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COLD BAY LRRS
ALASKA

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 67

PROPOSED PLAN FOR REMEDIAL ACTION AT THE POL STORAGE AREA (ST05) AND LANDFILL/GRAVEL PIT (LF02) COLD BAY, ALASKA

January 2000

The United States Air Force (USAF) and the **Alaska Department of Environmental Conservation (ADEC)** request your comments on this **Proposed Plan** for the former Petroleum, Oil and Lubricant (POL) Storage Area (ST05) and the Landfill/Gravel Pit (LF02) located in Cold Bay, Alaska (Figure 1) This Proposed Plan discusses the environmental investigations that were performed at the two sites and recommendations for **cleanup alternatives**. Default cleanup levels listed in **18 AAC 75** are being used for this project.

The purpose of the Proposed Plan is to.

- Describe the contamination at the two sites
- Describe the cleanup alternatives that were considered
- Describe the recommended cleanup alternative and explain why it is preferred
- Request public comment on the preferred alternatives
- Provide information on how the public can be involved in the final cleanup decision

Preparation of this Proposed Plan and the associated public comment period are required under Section 117(a) of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**, also known as the "Superfund" Program. Although neither the POL Storage Area (ST05) nor Landfill/Gravel Pit (LF02) is a Superfund site, the USAF cleanup program follows CERCLA guidance.

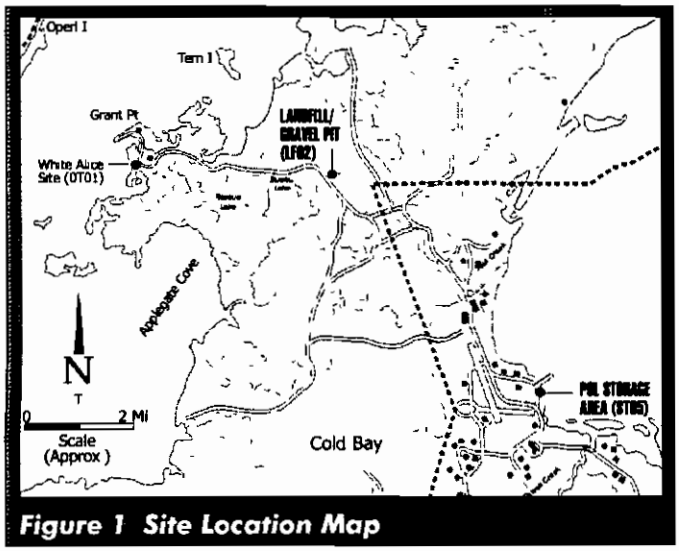
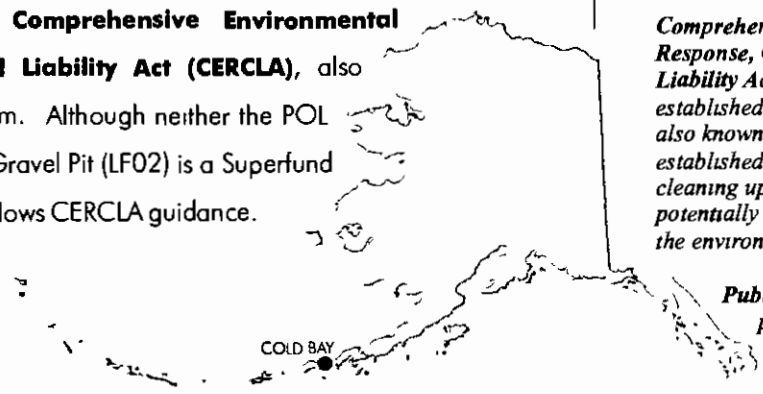


Figure 1 Site Location Map



Alaska Department of Environmental Conservation (ADEC): *the state agency responsible for protecting public health, safety, welfare and the environment from adverse effects of environmental contamination and pollution*

Proposed Plan: *a document informing the public about alternatives that were considered for cleaning up a contaminated site and which alternative was identified as the preferred alternative*

Cleanup Alternatives: *methods of cleanup of environmental contamination*

18 AAC 75 (Title 18 Alaska Administrative Code Chapter 75): *State regulation which governs oil and hazardous substances*

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): *a federal law established in 1980, modified in 1986, also known as "Superfund" CERCLA established a nationwide process for cleaning up hazardous waste sites that potentially endanger public health and the environment*

Public Comment Period: *a time period for the public to review and comment on various documents The public comment period for this Proposed Plan is 30 days (February 3 to March 4, 2000)*

This Proposed Plan has been reviewed and approved by the USAF and ADEC; however, final decisions on the preferred cleanup alternatives will not be made until all comments submitted by the end of the **public comment period** have been reviewed and considered. Changes to the preferred alternatives may be made if public comments or additional data indicate that such changes would result in more appropriate solutions.

