



**COLD BAY LRRS
ALASKA**

**ADMINISTRATIVE RECORD
COVER SHEET**

AR File Number 61



**UNITED STATES AIR FORCE
611TH AIR SUPPORT GROUP
611TH CIVIL ENGINEER SQUADRON
ELMENDORF AFB, ALASKA**

**MANAGEMENT ACTION PLAN
COLD BAY WHITE ALICE
COMMUNICATION SYSTEM, ALASKA**

APRIL 27, 1998

**MANAGEMENT ACTION PLAN
COLD BAY WHITE ALICE COMMUNICATION SYSTEM, ALASKA**

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Prepared for

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LIST OF ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
ADOT/PF	Alaska Department of Transportation and Public Facilities
AE	Architect and Engineering
AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
ARAR	Applicable or Relevant and Appropriate Requirements
AST	Aboveground Storage Tank
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CD-ROM	Compact Disk - Read Only Memory
CFR	Code of Federal Regulations
CES	Civil Engineer Squadron
3 rd CON	3 rd Contracting Squadron
CRP	Community Relations Plan
DEW	Distant Early Warning
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
DRO	Diesel Range Organics
EBS	Environmental Baseline Study
EPA	Environmental Protection Agency
ERA	Ecological Risk Assessment
ERP	Environmental Restoration Program
ES	Engineering Science
FAA	Federal Aviation Administration
FY	Fiscal Year
HHRA	Human Health Risk Assessment
HRS	Hazard Ranking System
HQPACAF	Headquarters Pacific Air Force
IRP	Installation Restoration Program
MAP	Management Action Plan
MAR	Minimally Attended Radar
NFA	No Further Action
NFAD	No Further Action Decision
NFRAP	No Further Response Action Planned
NORAD	North American Radar Defense
NPL	National Priority List
NRP	Natural Resources Plan
NWR	National Wildlife Refuge
PA	Preliminary Assessment
PAH	Polycyclic Aromatic hydrocarbons
POL	Petroleum, Oil, and Lubricant

LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

RA	Remedial Action
RBC	Risk Based Concentration
RCRA	Resource Conservation and Recovery Act
RFP	Request for Proposal
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
ROW	Right-of-way
RPM	Remedial Project Manager
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
USAF	United States Air Force
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank
WACS	White Alice Communication System
WC	Woodward-Clyde

MANAGEMENT ACTION PLAN COLD BAY WHITE ALICE COMMUNICATION SYSTEM, ALASKA

1.0 INTRODUCTION

This Management Action Plan (MAP) for Cold Bay White Alice Communication System (WACS) is intended to be a strategic document integrating the environmental restoration program into a series of response actions necessary to protect human health and the environment. Due to the dynamics inherent in the strategic planning process, the MAP represents a snapshot in time, requiring periodic updating to remain useful. This document, Cold Bay WACS MAP, does the following:

- Describes the environmental response objectives, the MAP purpose, and a brief history of the installation (Chapter 1).
- Identifies all known contaminated sites and environmental condition of property (Chapter 2).
- Summarizes Installation Restoration Program (IRP) status, and restoration sites (Chapter 3).
- Describes the installation-wide strategy for environmental restoration through the definition of zones, including current scope of removal and remedial activities associated with, or to be completed, for each (Chapter 4).
- Provides a master schedule of planned and anticipated activities to be performed throughout the duration of the Environmental Restoration Program (ERP) (Chapter 5).

1.1 *Environmental Response Objectives*

The objectives of the ERP are as follows:

- Protect human health by minimizing or eliminating exposure pathways.
- Protect the environment by ensuring that wildlife and vegetation in the surrounding Izembek National Wildlife Refuge (NWR) are not affected by contamination and cleanup activities at Cold Bay WACS.
- Comply with existing statutes and regulations.

- Conduct IRP activities in a manner consistent with Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA).
- Meet requirements in applicable permits and agreements.
- Continue efforts to identify all potential source areas.
- Establish priorities for environmental restoration, and restoration-related compliance activities.
- Initiate selected restoration actions to control, eliminate, or reduce risks to acceptable levels.
- Develop, screen, and select remedial actions (RAs) that reduce risk in a manner consistent with statutory requirements.
- Commence RAs for priority areas as soon as practical.
- Conduct any necessary five-year reviews for wastes left on site as needed.

1.2 MAP Purpose, Updates, and Distribution

1.2.1 MAP Purpose

The MAP is a dynamic document. It provides a summary of base history, current conditions, and how those conditions relate to human health. It provides a strategy to protect human and ecological health where it may be threatened.

The MAP summarizes the status of the Cold Bay WACS IRP program and the comprehensive strategy for all ERP activities. The MAP explains the installation's response action approach which ensures continued progress and implementation of scheduled activities.

1.2.2 MAP Updates

The MAP will be updated a minimum of once a year. The Remedial Project Manager (RPM) has the options of:

- Marking changes in the MAP as they occur;
- Updating the MAP when there are major changes in the program; or
- Conducting a formal annual review and update.

1.2.3 MAP Distribution

Draft MAP Distribution will be as follows:

- RPM, 1 copy;
- Headquarters Pacific Air Forces (HQ PACAF), 2 copies;
- Alaska Department of Environmental Conservation (ADEC), 1 copy; and
- Environmental Protection Agency (EPA), 1 copy.

Final MAP Distribution will be as follows:

- RPM, 4 copies (1 on CD-ROM);
- HQ PACAF, 2 copies;
- ADEC, 1 copy;
- EPA, 1 copy;
- Administrative Record, 1 copy per location; and
- Information Repository, 1 copy per location.

1.3 Brief History of Installation

Cold Bay is located 30 miles inland from the tip of the Alaska Peninsula (Figure 1-1). The Cold Bay WACS was constructed during the late 1950s as part of the extension of the Distant Early Warning (DEW) Line into the Aleutians. The Cold Bay DEW Line facility became operational in 1959. Several modernization programs have affected the facility over the years. In 1969, the DEW Line was converted to a North American Air Defense (NORAD) Surveillance Station, and a Joint Surveillance System was installed in 1982. As part of a U.S. Air Force (USAF) effort to reduce manpower with no decrease in air defense capability, the Cold Bay Minimally Attended Radar (MAR) station was installed in 1985. The MAR replaced all previous Cold Bay radar systems, and is in operation at the present time.

Communications for the Cold Bay WACS was provided by a White Alice Communications System (WACS) from 1959 to 1978, when the WACS was deactivated and replaced with a commercially owned and operated satellite communications system. The dome from the WACS was moved and installed at the MAR site. The WACS site consisted of a composite building, four antennae, two underground storage tanks (USTs) used to store diesel fuel, a gasoline dispensing aboveground storage tank (AST), an incinerator, one quonset hut, and four trailer residences. The site was demolished in 1987 and 1988, and buried on site in what is now called the WACS Demolition Debris Landfill. The only remaining structures are the quonset hut used by the U.S. Fish and Wildlife Service (USFWS), and the USTs which were reportedly filled with sand.

