UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

MAY 12 1999

Reply To
Attn Of: ECL-115

Kent W. Barkhau and Linda F. Behnken
403 Lincoln Street, Suite 237
Sitka, Alaska 99835

John W. Williams
500 Lincoln Street
Sitka, Alaska 99835

Alaska Trust Office
3601 C Street, Suite 800
Anchorage, Alaska 99503

Dean and Cindie Holtmann
4451 Wickersham Way
Wasilla, Alaska 99654

Re: Galankin Island Defense Site

The U.S. Environmental Protection Agency (EPA), through its contractor, Ecology & Environment, Inc. has completed the site inspection (SI) of the Galankin Island Defense Site. A copy of the report is enclosed. Based on the PA, EPA does not anticipate further investigation under the Federal Superfund Program.

If you have any questions, I can be reached at (206) 553-1808.

Sincerely,

Mark Ader
Site Assessment Manager
Environmental Assessment and
Cleanup Unit II

Enclosure
cc: Greg Light, ADEC, Fairbanks
~~Bob Chivvis, COE~~ BC 17 May 99
John Halverson, ADEC

ecology and environment
International Specialists in the Environment

1500 First Interstate Center, 999 Third Avenue
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

May 7, 1999

Mr. Mark Ader
Task Monitor
United States Environmental Protection Agency
1200 Sixth Avenue, Mail Stop ECL-115
Seattle, WA 98101

Re: Contract No. 68-W6-0008, Technical Direction Document No. 98-07-0021;
Galankin Island Defense (GID) Site Preliminary Assessment (PA)

Dear Mark:

Enclosed please find the PA Report completed for the GID Site located at Whale Island and Kayak Island near Sitka, Alaska. Results of the PA indicate the surface water pathway to be the pathway of greatest potential impact to receptors.

If you have any questions regarding this PA, please contact me at (206) 624-9537.

Sincerely,

Linda Foster

Linda Foster
START Project Leader

Enclosure

cc: Gary Sink, START Project Officer, EPA, Region 10, Seattle, WA (letter only)
David Byers, START Program Manager, E & E, Seattle, WA (letter only)
Ben Martich, START Project Manager, E & E, Anchorage, AK

Galankin Island Defense Site
Preliminary Assessment Report
Sitka, Alaska
TDD: 98-07-0021

Contract: 68-W6-0008
May 1999

Region 10

START

Superfund Technical Assessment and Response Team

Submitted To: Mark Ader, Task Monitor
U.S. Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101

GALANKIN ISLAND DEFENSE SITE
PRELIMINARY ASSESSMENT REPORT
SITKA, ALASKA

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ACRONYM LIST

Acronym	Definition
ADEC	Alaska Department of Environmental Conservation
ADFG	Alaska Department of Fish and Game
Army	United States Army
ATLO	Alaska Trust Land Office
DRO	diesel range organics
E & E	Ecology and Environment, Inc.
EPA	United States Environmental Protection Agency
GID Site	Galankin Island Defense site
IPHC	International Pacific Halibut Commission
mg/kg	milligrams per kilogram
NMFS	National Marine Fisheries Service
PA	Preliminary Assessment
PAHs	polynuclear aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PPE	probable point of entry
RRO	residual range organics
START	Superfund Technical Assessment and Response Team
TDL	target distance limit
TPHs	total petroleum hydrocarbons
USAED Alaska	United States Army Engineer District, Alaska
USCB	United States Census Bureau
USDOI	United States Department of Interior
USFWS	United States Fish and Wildlife Service

GALANKIN ISLAND DEFENSE SITE
PRELIMINARY ASSESSMENT REPORT
SITKA, ALASKA

1. INTRODUCTION

Ecology and Environment, Inc., (E & E) was tasked by the United States Environmental Protection Agency (EPA) to provide technical support for completion of a Preliminary Assessment (PA) at the Galankin Island Defense (GID) Site on Whale Island and Kayak Island near Sitka, Alaska. E & E completed PA activities under Technical Direction Document No. 98-07-0021, issued under EPA, Region 10, Superfund Technical Assessment and Response Team (START) Contract No. 68-W6-0008.

The specific goals for the GID PA, identified by the EPA, are to:

- Determine the potential threat to public health or the environment posed by the site;
- Determine the potential for a release of hazardous constituents into the environment; and
- Determine the potential for placement of the site on the National Priorities List.

Completion of the PA included reviewing existing site information, collecting receptor information within the range of site influence, determining regional characteristics, and conducting a site visit. This document includes a discussion of site background information (Section 2), a discussion of migration/exposure pathways and potential receptors (targets; Section 3), and a list of pertinent references (Section 4).

2. SITE BACKGROUND

2.1 SITE LOCATION

Site Name:	Galankin Island Defense Site	
CERCLIS ID No.:	AKSFN1002127	
Location:	Sitka, Alaska	
	Whale Island	Kayak Island
Latitude:	57°01′34″N	57°01′31″N
Longitude:	135°20′19″W	135°21′16″W
Legal Description:	Section 11, Township 56S, Range 63E, Copper River Meridian	
Congressional District:	Alaska	
Site Owners:	Kent W. Barkhau and Linda F. Behnken 403 Lincoln Street, Suite 237 Sitka, Alaska 99835 (907) 747-0695 The Alaska Trust Land Office (ATLO) 3601 C Street, Suite 800 Anchorage, Alaska 99503 (907) 269-7960 John W. Williams 500 Lincoln Street Sitka, Alaska 99835 Dean and Cindie Holtmann 4451 Wickersham Way Wasilla, Alaska 99654 (907) 376-0852	

Site Contacts:

Heather Gillihan
United States Army Engineer District, Alaska (USAED Alaska)
P.O. Box 898
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(907) 753-5656

Bob Chivvis
USAED Alaska
P.O. Box 898
Anchorage, Alaska 99506-0898
(907) 753-5782

John Halverson
Alaska Department of Environmental Conservation (ADEC)
555 Cordova Street
Anchorage, Alaska 99501
(907) 269-7545

2.2 SITE DESCRIPTION/OWNERSHIP HISTORY

The entire GID Site consisted of 140 acres of land on Passage, Kayak, Whale, McClellan, Beardslee, Galankin, and Bamboroshni Islands in Sitka Sound. The portion of the GID Site investigated under this PA includes Whale Island and Kayak Island near Sitka. Whale Island encompasses approximately 41 acres and is located approximately 1.5 miles south of Sitka in Sitka Sound. Kayak Island encompasses approximately 15.5 acres and is located approximately 1.75 miles south-southwest of Sitka in Sitka Sound. Sitka is located on the west coast of Baranof Island, Alaska, which fronts the Pacific Ocean. Sitka is 95 air miles southwest of Juneau and 185 miles northwest of Ketchikan (Figures 2-1 and 2-2).

The War Department obtained all of the islands of the GID Site in a land transfer with the United States Department of the Interior (USDOI) in 1943. The site was used by the United States Army (Army) for military defense of Fort Ray and the Naval Air Station in Sitka. Whale Island and Kayak Island were the only islands that received substantial improvements. The Army declared all of the islands excess in 1944 and transferred them back to the USDOI and Bureau of Land Management (USAED Alaska 1989).

Not correct. It was termed elephant shed b/c of type of construction

A military site drawing of Whale Island indicates 16 barracks buildings; a mess hall; four elephant sheds (the military termed large storehouses *elephant sheds*); a water tank; an administration building; and a powerhouse that included a vault transformer, a fuel tank, two gun emplacements, a dock, a recreation hall, and observation posts (USAED Alaska 1944a). The START did not find any specific file information regarding the elephant sheds or powerhouse; however, the fuel tank is described as an

aboveground unit that stored diesel (USAED Alaska 1998). An unimproved road was cleared through the center of the island. The road started at the dock on the north side of the island and continued south through three-fourths of the island, linking the improvements scattered across Whale Island. The Army also ran power lines to the island's buildings. File information indicates that poles and trees were used to string the power lines together (USAED Alaska 1944a). Figure 2-3 shows the approximate location where improvements were constructed on Whale Island.

A plot plan for Kayak Island indicates that two barracks buildings, a mess hall, two searchlight sheds, two storage sheds, two lookout posts, two fuel tanks, and a powerhouse were formerly located on this island. A 6-inch sewer line ran from the area of the barracks and mess hall to the shoreline of the island. A system of power lines also was constructed at the area of the barracks and mess hall. Kayak Island had no dock (USAED Alaska 1944b). The START did not find any more specific information concerning these improvements. Figure 2-3 shows the approximate location where improvements were constructed on Kayak Island.

Whale Island is divided into six lots. The ATLO owns Lot 1 and Lot 4; John W. Williams owns Lot 2; Cindie and Dean Holtmann own Lot 3 and Lot 5; and Kent W. Barkhau and Linda F. Behnken, husband and wife, own Lot 6 (Figure 2-4). Mr. Williams is the only individual who lives on Whale Island, and he operates a small sawmill business on his portion of the island. Kayak Island is owned by the ATLO, and no one lives on the island.

2.3 SITE OPERATIONS AND WASTE CHARACTERISTICS

The GID Site was used by the Army from 1943 to 1944, during World War II. No records of documented waste exist, but the current landowners commented on the amount of debris scattered around Whale Island. Ms. Behnken described the presence of dilapidated Quonset huts with many sharp edges (Behnken 1999). Mr. Holtmann told the START about an area of empty barrels and canisters located near Mr. Williams' sawmill (Holtmann 1999). The ATLO did not have any records regarding debris or possible hazardous substances on either island.