Additional information can be obtained from the information repositories located at Elmendorf Air Force Base in Anchorage and the Municipal Building in Cold Bay The repositories contain detailed investigation reports, evaluation of potential cleanup technologies, and test results from field studies at USAF facilities in Cold Bay

SITE HISTORY AND BACK ROUND

Cold Bay is located near the tip of the Alaska Peninsula, approximately 640 miles southwest of Anchorage. 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 the control of the airstrip to the Civil Aeronautics Authority (predecessor to the Federal Aviation Administration) in the early 1950's. Currently, the U S. Army Corps of Engineers (USACE) is investigating and cleaning up military wastes associated with the airstrip and other formerly used defense sites around Cold Bay.

A White Alice Communication System (WACS) site was constructed in 1958-59 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. In 1987, the WACS installation was demolished and buried on-site The USAF had operated the POL Storage Area (ST05) and Landfill/Gravel Pit (LF02) in support of the WACS.

POL Storage Area (ST05)

The POL Storage Area (ST05), located on USAF property within the community of Cold Bay, consisted of two 70,000-barrel aboveground storage tanks (ASTs), a pump house, a fueling island, and associated piping. 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; the earthen dike around the ASTs was not removed Investigations in 1993 and 1996 indicated diesel-contaminated soil inside the dike and near the former pump house. In 1997, a bioventing system was installed and is being operated to study the effectiveness of this remedial alternative

Landfill/Gravel Pit (LF02)

The Landfill/Gravel Pit (LF02) is located approximately 7 miles northwest of Cold Bay on property managed by the U S. Fish & Wildlife Service (USFWS). USAF used the site

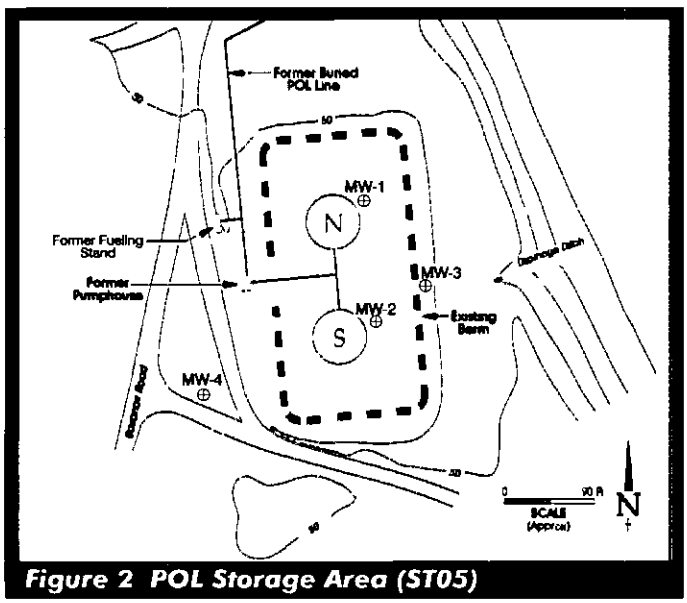


Figure 2 POL Storage Area (ST05)

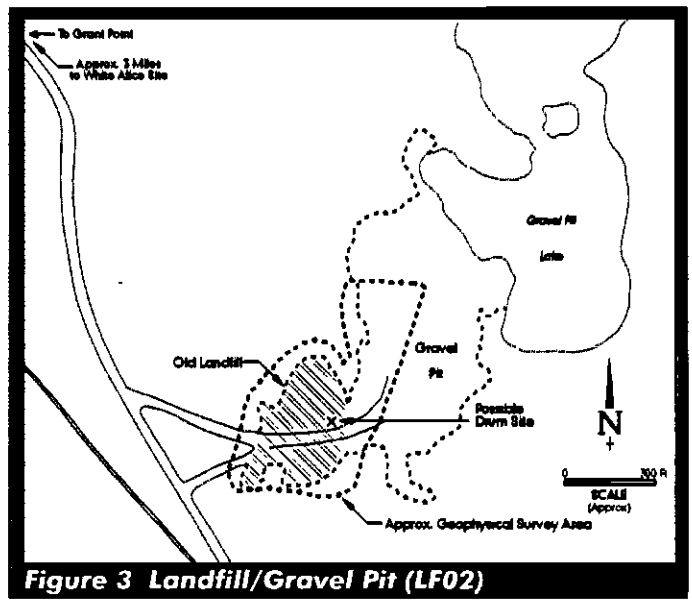


Figure 3 Landfill/Gravel Pit (LF02)

