DRAFT 2022 FIVE-YEAR REVIEW REPORT FOR LF002, OT001, AND ST005 AT COLD BAY LONG RANGE RADAR STATION, ALASKA

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Additional Record of Decision/Decision Document Site Figures are included in this FYR.

APPENDICES

ACRONYMS AND ABBREVIATIONS

µg/L.....micrograms per liter
AAC .....Alaska Administrative Code
ADEC.....Alaska Department of Environmental Conservation
AFCEC.....Air Force Civil Engineer Center
AST .....aboveground storage tank
bgs .....below ground surface
BTEX .....benzene, toluene, ethylbenzene, and xylenes
CERCLA.....Comprehensive Environmental Response, Compensation, and Liability Act
CFR .....Code of Federal Regulations
COC .....chemical or contaminant of concern
CV .....coefficient of variation
DRO .....diesel-range organics
EPA .....United States Environmental Protection Agency
FYR.....Five-Year Review
HHRA .....human health risk assessment
IC.....institutional control
ID .....identification
LRRS.....Long Range Radar Station
LTM .....long-term monitoring
LUC.....land use control
MAR .....Minimally Attended Radar
mg/kg .....milligrams per kilogram
mg/L.....milligrams per liter
MNA .....monitored natural attenuation
NAPL .....non-aqueous-phase liquid
NCP.....National Contingency Plan
n.d.....no date
NFRAP.....No Further Remedial Action Planned
NWR .....National Wildlife Refuge
OU.....Operable Unit
PAH.....polycyclic aromatic hydrocarbon
PCB.....polychlorinated biphenyl
POL .....petroleum, oils, and lubricants
R^2.....coefficient of determination
RAO .....remedial action objective
RI.....remedial investigation
RRO .....residual-range organics
TAH .....total aromatic hydrocarbons
TAqH .....total aqueous hydrocarbons
TPH.....total petroleum hydrocarbons
USAF .....United States Air Force

USFWS .....United States Fish and Wildlife Service
UST .....underground storage tank
UU/UE .....unlimited use and unrestricted exposure
VOC .....volatile organic compound
WACS .....White Alice Communication System

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The United States Air Force (USAF) is preparing this FYR pursuant to United States Department of Defense policy, consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (Title 40 Code of Federal Regulations Section 300.430(f)(4)(ii)) and considering United States Environmental Protection Agency (EPA) policy.

This is the second FYR for Site LF002 (previously referred to as LF02) and the fourth FYR for Sites OT001 and ST005 (previously referred to as OT01 and ST05, respectively) at Cold Bay Long Range Radar Station (LRRS), Alaska. Statutory reviews under CERCLA are not required for Site LF002 because no CERCLA contaminants of concern (COCs) exceeding acceptable exposure levels protective of human health and the environment have been detected. However, areas within Site LF002 cannot support unlimited use and unrestricted exposure (UU/UE) under Alaska state law due to historical use as a landfill, so an FYR is warranted. Contamination at Site ST005 is the result of releases of petroleum products, which the USAF is responding to pursuant to Alaska law. Because petroleum contamination remains above levels that allow for UU/UE, the USAF is conducting this policy FYR at ST005. At Site OT001, petroleum contamination above concentrations for UU/UE were removed or remediated, and in 2008, the Alaska Department of Environmental Conservation (ADEC) issued a conditional closure (ADEC, 2008). Institutional controls (ICs) included an FYR to monitor the landfill cap integrity at OT001. The remedies for Sites LF002 and OT001 were documented in the 2001 *Declaration of Decision* (USAF, 2001a) and for ST005 in the 2001 *Decision Summary* (USAF, 2001b).

The Cold Bay LRRS FYR was performed by Ahtna Solutions, LLC, (Ahtna) on behalf of the Air Force Civil Engineer Center (AFCEC) under contract FA8903-22-C0016. Participants included AFCEC, Ahtna, and ADEC personnel with expertise in site investigation and remediation. The review began in September 2022.

Site Background

This section presents background information on the Cold Bay LRRS sites included in this FYR. A chronology summarizing significant events and documents related to the FYR sites is provided in Appendix B. Figures from the Decision Documents (USAF, 2001a and 2001b) are included at the end of this report.

Site Location and History

Cold Bay LRRS is located near the tip of the Alaska Peninsula, approximately 640 miles southwest of Anchorage (Figure 1). The airstrip at Cold Bay was built in 1941 as a forward airfield to support operations in the Aleutians during World War II. The USAF transferred control of the airstrip to the Civil Aeronautics Authority, the predecessor to the Federal Aviation Administration, in the early 1950s (USAF, 2001b). Sites LF002 and OT001 are located on property managed by the United States Fish and Wildlife Service (USFWS) as part of the Izembek National Wildlife Refuge. The USAF is the current landowner of Site ST005.

A White Alice Communication System (WACS) site was constructed in 1958 and 1959 as the Cold Bay communication link in the extension of the Distant Early Warning Line into the Aleutians. The WACS operated from 1959 until 1978, when it was deactivated (USAF, 2001b). In 1985, the Cold Bay Minimally Attended Radar (MAR) station was installed, and the dome from the WACS was relocated to the MAR site. In 1987 and 1988, the WACS facility was demolished (USAF, 2018). Current land use at the installation is recreational. Details of the Cold Bay installation geology and hydrology are presented in the 1996 Remedial Investigation (RI) Report (USAF, 1996) and summarized in the 2017 FYR (USAF, 2018).

Operations at Cold Bay LRRS have resulted in the release of petroleum-related contaminants into the environment. Environmental investigations were initiated at Cold Bay LRRS in 1985. On 29 April 2008, the EPA determined that Cold Bay LRRS met the requirements for No Further Remedial Action Planned (NFRAP) under CERCLA (USAF, 2018).

Site LF002 (ADEC Hazard Identification [ID] 2832)

Site LF002, Landfill/Gravel Pit, is located approximately 7 miles northwest of Cold Bay on property managed by the USFWS (Figure 1). The USAF used Site LF002 from 1971 to 1976 to bury non-hazardous and possibly hazardous wastes from the Cold Bay installation (USAF, 2001a).

In 1986, groundwater sampling of five wells was performed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), and polychlorinated biphenyls (PCBs), however no analytes were detected at the site (USAF, 2018). The monitoring wells were subsequently plugged and abandoned at an unspecified date prior to 1998 (USAF, 2018). In 1994, a geophysical survey was conducted at Site LF002 to investigate a report that 200 drums from the WACS demolition may have been buried in the landfill, however no drums or other containers were found (USAF, 2001a). Soil samples collected from test pits detected diesel-range organics (DRO) and cadmium, but at concentrations below ADEC cleanup levels.

Because no COCs were attributed to Site LF002, and because the existing cover was determined to be adequate to prevent exposure of human or ecological receptors to buried wastes, a determination of NFRAP was made in the 2001 Decision Document (USAF, 2001a). However, Site LF002 consists of a landfill and therefore cannot support UU/UE under Alaska state law due to the potential for hazardous substances and contaminants in the landfill. The current ADEC site

status is Cleanup Complete with ICs (ADEC, n.d.). Additional details are provided in Section II, Response Action Summary.

Site OT001(ADEC Hazard ID 2826)

Site OT001, the former WACS, is located near Grant Point, approximately 12 miles from the city of Cold Bay (Figure 1). The WACS site consisted of a former composite building, four antennas, two fuel underground storage tanks (USTs), an incinerator, an aboveground gasoline-dispensing tank, and other structures. In 1987 and 1988, the WACS facility was demolished and the debris was buried on site in accordance with ADEC Landfill Permit No. 8721-BA015 (ADEC, 2018). As part of the demolition activities, the two USTs were drained of fuel and abandoned in place. All chemicals and hazardous materials except for asbestos were removed from the buildings prior to their demolition (USAF, 2001a). Locations of former infrastructure and the demolition debris landfill, which includes an asbestos cell, are provided in the 2017 FYR (USAF, 2018).

From 1991 to 2007, multiple remediation and monitoring activities, including soil excavation and soil, sediment, and groundwater sampling, have been performed (ADEC, 2008). DRO in soil and groundwater was the only COC detected above cleanup levels (ADEC, 2018). Site OT001 was issued an ADEC Conditional Closure, which includes ICs, on 28 February 2008 (ADEC, 2008). The current ADEC site status is Cleanup Complete with ICs (ADEC, n.d.). Additional details are provided in Section II, Response Action Summary.

Site ST005 (ADEC Hazard ID 2834))

Site ST005, the Petroleum, Oils, and Lubricants (POL) Storage Facility, is located within the community of Cold Bay, near the dock adjacent to Cold Bay (Figure 3). The POL Storage Area consisted of two 70,000-barrel aboveground storage tanks (ASTs), a pump house, a fueling island, and associated piping (USAF, 2001b). Diesel fuel was delivered by barge to the ASTs and then transferred by truck to tanks at the WACS for power generation and heating. The ASTs and piping were demolished in 1994 (USAF, 2001b).

Investigations conducted at Site ST005 from 1993 to 2000 identified DRO as the only COC in surface soil, subsurface soil, and groundwater (USAF, 2001b). The nature and extent of the contamination is detailed in the 1996 RI Report (USAF, 1996). The current ADEC site status is active with long-term monitoring (LTM) of groundwater (ADEC, n.d.). Additional details are provided in Section II, Response Action Summary.

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FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Sites LF002, OT001, and ST005		
EPA ID: AK0570028639		
Region: 10	**State:** AK	**City/County:** Cold Bay/Aleutians East Borough

SITE STATUS	
NPL Status: Non-NPL	
Multiple OUs? Yes	**Has the site achieved construction completion?** Yes

REVIEW STATUS
Lead agency: Other Federal Agency ***[If "Other Federal Agency", enter Agency name]*:** United States Air Force
Author name (Federal or State Project Manager): Ahtna Solutions, LLC, on behalf of the Air Force Civil Engineer Center (AFCEC)
Author affiliation: Contractor
Review period: 9/9/2022 – 6/7/2023
Date of site inspection: 9/21/2022 – 9/22/2022
Type of review: Policy
Review number: Review #2 for Site LF002; Review #4 for Sites OT001 and ST005
Triggering action date: 8/23/2018
Due date *(five years after triggering action date)*: 8/23/2023

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II. RESPONSE ACTION SUMMARY

This section summarizes the basis for taking action and site risks, response actions, and remedial action objectives (RAOs), as well as the selected remedies and their status of implementation.

Basis for Taking Action

Table 1 summarizes the COCs that have been identified at Sites OT001 and ST005, and the applicable cleanup levels identified in the Decision Documents (USAF, 2001a and 2001b). No COCs were identified at Site LF002.

TABLE 1: COCS BY SITE

Site	Medium	COC	Decision Document Cleanup Level
OT001	Soil (surface to 15 feet bgs)	DRO	1,000 mg/kg
	Groundwater	DRO	1.5 mg/L
	Surface Water	TAH	10 µg/L
		TAqH	15 µg/L
ST005	Soil (surface to 10 feet bgs)	DRO	250 mg/kg
	Soil (10–15 feet bgs)	DRO	1000 mg/kg
	Groundwater	DRO	1.5 mg/L
	Surface Water	TAH	10 µg/L
		TAqH	15 µg/L

Key:
µg/L micrograms per liter
bgs below ground surface
COC contaminant of concern
DRO diesel-range organics
mg/kg milligrams per kilogram
mg/L milligrams per liter
TAH total aromatic hydrocarbons
TAqH total aqueous hydrocarbons

Risk Summary

A baseline human health risk assessment (HHRA) was conducted for Sites OT001 and ST005 as part of the Cold Bay RI (USAF, 1996). An HHRA was not performed for Site LF002 because no site COCs were identified.

Risk analyses were conducted for soil at Site OT001 and for soil and groundwater at Site ST005. Detailed information on the HHRA is provided in the RI (USAF, 1996). The detected DRO concentrations at these sites were compared to risk-based concentrations for residential use and the significance of any exceedances were evaluated. DRO in soil at Sites OT001 and ST005 and in groundwater at Site ST005 exceeded the risk-bask concentrations. The HHRA concluded that DRO in soil and groundwater at Site ST005 could pose an unacceptable risk to human receptors,

but that risks could be minimized by removing soil with the highest DRO concentrations and using deed restrictions to limit potential land uses (USAF, 1996). For Site OT001, the HHRA concluded that, based on the recreational or intermittent occupational land use scenarios, the site did not pose an unacceptable level of risk to human receptors (USAF, 1996).

Response Actions

The following is a summary of responses that were performed at the Cold Bay LRRS sites prior to their respective 2001 Decision Documents.

Site LF002

During a 1986 groundwater sampling event, there were no detections of TPH, VOCs, or PCBs at the five wells located at LF002. Therefore, the site was recommended for no further remedial action in 1998, with a No Further Action Decision documented in 1991 (USAF, 1991). Subsequently, it was reported that approximately 200 drums from the WACS demolition activities may have been buried in the landfill. In response, a geophysical survey was conducted to delineate potential drum burial locations (USAF, 2001a).

In 1994, eight test pits were dug at the site, but no drums or other containers were found (USAF, 2001a). Detailed information, including figures showing the test pit and soil sample locations, is provided in the Cold Bay Site Inspection Report (USAF, 1995). Soil samples collected from the test pits identified DRO and cadmium in soil at maximum concentrations of 520 milligrams per kilogram (mg/kg) at 10 feet below ground surface (bgs) and 43 mg/kg at 5 feet bgs, respectively (USAF, 2001a). The detected DRO and cadmium concentrations were below their cleanup levels of 1,000 mg/kg and 76 mg/kg, respectively. No contaminants were detected at concentrations exceeding ADEC cleanup levels at Site LF002 (USAF, 2001a).

Site OT001

In 1991, the USFWS notified the USAF that a sinkhole had developed near the USTs and that the accumulated water had a petroleum sheen. In 1994–1995, an RI was performed that included soil and sediment sampling for COCs (USAF, 1996). In 1994, three soil borings were drilled near the USTs. Results identified DRO in soils above ADEC cleanup levels, with a maximum concentration of 15,000 mg/kg at 3.9 feet bgs (ADEC, 2018). In addition, 10 sediment samples were collected downgradient of Site OT001. DRO and semivolatile organic compounds were detected in the sediment samples but at concentrations below ADEC cleanup levels (USAF, 2018). In 1995, three additional borings were advanced around the sinkhole and eight soil samples were collected from the borings (USAF, 1996). Only one sample had a detectable DRO concentration (2,680 mg/kg at 20 feet bgs), which was above the 1,000 mg/kg ADEC cleanup level applicable at the time (USAF, 2001a). Detailed information on the 1994–1995 investigation is provided in the RI Report (USAF, 1996).

In 1997, the protruding debris was removed from Site OT001 and the largest sinkholes were filled with gravel. The gravel cover was then graded and seeded (USAF, 2001a).

Site ST005

Investigations in 1993 and 1996 identified DRO-contaminated soil inside the dike and near the former pump house (USAF, 2001b). DRO concentrations exceeded 1,000 mg/kg in several surface and subsurface soil samples and was detected at a maximum concentration of 15,000 mg/kg (at 5 feet bgs) (USAF, 2001b). In 1997, a bioventing system was installed. The system was removed in 2000 because data indicated that the bioventing system was not achieving project cleanup goals (USAF, 2001b).

In 2000, approximately 2,000 cubic yards of DRO-contaminated soil were excavated and placed in two long-term stockpiles (USAF, 2001b). The depth of the excavation was limited to 10 feet bgs, and contaminated soil was left in place along the south and east sidewalls and the excavation bottom (USAF, 2001b). Two soil samples were collected near the midline from each of the four sidewalls. Detectable DRO concentrations from the north and west sidewalls were below 50 mg/kg; DRO concentrations from each of the south wall samples were 1,100 mg/kg; and DRO was detected at concentrations of 12,000 mg/kg and 9,200 mg/kg in the two samples from the east wall (USAF, 2001b). DRO was detected in all 11 samples collected from the excavation bottom at concentrations ranging from 130 to 6,200 mg/kg (USAF, 2001b). DRO was detected at 610 mg/kg in an additional sample collected from 20 feet bgs.

Four groundwater monitoring wells were installed in 1994 at Site ST005 to assess groundwater contamination. At wells MW-1 and MW-2, located adjacent to the former ASTs, DRO was detected at concentrations of 0.33 mg/L and 14 mg/L, respectively (USAF, 2001b). DRO was detected at 1.1 mg/L in well MW-3, which is located downgradient of Site ST005. Well MW-4, located upgradient, had a DRO concentration of 0.13 mg/L (USAF, 2001b).

In 2000, it was reported that MW-1 and MW-4 had been previously decommissioned (USAF, 2001b). Well MW-3 could not be located and was also assumed to have been decommissioned. Well MW-2 was sampled and subsequently decommissioned, however the DRO concentration was reported at 23 mg/L, exceeding the groundwater cleanup level of 1.5 mg/L (USAF, 2001b).

Remedial Action Objectives

RAOs provide a general description of what the cleanup will accomplish. Following is a description of the RAOs identified for Sites OT001 and ST005 (USAF, 2001a and 2001b). RAOs were not established for Site LF002 in the 2001 Decision Document (USAF, 2001a).

Site OT001

The 2001 Decision Document (USAF, 2001a) identified the following RAOs for Site OT001:

- For soil from the surface to 15 feet bgs – Soil containing more than 1,000 mg/kg DRO will be excavated and thermally treated to 250 mg/kg.
- For contaminated groundwater – Monitoring natural attenuation (MNA) to achieve no greater than 1.5 mg/L DRO throughout the aquifer and achieve surface water quality standards at 10 micrograms per liter (µg/L) total aromatic hydrocarbons (TAH), and 15 µg/L total aqueous hydrocarbons (TAqH) at the point where groundwater discharges to surface water (USAF, 2001a)

Site ST005

The 2001 Decision Document (USAF, 2001b) identified the following RAOs for Site ST005:

- For soil from the surface to 10 feet bgs – Removal and treatment of soil containing more than 250 mg/kg DRO to meet the Title 18 Alaska Administrative Code (AAC) 75.341 (18 AAC 75) Method Two migration-to-groundwater cleanup level for the under-40-inch precipitation zone
- For soil between 10 and 15 feet bgs – Removal and treatment of soil containing more than 1,000 mg/kg DRO to ensure that the inhalation and ingestion standards are met and to reduce the amount of time it will take for natural attenuation to meet the cleanup levels
- For fuel contamination groundwater – MNA to achieve no greater than 1.5 mg/L DRO through the aquifer and achieve surface water quality standards (10 µg/L TAH, 15 µg/L TAqH) at the point where groundwater discharges to surface water

Selected Remedies

The remedies selected for Sites LF002, OT001, and ST005 are detailed in the following subsections.

Site LF002

The remedy selected for Site LF002 in the Decision Document is No Further Action (USAF, 2001a). Under Alaska state law, the remedy for Site LF002 is Cleanup Complete with ICs. The major components of the selected response actions are as follows:

- The landfill will be surveyed and the information will be recorded in the Aleutian Islands Recording District in Anchorage, Alaska.
- The landfill will be surveyed annually for five years for the development of sinkholes and for the presence of adequate cover.
- The landfill cap will be maintained as necessary.

