

FORMERLY USED DEFENSE SITES  
IN  
THE NORTON SOUND REGION:

Location, History of Use, Contaminants Present,  
And Status of Clean-Up Efforts

Prepared for Alaska Community Action on Toxics

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**HISTORY OF MILITARY OCCUPATION IN THE NORTON SOUND REGION**

**1890s to World War II**

Prior to World War II, American military presence in the Norton Sound region appears to have been limited to Ft. Saint Michael at the mouth of the Yukon River, established in 1897 by Executive Order to maintain order during the Yukon Gold Rush.

World War II saw a massive expansion of military activities in the region, the greatest growth in military presence the region has seen to date. It began before the Japanese attack on Pearl Harbor with the passage of an Act to establish a program to provide aircraft to England and Russia to counter German air assaults.

**Russian-American Lend Lease Program**

When the Nazis attacked Russia in 1940, they destroyed most of the Russian Air Force. Congress passed a bill in March 1941 to provide planes to the Soviet Union on a "lend-lease" program. The first American planes were delivered to the Soviet Union via cargo ship or by flying planes up through Africa, but Germans effectively blocked these routes, sinking several ships and destroying several aircraft. In 1942, a new route was found through Alaska, an Alaska-Siberia aerial bridge called ALSIB.

The starting point for the route was Great Falls, Montana. By September 1942, a ferrying base was established in Fairbanks and then a connecting string of smaller refueling fields in western Alaska to Nome and on to Yakutsk, Siberia and the Russian Front in eastern Europe. American pilots flew planes up from the lower 48 to Fairbanks. Soviet pilots took over at Fairbanks and flew the planes to Russia. The first flight of ferried planes took off from Fairbanks September 29, 1942. The ALSIB route became one of the most vital supply routes of the war. The last flight took off from Fairbanks on September 20, 1945. During three years of operation, nearly 8,000 American warplanes were flown via ALSIB route to the Soviet Union.

In the Norton Sound region, the network of ferry air bases also included weather stations and aircraft radio relay and monitoring stations. After the Japanese attack on Pearl Harbor, these stations were augmented with aircraft warning stations and several thousand troops. During the height of the war, over 40,000 troops were stationed in the Nome Area to support movement of aircraft along the ALSIB and to provide protection in the event the Japanese moved north beyond the Aleutian Chain.

**The Cold War**

In the early 1950s, fear of Japanese attack gave way to fear of attack by the Soviet Union. A series of Aircraft Control and Warning (AC&W) radar stations were constructed in the Norton Sound region to monitor any movement of Soviet aircraft. AC&W was designed to provide advance radar warning of enemy aircraft. By the late 1950s, fear of Soviet air attack gave way to fear of Soviet missile attack. In response, the Ballistic Missile Early Warning System (BMEWS) was constructed, as was a line of Distant Early Warning (DEW) stations that stretched across Arctic Alaska and Canada. A number of air bases were established to support these systems, and a series of National Guard facilities were constructed in villages to provide defense as well as support to rural communities.

### **White Alice Sites**

The “White Alice” communications system was developed during the depth of the Cold War, the primary purpose of which was to link together the AC&W sites, the DEW Line stations, and the BMEWS with reliable multi-channel communications under all weather/atmospheric conditions. At the time, it was considered a revolutionary communications system.

The formal name of the system was Alaska Integrated Communications and Electronics (ALICE) system, but military projects were usually given a two-word acronym. So a second word was added. (It is generally understood that the word “White” was a tribute to Alaska, the frozen north.) The most distinguishing feature of the sites in the system is a set of huge, 60’ tall billboard-shaped antennas reminiscent of Stonehenge. Massive amounts of power were used to blast radio transmissions from the antenna array skyward to bounce off the earth’s atmosphere and be received by another White Alice site beyond the horizon, a type of radio communications known as Forward Propagation Tropospheric Scatter. Large diesel-powered generators were used to produce power and giant transmitters were used to deliver power to the antenna array. It was a tremendously inefficient system, with each site using enough power each day to supply 25,000 homes. Each site was a self-contained outpost, with housing for operations crews and support staff and an airstrip for delivery of supplies and personnel.

Over a period of three years, a total of 49 White Alice sites were constructed across Alaska, and the system was placed in full operation in 1958. In addition to its military uses, the White Alice system brought reliable radio communications to many remote Alaska communities for the first time. The White Alice sites were co-located, where possible, with DEW line or AC&W site for the sake of sharing facilities.

The system was originally operated as a program of the U. S. Army’s Alaska Communications System, but in 1962, the USAF Air Force Communications Service took over the system and operated it until 1974, at which time it was transferred to Alascom under an agreement with the Air Force. By 1981, the system had been replaced by communications satellites. One by one, the sites were de-commissioned and abandoned and in many cases demolished. Alascom Earth stations superseded the White Alice sites at most of the same localities, providing the same functions through updated satellite technology.

### **Air Force Caches**

During the course of the development of the missile warning systems and the White Alice sites, the U.S. Air Force established a series of 23 emergency survival caches over the course of 1957 to 1959. The caches were a response to the dangerous flying conditions in Alaska. They would provide emergency aid to downed air crews. Each cache contained medical supplies, food, clothing, shelter, fuel, and emergency supplies. These items were stored in a log shelter, 8' x 10' and painted bright orange with the area around them cleared in a 100' radius for greater visibility. Some of the sites were never built and all were abandoned on October 30, 1961. Aerial efforts to locate caches in 1989 were unsuccessful (Denfeld 1994).

### **Operation NAM**

Also during the 50s, the U.S. Air Force developed a plan to build a series of secret airbases in the Norton Sound region to augment the missile defense system. Three bases were to be constructed, one at Noxapaga River (N), one at American River (A) and one near Kotzebue Sound southwest of Deering to be called Collins-Hannum (M). The code-name NAM derives from the place names of the three proposed sites. NAM was a composition of the first letter of the first two sites and last letter of Hannum. Proposed for each of these Seward Peninsula sites were large airfields to guard the northern approach to Alaska. Allegedly, interceptor aircraft would be assigned to these fields as this area was the initial point of enemy bomber penetration from Soviet airfields at nearby Siberia (Denfeld 1994).

The intention of Operation Nam has never been clearly determined. These air bases were not built and it's not clear how much preliminary work was done, but information about the system remains classified. An Army Corps of Engineers survey party established a base camp at American River in 1944. Funds for the proposed NAM project were cut from the military construction program in 1945. The camp, equipment, and fuel products at the American River Air Base were abandoned. There are no records available in the Alaska District COE for this site, although they may exist as classified Air Force documents.

### **Formerly Used Defense Sites**

The end of the Cold War and the drawdown of the military in Alaska meant a number of closed and abandoned military facilities. One of the main causes for the closing of the facilities was new technologies that replaced obsolete systems. The White Alice system was state of the art when begun in 1955 but became obsolete with satellite communications.

When the military closed and abandoned facilities, they left behind equipment and supplies which included: containers of hazardous substances such as brake fluid; fuel drums containing petroleum products; anti-freeze; containers of Polychlorinated Biphenyls (PCBs); above and underground fuel tanks; and transformers containing PCBs.

The Defense Environmental Restoration Program –Formerly Used Defense Sites (DERP-FUDS) program has funding available for demolition. A FUDS clean-up program was initiated in 1984 and is currently funded by the U. S. Department of Defense (DoD) and administered by the U.S. Army Corp of Engineers (Corps or USACE). There are about two dozen FUDS in the Norton Sound region. Many of the sites are close to

villages and traditional hunting and fishing grounds. The FUDS program is underfunded and is often slow and incomplete.

## **SITES SUMMARIES**

### **Brevig Mission**

#### **Port Clarence Army Base/USCG Loran Station**

LOCATION: LAT 65.26222 N; LON 166.84579 W. On narrow peninsula between Port Clarence Bay and the Bering Sea west of Brevig Mission and Teller. Extends from Port Clarence airport to Point Spencer.

DESCRIPTION: Port Clarence was established as an Army Base in 1942, and abandoned in 1950. The U.S. Coast Guard (USCG) established a Loran Station in 1962 that's still in operation.

CONTAMINANTS/CLEAN-UP: A field investigation done in 1984 found buildings, foundations, utilidors, 55-gallon drums, steel matting, wood and steel debris. Site was cleaned up under Corps contract in 1985. 1,400 55-gallon drums of asphalt were salvaged. Debris was consolidated, some was burned and all was buried in approved onsite disposal areas.

In 1994, petroleum contamination at the Station was added to the DEC Contaminated Sites Database. USCG delivered a plan for remediating petroleum contaminated soil located at the site and proposed a bioventing system to address POL contamination. No evidence was found that any action on the plan was taken.

REF: USACE Site # F10AK0843  
ADEC File# 475.38.020  
EPA ID# AK5690361139

#### **Point Spencer**

LOCATION: On peninsula between Port Clarence Bay and Bering Sea just north of Port Clarence Loran Station.

DESCRIPTION: Identified as a communications site for Operation NAM airbases, which were not built. The files on the project are classified. It's not clear what, if any, preliminary development work was done at Point Spencer.

CONTAMINANTS/CLEAN-UP: Corps completed site assessment and no hazards were found. No clean-up action is planned.

REF: USACE Site# F10AK0812

#### **Air Force Cache 7**

LOCATION: T1S R34W Section 21. East of Brevig Mission and north of Mary's Igloo on the west bank of the Agiapuk River.

DESCRIPTION: Twenty-three survival caches were sited in Alaska for emergency use by downed air crews. They consisted of a clearing of about 100' square feet with 8'x10' cache in center. Site was relinquished to BLM in 1961.

CONTAMINANTS/CLEAN-UP: A contractor was hired by Corps to survey cache sites in 1988. The contractor did not make a site visit, but through correspondence with the current landowner (BLM) reported no evidence of contamination.

REF: USACE Site# F10AK0406

## **Diomede**

### **Alaska Air National Guard Diomede Federal Scout Amory**

LOCATION: LAT 65.741972 N; LON 168.901222 W. On rocky hillside near village of Diomede.

DESCRIPTION: Above-ground fuel storage tanks for Little Diomede Federal Scout Armory.

CONTAMINANTS/CLEAN-UP: Contaminants of concern are DROs in surface soil near current bank of aboveground storage tanks of up to 13,000 mg/kg and near abandoned tanks up to 32,000 mg/kg. Problematic as there is no groundwater on Little Diomede. Water is collected from surface sources. ADEC has proposed working with Alaska Air National Guard to develop best course of action for clean-up.

