



PROPOSED PLAN FOR SITE SS004: PETROLEUM, OIL AND LUBRICANTS (POL) TANK AREA NIKOLSKI RADIO RELAY STATION, ALASKA

February 2012

United States Air Force

HOW CAN YOU PARTICIPATE?

You are encouraged to comment on this Proposed Plan.

The public comment period begins 16 February 2012 and ends 17 March 2012.

The USAF will accept written comments on the Proposed Plan during the public comment period.

A pre-addressed comment form is inserted into this Proposed Plan.

Comment letters must be postmarked by 18 March 2012 and should be submitted to:

Steve Hunt, Remedial
Project Manager
USAF 611th CES/CEAR
10471 20th Street, Suite 302
JBER, Alaska 99506
Email: Steve.Hunt@elmendorf.
af.mil

A public meeting will be held during the public comment period; please refer to the Community Participation section on Page 9 for detailed information.



Aerial view of Site SS004 POL Tank Area, Nikolski

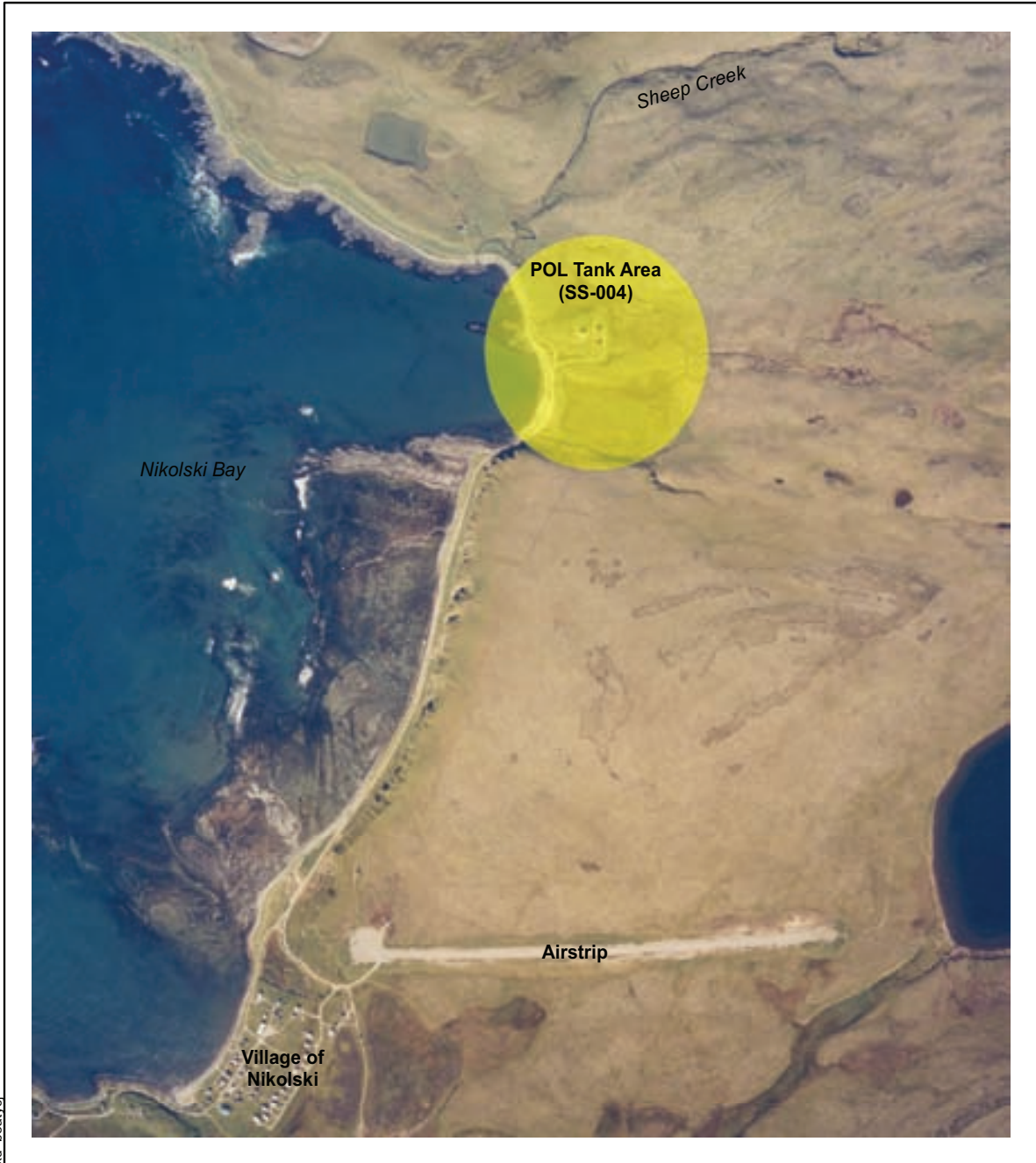
AIR FORCE ANNOUNCES PROPOSED PLAN

This Proposed Plan identifies the proposed remedial action for the Environmental Restoration Program (ERP) Petroleum, Oil, and Lubricants (POL) Tank Area (SS004) site at the Nikolski Radio Relay Station (RRS) and provides the rationale for selecting the proposed remedial action.

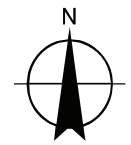
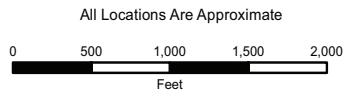
This Proposed Plan is issued by the Department of the Air Force (USAF) as the lead agency for site activities. The Alaska Department of Environmental Conservation (ADEC) is the regulatory agency. The USAF will select a final remedy for the site after reviewing and considering all information submitted during the public comment period. The USAF may modify the proposed remedial action or select another remedial alternative based on new information or public comments. Therefore, the public is encouraged to review and comment on this Proposed Plan.

The USAF is issuing this Proposed Plan as part of its public participation responsibilities under Section 117 (a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, 42 USC § 9617(a) and Section 300.430 (f)(3) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This Proposed Plan summarizes information that can be found in greater detail in the RI/FS report and other documents contained in the Administrative Record file for this site. Documents for this site can be viewed at the Nikolski Indian Reorganization Act (IRA) Council and the U.S. Environmental Protection Agency (EPA) Records Center (refer to page 9 for addresses and contacts).

