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**CAPE ROMANZOF LRRS
ALASKA**

**ADMINISTRATIVE RECORD
COVER SHEET**

AR File Number 101

February 2001

CAPE ROMANZOF LONG RANGE RADAR SITE

The Proposed Plan for Remedial Action

INTRODUCTION

The United States Air Force (USAF) and the Alaska Department of Environmental Conservation (ADEC) request your comments on this **Proposed Plan** for 10 sites at the Cape Romanzof Long Range Radar Site (LRRS), Alaska. These sites are shown in Figure 1 and are listed below:

- Dump Area (DP11)
- Landfill No. 1 (LF02)
- Debris Landfill (LF12)
- White Alice (OT06)
- Waste Accumulation Area No. 2 (SS01)
- Weather Station Well (SS10)
- Road Oiling (OT05)
- Landfill No. 2 (LF03)
- Waste Accumulation Area No. 1 (SS07)
- Waste Accumulation Area No. 3 (SS08)

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.

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 the sites described in this Proposed Plan are not Superfund sites, the USAF cleanup program follows CERCLA guidance.

This Proposed Plan discusses the environmental investigations that were performed at the 10 sites and recommendations for cleanup alternatives. A separate Proposed Plan has been prepared for two other sites: Spill Site 13 (SS13) and Spill Site 15 (SS15). More detailed information about these sites can be found in reports at the information repositories listed at the end of this document.

The purpose of this Proposed Plan is to:

- Describe contamination at the ten sites
- Describe cleanup alternatives that were considered
- Describe recommended cleanup alternatives and explain why they are preferred
- Request public comment on the preferred alternatives
- Provide information on how the public can be involved in final cleanup decisions

SITE HISTORY & BACKGROUND

Cape Romanzof LRRS is situated within the Yukon Delta National Wildlife Refuge, on a small peninsula that extends into the Bering Sea. The installation is located at the head of a glacially carved valley that is surrounded by steep mountain ridges. The valley floor is relatively shallow-sloped. The surrounding area has low, rounded hills and mountains with alpine tundra.

Cape Romanzof LRRS was one of ten original Aircraft Control & Warning (AC&W) sites in the Alaska air defense system. Installation construction was finished in 1952 and operations began in 1953. In 1958, Cape Romanzof was established as a White Alice Communications System (WACS), replacing the AC&W. The WACS has subsequently been replaced by a minimally-attended radar system operated by approximately six people who live at the site year-round.

The installation has been divided into two areas, known as the Lower Camp and the Upper Camp. The Lower Camp area lies at the head of the valley next to tundra fields and intermittent streams, while the Upper Camp is situated on a high ridge directly above the head of the valley, near Towak Mountain. Later sections discuss each of the ten sites in more detail.

INVESTIGATION AND REMEDIATION PROCESS

The steps involved in evaluating and cleaning up the sites discussed in this Proposed Plan are highlighted below.

- **Initial Assessment and Records Search** – In this first phase of the Installation Restoration Program

(IRP), investigators reviewed records and interviewed former site workers regarding waste and fuels management to identify potential contaminated areas. This was conducted at Cape Romanzof LRRS in 1985. Potential sites were identified for field investigation.

- **Remedial Investigation (RI)** – During this phase, environmental field crews inspected and collected samples from potential sites previously noted during interviews and the records search. Samples of soil and/or water were analyzed to evaluate whether contaminants were present, and if so, how widespread they were.

RIs were conducted during 1989, 1990, and 1994 for the sites discussed in this Proposed Plan. Some of the sites that were identified in the initial assessment could not be located or verified, either because they did not exist, or they had already been cleaned up.

- **Risk Screening** – Following the collection of field data, risk to human health and the environment was evaluated for each site. This information was and is being used to help guide the selection of cleanup alternatives. The risk screening process was conducted as part of the 1989-90 RI. Results are shown in Table 1.