The START identified two possible sources of contamination at Whale Island from a review of available site file information. The former powerhouse is documented as containing a vaulted transformer. Electrical transformers from that era typically contain insulating oil that historically has contained polychlorinated biphenyls (PCBs). The volume of oil in the vaulted transformer is unknown. The fuel supply for the generator at the powerhouse is also a possible source of contamination. Whale Island also had an aboveground storage tank that contained diesel fuel near the island's dock. The tank

was removed, but fuel releases may have occurred when the tank was in place (USAED Alaska 1998).

The START identified one possible source of contamination at Kayak Island from the site file. The island had a powerhouse for the generation and distribution of electricity to other buildings on the island. Two fuel tanks of unknown size, which likely stored diesel fuel, were located near the powerhouse in the center of the island. No other information concerning the two islands was located in the file.

The entire GID Site was investigated under the USAED Alaska Defense Environmental Restoration Program in 1988. The findings of the investigation indicated that no evidence of hazardous/toxic waste, ordnance, or unsafe debris existed (USAED Alaska 1989). The USAED Alaska, Geotechnical Branch, conducted a PA of Whale Island in July 1998. Although the subsequent PA Report documents a significant amount of military debris on the island, suspected contamination was observed only at the former location of the aboveground storage tank. Field personnel collected one surface soil sample at the location of the former fuel tank. The sample was analyzed for benzene, toluene, ethylbenzene, and total xylenes; gasoline range organics; diesel range organics (DRO); residual range organics (RRO); and polynuclear aromatic hydrocarbons (PAHs). Only DRO (176 milligrams per kilogram [mg/kg]), RRO (460 mg/kg), dibenzo(a,h)anthracene (0.011 mg/kg), 2-methylnaphthalene (0.021 mg/kg), and naphthalene (0.012) were detected in the sample (USAED Alaska 1998).

2.4 START ACTIONS

The START conducted a site visit of Whale Island on April 1, 1999, and a site visit of Kayak Island on April 2, 1999. The START traveled to Sitka, Alaska, by commercial airline, and then traveled to both islands by private boat charter. Before traveling to Whale Island, the START met with Mr. Barkhau, owner of Lot 6 on Whale Island. Mr. Barkhau indicated locations of existing debris on the island to the START.

Whale Island is a volcanic island that is heavily forested with spruce trees and thick undergrowth beneath the canopy of trees. However, within the dense vegetation, the START managed to identify numerous former Quonset huts that are now in various stages of deterioration all over the island. Most of the huts have fallen over, leaving scrap metal on the ground and exposed wooden floors. The START also found the locations of the former powerhouse and fuel tank. The former fuel tank was located approximately 50 feet southwest of the dock. The area around the foundation is clear of vegetation and lies within a slight depression. The former powerhouse was located approximately 100 feet south of the dock. The powerhouse still has two walls standing, and the wooden floor remains intact. The START

found no trace of a generator or transformer at the foundation. An empty, unmarked, rusted 55-gallon drum also was discovered in the center of the island and is possibly a remnant of military operations.

One individual, Mr. Williams, lives on the island. He lives in the northwest portion of the island and operates a sawmill on his property. Mr. Williams has debris related to the operation of the sawmill scattered on his property. Most of the debris consists of scrap wood, but there are also sheets of plastic tarpaulin, an abandoned truck, and scrap metal. The START identified some containers of lubricating oils on Mr. Williams' property and believes that these are the canisters that Mr. Holtmann mentioned. The START attributes the containers to Mr. Williams and the operation of his sawmill.

The START also looked for transformers and utility poles that would have been associated with the transfer of electricity around the island. However, no transformers were observed and the only indications of utility poles were fallen trees that had insulators bored through them. No other potential military debris was discovered on Whale Island.

Kayak Island is approximately one-third the size of Whale Island, but has characteristics very similar to Whale Island. The island also is volcanic in origin and densely forested with thick undergrowth. The START identified a smaller amount of debris on the island, compared to Whale Island. Two lookout posts are situated on the west edge of the island, along with a small amount of wooden, unidentifiable debris nearby. The START was unable to identify the location of the former powerhouse and fuel tanks because of the heavy undergrowth and the absence of visible debris. No contaminant sources were identified on Kayak Island.

The START collected four surface soil samples on Whale Island. Surface soil sample No. 99040001 was located in the center of the island where the START found a rusted 55-gallon drum (Attachment A, Photograph 1). Surface soil sample No. 99040002 was located at the foundation of the former powerhouse building in the north central portion of the island (Attachment A, Photograph 3). Surface soil sample Nos. 99040003 and 99040004 were located at the foundation of the former aboveground storage tank near the northern tip of the island (Attachment A, Photographs 4 and 5). Figure 2-5 shows the location of the four surface soil samples. The START did not collect surface soil samples on Kayak Island because no observed contamination was present, the island has no inhabitants, and no individuals utilize the island.

Each sample was collected with a dedicated stainless steel spoon between 0 and 6 inches below ground surface. Each sample was analyzed for PAHs (EPA Method 8270), PCBs (EPA Method 8082), and total petroleum hydrocarbons (TPHs; EPA Method 3550/8015 Modified). The samples were shipped to On-Site Environmental, Inc., of Redmond, Washington, for analysis.

All four samples had TPH contamination above detection limits. No PAHs or PCBs were detected in any sample. Sample results are presented in Table 2-1. A list of all substances analyzed for is presented in Attachment B. The analytical data have not been validated. The analytical laboratory data forms are presented in Attachment C.

No other environmental concerns were noted by the START during the site visit. ADEC ecological checklists are presented in Attachment D.

Table 2-1

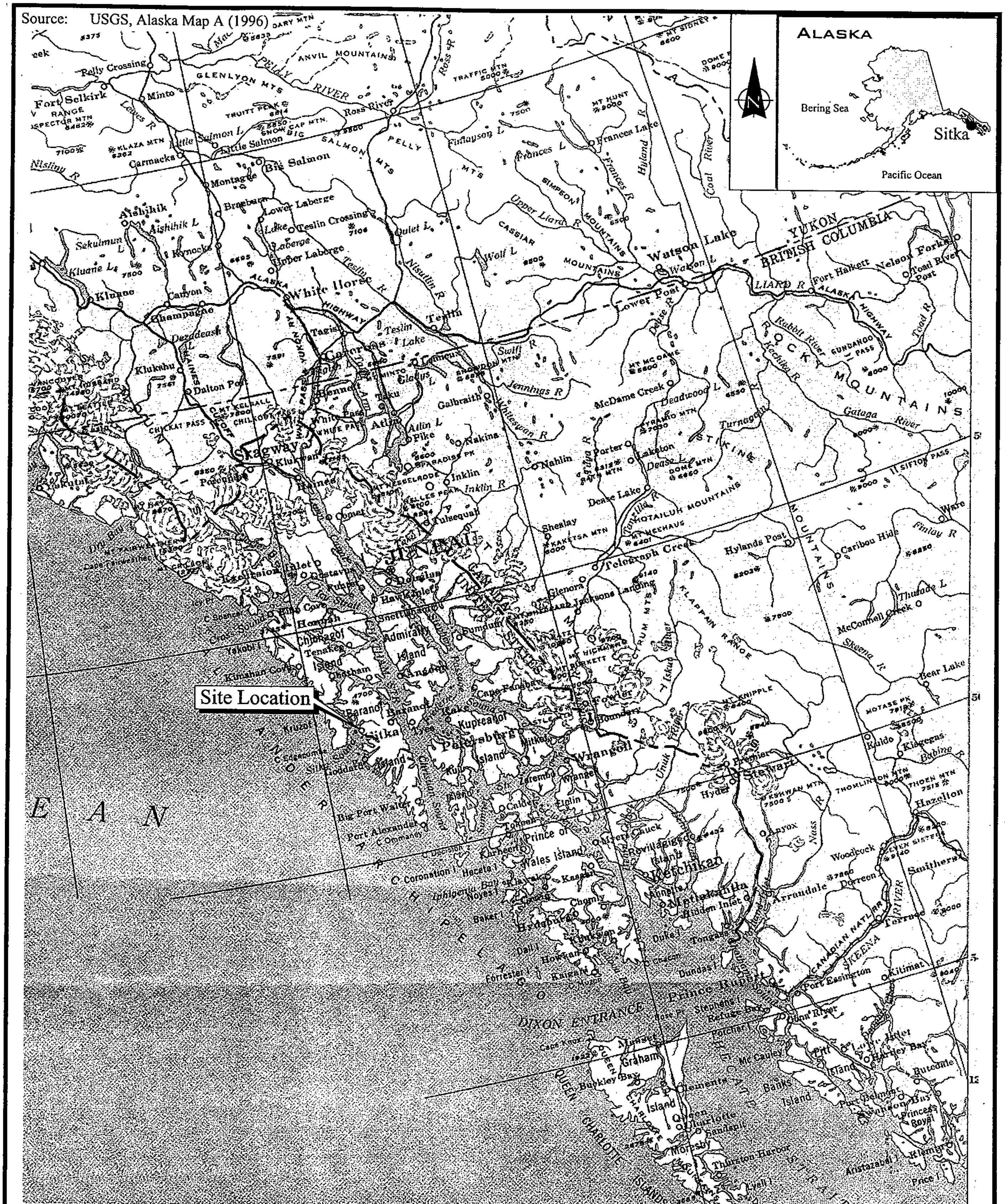
ANALYTICAL DATA SUMMARY
GALANKIN ISLAND DEFENSE SITE PRELIMINARY ASSESSMENT
SITKA, ALASKA

EPA Sample No.:	**99040001**	**99040002**	**99040003**	**99040004**
Total Petroleum Hydrocarbons (mg/kg)				
TPHs	**2,700**	**150**	**120**	**150**