REF: ADEC File# 685.38.001

## **Elim**

### **Moses Point Garrison**

LOCATION: LAT 64.6175 N; LON 162.2606 W. 10 miles NE of Elim between Iron Creek and the Kwiniuk River.

DESCRIPTION: Site encompasses 1,590 acres and includes an airstrip constructed by the Civil Aeronautics Administration (CAA\_ in 1940. The airstrip was taken over by the U.S. Army in 1942, and a garrison was constructed that encompassed the airstrip and included Quonset huts, buildings, a small hospital and a 6-mile road leading to an unloading dock on Norton Sound at the mouth of Iron Creek. After WWII, the Army reportedly demolished and buried some of the garrison buildings in place and returned the airfield to CAA control. The army buried drums as part of their demobilization, some still contained asphalt products. The CAA, which became the FAA in 1958, maintained the landing strip, instrumentation, and buildings until the mid-1980s. Land was transferred to Elim Native Corporation. In the past the houses have been used by the Elim Native Corporation. The Moses Point FAA Station is still active and located on a barrier beach at the mouth of the Kwiniuk River. The FAA maintains the airstrip

as well as buildings and instruments that support airstrip operation. The site is accessible by road to Elim 10 miles to the southwest.

Contamination at Moses Point has occurred due to both FAA and DoD activities and the two agencies are sharing responsibility for cleanup of the site. Areas of DoD responsibility are being addressed under the FUDS program. The following areas are addressed under the FUDS program: areas along the Access Road; Garrison Pad; and Kwiniuk River, including six sites where drums and/or contaminated soil have been identified.

**CONTAMINANTS/CLEAN-UP:** Reported contaminants included petroleum products, PCBs, asbestos, solvents, transformers, antifreeze, tar waste, organic compounds, chlorinated compounds and metals. Soil contamination by fuels, organic compounds, chlorinated compounds, and metals was detected.

In 1989, a field investigation was conducted to identify the presence, and magnitude of hydrocarbons and other hazardous contaminants. The primary potential sources of contamination included a landfill, over 1,400 drums, four transformers, and five empty aboveground diesel fuel tanks. The landfill is located at the Garrison Pad and was used during Army occupation. 1999/2000 RI/FS investigations showed that there was no contamination above clean-up levels at the landfill so it was determined that the clean-up of the Garrison Pad landfill was not warranted. A Chemical Contamination Report dated May 1990 included sampling of transformers, tanks, drums, soils, and ground and surface water. PCBs were found in transformers. Soil samples detected organic compounds including benzene, toluene, and xylenes; chlorinated compounds included PCE, and TCE; semi-volatiles; PAHs; DDT; gasoline and bunker oil; and elevated metals. Surface water analyses detected PCE; semi-volatiles; gasoline; lead, and mercury. Groundwater analyses detected semi-volatiles; DDT; barium, chromium, and arsenic.

The 1991 site plan called for remediating all soils contaminated with petroleum at concentrations of 100 mg. per kg. or greater. The selected plan was to bring in a mobile incinerator for treatment of non-RCRA-regulated contaminated soils. PCB contaminated soil would be shipped to an approved facility in the lower 48 states to be placed in an EPA-approved landfill or incinerated in a high temperature incinerator. Further the plan called for burying the 55-gallon drums in a landfill established at the site. The asbestos in the area would be cleaned up and placed in a separate cell in the on-site landfill. The plans called for closing the landfill upon project completion.

Almost 7,000 drums, 209 tons of metal, 17.5 ton of wood, 2 tons miscellaneous debris, 33 tons of tar contaminated soil was removed from 3000 acres. A 1995 Remedial Action Report disclosed that over 200 drums of lube oil may have been buried on site. A 2003 Removal Action Report called for excavating and treating an estimated 1200- cubic yards of soil, and to excavate, clean and dispose of approximately 400 drums.

A fuel storage area showed extensive diesel contamination at the site of a former tank farm. A 1999 investigation focused on the status of groundwater. Wells used at the complex included three wells which were abandoned due to saltwater



intrusion, and a fourth well was decommissioned in 1994 due to fuel contamination. During 1999/2000 RI/FS activities, there was excavation of test pits, installation of soil borings, and collection of surface soil, subsurface soil, sediment, and groundwater samples.

A clean-up contract was awarded by Corps in 1993 and from 1994 to 1996, some removal action occurred at this site. RAB was established in 1998. Clean-up work was conducted in summer 2005 and reported as winding up 8/24/2005. Supersacks of excavated soil had been loaded in Connex containers to be removed by barge. ChemTrack (2005) Work Plans revealed that there was still a considerable amount of contaminants to be dealt with at this site. Some of the continuing problems were: drums that still needed to be disposed of; excavation and disposal of lead-contaminated soil; excavation and offsite disposal of POL-contaminated soil at an offsite permitted facility; removal and disposal of asphalt products; and excavation and landfarming of POL-contaminated soil with DRO concentrations.

**SAMPLING INFORMATION:** In 1994 and 1995, surface ground water, soil and sediment laboratory samples were taken from Access Road, Garrison Pad and Kwiniuk River sites.. In 1999 field screening was conducted for organic vapor, petroleum hydrocarbon and lead, laboratory samples of surface and ground water, soil and sediment from Access Road, Garrison Pad and Kwiniuk River Sites.

The Remedial Investigation/Feasibility Study (RI/FS) (DOWL/Ogden, 2001) documents earlier actions conducted under removal authority to control releases from Moses Point FUDS areas and remove hazardous structures, debris, drums, and soil. Soil, sediment, surface water, and groundwater samples are summarized in the RI/FS and RI Addendum reports. In 2000 background RCRA (Resource Conservation and Recovery Act) laboratory samples of surface and ground water, soil and sediment was collected.

Dowl/Ogden Joint Venture 2001. Moses Point RI/FS Final Remedial Investigation/Feasibility Study, Volumes I and II, and Addendum.  
Figures for sampling sites

ChemTrack, LLC. 2005 (September). Project Work Plan; Field Sampling Plan; Quality Assurance Program Plan. FY05 FUDS Site-Moses Point Garrison Remedial Action, Moses Point, Alaska.

Table 1. Summary of Sampling Sites, Objectives and Work Plan Cross Reference

Table 4. Sampling Locations, Methods and Site Cleanup levels

Figures are from Remedial Investigation Report. September 2001

USACE. 2005 (March). Streamlined Decision Document: Moses Point FUDS, Moses Point, AK.

Figures for sampling locations are modified from Dowl/Ogden Final Remedial Investigation Report Addendum (2001)

REF: USACE Site #F10AK0162  
EPA ID# AK2140990118  
ADEC File# 475.38.004—Moses Point FUDS  
ADEC File#475.38.014—Moses Point FAA Station (still active):  
FAA Fuel Storage Area (Extensive diesel contamination)  
FAA Septic/Sewage Facility (Diesel)  
FAA Vehicle Maintenance Facility (Diesel and waste oil)  
FAA VORTAC Burns 1&2 (Metals)

## **Gambell**

### **Military Installations**

LOCATION: LAT 63°4700 N; LON 171.4346 W. Northwest tip of St. Lawrence Island in and near the village.

DESCRIPTION: Because of its proximity to the former Soviet Union, St. Lawrence Island has been an important defense site since WWII. The U.S. Army and the U.S. Navy independently built and maintained radar, sonar, and communication installations on the island, not only at Northwest Cape where Gambell is located, but at Northeast Cape as well. During WWII an airstrip was constructed and a CAA facility with six houses and support buildings was constructed. With the beginning of the Cold War in 1946 St. Lawrence was selected for an Aircraft Control and Warning (AC&W) facility. The Army built a camp on the north side of Troutman Lake and other facilities on the gravel beach ridges between Gambell and Sevuokuk Mountain. The Air Force built a radar installation at the north end of Sevuokuk Mountain. The Gambell radar was used to track Soviet shipping (Denfeld 1994). An Aircraft Control and Warning Station was operated by the Air Force in Gambell from 1948 to 1956 when it was abandoned. A similar facility was built at Northeast Cape which included a White Alice Communication Site.

The Navy installed many miles of wire across the island, connecting submarine detection equipment to a listening station on Sevuokuk Mountain. A total of seven military installations scattered over approximately 2,500 acres were used by the Army, Air Force, Navy and National Guard from 1948 to the early 1950s, at which time they were abandoned. The installations extended from West Beach and North Beach south to Navaghaq Lake and east to the Sevuokuk Mountain and encompass the village of Gambell. They included quonset huts, administration and maintenance buildings, power generation facilities, an airstrip and other support facilities, all of which were abandoned in place.

Field work conducted by Ecology and Environment, Inc in 1992 identified 12 areas of concern. Some of the areas may still contain waste under the ground, since the military sometimes excavated large holes at each facility, pushed everything in with heavy equipment, then buried it. East of the housing area, a small power plant was buried. Ecology and Environment (1992) also “suspected” a former communications facility burial area on the lower slope of Sevuokuk Mountain that included “two Jamesway huts and a 10-15 kw power plant...auxiliary generators, transformers, oils, fuels, and batteries... and 12 4– to 10–gallon glass carboys of sulfuric acid.”

A small area between Troutman and Nayvaghaq Lakes was reported to be an Air Force facility. Quonset huts, a wooden building, and towers were buried here, possibly with electrical transformers and generators (Mobley 2001).

**CONTAMINANTS/CLEAN-UP:** The majority of the contaminants are petroleum derivatives found in soils. Also present are asbestos, low levels of PCBs, dioxins, arsenic, chromium and other metals, and unexploded ordinance is reportedly buried near Troutman Lake. Allegedly, large quantities of buried waste, possibly hazardous substances are present in and around the village. Groundwater samples near the village water supply detected a low-level concentration of DROs in one well in 1998. Subsequent sampling has not found DRO or any other detectable contamination.

The Corps initiated a clean-up of demolished buildings, debris and containers of hazardous wastes in 1986, but the effort was stopped when villagers expressed concerns about the Corps' plans to bury the materials on site. Community concern has focused on buried debris which occasionally surfaces from erosion or new construction. Site remediation investigations were performed in 1994, 1996 and 1998, and some contaminated soil was removed in 1999. The Corps did field work in 2000 to identify suspected buried ordinance, and an analysis of historic photos was done to support the ordinance investigations. Thirty eight sites were identified for clean-up and a RAB was established. Thirty four of the thirty eight sites have been characterized, cleaned up and closed. Approximately 50-tons of metallic debris from two former landfills were removed. The debris consisted of: mixed empty drum; Marston matting; engine parts; cable; piping and miscellaneous scrap. About 3-tons of incidental contaminated soil was containerized in super sacks and disposed off island with the metal debris. Plans for clean-up of contaminated soils at two of the sites, one for arsenic and one for lead, have been developed; debris clean-up is underway at one site; and investigation of the final site had not been completed as of June 2005.