Site OT001

The remedy selected for Site OT001 is Excavation and Thermal Treatment of soil to 15 feet bgs and MNA for groundwater (USAF, 2001a). The major components of the selected response actions are as follows:

- The two USTs that were previously abandoned in place will be removed and disposed of in an approved offsite landfill. DRO-contaminated soil associated with USTs will be removed to the cleanup levels specified in the RAOs and then remediated by thermal desorption.
- To eliminate physical hazards presented by sinkholes at the demolition debris landfill, the following actions will be performed:
  - Fill remaining sinkholes with clean fill.
  - Add additional soil cover material so that there is a minimum cover of 2 feet over the non-asbestos cell and 3 feet over the asbestos cell.
  - Grade finish cover material to promote runoff and minimize erosion.
  - Revegetate the landfill area to minimize the potential for future erosion.
  - Perform an as-built survey of the landfill.
  - Annually inspect the demolition landfill for five years to monitor for any further sinkhole or erosion development. Fill any sinkholes and erosion channels with clean fill, grade, and revegetate as necessary.
  - Install and sample groundwater monitoring wells.
  - Perform Monitor natural attenuation for any residual contamination.
  - Develop ICs to record the landfill survey information in the applicable property records and record them in the Aleutian Islands Recording District in Anchorage, Alaska.
- If groundwater contamination is present above the cleanup levels in 18 AAC 75.345 Table C, ICs in the form of a notice in the land records will be developed by the USAF, with ADEC concurrence, stating that groundwater should not be used as a drinking water source until it meets applicable cleanup levels.

Site ST005

The remedy selected for Site ST005 is Excavation/Thermal Treatment of contaminated soil up to 15 feet bgs, MNA for groundwater, and ICs. The major components of the selected response actions are as follows:

- Excavation of the top 15 feet of contaminated soil and thermal treatment to remove the contamination. Excavated areas will be filled, regraded, and revegetated. The deeper contaminated soil will be remediated through natural biological processes.
- Thermal treatment of the approximately 2,000 cubic yards of stockpiled contaminated soil.

- MNA of groundwater until DRO levels fall below the ADEC cleanup level of 1.5 mg/L (and 10 µg/L TAH and 15 µg/L TAqH) at the point where groundwater discharges to surface water. New monitoring wells will have to be installed at Site ST005.
- ICs in the form of a notice in the land records to document that groundwater should not be used as a drinking water source until it meets applicable cleanup levels. The ICs will also document that, if contaminated soil is excavated or exposed in the future, it must be managed in accordance with the laws and regulations applicable at the time.

Status of Implementation

The remedies for all three sites included in this FYR involve ICs and/or land use controls (LUCs). In August 2019, the USAF issued the Revised LUC Management Plan for the Pacific Air Forces Regional Support Center Installation (LUC Management Plan) (USAF, 2019), which includes Cold Bay LRRS. The LUC boundary figure and Table 2-1 from the updated LUC Management Plan, which describes the LUCs in effect, are provided in Appendix C. The USAF filed a Notice of Environmental Contamination (NEC) for Sites LF002, OT001, and ST005 with the Alaska Department of Natural Resources Recorder's Office, District 305 Aleutian Islands, on 9 February 2021. Copies of the NECs are included in Appendix C. The implementation status of the LUCs/ICs are summarized in Table 2.

Table 2: Summary of Planned and/or Implemented LUCs/ICs

Media, Engineered Controls, and Areas That Do Not Support UU/UE Based on Current Conditions	LUCs/ICs Needed	Impacted Parcels	LUC/IC Objective	Title of LUC/IC Instrument, Documents, or Actions Implemented and Date
ICs are in place and monitored, warning signs are present, and performance reports are provided to ADEC.	Yes	LF002	Landfill restrictions in place prevent exposure to potential contaminants buried in the landfill; ensure the cap integrity is maintained.	• LUC Management Plan for the Pacific Air Forces Regional Support Center Installation, 2019 • New signs installed in 2019 • NECs filed with ADNR in 2021
ICs are in place and monitored, warning signs are present, and performance reports are provided to ADEC.	Yes	ST005 and OT001	The ICs establish restriction on the use, transport, or disturbance of contaminated soil or sediment, and on groundwater use and/or disposal. Ensure the cap integrity is maintained (OT001).	• LUC Management Plan for the Pacific Air Force Regional Support Center Installation, 2019 • New signs installed in 2019 • NEC filed with ADNR in 2021

Key:

ADEC	Alaska Department of Environmental Conservation
ADNR	Alaska Department of Natural Resources
IC	institutional control
LUC	land use control
NEC	Notice of Environmental Contamination
UU/UE	unlimited use/unrestricted exposure

The following sections provide details on the status of implementation for the other major components of the sites' remedies.

Site LF002

The remedy for Site LF002 included the implementation of ICs; a landfill survey filed with the local recording district; annual landfill surveys for five years; and landfill cap maintenance (USAF, 2001a). Details on the ICs implemented at Site LF002 are provided Table 2.

The Site LF002 remedy included surveying and recording the landfill boundaries. The survey documenting the location of the landfill at Site LF002 was filed with the Aleutian Islands Recording District on 19 July 2006, and recorded as Plat 2006-10 (USAF, 2018).

The remedy for Site LF002 required annual landfill surveys for five years and landfill cap maintenance, as required. Landfill surveys were conducted at Site LF002 in 2011, 2012, and 2016. In 2011, the vegetative cover was observed to be good. Minor debris was visible on the surface, however the USAF and ADEC agreed that any removal would do more damage to the growing tundra than was necessary (USAF, 2018). During the 2012 IC compliance review inspection, no sinkholes or erosion of the cap integrity was observed, and ADEC agreed that future cap integrity inspections would be performed at five-year intervals (USAF, 2018). In 2016, a landfill survey was performed as part of the previous FYR. There was no evidence of ponding, erosion, or settlement visible on the landfill cap, and the vegetative cover was observed to be properly established. A rusted pipe was observed protruding from the ground near Site LF002 along its approximate boundary with the gravel borrow pit. However, it was unclear at the time of the inspection if the pipe was within the site boundary of LF002 or associated with the gravel borrow pit area. No issues were identified during the 2016 site inspection that affect protectiveness of the remedy (USAF, 2018). A cap integrity inspection was conducted as part of this FYR, and the results are detailed in Section IV, Site Inspection.

The status of Site LF002 with ADEC is identified as Cleanup Complete with ICs (ADEC, n.d.).

Site OT001

The remedy for Site OT001 included the following: implementation of ICs; excavation and thermal treatment of DRO-contaminated soil to 15 feet bgs; the removal of two USTs that were previously abandoned in place and the associated contaminated soil; activities to eliminate sinkholes at the demolition debris landfill; a landfill survey, filed with the local recording district; annual landfill surveys for five years; the installation and sampling of groundwater monitoring wells; and the

completion of FYRs (USAF, 2001a). Details on the ICs implemented at Site OT001 are provided in Table 2.

In 2001, DRO-contaminated soil associated with the USTs was excavated to meet the cleanup levels specified in the Decision Document (USAF, 2018). Excavation and thermal treatment of DRO-contaminated soil to 15 feet bgs was completed in 2003 (USAF, 2018). Collected soil samples confirmed that the remediation using thermal desorption was successful and that soil DRO concentrations between the ground surface and 15 feet bgs met the cleanup levels specified in the Decision Document (USAF, 2018).

Annual inspections and activities identified to eliminate hazards presented by sinkholes at the demolition debris landfill were completed from 2002 to 2006 (USAF, 2018). In 2011, USAF, ADEC, and USFWS personnel conducted a landfill inspection at Site OT001. No sinkholes were identified, the landfill cap was observed to be intact, and natural vegetation was spreading at the site (USAF, 2018). A vertical culvert that was placed during the UST removal was recommended for removal, which was completed in 2014 (USAF, 2018). During the 2012 IC compliance review inspection, no sinkholes or erosion of the cap integrity was observed, and ADEC agreed that future cap integrity inspections would be performed at five-year intervals (USAF, 2018). The following cap integrity inspection was conducted in 2016. No evidence of ponding, erosion, or settlement was visible on the cap in 2016, but the geotextile woven grid was exposed in some areas. The site was reported to be predominantly vegetated, except for bare or sparsely vegetated areas noted along the northern edge of the site. A cap integrity inspection was conducted as part of this FYR, and the results are detailed in Section IV, Site Inspection.

The Site OT001 remedy included surveying and recording the landfill boundaries. The survey documenting the location of the landfill at Site OT001 was filed with the Aleutian Islands Recording District in 2006 (USAF, 2018).

Surface water samples were collected from accumulated water in sinkholes adjacent to the abandoned USTs in 2003 (USAF, 2018). No analytes were detected at concentrations above their cleanup levels. Because the cover was repaired to eliminate sinkholes, water no longer accumulates at Site OT001 and the surface water quality standards were deemed no longer applicable (USAF, 2018).

Four new monitoring wells were installed at Site OT001 during the 2003 field season, and groundwater monitoring was subsequently initiated in August 2003. In 2006, ADEC requested yearly groundwater monitoring in 2006 and 2007. DRO was detected at concentrations below the ADEC cleanup level in all samples collected in 2006 and 2007 (USAF, 2012). Based on these results, in 2007 ADEC granted approval for the USAF to cease the groundwater LTM program and decommission the Site OT001 wells (USAF, 2018). All wells except for one were decommissioned in 2007. The one remaining well, a 12-inch corrugated metal pipe approximately 12.4 feet bgs, was decommissioned in 2014 (USAF, 2015).

The status of Site OT001 with ADEC is identified as Cleanup Complete with ICs (ADEC, n.d.).

Site ST005

The remedy for Site ST005 included the following: implementation of ICs; excavation and thermal treatment of DRO-contaminated soil to 15 feet bgs; thermal treatment of contaminated soil stockpiled at the site; the installation and sampling of groundwater monitoring wells; and the completion of FYRs (USAF, 2001a). Details on the ICs implemented at Site OT001 are provided in Table 2.

Excavation and thermal treatment of DRO-contaminated soil to 15 feet bgs and the contaminated soil stockpile at Site ST005 was completed in 2003 (USAF, 2012). Soil samples collected at Site ST005 confirmed that the remediation using thermal desorption was successful and that soil DRO concentrations between the ground surface and 15 feet bgs met the cleanup levels specified in the Decision Document (USAF, 2018). The excavation was backfilled with the thermally treated soil (USAF, 2018). The Site ST005 remedy included documenting residual soil contamination at the site. This record was filed with the Aleutian Islands Recording District on 19 July 2006, and recorded as Plat 2006-8 (USAF, 2018).

In 2003, four monitoring wells were installed (ST005-MW5, ST005-MW6, ST005-MW7, and ST005-MW8). ST005-MW5 was installed upgradient of the site adjacent to Baranov Road. Wells ST005-MW7 and ST005-MW8 were installed downgradient of the Main Excavation Area. The fourth well, ST005-MW6, was installed in the area of highest DRO contamination in the floor of the 2003 excavation. ST005-MW3 was located and returned to service, and groundwater samples were obtained from each of these five wells.

The analytical program initially included benzene, ethylbenzene, toluene, and xylenes (BTEX), gasoline-range organics, and DRO. In consultation with ADEC, the analytical suite was limited over time to DRO only (USAF, 2018). In 2006, ADEC requested groundwater monitoring once every two years (biennially) starting in 2007 (USAF, 2018). Significant reduction of DRO in groundwater was not expected over the span of two years due to the low rate of biodegradation. Following the 2007 field season, MNA was recommended to continue on a five-year basis (USAF, 2018).

In 2008, an additional well was installed to better monitor the migration of contaminants and natural attenuation at Site ST005. Monitoring well ST005-MW9 was installed directly downgradient of where the highest DRO results were obtained in the excavation floor as identified during the 2003 excavation. This well was sampled in July 2008 and DRO was reported below the ADEC cleanup level (USAF, 2018).

Groundwater samples were collected from six wells in 2009 and from three monitoring wells (ST005-MW3, ST005- MW6, and ST005-MW09) in 2014, 2016, and 2019. DRO was detected in only two of the six wells in 2009 (ST005-MW3 and ST005-MW6). DRO exceeded the ADEC cleanup level of 1.5 mg/L at ST005-MW6 (2.6 mg/L). The next groundwater monitoring event was completed in 2014 with only one DRO exceedance at ST05-MW05 (1.75 mg/L). Groundwater

sampling in 2016 identified two DRO exceedances at ST05-MW06 (3.13 mg/L) and ST05-MW03 (2.51 mg/L). The results of the 2019 groundwater samples are detailed in Section IV, Data Review.

Systems Operations/Operation and Maintenance

There are no systems operating at Sites LF002, OT001, or ST005. No operations and maintenance activities were conducted at these sites during the period of this FYR.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the last FYR for Sites LF002, OT001, and ST005 (Table 3), as well as the recommendations from the last FYR and the current status of those recommendations.

TABLE 3: PROTECTIVENESS DETERMINATIONS/STATEMENTS FROM THE 2017 FYR

Site	Protectiveness Determination	Protectiveness Statement
LF002	Protective	The USAF certifies that the remedy at Site LF002 is protective of human health and the environment and complies with federal and state requirements that are legally applicable or relevant and appropriate. There are no immediate threats from Site LF002, and the remedy is being implemented in accordance with the Decision Document. The remedy is protective both currently and in the future because cover inspections are performed every five years, in accordance with the remedy requirements, and ICs are implemented and effective at Site LF002. Continued compliance with these effective ICs is required to ensure the long-term protectiveness of the remedy.
OT001	Protective	The USAF certifies that the remedy at Site OT001 is protective of human health and the environment and complies with federal and state requirements that are legally applicable or relevant and appropriate. There are no immediate threats from Site OT001, and the remedy is being implemented in accordance with the Decision Document. The remedy is protective both currently and in the future because cover inspections are performed every five years, in accordance with the remedy requirements, and ICs are implemented and effective at Site OT001. Continued compliance with these effective ICs is required to ensure the long-term protectiveness of the remedy.
ST005	Protective	The USAF certifies that the remedy at Site ST005 is protective of human health and the environment and complies with federal and state requirements that are legally applicable or relevant and appropriate. There are no immediate threats from Site ST005, and the remedy is being implemented in accordance with the Decision Document. The remedy is protective both currently and in the future because groundwater monitoring is conducted in accordance with the remedy requirements and ICs are implemented and effective at Site ST005. Continued compliance with these effective ICs is required to ensure the long-term protectiveness of the remedy.

Key:
FYR Five-Year Review
IC institutional control
USAF United States Air Force

There were no issues identified for Sites LF002, OT001, or ST005 in the previous FYR. The following recommendations were made, but do not affect protectiveness:

- The USAF should implement efforts to revegetate the bare areas at Site OT001. The recommendation has not been implemented to date.

- The USAF should consider reaching out to the Izembek National Wildlife Refuge (NWR) Manager to improve communications between the agencies. This recommendation is ongoing. The Izembek NWR Manager was invited to contribute to this FYR (see Section IV, Site Interviews).

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement, and Site Interviews

Activities conducted during the FYR included community notifications and site interviews, data review, and site inspections to assess the protectiveness of the remedy.

A public notice was made available by newspaper posting in the *Bristol Bay Times/Dutch Harbor Fisherman* on 22 September 2022 stating that there was an FYR and inviting the public to submit any comments to the USAF. The results of the review and the report will be made available at the site information repository available electronically on the USAF Administrative Record at https://ar.afcec-cloud.af.mil.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy that has been implemented to date**.** The following parties were interviewed, or interview responses were received from them, on the dates specified:

- Mr. Robert Johnston, AFCEC Remedial Project Manager; 14 February 2023
- Ms. Erica Blake, ADEC Environmental Program Specialist; 31 January 2023
- Ms. Maria Fosado, Izembek NWR Manager; 18 November 2022

Multiple attempts were made to interview a representative from the ARCTEC Cold Bay Station; however, no response was received. The results of the interviews that were conducted and correspondence received are summarized in this section, and complete records are provided in Appendix E.

Mr. Johnston stated that the remedies were functioning as intended and no problems have been encountered that would require changes to the Decision Documents. Mr. Johnston confirmed that he is not aware of any community or contractor concerns and that the USAF has not been notified of any problems at the sites.

Ms. Blake confirmed that LTM activities, reporting, and communication with ADEC is being performed as outlined in the Decision Documents, and she is not aware of any problems or impacts to the remedy that would require changes to the Decision Documents. ADEC recommends the USAF address potential cap repairs at LF002 and OT001, possibly requiring larger signage. ADEC also recommended that surface water sampling at ST005 should be included in the next LTM event.

Ms. Fosado was not aware of any contractor or community concerns or activities at the sites; however, the interview outreach was the first she was made aware of the sites' status and progress.

Data Review

This FYR consisted of a review of relevant documents, which included the recent LTM report (USAF, 2020), previous FYRs, Decision Documents, and historical RI and Removal Action reports. A complete list of the documents reviewed is provided in Appendix A.

Data collected at Cold Bay LRRS during the period of this review include the 2019 groundwater monitoring event at ST005. No analytical data were collected at Sites LF002 or OT001 during the period of this FYR because the remedial actions are complete and the sites are being monitored to ensure the ICs remain in place and are effective. The following section summarizes the data review conducted for Site ST005.

Site ST005

In 2019, groundwater samples were collected from the three existing monitoring wells (ST005-MW3, ST005-MW6, and ST005-MW09) and analyzed for DRO and residual-range organics (RRO) concentrations (USAF, 2020). DRO was detected in all three monitoring wells, with concentrations ranging from 0.539 to 1.54 mg/L. The reported DRO concentration of 1.54 mg/L at monitoring well location ST-05MW06 exceeded the ADEC groundwater cleanup level of 1.5 mg/L. A field duplicate sample was collected from this monitoring well location, but the reported concentration of 1.47 mg/L did not exceed the cleanup level. All other concentrations of DRO were below the respective ADEC groundwater cleanup level. RRO was detected in all three monitoring wells, with concentrations ranging from 0.379 to 0.754 mg/L, below the ADEC cleanup level of 1.1 mg/L.

The analytical results from the 2019 groundwater monitoring event at ST005 indicate that DRO remains present in the groundwater at levels that exceed the ADEC cleanup level.

Groundwater data from 2003 to 2019 are presented in Table 4. With the exception of data from 2014, these analytical data were compared using the nonparametric Mann-Kendall trend test (Gilbert, 1987) to assess whether concentrations of COCs exhibited an increasing trend, decreasing trend, stable trend, or no trend over time for a given well. A linear regression analysis was also performed on the data as a parametric alternative to the Mann-Kendall test. Results are presented in Table 4.

TABLE 4: DRO CONCENTRATIONS AT ST005 LTM WELLS

Well ID	DRO Concentration (mg/L)										
	Aug 2003	**May 2004**	**Sep 2004**	**May 2005**	**Oct 2005**	**Oct 2007**	**July 2008**	**Sept 2009**	**July 2014[a]**	**Sept 2016**	**Nov 2019**
ST005-MW3	0.844	0.997	**1.56**	1.06	1.23	0.950	--	1.44M	0.807J	**2.51**	1.05
ST005-MW6	**2.60**	**4.20**	**3.88**	**1.60**	**4.24**	**3.40**	--	**2.34M**	**1.75J**	**3.13**	**1.54**
ST005-MW9	--	--	--	--	--	--	0.250 JB	ND (0.800)M	0.412J	0.787	0.539J

Notes:
Bold indicates that the value exceeds the ADEC groundwater cleanup level for DRO of 1.5 mg/L.
J indicates that the result is an estimated value.
M indicates a potential matrix interference.
[a] Results are biased low; ADEC determined that these results could not be used to assess trends in DRO concentrations (USAF, 2018).

Key:
DRO diesel-range organics
ID identification
mg/L milligrams per liter
ND not detected

TABLE 5: DRO MANN-KENDALL TREND TEST AND LINEAR REGRESSION RESULTS

Location	Statistical Method	n	S	Confidence Level	CV	R^2	Result
ST005-MW3	Linear Regression	9	12	87.0%	0.40	0.2109	Likely No Trend
	Mann-Kendall						Likely No Trend
ST005-MW6	Linear Regression	9	-12	87.0%	0.35	0.2061	Likely No Trend
	Mann-Kendall						Stable Trend
ST005-MW9	Linear Regression	4	0	37.5%	0.44	0.0806	Likely No Trend
	Mann-Kendall						Likely No Trend

Notes:
"n" indicates the number of sample events.
"S" indicates the Mann-Kendall Statistic.