from 1971 to 1976. Non-hazardous and possibly hazardous wastes from the Cold Bay USAF facilities were buried in this landfill It was also reported that approximately 200 drums removed from the 1987 WACS demolition had been buried in this landfill Investigations performed in 1986 and 1997 found no evidence of significant contamination, or risk to human health or the environment.

ENVIRONMENTAL CONDITIONS

The USAF has characterized the soil and groundwater at the POL Storage Area (ST05) and Landfill/Gravel Pit (LF02). The following sections discuss the environmental condition of these sites. Additional information can be found in reports contained in the **information repositories** located at the Cold Bay Municipal Building and Elmendorf AFB

POL Storage Area (ST05)

Diesel range organics (DRO) is the contaminant of concern at this site and has been detected in surface soil, subsurface soil, and groundwater. DRO concentrations found in several surface and subsurface soil samples exceeded the ADEC **Method 2 cleanup level** of 230 milligrams per kilograms (mg/kg) The highest level of soil contamination was 15,000 mg/kg DRO, detected at a depth of 5 feet at MW-2 (Figure 2) A soil sample collected at a depth of 35 feet in the same soil boring contained 1,200 mg/kg DRO It is estimated that 3,000 to 4,000 cubic yards (CY) of soil may be contaminated at concentrations that exceed the ADEC cleanup level.

Four monitoring wells were installed at the POL Storage Area (ST05) to assess groundwater contamination. Samples collected from monitoring wells MW-1 and MW-2, placed adjacent to the former ASTs, had DRO concentrations at 0.33 and 14 milligrams per liter (mg/L), respectively. The ADEC cleanup level for DRO is 1.5 mg/L. MW-3, placed downgradient of the site (i.e., in the direction that groundwater flows), had a DRO concentration of 1 1 mg/L. The fourth monitoring well, MW-4, was positioned upgradient (i e , the direction from which groundwater flows) and had a DRO concentration of 0.13 mg/L.

Human health and ecological **risk assessments** were performed in 1996 to study the likelihood that humans or the environment could be harmed by contamination at the POL Storage Area (ST05). The risk assessments concluded that in some instances, DRO levels in soil and groundwater exceed levels protective of ecological and human health. The estimated risks were based on conservative screening levels using a residential scenario for the site

The conclusions signify that risks to human health and the environment from the DRO at the POL Storage Area (ST05) do exist. However, since groundwater at the site is not currently nor an anticipated source of drinking water, there is no risk to human health.

This site is currently undergoing remedial activities using a **bioventing system** installed in the fall of 1997. The bioventing system was installed in the first 10 feet of soil where the greatest contamination has been identified, and has been monitored since its installation. In 1999, nutrients were added to the soil to aid the microbes in

Information Repositories: *the locations that hold administrative records Usually a library, school or other public facility*

Cold Bay Municipal Building
Cold Bay, Alaska
(907) 532-2401
Open Mon-Fri 8 00 a m to 4 00 p m

611 CES/CEVR
10471 20th Street, Suite 302
Elmendorf AFB, Alaska
Open Mon-Fri 8 00 a m to 5 00 p m

Diesel Range Organics (DRO): *a group of petroleum hydrocarbons found in diesel fuel*

Method 2 Cleanup Level: *a method, described in 18 AAC 75, used to determine soil cleanup levels for numerous contaminants The levels are based on the contaminant, release mechanism, exposure route, and amount of precipitation a site gets*

Risk Assessment: *a study of the risks posed to human health and the environment from site contaminants Risk assessments are site-specific and involve the evaluation of the chemical(s) of concern and exposure pathways from the source of contaminants (i e , soil and groundwater) to potential receptors (i e , humans and wildlife)*

Bioventing: *introduction of air into subsurface soils to help microbial bacteria break down diesel contamination into non-hazardous components such as carbon dioxide and water (Figure 4)*

Geophysical Survey: an above-ground survey method using magnetic imaging technology to detect subsurface anomalies (i e metallic debris)

Applicable or relevant and appropriate requirements (ARARs): *State and federal laws and regulations that need to be met in development and implementation of cleanup alternatives at a site These include cleanup standards, standards of control, and other substantive environmental protection requirements, factors, or limitations under state and federal law*

breakdown of the DRO. Results of the bioventing system have been encouraging since the nutrients were added.