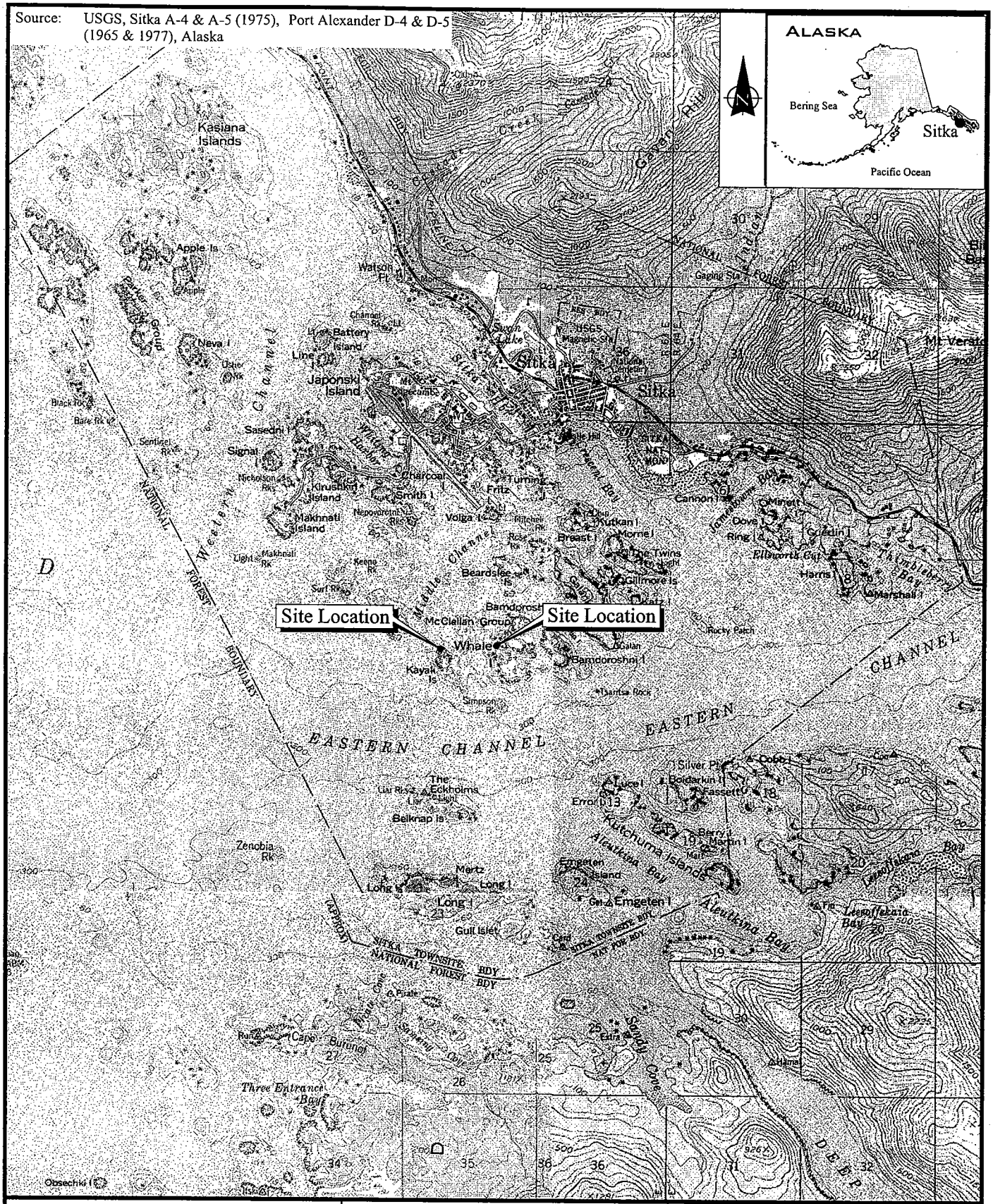
Note: Data have not been validated.
Bold text indicates concentrations above the detection limit.

Key:

EPA = United States Environmental Protection Agency.
mg/kg = Milligrams per kilogram.
TPHs = Total petroleum hydrocarbons.



ecology and environment, inc. International Specialists in the Environment Anchorage, Alaska	GALANKIN ISLAND DEFENSE SITE: KAYAK ISLAND & WHALE ISLAND Sitka, Alaska	Figure 2-1 SITE VICINITY MAP		
	0 40 80 Approximate Scale in Miles	Drawn: AES	DATE: 5/4/99	JOB NO. CG2120SAT0	Dwg.No. CG2120 2-1



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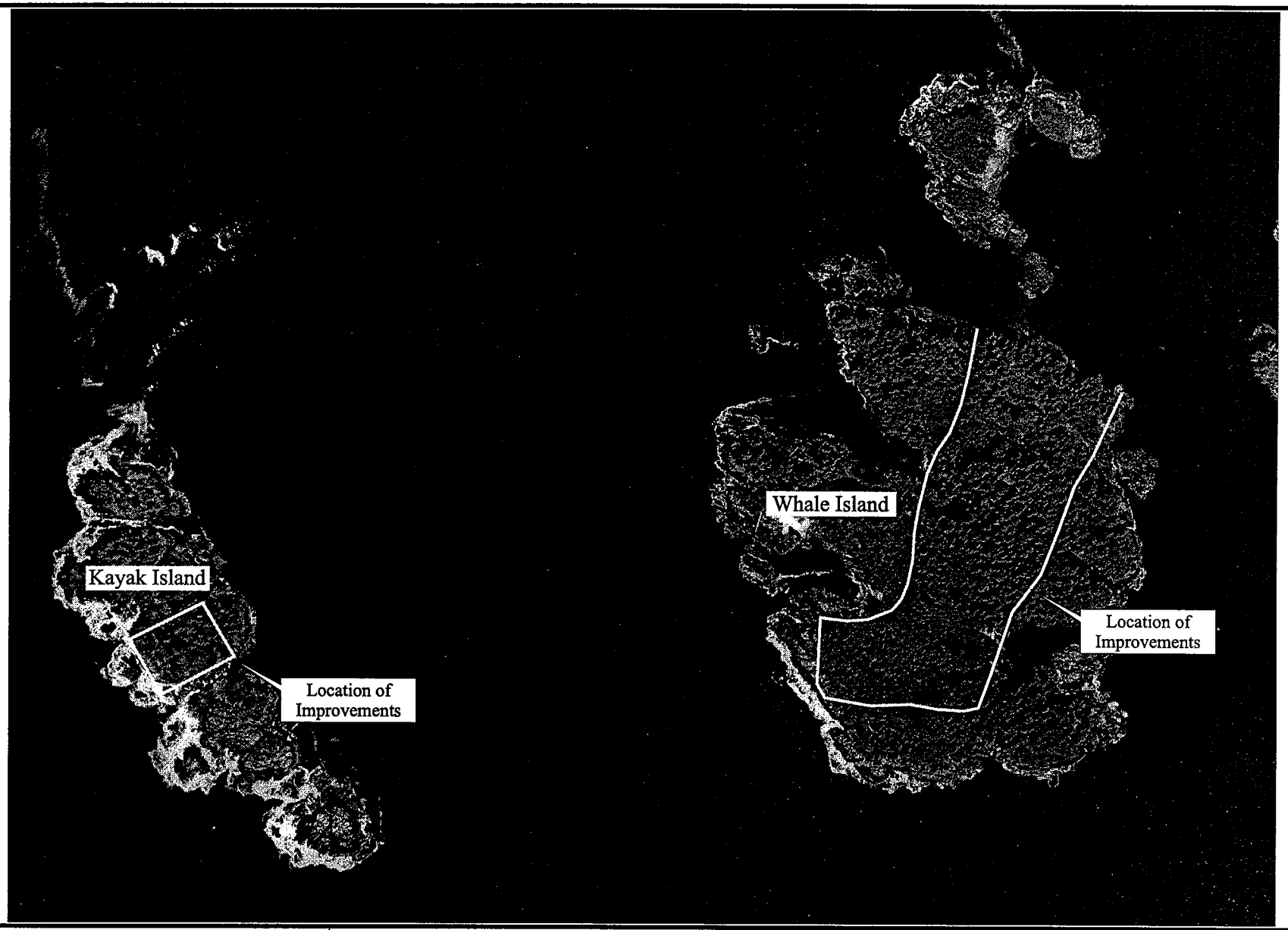
International Specialists in the Environment
Anchorage, Alaska