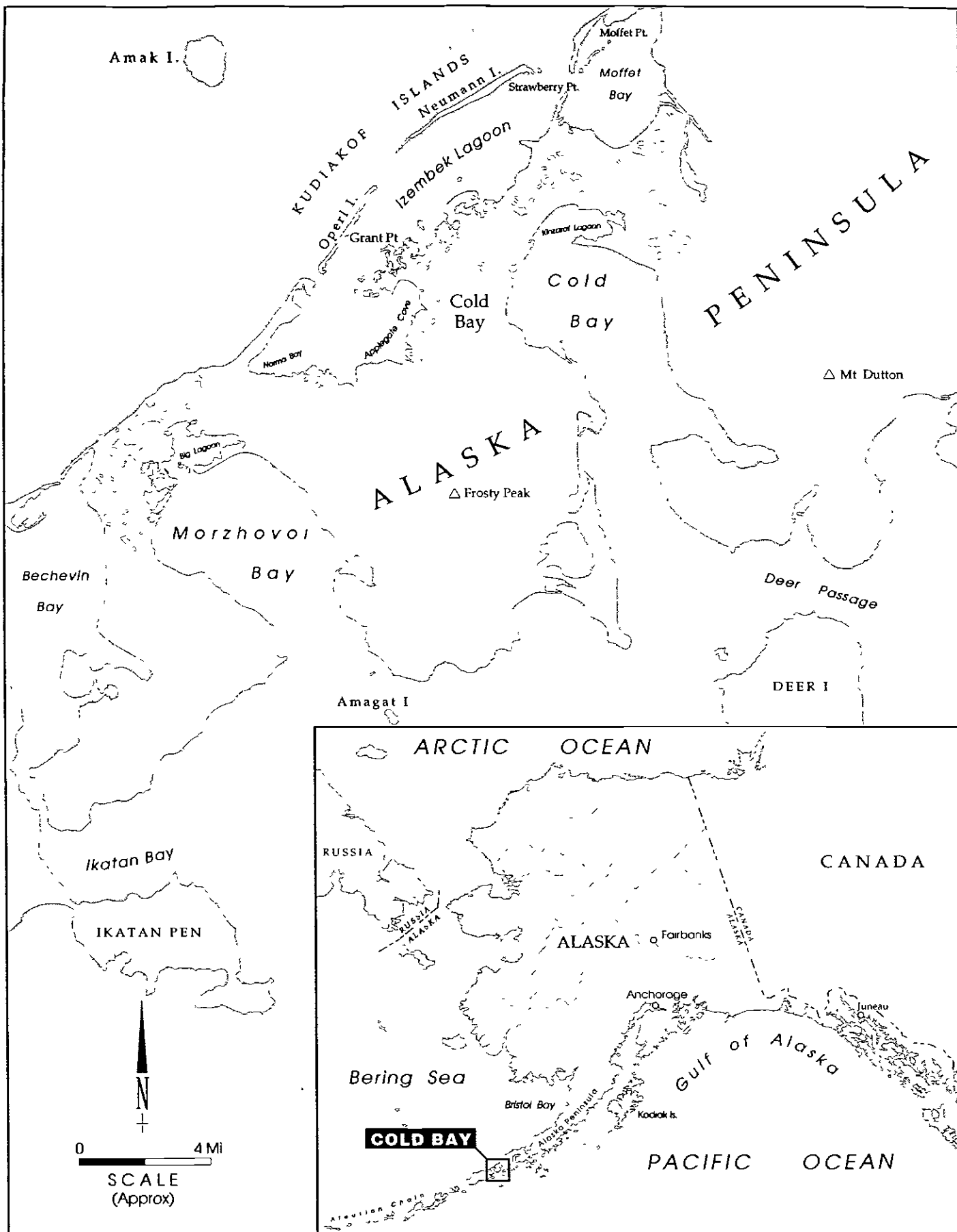


Figure 1-1 Regional Location Map

The airstrip at Cold Bay was built in 1941 as a forward air field to support operations in the Aleutians during World War II. The USAF transferred control of the airstrip to the Civil Aeronautics Authority in the early 1950s. Control of the airstrip has been transferred several times. The Alaska Department of Transportation and Public Facilities (ADOT/PF) is currently in control of operating and maintaining the airstrip.

Diesel fuel for the Cold Bay WACS was delivered by barge and stored in two 70,000-barrel ASTs, located within the community of Cold Bay. In 1985, when the MAR facility was constructed, the fuel needs of the Cold Bay WACS were considerably downsized. The USAF stopped using the petroleum, oil, and lubricant (POL) ASTs, and Reeve Aleutian Airlines pumped the fuel out of the POL ASTs, leaving the tanks dry. The POL ASTs and associated aboveground piping were demolished and removed during the fall of 1994 by Anderson Excavating and Wrecking. The steel and piping were stockpiled across the road from the POL site and eventually buried in the community landfill.

The Cold Bay WACS was issued a permit to operate a landfill by the USFWS in 1971. The landfill was operated between 1971 and 1976. Landfill debris was covered and the site was graded and re-seeded when the landfill was closed in 1976. Garbage and refuse associated with the Cold Bay WACS has since been disposed of in the Cold Bay community landfill.

In 1978, approximately 1,000 gallons of diesel fuel were spilled when a UST at the WACS facility was overfilled. Fuel leaked into a drainage channel and down to eel grass beds on Izembek Bay. Installation personnel cleaned up the spilled fuel in the eel grass beds with absorbent pads. It is estimated that 90 percent of the fuel was recovered. The affected area is referred to as the 1978 Spill/Leak (OT04) site.

The Cold Bay WACS was given permission by the USFWS in 1979 to use waste oil for dust control on gravel roads within the Izembek NWR. The permit authorized the placement of not more than 300 gallons per month, and prohibited the placement of waste oil on gravel roads within 300 yards of any lake or other body of water.

The current military mission of the Cold Bay WACS is the continued operation of the MAR as part of the SEEK IGLOO Program that performs aircraft control and warning missions in Alaska.

1.3.1 Environmental Setting

The Cold Bay area is located within a moraine and outwash-mantled plain. The area exhibits a variety of physiographic features including volcanic mountains, glacial moraines, dry tundra, low tundra wetlands, tundra uplands, lakes, sand dunes, and shallow lagoons. Ground elevation in the Cold Bay area ranges from sea level to over 5,000 feet at Frosty Peak.

The bay, which gives the community its name, is 25 miles long, 8 miles wide, and approximately 4 miles wide at its entrance. Cold Bay is flanked by Mount Dutton to the east, Frosty Peak to the southwest, and Izembek Lagoon to the north and northwest. The community of Cold Bay, located on the west side of Cold Bay, is within the boundaries of two wildlife refuges, the Izembek NWR, and the Pavlof Unit of the Alaska Peninsula NWR (Figure 1-2).

The area is situated in a moderate polar maritime climate zone, characterized by high winds, moderate temperatures, cloud cover, and frequent precipitation. Cold Bay is subject to tsunamis created by earthquakes and volcanic-induced submarine movements.

The WACS site Demolition Debris Landfill, designated by the USAF as site OT01, is located in the Izembek NWR near Grant Point approximately 12 miles north of the Cold Bay community (Figure 1-2).

The Road Oiling site, designated by the USAF as site OT03, is located within the former WACS site (Figure 1-3). The 1978 Spill/Leak (OT04) site is also located at the WACS site.

The Landfill/Gravel Pit site, designated by the USAF as site LF02, is located in the Izembek NWR approximately 7 miles north of the Cold Bay community (Figure 1-2).

The MAR site is located on approximately 8.34 acres of land in the Izembek NWR approximately 2 miles north of the Cold Bay community (Figure 1-2).

The POL Storage Area site, designated by the USAF as site ST05, is located in the Pavlof Unit of the Alaska Peninsula NWR within the community of Cold Bay, on a bluff above the dock (Figure 1-2).