Landfill/Gravel Pit (LF02)

The USAF has investigated the Landfill/Gravel Pit (LF02) during several site investigations at Cold Bay. In 1986, five monitoring wells were installed around the old landfill. Water samples collected from the wells were analyzed for petroleum hydrocarbons, volatile organic compounds, and PCBs. No contaminants were found above the detection limits.

The site was recommended for no further remedial action in 1989; ADEC concurred in a letter to the USAF in 1991. Subsequent interviews with Corps of Engineers personnel who participated in the WACS demolition indicated that 200 drums from the demolition might have been buried in the landfill. A **geophysical survey**, conducted in 1994, delineated potential drum burial locations. Trenches were later dug in these areas but did not reveal any buried drums or other containers that may have held hazardous materials.

Laboratory analysis of soil samples taken during the trenching operation indicated that the landfill generally has insignificant levels of contaminants. ADEC cleanup levels were exceeded in only two of the samples One of these samples, collected at 10 feet below ground surface, contained an elevated DRO concentration (520 mg/kg) and another sample, from a depth of 5 feet, had an elevated cadmium concentration (43 mg/kg). Both samples appeared to represent isolated areas or "hot spots "

REMEDIAL ACTION ALTERNATIVES

POL Storage Area (ST05)

A wide range of cleanup alternatives was considered for the cleanup of the POL Storage Area (ST05). The alternatives were screened based on the nine evaluation criteria found in the *Guidance for Conducting Remedial Investigation and Feasibility Studies Under CERCLA*. The nine evaluation criteria are listed in Table 1

Table 1 - Remedial Alternatives Evaluation Criteria

Evaluation Criterion	Definition
Overall Protection of Human Health and the Environment	How well does the alternative protect human health and the environment through elimination, reduction or control of contaminated areas?
Compliance with **Applicable Or Relevant And Appropriate Requirements (ARARs)**	Does the alternative meet cleanup standards and comply with applicable government laws and regulations?
Short-term effectiveness	Are there potential adverse effects to either human health or the environment during construction or implementation of the alternative?
Long-Term Effectiveness and Permanence	How well does the alternative protect human health and the environment after cleanup, and are there any risks remaining at the site?
Reduction of Toxicity, Mobility and Volume through Treatment	Does the alternative effectively treat the contamination to significantly reduce the toxicity, mobility, and volume of the hazardous substances?
Implementability	Is the alternative both technically and administratively feasible?
Cost	What are the capital and operating and maintenance costs of the alternative?
Community acceptance	Is the alternative acceptable to community members?
State acceptance	Is the alternative acceptable to the state (i e., ADEC)?

COMMENT CARD
Proposed Plan for Remedial Action at the POL Storage Area (ST05) and Landfill/Gravel Pit (LF02) Cold Bay, Alaska

Your comments and suggestions about the remedial alternatives in this Proposed Plan are important to the U.S. Air Force. Comments that the public provides will be valuable in helping the agencies select a final alternative for the POL Storage Area (ST05) and Landfill/Gravel Pit (LF02) sites in Cold Bay.

You may use the space provided below to submit your comments. When you are finished, please fold and mail. A return address has been provided on the back of this page for your convenience. Comments must be postmarked by March 4, 2000. If you have any questions, please contact Mr Steve Wilhelmi at (907) 552-8166 or (800) 222-4137.

Name: _____

Address: _____

_____

Telephone: _____

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Elmendorf AFB

Community Relations Coordinator
Steve Wilhelmi
611 CES/CEVR
10471 20th Street, Suite 302
Elmendorf AFB, Alaska 99506-2270

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After initial screening, five alternatives were selected for more detailed analysis. Each of these alternatives is described below.

Alternative 1: Excavation/Thermal Treatment of Shallow Contaminated Soil and Natural Attenuation

This alternative consists of excavating the top five feet of contaminated soil and **thermally treating** it to remove the contamination. Approximately 1,500 to 2,000 CY of soil would be removed USAF would coordinate work with USACE, who intends to bring a thermal treatment unit to Cold Bay for other work in 2000. It is assumed that the deeper contaminated soil would be remediated through **natural attenuation** The groundwater would be monitored for natural attenuation until DRO levels fall below the ADEC cleanup level (1.5 mg/L). Alternative 1 is estimated to cost $450,000 initially with an additional $18,000 each year for groundwater monitoring. The timeline to completion is estimated from 5 to 15 years.