REF: USACE Site# F10AK0696  
ADEC File # 660.38.006. File contains separate listings for 24 contaminated sites.  
EPA ID #AKD981765894

## **Golovin**

### **Air Force Cache #9**

**LOCATION:** LAT 64.2700 N; LON 163.0700 W. On the shore of Golovin Bay north of Rocky Point in the SE quarter of Section 8, T12S, R22W, Kateel River Meridian.

**DESCRIPTION:** One of 23 emergency survival caches established by the U.S. Air Force in 1957-1959. Caches were 8' x 10' and bright orange with area around them cleared in a 100' radius for greater visibility. Land was relinquished to BLM in 1961.

CONTAMINANTS/CLEAN-UP: Contractor was hired by Corps to survey cache sites in 1988. Did not make site visit, but corresponded with current landowner and determined there was no evidence of contamination.

REF: USACE Site# F10AK0406

## **Koyuk**

### **Granite Mountain White Alice Site**

LOCATION: LAT 65.432222 N; LON 161.236111 W. Thirty miles north of Koyuk.

DESCRIPTION: One of five White Alice sites in the Norton Sound region. Site includes White Alice facility which was built in 1956 and turned over to the Air Force in 1957. The Granite Mountain site had an upper and lower camp linked by a 3.2 mile road. Facilities at the upper camp included the radio relay antenna array, an equipment and power building, a dormitory, vehicle maintenance shop, three POL tanks and a water tank. Facilities at the lower camp included an air terminal, storage building, fuel storage tank, and runway (Wescott 2000). The site was leased to Alascom in 1976 and closed in 1978. The radio relay antenna and buildings are still intact at the site (Cultural Heritage Studies 2002). Active USAF station nearby.

CONTAMINANTS/CLEAN-UP: Possible contaminants include PCBs, pesticides, petroleum products, alcohols, spray paints, solvents, brominated flame retardants, battery acids, radioactive tubes, asbestos, and klystron tubes with beryllium dust. Quantity disposed and levels of contamination are unknown. One report of PCBs removed sometime during 1986 and transported to Elmendorf AFB. As USAF is still active in area, the site is not classified as a FUDS by the Corps, and responsibility for clean-up rests with USAF. USAF developed risk assessment in 2000 in which it determined contaminants levels were within acceptable risk parameters and proposed no further clean-up action. The USAF presented the plan at public meetings in Koyuk and Buckland in October 2000. Local residents expressed concern about risks to subsistence resources and human health. Final risk assessment and proposed remediation plan approved in 2001. It was determined that there is no migration to groundwater at the top camp. Reports indicate that contaminants are at the ground surface and that the area is used seasonally by hunters and caribou. Soils heavily contaminated with PCB and RROs are to be excavated and shipped offsite. DRO-contaminated soil is to be treated onsite using land-spreading technology.

REF: EPA ID# AK5570028659  
ADEC File# 610.38.001. File also includes separate contaminated site listings for active Air Force Station.

## **St. Michael**

### **Ft. St. Michael**

LOCATION: LAT 63.2900 N; LON 162.0200 W. Located at the village of St. Michael on St. Michael Island in Norton Sound, just north of the delta of the Yukon River.

DESCRIPTION: Established by Executive Order in 1897, with troops sent in October 1897 to maintain order during the Yukon gold rush. It was the western terminus of the Washington-Alaska Military Cable and Telegraph System (WAMCATS) built in 1900. The fort closed in 1925. Three of the buildings remaining are on the National Register of Historic Places.

CONTAMINATION/CLEAN-UP: Corps site investigation in 1994 found wood barge, barrel dump, sternwheeler wreckage, seven buildings, wood storage tank reinforcement debris, tar seepage, railroad tracks, abandoned WAMCATS station, and abandoned bridge supports. All items have been beneficially utilized, are not considered unsafe, or are not of military origin. No clean-up action is planned.

REF: USACE Site# F10AK0307

## **Savoonga/St. Lawrence Island Northeast CAPE**

### **Alaska Air National Guard Savoonga Federal Scout Amory**

LOCATION: LAT 63.7 N; LON 170.483333 W. In the village of Savoonga.

DESCRIPTION: Active National Guard Station, therefore it does not qualify as a FUDS.

CONTAMINATION/CLEAN-UP: Potential petroleum contamination in soil. DRO contamination is present. Final clean-up plan submitted by Guard to ADEC in July 2004. Conditional approval of the clean-up plan granted by ADEC in February 2005.

REF: ADEC File# 670.38.002

### **Northeast Cape Air Force Communications Base**

LOCATION: LAT 63.502778 N; LON 170.44689 W. At Northeast Cape on eastern end of St. Lawrence Island.

DESCRIPTION: Site covers approximately 4,800 acres and included 25 industrial buildings and associated support facilities. Operated by U.S. Air Force 1952-1972 as Aircraft Control & Warning (AC&W) radar station built during the early part of the Cold War to warn of incoming enemy aircraft attacks. AC&W stations were later replaced by the White Alice system. In 1969, the radar operations ceased and most military personnel were removed by the end of that year. The facilities were left intact, with minimal removal of equipment due to the

high cost of transportation (Denfeld 1994). White Alice communications site located ½ mile uphill from base continued operations until 1972 when it was closed. In 1982, the White Alice facility was transferred to the navy for submarine monitoring activities. The Navy departed a few years later.

**CONTAMINATION/CLEAN-UP:** Extensive petroleum contamination in soil and groundwater has been reported. There is petroleum (mainly diesel) at various sites throughout the facility. Also present are PCBs and other VOCs, pesticides, brominated flame retardants and metals. A drainage basin at the site was impacted with PCBs and petroleum from historical spills. Risk assessments evaluated the subsistence pathway for area fish and berries; sampling in the Suki River drainage was carried out to determine if PCB impacts occurred to the marine environment. Clean-up of debris, demolition of buildings, and removal of containerized hazardous and toxic waste was initiated in 1986, but was halted due to concerns raised by residents over disposal of debris onsite.

About a dozen sites have groundwater and soil contamination. The principle contaminants of concern are DROs, RROs and PCBs. Also present are metals (arsenic, chromium, lead) and some low level PAHs in both soil and groundwater.

RAB was established and debris removal and site remediation was re-initiated in 2000. A \$10 million bd/dr was performed by the Corps at the site in 2003. Approximately 50 tons of metallic debris from two former landfills were removed. The debris was mixed empty drums, Marston matting, engine parts, cable, piping and miscellaneous scrap. About 3 tons of incidental contaminated soil was containerized in super sacks and disposed off-island with the metal debris. Final building demolition and debris removal were to be completed in 2005 as well as the removal of 100 tons of PCB impacted soils. Further remedial investigations will be conducted by the Corps in 2006.

**Site 04** Within this site is a subsistence fishing and hunting camp adjacent to Cargo Beach. The site has a variety of cabins, mostly abandoned but a few make up active cabins for a summer camp. There is numerous miscellaneous debris including empty drums and two above ground storage tanks (AST). There is petroleum contamination in soil and groundwater in the area of the two ASTs.

**Site 07** Within this site was an unpermitted landfill located about .8 miles south of Cargo Beach. It was used as the bases solid waste disposal area from 1965 to base closure in 1974. The majority of exposed debris was removed and disposed off-island during removal actions in 2001 and 2003. The landfill is known to contain drums, batteries, ACM. Petroleum contamination has been identified in soil and sediment of nearby ephemeral ponds.

**Site 08** marks the area where 500 gallons of diesel spilled from a faulty weld in the Cargo Beach Pipeline in 1973. A localized area in a nearby wetland has petroleum sheen if the sediment is disturbed. The area does not appear to be hydrologically connected to the Suki River.

**Site 09** is the landfill located northeast of the Headquarters area and was the main solid waste disposal area from the base opening in 1952 until 1965 when

Site 07 became the landfill. DROs exceed action levels in groundwater adjacent to the landfill.

Site 11 had three 400,000 gallon diesel storage USTs. A spill of about 180,000 gallons occurred in March 1968 and the spill affected the entire drainage from the source to the mouth of the Suki River. The site has DRO impacts to soil, sediment and groundwater. PCBs have been detected in sediment.

Site 28 referred to as the Drainage Basin is a large wetland drainage area including the Suki River. The area is north of the Headquarters Area and west of Cargo Beach Road. Various spills over the years have impacted the area. The largest was the spill in 1968 that originated at Site 11. Depositional areas have petroleum and PCB contamination over action levels in soil and sediment. Fish and plants have been impacted by PCBs. A risk assessment was performed on the site in 2003 when a BD/DR was also completed.

REF: USACE Site# F10AK0969. Classified as DERP site under CERCLA.  
EPA ID# D981765894  
EPA ID #AKD981770084 Cargo Beach  
ADEC File# 475.38.013; File includes 29 separate sites.

### **Northeast Cape White Alice Site**

LOCATION: LAT 63.502778; LON 170.44689. At Northeast Cape on eastern end of St. Lawrence Island ½ mile upslope from abandoned USAF base.

DESCRIPTION: One of five White Alice sites in the Norton Sound region. Covers 26 acres and included seven abandoned buildings, four radio antennas and a tramway leading up Kanukhsam Mtn. Operated by USAF 1952-1976. U.S. Navy took control of site to include in operations of an Arctic Submarine Lab in 1982. Was decommissioned and classified by the Corps as a FUDS in 2000.

CONTAMINATION/CLEAN-UP: PCBs and POLS found in soils. PCBs are on concrete transformer pads and adjacent soils. Site inspection completed by EPA in 1986 reported 1,000 pounds of sludge, 1,000 gallons of oily waste, 1,500 gallons of solvents, 7 transformers, inorganic chemicals, acids, bases and heavy metals. PCBs and POLs found in soils. Low levels of PCB and VOCs also detected in stream sediment. 1990 Navy removal action removed 1000 drums and 29 transformers. The Corps and Navy disagreed over responsibility for clean-up and in 2000 the Corps agreed to include this site in the FUDS program as part of the Northeast Cape DERP/Army site. Established RAB deals with both sites. In 1990, 1,000 drums and 29 transformers were removed. In 2003, all the buildings, above-ground structures and debris were removed. Further remedial investigations and a risk assessment were completed in 2004. Final building demolition, removal of the tram system and debris and removal of 100 tons of PCB impacted soils were to be completed in 2005.

