- O Site number — NA
- O Address — NA
- O Coordinates (latitude and longitude in degrees, minutes, seconds, or township and range numbers) — FORM 2070
- O Directions to site (starting from nearest public road) — -11-

II. RESPONSIBLE PARTIES

- O Owner — -11-
- O Address (current and past, if available) — -11-
- O Telephone number — -11-
- O Operator — -11-
- O Operator's address — -11-
- O Operator's telephone number — -11-
- O Type of ownership (specify private, Federal, state, county, municipal) — -11-"

III. OVERVIEW/SITE HISTORY

- O Site operations
  - history/years of operation — 1.2.1
  - nature of operations (manufacturing, waste disposal, storage, etc.) — 1.2.1
- O Description of any emergency or remedial actions that have occurred at the site — 3.4.1.1 & 2.3.1

REFERENCE (PAGE NO.)

- O Description of any prior spills — 2.3.1
- O Description of relevant permits — 2.2.1
- O Description of existing sampling and analytic data and brief summary of data quality — 3.4.1.1
- O Evaluate the data quality for the following:
  - sample objectives — 3.4.1.1 & APPENDIX B
  - age/comparability — -"-
  - analytical methods — -"-
  - detection limits — -"-
  - QA/QC — -"-

IV. WASTE CONTAINMENT/HAZARDOUS SUBSTANCE IDENTIFICATION

- O Describe as specifically as possible the methods of hazardous substance disposal, storage, or handling. — 3.4.1.1
- • Describe the condition/integrity of each storage disposal feature or structure. Evaluate from the perspective of each migration pathway (e.g., ground water pathway - nonexistent natural or synthetic liner, corroding underground storage tank; surface water - inadequate freeboard, corroding bulk tanks; air - unstabilized slag piles, leaking drums, etc.). — 3.4.1.1
- O Describe any secondary containment features/structures (such as run-on diversion system, leachate collection systems). — NA
- O Describe size/volume of all features/structures that contain hazardous substances or volume of previously reported spills. — 2.3.1, 3.4.1.1
- O Describe as precisely as possible existing permits and the types of hazardous substances handled on site. — 2.2.1, 2.3.1, & 2.5.1

REFERENCE (PAGE NO.)

- Discuss any records or manifests which provide data on volume of hazardous substances handled/disposed/released on site. — -NA-

V. GROUND WATER PATHWAY

- Determine if ground water within four[1] miles of the site is used for any of the following purposes (if the answer to this is "unusable," then it is not necessary to answer the following questions). — 2.4.1
  - private or public drinking water source — 2.4.1
  - commercial — NO
  - irrigation (5-acre minimum) — NO
  - industrial — NO
  - not used, but usable — NA
  - unusable — NA
- Determine the population drinking ground water drawn from wells within four[1] miles of the site. — 3.3.1.2
- Identify nearest well within four[1] miles that is a source of drinking water. — 2.4.1 & FIG. 1
- As precisely as possible, describe the geology and hydrogeology of the area (including names, thickness, types of material and depth from surface, including soils). — 1.5.1, 1.6.1.3, FIG 5, & FIG. 7
- O Discuss any evidence of discontinuities between aquifers/aquitards within four[1] miles of the site. — *
- O Discuss any evidence of interconnections between aquifers within two[1] miles of the site. — *
- O Estimate annual net precipitation (by summing monthly values). — TABLE 2

[1]Distance based on proposed revisions to the HRS.

*: TO BE ADDRESSED IN SI OR RI/FS STUDIES

	REFERENCE (PAGE NO.)
O Discuss soil or geological conditions that might inhibit or facilitate ground water migration.	1.6.1.3
O Discuss, if possible, alternative water supply sources that are readily available.	2.4.1
• **Discuss any qualitative, quantitative, or circumstantial (e.g., closure of a well) evidence of a release to ground water.**	3.2.1

VI. ADDITIONAL FACTORS BASED ON PROPOSED REVISIONS TO THE HRS FOR THE GROUND WATER PATHWAY

O Identify if any sources lie within a Wellhead Protection Area as designated according to Section 1428 of the Safe Drinking Water Act.[1]	*
O Determine if the site is located in an area of karst terrain.	*

VII. SURFACE WATER PATHWAY

O Discuss the probable surface runoff patterns from the site to surface waters.	1.6.1.2
O Discuss whether the facility is located in surface water (e.g., marsh, swamp) or a floodplain.	1.6.1.2
O From a topographic map, calculate and discuss the slope between the point where hazardous substances begin to migrate and the probable point of entry into the surface water body.	1.6.1.2
O Describe surface water bodies of concern within the 15[2]-mile target distance limit.	1.6.1.2

[1]Factor based on proposed revisions to the HRS.
[2]Distance based on proposed revisions to the HRS.