Alternative 2: Excavation/Thermal Treatment of All Contaminated Soil and Natural Attenuation

This alternative consists of excavating and thermally treating all soil that exceeds the ADEC cleanup level for DRO (estimated at 3,000 to 4,000 CY). The estimated cost for excavation, thermal treatment, and replacement of the soil is approximately $875,000. The groundwater would be monitored for natural attenuation until DRO levels fall below the ADEC cleanup level (1 5 mg/L) Groundwater monitoring is expected to cost $18,000 annually for a period of approximately 2 to 4 years.

Alternative 3: Bioventing and Natural Attenuation

For this alternative, the bioventing system currently in place would continue to operate until either significant biodegradation of the contaminated soil is achieved or funds become available to excavate/treat contaminated soil. The bioventing system was installed at a depth of 10 feet below ground surface and only influences the shallow soil contamination present at the site (i e., from the surface down to 15 to 20 feet deep). Recent measurements indicate that with the addition of nutrients, microbial activity is reducing the concentration of DRO in soil The annual cost to operate and maintain this system is estimated at $45,000, with another $18,000 per year to monitor natural attenuation of the groundwater. This alternative may take 10 to 20 years to attain ADEC cleanup levels for soil and groundwater.

Alternative 4: Natural Attenuation Only

This alternative consists of remediation of both the soil and groundwater through natural attenuation only. Altemative 4 would involve annual monitoring of the groundwater to verify and track the progress of natural attenuation. The groundwater would be monitored until DRO levels fall below the ADEC cleanup level (1 5 mg/L). It is assumed that DRO concentrations in the soil would also be reduced through natural attenuation, however, it would not be monitored. This alternative is estimated to cost approximately $18,000 per year, for a period of 15 to 25 years.

Thermal Treatment: *a cleanup technology that relies on the action of heating contaminated soils to vaporize the contaminants and treating the subsequent vapors so that only carbon dioxide and water vapor are released into the atmosphere*

Natural Attenuation: *the process by which bacteria and other natural processes (chemical and physical) break down contaminants into harmless substances*

Alternative 5: No Action

No additional cleanup work or monitoring would be done at this site if this alternative were selected. There are no costs associated with this cleanup.

PREFERRED ALTERNATIVES

POL Storage Area (ST05)

Alternative 1, Excavation/Thermal Treatment of Shallow Contaminated Soil and Natural Attenuation, was chosen as the preferred alternative. This alternative meets all the evaluation criteria and would utilize limited funds already allocated to remove the bulk of the contamination source. The soil with the highest DRO concentration would be removed. Meanwhile, the existing bioventing system would continue to operate until 2000

Landfill/Gravel Pit (LF02)

No further action is recommended at the Landfill/Gravel Pit (LF02) for the following reasons.

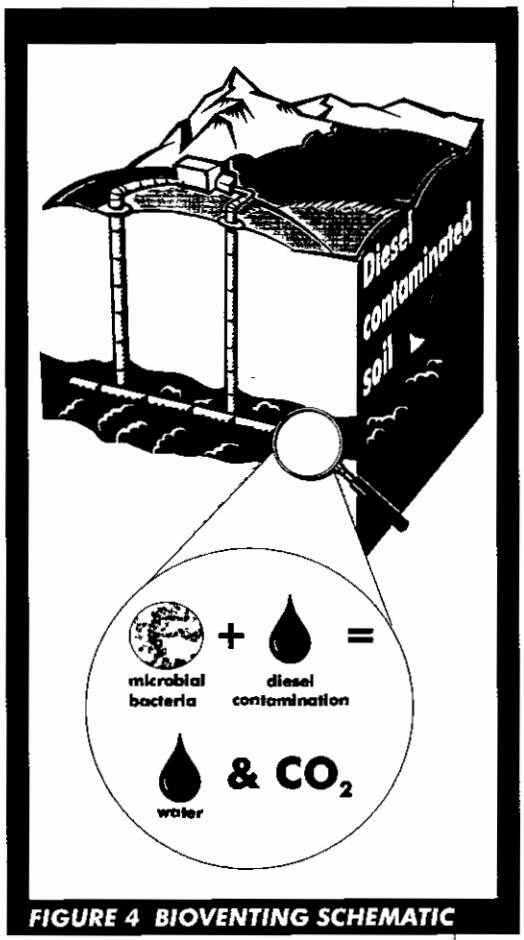

FIGURE 4 BIOVENTING SCHEMATIC

- Groundwater has not been affected.
- Soil contamination is subsurface and appears to be localized.
- No indication of containerized hazardous materials was found
- Human contact with the contaminants is unlikely
- Risk to the environment is considered to be insignificant.