REF: USACE Site#10AK0969  
ADEC File# 475.38.009  
EPA ID #AK6170000164

## **Shaktoolik**

### **Air Force Cache #20**

LOCATION: LAT 64.4100N; LON 160.1100 W.

One half mile southeast of the confluence of the Shaktoolik River and Kinkmetolik Creek, on the south side of the Creek.

DESCRIPTION: Clearing of about 100' square feet with 10'x12' cache in center. Land was relinquished to BLM in 1961.

CONTAMINANTS/CLEAN-UP: Contractor was hired by Corps to survey cache sites in 1988. Through correspondence with BLM determined there was no evidence of hazardous/toxic waste, ordnance, or unsafe debris.

REF: USACE Site# F10AK0417

## **Shismaref**

NO SITES FOUND IN USACE OR ADEC RECORDS.

## **Stebbins**

### **Alaska Air National Guard Stebbins Federal Scout Amory**

LOCATION: LAT 63.5222 N; LON 162.28333 W.

DESCRIPTION: Stebbins is located on the northwest coast of St. Michael Island, on Norton Sound.

CONTAMINATION/CLEAN-UP: Extensive petroleum contamination in soil. DRO reported from surface soil samples as well as GRO, RRO, benzene, toluene, ethylbenzen and xylenes. Concern expressed for human exposure to hazardous substances at the site and possible migration of hazardous substances from the site to groundwater and surface water. Stebbins' residents currently haul water and use honeybuckets. Water is derived from Big Clear Creek in the summer and a reservoir at Clear Lake and a new water tank are under construction to alleviate winter water shortages.

In 2005, 50 tons of petroleum contaminated soil were removed and transported to a thermal desorption treatment facility in Lakewood, WA. DROs still remain near the armory building. Additional site characterization and/or cleanup will be necessary.

REF: ADEC File #650.38.002



## Teller

### **Teller Supply and Storage Site**

LOCATION: LAT 65.1600 N; LON 166.2200 W. Located north of Teller, across the mouth of Grantley Harbor.

DESCRIPTION: Formerly the Teller Reindeer Station, consisting of 376 acres obtained by the Army from the Department of Interior (DoI) in 1946. Used as a supply point for Army operation until transferred back to DoI in 1949. FUDS consisted of 24-acre site. Portions are presently owned by the Brevig Mission Native Corporation, several Native allotments and U.S. Coast Guard.

CONTAMINATION/CLEAN-UP: Site contained 35 POL drums and 2,000 square yards of Marston matting. Contaminants of concern were petroleum compounds and lead. Clean up was conducted in 1994 and included removal of 262 tons of debris from Teller Spit, and 60 tons of debris from Brevig Spit, including drums, vehicles, Marston matting, a boiler, 7 compressed gas cylinders, batteries, metal buckets of grease, and stained soil. A total of 725 cubic yards of non-hazardous metal debris was removed, staged, and filled at a solid waste landfill located approximately seven miles south of Teller. No signs of contamination were encountered during debris removal and no environmental sampling was performed. The clean-up was funded under the Defense Environmental Restoration Program (DERP). In 2002 a record of decision was signed between ADEC and USACE to close this site.

REF: USACE Site #F10AK0231  
ADEC File #550.38.001  
EPA File #AK0001401421

### **American River Air Base (Operation NAM)**

LOCATION: LAT 65.2500 N; LON 165.4700 W. Located on the Seward Peninsula, on the west bank of the American River, across from Igloo and 22 miles NE of Teller. The former site area is currently owned by the State of Alaska, Department of Natural Resources; excluding a portion under a regional selection application by the Bering Straits Native Corporation.

DESCRIPTION: USACE records from 1995 revised this site from a Categorical Exclusion to eligibility for clean up under the DERP-FUDS. The original exclusion was based upon the information that the air base was not constructed. However, further research established that Army Corps of Engineers survey crews laid out a field and established a camp here in 1944. The site was used by the Army Air Corps in World War II. Operation NAM was a 1945 plan to construct three large airfields on the Seward Peninsula at Noxapaga (Lava Lake), American River, and Collins-Hannum. Funds for the proposed airfield project were cut from the military construction program in 1945.

CONTAMINATION/CLEAN-UP: The camp, equipment, and fuel products at the base were abandoned in 1945. The site contained numerous fuel drums, military vehicles, 20 cubic feet of POL contaminated soil, about 20 compressed gas

cylinders, and other associated metal and wood military. In 2001, the Corps removed 229 55-gallon drums, two 100-gallon drums, 5 compressed gas cylinders, and 24 Blazo containers. Lead contamination in one isolated location and high levels of DRO contamination (16,900mg/kg to 70,500 mg/kg) under a drum pile remained at the site. As of 2005 there was no progress in further clean-up due to lack of funding.

REF: USACE Site #10AK0814  
ADEC File# 475.38.018

## **Unalakleet**

### **Unalakleet Air Force Station**

LOCATION: LAT 63.87305N; LON 160.7881 N. The 737.18 acre Unalakleet Air Force Station is located 3.5 miles northeast of Unalakleet on the eastern end of Norton Sound.

DESCRIPTION: After World War II, Unalakleet Air Force Station was built as part of a network of aircraft warning systems and communications relay systems. There were nine buildings and two radar dome towers. The Unalakleet station was inactivated in May, 1963. The Site was relinquished from the Department of Defense in 1970 to the Bureau of Land Management. The land is now owned by the Unalakleet Native Corporation. The site was accessible only by aircraft or overland in the winter and the hilltop-site was reached by gravel road north of the airport. While the site was a facility of the Air Force, control of the site has been relinquished to the Corp, which is responsible for the clean-up under the FUDS/DERP.

CONTAMINANTS/CLEAN-UP: When the site was inventoried in 1986 there were nine buildings, six generators, and miscellaneous debris, two above ground fuel tanks, lead batteries, and contaminated soil. Soil Contamination was primarily from diesel fuel, but isolated areas of PCBs and heavy metal contamination exist. Asbestos has also been reported at the site. Demolition of the site infrastructure, removal of underground storage tanks holding gasoline and diesel fuel, removal of miscellaneous debris, and excavation and on-site treatment occurred in 1993 and 1995. The 1993 clean-up called for a Thermal Desorption Unit to burn TPH soils and PCBs less than 50ppm but the contractor went bankrupt and a final report on what actually was done was never produced. The Final Remedial Action Report in 2001 documents the 1993 and 1995 site work. In 1995, all of the buildings and other structures were demolished and the debris was buried in landfills within the sites. Thousands of barrels that were spread around the vicinity of Unalakleet by flooding were removed in 2002. Sampling activities in 2002 identified DROs as the primary onsite contaminant. In addition to DRO, other contaminants from these barrels included RROs, chlorinated solvents, chromium, and selenium. Pesticides such as DDT were used to control insects and PCBs were used in insulation for electronic equipment and in transformer cooling oil. More abandoned barrels and contaminated soil related to leaking drums were removed in 2005. The main work locations were near the shore of Norton Sound (Drum Dump and Communications Building) and along Air Force Road. Not all soil at the Drum

Dump could be removed without undermining the nearby road base, and backfilling at some areas of the radar installation was poorly completed.

The Unalakleet RAB was formed in 2005. There is community concern about several unpermitted dumps and other Air Force sites that are not included in the current scope of work by either the Air Force or USACE. Many local residents have knowledge of these sites although it is confusing because of the different names given to the sites by locals and the Department of Defense. Final cleanup action is scheduled for 2006.

**SAMPLING INFORMATION:** In 1999 and 2000 a Corp investigative team determined that six sites had contamination or debris, which were eligible for removal or remediation under the FUDS program (USACE 2003. See Figure 2). In September 2002 an investigative team collected soil and sediment samples, subsistence food samples, and surface water samples to determine if pesticides or PCBs were present in seven areas used for subsistence harvesting. The soil in two areas had low concentrations of DDT and one area had a low concentration of the PCB Aroclor 1254. They concluded from analysis of plant samples that even when pesticides or PCBs are present at low concentration in the soil that these compounds do not transfer to subsistence plants.

At the Communications Building Site (USACE 2003. Fig.2, No. 12), soil samples at the site of a former fuel storage tank, a soil pile under a tarp, and from the wetlands below the soil pile, indicated that fuel contamination existed in the soil pile and wetlands with DRO concentrations up to an estimated 450 mg/kg and RRO concentrations up to an estimated 2,700 mg/kg. The site of the former fuel storage tank had an estimated 270 mg/kg of DRO and 280 mg/kg of RRO. Soil samples collected at the Drum Dump Site (USACE 2003. Fig. 3, No. 14) indicated that soil at the dump had DRO concentrations up to an estimated 6,800 mg/kg and RRO concentrations up to an estimated 289,000 mg/kg.

The team also collected sediment and surface water samples from a stream southeast of the former radar site. The sediment had low concentrations of the pesticide, Lindane. The water had no detectable concentrations of pesticides or PCBs. Sediment and surface water samples collected from a tributary to Powers Creek, north of the former radar site had no detectable concentrations of pesticides or PCBs. Powers Creek is the local source of domestic water for Unalakleet.

Table 1 of the USACE Site Investigation Report (2003) shows the number and types of samples collected by location in the Unalakleet area. Table 2 lists the location of each sample by latitude and longitude as determined by GPS. Figure 3 shows the general locations of the sample sites for the 2002 sampling trip.

In the 2005 field season, 262 barrels and one 950-gallon tank were removed from 8 sites. Barrel removal included the collection of field screen and/or laboratory samples to determine if onsite contamination was present. Site characterization activities were conducted at 17 sites to determine the nature and extent of contamination, and included test pitting and collecting field screen and/or laboratory analytical samples. *The Barrel Removal, Contaminated Soil Removal, and Site Characterization Report* (Jacobs Engineering Group INC.

2006) summarizes the 17 sites where activities were conducted in 2005 and the recommendation for no further action or further action for each of the sites (Table ES-1). Kouwegok Slough, the Communications Building, the Quarry/Gravel Pit, Army Hill and Generator Hill were all recommended for "Further Action" while the other 12 sites were designated "No Further Action".

U.S. Army Corps of Engineers. 2003 (May). Site Investigations Report – Formerly Used Defense Sites, Unalakleet, Alaska.

Table 1. Number and Types of Samples Collected by Location.