Key:
CV coefficient of variance
DRO diesel-range organics
R^2 coefficient of determination

Statistical trend results indicate that there are no definitive trends in concentrations of DRO at ST005-MW3 or ST005-MW9. Fluctuations in DRO concentrations may be attributable to relative groundwater depth based on tidal influences at the time of sampling, plume dynamics, and limited natural attenuation. Based on the Mann-Kendall test, ST005-MW6 (the well closest to the source area) exhibits a stable trend, but with only 87.0 percent confidence level. Additional monitoring data, especially at ST005-MW9 where only four data points exist, should help increase confidence levels in the statistical trend results.

Site Inspection

The inspections of the sites were conducted on 9/21/2022 and 9/22/2022. In attendance were two field team members from Ahtna. All fieldwork was performed or supervised by qualified personnel, in accordance with 18 AAC 75.333 and 18 AAC 75.360 (ADEC, 2022). The purpose of the inspection was to assess the protectiveness of the remedy. The FYR inspection forms and photographic documentation are provided in Appendices F and G. Figures 2–4 display features of interest observed at each site.

Site LF002

In September 2022, the FYR inspection did not identify any evidence of trespassing or vandalism. The ICs were noted to be adequate, however the west LUC signage was missing. The LUC boundary on the signage shows an expanded footprint of the LF002 boundary when compared to the USAF 611th GeoBase and the 2006 Landfill Survey (Appendix C). No evidence of ponding, erosion, or settlement was visible on the landfill cap, and the vegetative cover was observed to be properly established. Animal tracks were observed along the perimeter slope. A rusted pipe was observed protruding from the ground in the northeastern boundary with the gravel borrow pit. The active operations of the gravel pit were observed to be in the southeastern portion of the borrow pit area. No issues were identified at Site LF002 that would affect the protectiveness of the remedy.

Site OT001

In September 2022, the FYR inspection did not identify any evidence of trespassing or vandalism. LUC signs were in place, however a sign at the northern boundary stating that vehicles were prohibited was observed with bullet holes. No evidence of ponding or settlement was visible on the cap. The site was predominantly vegetated, with some areas of gravel and sparse vegetation along the perimeter. The geotextile woven grid was exposed near the northwestern boundary. Metal rebar was observed protruding from the western boundary and metal pipe debris was observed at the eastern boundary, along the roadway. The were no indications that the ICs were not properly implemented or being fully enforced, and no issues were identified at Site OT001 that would affect the protectiveness of the remedy.

Site ST005

At ST005, the ICs were noted to be adequate and there were no indications that the ICs were not properly implemented. Two LUC signs were in place and in good condition. No signs of ponding, settlement, or erosion were observed, and the site was well vegetated. Disturbed vegetation and four-wheeler tire tracks were noted at the southeastern border of the site but appeared to follow the eastern perimeter of Site ST005. The onsite monitoring wells need maintenance. At ST005-MW9, a flush mount well, the outer casing's bolts were sheared off and debris had accumulated in the inner annulus of the casing. However, the well riser was secured with a locked compression cap. At ST005-MW6, the lock on the outer casing was cut and the well riser compression cap was not properly locked. At ST005-MW3, the outer casing lid was broken, however the well riser was

secured with a compression cap. The well was mostly obscured by overgrown vegetation. Although the outer well casings were compromised, all wells had compression caps in place and appeared functional. No issues were identified at Site ST005 that would affect the protectiveness of the remedy.

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V. TECHNICAL ASSESSMENT

In accordance with CERCLA, the NCP, and EPA guidance, an FYR should determine whether the remedy at the site is protective of human health and the environment. The technical assessment of a remedy examines three questions that provide a framework for organizing and evaluating data and information and ensures that all relevant issues are considered when determining the protectiveness of the remedy. These questions are presented in the following sections.

QUESTION A: Is the remedy functioning as intended by the decision documents?

The review of documents, site data, and the results of the site inspections indicates that the remedies at Sites LF002, OT001, and ST005 are functioning as intended by their Decision Documents (USAF, 2001a and 2001b). The LUCs for Sites LF002, OT001, and ST005 are documented in the LUC Management Plan for the Pacific Air Forces Regional Support Center Installation (USAF, 2019) and in NECs that are on file with the ADNR. The ICs are in place and adequate to prevent exposure to soil and/or groundwater contaminants. Inspections are performed in accordance with remedy requirements, LUC signs are repaired or replaced when needed, and reports are submitted to ADEC.

For Site ST005, groundwater LTM was initiated in 2003 and subsequent LTM events were completed in accordance with the Decision Document or agreements between the USAF and ADEC. Based on the 2019 data, DRO remains at concentrations above the cleanup level in Site ST005 groundwater. DRO concentrations vary over time, with no overall trend indicated at the two downgradient wells. ST005-MW6, closest to the source area, exhibits a stable trend. However, the remedy is functioning as intended because LUCs prohibit the use of site groundwater, thereby maintaining the protectiveness of the remedy.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

The RAOs used at the time of the remedy selection are still valid and no changes to exposure assumptions are warranted. Since the remedies for Sites LF002, OT001, and ST005 were determined, ADEC issued revised soil and groundwater cleanup levels, which are risk-based values that incorporate updates to toxicity data. Under the NCP (Subpart 300.430(f)(1)(ii)(B)(1)), if a new requirement is promulgated after the Decision Document is signed and the requirement is determined to be applicable or relevant and appropriate, the remedy must be examined in light of the new requirement to ensure that the remedy is still protective. The newly promulgated standards are neither applicable nor relevant and appropriate to Sites LF002, OT001, or ST005 because the cleanup level for DRO, the only COC that is actively being monitored, did not change. Therefore, the cleanup levels used at the time of remedy selection remain valid.

There have been no changes in the physical conditions of Sites LF002, OT001, or ST005 that would affect the protectiveness of the remedies. No contaminants or abandon drums and debris in sufficient quantities to cause adverse effects have been observed.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No additional information has been identified that calls into question the protectiveness of the remedies for Sites LF002, OT001, or ST005.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
Sites OT001 and ST005

Issues and Recommendations Identified in the Five-Year Review:

Site LF002	**Issue Category:** Site Access/Security			
	Issue: Signage is missing from the western boundary and additional signage may be needed at the northeastern boundary.			
	Recommendation: Replace the western sign and install, if necessary, additional signage to better delineate the LUC/IC area from the gravel pit area.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	Other (AFCEC)	State	2024

Other Findings

This FYR identified the following recommendations that may improve performance of the remedy, but do not affect current and/or future protectiveness:

- The USAF should implement efforts to revegetate the exposed geofabric areas at Site OT001.
- At LF002, the USAF should evaluate the feasibility for inert debris removal of surface debris identified within the geophysical survey area. It is unclear if the debris originated from the landfill area and the debris is not of sufficient quantities to cause adverse risk effects that would affect remedy protectiveness.
- The USAF should update the 611th GeoBase boundary of the former landfill at LF002 using the 2006 survey locations (Appendix C).
- The USAF should engage with the Izembek NWR Manager prior to the next LTM event to improve communication between the agencies.
- Based on ADEC recommendations, if surface water is encountered at ST005, then samples should be analyzed for BTEX and PAHs. The individual BTEX and PAH constituent concentrations should be used calculate TAH and TAqH concentrations for comparison against the state's surface water quality standards listed in 18 AAC 70 (ADEC, 2021).

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VII. PROTECTIVENESS STATEMENT

Protectiveness Statement	
Site LF002	*Protectiveness Determination:* Short-term Protective
Protectiveness Statement: The USAF certifies that the remedy at Site LF002 is protective of human health and the environment and complies with federal and state requirements that are legally applicable or relevant and appropriate. There are no immediate threats from Site LF002, and the remedy is being implemented in accordance with the Decision Document. The remedy is currently protective because LUCs/ICs are implemented, and an NEC is on record with ADNR land records. In order for the remedy to be protective in the long term, continued LUC/IC inspections, sign repairs, and new sign placement to fully delineate the LUC/IC boundary should be performed. Continued compliance with these effective ICs is required to ensure the long-term protectiveness of the remedy.	
Protectiveness Statement	
Site OT001	*Protectiveness Determination:* Protective
Protectiveness Statement: The USAF certifies that the remedy at Site OT001 is protective of human health and the environment and complies with federal and state requirements that are legally applicable or relevant and appropriate. There are no immediate threats from Site OT001, and the remedy is being implemented in accordance with the Decision Document. The remedy is protective both currently and in the future because cover inspections are performed every five years in accordance with the remedy requirements, and LUCs/ICs are implemented and effective at Site OT001. An NEC is on file with ADNR land records ensuring future protectiveness of the site remedy. Continued compliance with these effective LUCs/ICs is required to ensure the long-term protectiveness of the remedy.	
Protectiveness Statement	
Site ST005	*Protectiveness Determination:* Protective
Protectiveness Statement: The USAF certifies that the remedy at Site ST005 is protective of human health and the environment and complies with federal and state requirements that are legally applicable or relevant and appropriate. There are no immediate threats from Site ST005, and the remedy is being implemented in accordance with the Decision Document. The remedy is protective both currently and in the future because groundwater monitoring is conducted in accordance with the remedy requirements, LUCs/ICs are implemented and effective, and an NEC is on file with	

ADNR land records. Continued compliance with LUCs/ICs is required to ensure the long-term protectiveness of the remedy.

VIII. NEXT REVIEW

The next FYR report for Cold Bay LRRS Sites LF002, OT001, and ST005 is required five years from the signatory date of this review.

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FIGURES

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LEGEND

- Land Use Control Restriction
- Installation Boundary
- USFWS National Wildlife Refuge
- LUC Sign
- LUC Sign Missing
- Well Point

Notes:
1. LUC boundaries depicted on this figure are preliminary pending final analysis of survey information. LUC boundaries will be updated once this information is available.
2. Boundary data are from 611th GeoBase or have been georeferenced into GIS from historical documents. Data could be incomplete and are of unknown accuracy.
3. For more detailed land use restriction information, see individual site descriptions and summaries.

GIS - Geographic Information System
LUC - Land Use Control
LRRS - Long Range Radar Station
USFWS - United States Fish & Wildlife Service

0 0.5 1 2
Miles

2022 Five-Year Review Report for
LF002, OT001, and ST005 at
Cold Bay Long Range Radar Station, Alaska
U.S. Air Force Civil Engineer Center
Joint Base Elmendorf-Richardson, Alaska

Site Location and Vicinity

Figure 1

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LEGEND

- Land Use Control Restriction
- Installation Boundary
- USFWS National Wildlife Refuge
- LUC Sign
- LUC Sign Missing
- Well Point

Notes:
1. LUC Boundary data are from 611th GeoBase or have been georeferenced into GIS from historical documents. Data could be incomplete and are of unknown accuracy.
2. For more detailed land use restriction information, see individual site descriptions and summaries.

GIS - Geographic Information System
LUC - Land Use Control
LRRS - Long Range Radar Station
USFWS - United States Fish & Wildlife Service

0 100 200 400
Feet

2022 Five-Year Review Report for LF002, OT001, and ST005 at Cold Bay Long Range Radar Station, Alaska
U.S. Air Force Civil Engineer Center
Joint Base Elmendorf-Richardson, Alaska

Site LF002 Features of Interest

Figure 2

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APPROXIMATE AREA OF EXPOSED GEOFABRIC

OT001

Grant Point Road

LEGEND

- LUC Sign
- Land Use Control Restriction
- Installation Boundary
- USFWS National Wildlife Refuge

Notes:
1. LUC Boundary data are from 611th GeoBase or have been georeferenced into GIS from historical documents. Data could be incomplete and are of unknown accuracy.
2. For more detailed land use restriction information, see individual site descriptions and summaries.

GIS - Geographic Information System
LUC - Land Use Control
LRRS - Long Range Radar Station
USFWS - United States Fish & Wildlife Service

N

0 100 200 400
Feet

2022 Five-Year Review Report for LF002, OT001, and ST005 at Cold Bay Long Range Radar Station, Alaska
U.S. Air Force Civil Engineer Center
Joint Base Elmendorf-Richardson, Alaska

Site OT001 Features of Interest

Figure 3

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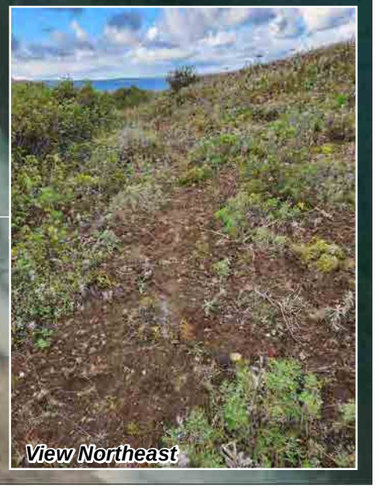
ST005

ST005-MW03

ST005-MW09

ST005-MW06

Baranov Road



LEGEND

- LUC Sign
- Well Point
- Land Use Control Restriction
- Installation Boundary
- USFWS National Wildlife Refuge

Notes:
1. LUC Boundary data are from 611th GeoBase or have been georeferenced into GIS from historical documents. Data could be incomplete and are of unknown accuracy.
2. For more detailed land use restriction information, see individual site descriptions and summaries.

GIS - Geographic Information System
LUC - Land Use Control
LRRS - Long Range Radar Station
USFWS - United States Fish & Wildlife Service

N

0 50 100 200
Feet

2022 Five-Year Review Report for LF002, OT001, and ST005 at Cold Bay Long Range Radar Station, Alaska
U.S. Air Force Civil Engineer Center
Joint Base Elmendorf-Richardson, Alaska

Site ST005 Features of Interest

Figure 4

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COLD BAY LRRS FIGURES
AS REFERENCED IN DECISION DOCUMENTS

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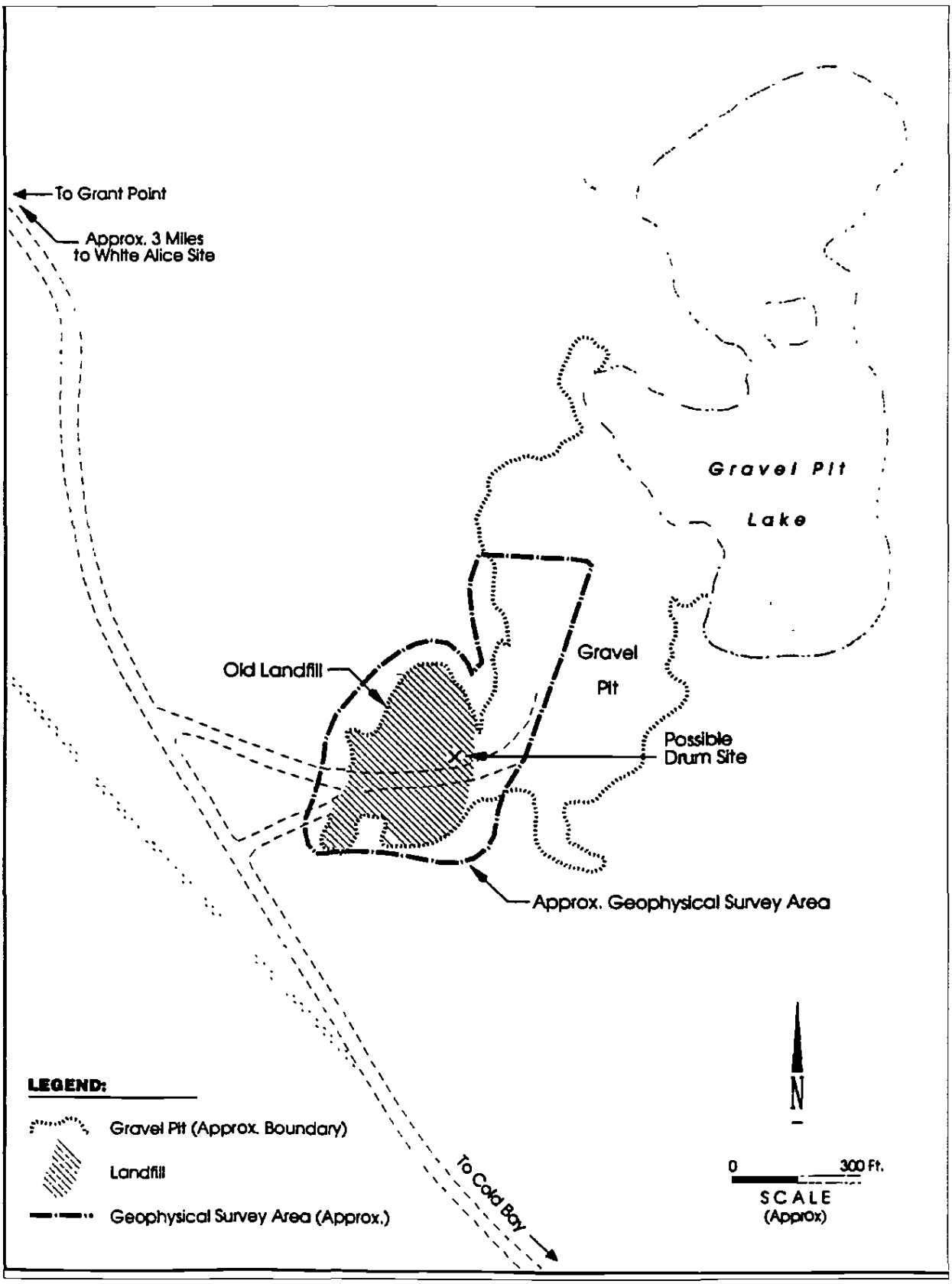

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FIGURE 3

U S ARMY ENGINEER DISTRICT, ALASKA
COLD BAY DECISION DOCUMENT

LANDFILL/GRAVEL PIT (LF02)

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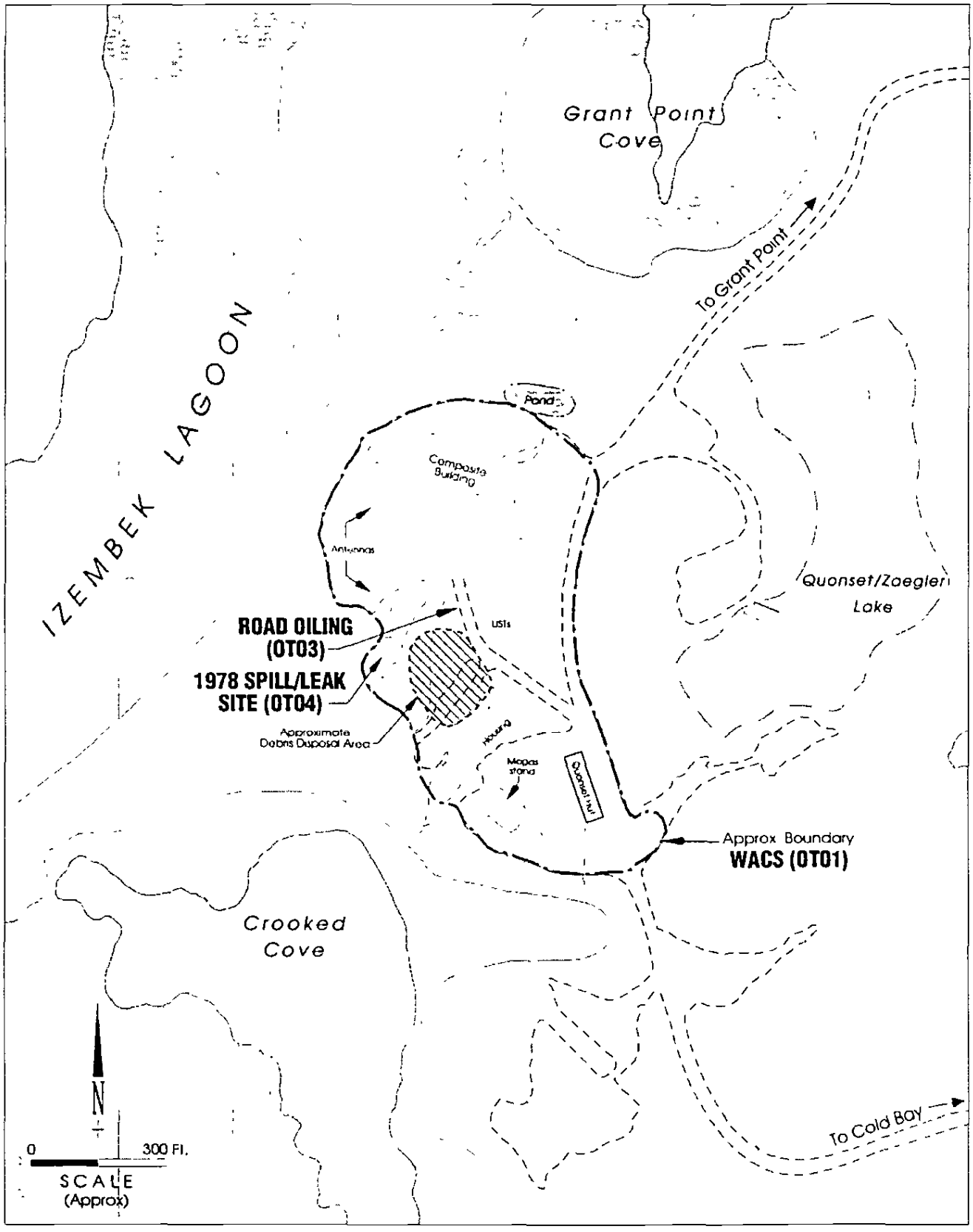