*: TO BE ADDRESSED IN SI OR RI/FS STUDIES

REFERENCE (PAGE NO.)

- O Identify if surface water drawn from intakes within 15[1] miles from the probable point of entry is used for any of the following purposes:
  - irrigation of commercial food or forage crops (5-acre minimum) — (NO)
  - commercial livestock watering — (NO)
  - commercial food preparation — (NO)
  - commercial/industrial purposes other than drinking water, recreation, or fishery uses — 3.3.1.1
- Identify and discuss the nature and size of any of the following targets within the 15[1]-mile target distance limit:
  - population served by intakes drawing drinking water — 3.3.1.1
  - population associated with recreational use[2] — 3.3.1.1
  - sensitive environments (including fresh water or coastal wetlands [5-acre minimum] and critical habitats of a federally-designated endangered species) — 1.4.1
  - economically important resources (e.g., shellfish)[2] — 3.3.1.1
- Discuss any qualitative, quantitative, or circumstantial (e.g., contaminated surface water downstream of the site) evidence of a release to surface water. — 3.2.1

VIII. ADDITIONAL FACTORS BASED ON PROPOSED REVISIONS TO THE HRS FOR THE SURFACE WATER PATHWAY

- O From a topographic map, estimate the size (in acres) of the upgradient drainage area from the site. — (none) 1.6.1.2 & FIG. 7

[1]Distance based on proposed revisions to the HRS.
[2]Factor based on proposed revisions to the HRS.

REFERENCE (PAGE NO.)

- O Discuss the average annual stream-flow in the vicinity of the site. — 2.4.1
- O Discuss any biological sampling that might assess the food chain and recreational impacts. — NA
- O If fisheries (recreational or commercial) exist within the 15-mile target distance limit, assess each of the following:
  - acreage of oceans, large lakes, or rivers — 3.3.1.1
  - acreage of ponds or lakes fed by low-volume streams — NA

IX. ADDITIONAL FACTORS BASED ON PROPOSED REVISIONS TO THE HRS FOR THE AIR PATHWAY

- • Determine the population within a four-mile radius of the site (allocated in 1/4, 1/2, 1, 2, 3, 4-mile ring distances). — 1.3.1 & FIG. 1
- • Determine the distance to the nearest residence or regularly occupied building as measured from any onsite emission source. If onsite, determine how many residents or workers occupy the building. — 1.3.1
- O Determine the distance to the following land uses within a four-mile radius:
  - commercial/industrial — N.A., 1.3.1
  - residential — —"—
  - schools — —"—
  - parks — —"—
  - agricultural — —"—
- O Identify, locate, and discuss any nearby fresh water or coastal wetlands (5-acre minimum) or critical habitats of federally-designated endangered species that could be affected by a release. — 1.4.1

REFERENCE (PAGE NO.)

- **Discuss any quantitative or qualitative evidence of a release to air.** — 3, 4. 1. 1

O Determine particulate source mobility value (see Figure 2-3 in the proposed rule). — *

X. ADDITIONAL FACTORS BASED ON PROPOSED REVISIONS TO THE HRS FOR THE ONSITE EXPOSURE PATHWAY

- **Discuss any qualitative or quantitative evidence of onsite soil contamination. If there is no evidence of onsite soil contamination, then it is not necessary to answer the following questions.** — 2.3.1, 3.4.1.1, & FIG. 9

O Determine the onsite population (i.e., people living or attending school or day care on contaminated property). — 1.3.1

O Determine the population within one mile of the site (i.e., individuals who live or go to school within one mile of the site). — 1.3.1

O Describe any restrictions/barriers on accessibility to onsite waste materials. — -NA-

O Identify and discuss any onsite terrestrial sensitive environments. — 1.4.1

O Describe the area of surface contamination (both on and off site). — 1.6.1.1, 3.2.1, & 3.4.1.1