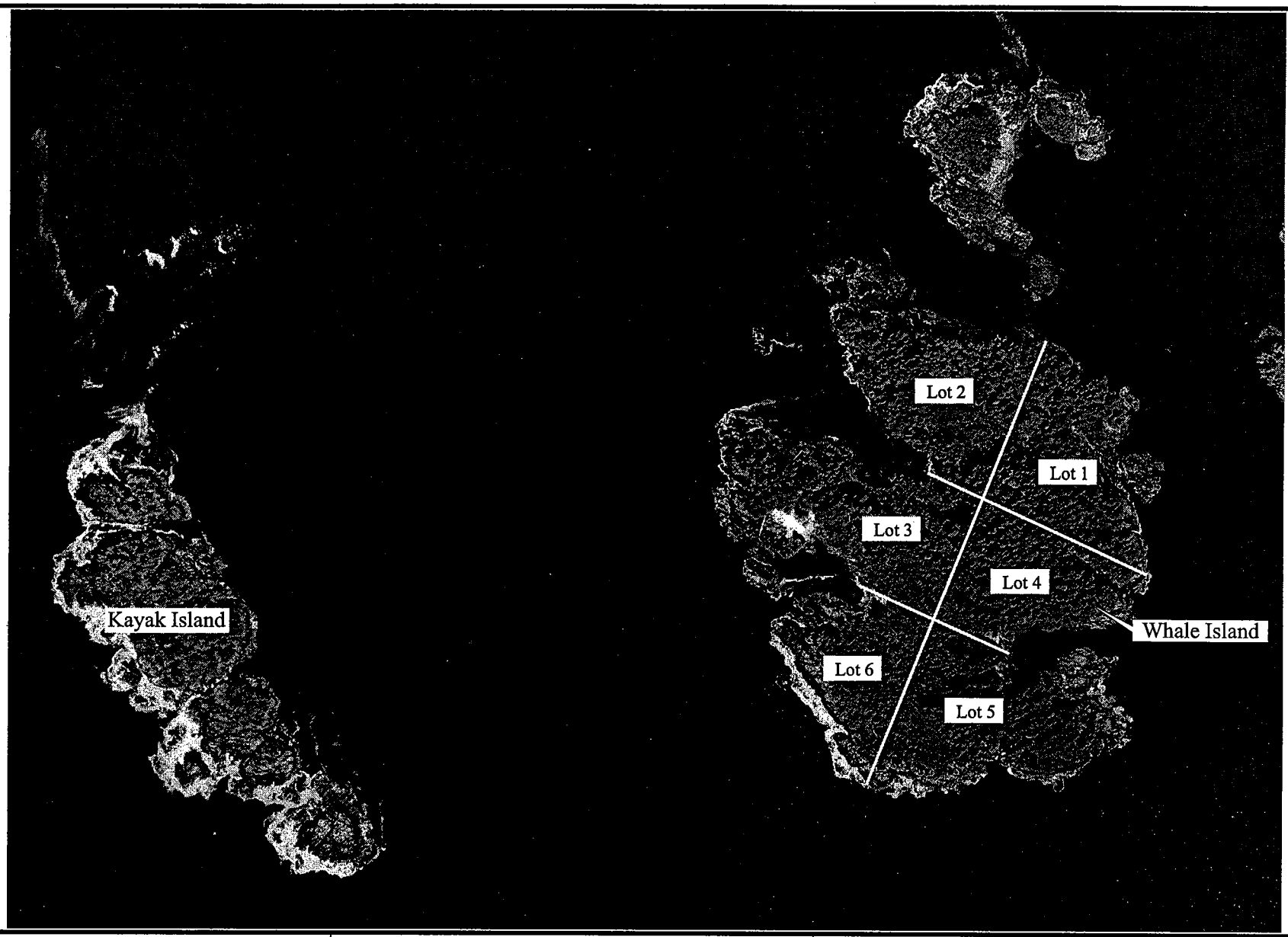
GALANKIN ISLAND DEFENSE SITE:
KAYAK ISLAND & WHALE ISLAND
Sitka, Alaska

Figure 2-2
SITE LOCATION MAP

Drawn:	DATE:	JOB NO.	Dwg.No.
AES	5/4/99	CG2120SAT0	CG2120 2-2



ecology and environment, inc. International Specialists in the Environment Anchorage, Alaska	GALANKIN ISLAND DEFENSE SITE: KAYAK ISLAND & WHALE ISLAND Sitka, Alaska	Figure 2-3 IMPROVEMENTS LOCATION MAP			
	Source: Aeromap U.S. Inc. 6-4-71 0 400 800 Approximate Scale in Feet	Drawn: AES	Date 5/4/99	Job No. CG2120SAT0	Dwg.No. CG2120 2-3



ecology and environment, inc.
International Specialists in the Environment
Anchorage, Alaska

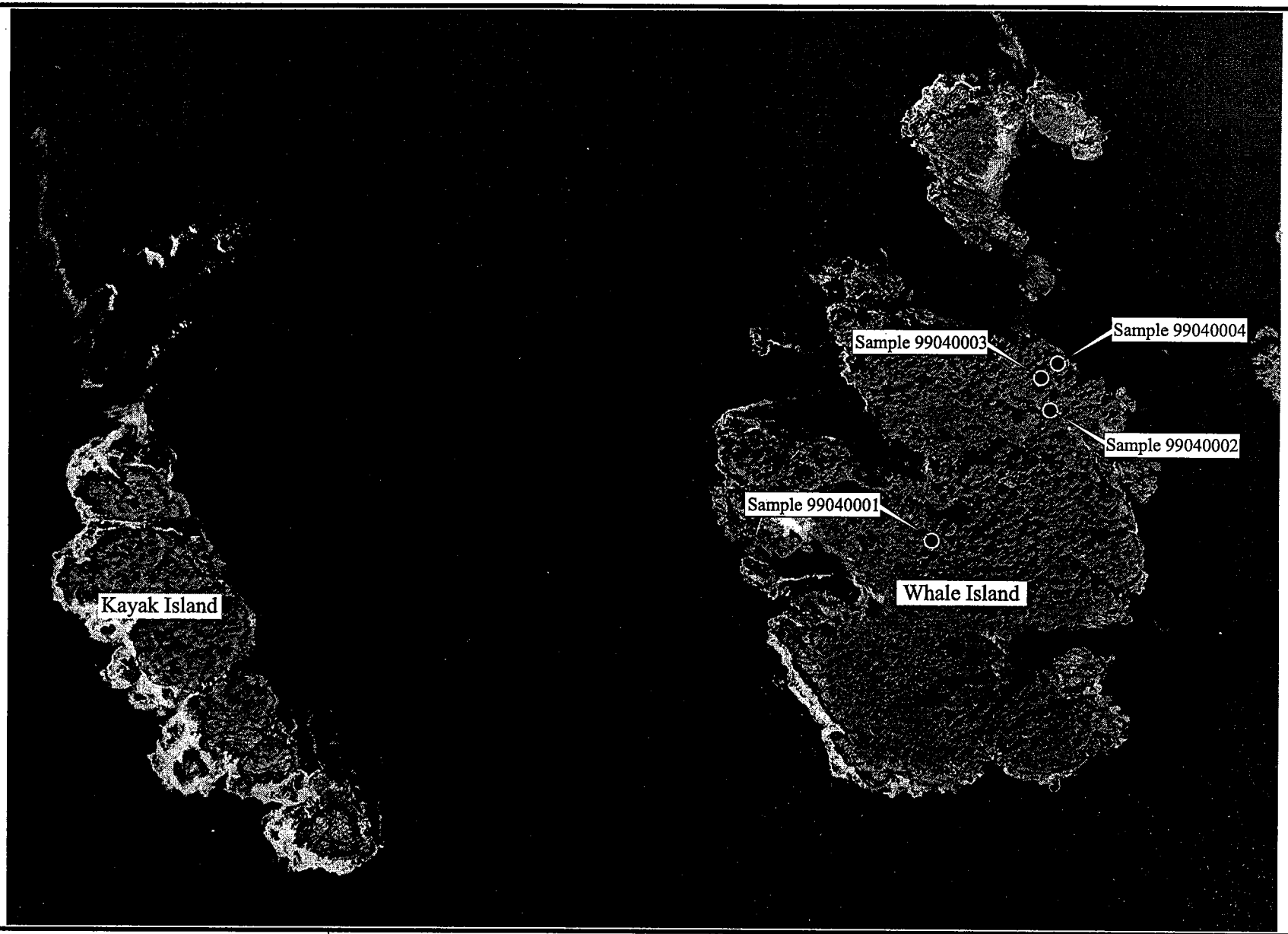
GALANKIN ISLAND DEFENSE SITE:
KAYAK ISLAND & WHALE ISLAND
Sitka, Alaska

Source: Aeromap U.S. Inc. 6-4-71

0 400 800
Approximate Scale in Feet

Figure 2-4
LOT LOCATION MAP

Drawn:	Date	Job No.	Dwg.No.
AES	5/4/99	CG2120SAT0	CG2120 2-4



ecology and environment, inc.
International Specialists in the Environment
Anchorage, Alaska

GALANKIN ISLAND DEFENSE SITE:
KAYAK ISLAND & WHALE ISLAND
Sitka, Alaska

Figure 2-5
SAMPLE LOCATION MAP

Source: Aeromap U.S. Inc. 6-4-71

0 400 800
Approximate Scale in Feet

Drawn:	Date	Job No.	Dwg.No.
AES	5/4/99	CG2120SAT0	CG2120 2-5

3. MIGRATION/EXPOSURE PATHWAYS AND TARGETS

The following sections describe migration/exposure pathways and potential targets within the site's range of influence (Figures 3-1 and 3-2).

3.1 GROUNDWATER MIGRATION PATHWAY

The START does not have information concerning groundwater conditions, such as depth to groundwater and the number or thickness of aquifers, because no reports concerning hydrogeology on Whale Island and Kayak Island were identified by the START. However, the START knows that no individuals on Whale Island and Kayak Island use groundwater as a drinking water source or for any other resource. Therefore, no targets are associated with the groundwater pathway for Whale Island and Kayak Island. Also, based on the distance between islands in Sitka Sound and the depth of Sitka Sound, it is possible that groundwater is not interconnected between islands. A brief overview of local geology follows.

The geologic setting of the Sitka area is complex and includes basin sedimentation, volcanic eruption, igneous intrusion, metamorphism, deformation caused by folding and faulting, and glaciation. Bedrock in the Sitka area consists predominantly of dark gray, fine- to medium-grained graywacke of early to late Cretaceous age. The bedrock generally strikes northwest and is vertical or dips steeply (Foster Wheeler 1996).