Two primary factors were considered in risk screening:

- 1) Whether contaminants were present at the site, determined by comparing sample results with the appropriate **cleanup level**.
- 2) The likelihood of an exposure occurring, determined by the proximity of **biological receptors** to the site, the

persistence of the contaminants, and whether the **toxicity threshold** of any chemicals was exceeded.

Risk was considered significant when exposure was likely to occur AND the toxicity threshold was exceeded.

The toxicity threshold criterion was not met at any of the sites addressed in this Proposed Plan; therefore, human health and environmental risks were determined to be insignificant. This finding does not mean that cleanup should not occur; rather, it indicates that current biological receptors conducting typical activities at these sites are not likely to be harmed by exposure to site contamination.

- **Feasibility Study (FS)** – Following the determination of risk, a range of possible response actions was considered for each site.

Response actions were evaluated according to their ability to achieve the following:

- Protect human health and the environment by ensuring that cancer and non-cancer health risks are within established health guidelines;
- Meet the state and federal environmental laws and regulations for the specific contaminants;
- Include treatment to the greatest extent practical; and
- Is cost effective.

The selection of response actions is based on the nature and extent of contamination present in the environment. Because cleanup is not required when risk is insignificant or where contaminants are present in concentrations below the allowable

levels, **No Further Action (NFA)** is proposed for seven of the ten sites discussed in this Proposed Plan. The other three sites require **remedial actions** to achieve the required level of protection of human health and the environment.

- **Remedial Actions** – For the three sites requiring remedial actions, a range of alternatives were evaluated against to **nine criteria** established under CERCLA (Table 2). After receiving input from the community, a remedial alternative will be selected and implemented.

The three sites that were found to have contamination requiring remedial actions are:

- Landfill No. 2 (LF03)
- Waste Accumulation Area No. 1 (SS07)
- Waste Accumulation Area No. 3 (SS08)

A wide range of cleanup alternatives was considered for these sites. Cleanup alternatives were selected that could best accommodate the severe climatic, logistical, and environmental conditions specific to Cape Romanzof LRRS. One of these sites, SS08, has already been remediated so that no contamination remains. The **preferred alternatives** for the other two sites are discussed later in this proposed plan.

- **General Cleanup Work** – During the investigation and remediation process, various cleanup projects have been conducted at Cape Romanzof LRRS to reduce immediate threats to the environment. Actions have included removal and disposal of debris, drums, tanks, contaminated soil, asbestos, and building materials. Detailed reports

about these investigations and actions can be found in the information repositories listed in this document.

SITE SUMMARIES

Dump Area (DP11)

The Dump Area (DP11) is located near the former Upper Camp and White Alice facilities. Debris disposed of in this area included scrap metal, wood, plastic, drums, vehicles, and other materials. This waste was reportedly picked up in 1976, 1977, and 1984 and disposed of in Landfill No. 2 (LF03). Drummed waste was reportedly shipped offsite for disposal.

During the 1989 RI, the field team could not find any remaining debris, stained soil, or other evidence of the Dump Area (DP11). Because no evidence of contamination was observed, no samples were collected for analysis.

No Further Action is proposed for this site. The rationale for this alternative is that the waste has already been removed and no residual contamination was indicated.

Landfill No. 1 (LF02)

Landfill No. 1 (LF02) was reportedly an open dump used for garbage and refuse. Debris picked up during cleanups performed in 1976, 1977, and 1984 may have removed the only evidence of this former landfill location.

Field workers in 1985 could not determine the location of Landfill No. 1 (LF02) due to lack of records and absence of long-term employees who could identify the area. The location of this site was estimated based on the recollection of an interviewee who noted that dumping had occurred in an area on the

north slope of the ridge, north of Lower Camp, at some time in the past.

The 1989 field team also attempted to locate Landfill No. 1 (LF02) by looking for disturbed areas on both the north and south side of the road between Upper and Lower Camps. They too were unable to determine its former location. Because no evidence of contamination was observed, no samples were collected for analysis.

No Further Action is the preferred alternative for this site. The rationale for this alternative is that the waste has already been removed and no residual contamination was indicated.