* TO BE addressed in SI OR RI/FS studies

NAVY FIELD STATION, WALES

9345.0-01
OSWER DIRECTIVE
PA CHECKLIST

	REFERENCE (PAGE NO.)
I. SITE BACKGROUND INFORMATION	
O Site name	FORM 2070
O Site number	NA
O Address	FORM 2070
O Coordinates (latitude and longitude in degrees, minutes, seconds, or township and range numbers)	— " —
O Directions to site (starting from nearest public road)	— " —
II. RESPONSIBLE PARTIES	
O Owner	— " —
O Address (current and past, if available)	— " —
O Telephone number	— " —
O Operator	— " —
O Operator's address	— " —
O Operator's telephone number	— " —
O Type of ownership (specify private, Federal, state, county, municipal)	— " —
III. OVERVIEW/SITE HISTORY	
O Site operations	
- history/years of operation	1.2.2
- nature of operations (manufacturing, waste disposal, storage, etc.)	1.2.2
O Description of any emergency or remedial actions that have occurred at the site	2.3.2

	REFERENCE (PAGE NO.)
O Description of any prior spills	2, 3, 2 3, 5
O Description of relevant permits	2.2.2
O Description of existing sampling and analytic data and brief summary of data quality	- NA -
O Evaluate the data quality for the following:	
- sample objectives	- NA -
- age/comparability	- " -
- analytical methods	- " -
- detection limits	- " -
- QA/QC	- " -

IV. WASTE CONTAINMENT/HAZARDOUS SUBSTANCE IDENTIFICATION

O Describe as specifically as possible the methods of hazardous substance disposal, storage, or handling.	3.5.1.1 (SITE 2) 2.4.2
• Describe the condition/integrity of each storage disposal feature or structure. Evaluate from the perspective of each migration pathway (e.g., ground water pathway - nonexistent natural or synthetic liner, corroding underground storage tank; surface water - inadequate freeboard, corroding bulk tanks; air - unstabilized slag piles, leaking drums, etc.).	3.5.1.1 3.5.1.2 } (SITE)
O Describe any secondary containment features/structures (such as run-on diversion system, leachate collection systems).	NA
O Describe size/volume of all features/structures that contain hazardous substances or volume of previously reported spills.	3.5.1.1 (SITE 2) 3.5.2.1 (SITE 3) 3.5.3.1 (SITE 4
O Describe as precisely as possible existing permits and the types of hazardous substances handled on site.	{ 2.2.2, 2.5.2 (GEN. 2.2.2, 2.5.2

	REFERENCE (PAGE NO.)
O Discuss soil or geological conditions that might inhibit or facilitate ground water migration.	1.6.2.3
O Discuss, if possible, alternative water supply sources that are readily available.	2.4.2
• **Discuss any qualitative, quantitative, or circumstantial (e.g., closure of a well) evidence of a release to ground water.**	3.2.2

VI. ADDITIONAL FACTORS BASED ON PROPOSED REVISIONS TO THE HRS FOR THE GROUND WATER PATHWAY

O Identify if any sources lie within a Wellhead Protection Area as designated according to Section 1428 of the Safe Drinking Water Act.[1]	- NA -
O Determine if the site is located in an area of karst terrain. Most likely Not	*

VII. SURFACE WATER PATHWAY

O Discuss the probable surface runoff patterns from the site to surface waters.	3.2.2
O Discuss whether the facility is located in surface water (e.g., marsh, swamp) or a floodplain.	1.6.2.1
O From a topographic map, calculate and discuss the slope between the point where hazardous substances begin to migrate and the probable point of entry into the surface water body.	3.2.2
O Describe surface water bodies of concern within the 15[2]-mile target distance limit.	3.3.1.1 3.3.2.1

[1]Factor based on proposed revisions to the HRS.
[2]Distance based on proposed revisions to the HRS.

* To be addressed in SI or RI/FS Studies

REFERENCE (PAGE NO.)

- Discuss any records or manifests which provide data on volume of hazardous substances handled/disposed/released on site. — 2.3.2 & APPENDIX A

V. GROUND WATER PATHWAY

- Determine if ground water within four[1] miles of the site is used for any of the following purposes (if the answer to this is "unusable," then it is not necessary to answer the following questions).
  - private or public drinking water source —
  - commercial —
  - irrigation (5-acre minimum) —
  - industrial —
  - not used, but usable — 3.2.2
  - unusable —
- Determine the population drinking ground water drawn from wells within four[1] miles of the site. — 3.2.2
- Identify nearest well within four[1] miles that is a source of drinking water. — 3.2.2
- As precisely as possible, describe the geology and hydrogeology of the area (including names, thickness, types of material and depth from surface, including soils). — FIG 5, FIG 7, 1.6, 2.3 & 1.5.1
- O Discuss any evidence of discontinuities between aquifers/aquitards within four[1] miles of the site. — *
- O Discuss any evidence of interconnections between aquifers within two[1] miles of the site. — *
- O Estimate annual net precipitation (by summing monthly values). — ~~P.2.2~~ TABLE 2

[1]Distance based on proposed revisions to the HRS.