Table 2. Location of Each Sample by GPS

Figure 2. Location of FUDS Sites in the Vicinity of Unalakleet

Figures 3 – 9. The 2002 Sampling Locations

U.S. Army Corps of Engineers. 2003 (October). Final Remedial Action Report: Unalakleet Drum Removal Project, Unalakleet, Alaska

Figure 2. Project Site Locations

Jacobs Engineering Group Inc. 2006 (January). Draft. Barrel Removal, Contaminated Soil Removal and Site Characterization Report, Unalakleet, Alaska.

Figure 3-1. Barrel Removal Locations and Quantities

Figure 4-1. Contaminated Soil Removal Locations and Quantities

Figure 4-2. North Kouwegok Slough Confirmation Sample Locations

Figure 4-3. Barrel Bluff Site Confirmation Sample Locations.

Figure 4-5. Quarry/Gravel Pit Area Confirmation Sample Locations.

Figure 4-6. Drum Dump Site Confirmation Sample Locations

Figure 4-7. Army Hill Site Confirmation Sample Locations

Figure 4-8. Generator Hill Site Confirmation Sample Locations

Figure 4-9 Burned Fuel Truck Site Confirmation Sample Locations

Figure 4-10 Musk Ox Farm Confirmation Sample Locations

Figure 4-11 Barrel Disposal Area Confirmation Sample Locations

**Section 5.1. Recommended Drum Removal Actions**

**Section 5.2. Recommended Soil Cleanup Actions**

REF: USACE Site #F10AK0036  
ADEC File #630.38.003

### **North River Radio Relay Station**

LOCATION: LAT 63.5300 N; LON 160.3100 W. The North River Radio Relay Site is approximately 8 miles east of Unalakleet, on a bluff adjacent to the Unalakleet River.

DESCRIPTION: The site (215.9 acres) was part of the aircraft warning and communications relay systems from 1958- 1978. There was a two-story, wood-frame composite building; a second wood-frame, two-story building; two concrete buildings; a wood-frame concrete building and two radar dome towers.

When military activities ended, buildings, debris and thousands of 55-gallon drums were left in the area. Radio Corporation of America/Alascom operated the site remotely from the early 1960s until 1978. The station was abandoned in

1978 and all structures at the site were demolished and debris was buried in an on-site landfill in 1993 and 1995.

**CONTAMINANTS/CLEAN-UP:** The main contaminants of concern are PCBs and diesel range petroleum. According to records, transformers were removed from the site in 1982 and in 1984 PCB-contaminated soils were removed. The Corps demolished the abandoned buildings and conducted a removal of contaminated soil under the FUDS program in 1993 and 1995.

In 2002, a Corps contractor removed approximately 3,300 drums that were scattered across a 10-square mile area. In June 2002, the Corps identified an area with three drums possibly containing contaminants of concern and reported these to the Air Force. A local resident owns a cabin about one-half mile from the hilltop site where the antennas were located. Soil contaminated by PCBs was discovered on July 10, 2003 near the beginning of the trail to this cabin. Air Force personnel confirmed high levels of PCBs in the soil and vegetation. Sampling results showed PCB concentrations as high as 26,600 mg/kg in an approximate 12 by 20-foot source area. Further sampling confirmed that PCBs had been tracked to the nearby cabin.

The land around the former RRS is used for hunting, berry picking and recreation. In July 2003, responding to residents, Air Force personnel investigated the site of old barrels and soil across the road from the demolition debris landfill. Investigation showed the soil was contaminated with PCBs and petroleum. A RAB is being formed in Unalakleet. The Air Force visited the Unalakleet school in 2003 to let children know to stay away from the site. Local residents concerned about possible exposure were referred to Health & Social Services Office of Epidemiology.

Action to clean-up contamination took place as a "Time-Critical Removal," a designation the military can give when the situation is urgent and when fewer than six months are available to plan a clean-up. Sites designated for this response were: Area A – two areas of PCB contamination. Areas were ready for excavation in 2004 but excavation did not proceed; Area B - an old landfill where drums and debris were pushed off the hillside. It was exposed and sampled, but not excavated in 2004; Area C – Air Force removed the most heavily contaminated PCB soils along the trail to the cabin in 2003. Approximately 31,530 pounds of the highly-contaminated PCB soil was excavated, placed in drums, and shipped to Elmendorf for disposal.

Residents medically screened for PCB exposure showed that PCB levels were very low, similar to global background exposures and less than levels that would be expected to cause ill health effects. Biological sampling of resident winter birds consumed by subsistence hunters produced negative results.

Clean-up actions begun in the summer of 2004 found a larger volume of contaminated soil than originally anticipated and clean-up was not finished. Most of the trail to the cabin was scraped off and backfilled with new gravel. PCB contamination still remains at the source area near the beginning of the trail (Area C) and at Area A (Contaminated Sites Program: see <http://www.dec.state.ak.us/spar/csp/sites/unalakleet.htm>). Remaining

contamination has been covered, fenced in, and warning signs posted. A Remedial Investigation is programmed by the Air Force to take place in 2007.

**SAMPLING INFORMATION:** In 1993 and 1995, two Corps contractors demolished buildings at North River RRS and buried all debris in an on-site landfill. In 2002 a Corps contractor removed approximately 3,300 drums scattered across a 10-square mile area and identified a different location with three drums possibly containing contaminants of concern. Maps identifying contaminated sites are in the Contaminated Sites Report found at <http://www.dec.state.ak.us/spar/csp/sites/unalagleet.htm>. Area A on the map marks the location of two areas of PCB contamination in concentrations of about 500 mg/kg, over the cleanup level of 1 mg/kg. Area B is an old landfill where drums and debris were pushed off the hillside. Area C marks where PCB contamination was found along the trail to a privately owned cabin. In September of 2003, the Air Force completed its initial PCB assessment and removed the most heavily contaminated soil

U.S. Air Force. 2004 (April). Time –Critical Removal Work Plan for 2004, North River (former) Radio Relay Site.

U.S. Air Force. 2004 (June). North River Radio Relay Station Site Investigation Work Plan.

MWH. 2005 (March). North River Radio Relay Station Site Investigation Report. (*Good graphics and maps with sampling locations*).

<http://www.dec.state.ak.us/spar/csp/sites/unalagleet.htm> - Diagram of the western portion of the North River Radio Relay Station (White Alice) site, showing contaminated areas A, B, & C. (99K pdf file)

REF: USACE Site# F10AK0037  
ADEC File# 630.38.001

### **North River White Alice Site**

**LOCATION:** LAT 63.8888 N; LON 160.5175 W. This site is 13 miles NE of Unalagleet.

**DESCRIPTION:** This was a combination tropo/microwave site constructed in 1957 and located with the above reported AC&W. There was an equipment/power building and a 12 person dormitory. POL storage was a combined capacity of 11,200 barrels. (Reynolds 1988). The former Maintenance facility was located approximately ¼ mile west of the White Alice site. This was the location of the Auto Maintenance Building (removed from the site in 1995) and a 500-gallon UST used to supply fuel to heat the building (also removed in 1995). A mounded area remains at the location of the former Auto Maintenance Building, suggesting a buried concrete pad. The site was closed in June of 1978.

**CONTAMINANTS/CLEAN-UP:** Contamination resulted from past handling of fuels, chemicals and waste at the station. The main contaminants of concern are PCBs and diesel range petroleum. Before building demolition began, the site

contained large deteriorated structures containing asbestos, above-ground water and fuel tanks, an underground storage tank, four 80-foot high communications towers, scattered debris, electrical transformers, drums containing petroleum, and associated soil contamination. The Corps demolished the buildings and structures and removed contaminated soil in 1993 and 1995.

The site was assigned a MEDIUM overall risk on the Air Force Relative Risk Evaluation Worksheet dated 12/5/95. The worksheet indicated that soil and surface water were found to be contaminated, with potential harm to both local residents and land mammals and birds. Hazardous waste assessment in 1982 found approximately 500 gallons transformer oil, one 5 gallon can PCB fluid, transformer oil, sulfuric acid, NaOH, carbon dioxide cylinders klystron tubes and 94 batteries. Soil and surface water samples were taken in 1982 and in 1983 PCB contaminated soils were removed. Soil samples were again taken in 1990 and analyses detected up to 160 ppb toluene, 270 ppb xylenes, 25 ppb trichloroethylene (TCE), and semivolatiles including PAHs, phenolic compounds, and up to 3.5 ppm dibenzofuran. PCBs also were detected and samples contained up to 2600 ppm diesel and 120 ppm bunker fuel. Water analyses detected up to 5 ppb TCE and 115 ppb fuel in surface water. 17ppbchromium, 2 ppb lead, and 0.0062 mercury also found in surface water. Sampling efforts began in January, 2003 to collect grouse, rabbits, and ptarmigan within 5 miles of the PCB hot zone to test the effects of PCBs. Planning continued for the removal of PCB contaminated soil above 1 ppm. Initial quantity estimates for removal and offsite shipment were approximately 1 million pounds of soil. Laboratory sample results for vegetation collected in the vicinity of the hot spot showed elevated levels of PCB presumably caused by dust.

In 2004, a Site Investigation Report found PCBs above the cleanup level in surface soils at the former White Alice site. Subsurface petroleum contamination was documented at the site and the former Auto Maintenance Yard. The petroleum contamination is almost entirely in the diesel range, and the only detection of BTEX above cleanup levels was at the former Auto Maintenance Building underground storage tank site. Soil with DRO concentrations exceeding the ADEC Method Two soil cleanup level was found at the White Alice site in four of five test pits. These sample sites corresponded with known locations of the former fuel system tanks and piping. Soil with DRO concentrations exceeding the ADEC Method Two soil cleanup level was found in test pits at the Maintenance Building. Groundwater was encountered in the bottom of test pits excavated at the former Auto Maintenance Yard at approximately six feet below the ground surface. Based on the findings of the 2004 SI, further investigation was recommended at this site

The Air Force is currently planning to remove the stockpile of PCB contaminated soil left behind from the 2004 excavation but this work did not occur in 2005.

Air Force contractors conducted sampling around the locations of the former White Alice infrastructure including surface and subsurface soil sampling for petroleum, PCBs, and other contaminants. Sampling results are available in the Site Inspection Report of March 2005 prepared by MWH Consulting.

**SAMPLING INFORMATION:** PCB contamination was found in surface soil near the former Maintenance Facility and along the road in 2003. PCBs were

evaluated in soil at the former White Alice site in 2004 when 52 surface soil samples were collected from a grid covering the site. Soil with PCB concentrations exceeding the ADEC Method Two soil cleanup level was found in nine of the 52 soil sample locations.