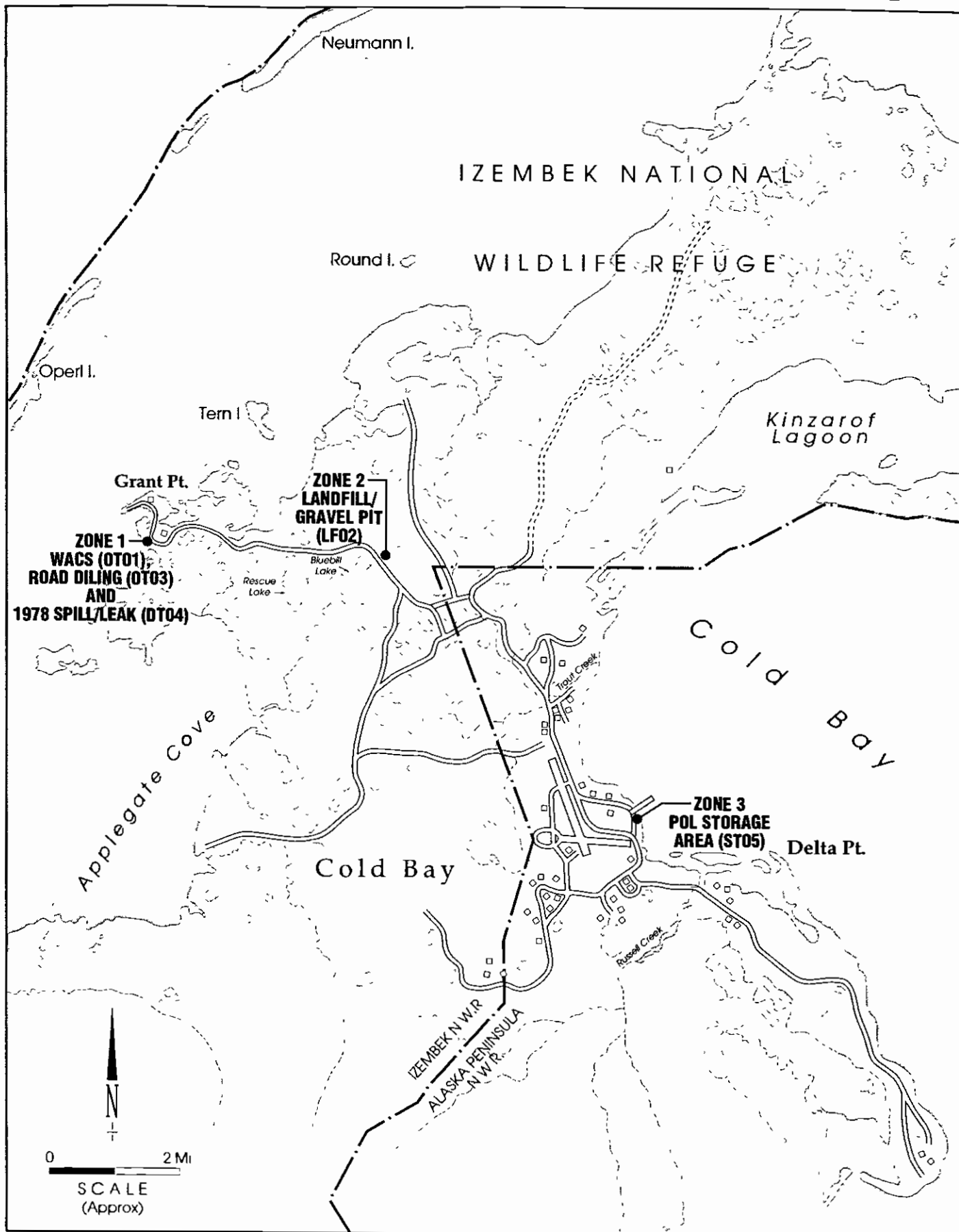


Figure 1-2 Site Location Map

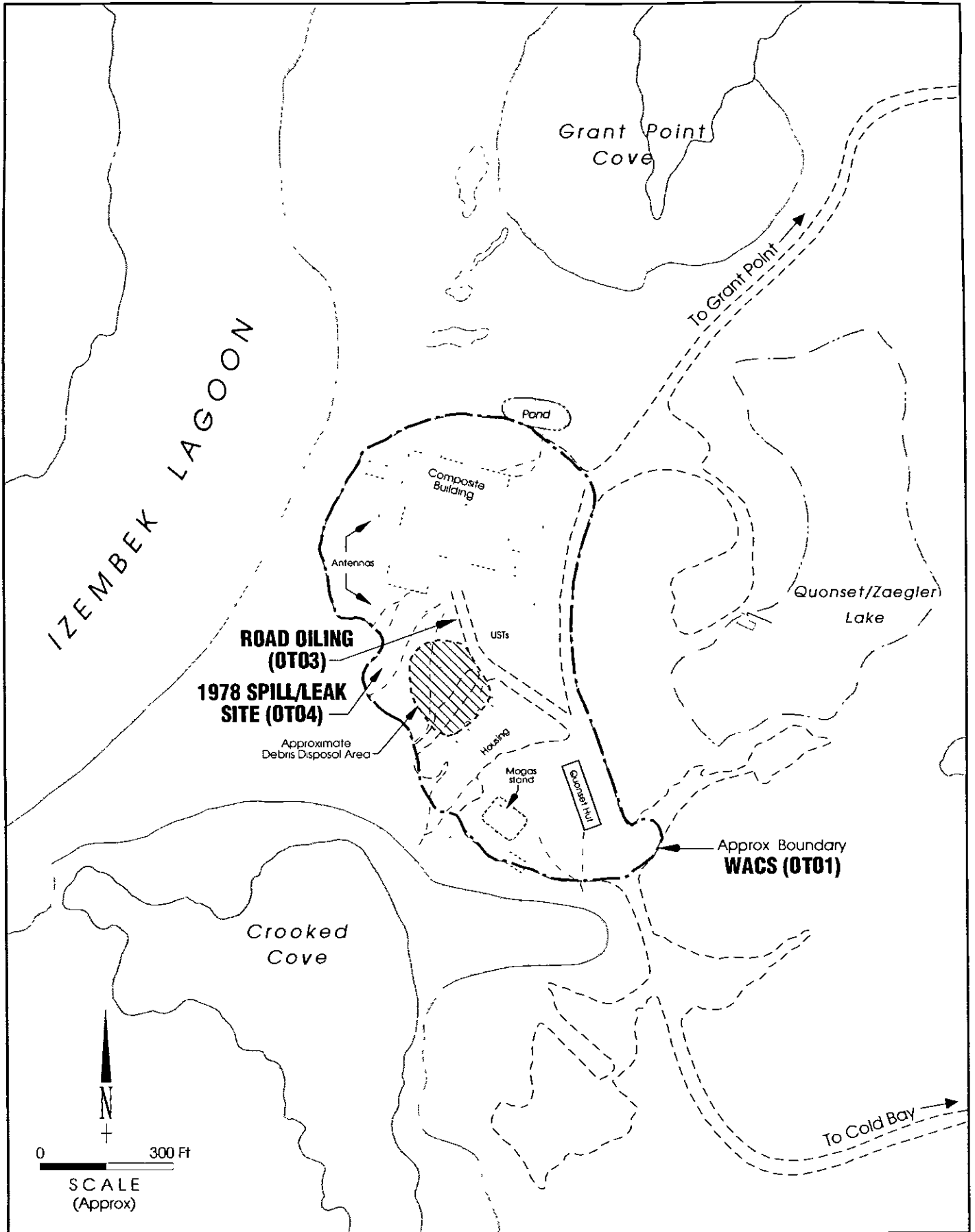


Figure 1-3 Site Map for WACS (OT01), Road Oiling (OT03) and 1978 Spill/Leak Site (OT04)

1.3.2 Past Operations

Historically, the Cold Bay WACS required several systems and activities to fulfill its mission of radar coverage. Required systems and activities have included facility maintenance, power generation, waste disposal, transportation, living quarters, mess hall, and radar and communication system maintenance. The wastes generated at the Cold Bay WACS were primarily waste oils, contaminated fuels, petroleum-based fluids used in power generation and vehicle maintenance operations, and smaller quantities of ethylene glycol, battery acid, and paint thinner. These wastes were placed in drums and transported to a Federal Aviation Administration (FAA) facility for fire protection training. Some of the waste oil was used for road oiling within the WACS facility area in the late 1970s and early 1980s. Table 1-1 highlights the operation and maintenance activities over the years at the Cold Bay WACS.

**TABLE 1-1 HISTORY OF INSTALLATION OPERATIONS
COLD BAY WACS**

Period	Types of Operations	Weapon System	Hazardous Substance Activities
1958-1959	Installation construction	None	Earthwork/facility construction
1958-1985	POL Storage Area (ST05)	None	Fuel storage
1959-1969	DEW Line	None	Fuel/oil storage, vehicle maintenance, wastewater treatment, electronic systems maintenance, power plant, fire training
1969-1982	NORAD Surveillance System	None	Fuel/oil storage, vehicle maintenance, wastewater treatment, electronic systems maintenance, power plant, fire training
1971-1976	Landfill/Gravel Pit (LF02)	None	Garbage and refuse
1979- mid 1980s	Road Oiling (OT03)	None	Waste oil on gravel roads within the WACS facility for dust control
1982-1985	Joint Surveillance System	None	Fuel/oil storage, vehicle maintenance, wastewater treatment, electronic systems maintenance, power plant, fire training
1985- present	MAR	None	Fuel storage, wastewater treatment, electronic systems maintenance
1959-1978	WACS (OT01)	None	Fuel storage, wastewater treatment, electronic systems maintenance
1978- present	Private satellite communication system (Alascom)	None	Fuel storage, wastewater treatment, electronic systems maintenance
1987	WACS demolished	None	

2.0 CONDITION OF PROPERTY

This section describes the status of contamination source discovery efforts, and the environmental condition of the Cold Bay WACS. Table 2-1 summarizes the deliverables.

2.1 *Installation-Wide Source Discovery and Assessment Status*

IRP Phase I Records Search

In 1985, an IRP Phase I Records Search was conducted by Engineering Science (ES) at several southern Alaska USAF installations, including Cold Bay. No sampling or analysis was performed during this phase. The evaluation considered installation records, interviews with past and present employees, facility use, and included a site visit to observe actual conditions. The report identified three areas of interest at the Cold Bay WACS; the Road Oiling (OT03) site, Landfill/Gravel Pit (LF02), and 1978 Spill/Leak (OT04) site.