Debris Landfill (LF12)

Debris Landfill (LF12) is the location where the demolition debris was deposited when the Lower Camp facilities were razed. The site is a backfilled pit located south of the present lower camp facility.

In 1989, a soil gas survey was conducted to locate areas with the greatest potential contamination. Two soil samples were collected where soil gas readings were the highest. The samples were analyzed for metals, TPH, VOCs, SVOCs, and PCBs. TPH was detected in one sample at a concentration of 30 mg/Kg. No other contaminants were detected.

No Further Action is the preferred alternative for this site. The rationale is that no contaminants were detected above the cleanup level in the samples tested, and the probability for off-site migration of potential contaminants is low.

White Alice (OT06)

The White Alice (OT06) facility was demolished as part of a cleanup of the site in the late 1980s. The demolition debris was buried in onsite landfills. Following burial, the entire site was graded to blend into surrounding contour lines.

The 1989 field team was unable to discern the location of the former structures or the location of the debris landfill. The asbestos landfill was observed to be staked and placarded. There were no visible stains or other indications of contamination, therefore, no laboratory samples were collected.

No Further Action is the preferred alternative for this site. The rationale for this alternative is that no evidence of residual contamination was observed and the probability for any off-site migration of potential contaminants is low.

Waste Accumulation Area No. 2 (SS01)

Waste Accumulation Area No. 2 (SS01) was reportedly used to store drummed new product and liquid waste. The liquid waste probably consisted mostly of waste oil and small quantities of fuels, solvents, hydraulic fluid, and ethylene glycol.

The field team was not able to determine the exact location of this site during the 1989 field investigation because all drums and surface features had been removed in the late 1980s during a demolition and cleanup of the Lower Camp. The entire area was graded at that time, thus covering or removing any stains if they had existed. The ground surface of this area consists of rock rubble and gravel fill over tundra. The reported location of Waste Accumulation Area No. 2 (SS01) was at the edge of the fill, where the gravel pad sloped sharply to the surrounding tundra, about 6 feet below.

The 1989 field team could not find any visual indications of contamination, such as staining, on the tundra below the estimated location of the site; therefore, no laboratory samples were collected.

No Further Action is the preferred alternative for this site. The rationale for this alternative is that no residual contamination was observed during reconnaissance surveys.

Weather Station Well (SS10)

Two wells, Well No. 2 and Well No. 3 (SS10), were located near the Weather Station building. Well No. 2, which was 96 feet deep, reportedly became contaminated with petroleum products in 1964 and was abandoned. Well No. 3 was installed to replace Well No. 2 in 1972. Well No. 3 was 92 feet deep. Water from Well No. 3 was stored in a 10,000-gallon tank and used to supply non-potable water to the facility for general washing and toilet use. In 1993, Well No. 3 was abandoned.

In 1989, one groundwater sample from Well No. 3 was collected and analyzed for TPH and BTEX. TPH was detected at a concentration of 0.31 mg/L. No BTEX constituents were detected. No sample was collected from Well No. 2 because the field team was unable to locate it, and presumed the well had been abandoned.

No Further Action is the preferred alternative for this site. The rationale for this is that cleanup levels were not exceeded in groundwater.

Landfill No. 2 (LF03)

Landfill No. 2 (LF03) was used until the mid-1970s for garbage, rubbish, wood, metal, plastic, construction and demolition

debris, shop wastes, and incinerator ash. This landfill occupies an area of about 1 to 1.5 acres (Figure 2).

Fowler (Nilumat) Creek lies approximately 250 feet south of the landfill, with two tributaries located between the landfill and the creek. Flow in all three streams is toward the west-southwest. Groundwater flows to the west, approximately parallel to the streams.

Numerous studies have been conducted at the site to characterize the nature and extent of contaminants. Samples of soil, groundwater, surface water, and sediment have been collected frequently since 1989. Samples have been analyzed for metals, TPH, DRO, GRO, VOCs, SVOCs, PCBs, BTEX, and pesticides. Highlights of the analytical results are shown in Tables 2 and 3. A summary of findings is discussed below for each medium.