The USAF, USFWS, and ADEC will work together to ensure that the landfill location is properly documented in USFWS land records and management plans, and that an adequate cover is maintained over the solid waste

COMMUNITY PARTICIPATION

You are encouraged to provide comments on the recommended alternatives for the POL Storage Area (ST05) and the Landfill/Gravel Pit (LF02) sites A final decision on the alternatives for each of these sites will not be made until public comments are considered. Your comments can be presented either in writing or at the public meeting on February 3, 2000 A pre-addressed comment form is included in this proposed plan. The public comment period is from February 3 to March 4, 2000.

Public Meeting

A public meeting to discuss this Proposed Plan, answer questions, and receive public comments will be held on February 3 beginning at 7:00 p.m. at the Municipal Building in Cold Bay.

Additional Information

The following list of source material is provided for readers who want more detailed information than is presented in this Proposed Plan. These documents are available in the information repositories.

- Installation Restoration Program (IRP) Phase I - Records Search, AAC Southern Region. King Salmon AFS, Cape Newenham AFS, Cape Romanzof AFS, Cold Bay AFS, Sparrevohn AFS, and Tatalina AFS, September 1985.
- Installation Restoration Program (IRP) Phase II - Confirmation/Quantification, Stage 1 Campion, Fort Yukon, Galena, Indian Mountain, Murphy Dome, Cold Bay, Sparrevohn Air Force Stations, Alaska, April 1989.
- Installation Restoration Program (IRP) Remedial Investigation/Fesibility Study, Stage 2, No Further Action Decision and Technical Document to Support No Further Action, Cold Bay AFS, Alaska, July 1991.
- Preliminary Assessment/ Site Investigation, Cold Bay Beach Tanks, September 1993
- Natural Resources Plan, South Coastal Long Range Radar Sites, Cape Romanzof, Cape Newenham, Cold Bay, September 1993
- Draft Preliminary Assessment, Cold Bay, September1993
- Site Inspection Report, Volumes I & II, September 1995.
- Remedial Investigation Report, August 1996
- No Further Response Action Planned Document, August 1996.
- All Around Alaska, Cold Bay Edition - Fact Sheet, 1st Edition, April 1997.
- Proposed Plan, White Alice Communications System Site, April 1997.
- Community Relations Plan, August 1997.
- Field Investigation and Remediation Report, Cold Bay WACS, Alaska, April

Information Repositories

611 CES/CEVR
10471 20th Street, Suite 302
Elmendorf AFB, Alaska
(907) 552-4532

Hours:
Mon-Fri: 8 00 a.m. - 5·00 p.m.

Cold Bay City Office
Municipal Building
Cold Bay, Alaska
(907) 532-2401

Hours:
Mon-Fri 8.00 a.m.- 4·00 p.m.

Contact for Questions

If you have any questions about the information provided in this Proposed Plan, or if you would like to be added to or deleted from the mailing list, please contact the USAF Community Relations Coordinator:

Mr. Steve Wilhelmi
611 CES/CEVR
10471 20th Street, Suite 302
Elmendorf AFB, Alaska
99506-2270

(907) 552-8166
or
(800) 222-4137

Community Relations Coordinator
Steve Wilhelmi
611 CES/CEVR
10471 20th Street, Suite 302
Elmendorf AFB, Alaska 99506-2270

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611 CES/CEVR
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Elmendorf Air Force Base, Alaska
99506-2270

(907) 552-8166 or (800) 222-4137

PUBLIC MEETING

A public meeting will be held on
April 25th, 2000 beginning at
7:00 p.m. at the Municpal Building in
Cold Bay

The purpose of the meeting is to discuss the Proposed Plan for the Petroleum, Oil and Lubricant (POL) Storage Area and Landfill/Gravel Pit sites, answer questions about the Proposed Plan and about activities planned for the 2000 field season, and receive public comments.

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ADMINISTRATIVE RECORD

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