Deposits of Pleistocene glacial drift can be found overlying the bedrock in most areas. The glacial drift is predominantly a mixture of gravel, cobbles, and some boulders in a matrix of sand, silt, and clay. Volcanic ash, from a Holocene-age eruption of Mt. Edgecumbe on Kruzof Island, overlies the glacial drift in many areas. The ash comprises particles of pumice glass with fragments of basalt and andesite. Strata identified as Holocene-age elevated shoreline and delta deposits overlie the ash and preceding units in most shoreline areas. These deposits are typically sand and gravel with some cobbles and were formed when the sea level was as much as 35 feet higher than the current level. Muskeg deposits overlie the volcanic ash and elevated shoreline deposits in many areas. The muskeg beds are generally irregularly stratified layers of moss, water plants, and wood fragments and include silt and fine sand (Foster Wheeler 1996).

The mean annual precipitation in Sitka is 96.33 inches. Actual evapotranspiration is 22.64 inches; therefore, the net mean annual precipitation for Sitka is 73.69 inches (Patric and Black 1968).

The site is not within a wellhead protection area. Based on site conditions and soil sample results, the START does not suspect a release of hazardous substances to groundwater at the GID Site.

3.2 SURFACE WATER MIGRATION PATHWAY

The GID Site is densely forested with spruce trees. A thick organic mat, built up by a cyclical process of growth and decay on the forest floor, overlies the rock surfaces of Whale Island and Kayak Island. The highest elevation is generally in the center of each island. Runoff follows radial paths from the center of the islands to their shores. All surface water runoff from each island enters Sitka Sound. The farthest distance that surface water will travel on Whale Island before entering Sitka Sound is approximately 400 feet, and the farthest distance that surface water will travel on Kayak Island before entering Sitka Sound is approximately 200 feet.

The two main types of surface soils found in the Sitka area are soils formed on volcanic ash material and soils formed under forests of spruce and hemlock. Well-drained soils develop on thick deposits of volcanic ash, while loamy soils, found in forested areas, are characterized by a thin, gray surface layer over thick, black to brown subsurface layers (Foster Wheeler 1996).

Surface water on Whale Island passes through intermittent pools and streams before entering Sitka Sound. The START anticipates that the intermittent bodies of water vary in volume based on the time of year and rainfall recently received. The intermittent bodies of water usually are located in low areas where the organic mat has allowed water to pool or channel. The START assumes that the organic material is well-drained, allowing surface water to move through quickly. From the area where the START identified a drum on Whale Island, the START estimates that surface water travels approximately 200 feet northwest to Sitka Sound, the probable point of entry (PPE). From the location of the former fuel tank, the START estimates that surface water travels approximately 50 feet north and northwest before entering Sitka Sound, the PPE. From the location of the former powerhouse, the START estimates that surface water travels approximately 250 feet north before entering Sitka Sound, the PPE. For each island, the surface water pathway continues in Sitka Sound to the 15-mile target distance limit (TDL; Figure 3-2).

The START also estimates that the drainage area is 2 acres for the location of the drum, ½ acre for the location of the former fuel tank, and 2 acres for the location of the former powerhouse.

Whale Island has one resident. He obtains drinking water from areas of intermittently pooled

surface water (Barkhau 1999). The START does not know the exact locations of these areas and assumes that they change depending on the amount and frequency of rainfall. The other landowners also did not know the location of the resident's surface water collection points. Kayak Island has no residents. Surface water has no other resource usage on either island.

The two-year, 24-hour rainfall event for the Sitka area is 6 inches (Miller 1963). The START was unable to determine flood frequency on the two islands, but based on their location and small size, and on the frequent storms in the area, the START assumes that both islands receive high tidal events annually.

The Alaska Department of Fish and Game (ADFG) has tabulated the 1997 sport fishing harvest for saltwater and freshwater fisheries in Sitka Sound. The ADFG obtains sport fish harvest data for the entire state of Alaska by mail-in survey. The data are presented as the number of fish caught per species per area. The START identified the ADFG reporting areas of Sitka Sound within the surface water TDL. The reporting areas included Sitka Sound, Crescent Bay, Starrigavan Bay, Silver Bay, and the shorelines of the preceding bays. These reporting areas were located either completely within the TDL or partially within the TDL. If a reporting area was completely within the TDL, then the START used the total harvest amount for that area in calculating the sport fish harvest. If a reporting area was partially within the TDL, then the START estimated the percentage of the area that was within the TDL and multiplied this figure by the harvest total to arrive at the reporting quantity for calculating total sport fish harvest. In this survey, sport fish harvest is reported in number of fish, not pounds. The START obtained total pounds caught by multiplying the number of fish caught per species by the average size per species as reported in the commercial fishery or assumed by the START (next paragraph). The sport fish harvest is presented in Table 3-1 (Howe et al. 1998).

Commercial fishing is a major form of employment in the Sitka area and occurs throughout Sitka Sound. The ADFG manages the harvest of commercial fishing by dividing the catch by groundfish, shellfish, and salmon. The International Pacific Halibut Commission (IPHC) independently manages the harvest of pacific halibut. The START obtained statistical maps and harvest data for 1998 from each division of the ADFG that manages the respective species, and statistical maps and harvest data for 1997 from the IPHC. The ADFG designated that statistical areas 113-35, 113-36, 113-38, 113-41, 113-43, and 113-44 fall at least partially within the site's surface water TDL. Although the ADFG manages groundfish, shellfish, and salmon separately, the same statistical areas are used for all fish. IPHC statistical area 170 covers the site's surface water TDL for halibut. The percentage of each statistical area that lies within the GID Site's surface water TDL was estimated by the START. This percentage

then was multiplied by the harvest data obtained for each statistical area from the ADFG or the IPHC to arrive at the total commercial fish harvest within the site's surface water TDL. The data are reported in number of fish caught per species and the total pounds of fish caught per species. The commercial fish harvest is presented in Table 3-1 (Brylinsky 1999; Stouffer 1999; Rumble 1999; Gilroy 1999). The harvest of some species of shellfish in Sitka Sound is limited; therefore, the supporting data are regarded as confidential by the ADFG to protect commercial fishing of shellfish (Botelho 1999). However, sea cucumbers and geoducks have been included, and their numbers are reported in Table 3-1.

The National Marine Fisheries Service (NMFS) was contacted regarding critical habitats of marine animals. The NMFS lists haulouts on St. Lazaria Island, approximately 14 miles west of the GID site, as critical habitat for federally threatened Stellar sea lions (*Eumetopias jubatus*). The NMFS also reports that Stellar sea lions and endangered humpback whales (*Megaptera novaeangliae*) frequently are sighted in the waters of Sitka Sound (Pennoyer 1999). The START also contacted the United States Fish and Wildlife Service (USFWS) concerning threatened and endangered species and other sensitive environments within the site's surface water TDL. The USFWS reports that the candidate short-tailed albatross (*Phoebastria albatrus*) is a migratory bird for the region (Grossman 1999).

The START obtained USFWS wetlands maps of areas within the surface water TDL for measurement of eligible wetlands. The START measured approximately 6 linear miles of wetlands along the surface water pathway (USFWS 1979, 1986). Furthermore, the GID Site lies within the boundaries of the Tongass National Forest, and the St. Lazaria National Wildlife Refuge lies approximately 14 miles west of the GID Site.

Based on site conditions and soil sample results, the START does not suspect that a release of hazardous substances to surface water has occurred at the GID Site.

3.3 SOIL EXPOSURE PATHWAY

Whale Island has one resident. Ms. Behnken and Mr. Barkhau, property owners on the island, also visit the island regularly. Otherwise, Whale Island receives no traffic. Kayak Island has no individuals living on the island, and the START does not expect that anyone regularly visits the island.

Whale Island has a large amount of debris from former military activities, including a rusted 55-gallon drum and powerhouse foundation. The location of a former aboveground storage tank also was discovered. At Kayak Island, the START found less debris than at Whale Island. Although Kayak Island reportedly had two aboveground fuel tanks and a powerhouse, the START did not positively identify the locations of these structures because of the dense forest, heavy undergrowth, and lack of identifiable

debris.

The START collected four surface soil samples on Whale Island: one at the location of the 55-gallon drum, another at the foundation of the powerhouse, and two at the location of the former aboveground diesel storage tank. Sample results indicated contamination from TPHs, but not from PAHs or PCBs. No samples were collected on Kayak Island.

One individual lives on site at Whale Island. No schools or day care facilities are located within 200 feet of the site. Table 3-2 provides population data for individuals living within 1 mile of the GID Site.

Both islands lie within the Tongass National Forest. During the site visit, the START observed a nesting pair of bald eagles on Kayak Island. However, the USFWS reports no other sensitive environments on Whale Island and Kayak Island (Grossman 1999). No commercial agriculture or silviculture occurs on site.

Based on site conditions and surface soil sample results, the START suspects that there may be an area of contamination near the 55-gallon drum where sample 99040001 was collected. The START estimates the area of contaminated soil to be no greater than 100 square feet. Sample results indicated a TPH level of 2,700 mg/kg. However, contamination from TPH is not regulated by the Comprehensive Environmental Response, Compensation, and Liability Act.

3.4 AIR MIGRATION PATHWAY

The GID Site is densely forested with spruce trees. One individual lives on site at Whale Island. No individuals live on Kayak Island. The city of Sitka lies approximately 1.5 miles north of the GID Site.

The START requested information regarding threatened and endangered species and other sensitive environments within a 4-mile radius of the site from the USFWS. The USFWS lists the endangered American peregrine falcon (*Falco peregrinus anatu*) and the candidate short-tailed albatross as migratory birds for the region (Grossman 1999). The NMFS reports that Stellar sea lions and endangered humpback whales (*Megaptera novaeangliae*) are sighted frequently in the waters of Sitka Sound (Pennoyer 1999). Furthermore, Whale Island and Kayak Island lie within the boundaries of the Tongass National Forest.