The USAF and the ADEC encourage the public to review these documents to gain a more comprehensive understanding of the site and remedial activities conducted at Nikolski RRS.



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POL TANK AREA (SS-004) LOCATION MAP		
NIKOLSKI, UMNAK ISLAND, ALASKA		
JACOBS	DATE: 01 Feb 2012	PROJECT MANAGER: K. MAHER

SITE HISTORY AND BACKGROUND

The Nikolski RRS was one of eighteen Distant Early Warning (DEW) line stations constructed in Alaska between 1950 and 1959. The facility was constructed in 1958, became operational in 1961, and was deactivated in 1977. The majority of the structures were demolished in 1988.

Site SS004, also known as the POL Tank Area, is a former petroleum storage site located near the shoreline overlooking Mona Lisa Beach and Nikolski Bay. Site SS004 can be seen in the adjacent figure.

Contamination at the POL Tank Area is primarily the result of historical releases of diesel fuel resulting in DRO contamination in surface and subsurface soils and groundwater. In addition, historical releases of MoGas (motor vehicle gasoline) have resulted in benzene, toluene, ethylbenzene, and xylenes (BTEX) contamination in surface soils beneath the former MoGas tank area. Due to the petroleum exclusion in the CERCLA definition of hazardous substances, petroleum contamination is not subject to CERCLA. There is, however, petroleum contamination at the site, therefore, the site remedy selected for Site SS004 will be implemented pursuant to State of Alaska laws and regulations.

Nikolski RRS encompasses 435 acres of federal land withdrawn from the public domain for military purposes under Public Land Order No. 2374. The Nikolski RRS was deactivated in 1977, and most of its facility buildings and structures were demolished in 1988. When the installation was active, the land use was industrial; currently, USAF does not use the SS004 property for any purpose. Access to the property is not restricted. Nikolski community members and visitors occasionally visit the site for recreational purposes.