In 1994, Landfill No. 2 (LF03) was capped in order to minimize water flowing through it. The landfill cap consisted of a impermeable liner (hypalon) overlain by geotextile fabric, sandwiched between layers of sand and gravel.

During the RI investigations, several brown-colored leachate seeps were observed at the periphery of the landfill. After capping, Landfill No. 2 (LF03) was monitored during and after rains for the effectiveness of the cap to minimize precipitation from infiltrating into the landfill. All the previously observed leachate sites around the periphery of the landfill had dried out and no new seeps were observed. Those observations indicated that the landfill cover was functioning as intended.

Groundwater

Four monitoring wells were installed at Landfill No. 2 (LF03) in 1989 and seven more in 1996. Wells CMW-2 and CMW-3 are located between the edge of the landfill and the first tributary. Groundwater has been sampled frequently since 1989, and analyzed for DRO, GRO, VOCs, SVOCs, pesticides, and metals.

Since the landfill was capped in 1994, hydrocarbon levels in groundwater have been dropping. In 1999, levels of DRO, GRO, BTEX, and SVOCs were non-detectable in all wells except for DRO in two wells (CMW-4 and CMW-5), at a maximum concentration of 0.79 mg/L. Various metals have been detected in groundwater at the site. PCBs and pesticides have not been detected in groundwater downgradient of the site.

Surface water/Sediment

Collocated surface water and sediment samples have been collected at three locations near LF03 since 1989. Sampling location SD-1/SW-1 is situated in the tributary nearest the landfill. Site SD-2/SW-2 is located west of and downhill from the landfill. Site SD-3/SW-3 is placed in the apparent upgradient direction of the landfill, to the east.

As with groundwater, petroleum hydrocarbon levels in surface water have dropped since the landfill was capped.

The PCB Arochlor 1260 has been measured at one site (SW-2/SD-2) in both sediment (180 mg/Kg) and surface water (0.046 mg/L) at levels exceeding the cleanup criteria. Lead has been detected in surface water. Arsenic and chromium were measured in sediments at levels exceeding ADEC criteria and background levels.

**Table 3
Detected Compounds
Above Cleanup Criteria
at LF03 Prior to Capping Landfill**

Chemicals	Regulatory Cleanup Criteria*	Samples Above Regulatory Cleanup Criteria/Total Number of Samples	Highest Reported Concentration
Soil			
TPH	250 mg/Kg	1/1	100,000 mg/Kg
Sediment			
TPH	250 mg/Kg	3/7	3,000 mg/Kg
Surface Water			
TPH	1.5 mg/L	2/10	4 mg/L
PCB	0.5 µg/L	1/10	2.7 µg/L
Cadmium	0.005 mg/L	1/10	0.009 mg/L
Groundwater			
TPH	1.5 mg/L	1/3	2 mg/L
Cadmium	0.005 mg/L	¼	0.006 mg/L

* Note: There is no current regulatory cleanup criterion for TPH, therefore, the cleanup criterion for DRO is used
 TPH = Total Petroleum Hydrocarbons
 PCB = Polychlorinated Biphenyls
 mg/Kg = milligrams per kilogram (parts per million)

**Table 4
Detected Compounds
Above Cleanup Criteria at LF03
After Capping**

Chemicals	Regulatory Cleanup Criteria (Background Concentration)	Samples Above Regulatory Cleanup Criteria or Background/ Total Number of Samples	Highest Reported Concentration
Sediment¹			
DRO	250 mg/Kg	1/6	400 mg/Kg (SD-1)
Benzene	0.02 mg/Kg	1/3	1.11 mg/Kg (SD-1)
PCB	10 mg/Kg	2/12	180 mg/Kg (SD-2)
Arsenic	2 mg/Kg	5/6	7.72 mg/Kg (SD-1)
Chromium	26 mg/Kg	2/6	42.3 mg/Kg (SD-3)