FIGURE 2

U S ARMY ENGINEER DISTRICT, ALASKA
COLD BAY DECISION DOCUMENT

SITE MAP FOR WACS (OT01), ROAD OILING (OT03) AND 1978 SPILL/LEAK SITE (OT04)

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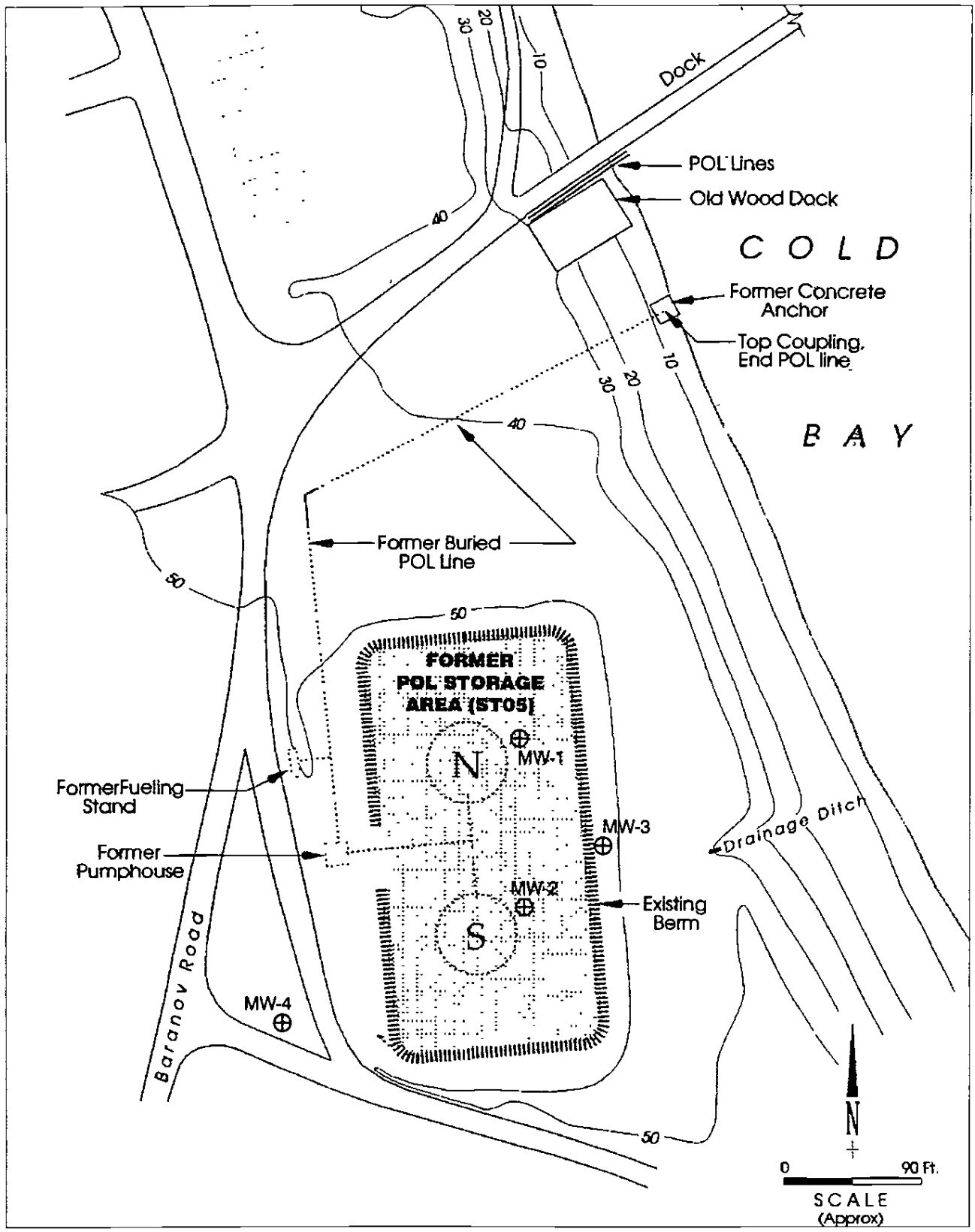

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FIGURE 2

U S ARMY ENGINEER DISTRICT, ALASKA
COLD BAY DECISION DOCUMENT

POL STORAGE AREA (ST05)

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APPENDIX A – REFERENCES

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APPENDIX B

SITE CHRONOLOGY

Event	Date
The USAF constructed the Cold Bay LRRS facility.	1941
The USAF transferred control of the airfield to the Federal Aviation Administration.	1950s
The WACS site was constructed as a Cold Bay communication link in the extension of the Distant Early Warning Line into the Aleutians.	1958 and 1959
The USAF used Sited LF002 to bury non-hazardous and possibly hazardous wastes from the Cold Bay installation.	1971–1976
The Cold Bay MAR Station was installed.	1985
Environmental investigations were initiated at the Cold Bay LRRS.	April 1985
Five monitoring wells were installed around Site LF002 and groundwater samples were collected from the wells. Samples were analyzed for TPH, VOCs, and PCBs, but none of the analytes were detected. Soil samples were collected, but no contaminants were detected at concentrations exceeding ADEC cleanup levels at Site LF002.	1986
Site OT001 (the former WACS facility) was demolished. All chemical and hazardous materials except for asbestos were removed from the buildings prior to their demolition.	1987 and 1988
The USFWS notified the USAF that a sinkhole had developed near the Site OT001 USTs and that the accumulated water had a petroleum sheen.	1991
An investigation on Site ST005 identified DRO-contaminated soil	1993–1996
A geophysical survey was conducted at Site LF002 to investigate a report that 200 drums from the WACS demolition may have been buried in the landfill. Eight test pits were dug, but no drums or other containers were located. Three soil borings were drilled at Site OT001 near the UST. Ten sediment samples were collected with a maximum DRO concentration of 15,000 mg/kg. Site ST005 had four monitoring wells installed. DRO was detected in groundwater samples collected from the monitoring wells.	1994
Three additional borings were advanced around the sinkhole at Site OT001, and eight soil samples were collected from the soil borings. Only one sample had a detectable DRO concentration.	1995
Protruding debris was removed from Site OT001 and the largest sinkholes were filled with gravel. The gravel cover was graded and seeded. Site ST005 had a bioventing system installed.	1997
Five monitoring wells installed at Site LF002 in 1986 were plugged and abandoned.	1998
Approximately 2,000 cubic yards of DRO-contaminated soil were excavated at Site ST005 and placed in two long-term stockpiles. Thirteen soil samples were collected from the excavation, and DRO concentrations were detected in 11 of the soil samples. DRO concentrations ranged from 130 to 12,000 mg/kg. Three of the monitoring wells installed in 1994 were decommissioned and one was sampled. The sampled monitoring well had a DRO concentration exceeding DRO cleanup levels.	2000
Site ST005 had contaminated soils excavated and thermally treated to cleanup levels stated in the Declaration of Decision for ST005. Three storage tanks were emptied and sealed, and the	2003

Event	Date
tanks were left on the site. Tank contents and wastewater were disposed of off site. Four monitoring wells were installed.	
The EPA determined that Cold Bay LRRS met the requirements for NFRAP under CERCLA OT001 was granted a Conditional Closure by ADEC.	2008
LUC/IC inspections at Cold Bay LRRS and Site ST005 LTM were performed.	2009
LUC/IC inspections at Cold Bay LRRS and Site ST005 LTM were performed.	2014
LUC/IC inspections at Cold Bay LRRS and Site ST005 LTM were performed.	2016
The first FYR for Site LF002 and third FYR for Sites OT001 and ST005 were conducted.	2017
LUC/IC inspections at Cold Bay LRRS and Site ST005 LTM were performed.	2019
The second FYR for Site LF002 and fourth FYR for Sites OT001 and ST005 were conducted.	2022

Key:

ADEC	Alaska Department of Environmental Conservation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DRO	diesel-range organics
FYR	Five-Year Review
LRRS	Long Range Radar Station
LTM	long-term monitoring
MAR	Minimally Attended Radar
mg/kg	milligrams per kilogram
PCB	polychlorinated biphenyl
TPH	total petroleum hydrocarbon
USAF	United States Air Force
USFWS	United States Fish and Wildlife Service
UST	underground storge tank
VOC	volatile organic compound
WACS	White Alice Communications System

APPENDIX C

LUC Documentation

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TABLE 2-1
Description of LUC[1] Types Currently in Effect at PRSC ERP Sites
Land Use Control Management Plan 2019, PRSC Installations, JBER, Alaska

Installation:	ERP Site(s)	Purpose and Objectives	Prohibitions/Restrictions	Engineering Controls	Expected Durations	Monitoring/ Inspections/ Reporting/ Maintenance	Administrative Elements
Cape Romanzof LRRS	SS016	Prohibit development and use of property for residential housing, prevent use of contaminated soil for restricted uses.and maintain cap (if necessary) at SS016 in order to prevent direct exposure and water infiltration.	Prohibit development and use of property for residential housing, prevent use of contaminated soil for restricted uses, require dig permit in the event of excavation, implement soil management plan, and maintain cap (if necessary) at SS016 in order to prevent direct exposure and water infiltration. ICs will be incorporated into the LUC Plan.	Soil cap Signage	The cap and signs will be maintained by USAF until it is determined that PCB contaminated soil no longer poses an unacceptable risk to human health and the environment and allow for unlimited use and unrestricted exposure at the site.	• Periodic site inspections will be performed to check the condition of the cap and signs; maintenance will be completed as needed. • Cap and signs will be maintained by USAF until it is determined that PCB-contaminated soil no longer poses an unacceptable risk to human health and the environment and allow for unlimited use and unrestricted exposure at the site. • If contamination remains on site, ICs and a Five-Year Review will be required. Performance reports will be provided to ADEC, annually, for the first five years after remedial activities and will be followed by a Five-Year Review.	• ICs and a Five-Year Review will be required. • Performance reports will be provided to ADEC, annually, for the first five years after remedial activities and will be followed by a Five-Year Review. • Implement soil management plan • Implement LUC Plan incorporating ICs
Cape Romanzof LRRS	SS017	To prevent unacceptable ecological risks to the recreational and subsistence population at Cape Romanzof LRRS.	If excavation to promulgated soil cleanup levels (1 mg/kg PCBs and 400 mg/kg Lead) is infeasible due to safety or logistical issues associated with remedial action, then capping and ICs with long-term monitoring and maintenance on the cap will be required.	• (None specified)	• (None specified)		• If contamination greater than cleanup levels remains on site after excavation, capping and ICs with long-term monitoring and maintenance on the cap will be required.
Cape Romanzof LRRS	ST009	• Ensure that groundwater contamination is not migrating downgradient into Kokechik Bay at levels that could be detrimental to surface water quality. • Restrict use of the groundwater as long as the groundwater DRO concentrations exceed the ADEC Table C cleanup levels, which are protective of drinking water. • Restrict access to contaminated soils above 18 AAC Method 2 levels protective of unrestricted use.	• No unauthorized digging/excavation	• (None specified)	• Annual monitoring will be discontinued if downgradient wells MW-7 and MW-9 do not show increasing levels or DRO, GRO, or BTEX, and surface water results are consistently below water quality criteria and not increasing. Otherwise, the monitoring program will be reviewed for protectiveness and representativeness, revised if appropriate, and extended until three consecutive years of monitoring data establish that the criteria listed above have been met.	• Annual monitoring of three wells, MW-4, MW-7, and MW-9 (for DRO, GRO, and BTEX), and one surface water location SW-5 (for TAqH) will be performed a minimum of 3 years • Visual inspections and reporting at least once every 5 years to asses IC status and how any inconsistencies or inconsistent uses have been addressed.	• Boundaries of soil with DRO above 18 AAC 75.341 Method Two cleanup levels will be delineated • Institutional controls will be documented in USAF Real Property records, including a map of IC locations. Appropriate notice will be filed with the USFWS. • USAF dig permit and construction review system or similar system developed by the Base Operation Support contractor will be used to restrict incompatible activities • ADEC approval required for any major changes to ICs or excavation activities within contaminated areas • In the event that the property is transferred, the property transfer document will describe the ICs. USAF will provide notice to ADEC prior to any transfer, sale, or lease of the property so that ADEC can be involved in discussions to ensure that appropriate provisions are included in the transfer terms or conveyance documents to maintain the ICs.
Cape Romanzof LRRS	OB942 (MMRP)	• Minimize or eliminate the potential for human exposure to MEC, which could prevent a physical hazard	• Restrict invasive and residential activities • Protect human health from exposure to munition consituents associated with small arms debris • No unauthorized digging/excavation	• Signage	• The Air Force shall maintain the LUCs indefinitely, as buried anomalies would remain in place and OB942 would not be restored for UU/UE	• Five-Year reviews • Utilize the installations construction review process • Utilize the installations dig permit system • Inconsistent activities shall be addressed by USAF as soon as possible, no later than 10 days after becoming aware of the breach	• CERCLA five-year reviews required, but not yet implemented (10/6/2016)
Cold Bay LRRS	LF002	• (None specified)	• (None specified)	• (None specified)	• Annual landfill inspection for 5 years	• The landfill will be surveyed annually for five years for development of sinkholes and for the presence of adequate cover. The landfill cap will be maintained as necessary.	• The landfill will be surveyed and the information will be recorded in the Aleutian Islands Recording District in Anchorage, Alaska.

TABLE 2-1
Description of LUC[1] Types Currently in Effect at PRSC ERP Sites
Land Use Control Management Plan 2019, PRSC Installations, JBER, Alaska

Installation:	ERP Site(s)	Purpose and Objectives	Prohibitions/Restrictions	Engineering Controls	Expected Durations	Monitoring/ Inspections/ Reporting/ Maintenance	Administrative Elements
Cold Bay LRRS	ST005	• To meet 18 AAC 75.341, Method 2 migration to groundwater cleanup level for the under 40-inch precipitation zone for soils to a depth of 10 feet • To ensure that the inhalation and ingestion standards are met and to reduce the amount of time it will take for natural attenuation to meet the cleanup levels for soils between 10 and 15 feet bgs • (For fuel contaminated groundwater) To achieve no greater than 1.5 mg/L DRO throughout the aquifer (18 AAC 75.345 Table C), and to achieve surface water quality standards (10 ug/l TAH, 15 ug/1 TAqH) at the point where groundwater discharges to surface water	• Groundwater not to be used as drinking water until it meets applicable cleanup levels • If contaminated soil is excavated or exposed in the future, it will be managed in accordance with the laws and regulations applicable at that time.	• (None specified)	• Monitored natural attenuation will occur until groundwater DRO concentrations are less than 1.5 mg/L throughout the aquifer (18 AAC 75.345 Table C) and surface water is less than 10 ug/L TAH, 15 ug/L TAqH at the point where groundwater discharges to surface water.	• Monitored natural attenuation will occur until groundwater DRO concentrations are less than 1.5 mg/L throughout the aquifer (18 AAC 75.345 Table C) and surface water is less than 10 ug/L TAH, 15 ug/L TAqH at the point where groundwater discharges to surface water.	• ICs in the form of notice in land records will be developed by USAF, with ADEC concurrence, to document that groundwater should not be used as a drinking water source until it meets the applicable cleanup levels. The ICs will also document that if contaminated soil is excavated or exposed in the future it must be managed in accordance with the laws and regulation applicable at that time.
Cold Bay LRRS	OT001	• Protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment • Protect human health by reducing the risk from potential exposure	• (None specified)	• (None specified)	As no contaminants remain on site above ADEC cleanup levels, site closure is anticipated	• (None specified)	• (None Specified)
Driftwood Bay RRS	LF006	Prevent the ingestion, inhalation, and offsite migration of soil exceeding risk-based cleanup levels; '• Meet 18 AAC 60 maintenace and inspection requirements • Be protective of human health, safety, welfare, and the environment	• (None specified)	• Containerize and stage contaminated soil above ADEC cleanup levels for offsite shipment; • Perform analytical sampling for waste stream characterization; • Offsite disposal; • Collect and analyze confirmation samples to ensure that cleanup levels have been met; and • Backfill the excavations with locally available material after contaminated soil in excess of ADEC cleanup levels has been removed from the site.	• (None specified)	• (None specified)	• (None specified)
Driftwood Bay RRS	OT001	• Meet 18 AAC 60 maintenace and inspection requirements • Be protective of human health, safety, welfare, and the environment	'Preliminary LUCs will remain in place until ROD is finalized; '• Signage			TBD	TBD
Driftwood Bay RRS	SS002	• Meet 18 AAC 60 maintenace and inspection requirements • Be protective of human health, safety, welfare, and the environment	• Notification prior to digging/excavation is required by ADEC • Groundwater not to be used as drinking water until it meets applicable cleanup levels	• Signage	• IICs and LTM will remain in place until contaminants are below cleanup levels	• Groundwater monitoring • Inspection of all site areas subject to LUCs • Five-Year reviews	• (None Specified)
Driftwood Bay RRS	SS007	• Meet 18 AAC 60 maintenace and inspection requirements • Be protective of human health, safety, welfare, and the environment	'Preliminary LUCs will remain in place until ROD is finalized; '• Signage			TBD	TBD

ALASKA
2021-000039-0
Recording District 305 Aleutian Islands
02/09/2021 02:02 PM Page 1 of 3

NOTICE OF ENVIRONMENTAL CONTAMINATION

RECORDING DISTRICT: ALEUTIAN ISLANDS

As required by the Alaska Department of Environmental Conservation (ADEC), Grantee, pursuant to 18 AAC 75.375 the U.S. Air Force (USAF), Grantor, as the owner of the subject property, hereby provides public notice that site LF002 – Landfill located at: Northing 461,348.230 feet, Easting 1,474,530.397 feet (Zone 7, Alaska State Plane), at the Cold Bay Long Range Radar Station, near Cold Bay, Alaska, and more particularly described as follows:

Section 9 of Township 57 South, Range 89 West, Seward Meridian,

has been subject to a discharge or release and subsequent cleanup of oil or other hazardous substances, regulated under 18 AAC 75, Article 3, as amended October 27, 2018. The release and cleanup information is documented in the ADEC Contaminated Sites database file at:

https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/SiteReport/2832

Site LF002 is located approximately 7 miles northwest of the community of Cold Bay on property managed by the USFWS. USAF used the site from 1971 to 1976 to bury non-hazardous and possibly drums and hazardous wastes from the Cold Bay USAF facilities. Subsequent investigations at the site documented the presence of subsurface soil contaminated with diesel range organics and cadmium, but confirmed that the groundwater had not been impacted. Following the removal from service in 1976, the landfill was capped with clean fill material to prevent against potential exposures of contaminants to wildlife and human receptors. A 2001 Decision Document established Institutional Controls as the Selected Remedy for the site to ensure continued management of the contaminated material beneath the landfill cap.