Groundwater monitoring wells

HISTORICAL INVESTIGATIONS

PRIOR TO 2001

Historical investigations occurred before 2001 and evaluated contamination in soil relative to various screening criteria. The results indicated:

- Diesel-range organics (DRO) and lead concentrations in soil near the pump house exceeded ADEC Method Two soil cleanup levels for migration to groundwater.
- DRO concentrations at several locations near the beach exceeded the ADEC Method Two soil cleanup level for migration to groundwater.
- Benzene, toluene, and ethylbenzene concentrations in soil near the former MoGas tank exceeded ADEC Method Two soil cleanup levels for migration to groundwater.

2001 REMEDIAL INVESTIGATION

During this remedial investigation, samples were taken at the site and the following compounds were detected at concentrations exceeding regulatory limits: DRO in groundwater and DRO, GRO, BTEX, arsenic, and lead in soils. In addition, elevated concentrations of DRO were detected in sediments.

2002 SUPPLEMENTAL REMEDIAL INVESTIGATION (SRI)

The purpose of the SRI was to augment data obtained during the 2001 Remedial Investigation to establish Alternative Cleanup Levels (ACLs) for the site. A total of three soil samples were collected upgradient from the POL Tank Area and analyzed for contaminants in an effort to obtain additional site-specific soil data that could be used to calculate ACLs for the site. An ACL was calculated based on percent carbon, resulting in a proposed cleanup level of 1,190 mg/kg for DRO for site soils. This ACL does not apply to soils west of the site access road along the beach, because soils in this location have lower organic carbon content.

2004 BASELINE RISK ASSESSMENT

A baseline risk assessment was prepared for Site SS004 which described potential human health and ecological risks associated with site contaminants. The baseline risk assessment concluded that, based on future residential use, remedial action would be necessary to address GRO, DRO, and BTEX compounds in soil, and DRO in groundwater.

2007 CLEANUP ACTIVITIES

The cleanup fieldwork was implemented at the site between 1 May 2007 and 3 July 2007. Site activities consisted of demolition and removal of five aboveground storage tanks (ASTs), removal of oil-treated sand beneath the three bulk fuel ASTs, demolition and removal of the pumphouse, excavation and disposal of contaminated soil from the pumphouse, site restoration, sampling, and analysis of groundwater. Seventy-seven 1-cy Super Sacks, filled with excavated DRO- and lead-contaminated soils, were transported offsite for disposal.

2009 - 2010 MONITORING AND CHARACTERIZATION

Groundwater monitoring took place in May 2009, September 2009, May 2010, and September 2010. Additionally, a subsurface soil investigation took place in September 2010.

Groundwater samples were collected from several wells and analyzed. Groundwater sample results indicated that all analytes, with the exception of DRO in well MW-08, were below cleanup levels in Table C of 18 AAC 75 (ADEC 2008).

Soil samples were collected from several areas and analyzed. Results from soil samples confirmed that contamination from DRO, GRO, toluene, ethylbenzene, xylene, and polycyclic aromatic hydrocarbons (PAH) remain in soil at concentrations greater than ADEC Method Two cleanup levels at several areas at SS004.