The three areas were evaluated for their hazardous and/or potentially hazardous effect to human health, welfare, and the environment. The report concluded that the Road Oiling (OT03) site had a minimal potential to create environmental contamination, and that no further study was necessary. A Phase II investigation was recommended to assess the contamination at the Landfill/Gravel Pit (LF02) and 1978 Spill/Leak (OT04) sites.

IRP Phase II Confirmation/Quantification Stage 1 Investigation

An IRP Phase II Confirmation/Quantification Stage 1 investigation of the Landfill/Gravel Pit and Spill/Leak (OT04) sites was conducted by Woodward-Clyde (WC) from 1986 to 1988. The field program at the 1978 Spill/Leak (OT04) site included surface and subsurface soil sampling. At the Landfill/Gravel Pit (LF02) site, groundwater monitoring wells were installed and sampled. Soil from the well drill cuttings were field screened with an Hnu photoionization meter. The Phase II investigation concluded that both sites presented insignificant health and environmental risks, and recommended they be moved to no further response action planned (NFRAP) status.

The IRP Phase II document was submitted to the EPA Region X, ADEC, and the USFWS Alaska Region for review and comments in 1989. No formal comments were received from the agencies.

**TABLE 2-1 PROJECT DELIVERABLES
COLD BAY WACS**

Phase	Deliverable Title	Sites Examined	Year	Author
PA	Candidate Environmental Assessment Cold Bay Minimally Attended Radar (MAR) Relocation	WACS, and proposed location of MAR	1984	United States Air Force
PA	Installation Restoration Program Phase I. Records Search	Road oiling, landfill/gravel pit, and 1978 spill/leak site	1985	Engineering Science
PA	Installation Restoration Program Phase II: Confirmation/ Quantification Stage 1	Landfill/gravel pit and 1978 spill/leak site	1989	Woodward-Clyde
NFAD	Installation Restoration Program Remedial Investigation/Feasibility Study Stage 2, No Further Action Decision	Landfill/gravel pit and 1978 spill/leak site	1991	Woodward-Clyde
PA	Installation Restoration Program Preliminary Assessment/Site Investigation	POL storage area	1993	United States Army Corps of Engineers
NRP	Natural Resources Plan	Cold Bay WACS	1993	Woodward-Clyde
PA	Preliminary Assessment Cold Bay	Landfill/gravel pit, road oiling, and 1978 spill/leak site	1994	CH ₂ M Hill
RI	Geophysical Site Evaluation Possible Drum Disposal Site, Cold Bay, Alaska	Landfill/gravel pit	1994	Arctic GeoScience
SI	Site Investigation Report, Cold Bay WACS, Alaska	WACS, and road oiling	1995	Woodward-Clyde
RI	Remedial Investigation, Cold Bay WACS, Alaska	WACS, road oiling, landfill/gravel pit, and POL storage area	1996	Woodward-Clyde
NFRAP	No Further Response Action Planned Document, Cold Bay WACS, Alaska	WACS, and road oiling	1996	Woodward-Clyde
EBS	Air Force Radar Stations Installation-Wide Environmental Baseline Survey, Alaska	Cold Bay WACS	1996	United States Air Force
CR	Community Relations Plan, Cold Bay, Alaska	WACS, landfill/gravel pit, road oiling, 1978 spill/leak site, and POL storage area	1997	Woodward-Clyde
CR	Fact Sheet, All Around Alaska Cold Bay Edition	WACS, landfill/gravel pit, POL storage area	1997	Woodward-Clyde
WP	Landfill/Gravel Pit Characterization and POL Storage Area Biovent Pilot Study, Cold Bay, Alaska	Landfill/gravel pit and POL storage area	1997	Woodward-Clyde

CR Community Relations
 EBS Environmental Baseline Study
 NFAD No Further Action Decision
 NRP Natural Resources Plan
 NFRAP No Further Response Action Planned

PA Preliminary Assessment
 RI Remedial Investigation
 SI Site Inspection
 WP Work Plan

IRP Remedial Investigation/Feasibility Study (RI/FS) Stage 2, No Further Action Decision (NFAD)

An IRP Remedial Investigation/Feasibility Study (RI/FS) Stage 2, No Further Action Decision (NFAD) was written in 1991 by WC for the Landfill/Gravel Pit (LF02) and 1978 Spill/Leak (OT04) sites based on the conclusions from the IRP Phase I and Phase II findings. The IRP RI/FS NFAD document was submitted to the USAF, EPA Region X, ADEC, and USFW Alaska Region. ADEC responded that they concurred with the NFAD at these sites based on future withdrawal, revocation, and resumption of land management by the Izembek NWR, as long as future investigations do not indicate the existence of contamination. No formal comments were received from the remaining agencies.

IRP Preliminary Assessment/Site Investigation

The U.S. Army Corps of Engineers (USACE) conducted an IRP Preliminary Assessment/Site Investigation at the POL Storage Area (ST05) in 1993. The assessment included interviews with Cold Bay residents familiar with historical practices at the site, an on-site inspection, and soil sampling to determine if contaminants were present. The soil samples taken indicated contamination that exceeded ADEC clean-up levels. The report recommended the site for further investigation to quantify the extent of the contamination, and evaluate possible remediation alternatives.

Natural Resources Plan (NRP)

In 1993, WC prepared a Natural Resources Plan (NRP) for the Cold Bay WACS. An NRP provides guidance for managing natural resources on improved, semi-improved, and unimproved lands at USAF facilities.

Preliminary Assessment (PA)

A Preliminary Assessment (PA) report for the Cold Bay WACS was completed by CH₂M Hill in 1994. The report was compiled by researching available information and conducting interviews. No field work, sampling or analysis was performed for the report. Three areas associated with the WACS were identified as possible sources of contamination; the Landfill/Gravel Pit (LF02), Road Oiling (OT03), and 1978 Spill/Leak (OT04) sites. It was noted that soil sampling and analysis was never conducted at the Landfill/Gravel Pit (LF02) or Road Oiling sites. The study did not consider the POL Storage Area (ST05).

Site Inspection (SI) Report

Under CERCLA, sites which pose a threat to human health and the environment are scored using the Hazard Ranking System (HRS) to determine if they should be placed on the National Priorities List (NPL). A Site Inspection (SI) report for the WACS was completed by WC for the EPA to fill in the data gaps identified in the PA in 1994. The EPA required additional sampling at the WACS in order to calculate an HRS score. Surface and subsurface soil sampling were conducted to address the possibility of off-site migration of contaminants to the Izembek NWR and surrounding wetlands. The EPA evaluation determined that the HRS score for the WACS site was not high enough to include the site on the NPL.

Remedial Investigation (RI)

A Remedial Investigation (RI) was conducted by WC in 1994. The investigation identified and characterized the nature of contamination at the POL Storage Area (ST05), WACS (OT01), Road Oiling area (OT03), and the Landfill/gravel Pit (LF02). The data obtained from the RI and the SI investigations were used to group sites together that required further action, or were recommended for no further response action. Recommendations for remediation were made for those sites requiring further action.

The Landfill/Gravel Pit (LF02) was recommended for no further action (NFA) in a 1989 WC report. However, further interviews with USACE personnel who participated in the WACS demolition indicated the possibility that approximately 200 drums from the demolition were buried in the landfill. A geophysical survey, conducted as part of the RI, delineated likely drum burial locations on the west side of the landfill (Figure 2-1). A limited trenching program was recommended to expose the alleged drums, and determine their contents.

RI sample analysis at the POL Storage Area (ST05) detected diesel range organics (DRO) in the ground water and most surface and near-surface soil samples exceeded the residential risk based concentrations (RBC). Only one near-surface soil sample exceeded the industrial RBC. Downgradient soil samples collected along the bluff by the USACE in 1993 did not indicate migration of contaminants to the beach. Bioremediation of the surface soils down to a depth of 4 feet using either an in situ treatment or in a biocell was recommended for the POL Storage Area (ST05) site.

The RI concluded that petroleum contamination does exist in limited areas at WACS (OT01). Sample analysis did not indicate any evidence of

seepage from the site, or migration of contaminants off site. There were no detectable analytes in the Road Oiling (OT03) area other than metals at or below background levels. The WACS (OT01) and Road Oiling (OT03) sites were recommended for no further response action planned (NFRAP). An NFRAP document was prepared by WC in 1996 for the WACS (OT01) and Road Oiling (OT03) sites.