ADEC reviewed and approved, subject to the sustained management of the Institutional Controls, the cleanup as protective of human health, safety, welfare, and the environment. No further cleanup is necessary at this site unless new information becomes available that indicates to ADEC that the site may pose an unacceptable risk to human health, safety, welfare, or the environment. ADEC determined, in accordance with site cleanup rules detailed in 18 AAC 75.325 – 390, that cleanup has been performed to the maximum extent practicable.

Attached is a site figure that shows the approximate boundary of the area managed under ICs. The following Land Use Controls apply specifically to the LF002 site (Hazard ID 2832):

- Requirements for installation of warning signage to alert site visitors of the presence of contamination and the access and use restrictions.
- Requirements for periodic inspections at the site, until ADEC approves discontinuation, to visually assess the following:
    - The condition of the landfill cap and the down-gradient area to monitor for evidence of containment failure, and

  - The condition and visibility of the site warning signage.
- Requirements for implementation of a dig permit and construction review process to include an as-built survey of the landfill cap and notice requiring the management of any solid waste or contaminated soil that is excavated or exposed in the future in accordance with all applicable laws and regulations.
- Requirements for documenting land use limitations and prohibitions in USAF Real Property Records, for Cold Bay LRRS.
- Documentation of the site condition and the Institutional Controls in the Alaska Department of Natural Resources Recording Office
- Requirements for ADEC approval of any termination of Land Use Controls or modifications to land use that is inconsistent with or may disrupt the protectiveness of the controls.

Pursuant to 18 AAC 75.325(i)(1) and (2), ADEC approval is required prior to transporting soil or water from within the boundaries of the site. Any soil or water that is extracted or brought to the surface in the future must be characterized and managed following applicable regulations at that time. In addition, any work/dig permit must comply with the Pacific Air Forces Regional Support Center Operating Instruction (PRSCOI) 32-7001 Land Use Control Management. The Institutional Controls will remain in effect until the State of Alaska determines they are no longer required for protection of human health and ecological receptors.

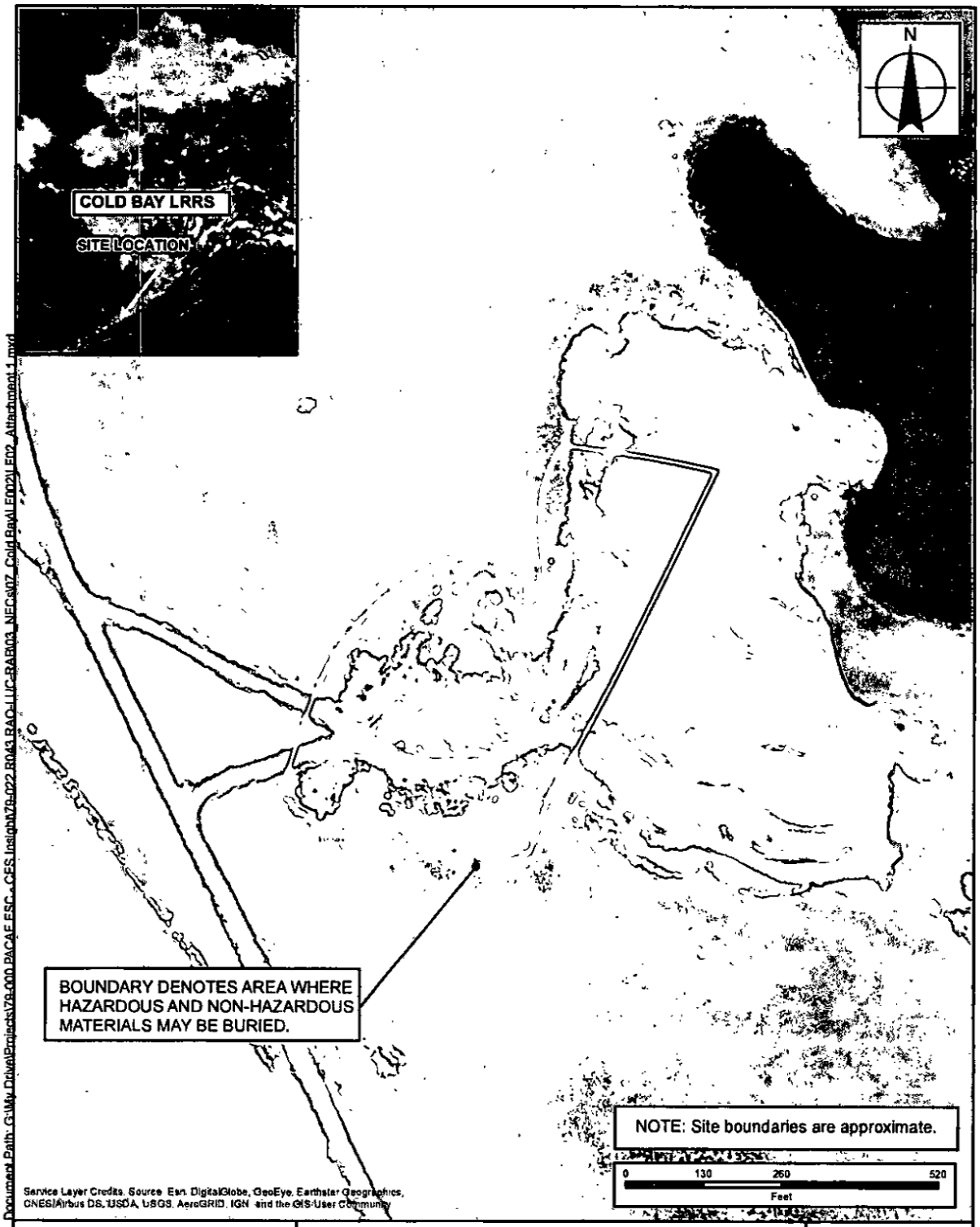
In the event that contaminated media becomes exposed or accessible by land use activities, or other information becomes available which indicates that the site may pose an unacceptable risk to human health, safety, welfare or the environment, the land owner and/or operator are required under 18 AAC 75.300 to notify ADEC and evaluate the environmental status of the contamination in accordance with applicable laws and regulations; further site characterizations and cleanup may be necessary under 18 AAC 75.325-.390.

This Notice remains in effect until a written determination from ADEC is recorded that states that the soil, surface water and groundwater at the LF002 site has been shown to meet the most stringent cleanup levels under 18 AAC 75.325-.390 and 18 AAC 70 and that off-site transportation of contaminants is not a concern.

For more information on the contaminated site in this Notice of Environmental Contamination, please see ADEC Contaminated Sites Program file number 2538.38.008, Cold Bay RRS – Mile 6 Landfill (LF002)/ Gravel Pit by Bluebill Lake, Cold Bay, AK 99571, Hazard ID No. 2832.

Daniel Fisher
CES-Insight

Return To: Charlie Crawford, CES-Insight, 1701 Shenandoah Avenue, NW, Roanoke, VA 24017



NOTICE OF ENVIRONMENTAL CONTAMINATION RECORDING DISTRICT: ALEUTIAN ISLANDS COLD BAY, ALASKA	T57S, R89W, SECTION 9 SEWARD MERIDIAN AREA SUBJECT TO RESTRICTED LAND USE DUE TO ENVIRONMENTAL CONTAMINATION	ATTACHMENT 1

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A L A S K A
2021 – 000040 – 0
Recording District 305 Aleutian Islands
02/09/2021 02:02 PM Page 1 of 3

NOTICE OF ENVIRONMENTAL CONTAMINATION

RECORDING DISTRICT: ALEUTIAN ISLANDS

As required by the Alaska Department of Environmental Conservation (ADEC), Grantee, pursuant to 18 AAC 75.375 the U.S. Air Force (USAF), Grantor, as the owner of the subject property, hereby provides public notice that site OT001 – White Alice Communication System (WACS) located at: Northing 462,230.483 feet, Easting 1,455,300.338 feet (Zone 7, Alaska State Plane), at the Cold Bay Long Range Radar Station, near Cold Bay, Alaska, and more particularly described as follows:

Section 11 of Township 57 South, Range 90 West, Seward Meridian,

has been subject to a discharge or release and subsequent cleanup of oil or other hazardous substances, regulated under 18 AAC 75, Article 3, as amended October 27, 2018. The release and cleanup information is documented in the ADEC Contaminated Sites database file at:

https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/SiteReport/2826

Site OT001 was a former WACS facility consisting of a former composite building, several other structures and multiple underground and aboveground fuel storage tanks. In 1987 and 1988, the facility was demolished and the debris was buried onsite. Subsequent analytical sampling detected the presence of petroleum contamination in the subsurface soil at the site and in wetland sediments around the former facility. In 2001 diesel-contaminated soil was removed and thermally treated on site and the remnant buried debris was covered with a gravel cap. Groundwater samples collected in 2006 and 2007 confirmed that contaminant levels in the groundwater were below the respective ADEC cleanup levels. A 2001 Decision Document established Institutional Controls as the Selected Remedy for the site to monitor the condition of the gravel cap covering the remnant debris.

ADEC reviewed and approved, subject to the sustained management of the Institutional Controls, the cleanup as protective of human health, safety, welfare, and the environment. No further cleanup is necessary at this site unless new information becomes available that indicates to ADEC that the site may pose an unacceptable risk to human health, safety, welfare, or the environment. ADEC determined, in accordance with site cleanup rules detailed in 18 AAC 75.325 – 390, that cleanup has been performed to the maximum extent practicable.

Attached is a site figure that shows the approximate boundary of the area managed under ICs. The following Land Use Controls apply specifically to the OT001 site (Hazard ID 2826):

- Requirements for installation of warning signage to alert site visitors of the presence of contamination and the access and use restrictions.
- Requirements for periodic inspections at the site, until ADEC approves discontinuation, to visually assess the following:
    - The condition of the landfill cap and the down-gradient area to monitor for evidence of containment failure, and

  - The condition and visibility of the site warning signage.
- Requirements for implementation of a dig permit and construction review process to include an as-built survey of the landfill cap and notice requiring the management of any solid waste or contaminated soil that is excavated or exposed in the future in accordance with all applicable laws and regulations.
- Requirements for documenting land use limitations and prohibitions in USAF Real Property Records, for Cold Bay LRRS.
- Documentation of the site condition and the Institutional Controls in the Alaska Department of Natural Resources Recording Office
- Requirements for ADEC approval of any termination of Land Use Controls or modifications to land use that is inconsistent with or may disrupt the protectiveness of the controls.

Pursuant to 18 AAC 75.325(i)(1) and (2), ADEC approval is required prior to transporting soil or water from within the boundaries of the site. Any soil or water that is extracted or brought to the surface in the future must be characterized and managed following applicable regulations at that time. In addition, any work/dig permit must comply with the Pacific Air Forces Regional Support Center Operating Instruction (PRSCOI) 32-7001 Land Use Control Management. The Institutional Controls will remain in effect until the State of Alaska determines they are no longer required for protection of human health and ecological receptors.

In the event that contaminated media becomes exposed or accessible by land use activities, or other information becomes available which indicates that the site may pose an unacceptable risk to human health, safety, welfare or the environment, the land owner and/or operator are required under 18 AAC 75.300 to notify ADEC and evaluate the environmental status of the contamination in accordance with applicable laws and regulations; further site characterizations and cleanup may be necessary under 18 AAC 75.325-.390.

This Notice remains in effect until a written determination from ADEC is recorded that states that the soil, surface water and groundwater at the OT001 site has been shown to meet the most stringent cleanup levels under 18 AAC 75.325-.390 and 18 AAC 70 and that off-site transportation of contaminants is not a concern.

For more information on the contaminated site in this Notice of Environmental Contamination, please see ADEC Contaminated Sites Program file number 2538.38.012, Cold Bay LRRS – White Alice Communication, Site, near Grant Point, Cold Bay, AK 99571, Hazard ID No. 2826.

Daniel Fisher
CES-Insight

Return To: Charlie Crawford, CES-Insight, 1701 Shenandoah Avenue, NW, Roanoke, VA 24017

NOTICE OF ENVIRONMENTAL CONTAMINATION RECORDING DISTRICT: ALEUTIAN ISLANDS COLD BAY, ALASKA	T57S, R90W, SECTION 11 SEWARD MERIDIAN AREA SUBJECT TO RESTRICTED LAND USE DUE TO ENVIRONMENTAL CONTAMINATION	ATTACHMENT 1

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ALASKA
2021-000041-0
Recording District 305 Aleutian Islands
02/09/2021 02:02 PM Page 1 of 3

NOTICE OF ENVIRONMENTAL CONTAMINATION

RECORDING DISTRICT: ALEUTIAN ISLANDS

As required by the Alaska Department of Environmental Conservation (ADEC), Grantee, pursuant to 18 AAC 75.375 the U.S. Air Force (USAF), Grantor, as the owner of the subject property, hereby provides public notice that site ST005 – former petroleum, oil and lubricant (POL) storage area located at: Northing 440,111.850 feet, Easting 1,493,542.254 feet (Zone 7, Alaska State Plane), at the Cold Bay Long Range Radar Station (LRRS), near Cold Bay, Alaska, and more particularly described as follows:

Section 36 of Township 57 South, Range 89 West, Seward Meridian,

has been subject to a discharge or release and subsequent cleanup of oil or other hazardous substances, regulated under 18 AAC 75, Article 3, as amended October 27, 2018. The release and cleanup information is documented in the ADEC Contaminated Sites database file at:

https://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/SiteReport/2834

Site ST005 was a POL Storage Area at the Cold Bay LRRS that formerly consisted of two 70,000 aboveground storage tanks, a pump house, a fueling island, and associated piping. Following the removal of the storage tanks and structures in 1994, petroleum contaminated soil and groundwater was discovered at the site in the vicinity of the former pump house. The Selected Remedy in a 2001 Decision Document for the site consisted of a remedial excavation of the contaminated soil along with Monitored Natural Attenuation of the residual contamination in the groundwater. The remedial excavation performed in 2003 removed the bulk of the contaminated soil down to 15 feet below the ground surface. Following the removal activity, the site has been managed under Institutional Controls (ICs) with periodic monitoring of the groundwater to prevent the potential for contaminant exposures to human and/or wildlife receptors.

ADEC reviewed and approved, subject to the sustained management of the Institutional Controls, the cleanup as protective of human health, safety, welfare, and the environment. No further cleanup is necessary at this site unless new information becomes available that indicates to ADEC that the site may pose an unacceptable risk to human health, safety, welfare, or the environment. ADEC determined, in accordance with site cleanup rules detailed in 18 AAC 75.325 – 390, that cleanup has been performed to the maximum extent practicable.

Attached is a site figure that shows the approximate boundary of the area managed under ICs. The following Land Use Controls apply specifically to the ST005 site (Hazard ID 2834):

- Requirements for periodic monitoring of the groundwater from three wells at the site until the remnant petroleum contamination declines below ADEC cleanup levels.
- The installation of warning signage to alert site visitors of the presence of contamination and the access and use restrictions.
- Requirements for periodic inspections at the site, until ADEC approves discontinuation, to visually assess the site for evidence of contaminant impact.

- Requirements for documenting land use limitations and prohibitions in USAF Real Property Records, for Cold Bay LRRS.
- Restrictions on the use of the groundwater at the site for a drinking water source until it meets the applicable cleanup levels.
- Documentation of the site condition and the Institutional Controls in the Alaska Department of Natural Resources Recording Office
- Requirements for ADEC approval of any termination of Land Use Controls or modifications to land use that is inconsistent with or may disrupt the protectiveness of the controls.

Pursuant to 18 AAC 75.325(i)(1) and (2), ADEC approval is required prior to transporting soil or water from within the boundaries of the site. Any soil or water that is extracted or brought to the surface in the future must be characterized and managed following applicable regulations at that time. In addition, any work/dig permit must comply with the Pacific Air Forces Regional Support Center Operating Instruction (PRSCOI) 32-7001 Land Use Control Management. The Institutional Controls will remain in effect until the State of Alaska determines they are no longer required for protection of human health and ecological receptors.

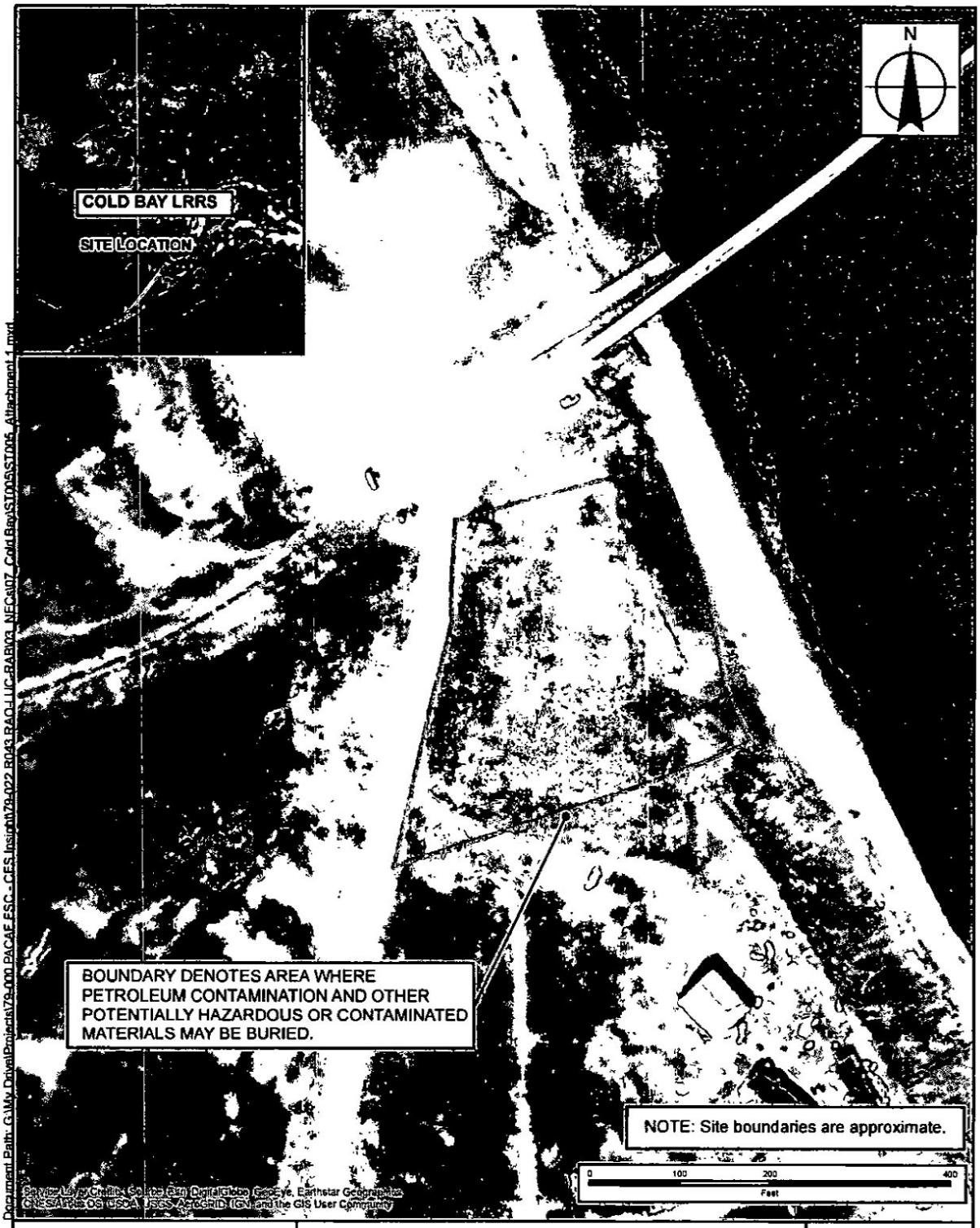
In the event that contaminated media becomes exposed or accessible by land use activities, or other information becomes available which indicates that the site may pose an unacceptable risk to human health, safety, welfare or the environment, the land owner and/or operator are required under 18 AAC 75.300 to notify ADEC and evaluate the environmental status of the contamination in accordance with applicable laws and regulations; further site characterizations and cleanup may be necessary under 18 AAC 75.325-.390.