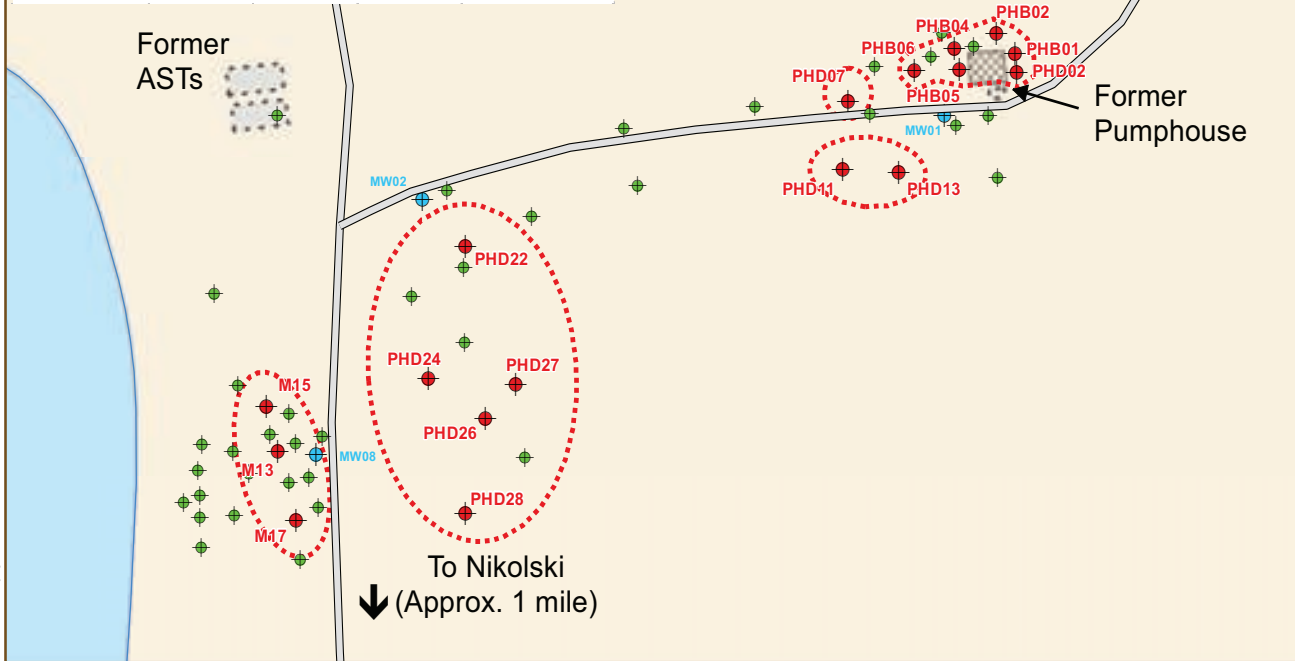
GRO contamination was detected at a maximum concentration of 6,100 mg/kg at the Former MoGas Tank. DRO was detected at a maximum concentration of 7,800 mg/kg in the excavation of the Former Pump House. Ethylbenzene, toluene, and xylenes were detected at a maximum concentration of 65 mg/kg, 20 mg/kg, and 940 mg/kg, respectively, in the excavation of the Former Pump House. The PAHs benzo(a)pyrene and dibenzo(a,h)anthracene were detected at a maximum concentration of 3.2 mg/kg and 0.46 mg/kg, respectively, in the excavation of the Former Pump House.

Results from the 2009-2010 monitoring and characterization field effort are presented in the Soil Sample Locations figure on the following page.

Sample Field ID	Depth (feet bgs)	DRO	Benzo(a)-pyrene	Dibenzo(a,h)-anthracene
M13	3	3,700	NA	NA
M15	4-4.5	670	NA	NA
M17	2-2.5	560	NA	NA
PHD2	2	300	NA	NA
PHD7	2.5	290	NA	NA
PHD11	4.5	3,300	NA	NA
PHD13	4	2,400	NA	NA
PHD22	1	690	NA	NA
PHD22(dup)	1	350	NA	NA
PHD24	2.5	300	NA	NA
PHD24(dup)	2.5	410	NA	NA
PHD26	2	780	NA	NA
PHD27	2.5	2,000	NA	NA
PHD28	2	2,700	NA	NA
PHB01	3	380	3.2	0.46
PHB02	2	NA	2.7	0.42
PHB04	3	NA	1.2	NA
PHB05	2.5	NA	1.4	NA
PHB06	3	NA	0.49	NA
SAST001	3.5	490	NA	NA
WAST001	0.0-0.5	7200	NA	NA
WAST003	1.5	350	NA	NA

10SS004SB56A2SO
2' bgs
GRO = 6,100
DRO = 260
Ethylbenzene = 65 JS+
Toluene = 20 JS+
Xylenes = 940 JS+

Samples exceeding ADEC Cleanup Levels; data collected September 2010
 Sample results are mg/kg



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- Monitoring Well
 - Analytical Sample Location with at Least one Result Exceeding ADEC Cleanup Levels
 - Analytical Sample Location
 - Approximate area of subsurface soil contamination above site regulatory limit
- N
 0 25 50 75 100 Feet
 Coordinate System: AK State Plane 10
 Datum: North American 1983
 Units: Foot US

NIKOLSKI SS-004 SOIL SAMPLE LOCATIONS VILLAGE OF NIKOLSKI, ALASKA			
	DATE: 15 Dec 2011	PROJECT MANAGER: K. MAHER	FIGURE NO.:

WHAT ARE THE CONTAMINANTS OF POTENTIAL CONCERN?