The START obtained wetlands maps from the USFWS for areas within a 4-mile radius of the GID Site. Based on the wetlands maps, there is approximately 1,375 acres of eligible wetlands within 4 miles of the GID Site (USFWS 1979, 1986). Wetlands data are presented in Table 3-2. No commercial

agriculture, silviculture, or designated recreation area is known to exist within ½ mile of the site.

The START obtained population figures from within a 4-mile radius of Whale Island and Kayak Island from the United States Census Bureau (USCB). The population figures reported for Whale Island were used by the START because the total population figure was higher for Whale Island than for Kayak Island. A total of 6,724 people lives within 4 miles of Whale Island (USCB 1999). Table 3-2 provides population data for each target distance ring.

The Sitka area receives more than 96 inches of rain annually; therefore, the ground is almost always damp or saturated. Therefore, the START does not expect particulate matter from either Whale Island or Kayak Island to become airborne. Based on site conditions and soil sample results, the START does not suspect that a release of hazardous substances to the air pathway has occurred at the GID Site.

Table 3-1

ANNUAL FISH HARVEST WITHIN THE SITE'S RANGE OF INFLUENCE
GALANKIN ISLAND DEFENSE SITE PRELIMINARY ASSESSMENT
SITKA, ALASKA

SPORT HARVEST			
Species	**Number Harvested**	**Average Pound Per Fish**	**Pounds Harvested**
Chinook salmon (*Oncorhynchus tshawytscha*)	17,314	16.9 *	292,607
Coho salmon (*O. kisutch*)	18,969	7.2 *	136,577
Sockeye salmon (*O. nerka*)	1,002	3.5 *	3,507
Pink salmon (*O. gorbuscha*)	3,638	3.6 *	13,097
Chum salmon (*O. keta*)	1,951	8.1 *	15,803
Dolly Varden (*Salvelinus malma*)	572	3 **	1,716
Cutthroat trout (*O. clarki*)	5	2 **	10
Pacific halibut (*Hippoglossus stenolepis*)	10,579	40 **	423,160
Rockfish (*Sebastes* spp.)	7,346	2 **	14,692
Lingcod (*Ophiodon elongatus*)	3,945	6 **	23,670
Other	150	1 **	150
Total Sport Harvest			**924,989**
COMMERCIAL HARVEST			
Chinook salmon (*Oncorhynchus tshawytscha*)	11,800	16.9	199,420
Coho salmon (*O. kisutch*)	72,300	7.2	520,560
Sockeye salmon (*O. nerka*)	540	3.5	1,890
Pink salmon (*O. gorbuscha*)	3,384,000	3.6	12,182,400
Chum salmon (*O. keta*)	2,325,750	8.1	18,838,575
Rockfish (*Sebastes* spp.)	26,395	2 **	52,790
Pacific cod (*Gadus macrocephalus*)	1,719	6 **	10,314
Lingcod (*Ophiodon elongatus*)	11,434	6 **	68,604
Pacific halibut (*Hippoglossus stenolepis*)	67,500	40 **	2,700,000
Sea cucumber (*Parastichopus californicus*)	***	***	72,826
Geoducks (*Panope generosa*)	2,242	2	4,484
Other	70	1 **	70

Table 3-1

ANNUAL FISH HARVEST WITHIN THE SITE'S RANGE OF INFLUENCE
GALANKIN ISLAND DEFENSE SITE PRELIMINARY ASSESSMENT
SITKA, ALASKA

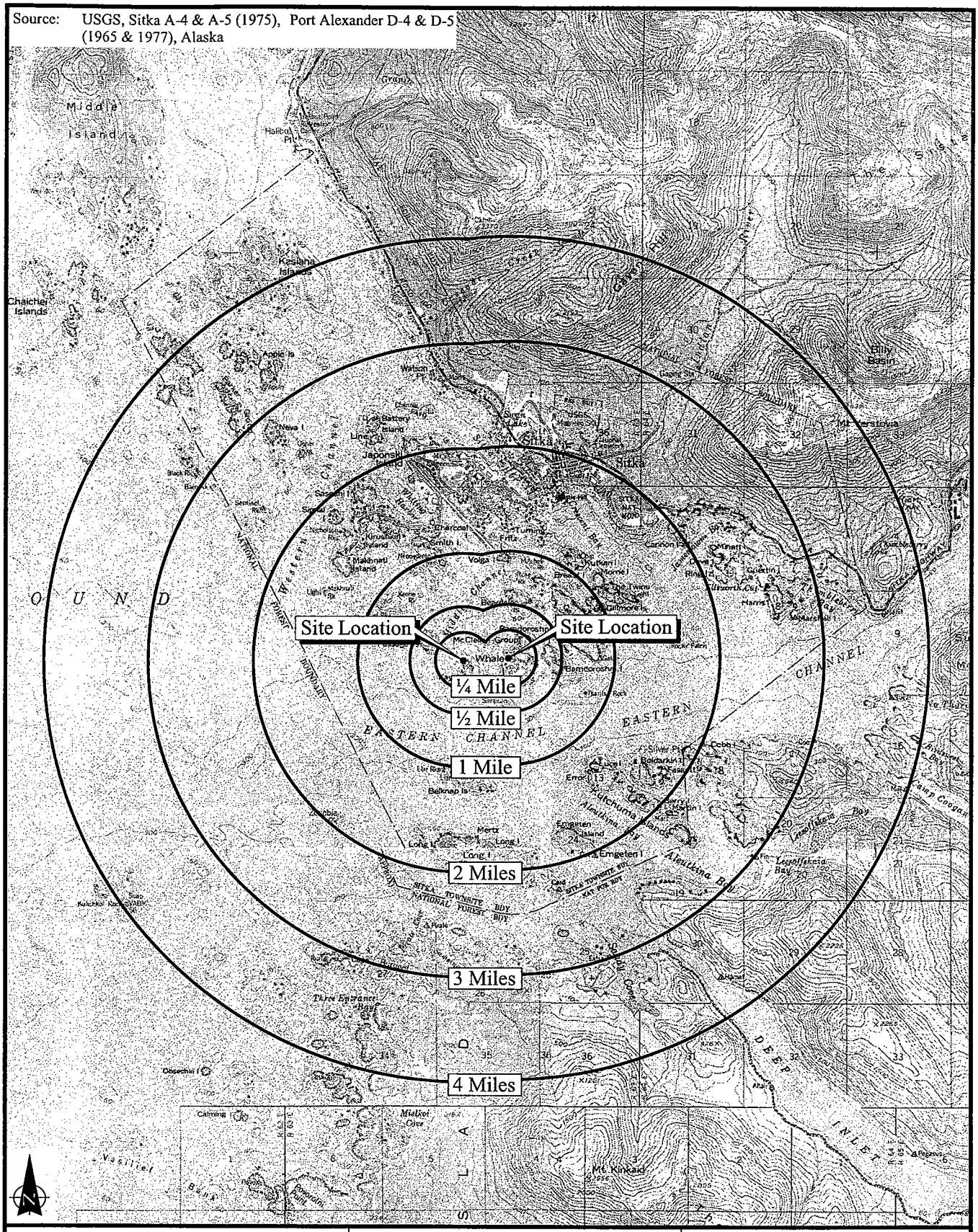
Total Commercial Harvest	**34,651,933**
Total Harvest	**35,576,922**

* Values obtained from the reported commercial harvest.
** Values estimated by the START.
*** Values not provided by the ADFG.

Table 3-2

POPULATION AND WETLANDS WITHIN A 4-MILE RADIUS
GALANKIN ISLAND DEFENSE SITE PRELIMINARY ASSESSMENT
SITKA, ALASKA

Distance Ring (Miles)	Population	Wetlands (Acreage)
On site	1	0
0-¼	0	0
¼-½	2	0
½-1	45	0
1-2	3,067	20
2-3	2,564	340
3-4	1,045	1,015
Total	**6,724**	**1,375**