This Notice remains in effect until a written determination from ADEC is recorded that states that the soil, surface water and groundwater at the ST005 site has been shown to meet the most stringent cleanup levels under 18 AAC 75.325-.390 and 18 AAC 70 and that off-site transportation of contaminants is not a concern.

For more information on the contaminated site in this Notice of Environmental Contamination, please see ADEC Contaminated Sites Program file number 2538.38.011, Cold Bay LRRS – Former Tank Farm on Bluff, South of Dock, Cold Bay, AK 99571, Hazard ID No. 2834.

Daniel Fisher
CES-Insight

Return To: Charlie Crawford, CES-Insight, 1701 Shenandoah Avenue, NW, Roanoke, VA 24017



NOTICE OF ENVIRONMENTAL CONTAMINATION RECORDING DISTRICT: ALEUTIAN ISLANDS COLD BAY, ALASKA	T57S, R89W, SECTION 36 SEWARD MERIDIAN AREA SUBJECT TO RESTRICTED LAND USE DUE TO ENVIRONMENTAL CONTAMINATION	ATTACHMENT 1

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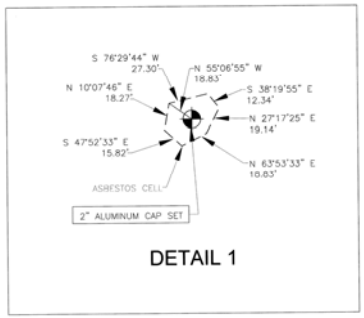
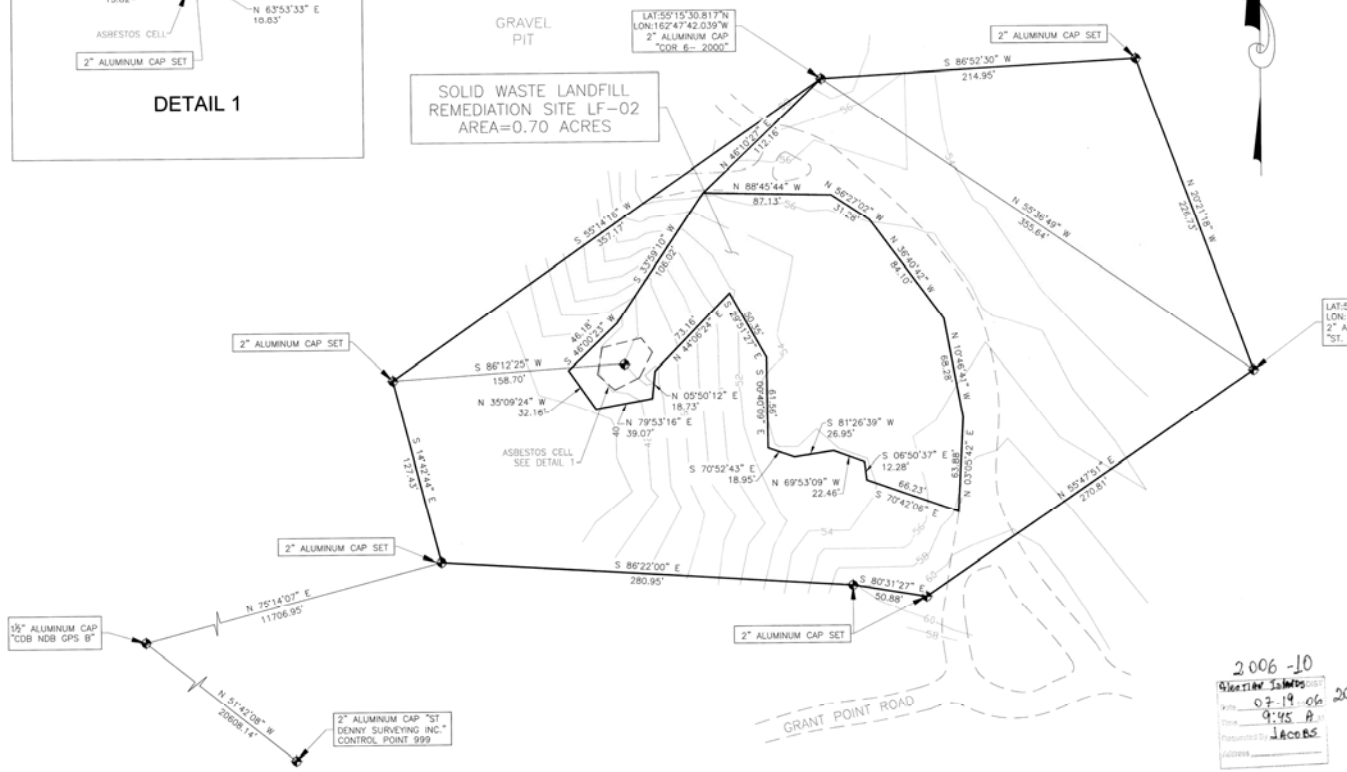


DETAIL 1



VICINITY MAP
SCALE 1"=5802' USGS QUAD MAP COLD BAY A-3

IN 2001, THE UNITED STATES AIR FORCE (USAF) AND THE STATE OF ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION (ADEC) SIGNED THE DOCUMENT ENTITLED *DECLARATION OF DECISION, WHITE ALICE COMMUNICATIONS SYSTEM (OT01), 1978 SPILL/LEAK (OT04), ROAD OILING (OT03), LANDFILL/GRAVEL PIT (LF02), COLD BAY, ALASKA*. THIS NOTICE IS INTENDED TO COMPLY WITH THE DOCUMENT AS IT APPLIES TO LF02.

- THIS NOTICE PROVIDES DOCUMENTATION OF THE LANDFILL LOCATION IN THE APPROPRIATE LAND RECORDS.

FOR INFORMATION REGARDING THIS SITE, PLEASE CONTACT EITHER OF THE OFFICES LISTED BELOW:

USAF 611TH CIVIL ENGINEER SQUADRON
ENVIRONMENTAL RESTORATION SECTION
10471 20TH STREET SUITE 302
ELMENDORF AIR FORCE BASE AK 99506-2200

ADEC
DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM
555 CORDOVA STREET
ANCHORAGE AK 99501-2617

NOTES:
1. THIS SURVEY DOES NOT CONSTITUTE A SUBDIVISION AS DEFINED BY A.S. 40.15.900(5)(A).
2. BASIS OF BEARING; ALASKA STATE PLANE COORDINATE SYSTEM ZONE 7. NORTH AMERICAN DATUM 83. ESTABLISHED USING CONTROL STATIONS COLD USCG A, CDB NDB GPS B, AND CONTROL POINT 999. POSITIONING WAS ESTABLISHED BY ON-LINE POSITIONING USER SERVICE (OPUS).
3. THIS SURVEY IS ONLY TO IDENTIFY A U.S.A.F. REMEDIATION SITE.

2006-10
Aleutian Islands DIST
Date 07-19-06 20--
Time 9:45 A
Requested By Jacobs
Address

LEGEND

SET 2" ALUMMINUM CAP (⅝"REBARx30"), SET ABOVE GROUND PLUS OR MINUS 2", TYPICAL

0' 50' 100' 150'

STATE OF ALASKA
49 TH
Mark R. St.Denny
No. 10197
REGISTERED PROFESSIONAL LAND SURVEYOR

SURVEYOR'S CERTIFICATE
I HEREBY CERTIFY THAT I AM PROPERLY REGISTERED AND LICENSED TO PRACTICE LAND SURVEYING IN THE STATE OF ALASKA, THAT THIS PLAT REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECT THIS PLAT REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION, THAT ALL DIMENSIONS AND OTHER DETAILS ARE CORRECT, OTHER DETAILS ARE CORRECT.
Date 6-26-06 Registration No. 10197
REGISTERED LAND SURVEYOR

DATE	REVISION

RECORD OF SURVEY
REMEDIATION SITE LF-02 ADEC PERMIT 8421-BA012
PROTRACTED SW1/4 NW 1/4 SECTION 09 TOWNSHIP 57 SOUTH, RANGE 89 WEST
COLD BAY SEWARD MERIDIAN, ALASKA ALASKA

DRAWN BY M.ST.D.	DATE 02/08/06	ALEUTIAN ISLANDS RECORDING DISTRICT
SCALE 1" = 50'	SHEET 1 of 1	FIELD SURVEYED: BEGIN SURVEY:9-29-2003 END SURVEY:10-04-2003

PREPARED FOR: JACOBS ENGINEERING
4300 B STREET, STE 600
ANCHORAGE, ALASKA 99503

ST.DENNY SURVEYING, INC.
P.O. BOX 388, KODIAK, ALASKA 99615 (907) 481-3500

SUBJECT TO ALL CONDITIONS, SERVITUDE'S, EASEMENTS, COVENANTS, RESERVATION, RESTRICTIONS AND RIGHTS OF WAY OF RECORD.

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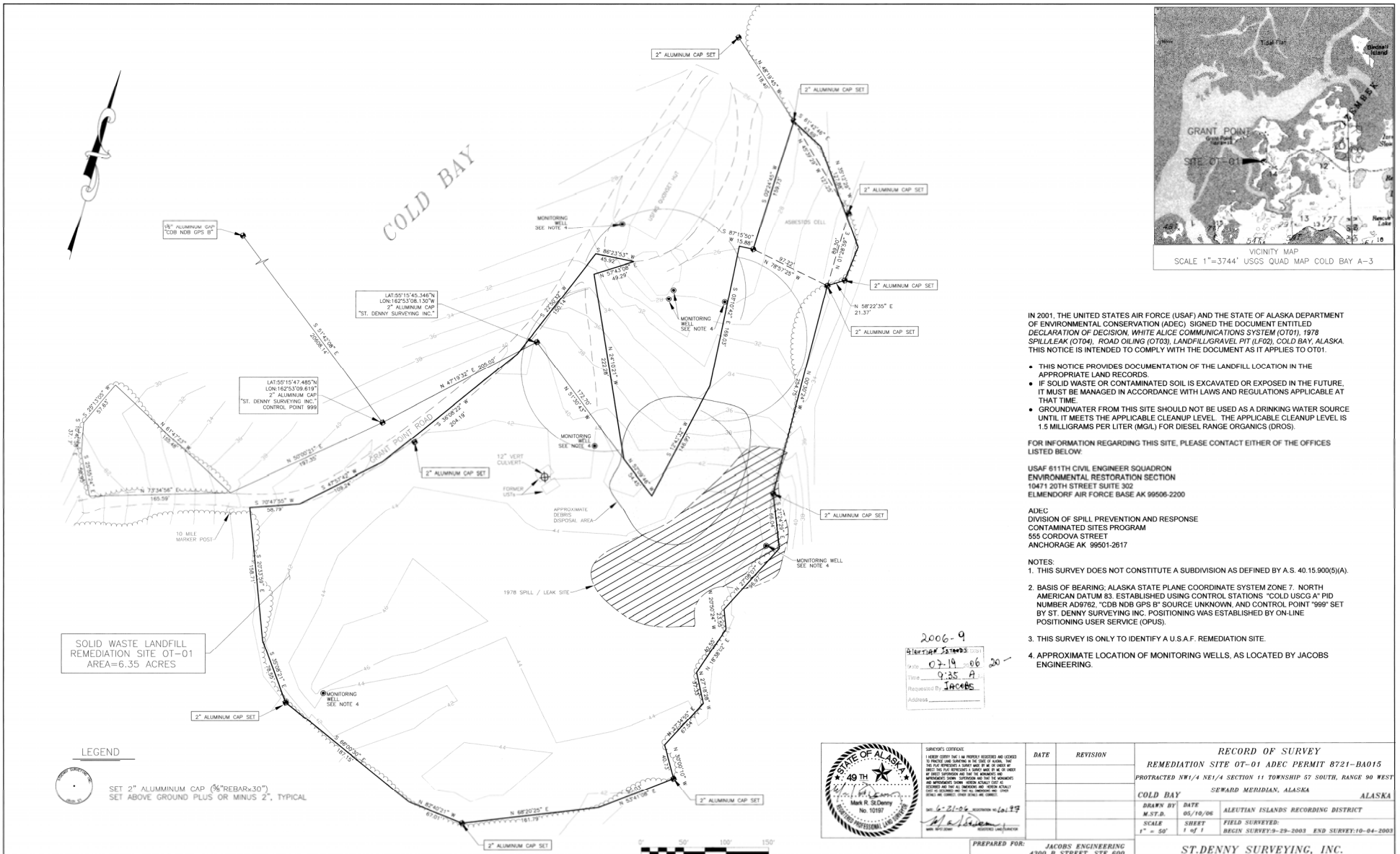

VICINITY MAP
SCALE 1"=3744' USGS QUAD MAP COLD BAY A-3

IN 2001, THE UNITED STATES AIR FORCE (USAF) AND THE STATE OF ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION (ADEC) SIGNED THE DOCUMENT ENTITLED *DECLARATION OF DECISION, WHITE ALICE COMMUNICATIONS SYSTEM (OT01), 1978 SPILL/LEAK (OT04), ROAD OILING (OT03), LANDFILL/GRAVEL PIT (LF02), COLD BAY, ALASKA.* THIS NOTICE IS INTENDED TO COMPLY WITH THE DOCUMENT AS IT APPLIES TO OT01.

- THIS NOTICE PROVIDES DOCUMENTATION OF THE LANDFILL LOCATION IN THE APPROPRIATE LAND RECORDS.
- IF SOLID WASTE OR CONTAMINATED SOIL IS EXCAVATED OR EXPOSED IN THE FUTURE, IT MUST BE MANAGED IN ACCORDANCE WITH LAWS AND REGULATIONS APPLICABLE AT THAT TIME.
- GROUNDWATER FROM THIS SITE SHOULD NOT BE USED AS A DRINKING WATER SOURCE UNTIL IT MEETS THE APPLICABLE CLEANUP LEVEL. THE APPLICABLE CLEANUP LEVEL IS 1.5 MILLIGRAMS PER LITER (MG/L) FOR DIESEL RANGE ORGANICS (DROS).

FOR INFORMATION REGARDING THIS SITE, PLEASE CONTACT EITHER OF THE OFFICES LISTED BELOW:

USAF 611TH CIVIL ENGINEER SQUADRON
ENVIRONMENTAL RESTORATION SECTION
10471 20TH STREET SUITE 302
ELMENDORF AIR FORCE BASE AK 99506-2200

ADEC
DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM
555 CORDOVA STREET
ANCHORAGE AK 99501-2617

NOTES:
1. THIS SURVEY DOES NOT CONSTITUTE A SUBDIVISION AS DEFINED BY A.S. 40.15.900(5)(A).
2. BASIS OF BEARING; ALASKA STATE PLANE COORDINATE SYSTEM ZONE 7. NORTH AMERICAN DATUM 83. ESTABLISHED USING CONTROL STATIONS "COLD USCG A" PID NUMBER AD9762, "CDB NDB GPS B" SOURCE UNKNOWN, AND CONTROL POINT "999" SET BY ST. DENNY SURVEYING INC. POSITIONING WAS ESTABLISHED BY ON-LINE POSITIONING USER SERVICE (OPUS).
3. THIS SURVEY IS ONLY TO IDENTIFY A U.S.A.F. REMEDIATION SITE.
4. APPROXIMATE LOCATION OF MONITORING WELLS, AS LOCATED BY JACOBS ENGINEERING.

2006-9
Aleutian Islands DIST
Date 07-19-06
Time 9:35 A
Requested By JACOBS
Address

SUBJECT TO ALL CONDITIONS, SERVITUDE'S, EASEMENTS, COVENANTS, RESERVATION, RESTRICTIONS AND RIGHTS OF WAY OF RECORD.

STATE OF ALASKA 49TH
Mark R. St.Denny
No. 10197
REGISTERED LAND SURVEYOR

SURVEYOR'S CERTIFICATE
I HEREBY CERTIFY THAT I AM PROPERLY REGISTERED AND LICENSED TO PRACTICE LAND SURVEYING IN THE STATE OF ALASKA, THAT THIS PLAT REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT THE MONUMENTS AND IMPROVEMENTS SHOWN THEREON ACTUALLY EXIST AS LOCATED; THAT ALL DIMENSIONAL AND OTHER DETAILS ARE CORRECT. OTHER DETAILS ARE CORRECT.
DATE: 6-21-06 REGISTRATION NO. 10197
REGISTERED LAND SURVEYOR

DATE	REVISION

RECORD OF SURVEY
REMEDIATION SITE OT-01 ADEC PERMIT 8721-BA015
PROTRACTED NW1/4 NE1/4 SECTION 11 TOWNSHIP 57 SOUTH, RANGE 90 WEST
COLD BAY SEWARD MERIDIAN, ALASKA ALASKA

DRAWN BY	DATE	
M.ST.D.	05/10/06	ALEUTIAN ISLANDS RECORDING DISTRICT
SCALE	SHEET	FIELD SURVEYED:
1" = 50'	1 of 1	BEGIN SURVEY:9-29-2003 END SURVEY:10-04-2003

PREPARED FOR: JACOBS ENGINEERING
4300 B STREET, STE 600
ANCHORAGE, ALASKA 99503

ST.DENNY SURVEYING, INC.
P.O. BOX 380, KODIAK, ALASKA 99615 (907) 481-3590

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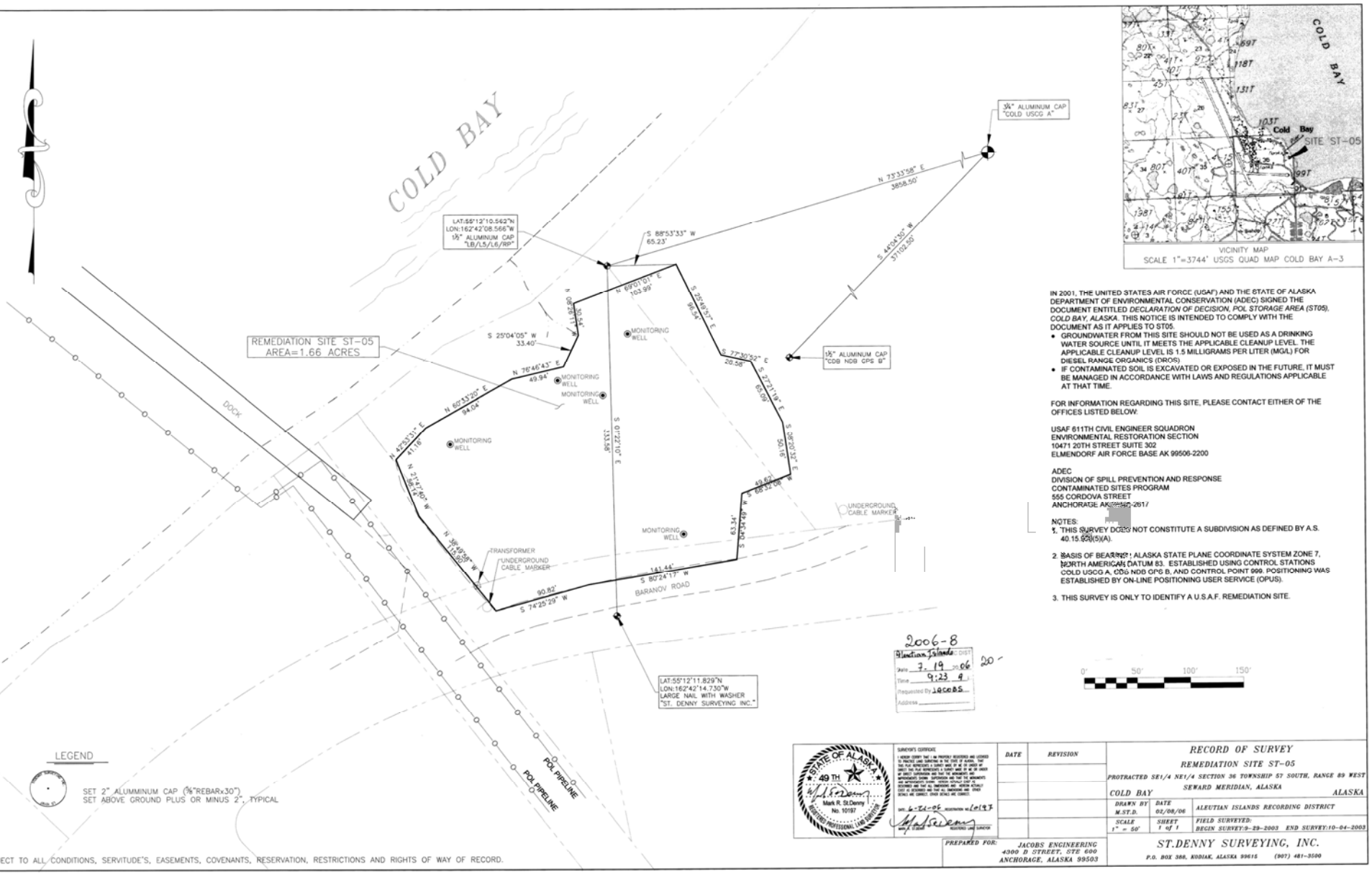

VICINITY MAP
SCALE 1"=3744' USGS QUAD MAP COLD BAY A-3

IN 2001, THE UNITED STATES AIR FORCE (USAF) AND THE STATE OF ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION (ADEC) SIGNED THE DOCUMENT ENTITLED *DECLARATION OF DECISION, POL STORAGE AREA (ST05), COLD BAY, ALASKA*. THIS NOTICE IS INTENDED TO COMPLY WITH THE DOCUMENT AS IT APPLIES TO ST05.