Environmental Baseline Study (EBS)

The USAF conducted an Environmental Baseline Study (EBS) of the Cold Bay WACS in 1996. The EBS assists the USAF in meeting its obligations under CERCLA, and is required by Department of Defense (DOD) policy before property can be sold, leased, transferred, or acquired by the USAF. Information for the EBS was acquired through a records search, visual site inspections, and interviews with personnel from the 611 CES, the 3 AERMS/AMGAB, and Real Property Management Office. The EBS addresses management practices and facility use pursuant to the requirements of the Resource Conservation and Recovery Act (RCRA). Waste management practices prior to the 1978 requirements of RCRA are the subject of the USAF IRP at the Cold Bay WACS.

Community Relations Plan (CRP)

A Community Relations Plan (CRP) was developed by WC for the USAF in 1997 to outline plans for community involvement and environmental clean-up activities at the Cold Bay WACS. The CRP specifically addresses the WACS (OT01), Landfill/Gravel Pit (LF02), and POL Storage Area (ST05) sites. Information repositories were established at the city office in Cold Bay, and at Elmendorf Air Force Base (AFB) in Anchorage. The repositories contain published reports and *All Around Alaska, Cold Bay Edition* fact sheets on the three sites. The fact sheets inform Cold Bay residents about scheduled, ongoing and completed cleanup activities, publications available at the repositories, and public meeting schedules.

Public Participation

The proposed plan for environmental cleanup activities was presented to local residents during a public meeting held in Cold Bay on April 15, 1997. After reviewing the selected remedies during the public meeting, Cold Bay residents requested that the USAF consider the following action items:

- Complete the filling in of sinkholes at the WACS;
- Cap the WACS with an additional 6 inch lift;
- Seed the cap to help prevent wind erosion; and

- Develop a five-year contingency plan to monitor and fix any additional sinkholes as they develop.

During the 30-day public comment period for the Proposed Plan, only one comment was received. The comment was from the USFWS and concerned potential future groundwater contamination at the WACS. In response, the USAF agreed to do the following:

- Install five groundwater monitoring wells around the perimeter of the WACS; and
- Sample groundwater from the five monitoring wells for the next five years.

1997 Field Investigation and Remediation

In 1997, Woodward-Clyde conducted a field investigation to determine if the alleged drums were buried in the Landfill/Gravel Pit (LF02). Eight 10-foot trenches were excavated in areas where strong geophysical anomalies were indicated during a 1994 geophysical evaluation of the site conducted as part of the RI. Soil samples were taken from the bottom of the trenches. Trenching reveal garbage, refuse, and assorted small and large pieces of metal debris. The alleged drums were not encountered.

An in situ bioventing system was installed at the POL Storage Area (ST05) in the fall of 1997. The bioventing system is used to enhance the DRO degrading activity of heterotrophic bacteria in the soil.

The system will run for 18 months, at which time soil and water samples will be collected to assess the status of the remedial action.

The majority of the sinkholes at the WACS need to be filled. In the fall of 1997, 500 cubic yards of gravel were placed in some of the larger sinkholes located at the WACS Demolition Debris Landfill. The gravel was obtained from the Bluebill Lake gravel pit under USFWS Special Use Permit 74520-98001. The sinkholes were filled as an interim remedial measure to prevent human recreational users from potentially falling or driving into the holes. The USAF plans to place a gravel cover on the area, and fill remaining sinkholes located at the WACS in 1998.

MAR Facility

Records searches revealed little information regarding the environmental status of the MAR facility. The facility has two active 4000-gallon diesel ASTs, but the condition of the tanks is not known. The condition of the soil and groundwater at the MAR facility is also unknown.

2.2 *Environmental Condition of Property*

The sites at Cold Bay WACS have been placed into one of seven categories, as shown on Figure 2-1. The seven categories, and the sites associated with each are:

Category 1. Areas where no storage, release, or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas). There are no sites classified as Category 1 at this time.

Category 2. Areas where only storage of hazardous substances or petroleum products has occurred (but no release, disposal, or migration from adjacent areas has occurred). There are no sites classified as Category 2 at this time.

Category 3. Areas where storage, release, or disposal of hazardous substances or petroleum products has occurred, but at concentrations that do not require removal or RA.

- **Road Oiling (OT03).** Waste oil was sprayed on the roads as a method of dust control in the WACS area from 1979 to the mid-1980s. During the 1994 RI, investigators found no detectable analytes in the Road Oiling (OT03) area other than metals at or below background levels. This site was recommended for no further action in 1996.
- **Landfill/Gravel Pit (LF02).** This site was investigated and sampled during the 1997 field season. Trenching did not reveal any buried drums other containers that may have held hazardous materials. Laboratory analysis of soil samples taken during the trenching process generally indicated levels of contaminants below ADEC's proposed soil cleanup standards with the exception of one "hot spot". The hot spot contained elevated levels of petroleum and metals at a depth of 10 feet. This site is recommended for no further action.

Category 4. Areas where storage, release, or disposal of hazardous substances or petroleum products has occurred, and all RAs necessary to protect human health and the environment have been taken.

- **1978 Spill/Leak (OT04).** This site was cleaned up in 1978, and was then sampled during the IRP Phase II Confirmation/Quantification Stage 1 investigation from 1986 to 1988. Sample results from surface and subsurface soil sampling indicated no significant risk to human health or the environment. The 1978 Spill/Leak (OT04) site was recommended for no further action in 1991.

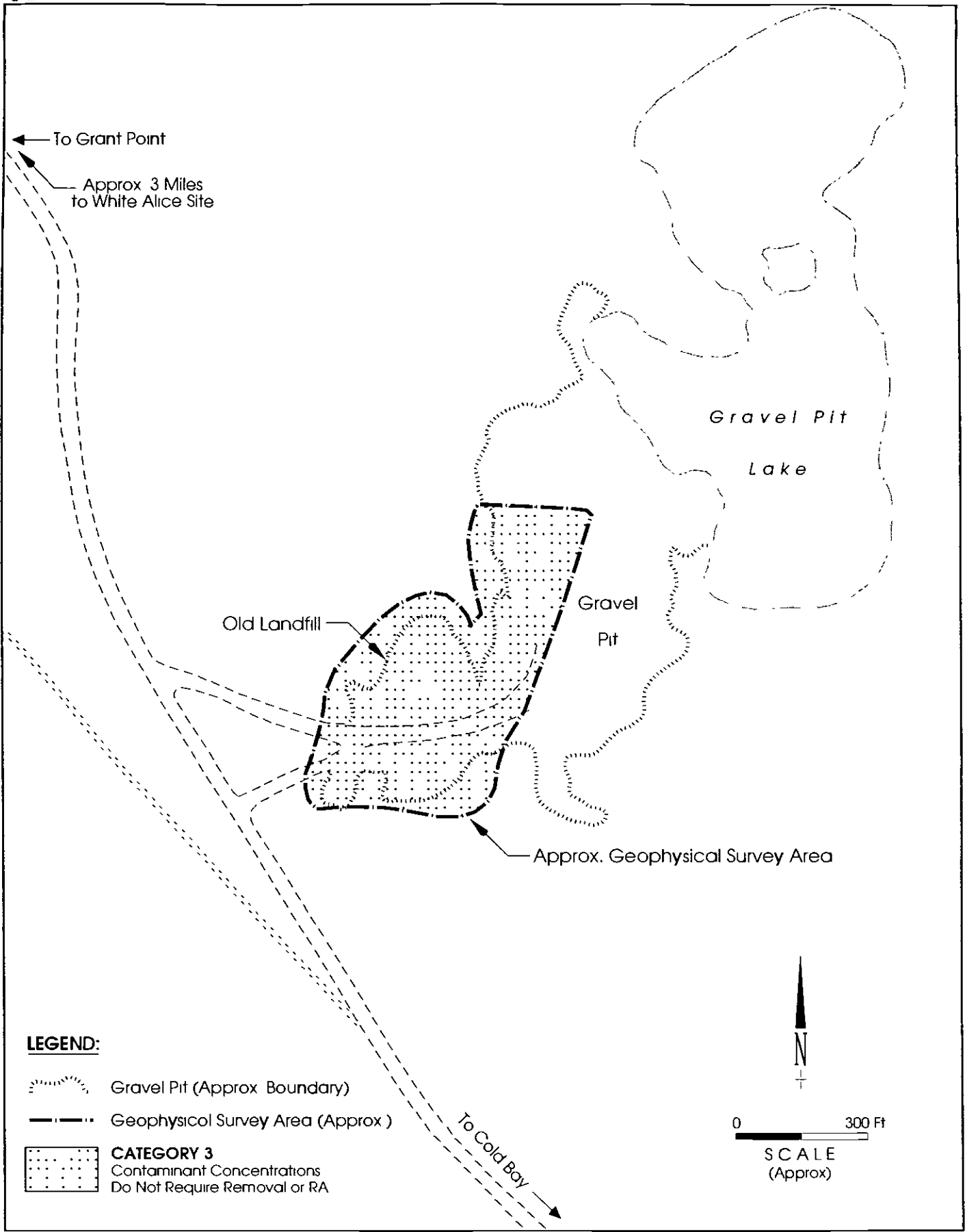


Figure 2-1 Environmental Condition of Property Map - Landfill/Gravel Pit (LF02)