The USAF and the ADEC have identified four contaminants that pose a potential risk to human health and the environment.

GRO (gasoline-range organics) are organics in the gasoline range, which correspond to an n-alkane range from the beginning of C6 to the beginning of C10, and a boiling point range of approximately 60 °C to 170 °C.

DRO (diesel-range organics) are organics in the diesel range, which correspond to an n-alkane range from the beginning of C10 to the beginning of C25, and a boiling point range of approximately 170 °C to 400 °C.

BTEX (benzene, toluene, ethylbenzene, and xylenes) are volatile organic compounds found in petroleum derivatives such as gasoline.

PAH (polycyclic aromatic hydrocarbons)

SITE CHARACTERISTICS

Site SS004 consists of an upland area where tanks were located and a beach area where fuel barges landed. Diesel fuel was transferred from the barges to aboveground storage tanks (AST) via piping from the beach area to the upland tank area, from which fuel was transferred to the main facility. The POL tank area consisted of three bulk ASTs used for diesel fuel, other diesel ASTs, a small motor vehicle gasoline AST, a concrete pump house, and associated fuel piping.

The POL Tank Area covers approximately 4.7 acres. Approximately 92 percent of this area is covered with low vegetation. Vegetation near the POL tanks is typical of tundra vegetation found in well-drained areas of the Aleutian Islands.

Wetlands surround the POL Tank Area on the north, south, and east. Various species of wetlands plants dominate in the low wet areas that surround the site. There is no surface water discharge from the POL Tank Area to these wetlands. Precipitation that falls on the site percolates through site soils and becomes part of the shallow groundwater. Groundwater flow is generally toward Nikolski Bay, located to the west of the site. Surface water discharge between the POL Tank Area and Nikolski Bay appears to be minimal. Precipitation appears to percolate through site soils until it encounters shallow groundwater, which travels downgradient towards the Bay.

Mona Lisa Beach and the POL Tank Area is important to Chaluka Corporation, the Native corporation in Nikolski. Chaluka Corporation is interested in using the site for residential purposes. The property is highly valued primarily because of its proximity to the village of Nikolski and its waterfront location.

SCOPE AND ROLE OF THE ACTION

Site SS004 is not part of an operable unit, but is one of 13 environmental restoration sites that exist at Nikolski RRS. The preferred remedial action of excavation and offsite disposal identified in this Proposed Plan is in compliance with State law, as well as USAF remedial action objectives and general remedial alternatives for the environmental restoration program at Nikolski RSS. SS004 has petroleum contamination in soil and groundwater above applicable State of Alaska regulatory limits. Excavation and offsite disposal of contaminated soil is needed as a remedy to prevent human exposure to petroleum contaminants.

SUMMARY OF SITE RISKS

A Baseline Risk Assessment was conducted in 2004 and the following summarizes those results:

HUMAN HEALTH RISKS

The human health risk assessment considered only the future residential scenario, which incorporates the most protective assumptions. For soils, surface water, and groundwater at the POL tank area, the hazard index (HI) exceeds 1.0. Risks at the site are primarily attributable to DRO in soils (total HI=56), surface water (total HI=2.3), and groundwater (total HI=5.4). The excess lifetime cancer risk (ELCR) is less than the ADEC target value.

ECOLOGICAL RISKS

Contaminants from the POL tank area site could potentially travel offsite via groundwater, through surface water, or via a pair of unnamed streams that flow near the site. A variety of organisms has been noted in this area including bald eagles, foxes, and feral cattle. Minnows have been seen in the stream; however, rock deposited by wave action frequently blocks aboveground flow of the streams into Nikolski Bay. Subsistence activities include harvesting of salmon and halibut from Nikolski Bay. Nikolski residents also harvest sea urchins, octopuses, and shellfish from a reef that extends across the mouth of Nikolski Bay.

There are no CERCLA contaminants or CERCLA contaminants of concern at Site SS004, and therefore no action is proposed under CERCLA. However, there is POL contamination, and therefore, USAF is proposing a remedy under state laws and regulations.