- GROUNDWATER FROM THIS SITE SHOULD NOT BE USED AS A DRINKING WATER SOURCE UNTIL IT MEETS THE APPLICABLE CLEANUP LEVEL. THE APPLICABLE CLEANUP LEVEL IS 1.5 MILLIGRAMS PER LITER (MG/L) FOR DIESEL RANGE ORGANICS (DROS).
- IF CONTAMINATED SOIL IS EXCAVATED OR EXPOSED IN THE FUTURE, IT MUST BE MANAGED IN ACCORDANCE WITH LAWS AND REGULATIONS APPLICABLE AT THAT TIME.

FOR INFORMATION REGARDING THIS SITE, PLEASE CONTACT EITHER OF THE OFFICES LISTED BELOW:

USAF 611TH CIVIL ENGINEER SQUADRON
ENVIRONMENTAL RESTORATION SECTION
10471 20TH STREET SUITE 302
ELMENDORF AIR FORCE BASE AK 99506-2200

ADEC
DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM
555 CORDOVA STREET
ANCHORAGE AK [illegible]-2617

NOTES:
1. THIS SURVEY DOES NOT CONSTITUTE A SUBDIVISION AS DEFINED BY A.S. 40.15.[illegible](5)(A).
2. BASIS OF BEARING: ALASKA STATE PLANE COORDINATE SYSTEM ZONE 7, NORTH AMERICAN DATUM 83. ESTABLISHED USING CONTROL STATIONS COLD USCG A, COB NDB CPS B, AND CONTROL POINT 999. POSITIONING WAS ESTABLISHED BY ON-LINE POSITIONING USER SERVICE (OPUS).
3. THIS SURVEY IS ONLY TO IDENTIFY A U.S.A.F. REMEDIATION SITE.

2006-8
Aleutian Islands DIST
Date 7. 19 20 06
Time 9:23 A
Requested By IACOBS
Address

0' 50' 100' 150'

LEGEND

SET 2" ALUMINUM CAP (⅝"REBARx30")
SET ABOVE GROUND PLUS OR MINUS 2", TYPICAL

SUBJECT TO ALL CONDITIONS, SERVITUDE'S, EASEMENTS, COVENANTS, RESERVATION, RESTRICTIONS AND RIGHTS OF WAY OF RECORD.

STATE OF ALASKA 49TH
Mark R. St.Denny
No. 10197
REGISTERED PROFESSIONAL LAND SURVEYOR

SURVEYOR'S CERTIFICATE
I HEREBY CERTIFY THAT I AM PROPERLY REGISTERED AND LICENSED TO PRACTICE LAND SURVEYING IN THE STATE OF ALASKA, THAT THIS PLAT REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT IT SHOWS ALL MONUMENTS FOUND OR SET, AND THAT ALL DIMENSIONS AND OTHER DETAILS ARE CORRECT. ERROR CLOSURE DOES NOT EXCEED ONE FOOT IN 10,000 FEET.
DATE: 6-26-06 REGISTRATION NO. 10197
REGISTERED LAND SURVEYOR

DATE	REVISION

PREPARED FOR: JACOBS ENGINEERING
4300 B STREET, STE 600
ANCHORAGE, ALASKA 99503

RECORD OF SURVEY
REMEDIATION SITE ST-05

PROTRACTED SE1/4 NE1/4 SECTION 36 TOWNSHIP 57 SOUTH, RANGE 89 WEST
SEWARD MERIDIAN, ALASKA
COLD BAY ALASKA

DRAWN BY: M.ST.D.	DATE: 02/08/06
SCALE: 1" = 50'	SHEET: 1 of 1

ALEUTIAN ISLANDS RECORDING DISTRICT
FIELD SURVEYED: BEGIN SURVEY:9-29-2003 END SURVEY:10-04-2003

ST. DENNY SURVEYING, INC.
P.O. BOX 388, KODIAK, ALASKA 99615 (907) 481-3500

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APPENDIX D

Community Involvement Materials

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The Bristol Bay Times & The Dutch Harbor Fisherman

CASE/PO/AIO: AHTNA ENGINEERING SERVICES, INC.
AD# or identifier: 31518

REMIT TO: **Anchorage Daily News**
300 W 31st Ave
Anchorage, AK 99503
Ph: (907) 257-4251
Fax: (907) 279-7579

INVOICE(S):

AFFIDAVIT OF PUBLICATION

UNITED STATES OF AMERICA
STATE OF ALASKA, THIRD DISTRICT
BEFORE ME, THE UNDERSIGNED, A NOTARY PUBLIC THIS DAY PERSONALLY APPEARED **Lisi Misa** WHO, BEING FIRST DULY SWORN, ACCORDING TO LAW, SAYS THAT S/HE IS **Legal Sales** OF **The Bristol Bay Times/Dutch Harbor Fisherman** PUBLISHED AT **300 W 31ST AVE, ANCHROAGE AK ,** IN SAID THIRD DISTRICT STATE OF ALASKA AND THAT THE ADVERTISEMENT, OF WHICH THE ANNEXED OR ATTACHED IS A TRUE COPY, WHICH WAS PUBLISHED IN SAID PUBLICATION **The Bristol Bay Times/Dutch Harbor Fisherman** AND THEREAFTER FOR A TOTAL OF **1** CONSECUTIVE ISSUE(S), THE LAST PUBLICATION APPEARING ON **September 22, 2022**.

ATTACH PROOF OF PUBLICATION HERE

Lisi Misa

LISI MISA
LEGAL SALES

SUBSCRIBED AND SWORN BEFORE ME THIS 26th DAY OF September, 2022

Jada L. Nowling

JADA L NOWLING
NOTARY PUBLIC STATE OF ALASKA
MY COMMISSION EXPIRES ON JULY 24, 2024

Jada L. Nowling
ELECTRONIC NOTARY PUBLIC
STATE OF ALASKA
MY COMMISSION EXPIRES 07/24/2024

CLASSIFIEDS & LEGALS

In the Superior Court for the State of Alaska Third Judicial District at Dillingham

In the Matter of the Estate of Oleanna McKinnon, Person Who Died (Decedent)
Date of Birth 11-11-1932
Case No. 3DI-22-00019 PR

Notice to Creditors

"You are notified that the court appointed Gusty Hansen as personal representative of this estate. All persons having claims against the person who died are required to present their claims within four months after the date of first publication of this notice or the claims will be forever barred."

All claims should be directed to Teka K. Lamade, Attorney for Gusty Hansen, Alaska Legal Services Corporation, 1500 Kanakanak Road, Suite 112C, Dillingham, Alaska 99576

pub: 9/22,29,10/6/2022

IN THE SUPERIOR COURT FOR THE STATE OF ALASKA AT DILLINGHAM

In the Matter of the Estate of LUDWIG ALBERT JOHNSON
Deceased
Date of Birth: 12/5/1945
Case No. 3DI-19-00018PR

NOTICE TO CREDITORS

You are notified that the court appointed Nina Marie Johnson as personal representative of this estate. All persons having claims against the person who died are required to present their claims within four months after the date of the first publication of this notice or the claims will be forever barred.

P.O. Box 1276, Dillingham, Alaska 99576.
(907) 843-0928
ninamariesam18@gmail.com
Nina Marie Johnson
By: s/ NJohnson
PUB 9/8,9/15,9/22/2022

NOTICE OF ELECTION

2022 Regional Educational Attendance Areas (REAA)
Tuesday, October 4, 2022
Polling Places will be open from 8:00 a.m. to 8:00 p.m.

REAA #6 Southwest Region School District, Section I, Seat A; Section II, Seat E
REAA #8 Aleutian Region School District, Section II, Seat C, Seat E
REAA #9 Pribilof Islands School District, Section I, Seat C, Seat D, Seat E

Absentee voting official location listed below:
REAA 8, Atka IRA Office, Sept 19 – Oct 3, Monday – Friday 10:00am – 4:30pm

Absentee Voting – September 19 – October 3
Absentee voting will be available in the Juneau, Anchorage, Wasilla, Fairbanks and Nome offices, Monday through Friday, 8am to 5pm. For more information on absentee voting procedures and polling place locations, please call your Regional Election Office or visit our website at www.elections.alaska.gov.

Assistance
If you need assistance while voting, you may ask an election board member or bring a person of your choice to assist you, as long as that person on not a candidate, your employer, agent of your employer, or an agent of a union you belong to.

For more information, contact the Region IV Election Office in Nome at 907-443-5285 or toll-free at 1-866-953-8683

For Alaska Native language assistance, call 1-866-954-8683

The State of Alaska, Division of Elections, complies with Title II of the Americans with Disabilities Act of 1990. If you are a person with a disability who may need special assistance and/or accommodations to vote, please contact your local Division of Elections office to make necessary arrangements. STATEWIDE TDD 1-888-622-3020

Public Notice
United States Air Force Environmental Restoration Program Five-Year Review

The Air Force Civil Engineer Center announces the beginning of the Five-Year Review process for Cold Bay Long Range Radar Site (LRRS), Alaska. This process will document whether the remedies implemented at Sites LF002 (Cold Bay Landfill), OT001 (White Alice Communications System Site), and ST005 (POL Storage Area) remain protective of human health and the environment. The remedy selected for LF002 in the January 2001 Decision Document is Intuitional Controls (ICs). The remedies selected for OT001 and ST005 in the January 2001 Decision Documents are Excavation and Thermal Treatment, Monitored Natural Attenuation, and ICs. This will be the third Five-Year Review for OT001 and ST005 and the second Five-Year Review for LF002.

Reviews are conducted at least once every five years until contaminant levels allow unlimited use of the site and unrestricted exposure to the air, soil, and water. Detailed information concerning Cold Bay LRRS cleanup efforts are available electronically on the Air Force Administrative Record at https://ar.afcec-cloud.af.mil/. Findings from the Five-Year Review will be placed on the Administrative Record website upon completion of the report.

Interested persons can participate in the Five-Year Review process through October 22, 2022, by responding to a questionnaire available from the following representative:

Leslie Davis, Ahtna Solutions, LLC
714 4th Avenue, Suite 303
Fairbanks, AK 99701
ldavis@ahtna.net
(907) 301-6992

APPENDIX E

Interview Records

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INTERVIEW RECORD
Cold Bay LRRS

Site Name: ST005, OT001, LF002	**EPA ID No.:** n/a	
Subject: 2022 Five Year Review	**Time:**	**Date:** 2/14/2023
Type: ☐ Telephone ☐ Visit ☒ Email **Location of Visit:** n/a	☒ Incoming ☒ Outgoing	

Contact Made By

Name: Leslie Davis	**Title:** Deputy Project Manager	**Organization:** Ahtna Solutions, LLC

Individual Contacted

Name: Robert Johnston	**Title:** Remedial Project Manager	**Organization:** AFCEC/CZOP
Telephone: 907-552-7193 **Email:** robert.johnston.17@us.af.mil	**Street Address:** 10471 20th St. Ste. 326; PO Box 6898 **City, State, Zip:** JBER, AK 99506-2201	

SUMMARY OF CONVERSATION

Are the ICs at Sites ST005, OT001, LF002 functioning as expected? Yes they are functioning.

Do you know of any problems or difficulties that have been encountered that have impacted remedy implementation or progress at the sites? No

Have any problems been encountered that required, or will require, changes to the RODs or Decision Documents?
No

Are you aware of any community or contractor concerns regarding these sites? If so, please give details.
No, I'm not aware of any concerns.

Are you aware of any events, incidents, or activities at the sites such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.
No, the Air Force has not been notified of any problems

Do you have any general comments, suggestions, or recommendations regarding the management of these sites, remedy implementation, or ongoing work at the sites?

Do we have your permission to use your name in the Five-Year Review report and document the results of your interview in the report?
Yes.

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INTERVIEW RECORD
Cold Bay LRRS

Site Name: ST005, OT001, LF002	**EPA ID No.:** n/a	
Subject: 2022 Five Year Review	**Time:**	**Date: 1/31/2023**
Type: ☐ Telephone ☐ Visit ☒ Email **Location of Visit:** n/a	☐ Incoming ☒ Outgoing	

Contact Made By

Name: Leslie Davis	**Title:** Deputy Project Manager	**Organization:** Ahtna Solutions, LLC

Individual Contacted

Name: Erica Blake	**Title:** Environmental Program Specialist IV	**Organization:** ADEC
Telephone: 907-451-2182 **Email:** erica.blake@alaska.gov	**Street Address:** 610 University Avenue **City, State, Zip:** Fairbanks, AK 99709	

SUMMARY OF CONVERSATION

Are the ICs at Sites LF002, OT001, and ST005 functioning as expected?
The long-term monitoring activities at the sites are being conducted timely, with reporting on the results provided.

Based on the results from the 2019 Environmental Long-Term Management Report, Cold Bay Long Range Radar Site (dated 2020), the ICs at ST005 are functioning as expected. The evidence of trespassing (tire tracks) at the OT001 and LF001 sites indicates the ICs may not be functioning as intended.

Has the USAF reported on the status of the ICs and LTM as required?
Yes.

Do you know of any problems or difficulties that have been encountered that have impacted remedy implementation or progress at any of the sites?
DEC has not been made aware of any problems or difficulties if there are any.

Have any problems been encountered or changes in State laws and regulations that may impact protectiveness and required, or will require, changes to the RODs or Decision Documents?
No.

Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by your office regarding the sites? If so, please give purpose and results.
Communication from the U.S. Air Force occurs when documents are being submitted to DEC. DEC reviewed a 2019 work plan addendum and report for long-term monitoring at ST005, and inspections at LF002 and OT001. DEC has not conducted any site inspections at the Cold Bay LRRS sites.

Have there been any complaints, violations, or other incidents related to the sites requiring a response by your office? If so, please give details of the events and results of the responses.
None that DEC is aware of.

Do you have any general comments, suggestions, or recommendations regarding the management of these sites, remedy implementation, or ongoing work at the sites?
If the land use control signs need to be replaced, the signs should be made larger. DEC recommends the U.S. Air Force address the caps at OT001 and LF002. Photographs in the 2019 long-term

monitoring report show there have been trespassers, and there is evidence the caps require repairs (additional cover and vegetation). The signs posted should notify the public in the area to avoid driving their vehicles over the caps, which may result in exposure to potential buried contamination. The remedial action goals in the 2001 Decision Document for ST005 discuss meeting surface water quality standards, 10 micrograms per liter (ug/L) for total aromatic hydrocarbons (TAH) and 10 ug/L for total aqueous hydrocarbons (TAqH). The 2019 long-term monitoring report did not include sampling the surface water for BTEX and PAHs to check and see if there are any surface water quality exceedances. How is the U.S. Air Force able to confirm this remedial action goal is being met if the surface water is not being sampled to confirm? This should be included in the next long-term monitoring sampling event.
Do we have your permission to use your name in the Five-Year Review report and document the results of your interview in the report? Yes.

INTERVIEW RECORD
Cold Bay LRRS

Site Name: ST005, OT001, and LF002	**EPA ID No.:** n/a	
Subject: 2022 Five Year Review	**Time:**	**Date:** 11/18/2022
Type: ☐ Telephone ☐ Visit ☒ Email **Location of Visit:** n/a	☐ Incoming ☒ Outgoing	

Contact Made By

Name: Leslie Davis	**Title:** Deputy Project Manager	**Organization:** Ahtna Solutions, LLC

Individual Contacted

Name: Maria Fosado	**Title:** Izembek National Wildlife Refuge Manager	**Organization:** USFWS
Telephone: 907-717-7563 **Email:** maria_fosado@fws.gov	**Street Address:** 1 Izembek Road **City, State, Zip:** Cold Bay, Alaska	

SUMMARY OF CONVERSATION

Are you aware of any community or contractor concerns regarding Sites ST005, OT001, or LF002? If so, please give details.
No, I am not aware of any contractor concerns regarding sites ST005, OT001, or LF002.

Are you aware of any events, incidents, or activities at the sites such as vandalism, trespassing, or emergency responses from local authorities or your office? If so, give details.
No, I am not aware of any events, incidents, or activities of concern at the sites.

Do you feel well informed about the site's activities and progress?
This is the first time I've been made aware of this. I anticipate reaching out in the future with additional questions to the proper POC.

Do you have any general comments, suggestions, or recommendations regarding the management of these sites, remedy implementation, or ongoing work at the sites?
No comments at this time, but may submit comments in the future.

Do we have your permission to use your name in the Five-Year Review report and document the results of your interview in the report?
Yes.

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APPENDIX F

Site Inspection Checklist

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Five-Year Review Site Inspection Checklist

Installation: Cold Bay Long Range Radar Station

SITE INFORMATION

Site ID: LF002 **Inspection Date:** 9/21/2022

Company/Personnel Conducting Inspection: Ahtna Solutions, LLC / Morgan Bruno / Quinn Carroll

Weather/temperature: 40°F, Windy **GPS Check shot/Loc:** Yes, East LUC Sign

Remedy Includes (check all that apply):

- ☐ **Access Controls**
- ☐ **Groundwater Containment**
- ☐ **Groundwater Pumping and Treatment**
- ☒ **Institutional Controls**
- ☒ **Landfill Cover/Containment**
- ☐ **Monitored Natural Attenuation**
- ☐ **Surface Water Collection and Treatment**
- ☐ **Other** _____

LAND USE

Were onsite residential or manned industrial facilities constructed in the past 12 months? (If yes, specify in comments) ☐ **Yes** ☒ **No**

Any evidence of land use change? (If yes, specify in comments) ☐ **Yes** ☒ **No**

On going gravel pit operations as noted in last FYR.