Surface Water			
DRO	1.5 mg/L	0/3	0.205 mg/L (SW-2)
Lead	0.015 mg/L	1/3	0.023 mg/L (SW-2)
PCB	0.000014 mg/L	1/3	0.046 mg/L (SW-2)
Groundwater			
DRO	1.5 mg/L	1/18	2.13 mg/L (CMW-4)
Antimony	0.006 mg/L (0.1 mg/L)	4/6	0.222 (CMW-4, -5, -6 and -7)
Arsenic	0.05 mg/L (0.5 mg/L)	8/12 0/2	0.111 (CMW-4, -5, -6, -7)
Beryllium	0.016 mg/L (0.1 mg/L)	3/17	1.72 mg/L
Cadmium	0.005 mg/L (0.01 mg/L)	8/12	20 mg/L (CMW-4)
Lead	0.015 mg/L (0.0926 mg/L)	8/12+	5 mg/L (CMW-4)
Nickel	0.1 mg/L (0.0488 mg/L)	4/12	6.74 mg/L (CMW-4)
Selenium	0.05 mg/L (0.1 mg/L)	8/12	6.74 mg/L (CMW-4)
Silver	0.18 mg/L	4/12	6.74 mg/L (CMW-4)

ok
Metals

1 - Criteria shown are for soils.
 DRO = Diesel Range Organics
 mg/L = milligrams per liter (parts per million)
 µg/L = micrograms per liter (parts per billion)

Remedial Alternatives for Landfill No. 2 (LF03)

The FS considered the following remedial alternatives for site LF03:

1. Institutional Controls/No Action
2. Landfill Closure, including
 - Hot Spot Removal
 - Capping
 - Enlarge and line ditch
 - Culvert stream flowing south of site
 - Post-closure monitoring
3. Landfill Closure/Capping with Treatment of Surface Water Effluent, including
 - Hot Spot Removal
 - Capping
 - Enlarge and line ditch
 - Culvert stream flowing south of site
 - Collection and Treatment of Surface Water Effluent

- Post-closure monitoring

Preferred Alternative

The recommended alternative in the FS was Alternative No. 3, Closure/Capping with Treatment of Surface Water Effluent. Since then, certain remedial actions, such as capping the landfill and performing a long term monitoring program, have been implemented. In addition, cleanup criteria and applicable laws have changed. Because of these changes, a slightly different remedial strategy is currently preferred.

The Air Force proposes to place additional cover material in the form of remediated soil from other sites at Landfill No. 2 (LF03). Approximately 2,700 cubic yards of treated soils originally removed from Waste Accumulation Area No. 3 (SS08) and Drum Storage Area (SS14) would be put to beneficial use as capping material for LF03. Those soils have been treated in biocells, which were designed to enhance biodegradation of residual petroleum. The cleanup criteria for those soils was determined using the ADEC Method 3 Leaching Assessment Model, as follows:

- GRO - 300 mg/Kg
- DRO - 6,180 mg/Kg
- RRO - 22,000 mg/Kg

The preferred alternative for additional response action at Landfill No. 2 (LF03) is **Monitored Natural Attenuation**. This alternative would consist of monitoring the quality of the groundwater, sediment, and surface water for several more years until cleanup levels are achieved or the risk to human health and the environment is determined to be insignificant. The rationale for this alternative is that since the addition of the landfill cap, the quantity of leachate has decreased and the quality of the groundwater and surface water has

improved. With more time, the contaminates should naturally attenuate.

Road Oiling (OT05)

Upper and Lower Camp roads comprise the Road Oiling (OT05) site. The application of waste oil to road surfaces for dust control is known as "road oiling", and in the past, the roads at Cape Romanzof were occasionally oiled. Some of the oil or oil-coated soil particles may have washed into the roadside ditches. Runoff captured in some of those ditches eventually flows into Fowler (Nilumat) Creek.

In 1989, two soil samples were collected in ditches along the main access road between the Composite Facility and the Alascom Station. The upper sample was analyzed for metals, TPH, VOCs, SVOCs, and PCBs; the lower sample was analyzed for TPH and PCBs only.