Fieldwork in 2004 at the U.S. Air Force North River Radio Relay Station included collection of surface soil samples and excavation of test pits for subsurface soil sample collection. This field investigation included not only the Radio Relay Station but also the former White Alice Communications System and the former Maintenance Facility, located ¼ mile west of the White Alice site.

The objective of the Site Inspection was to analyze for PCBs in surface soil and to evaluate surface and subsurface soil for POLs and other potential contaminants at several locations. A sample grid was used to establish 52 surface soil sample locations over an area of approximately 130,000 square feet to evaluate PCBs in surface soil at the former White Alice site. Five test pits each were excavated at the former White Alice site and Maintenance Facility to evaluate POLs in surface and subsurface soil. Laboratory analyses included investigation of DROs, GRO, residual range organics, volatile organic compounds, semi-volatile organic compounds, PCBs/pesticides and Resource Conservation and Recovery Act metals.

For sampling locations see: MWH 2005, Figure 3-1 Former WACS – PCB Sampling Grid Locations with Results Above 1 mg/Kg on page 3-11.  
MWH 2005, Figure 3 – 2 Former WACS Test Pit Locations on page 3-13.  
MWH 2005, Figure 3 – 3 Former Maintenance Facility Test Pit Locations on page 3-15.

U.S. Air Force. 2004 (June). North River Radio Relay Station Site Investigation Work Plan.

MWH. 2005 (March). North River Radio Relay Station Site Inspection Report. (*Good graphics and maps with sampling locations*).

REF: USACE#F10AK0037  
ADEC File#630.38.001  
EPA ID #AK3570028685

### **Alaska National Guard Unalakleet Federal Scout Amory**

LOCATION: LAT 63.8792 N; LON 160.793889 W.

DESCRIPTION: The Unalakleet National Guard Site is located in Unalakleet, on the eastern shore of Norton Sound. A prefabricated scout armory building was erected on the site in 1959 then relocated in 1983. The site was transferred to the Unalakleet Native Corporation.

CONTAMINANTS/CLEAN-UP: Main concern is petroleum product from heating oil system. DEC priority rating is "low". A work plan for cleanup by AKANG was approved by DEC in February, 2005.



REF: USACE Site #F10AK0783  
ADEC File #630.38.008

### **South River Recreation Site**

LOCATION: LAT 63.5400 N; LON 161.00000 W. The site is on the left bank of the Unalakleet River, at the mouth of the South River, four miles east of Unalakleet.

DESCRIPTION: The Unalakleet Recreation Fish Camp was used by the Army, Yukon Command, as a recreational fishing and camping area for military personnel. The camp was on 5.0 acres and consisted of a tent camp. It was used from June to September.

The site was acquired for the Army from Clarence Towarak, Sr. in 1963. The site was disposed in 1967 and vacated and restored with all real and personal property removed. Current owner of the site is the Estate of Clarence Towarak, Sr.

REF: USACE Site# F10AK0352

### **Unalakleet Recreation Annex**

LOCATION: LAT 63.5500 N; LON 160.3200 W. This site is located on the North River near Unalakleet.

DESCRIPTION: The Unalakleet Recreation Annex, or North River Recreation Site, was acquired by the Air Force in 1964 for a recreation camp. It was used as a fishing camp by personnel from the Unalakleet Air Force facilities. An FAA building was used as a recreation building and temporary structures were built at the site. The camp was closed in 1969.

CONTAMINATION/CLEAN-UP: No hazards reported.

REF: USACE Site# F10AK0596

### **Unalakleet Recreation Fish Camp**

LOCATION: LAT 63.5200 N; LON 160.4000 W. Located on the left bank of the Unalakleet River, at the mouth of the South River, four miles east of Unalakleet. Also known as South River Recreation Site (Site# F10AK0352). See above.

REF: USACE Site# F10AK0597

### **Air Force Cache #18**

LOCATION: LAT 64.2100 N; LON 158.1700 W. The site appears to be between Turotlurna Slough and the Khotol River, approximately 50 miles southwest of Galena and northeast of Unalakleet.

DESCRIPTION: Cache 18 was obtained for the Air Force from BLM. Caches were to be 10' by 12', painted bright orange, and the vegetation cleared in a 100' radius for aerial visibility. Land was relinquished to BLM October 1961.

CONTAMINANTS/CLEANUP: USACE Contractor was hired to survey cache sites in 1988. Through correspondence with the owner, the contractor determined that there was no evidence of hazardous/toxic waste, ordnance, or unsafe debris.

REF: USACE Site# F10AK0415

### **Air Force Cache #21**

LOCATION: LAT 63.2300 N; LON 159.200 W. Located approximately 120 miles southwest of Galena, 2 miles east of Blackburn Island in the Yukon River, and confined on three sides by Papa Willie Creek. Site is within the Innoko National Wildlife Refuge.

DESCRIPTION: Cache 21 was obtained for the Air Force from BLM in 1957. Caches were to be 10' by 12', painted bright orange, and the vegetation cleared in a 100' radius for aerial visibility. Land was relinquished to BLM in Oct. 1961. Current owner is the U.S. Fish and Wildlife Service.

CONTAMINANTS/CLEAN-UP: The contractor for the Corps corresponded with the Fish & Wildlife Service and determined there was no evidence of hazardous/toxic waste, ordnance, or unsafe debris.

REF: USACE Site # 10AK0696

## **Wales**

### **Cape Prince of Wales Aircraft Warning Station**

LOCATION: LAT 65.59638 N; LON 168.0847 W. Site is located at the western tip of the Seward Peninsula, adjacent to the village of Wales.

DESCRIPTION: This 18,500 acre site was withdrawn for military use in 1942 and encompasses all Cape land west of 167.57 W and is the western most end of the Continental Divide. It was used by the Army as a classified Aircraft Warning Station for the Nome Area Defense Region during World War II. In May 1943 the site was declared excess. The contaminants and debris were located in three main locations on the east side of the city of Wales.

CONTAMINANTS/CLEAN-UP: Contaminants included more than 9,000 barrels and 5 transformers in 11 areas at 4 sites. 25 barrels contained products of 1,025 gallons fuel oil and transformers (3 tested PCB positive) with about 8 gallons of transformer contents. Records indicate that 4,150 cubic yards of soil was contaminated by diesel fuel kerosene, and volatile organics.

Clean-up consisted of removal of about 35,000 drums, 26 of which contained product, and removal of 140 tons of unsafe debris, including Quonset huts, a

radio tower, vehicles, storage tanks, compressed gas cylinders and eight transformers. One drum pile was buried in the sand at an old landfill area adjacent to the north side of the cemetery; five layers of drums were removed, and two layers left in place, because they were filled with silt, frozen into the permafrost, and no contamination was found. A permitted landfill was constructed for disposal of drums and debris. The landfill is located north and east of the North Beach boundary and is constructed on an abandoned military runway. All debris except transformers went into the landfill; transformers were shipped off-site for disposal. Contaminants of concern at this site were DROs and PCBs. DROs were found at levels below Method 2 cleanup levels; the maximum concentration was 970 mg/kg, which is below Method 2 cleanup level of 12,500 mg/kg. PCB contaminated soil (1.8 cubic yards) was excavated and shipped off-site for disposal; maximum concentration remaining on site was 0.13 mg/kg. This site was closed under Method 2, Arctic Zone. The pathways of exposure were soil inhalation and soil ingestion. Closure of this site was approved in February 2002.

Surface water in Village Creek was sampled and no contamination was found. Currently, water in Wales is derived from Gilbert Creek during the summer, and residents haul treated water from a 500,000-gal. storage tank at the washeteria. Some villagers use untreated water from Village Creek. Cleanup occurred in and adjacent to village of Wales in areas referred to as North Beach, Old village Landfill, Cemetery, School Building, Airport Windsock, Village Creek and Headquarters areas. The closest site is within 600 feet of the village.

REF: USACE Site# F10Ak0074  
ADEC File# 540.38.001

### **Cape Prince of Wales Naval Field Station**

LOCATION: LAT 65.616044 N; LON 168.083611 W. The site is located 500-700' from the Bering Strait.

DESCRIPTION: This site is the 5 acre component of the Cape Prince of Wales former Aircraft Warning Station which is the responsibility of the Navy. Clean-up of Aircraft Warning Station was conducted separate from Naval Field Station by USACE. Land is owned by Wales Native Corporation. This facility was a field station that was part of the Arctic Submarine Laboratory, a research facility of the U.S. Navy's Electronics Laboratory in San Diego, California. Research was focused on scientific exploration of the Arctic Basin and particularly providing the capability to operate attack submarines in the Arctic under the ice canopy. The Station's purpose was to conduct arctic experiments and gather weather information. Habitat is beach with wet tundra. The drinking water for the station is from springs located upgradient of the village of Wales. There are no successful wells in the area. There are three personnel at site; 80% of Wales' residents live within ¼ mile radius and the school is ¼ mile away. This site is in the "Installation Restoration Program" (IRP site).

CONTAMINANTS/CLEAN-UP: Limited sampling in 1989 identified the site for additional investigation. Drums and transformers with PCBs, pesticides, metals and petroleum products were left on site. There are more than 600 abandoned

drums. Sampling in 1989 revealed soil sample 14 ppb beta-BHC, 140 ppm kerosene and 800 ppm diesel. Aroclor 1260 and 1254 was found in transformers. No record of where water and soil samples were collected. It was noted that there was a potential migration to Bering Strait and shallow ground water. Dioxin contamination was detected (three transformer burn areas). The pesticide shop in building 4 was the headquarters and storage area for the pest control program at NAVMAG from 1939 until 1976. Pesticide compounds were stored in a 150-gallon above ground tank immediately west of building 4. Pesticides were mixed in this area, and mobile or stationary tanks for pesticide application were cleaned and rinsed in an area west of building 4.

Clean-up finally occurred in summer 1996 when, additional characterization of site wastes was performed, and wastes were transported off site for disposal. Wastes removed consisted of 12 gallons of chlorodifluoromethane, 336 gallons of acids and flammable liquids, 30 pounds of dry metal salts and photo processing chemicals, 15 gallons of dry metal salts, 12 gallons of waste mercury, 990 gallons of used generator oil and diesel/water mix, 27 pounds of sodium hydroxide, 440 gallons of used solvent, 600 pounds of various non-regulated material, 450 pounds of used personal protective equipment, and 9,250 pounds of scrap metal, empty containers, and asbestos.