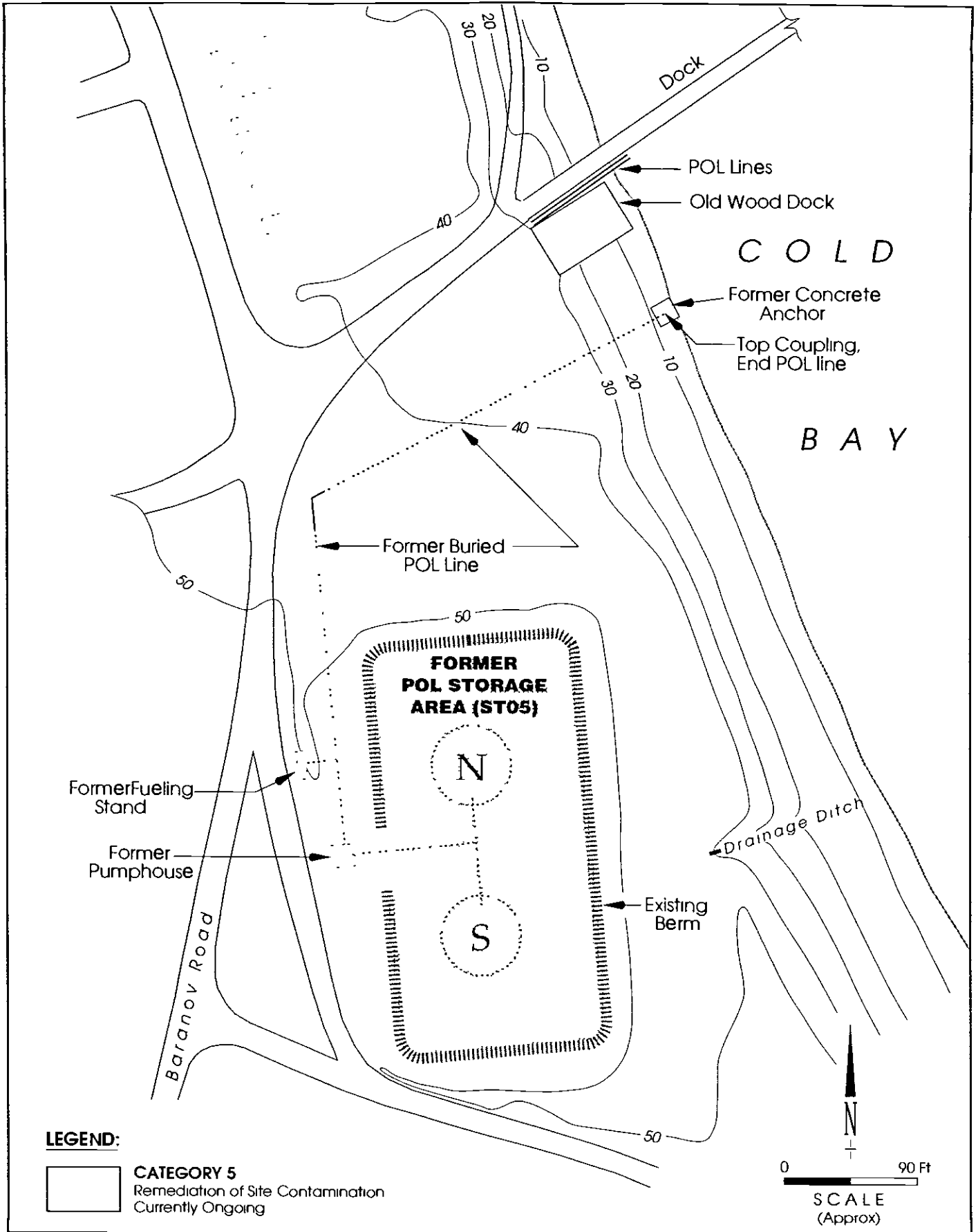


Figure 2-2 Environmental Condition of Property Map - POL Storage Area (ST05)

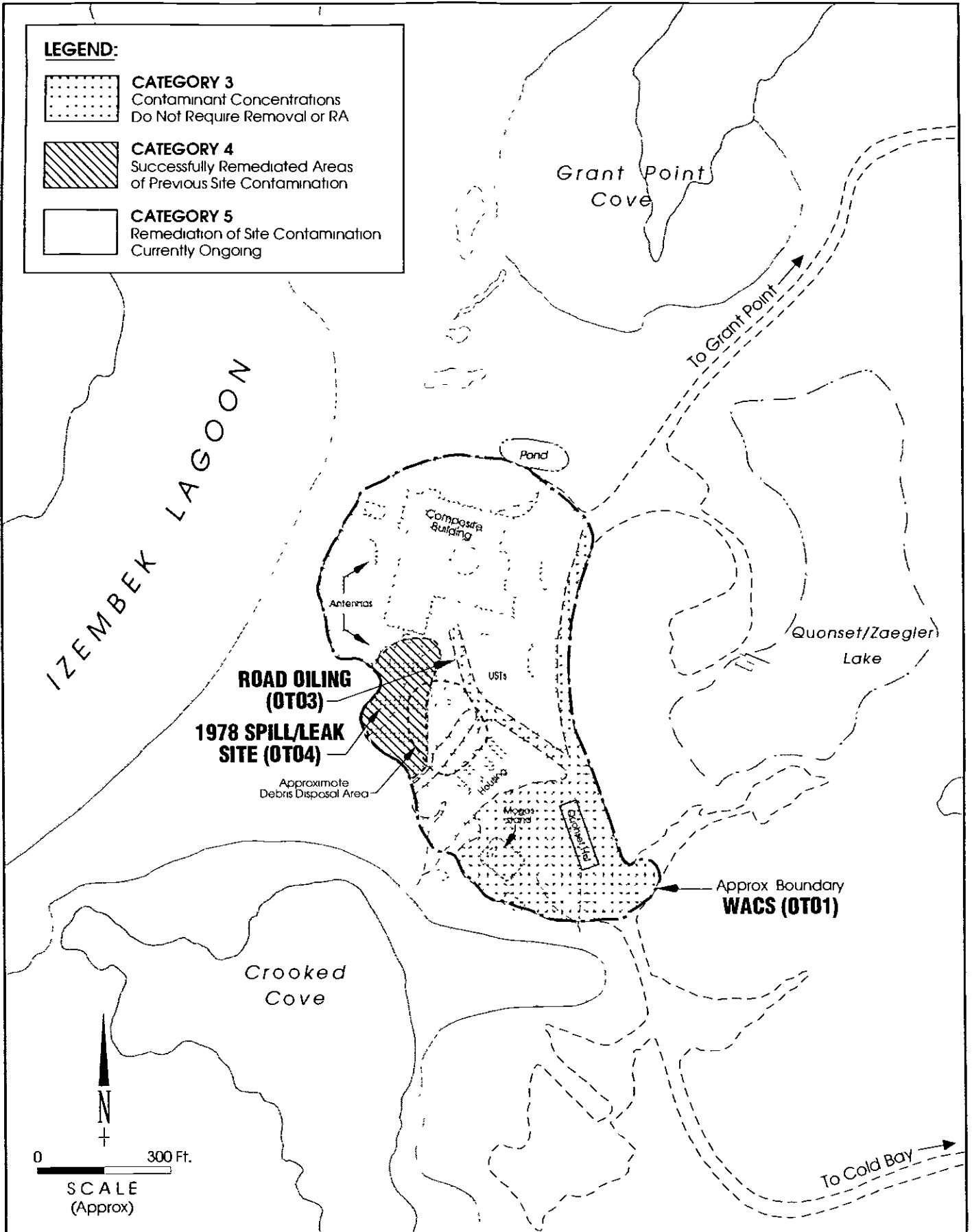


Figure 2-3 Environmental Condition of Property Map - WACS (OT01), Road Oiling (OT03) and Spill/Leak Site (OT04)

Category 5. Areas where storage, release, or disposal of hazardous substances or petroleum products has occurred, but all RAs have not yet been taken.