All metals detected were within typical background ranges. TPH was detected in concentrations of 100 mg/Kg and 380 mg/Kg. VOCs, SVOCs, and PCBs were not detected above reporting limits.

No Further Action is the preferred alternative for this site. The rationale for this alternative is the low overall risk associated with the site.

Waste Accumulation Area No. 1 (SS07)

Waste Accumulation Area No. 1 (SS07) is the site of a former shop area where oils, hydraulic fluids, solvents, toluene, paints, and ethylene glycol were stored. Leaks and spills have impacted the soil and surface water in this area. The soils consist of locally obtained fill material containing granite blocks intermixed with sand, silt, and trace amounts of clay. Surface water is

located in a lake behind Huson Dam (Figure 3).

Four soil samples, one sediment sample, and one surface water sample were collected from Waste Accumulation Area No. 1 (SS07) in 1989. Soil sampling locations were selected based on results of a soil gas survey. The sediment sample was collected from a small downstream drainage, and the surface water sample was collected from the lake behind Huson Dam. The samples were analyzed for metals, TPH, VOCs, SVOCs, and PCBs.

Metals were detected in the soil and sediment samples at typical background concentrations. The highest detected levels of chemicals are listed in Table 4. Chemicals not detected or below cleanup criteria are not listed in the table, except for the one PCB detection.

**Table 4
Detected Compounds at SS07**

Chemicals	Regulatory Cleanup Criteria*	Samples Above Regulatory Cleanup Criteria/Total Number of Samples	Highest Reported Concentration
Soil			
TPH	250 mg/Kg	4/4	35,000 mg/Kg
Sediment			
TPH	250 mg/Kg	1/1	2,400 mg/Kg
PCB	10 mg/Kg	0/1	0.39 mg/Kg

* Note: There is no current regulatory cleanup criterion for TPH; therefore, the cleanup criterion for DRO is used
 TPH = Total Petroleum Hydrocarbons
 PCB = Polychlorinated Biphenyls
 mg/Kg = milligrams per kilogram (parts per million)

An estimated 2,100 cubic yards of contaminated soil is present at this site.

Because high levels of TPH contamination were found in the surface soils, runoff from this site could cause contaminant migration.

Results for the water sample from the lake behind Huson Dam suggest that site activities have not impacted the lake.

Remedial Alternatives for SS07

Remediation of Site SS07 will be conducted in conjunction with remediation of nearby Site SS13, because the contaminants are similar. A separate Proposed Plan presents remedial alternatives considered for SS07. Briefly, they are:

1. No Further Action
2. Monitored Natural and Wetland Enhanced Attenuation
3. Hot Spot Removal

Preferred Alternative

The preferred alternative for this site is **Monitored Natural Attenuation**. ~~Question~~

Waste Accumulation Area No. 3 (SS08)

Drummed new products and liquid wastes were stored at Waste Accumulation Area No. 3 (SS08). Several spills and leaks of diesel fuel and motor gasoline from storage tanks and pump fill nozzles have occurred nearby. Surface soils consist of fill material composed of sandy silt with boulders.

In 1989, three soil samples were collected from Waste Accumulation Area No. 3 (SS08). The samples were analyzed for metals, TPH, VOCs, SVOCs, and PCBs. Metals were detected in the soil samples in concentrations typical of background concentrations. TPH was detected in all samples at concentrations ranging from 170 to 3,500 mg/Kg. Xylenes were detected in one sample at a concentration of 33 mg/Kg. No other analytes were detected.

Approximately 722 cubic yards of DRO-contaminated soil were excavated from Waste Accumulation Area No. 3 (SS08) in 1994. During the excavation, soil samples

were collected for analysis of DRO, GRO, BTEX and PCBs. The excavated soils were placed in a biocell designed to enhance biodegradation of residual petroleum.

Soil samples collected from the bottom and sides of the excavation at the conclusion of soil removal confirm that soils containing DRO above the cleanup level were removed. The highest levels of DRO and GRO remaining in the completed excavation were 4.77 mg/Kg and 87.3 mg/Kg, respectively. The excavation was backfilled with clean fill. No contaminated soil remains at Waste Accumulation Area No. 3 (SS08).