* TO BE ADDRESSED IN SI OR RI/FS

REFERENCE (PAGE NO.)

- O Identify if surface water drawn from intakes within 15[1] miles from the probable point of entry is used for any of the following purposes:
  - irrigation of commercial food or forage crops (5-acre minimum) — 3.3.2.1
  - commercial livestock watering — -11-
  - commercial food preparation — -11-
  - commercial/industrial purposes other than drinking water, recreation, or fishery uses — -11-
- Identify and discuss the nature and size of any of the following targets within the 15[1]-mile target distance limit:
  - population served by intakes drawing drinking water — 3.3.2.1
  - population associated with recreational use[2] — NA
  - sensitive environments (including fresh water or coastal wetlands [5-acre minimum] and critical habitats of a federally-designated endangered species) — 1.4.1
  - economically important resources (e.g., shellfish)[2] — NA
- Discuss any qualitative, quantitative, or circumstantial (e.g., contaminated surface water downstream of the site) evidence of a release to surface water. — 3.2.2

VIII. ADDITIONAL FACTORS BASED ON PROPOSED REVISIONS TO THE HRS FOR THE SURFACE WATER PATHWAY

- O From a topographic map, estimate the size (in acres) of the upgradient drainage area from the site. — 3.2.2 ~~3.2.3.1~~

[1]Distance based on proposed revisions to the HRS.
[2]Factor based on proposed revisions to the HRS.

	REFERENCE (PAGE NO.)
O Discuss the average annual stream-flow in the vicinity of the site.	2.4.2
O Discuss any biological sampling that might assess the food chain and recreational impacts.	NA
O If fisheries (recreational or commercial) exist within the 15-mile target distance limit, assess each of the following:	
- acreage of oceans, large lakes, or rivers	NA, 3.3.1.1
- acreage of ponds or lakes fed by low-volume streams	*

IX. ADDITIONAL FACTORS BASED ON PROPOSED REVISIONS TO THE HRS FOR THE AIR PATHWAY

• Determine the population within a four-mile radius of the site (allocated in 1/4, 1/2, 1, 2, 3, 4-mile ring distances).	1.3.2
• Determine the distance to the nearest residence or regularly occupied building as measured from any onsite emission source. If onsite, determine how many residents or workers occupy the building.	NA
O Determine the distance to the following land uses within a four-mile radius:	
- commercial/industrial	NO
- residential	1.3.2
- schools	1.3.2
- parks	1.3.2
- agricultural	NO
	NO
O Identify, locate, and discuss any nearby fresh water or coastal wetlands (5-acre minimum) or critical habitats of federally-designated endangered species that could be affected by a release.	1.4.1

* To be addressed in SI OR RI/FS reports

REFERENCE (PAGE NO.)

- **Discuss any quantitative or qualitative evidence of a release to air.** — 3.5.1.1
- O Determine particulate source mobility value (see Figure 2-3 in the proposed rule). — *

X. ADDITIONAL FACTORS BASED ON PROPOSED REVISIONS TO THE HRS FOR THE ONSITE EXPOSURE PATHWAY

- **Discuss any qualitative or quantitative evidence of onsite soil contamination. If there is no evidence of onsite soil contamination, then it is not necessary to answer the following questions.** — 3.5.1.2 & 3.5.2.1
- O Determine the onsite population (i.e., people living or attending school or day care on contaminated property). — 1.3.2
- O Determine the population within one mile of the site (i.e., individuals who live or go to school within one mile of the site). — 1.3.2
- O Describe any restrictions/barriers on accessibility to onsite waste materials. — *
- O Identify and discuss any onsite terrestrial sensitive environments. — 1.8.2 & 3.5.3.1
- O Describe the area of surface contamination (both on and off site). — 3.5.1, 3.5.2, & 3.5.3