- **POL Storage Area (ST05).** DRO contamination at this site has been identified and delineated based on the results of several site investigations. This site is currently undergoing remedial activities. A biovent system was installed in the fall of 1997, and is currently operating. The biovent system is designed to enhance heterotrophic bacterial degradation of diesel fuel contamination in the soil. Successful attenuation of the soil contaminants is expected to take approximately 18 months. The biovent system will be monitored periodically throughout the remedial process.
- **WACS (OT01).** The White Alice facility was demolished and graded over in 1988 and 1989. Demolition debris was burned and buried on site. During the 1995 SI and 1996 RI soil samples were collected at the location of the previously existing facility and in surrounding off-site wetlands. Only two on-site soil samples exceeded the applicable or relevant appropriate requirements (ARAR) established by matrix scoring for DRO. Off-site sampling for DRO in down gradient drainage channels did not detect diesel constituents, which indicates that off-site migration of diesel is not occurring. Three polycyclic aromatic hydrocarbons (PAHs) were detected in one off-site sample. The PAHs were not detected in a wetland sample to the north, also indicating that migration of contaminants is not occurring. An Ecological Risk Assessment (ERA) and a Human Health Risk Assessment (HHRA) were conducted as part of the RI in 1996. From a site-wide perspective, the contaminants are limited to small areas, have not migrated off site, and are not above the levels of risk recommended by EPA to warrant further action. This site was recommended for no further action in 1996.

Category 6. Areas where storage, release, or disposal of hazardous substances or petroleum products has occurred, but required response initiatives have not yet been implemented. There are no sites classified as Category 6 at this time.

Category 7. Areas that are unevaluated or require additional evaluation.

- **MAR Facility.** This facility includes two 4000-gallon diesel ASTs. The condition of the tanks, soil and groundwater is unknown. The MAR facility is listed as Category 7 because it has not been evaluated.

2.3 *Real Property*

The WACS (OT01), Road Oiling (OT03), 1978 Spill/Leak (OT04), Landfill/Gravel Pit (LF02), and POL Storage Area (ST05) sites are owned by the USAF, but are no longer actively used. The only remaining structures are a quonset hut used by the USFWS at the WACS (OT01) site, and concrete tank foundations at the POL Storage Area (ST05). The POL Storage Area (ST05) may be transferred to the City of Cold Bay after cleanup is complete, and the remaining sites may be transferred to the USFWS.

The MAR facility is owned by the USAF and is currently active. There are no immediate plans to transfer this property.

There are no off-base facilities or off-base properties associated with the Cold Bay WACS.

Real property records are provided in Table 2-2.

**TABLE 2-2 REAL PROPERTY RECORDS
COLD BAY WACS**

Description	Active (Y / N)	Owner/ Operator	Facility No./Parcel	Quantity (acres)	Dates of Operation	Date Acquired	Remarks / No. of Restoration Sites
WACS (OT01)	N	USAF	N/A		1959 - 1978		One restoration site, OT01. Demolished and buried on site in 1987.
Road Oiling (OT03)	N	USAF	N/A		1979 - mid-1980s		
1978 Spill/Leak (OT04)	N	USAF	N/A		1959 - 1978		
Landfill/Gravel Pit (LF02)	N	USAF	N/A		1971-1976		
POL Storage Area (ST05)	N	USAF	N/A		1958 - 1985		One restoration site, ST05. Bioventing system operational through 1999.
MAR Facility	Y	USAF	N/A		1985 - present		Active. Environmental condition unknown.

Notes: N/A - Not Available

3.0 RESTORATION PROGRAM STATUS

Currently, the Cold Bay WACS is not listed, or proposed for inclusion, on the NPL in accordance with the National Contingency Plan, Title 40 Code of Federal Regulations (CFR), Part 300. Although Cold Bay WACS is not included on the NPL, SARA § 211 and Executive Order 12580 require that all sites be addressed in a manner consistent with CERCLA § 120 which regulates NPL sites. Cold Bay WACS is required to comply with the following restoration related environmental laws and regulations:

- CERCLA § 120 (as amended by SARA), establishes a framework for responding to releases of hazardous substances, pollutants, or contaminants in all media at all installations.
- Executive Order 12580, and the statutory provisions of the Defense Environmental Restoration Program (DERP), of which the IRP is a sub-component.
- All applicable federal and state statutes, and regulation that governs environmental restoration activities and conditions.

3.1 *Summary of Regulatory Agreements*

The MAR facility was issued a right-of-way permit (ROW) by the USFWS on October 11, 1984, case file M-195-IZ. The permit allows for the use and occupancy of approximately 8.34 acres of land within the Izembek NWF for the construction, operation, and maintenance of a MAR site for 30 years or while used for this purpose. In 1995, the USFWS transferred the administration of this ROW to the FAA.

The WACS was demolished and buried under ADEC Permit No. 8721-BA015, issued November 20, 1978. Since that time, large sinkholes have developed in the Demolition Debris Landfill. The larger sinkholes were filled with gravel in the fall of 1997, and the USAF plans to install a gravel cover in 1998. Permit closure requirements and records and reporting requirements must be followed for installation, grading and revegetation of the gravel cover.

3.2 Restoration Sites

Table 3-1 summarizes past actions and the current interim action status at the four sites at the Cold Bay WACS. The following items are noted:

- WACS (OT01) status is currently being discussed by the USAF, ADEC and USFWS. The WACS was proposed for no further action in 1996 but since that time information was obtained by USFWS indicating that transformers and other hazardous materials may have been buried along with the WACS debris. During an internal USAF investigation conducted in response to the USFWS concerns about burial of transformers and other hazardous materials, written affidavits were collected from each of the employees that had worked on the Cold Bay demolition project. None of the affidavits documented that anything hazardous was buried in the solid waste landfill.
- POL Storage Area (ST05) soil contamination is currently being treated with an in situ bioventing system. Remediation is estimated to be complete by spring of 1999.

**TABLE 3-1 SITE SUMMARY
COLD BAY WACS**

WIMS-ES	Site Category	Description	Materials Involved/ Potential Contaminant	Dates of Operation	Status	Regulatory Mechanism	Relative Risk Site Evaluation	Completed and Ongoing Actions
OT03	Category 3	Road Oiling	Waste oil	1979 - mid-1980s	NFRAP	IRP	Low	Investigated in 1994.
LF02	Category 3	Landfill/ Gravel Pit	Garbage and refuse	1971-1976	NFRAP	IRP	Low	Investigated in 1997.
OT04	Category 4	1978 Spill/Leak	Diesel contaminated soil	1959-1978	NFRAP	IRP	Low	Remediated in 1978.
ST05	Category 5	POL Storage Area	Diesel contaminated soil	1958-1985	RA	IRP	Low	In situ bioventing system in operation through 1999.
OT01	Category 5	WACS	Diesel, PCB, PAH	1959-1978	NFRAP	IRP	Low	Gravel cover and monitoring wells to be installed in 1998.
	Category 7	MAR Facility	Not Evaluated	1985 - present	Active			Not Evaluated.

NFRAP -No Further Response Action Planned

RA - Remedial Action

IRP - Installation Restoration Program

3.3 *Community Relations Program*

Involving the public in the IRP decision-making process is required by 40 CFR 300 (CERCLA and SARA) for NPL sites. Although Cold Bay WACS is not on the NPL, the USAF is committed to keeping the community informed of activities, investigations, and cleanup schedules at the site.

The 611th CES is conducting a comprehensive community involvement effort to inform and involve the public in the environmental decision-making process. Community relations activities include the following:

Management Action Plan (MAP). This MAP is made available to the public in order to provide a summary of all restoration activities in one document. If anyone is interested in obtaining additional information, the MAP provides references to the appropriate document.

Information Repository. An information repository has been established at the city office in Cold Bay. The repository contains all applicable documents pertaining to the environmental conditions of the USAF sites. An additional information repository is located at Elmendorf AFB.