Surveying soil sample locations near the Former Pumphouse

SUMMARY OF PROPOSED REMEDIAL ACTION FOR SITE SS004

EXCAVATION AND OFFSITE DISPOSAL

Estimated Capital Cost*	\$3,300,000
Estimated Annual Overhead and Maintenance Cost*	\$100,000
Estimated Present Worth Cost*	\$3,400,000
Estimated Construction Timeframe	1 year
Estimated Time to Achieve RAOs	1 year

With Excavation and Offsite Disposal, contaminated soils would be excavated, containerized, and shipped offsite to a permitted facility for land disposal. The quantity of contaminated soils excavated is expected to be in the range of 2,300 cy.

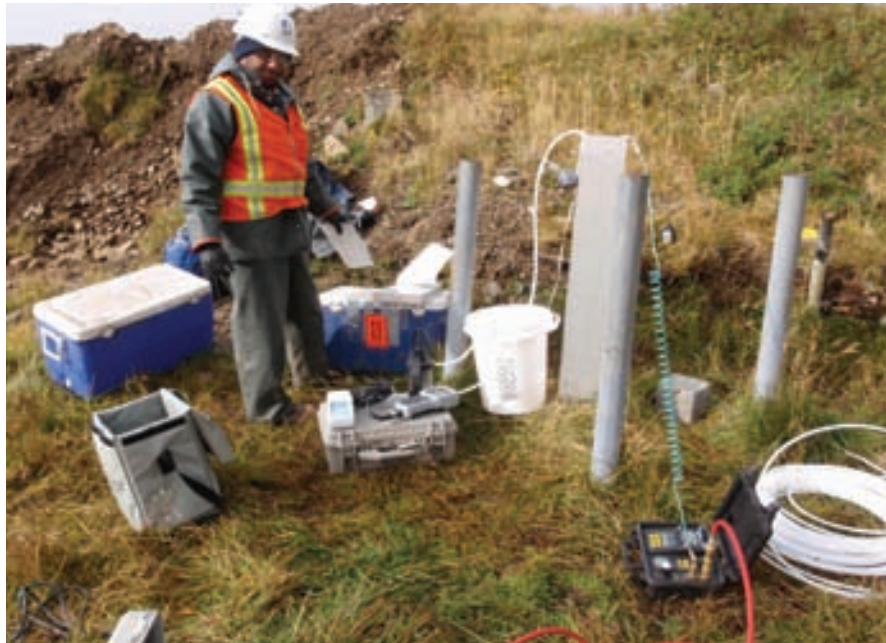
The soil would be placed in containers meeting the requirements of the DOT Hazardous Materials Regulations (HMR) at 49 CFR parts 171 through 180.

No hazardous substances would remain onsite above 18 AAC 75 soil cleanup levels.

Clean fill would be used for site backfill.

SUMMARY OF PROPOSED REMEDIAL ACTION

Due to the petroleum exclusion in the CERCLA definition of hazardous substances, petroleum contamination is not subject to CERCLA. No CERCLA hazardous substances have been detected at the site above screening levels; site soils contaminated with lead above screening levels were previously excavated and disposed offsite. POL contamination is considered a hazardous substance under state law, and is present onsite at levels exceeding applicable State of Alaska regulatory limits; therefore, excavation and offsite disposal of petroleum-contaminated soil will be conducted under State laws and regulations to prevent human exposure to POL contamination. The proposed remedial action will be implemented with a work plan that will be developed by the USAF for approval by ADEC. Based on information currently available, the USAF expects the proposed remedial action will be protective of human health and the environment; comply with applicable requirements; provide long-term permanence and effectiveness; have short-term effectiveness; and be cost-effective. The proposed remedial action would remove the contaminant source and has superior short-term effectiveness, long-term effectiveness, and permanence relative to the other alternatives considered.



Groundwater Sampling

REMEDIAL ACTION OBJECTIVES

Remedial action objectives are the specific goals that a given remedial action is designed to achieve. Based on 18 AAC 75.341 Table B – soil cleanup levels, and Table C – groundwater cleanup levels screening criteria, the remedial action objectives are as follows:

- Prevent migration to groundwater of soil containing DRO in excess of 230 mg/kg.
- Prevent migration of benzene in excess of 0.025 mg/kg, toluene in excess of 6.5 mg/kg, ethylbenzene in excess of 6.9 mg/kg, and xylenes in excess of 63 mg/kg from soil to groundwater.
- Prevent direct contact of soil containing benzo(a)pyrene in excess of 0.40 mg/kg or dibenzo(a,h)anthracene in excess of 0.40 mg/kg.
- Restore the aquifer to 1.5 milligrams per liter (mg/L) for DRO.