* To be addressed in SI or RI/FS studies

White Alice Site, Northeast Cape, St. Lawrence Island, AK

~~9345.0-01~~
OSWER DIRECTIVE
PA CHECKLIST

	REFERENCE (PAGE NO.)
I. SITE BACKGROUND INFORMATION	
O Site name	Form 2070
O Site number	NA
O Address	Form 2070
O Coordinates (latitude and longitude in degrees, minutes, seconds, or township and range numbers)	-11-
O Directions to site (starting from nearest public road)	-11-
II. RESPONSIBLE PARTIES	
O Owner	-11-
O Address (current and past, if available)	-11-
O Telephone number	-11-
O Operator	-11-
O Operator's address	-11-
O Operator's telephone number	-11-
O Type of ownership (specify private, Federal, state, county, municipal)	-11-
III. OVERVIEW/SITE HISTORY	
O Site operations	
- ~~history~~/years of operation	1.2.3
- nature of operations (manufacturing, waste ~~disposal,~~ storage, etc.)	1.2.3
O Description of any emergency or remedial actions that have occurred at the site	4.0

REFERENCE (PAGE NO.)

- O Description of any prior spills — 3.6
- O Description of relevant permits — 2.2.3
- O Description of existing sampling and analytic data and brief summary of data quality — APPNDX C
- O Evaluate the data quality for the following:
  - sample objectives — -"-
  - age/comparability — -"-
  - analytical methods — -"-
  - detection limits — -"-
  - QA/QC — -"-

IV. WASTE CONTAINMENT/HAZARDOUS SUBSTANCE IDENTIFICATION

- O Describe as specifically as possible the methods of hazardous substance disposal, storage, or handling. — 2.4.3, 2.3.3, & FIG. 4, 3.6
- • **Describe the condition/integrity of each storage disposal feature or structure. Evaluate from the perspective of each migration pathway (e.g., ground water pathway - nonexistent natural or synthetic liner, corroding underground storage tank; surface water - inadequate freeboard, corroding bulk tanks; air - unstabilized slag piles, leaking drums, etc.).** — 3.6.2.1, 3.6.3.1
- O Describe any secondary containment features/structures (such as run-on diversion system, leachate collection systems). — NA
- O Describe size/volume of all features/structures that contain hazardous substances or volume of previously reported spills.
- O Describe as precisely as possible existing permits and the types of hazardous substances handled on site. — 2.4.3

3.6.1.1 (SITE 5)
3.6.2.1 (SITE 6)
3.6.3.1 (SITE 7)
3.6.4.1 (SITE 8)
2.3.3
TABLE 3, TABLE 5

REFERENCE (PAGE NO.)

- Discuss any records or manifests which provide data on volume of hazardous substances handled/disposed/released on site. — NONE

V. GROUND WATER PATHWAY

- Determine if ground water within four[1] miles of the site is used for any of the following purposes (if the answer to this is "unusable," then it is not necessary to answer the following questions). — 2.4.3 & 3.3.3.2
  - private or public drinking water source — -11-
  - commercial — -11-
  - irrigation (5-acre minimum) — -11-
  - industrial — -11-
  - not used, but usable — -11-
  - unusable — -11-
- Determine the population drinking ground water drawn from wells within four[1] miles of the site. — -11-
- Identify nearest well within four[1] miles that is a source of drinking water. — -11-
- As precisely as possible, describe the geology and hydrogeology of the area (including names, thickness, types of material and depth from surface, including soils). — 1.5.2 & FIG 6
- O Discuss any evidence of discontinuities between aquifers/aquitards within four[1] miles of the site. — *
- O Discuss any evidence of interconnections between aquifers within two[1] miles of the site. — *
- O Estimate annual net precipitation (by summing monthly values). — 1.7.2

[1]Distance based on proposed revisions to the HRS.

* TO BE ADDRESSED IN SI OR RI/FS

	REFERENCE (PAGE NO.)
O Discuss soil or geological conditions that might inhibit or facilitate ground water migration.	3.2.3.(1&2) & 1.6.3.3
O Discuss, if possible, alternative water supply sources that are readily available.	2.4.3
• Discuss any qualitative, quantitative, or circumstantial (e.g., closure of a well) evidence of a release to ground water.	3.2.3.2
VI. ADDITIONAL FACTORS BASED ON PROPOSED REVISIONS TO THE HRS FOR THE GROUND WATER PATHWAY	
O Identify if any sources lie within a Wellhead Protection Area as designated according to Section 1428 of the Safe Drinking Water Act.[1]	*
O Determine if the site is located in an area of karst terrain.	*
VII. SURFACE WATER PATHWAY	
O Discuss the probable surface runoff patterns from the site to surface waters.	3.2.3.1 & 1.6.3.2
O Discuss whether the facility is located in surface water (e.g., marsh, swamp) or a floodplain.	1.6.3.2 & FIG 8
O From a topographic map, calculate and discuss the slope between the point where hazardous substances begin to migrate and the probable point of entry into the surface water body.	VARIABLE, FIG 8
O Describe surface water bodies of concern within the 15[2]-mile target distance limit.	1.6.3.2