In 1997 representatives from Wales Native Corporation provided information on subsistence uses near the site to DEC and Navy representatives. Data gaps included petroleum spill areas and buried debris in dunes and beach area. Further clean up of petroleum contaminated soil was identified for excavation and to be treated on-site with HAVE (hot air vapor extraction) system. The work plan called for using the treated soil to backfill the excavated areas. Soil with methylene chloride was to be excavated and shipped off-site for disposal (2003).

Site cleanup conducted in 1999 apparently met criteria for site closure which was approved on 7/14/03 by ADEC. Specific cleanup actions included: excavation and treatment by hot air vapor extraction of 1883 cubic yards of petroleum contaminated soil from diesel tank area, biocell, burn area, north and south beach areas, and fuel tank areas behind BOQ and Resident Building; 28 tons of petroleum soil was excavated and shipped off site due to lack of time and space for treatment at the site; confirmation sampling for methylene chloride did not locate this contaminant and it is believed to have evaporated from the soil between discovery and cleanup actions; 29 empty drums and 2 drums with fluid were excavated from sand dunes and properly disposed off site; batteries and battery parts were removed from drum area and garage area. In addition several buildings were demolished and demolition debris and other site debris were disposed. Non-hazardous wood debris was burned on-site; other materials were properly disposed off-site. This clean-up encompassed the entire facility, including three specific areas formerly identified as sites: Burn Area, Storage Area, and Drum Disposal Area, and other areas of contamination not separately identified as sites, such as under the fuel tanks behind the BOQ and resident building.

In July, 2003, cleanup levels were approved for DRO and RRO based on Method 2 Arctic Zone cleanup levels: 12,500 mg/kg DRO, 13,700 mg/kg RRO, with a cleanup level of 1000 mg/kg for DRO and RRO in surface soil (to depth of 1 foot)

for aesthetic purposes. Cleanup level for methylene chloride is risk-based (method 4): 144 mg/kg.

REF: ADEC File# 540.38.002 –Naval Field Station Wales  
ADEC File# 540.38.002 – Cape Prince of Wales Burn Area  
ADEC File# 540.38.002- Cape Prince of Wales Drum Disposal  
ADEC File# 540.38.002 Cape Prince of Wales Storage Area  
EPA ID # AK9170000203

### **Tin City Aircraft Control and Warning Station and LRRS**

LOCATION: LAT 65.5586 N; LON 167.9481 W. Tin City Long Range Radar System (LRRS) is near the end of the Seward Peninsula and adjacent to the Alaska Maritime National Wildlife Refuge.

DESCRIPTION: The site, property of the U.S. Air Force, is five miles southeast of Wales. A new road connecting Tin City and Wales was recently completed. The installation consists of an upper camp and lower camp. The lower camp is located ½ mile west of the Tin City Mine site at the mouth of Cape Creek. The AC&W at Tin City was unique as a single three-story, concrete-composite operations building. This station, like the other 4 coastal surveillance sites, featured split camps with the support camp located at the foot of the mountain and the radar sited at the top. A tramway connects the operations area to the mountain-top radars. Tin City became operational in 1953 and the original high frequency radio communication was replaced in 1958 by a White Alice Communications System. The AC&W system was a main advanced radar warning system for the detection of enemy aircraft. The system has been improved over the years and remains in service as the Long Range Radar System.

CONTAMINANTS/CLEAN-UP: On 8/19/91 ADEC was informed of a petroleum release from an underground storage tank system. Three tanks were removed 09/07/91: 6000 gallon diesel, 6000 gallon diesel, and 1000 gallon diesel in front of Building 76-2000. Extensive fuel contamination was as high as 17,000 ppm detected. Soils were stockpiled and the extent of the contamination was undetermined. A DEC report in 1993 indicated extensive fuel contamination at the site of the 3 underground storage tank (UST) removals. The tanks were removed but additional characterization was called for by DEC and reportedly would be conducted with IRP funding. No DEC records were filed after March, 1996.

REF: ADEC File# 475.26.003

### **Tin City Air Force Station**

LOCATION: LAT 65.5586N; LON 167.9481 W. Site is five miles SE of Wales.

DESCRIPTION: Site operated by the Air Force since 1953 and still active. This is an active site in the Installation Restoration Program (IRP). *Tin City White Alice Site is not included in this file because it was transferred from the Air Force to the Navy in 1978.*

Closure/no further action status 1993

SS01 Waste Accumulation Area, Lower Camp – Liquid waste  
SD04 Runway oiling, Lower Camp – POL, solvents  
SS07 Incinerator Pipeline Lower Camp/Spill/Leak #2 – Diesel  
DP08 Dump #1, Upper Camp – POL, refuse, scrap  
LF09 Dump #2, Lower Camp – POL, refuse, scrap  
LF10 Mid-mountain Dump – Debris

Installation Restoration Program (IRP)

DP11 Dump #3 at Beach – Abandoned drums, machinery  
ST 12 Four USTs - Diesel  
SS13 Spill/Leak #3 near Building 110 – PCB, POL  
LF02 Third-Party Landfill - Refuse  
AOC1 Building 124 Fuel Pump House/Leak No. 5 - POL

**CONTAMINANTS/CLEAN-UP:** First reported spills on site in 1982, when eight sites were identified with potential contamination. Water supply on site is upgradient or away from potentially hazardous sites. Possible contaminants include unknown quantities of petroleum products, PCBs, heavy metals, solvents, acids, bases, inorganic chemicals. PCB contaminated soil was removed in 1984 and taken to Elmendorf AFB. In 1994 ADEC and Air Force investigation concentrated on Airstrip Area, Lower Tramway Building and Old Transformer Pad. In 2000, eleven different sites were considered for cleanup. At six sites, no further action was proposed because contaminants found were below Method 2 levels. At the Top camp in September 2000, soil was excavated to achieve an industrial level PCB clean-up of 10 ppm at the surface. Residential PCB level of 1 ppm are proposed at the old power plant. In two areas close to the beach, soil was excavated to 10x the Method 2 levels for DRO. As of April 2005, DEC records indicated that DP011 (Dump #3 at beach) and SS014 (spill/leak # 4 near building 110) still needed to be sampled before the sites could be closed.

REF: ADEC File # 475.38.011  
EPA ID #AK3572728712

**Tin City White Alice Site**

**LOCATION:** LAT 65.5586 N; LON 167.9481 W. Located 7000'NE of Tin City Airport and 1 mile from Tin City AFS. Surface water drainage from site flows to Cape Creek.

**DESCRIPTION:** Construction began in 1957 and the site was turned over to the Air Force in 1958. Land was transferred to the Navy in 1978. The composite building was 4960 sq.ft. and there were two POL storage tanks totaling 950 barrels capacity. Other facilities were available at the AC&W site, 1.5 miles away. Housing was at the Air Force base 2.5 miles southeast. The White Alice Site was deactivated in 1975 and replaced with an Alascom-owned satellite earth terminal. In 1983, the Navy started operations at the White Alice facility and in 1984, a Minimally Attended Radar (MAR) unit was installed.

CONTAMINANTS/CLEAN-UP: Navy preliminary assessment identified potential contaminants, PCBs and petroleum hydrocarbons in the soil. PCBs were found in concrete floor of transformer room in transmitter building (Building 1001) and in surface soils outside. In 1980, there was an 850-gallon diesel fuel spill. Asbestos containing material was detected in all buildings. Some cleanup of this White Alice site occurred sometime during 1984. Four abandoned fuel tanks were drained. Generally 20-25 tons of solid waste and 40-170 barrels of PCB contaminated soils were removed. PCB contaminated soil was taken to Elmendorf AFB. In 1997 EPA did a Preliminary Assessment but the HRS score (Hazard Ranking System) did not rank on the National Priorities List so there was no further action under EPA. Further cleanup by the Navy occurred in 1999 with a focus on the bulk fuel tank area, piping, garage and soil in the vicinity of the composite building. Later it was determined that there should be an investigation of nearby drainages for off-site migration. PCB-contaminated soil and concrete was removed, and petroleum-contaminated soil was excavated and treated from bulk fuel area. In November, 2005 DEC approved the final 1999 cleanup as meeting requirements both for a risk-based cleanup level for PCBs to protect ecological receptors, current method 2 cleanup level of 1 mg/kg PCBs for future residential, and maximum allowable levels for diesel range and benzo(a)pyrene.

REF: ADEC File #475.38.012  
EPA File #AK0001626662

### **Alaska Air National Guard Wales Federal Scout Amory**

LOCATION: LAT 65.616667N; LON 168.08333 W.

DESCRIPTION: Site is on road to Wales Airstrip.

CONTAMINANTS/CLEAN-UP: Concern is for petroleum contamination in soil. DRO reported in two surface samples at levels ranging from 6,200 to 8,100 mg/kg. An investigation and sampling was conducted by Hart Crowser in 1999. Site was reranked by DEC as a medium priority for clean-up. No further action reported in files.

REF: ADEC File# 540.38.003

### **Air Force Cache #22**

LOCATION: LAT 65.4200 N; LON 167.2800 W. Site is located approximately 100 miles northwest of Nome and 18 miles northeast of Wales, and 3 miles south of the confluence of the Mint River and Lopp Lagoon.

DESCRIPTION: The land for Cache 22 was transferred to the Air Force from BLM in September 1957. A total of 23 caches were to be installed across Alaska for survival of military and civilian personnel. Caches were to be 10" by 12", painted bright orange, and the vegetation cleared in a 100' radius for aerial visibility. Land was relinquished back to BLM October 1961.

CONTAMINANTS/CLEAN-UP: The Corps contractor, through correspondence with the land owner in 1988, could find no evidence of hazardous/toxic waste, ordnance, or unsafe debris.

REF: USACE Site#F10AK0419

### **White Mountain**

#### **White Mountain Drum Disposal Area**

LOCATION: LAT 64.68333 N; LON 163.4 W. White Mountain is located on the Fish River six miles northwest of Golovin Lagoon, a northern embayment of Norton Sound.

DESCRIPTION: The drum area is on the northeast edge of the city, approximately 800 feet from the Fish River. It is a four acre drum dump with diesel contamination. Alaska Army National Guard determined that the drum disposal area is not located within the former White Mountain Alaska National Guard property boundary. In 2004 the Corps of Engineers determined that the site is not eligible for cleanup under the FUDS program. Area residents recollected that the drums are from past operation of the BIA school between 1948 and 1955. The military may have supplied fuel to BIA school under the Military Sea Transport Service (MSTS) Mona Lisa operation. Landowner is White Mountain Native Corporation.