ACCESS AND INSTITUTIONAL CONTROLS (acquire location and photos)

Fencing ☐ **Damaged** ☐ **Intact** ☒ **N/A**

Gate(s) ☐ **Damaged** ☐ **Secured** ☒ **N/A**

Signage ☐ **Damaged** ☐ **In Place** ☒ **Missing** ☐ **N/A**

West LUC sign missing, sign post intact. East LUC sing in good condidtion.

Other Security Measures (specify in comments)

☐ **In Place** ☐ **Missing** ☒ **N/A**

Evidence of possible trespass (specify in comments) ☐ Yes ☒ No

Vandalism evident (specify in comments) ☐ Yes ☒ No

Evidence to access gravel pit.

Soil excavated in the past 12 months? ☒ Yes ☐ No

If yes, Note:Gravel excavated from active gravel pit

Dig permit approved? ☐ Yes ☐ No

Excavated soil used on site for backfill? ☐ Yes ☒ No

Excavated soil transported off site? ☒ Yes ☐ No

Groundwater encountered during excavation? ☐ Yes ☒ No

Did excavation affect the integrity and function of any landfill caps?

☐ N/A ☐ Yes ☒ No

Any wells installed in the past 12 months? ☐ Yes ☒ No

If yes, did drilling through a shallow aquifer into a confined aquifer occur without AFCEC review of engineering controls and methods to prevent cross-contamination? ☐ Yes ☐ No

Is groundwater from this site used for drinking, irrigation, fire control, dust control, or any other purpose? ☐ Yes ☒ No

Soil LUC applies to this site ☒ Yes ☐ No

Groundwater LUC applies to this site ☐ Yes ☒ No

Site conditions imply LUCs are being enforced ☐ Yes ☐ No

Note: Unclear, see comment below.

If ICs/LUCs not enforced, explain below:

LUC boundaries unclear – LUC boundaries proved by USAF Geobase do not match those shown on intact East LUC sign. IF LUC boundary shown on sign is correct, LUCs not being enforced as active gravel borrow activity is occurring within LUC boundary shown on sign. This activity is outside LUC boundary provided by USAF Geobase.

GENERAL SITE CONDITIONS

Clutter or trash present ☒ **Yes** ☐ **No**

Small general debris. Large debris outside former land fill boundaries.

Evidence of wildlife ☒ **Yes** ☐ **No**

Bear tracks observed in boundaries.

Road condition ☐ **Damaged** ☒ **Adequate** ☐ **N/A**

LANDFILL COVERS ☒ **Applicable** ☐ **N/A**

Landfill Surface:

Settlement (low spots) ☐ **Location and Photo acquired** ☒ **Settlement not evident**

Areal extent _____ Depth _____

Cracks ☐ **Location and photo acquired** ☒ **Cracking not evident**

Lengths _____ Widths _____ Depths _____

Erosion ☐ **Location and photo acquired** ☒ **Erosion not evident**

Areal extent _____ Depth_____

Holes ☐ **Location and photo acquired** ☒ **Settlement not evident**

Areal extent _____ Depth_____

Vegetative Cover (Specify percent in comments):

☐ **Cover properly established** ☐ **No signs of stress**
☒ **Cover partially established** ☐ **Showing signs of stress**
☐ **Grass/Sedges** ☐ **Trees/Shrubs**

Former land fill 60% shrub / 40% gravel spots, bare soil.

Alternative Cover (armored rock, concrete, etc.): _____ ☒ **N/A**

Bulges ☐ **Location and photo acquired** ☒ **Bulges not evident**

Areal extent _____ Height _____

_____

_____

Wet Areas/Water Damage ☒ **Not evident**

☐ **Wet Areas** ☐ **Location and photo acquired** ☐ **Areal extent**

☐ **Ponding** ☐ **Location and photo acquired** ☐ **Areal extent**

☐ **Seeps** ☐ **Location and photo acquired** ☐ **Areal extent**

☐ **Soft subgrade** ☐ **Location and photo acquired** ☐ **Areal extent**

☐ **N/A**

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Slope Instability ☐ **Slides** ☐ **Location and photo acquired**

☒ **No evidence of slope instability**

Areal extent _____

Benches ☐ **Applicable** ☒ **N/A**

Flows Bypass Bench ☐ **Location and photo acquired** ☐ **N/A**

Bench Breached ☐ **Location and photo acquired** ☐ **N/A**

Bench Overtopped ☐ **Location and photo acquired** ☐ **N/A**

Letdown Channels ☐ **Location and photo acquired** ☐ **N/A**

Landfill Surface Comments:

_____

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GROUNDWATER/SURFACE WATER REMEDIES ☐ **Applicable** ☒ **N/A**

Monitoring Wells

☐ **Properly Secured/Locked**
☐ **Functioning**
☐ **Routinely Sampled**
☐ **Good Condition**
☐ **All Required Wells Located**
☐ **Need Maintenance (specify in comments)**

_____
_____

Groundwater Extraction Wells, Pumps, Pipelines, Wellhead Plumbing, and Electrical

☐ **Good Condition** ☐ **All Required Wells Properly Operating** ☒ **N/A**
☐ **Need Maintenance (specify in comments)**

Surface Water Collection Structures, Pumps, Pipelines, and Electrical

☐ **Good Condition** ☐ **Need Maintenance (specify in comments)** ☒ **N/A**

Groundwater/Surface Water Comments:

_____
_____
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Post-Data Collection GPS Check Shot: Yes, East LUC Sign

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Five-Year Review Site Inspection Checklist

Installation: Cold Bay Long Range Radr Station

SITE INFORMATION

Site ID: OT001 **Inspection Date:** 9/21/2022

Company/Personnel Conducting Inspection: Ahtna Solutions, LLC / Morgan Bruno / Quinn Carroll

Weather/temperature: 45°F, Windy, Cloudy **GPS Check shot/Loc:** Yes, NE corner of Building

Remedy Includes (check all that apply):

- ☐ **Access Controls**
- ☐ **Groundwater Containment**
- ☐ **Groundwater Pumping and Treatment**
- ☒ **Institutional Controls**
- ☒ **Landfill Cover/Containment**
- ☐ **Monitored Natural Attenuation**
- ☐ **Surface Water Collection and Treatment**
- ☒ **Other** LTM of Gravel Cap

LAND USE

Were onsite residential or manned industrial facilities constructed in the past 12 months? (If yes, specify in comments) ☐ **Yes** ☒ **No**

Any evidence of land use change? (If yes, specify in comments) ☐ **Yes** ☒ **No**

ACCESS AND INSTITUTIONAL CONTROLS (acquire location and photos)

Fencing ☐ **Damaged** ☐ **Intact** ☒ **N/A**

Gate(s) ☐ **Damaged** ☐ **Secured** ☒ **N/A**

Signage ☒ **Damaged** ☒ **In Place** ☐ **Missing** ☐ **N/A**

LUC signs in good condition. 3rd sign stating “Foot traffic only” in NE corner had been shot.

Other Security Measures (specify in comments)

☐ **In Place** ☐ **Missing** ☒ **N/A**

Evidence of possible trespass (specify in comments) ☐ Yes ☒ No

Vandalism evident (specify in comments) ☒ Yes ☐ No

Old "Foot traffic only" sign in NE corner has been shot.

Soil excavated in the past 12 months? ☐ Yes ☒ No

If yes,

Dig permit approved? ☐ Yes ☐ No

Excavated soil used on site for backfill? ☐ Yes ☐ No

Excavated soil transported off site? ☐ Yes ☐ No

Groundwater encountered during excavation? ☐ Yes ☐ No

Did excavation affect the integrity and function of any landfill caps?

☐ N/A ☐ Yes ☐ No

Any wells installed in the past 12 months? ☐ Yes ☒ No

If yes, did drilling through a shallow aquifer into a confined aquifer occur without AFCEC review of engineering controls and methods to prevent cross-contamination? ☐ Yes ☐ No

Is groundwater from this site used for drinking, irrigation, fire control, dust control, or any other purpose? ☐ Yes ☒ No

Soil LUC applies to this site ☒ Yes ☐ No

Groundwater LUC applies to this site ☐ Yes ☒ No

Site conditions imply LUCs are being enforced ☒ Yes ☐ No

If ICs/LUCs not enforced, explain below:

GENERAL SITE CONDITIONS

Clutter or trash present ☒ **Yes** ☐ **No**

Metal pipes, rebar, and Geofabric coming up from sparsely vegetated area.

Evidence of wildlife ☐ **Yes** ☒ **No**

Road condition ☐ **Damaged** ☒ **Adequate** ☐ **N/A**

Road outside LUC boundary but in generally good condition.

LANDFILL COVERS(Gravel Cap) ☒ **Applicable** ☐ **N/A**

Landfill Surface:

Settlement (low spots) ☐ **Location and Photo acquired** ☒ **Settlement not evident**

Areal extent _____ Depth _____

Cracks ☐ **Location and photo acquired** ☒ **Cracking not evident**

Lengths _____ Widths _____ Depths _____

Erosion ☒ **Location and photo acquired** ☐ **Erosion not evident**

Areal extent _____ Depth_____

Small linear erosion feature appears to be surface water drainage.

Holes ☐ **Location and photo acquired** ☒ **Settlement not evident**

Areal extent _____ Depth_____

Vegetative Cover (Specify percent in comments):

☐ **Cover properly established** ☐ **No signs of stress**
☒ **Cover partially established** ☐ **Showing signs of stress**
☒ **Grass/Sedges** ☒ **Trees/Shrubs**

Cover properly covered over 90% of site. 10% partially established.

Alternative Cover (armored rock, concrete, etc.): Gravel ☐ **N/A**

Bulges ☐ **Location and photo acquired** ☒ **Bulges not evident**

Areal extent _____ Height _____

_____

_____

Wet Areas/Water Damage ☒ **Not evident**

☐ **Wet Areas** ☐ **Location and photo acquired** ☐ **Areal extent**

☐ **Ponding** ☐ **Location and photo acquired** ☐ **Areal extent**

☐ **Seeps** ☐ **Location and photo acquired** ☐ **Areal extent**

☐ **Soft subgrade** ☐ **Location and photo acquired** ☐ **Areal extent**

☐ **N/A**

_____

_____

_____

_____

Slope Instability ☐ **Slides** ☐ **Location and photo acquired**

☒ **No evidence of slope instability**

Areal extent _____

Benches ☐ **Applicable** ☒ **N/A**

Flows Bypass Bench ☐ **Location and photo acquired** ☐ **N/A**

Bench Breached ☐ **Location and photo acquired** ☐ **N/A**

Bench Overtopped ☐ **Location and photo acquired** ☐ **N/A**

Letdown Channels ☐ **Location and photo acquired** ☐ **N/A**

Landfill Surface Comments:

_____

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GROUNDWATER/SURFACE WATER REMEDIES ☐ **Applicable** ☒ **N/A**

Monitoring Wells

☐ **Properly Secured/Locked**
☐ **Functioning**
☐ **Routinely Sampled**
☐ **Good Condition**
☐ **All Required Wells Located**
☐ **Need Maintenance (specify in comments)**

_____
_____

Groundwater Extraction Wells, Pumps, Pipelines, Wellhead Plumbing, and Electrical

☐ **Good Condition** ☐ **All Required Wells Properly Operating** ☒ **N/A**
☐ **Need Maintenance (specify in comments)**

Surface Water Collection Structures, Pumps, Pipelines, and Electrical

☐ **Good Condition** ☐ **Need Maintenance (specify in comments)** ☒ **N/A**

Groundwater/Surface Water Comments:

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Post-Data Collection GPS Check Shot: Yes, NE corner of Building

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Five-Year Review Site Inspection Checklist

Installation: Cold Bay Long Range Radar Station

SITE INFORMATION

Site ID: ST005 **Inspection Date:** 9/20/2022

Company/Personnel Conducting Inspection: Ahtna Solutions, LLC / Morgan Bruno / Quinn Carroll

Weather/temperature: 50°F, Breezy **GPS Check shot/Loc:** Yes, MW06

Remedy Includes (check all that apply):

- ☐ **Access Controls**
- ☐ **Groundwater Containment**
- ☐ **Groundwater Pumping and Treatment**
- ☐ **Institutional Controls**
- ☐ **Landfill Cover/Containment**
- ☒ **Monitored Natural Attenuation**
- ☐ **Surface Water Collection and Treatment**
- ☐ **Other** _____

LAND USE

Were onsite residential or manned industrial facilities constructed in the past 12 months? (If yes, specify in comments) ☐ **Yes** ☒ **No**

Any evidence of land use change? (If yes, specify in comments) ☐ **Yes** ☒ **No**

ACCESS AND INSTITUTIONAL CONTROLS (acquire location and photos)

Fencing ☐ **Damaged** ☐ **Intact** ☒ **N/A**

Gate(s) ☐ **Damaged** ☐ **Secured** ☒ **N/A**

Signage ☐ **Damaged** ☐ **In Place** ☐ **Missing** ☐ **N/A**

Both LUC signs in good condtion.

Other Security Measures (specify in comments)

☐ **In Place** ☐ **Missing** ☒ **N/A**

Evidence of possible trespass (specify in comments) ☐ Yes ☒ No

Vandalism evident (specify in comments) ☐ Yes ☒ No

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_____

Soil excavated in the past 12 months? ☐ Yes ☒ No

If yes,

Dig permit approved? ☐ Yes ☐ No

Excavated soil used on site for backfill? ☐ Yes ☐ No

Excavated soil transported off site? ☐ Yes ☐ No

Groundwater encountered during excavation? ☐ Yes ☐ No

Did excavation affect the integrity and function of any landfill caps?

☐ N/A ☐ Yes ☐ No

Any wells installed in the past 12 months? ☐ Yes ☒ No

If yes, did drilling through a shallow aquifer into a confined aquifer occur without AFCEC review of engineering controls and methods to prevent cross-contamination? ☐ Yes ☐ No

Is groundwater from this site used for drinking, irrigation, fire control, dust control, or any other purpose? ☐ Yes ☒ No

Soil LUC applies to this site ☐ Yes ☒ No

Groundwater LUC applies to this site ☒ Yes ☐ No

Site conditions imply LUCs are being enforced ☒ Yes ☐ No

If ICs/LUCs not enforced, explain below:

_____

_____

_____

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_____

GENERAL SITE CONDITIONS

Clutter or trash present ☐ **Yes** ☒ **No**

Evidence of wildlife ☐ **Yes** ☒ **No**

Road condition ☐ **Damaged** ☒ **Adequate** ☒ **N/A**

Road outside LUC boundary; in generally good condition.

LANDFILL COVERS ☐ **Applicable** ☒ **N/A**

Landfill Surface:

Settlement (low spots) ☐ **Location and Photo acquired** ☐ **Settlement not evident**

Areal extent _____ Depth _____

Cracks ☐ **Location and photo acquired** ☐ **Cracking not evident**

Lengths _____ Widths _____ Depths _____

Erosion ☐ **Location and photo acquired** ☐ **Erosion not evident**

Areal extent _____ Depth_____

Holes ☐ **Location and photo acquired** ☐ **Settlement not evident**

Areal extent _____ Depth_____

Vegetative Cover (Specify percent in comments):

☐ **Cover properly established** ☐ **No signs of stress**
☐ **Cover partially established** ☐ **Showing signs of stress**
☐ **Grass/Sedges** ☐ **Trees/Shrubs**

Alternative Cover (armored rock, concrete, etc.): _____ ☒ **N/A**

Bulges ☐ **Location and photo acquired** ☐ **Bulges not evident**

Areal extent _____ Height _____

_____

_____

Wet Areas/Water Damage ☒ **Not evident**

☐ **Wet Areas** ☐ **Location and photo acquired** ☐ **Areal extent**

☐ **Ponding** ☐ **Location and photo acquired** ☐ **Areal extent**

☐ **Seeps** ☐ **Location and photo acquired** ☐ **Areal extent**

☐ **Soft subgrade** ☐ **Location and photo acquired** ☐ **Areal extent**

☐ **N/A**

_____

_____

_____

_____

Slope Instability ☐ **Slides** ☐ **Location and photo acquired**

☒ **No evidence of slope instability**

Areal extent _____

Benches ☐ **Applicable** ☐ **N/A**

Flows Bypass Bench ☐ **Location and photo acquired** ☐ **N/A**

Bench Breached ☐ **Location and photo acquired** ☐ **N/A**

Bench Overtopped ☐ **Location and photo acquired** ☐ **N/A**

Letdown Channels ☐ **Location and photo acquired** ☐ **N/A**

Landfill Surface Comments:

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GROUNDWATER/SURFACE WATER REMEDIES ☐ **Applicable** ☒ **N/A**

Monitoring Wells MW3, MW6, MW9

☐ **Properly Secured/Locked** ☒ **Functioning**

☒ **Routinely Sampled** ☐ **Good Condition**

☒ **All Required Wells Located** ☒ **Need Maintenance (specify in comments)**

MW9 bolts for outer casing sheared off. MW3 no lock on outer casing, not labeled, lock in good condition, light rust outer casing.
MW6 not properly secured/locked and not labeled. Lock on inner casing rusted, in bad condition.

Groundwater Extraction Wells, Pumps, Pipelines, Wellhead Plumbing, and Electrical

☐ **Good Condition** ☐ **All Required Wells Properly Operating** ☒ **N/A**

☐ **Need Maintenance (specify in comments)**

Surface Water Collection Structures, Pumps, Pipelines, and Electrical

☐ **Good Condition** ☐ **Need Maintenance (specify in comments)** ☒ **N/A**

Groundwater/Surface Water Comments:

Post-Data Collection GPS Check Shot: Yes, MW06

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APPENDIX G

Photographic Log

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Site OT001

Photo ID: 58. View south. LUC sign #1 in good condition.

Photo ID: 59. View northwest. Entrance to site OT001 and access road in good condition.

Photo ID: 72. View east. LUC sign #2 in good condition.

Photo ID: 73. View northwest. Small area with gravel and no vegetation.

Photo ID: 75. View west. Vandalized “Foot Traffic Only” sign with bullet holes.

Photo ID: 76. View south. Overview of site OT001 from the north looking south.

Photo ID: 81. View south. Footprint of former building.

Photo ID: 85. View east. Overview of 1978 spill area.

Photo ID: 64. View southeast. Overview of debris disposal area.

Photo ID: 62. View north. Overview of site OT001 from the south looking north.

Site LF002

Photo ID: 52. View east. Overview of Site LF002. Area is missing LUC sign.

Photo ID: 57. View east. Location of missing LUC sign with pole still intact.

Photo ID: 35. View west. LUC sign #2 in good condition. Note LUC boundary shown on sign does not match boundary documented in USAF GeoBase system.

Photo ID: 38. View northwest. Slope on east side of LF002. Slope shows good grade and appears stable.

Photo ID: 45. View east. Possible unstable slope next to gravel borrow pit on north side of LF002.

Photo ID: 38. View south. Overview of LF002 from the north looking south.

Site ST005

Photo ID: 25. View south. LUC sign #1 in good condition.

Photo ID: 1. View east. LUC sign # 2 in good condition.

Photo ID: 1. Well ST005-MW3 locked. Well monument was not locked from outside and well was not labeled.

Photo ID: 17. Closeup. Well ST005-MW9 locked. Well monument is filled with sediment and bolts to monument were sheared off.

Photo ID: 11. View west. Well ST005-MW6 not properly locked and not labeled.

Photo ID: 3. View north. Overview of Site ST005 from the south looking north.

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