[1]Factor based on proposed revisions to the HRS.
[2]Distance based on proposed revisions to the HRS.

* To be addressed in SI OR RI/FS reports

REFERENCE (PAGE NO.)

- O Identify if surface water drawn from intakes within 15[1] miles from the probable point of entry is used for any of the following purposes:
  - irrigation of commercial food or forage crops (5-acre minimum) — NA
  - commercial livestock watering — NA
  - commercial food preparation — NA
  - commercial/industrial purposes other than drinking water, recreation, or fishery uses — NA
- Identify and discuss the nature and size of any of the following targets within the 15[1]-mile target distance limit:
  - population served by intakes drawing drinking water — 3.3.3.1
  - population associated with recreational use[2] — NONE
  - sensitive environments (including fresh water or coastal wetlands [5-acre minimum] and critical habitats of a federally-designated endangered species) — 1.4.2
  - economically important resources (e.g., shellfish)[2] — 3.3.3.1
- Discuss any qualitative, quantitative, or circumstantial (e.g., contaminated surface water downstream of the site) evidence of a release to surface water. — 4.0

VIII. ADDITIONAL FACTORS BASED ON PROPOSED REVISIONS TO THE HRS FOR THE SURFACE WATER PATHWAY

- O From a topographic map, estimate the size (in acres) of the upgradient drainage area from the site. — VARIABLE, FIG 8

[1]Distance based on proposed revisions to the HRS.
[2]Factor based on proposed revisions to the HRS.

REFERENCE (PAGE NO.)

- O Discuss the average annual stream-flow in the vicinity of the site. — 3.2.3.1
- O Discuss any biological sampling that might assess the food chain and recreational impacts. — *
- O If fisheries (recreational or commercial) exist within the 15-mile target distance limit, assess each of the following:
  - acreage of oceans, large lakes, or rivers — *
  - acreage of ponds or lakes fed by low-volume streams — *

IX. ADDITIONAL FACTORS BASED ON PROPOSED REVISIONS TO THE HRS FOR THE AIR PATHWAY

- • Determine the population within a four-mile radius of the site (allocated in 1/4, 1/2, 1, 2, 3, 4-mile ring distances). — NA
- • Determine the distance to the nearest residence or regularly occupied building as measured from any onsite emission source. If onsite, determine how many residents or workers occupy the building. — NA, 1.3.3
- O Determine the distance to the following land uses within a four-mile radius:
  - commercial/industrial — NONE, 1.3.3
  - residential — -11-
  - schools — -11-
  - parks — -11-
  - agricultural — -11-
- O Identify, locate, and discuss any nearby fresh water or coastal wetlands (5-acre minimum) or critical habitats of federally-designated endangered species that could be affected by a release. — 1,4,2 & FORM 2070

* To be addressed in SI or RI/FS reports.

REFERENCE (PAGE NO.)

- **Discuss any quantitative or qualitative evidence of a release to air.** — 3.6.1.2
- O Determine particulate source mobility value (see Figure 2-3 in the proposed rule). — *

X. ADDITIONAL FACTORS BASED ON PROPOSED REVISIONS TO THE HRS FOR THE ONSITE EXPOSURE PATHWAY

- **Discuss any qualitative or quantitative evidence of onsite soil contamination. If there is no evidence of onsite soil contamination, then it is not necessary to answer the following questions.** — 4.0
- O Determine the onsite population (i.e., people living or attending school or day care on contaminated property). — NA
- O Determine the population within one mile of the site (i.e., individuals who live or go to school within one mile of the site). — -"-
- O Describe any restrictions/barriers on accessibility to onsite waste materials. — 3.6
- O Identify and discuss any onsite terrestrial sensitive environments. — *
- O Describe the area of surface contamination (both on and off site). — 3.6.1.1 & 3.6.1.3

* To be addressed in SI OR RI/FS Studies.