Community Relations Plan (CRP). A CRP was developed for Cold Bay in 1997. The CRP is available in the information repositories and outlines the plans for community involvement in investigation and cleanup of the USAF sites in Cold Bay.

Updated Mailing List. A mailing list of interested parties is maintained and updated regularly by the USAF Community Relations Coordinator. These mailing lists are used to provide interested parties with copies of the newsletters, fact sheets, and public notices, and to announce public meetings that pertain to the environmental issues at the various installations.

Fact Sheets and Newsletters. Fact sheets and newsletters are distributed as changes occur in the restoration program or when proposed plans require public comment.

Public Meetings. The USAF hosts public meetings when proposed plans have been distributed for comment. Topics of concern at these meetings often include the environment; human health in general; fishing; hunting; tourism; property values; groundwater quality; and buried debris.

1-800 Hotline. A 1-800 number to the 611 CES Community Relations Coordinator was established in May of 1995. The line provides immediate access to the 611 CES for questions and information relating to environmental activities at 611 CES sites. The number is 1-800-222-4137.

4.0 RESTORATION PROGRAM STRATEGY

The purpose of this section is to summarize the installation-wide environmental restoration strategy at Cold Bay WACS. The ongoing community relations program will remain an integral part of the restoration program. Current plans for community relations activities include additional fact sheets, updates to the information repository, and public meetings. The next public meeting is scheduled for spring of 1998.

Zones are boundaries designed to organize and define areas of environmental investigation. The purpose of establishing these investigative areas is to group multiple sites into a related geographical area. These groupings enable the RPM to combine information and develop detailed maps and conceptual models.

4.1 *Zone Designation*

Three zones, each consisting of a geographically distinct area, have been designated (Figure 1-2). Each zone consists of one or more IRP Sites as identified below:

- **Zone 1** - The White Alice Site which includes WACS (OT01), Road Oiling (OT03), and former 1978 Spill/Leak (OT04) (Figure 1-3);
- **Zone 2** - The Landfill/Gravel Pit (LF02); and
- **Zone 3** - The POL Storage Area (OT05).

4.2 *IRP Site Strategy*

Zone 1

The Road Oiling (OT03) and 1978 Spill/Leak (OT04) sites have been recommended for NFRAP. At the WACS (OT01) site, the USAF will cover the debris landfill to conform with the landfill permit closure stipulations.

Zone 2

During a 1997 field investigation, no mass burial of drums or significant levels of DRO contaminants were found at the Landfill/Gravel Pit (LF02). Findings suggest that this site will be recommended for NFRAP status in 1998. The ultimate goal is to transfer this site to the Izembek NWR.

Zone 3

Zone 3, the POL Storage Area, is currently undergoing remedial action.

4.3 Ongoing and Planned Remedial Actions

Zone 1

Some of the larger sinkholes at the WACS (OT01) site were filled in the fall of 1997. The USAF plans to fill remaining sinkholes and reinstall a gravel cover during fiscal year (FY) 1998. The NFRAP status of this site is currently being evaluated by regulatory agencies and the Izembek NWR. Future work is contingent on the evaluation results. The ultimate goal is to transfer this land to the Izembek NWR.

Zone 2

No remedial actions are planned for Zone 2, the Landfill/Gravel Pit site.

Zone 3

The in situ bioventing system will be operated at the POL Storage Area (ST05) through FY 1999. Future actions are contingent on the follow-up soil and water sampling to be conducted in FY 1999. The ultimate goal is to transfer this land to the East Aleutians Borough in behalf of the city of Cold Bay.

4.4 Contracting and Hiring Strategy

The 611 CES has three primary contracting mechanisms available, the 3rd Contracting Squadron (3CONS) at Elmendorf AFB, the USACE, and the Air Force Center for Environmental Excellence (AFCEE).

3CONS is part of the 3rd Wing at Elmendorf AFB. Available services include open-end Architect and Engineering (AE) Services contracts, small purchases, competitive bids for removal action contractors, 8(a) contracts, and Request for Proposals (RFPs) with technical evaluation. Title II inspection services are also available. Two contracting personnel are dedicated to provide support to environmental contracts.

The USACE Alaska District Office at Elmendorf AFB offers open-end AE contracts, competitive bidding, 8(a) contracts, and RFPs with technical evaluation. Inspection during construction activities is provided by the USACE or through Title II services.

AFCEE also offers open-end AE contracts, competitive bidding, 8(a) contracts, and RFPs with technical evaluation. Inspection during construction activities is provided through Title II services. The AFCEE Headquarters are in Texas, but there is an Alaska office at Elmendorf AFB. Government and contract employees oversee design and remediation activities. The contracting office is located at Brooks AFB in San Antonio, Texas.

Contracts are awarded based on company qualifications. Consideration is also given to Alaskan businesses, small and disadvantaged businesses, and use of local hire.

5.0 ENVIRONMENTAL RESTORATION SCHEDULE

This section presents the Cold Bay WACS Master Schedule of anticipated environmental restoration activities. A Master Schedule of Projected Restoration Activities is presented in Figure 5-1.

5.1 *Installation Restoration Program*

The RPM's ability to accomplish the environmental actions is dependent upon the availability of funding, ongoing discussions regarding the status of the WACS site, and bioventing operations at the POL Storage Area (ST05).

5.2 *Response Schedules*

Bioventing will continue at the POL Storage Area (ST05) until spring of 1999. Evaluation of data from analyses of soil and groundwater samples to be collected in spring of 1999 will determine the need for additional action at the POL Storage Area (ST05).

The Landfill/Gravel Pit (LF02) site will be proposed for no further action in 1999.

The WACS Demolition Debris Landfill will be covered with gravel and seeded in 1998 if fallout monies are available.

COLD BAY WACS		Most Recent Activity	FY 1997				FY 1998				FY 1999				FY 2000				Legend
WIMS-ES Site ID	Alias		I	II	III	IV	I	II	III	IV	I	II	I	IV	I	II	III	IV	
OT01	WACS	Active				Fill Sinkholes			Fill Sinkholes	Cap. Seed	Propose NFRAP								LTM Long Term Monitoring NFRAP No Further Response Action Planned RA Remedial Action RI Remedial Investigation II Specific Quarter of year
OT03	Road Oiling	NFRAP 1996																	
OT04	1978 Spill/Leak	NFRAP 1991																	
LF02	Landfill/Gravel Pit	RI 1997				Field Investigation					Propose NFRAP								
ST05	POL Storage Area	RA 1997				Biovent													
													Post-remediation Evaluation						



**MASTER SCHEDULE
COLD BAY WACS, ALASKA**

PROJECT NO

FIGURE

5-1

6.0 REFERENCES

Arctic GeoScience, 1994. *Geophysical Site Evaluation Possible Drum Disposal Site, Cold Bay, Alaska.*

CH₂M Hill, 1994. *Preliminary Assessment Cold Bay.*

Engineering Science (ES), 1985. *Installation Restoration Program Phase I Report, Southern Region LRRS.*

U.S. Air Force (USAF), 1984. *Candidate Environmental Assessment Cold Bay Minimally Attended Radar (MAR) Relocation.*

U.S. Air Force (USAF), 1996. *Air Force Radar Stations Installation-Wide Environmental Baseline Survey, Alaska.*

U.S. Army Corps of Engineers (USACE), 1993. *Installation Restoration Program Preliminary Assessment/Site Investigation.*

Woodward-Clyde, 1989. *Installation Restoration Program Phase II: Confirmation/Quantification Stage 1.*

Woodward-Clyde, 1991. *Installation Restoration Program Remedial Investigation/Feasibility Study Stage 2, No Further Action Decision.*

Woodward-Clyde, 1993. *Natural Resources Plan.*

Woodward-Clyde, 1995. *Site Investigation Report, Cold Bay WACS, Alaska.*

Woodward-Clyde, 1996a. *Remedial Investigation, Cold Bay WACS, Alaska.*

Woodward-Clyde, 1996b. *No Further Response Action Planned Document, Cold Bay WACS, Alaska.*

Woodward-Clyde, 1997a. *Community Relations Plan, Cold Bay, Alaska.*

Woodward-Clyde, 1997b. *Final Work Plan, Landfill/Gravel Pit Characterization and POL Storage Area Biovent Pilot Study, Cold Bay, Alaska.*

Woodward-Clyde, 1997c. *Proposed Plan, United States Air Force White Alice Communications System Site, Cold Bay, Alaska.*

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