COMMUNITY PARTICIPATION

The USAF and ADEC will provide information regarding Site SS004 to the public with a public meeting and the Administrative Record. The public comment period will be 30 days starting on 16 February 2012 and ending on 17 March 2012. The public meeting will be held in Anchorage, Alaska starting at 4 p.m. on 1 March 2012 at:

Alaska Energy Building
4300 B Street, Suite 600, 6th Floor
Anchorage, Alaska 99503

Call in number: 1-800-747-5150
Access Code: 4448229

Written comments can be provided by using the included comment form found on page 11. Verbal comments can be provided by telephoning the USAF Remedial Project Manager at the number provided below, or by attending the public meeting. The Administrative Record files can be viewed at the Nikolski IRA Council and the U.S. EPA Records Center, as specified below.

Nikolski IRA Council
P.O. Box 105
Nikolski, Alaska 99638
(907) 576-2225

U.S. EPA Records Center
Region 10
1200 Sixth Ave, Suite 900, 7th Floor
Seattle, WA 98101
(206) 553-4494
Hours: Mon – Fri, 8:30 a.m. - 4:30 p.m.

For further information on Site SS004, please contact:

U.S. Air Force
USAF 611th CES/CEAR
10471 20th Street, Suite 302
JBER, Alaska 99506

Steve Hunt
Remedial Project Manager
(907) 552-4869

Tommie Baker
Community Relations Coordinator
(800) 222-4137

GLOSSARY OF TERMS Specialized terms used in this Proposed Plan:

aboveground storage tank (AST) – a storage tank elevated above the ground surface, as opposed to buried underground in the soil. Generally these storage tanks hold a petroleum fuel product.

Alaska Department of Environmental Conservation (ADEC) – the regulatory body that monitors the enforcement of Alaska’s environmental standards.

below ground surface (bgs) – identifies where a sample was collected relative to the exposed ground surface.

benzene, toluene, ethylbenzene, and xylenes (BTEX) – volatile organic compounds (VOC) found in petroleum derivatives such as gasoline.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – a United States federal law designed to clean up sites contaminated with hazardous substances.

diesel-range organics (DRO) – organics in the diesel range, which corresponds to an n-alkane range from the beginning of C10 to the beginning of C25, and a boiling point range of approximately 170 °C to 400 °C.

Distant Early Warning (DEW) line – a system of radar stations in the far northern arctic region of Canada and along the North Coast and Aleutian Islands of Alaska.

feasibility study (FS) – a document required under CERCLA to investigate the potential options available to remediate contamination.

gasoline-range organics (GRO) – organics in the gasoline range, which corresponds to an n-alkane range from the beginning of C6 to the beginning of C10, and a boiling point range of approximately 60 °C to 170 °C.

groundwater - underground water that fills pores in soil or openings in rocks to the point of saturation. Groundwater is often used as a source of drinking water via municipal or domestic wells.

mg/kg – a unit of measurement representing 1 milligram of the contaminant per kilogram of soil as a way to describe the amount of contamination.

nondetect (ND) – the analyte was not detected in the sample at a concentration greater than the method detection limit.

operable unit (OU) – a step taken towards comprehensively addressing site problems.

petroleum, oil, and lubricants (POL) – all petroleum and associated products.

present worth analysis - a method of evaluation of expenditures that occur over different time periods. By discounting all costs to a common base year, the costs can be compared on the basis of a single figure for each alternative. When calculating present worth cost for Superfund sites, total operations and maintenance costs are to be included.

remedial investigation (RI) – a site investigation performed to characterize and assess potential for contamination.

residual-range organics (RRO) – organics in the motor and lubricating oil range, which corresponds to an n-alkane range from the beginning of C25 to the end of C36, and a boiling point range of approximately 400 °C to 500 °C.

View of Mt. Vsevidof
from Nikolski Lodge





Comments on Proposed Plan for Nikolski Radio Relay Station, Alaska Site SS004

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