Preferred Alternative

The preferred alternative for Waste Accumulation Area No. 3 (SS08) is to transport the treated soil from the biocell to Landfill No. 2 (LF03) and place as additional cover material. After removal of the treated soil, No Further Action is proposed for this site. The rationale for this alternative is that there are no contaminants remaining at the site and therefore no risk.

COMMUNITY PARTICIPATION

You are encouraged to provide comments on any of the alternatives presented in this Proposed Plan for Cape Romanzof LRRS. 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 in Hooper Bay on Month Day, 2001. A pre-addressed comment form is included in this Proposed Plan. The public comment period is from Month Day to Month Day, 2001.

ADDITIONAL INFORMATION

Additional information can be found in the **information repository** located at

Elmendorf AFB. The following list of source material is provided for readers who want more detailed information than is presented in this Proposed Plan.

SIDEBARS/TEXT BOXES – to be part of the Proposed Plan for Cape Romanzof LRRS

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.*

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

Cleanup Alternatives: *methods of cleanup of environmental contamination*

Public Comments Requested: *You are encouraged to comment on this Proposed Plan. The public comment period begins on Month/Day, 2001 and ends on Month/Day, 2001. Public comments postmarked by Month/Day, 2001 will be addressed.*

Send your comments to:

611 CES/CEVR
Mr. Roger Lucio
Community Relations Coordinator
10471 20th Street, Suite 302
Elmendorf AFB, AK 99506-2200
(907) 552-4506
(800) 222-4137

Public Meeting: *A public meeting to present and discuss this Proposed Plan will be held on Month/Day, 2001 at the Traditional Council Building at Hooper Bay, beginning at Time.*

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.*

Installation Restoration Program (IRP): *the federal program initiated in the early 1980s to investigate and clean up old military facilities*

Remedial Investigation (RI): *a study conducted under CERCLA to identify the types, amounts, and locations of contamination at a facility*

Risk Screening: *an evaluation of the risks posed to human health and the environment from site contaminants. Risks are site specific and involve the evaluation of the chemical(s) of concern and exposure pathways from the source of contaminants (i.e. soil, sediment, surface water and groundwater) to potential receptors (i.e., humans and wildlife).*

Cleanup Levels: also known as "allowable limits" and "cleanup criteria," these are the levels of chemicals prescribed by state or federal regulation that determine how much cleanup must be done at a site.

Toxicity threshold: a criterion used in the risk screening to evaluate how toxic a potential exposure to a contaminant could be. The toxicity threshold was determined to be exceeded when:

- The duration or frequency of exposure was sufficient to cause health or environmental effects, AND one of the following conditions was met:
- The measured concentration of at least one contaminant exceeded the ADEC cleanup level, OR
- One or more contaminants exhibits high toxicity to humans.

Feasibility Study (FS): a FS identifies, screens, and evaluates different alternatives for cleaning up contamination.

Table 1
SUMMARY OF RISK SCREENING RESULTS

Criterion	D P 1 1	LF02	LF12	OT06	SS01	SS10	OT05	LF03	SS07	SS08
Exposure Potential										
Release or Migration from Site	X	X	X	X	X	X	X	X	X	X
Environmental Persistence	--	--	--	--	--	--	--	X ¹	X ¹	--
Toxicity Threshold										
Exposure Duration/Frequency	--	--	--	--	--	--	--	--	--	--
Maximum Allowable Level Exceeded	--	--	--	--	--	--	X ²	X ²	X ²	X ²
High Toxicity	--	--	--	--	--	--	--	--	X ¹	--
Estimated Risk	I	I	I	I	I	I	I	I	I	I

X = criterion met

-- = criterion not met

¹ = PCBs

² = TPH/DRO

I = risk not significant

Table 2 Nine Remedial Alternatives Evaluation Criteria Under CERCLA:

Evaluation Criteria	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 (ADEC)?