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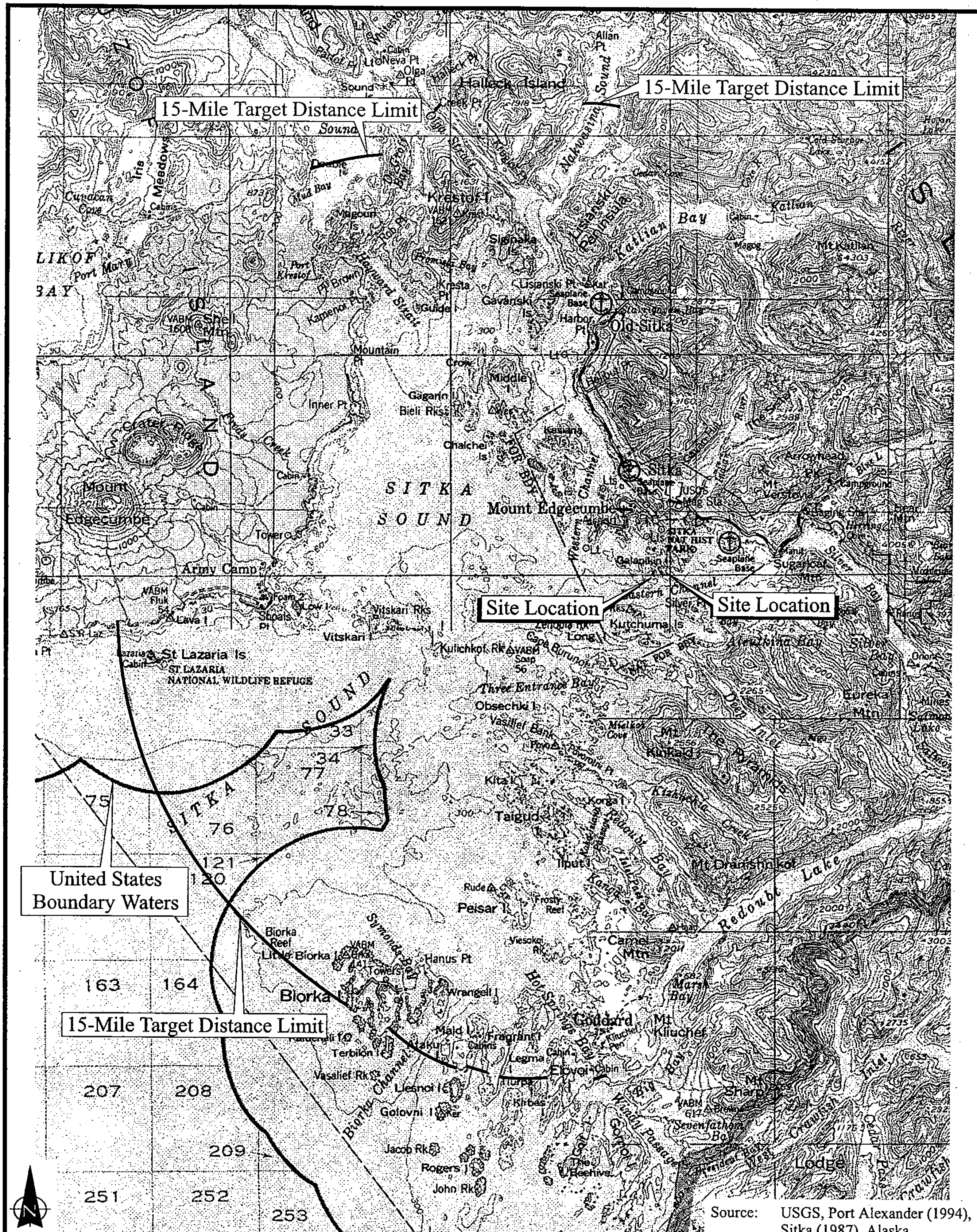
International Specialists in the Environment
Anchorage, Alaska

GALANKIN ISLAND DEFENSE SITE:
KAYAK ISLAND & WHALE ISLAND
Sitka, Alaska

Figure 3-1
4-MILE MAP

0 .5 1
Approximate Scale in Miles

Drawn:	DATE:	JOB NO.	Dwg.No.
AES	4/4/99	CG2120SAT0	CG2120 3-1



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Anchorage, Alaska

GALANKIN ISLAND DEFENSE SITE:
KAYAK ISLAND & WHALE ISLAND
Sitka, Alaska

Figure 3-2
15-MILE MAP

0 2.5 5
Approximate Scale in Miles

Drawn:	DATE:	JOB NO.	Dwg.No.
AES	5/4/99	CG2120SAT0	CG2120 3-2

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ATTACHMENT A

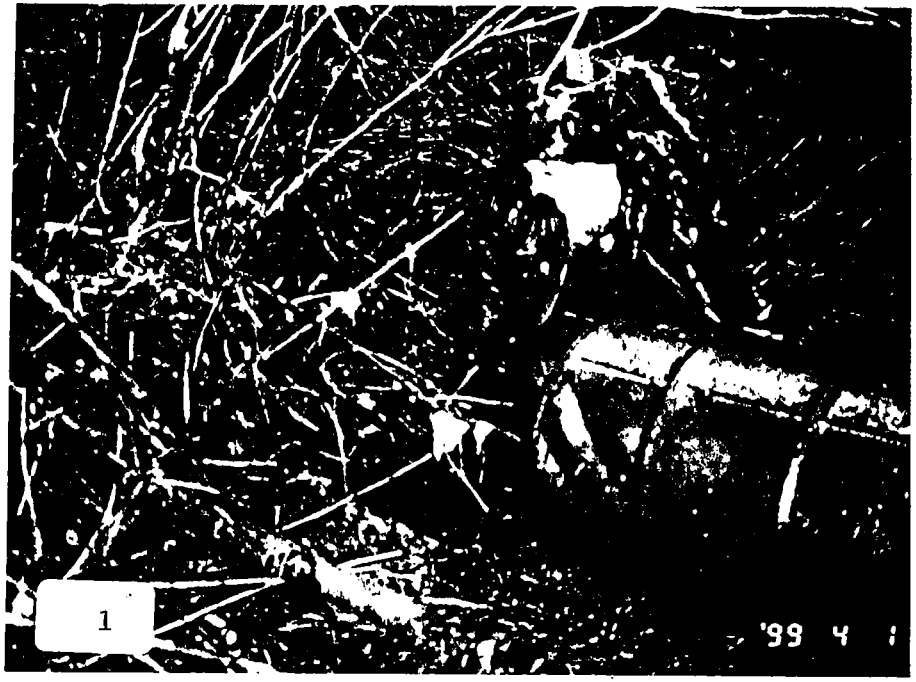
PHOTOGRAPHIC DOCUMENTATION

PHOTOGRAPH IDENTIFICATION SHEET

Camera Serial #: 8728118 **TDD #: 98-07-0021**
Lens Type: Pentax 38-110 mm **Site Name: Galankin Island Defense Site**

Photo	Date	Time	Photographer	Direction	Description and Orientation
1	04/01/99	1247	B. Martich	West	Sample No. 99040001 collected near rusty drum on Whale Island
2	04/01/99	1254	B. Martich	East	Quonset hut debris on Whale Island
3	04/01/99	1300	B. Martich	Northeast	Sample No. 99040002 collected at former powerhouse on Whale Island
4	04/01/99	1306	B. Martich	West	Sample No. 99040003 collected at west side of former fuel tank location on Whale Island with Sitka Sound in background
5	04/01/99	1310	B. Martich	North	Sample No. 99040004 collected at north side of former fuel tank location on Whale Island
6	04/01/99	1330	B. Martich	West	John Williams' sawmill and property on Whale Island
7	04/01/99	1445	B. Martich	North	Gun emplacement with wooden cover on south side of Whale Island
8	04/02/99	0908	B. Martich	Southwest	Kayak Island
9	04/02/99	0908	B. Martich	South	Kayak Island
10	04/02/99	0909	B. Martich	East	The START's boat charter
11	04/02/99	0936	B. Martich	Northeast	Lookout post on west side of Kayak Island
12	04/02/99	0937	B. Martich	Northeast	Two lookout posts on west side of Kayak Island