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.*

Remedial Actions: *cleanup actions performed at a site to reduce levels of contaminants to levels that are acceptable.*

No Further Action (NFA): *a response action selected for a site when it is determined that no additional remedial actions are necessary to protect human health and the environment.*

Biological Receptors:

Soil Gas:

Preferred Alternative: *a response action for a site selected after investigating potential contamination and evaluating risks associated with possible exposures.*

Analytical Tests: *laboratory tests performed on samples of soil and water typically looked at levels of the following chemicals*

- *TPH – Total Petroleum Hydrocarbons*
- *DRO – Diesel Range Organics*
- *GRO – Gasoline Range Organics*
- *Metals – Common and trace metals*
- *PCBs – Polychlorinated Biphenols*
- *RRO – Residual Range Organics*
- *VOC – Volatile Organic Compounds*
- *SVOCs – Semi-volatile Organic Compounds*

Units of Measure for Analytical Tests
mg/Kg *milligrams per kilogram*

mg/L *milligrams per liter*
ug/L *micrograms per liter, equivalent to 0.001 mg/L*

Background levels: *Levels of naturally occurring substances such as metals that are commonly found in soil, sediment or water of a region*

Monitored Natural Attenuation: *the process by which bacteria and other natural processes (chemical and physical) break down contaminants into harmless substances. Samples of groundwater, surface water or soils are collected during the treatment period to ensure that the compounds are breaking down naturally as expected. If the monitoring shows that biodegradation is not occurring quickly enough to reduce contaminant levels below the cleanup criteria, then other remedial options are considered.*

Additional Information: *The documents listed below contain additional information about Cape Romanzof LRRS and can be found at the Information Repositories.*

- *USAF, 1991. (ENSR Consulting and Engineering, ENSR). Cape Romanzof Site Reconnaissance.*
- *USAF, 1996. (Harding Lawson Associates). Closure Monitoring Report, Landfill 2 (LF03), Cape Romanzof LRRS, Alaska.*
- *USAF, 1985. (Engineering Science, Inc.) Installation Restoration Program Phase I: Records Search, AAC-Southern Region, King Salmon AFB, Cape Newenham AFB, Cape Romanzof AFB, and Tatalina AFB.*
- *USAF, 1995. Investigation, Delineation, and Excavation of Contaminated Soil from SS15, SS14, and ST09, Construction of Cells for Contaminated Soil; Capping of LF03; and Geology/Water Resources of Niluniat Creek Valley.*
- *USAF, 2000. Long Term Monitoring Landfill Cap Inspection, Cape Romanzof LRRS, Alaska.*
- *USAF, 2001. Proposed Plan for Remedial Action. Cape Romanzof LRRS Spill Site 13 (SS13) and Spill Site 15 (SS15).*
- *USAF, 1997. (Harding Lawson Associates/Wilder Construction Company Joint Venture). Remedial Action Report, Biotreatment Cell Construction, Operation, and Maintenance, Cape Romanzof LRRS, Alaska.*
- *USAF, 1992a. (Woodward-Clyde). Remedial Investigation/Feasibility Study Technical Report, Cape Romanzof LRRS, Alaska.*
- *USAF, 2000. Site Investigation. Cape Romanzof LRRS, Alaska.*
- *USAF, 1999. Site Investigation and Closure Monitoring Landfill 2 (LF03), Cape Romanzof, Alaska.*
- *USAF, 1992b. (Woodward-Clyde). Technical Document to Support No Further Action for Certain Sites at Cape Romanzof LRRS, Alaska.*
- *U.S. Fish and Wildlife Service (USFWS), 1991. Contaminant Study of the Environment Surrounding the Cape Romanzof Long Range Radar Station, Alaska.*

Information Repository: *Additional information can be obtained at the information repository located at Elmendorf Air Force Base. The repository contains the Administrative Record for Cape Romanzof LRRS, including detailed investigation reports, evaluation of potential cleanup technologies, and test results from field studies.*

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:*

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ADMINISTRATIVE RECORD

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