3
'99 4 1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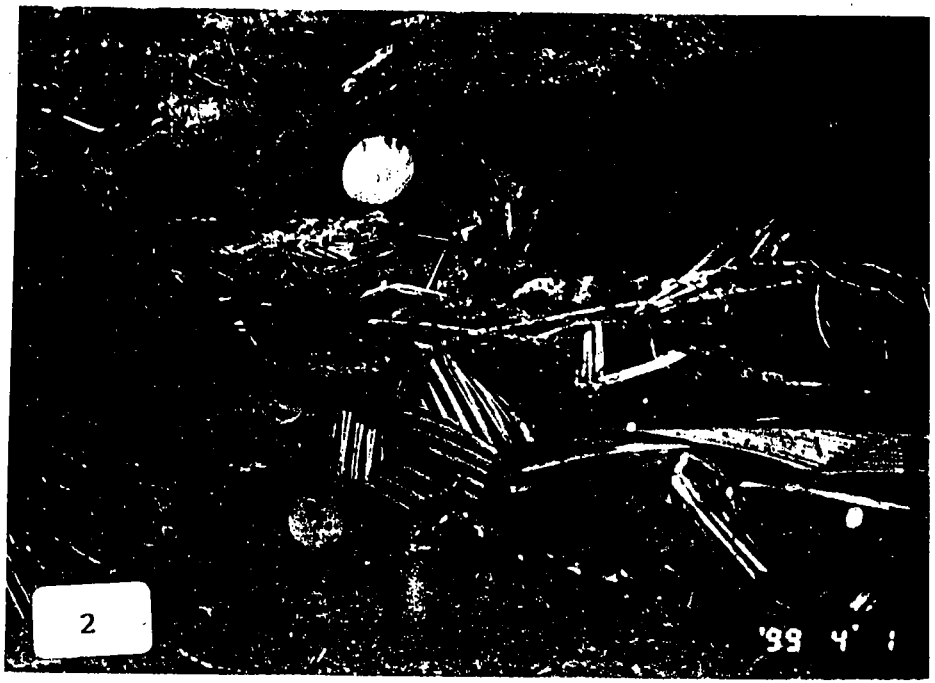
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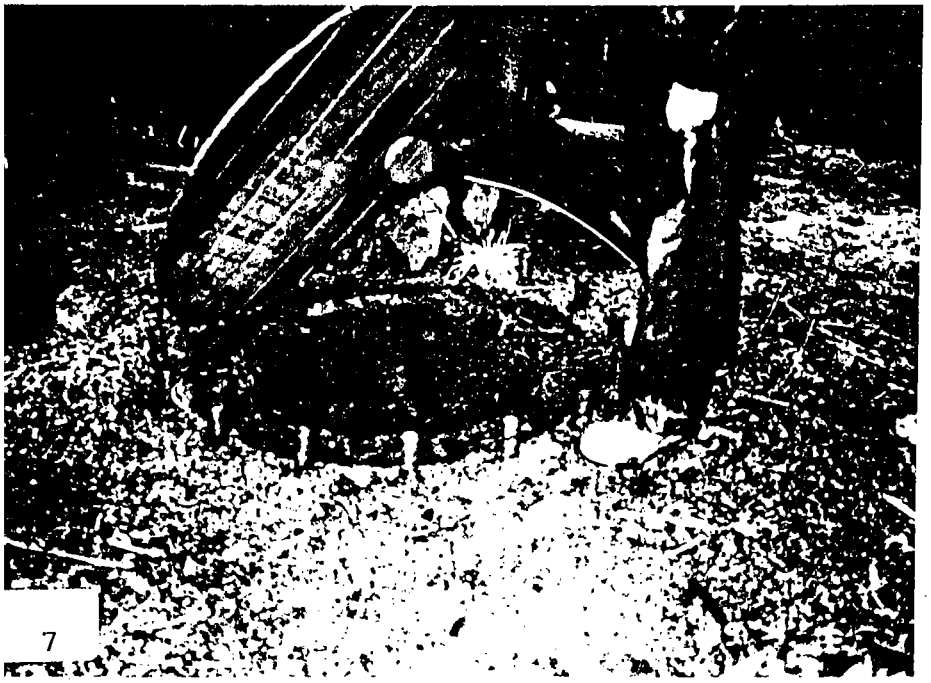
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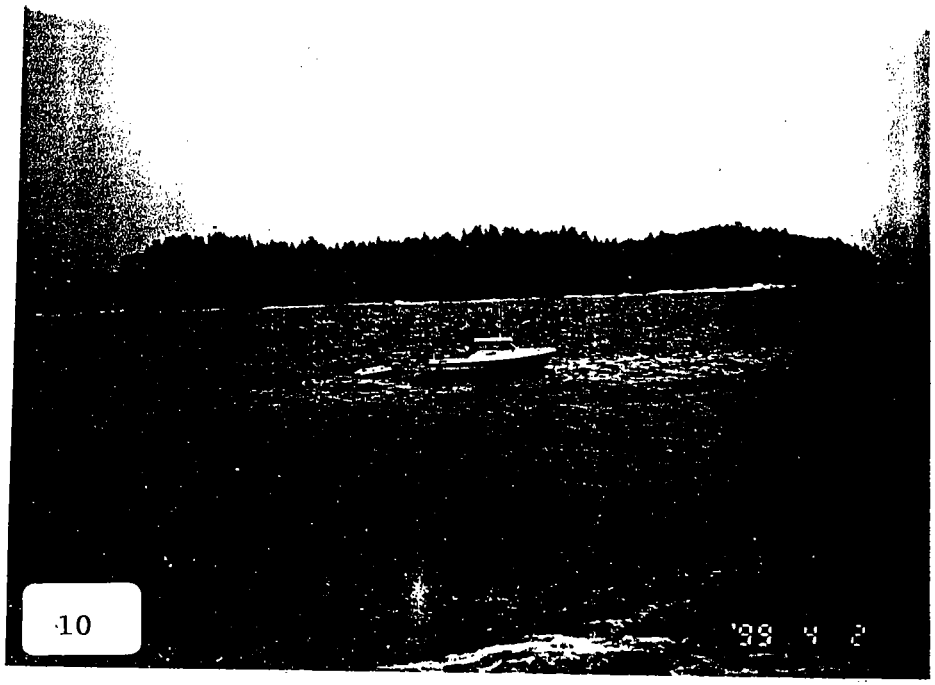
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ATTACHMENT B

LIST OF COMPOUNDS ANALYZED

Polynuclear Aromatic Hydrocarbons (PAHs)
Naphthalene
2-Methylnaphthalene
2-Chloronaphthalene
Acenaphthylene
Acenaphthene
Fluorene
Phenanthrene
Anthracene
Fluoranthene
Pyrene
Benzo(a)anthracene
Chrysene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(a)pyrene
Indeno(1,2,3-cd)pyrene
Dibenzo(a,h)anthracene
Benzo(g,h,i)perylene

Polychlorinated Biphenyls (PCBs)
Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260

Total Petroleum Hydrocarbons (TPHs)

ATTACHMENT C

RAW ANALYTICAL DATA

PAH's by EPA 8270

Date Extracted:	4-6-99
Date Analyzed:	4-8-99
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-034-01
Client ID:	99040001

Compound:	Results	Flags	PQL
Naphthalene	ND		1.4
2-Methylnaphthalene	ND		1.4
Acenaphthylene	ND		1.4
Acenaphthene	ND		1.4
Fluorene	ND		1.4
Phenanthrene	ND		1.4
Anthracene	ND		1.4
Fluoranthene	ND		1.4
Pyrene	ND		1.4
Benzo[a]anthracene	ND		1.4
Chrysene	ND		1.4
Benzo[b]fluoranthene	ND		1.4
Benzo[k]fluoranthene	ND		1.4
Benzo[a]pyrene	ND		1.4
Indeno[1,2,3-cd]pyrene	ND		1.4
Dibenz[a,h]anthracene	ND		1.4
Benzo[g,h,i]perylene	ND		1.4

Surrogate :	Percent Recovery	Flags	Control Limits
Nitrobenzene-d5	22	*	23 - 120
2-Fluorobiphenyl	50		30 - 115
Terphenyl-d14	45		18 - 137

PAH's by EPA 8270

Date Extracted:	4-6-99
Date Analyzed:	4-8-99
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	04-034-03
Client ID:	99040003

Compound:	Results	Flags	PQL
Naphthalene	ND		0.29
2-Methylnaphthalene	ND		0.29
Acenaphthylene	ND		0.29
Acenaphthene	ND		0.29
Fluorene	ND		0.29
Phenanthrene	ND		0.29
Anthracene	ND		0.29
Fluoranthene	ND		0.29
Pyrene	ND		0.29
Benzo[a]anthracene	ND		0.29
Chrysene	ND		0.29
Benzo[b]fluoranthene	ND		0.29
Benzo[k]fluoranthene	ND		0.29
Benzo[a]pyrene	ND		0.29
Indeno[1,2,3-cd]pyrene	ND		0.29
Dibenz[a,h]anthracene	ND		0.29
Benzo[g,h,i]perylene	ND		0.29

Surrogate :	Percent Recovery	Flags	Control Limits
Nitrobenzene-d5	53		23 - 120
2-Fluorobiphenyl	68		30 - 115
Terphenyl-d14	60		18 - 137

PCB'S BY 8082

Date Extracted:	4-8-99
Date Analyzed:	4-9-99
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	04-034-01
Client ID:	**99040001**

	Result	PQL
Aroclor 1016:	**ND**	0.22
Aroclor 1221:	**ND**	0.22
Aroclor 1232:	**ND**	0.22
Aroclor 1242:	**ND**	0.22
Aroclor 1248:	**ND**	0.22
Aroclor 1254:	**ND**	0.22
Aroclor 1260:	**ND**	0.22

Surrogate	**Percent Recovery**	**Control Limits**
Decachlorobiphenyl	51	48 - 148

Flags: X

PCB'S BY 8082

Date Extracted:	4-8-99
Date Analyzed:	4-9-99
Matrix:	Soil
Units:	mg/Kg (ppm)
Lab ID:	04-034-03
Client ID:	**99040003**

	Result	PQL
Aroclor 1016:	**ND**	0.22
Aroclor 1221:	**ND**	0.22
Aroclor 1232:	**ND**	0.22
Aroclor 1242:	**ND**	0.22
Aroclor 1248:	**ND**	0.22
Aroclor 1254:	**ND**	0.22
Aroclor 1260:	**ND**	0.22

Surrogate	**Percent Recovery**	**Control Limits**
Decachlorobiphenyl	55	48 - 148

Flags: X

ECOLOGICAL CHECKLIST #4:
AQUATIC NON-FLOWING SYSTEMS

1. TYPE OF OPEN WATER NON-FLOWING SYSTEMS PRESENT AT SITE
   FLOWING WATER SYSTEMS PRESENT AT SITE
   - ❒ NATURAL
   - ❒ MAN MADE

2. KNOWN USES OF WATER BODY

   - ❒ RECREATIONAL
   - ❒ NAVIGATIONAL
   - ❒ SUBSISTENCE
   - ❒ OTHER

3. APPROXIMATE SIZE OF WATER BODY
   _____ACRES

4. TYPE OF AQUATIC VEGETATION PRESENT
   - ❒ EMERGENT
   - ❒ SUBMERGENT
   - ❒ FLOATING

5. DEPTH OF WATER
   _____FEET

6. GENERAL COMPOSITION OF SUBSTRATE
   - ❒ BEDROCK
   - ❒ SAND
   - ❒ SILT
   - ❒ BOULDER
   - ❒ COBBLE
   - ❒ GRAVEL
   - ❒ MARL
   - ❒ CLAY
   - ❒ MUCK
   - ❒ DEBRIS
   - ❒ MUCK
   - ❒ CONCRETE
   - ❒ OTHER

ECOLOGICAL CHECKLIST #5: WETLANDS

1. ANY DESIGNATED OR KNOWN WETLANDS AT THE SITE

☒ YES
☐ NO

2. ARE WETLAND HABITATS EXPECTED

☒ YES
☐ NO

3. TYPES OF VEGETATION PRESENT

☐ EMERGENT
☐ SUBMERGENT
☐ SCRUB/SHRUB
☐ WOODED
☒ OTHER

4. DISCHARGE FROM SITE TO WETLANDS

☒ YES
☐ NO

5. DISCHARGE FROM WETLAND

☐	RIVER STREAM	☐	ON-SITE	☐	OFF-SITE
☐	GROUNDWATER	☐	ON-SITE	☐	OFF-SITE
☐	LAKE/POND	☐	ON-SITE	☐	OFF-SITE
☒	MARINE	☐	ON-SITE	☒	OFF-SITE