CONTAMINANTS/CLEAN-UP: Diesel contamination from 1000+ abandoned drums and minor petroleum contamination exists. Drums contain military markings. However, a USAED Alaska document states that fuel in drums for the BIA school was delivered by the U.S. Department of Defense from 1941- to 1950. Approximately 75% of the drums were found to be empty and 10-20 contained 1-2" of residual liquid. DEC informed BIA that BIA appears to be responsible for the improperly disposed of drums, the potential for residue to leak and the potential physical hazards posed by the solid waste. As of 11/2004 no action had been taken.

REF: USACE Site# F10AK 0812  
ADEC File# 580.38.002

### **Nome, Solomon, Council, Mary's Igloo, King Island**

#### **Nome Area Defense Region (10 Sites)**

LOCATION: LAT64.3038 N; LON 165.2944 W. There are 10 formally acquired areas within 5 miles of Nome.

DESCRIPTION: The site originally consisted of nine military areas (Nome Garrison Project) and approximately 40,000 troops were stationed in Nome at the peak of WWII activity, during the Russian-American lend-lease program. The WWII airfield at Nome included three runways – two runways at the main field and a satellite field at Moonlight Springs. The main airfield was named Marks Field and is now the Nome Airport. The State of Alaska, DOT, has removed the



WWII structures which had also served during the Cold War. The former military base is no longer identifiable. In addition, communications stations, submarine patrol airfields and logistics centers were based in Nome.

**CONTAMINANTS/CLEAN-UP:** These individual areas had unsafe structures and scattered debris, electrical transformers, and POLs, containers and related soil contamination that posed a hazard to the public and the environment. From 1994 to 1996 the Department of Defense conducted a massive cleanup effort at these sites. Several of these sites were officially closed in 2002. Additional clean-up data was reviewed in 2005 and a plan is being developed that will result in closure at the remaining sites. Additional sampling is scheduled to be followed up with closure or a removal action.

Site 1 Nome Spit: 300 empty drums containing petroleum residue on east side beach of Snake River mouth is less than ½ mile from Nome. About 1,245 cubic yards of contaminated soil (one sample exceeded level of concern for total PNAs) were removed. Site was closed in February, 2002 under Method 2. Pathways of exposure were soil ingestion and soil inhalation. Contaminants of concern were petroleum products. Site cleanup consisted of removal of approximately 413 55-gallon drums and drum fragments. Petroleum contamination detected during a 1989 investigation could not be found, and no contamination was found remaining at this site.

Site 2 Nome Field Site "R"/DERP/ Site 3 O: Near Center Creek Road in Nome. 11,850 cubic yards of debris and ammo belts, caps/detonators were found on site. Vegetation is largely dense brush with some tundra. DEC determined in 1999 that site can be closed as meeting Method 2 cleanup levels.

Nome Field Site "R"/DERP/Site 3 P: Near Center Creek Road in Nome. 1,306 empty drums – 136 contain about 570 gallons liquid waste (heavy tar residue) and ¾ of drums have a viscous asphalt-like material as well as some soil contamination. Biovent in operation in 1995 and 1996. Closeout report delivered in 1999 and an updated Closeout Report was filed in Nov. 2004.

Nome Prison Site "A"/DERP/Site 4: 300 empty drums, 38 drums containing oil/grease, coal tar and heavy fuel oil and tar-like solids, 20-30 batteries contaminated soil and debris. Cleanup occurred in 1994. There is a report on remediation of stockpiled soils from 1999. Closeout report prepared in 1999 and site can be closed as meeting Method 2 cleanup levels and an updated Closeout Report was filed in 2004 with DEC.

Nome ADOT&PF Yard Site "J"/ DERP/Site 5: Multiple contaminants documented from 684 empty drums containing liquid waste POL and contaminated soil(POL), wood and metal debris, and contaminated pond. There is a 600 foot radius sector surrounded by private residences. This is the only site that the Corps considers may have groundwater issues. Hundreds of contaminated areas were identified and classified by the Corps as no action, below clean-up levels. Some areas ponded from thermokarsting due to presence of barrels are being remediated passively, anaerobically with addition of nitrogen. DEC received updated Closure Report in January, 2004.

Nome Tank Site "E"/DERP/Site 6: Two tanks at site, one is northeast of the intersection of Nome/Teller Road and Anvil Creek Road and the other is north of Nome/Teller Road and Anvil Creek Road. Main contamination is hydrocarbon concentration in soil exceeding state standard (0.2ppm) and trichlorofluoromethane level of 18 ppb also in soil. Carbon disulfide detected in groundwater. In 1999 a closeout report revealed that contamination was still present in soil under tank and possibly in groundwater. No closing or other action reported since 1999.

Nome Airport Site "U"/DERP/Site 7: Main contamination is liquid waste from 948 empty drums and contaminated soil. A draft closeout report determined that site could be closed after confirming residual contamination had been mixed into soil from mining activities. No further action reported in DEC files.

Nome Area Site # 16, Hospital (DERP): Site is about 8 miles north of Nome. Moonlight Springs, the water supply for City of Nome, is contained within site. Site contained wood and concrete debris and underground piping. Approximately 600 drums, some empty and some with POL product were on site. There is an old asphalt manufacturing facility on site and asbestos containing materials were present. Site cleaned up in 1996 under work plans for whole Nome project. Clean up removed empty and POL bearing drums and removal or remediation of POL contaminated soils. A site visit in 1996 determined that no drums or spills were found in immediate vicinity of Moonlight Springs. Draft closeout report prepared in 1999. All available data shows that site meets Method 2 cleanup levels. No further action reported in DEC files.

Hotel Gulch Nome Area Site # 17 DERP: Site is about 4 miles north of Nome and was a former mine and contains tailing piles and dredge ponds. Domestic wells are present in the area. In 1996 the site was included in the Nome area FUDS project and cleaned up under work plans for the whole project. Clean-up consisted of removal of empty and POL-bearing drums, and removal or remediation of POL contaminated soils. In 2001 ADEC determined that site could be closed as meeting Method 2 cleanup levels and the site was closed in 2002. Site cleanup consisted of removal of 180 55-gallon drums, demolition and removal of maintenance building, removal of radio battery debris and a small volume of soil. Following cleanup the maximum concentration of cadmium at the battery removal area was 14 mg/kg, which is below the Method 2 cleanup level of 100 mg/kg. Following removal of the soil there was still an area that had 41,000mg/kg total petroleum hydrocarbons.

Center Creed Rd./DERP/Area Site 18. Site is 174 acres located 2 miles NNW of downtown Nome on Center Creek Road. Used as Army Air Corps support area during WWII. Mine tailings and numerous dredge ponds present. Domestic wells present in the area. Contamination consisted of approximately 600 scattered drums and two visibly POL contaminated soil areas. Clean-up consisted of removal of empty and POL-bearing drums and removal of petroleum contaminated soil treated off-site by hot air vapor extraction. Site closure was approved under Method 2, under-40-inch zone in 2002.

Settling Pond, Nome Site # 19, DERP: This 80-acre site is located about 2.5 miles NNE of Nome. It contains mine tailings with a large dredge pond from past

mining operations. Closure of this site was approved in 2002 under Method 2. Site clean-up consisted of removal of about 11,000 empty 55-gallon drums and removal of associated petroleum-contaminated soil from various drum areas. Many of the drums were removed from a large settling pond. Soil was treated off-site by hot air vapor extraction. Following cleanup, the maximum concentration of total petroleum hydrocarbons remaining on site was 11,000 mg/kg at one drum area and 9400 at another drum area, which are approximately at the Method 2 cleanup levels for DROs (10,250 mg/kg) or residual range organics (10,000 mg/kg). Traces of some semi-volatile compounds were detected at levels much below Method 2 cleanup level.

Icy View, Nome Area Site #20 DERP: Site is adjacent to Icy View subdivision and has a creek running through it. Contamination consisted of 250 drums, some with POL product, numerous Quonset hut frames, asbestos materials, wood debris and concrete pads. One pad had lubrication pit area. POL and lead contamination was found in soils and on edges of pad. Cleanup apparently occurred in 1994-1996. DEC received updated Closeout report in 2004 but no further action has occurred.

Dexter Creek Nome Area Site #21 DERP: This 384 acre site is located about 6 miles NNE of Nome on both sides of Dexter Bypass Road. Domestic wells are present in the area. Contamination consisted of 450 drums, some with POL product, and POL contaminated soil visually identified at two location. Closure of this site was approved in February, 2002 under Method 2, under 40 inch zone. Pathways of exposure were soil inhalation and soil ingestion. Clean-up consisted of removal of 396 empty drums, 47 product-bearing drums, and removal of a small volume of soil. Soil was treated off-site by hot air vapor extraction. Additionally, 1.5 cubic yards of tar-like soil were excavated and disposed off-site. Following cleanup, the maximum contamination left on site was 9800 mg/kg total petroleum hydrocarbons which is below the Method 2 cleanup levels for either diesel or RROs (10,250 mg/kg and 10,000 mg/kg, respectively).

Sledge Island, Nome Site #22: Site is on Sledge Island, about 24 miles west of Nome. Island is part of Alaska Maritime National Wildlife Refuge. It is a bird nesting area. Contamination consisted of two POL product bearing drums and POL contaminated soil. Closure of this site was approved in March 2000 under Method 2, under 40 inch zone. Site cleanup consisted of removal of two drums that contained some petroleum product and removal of product from underneath the drums.

Nome New Power Plant: The site was originally part of the Army's Marks Field. In 1970, Alaska DOT acquired the property and converted a munitions storage building into a storage and maintenance facility. The site is proposed for the Nome Power Plant location which is approximately 200 feet southwest of the existing Nome Joint Utility System power plant. DRO contamination was found in the soil that ranged up to 418 ppm and in the groundwater that ranged up to 4.87 ppm. In 2004 DEC approved a Work Plan for constructing the new power plant and water and sewer line which includes soil remediation on site and within the utilidor project.

Former West Nome Tank Farm: The tank farm was operated from 1944 to 1991. The Air Force, Chevron Texaco and Crowley Maritime Corporation have individually operated the tank farm. The USCG is the current property owner. Extensive petroleum hydrocarbon contamination of soils and groundwater was found at the former tank farm. Area has history spill with limited cleanup. One monitoring well out of several installed by owner in 1980's has shown liquid product. PCBs and pesticides were also detected at low levels. Primary contaminants are DROs and benzene. In 1988 an investigation for the Air Force revealed samples that included TPH, VOCs and organochlorine pesticides for groundwater. TPH values as high as 16,000 ppm were found in soils and 14 ppm TPH was found in groundwater. 1988 report was unclear about the results on detection limits greater than MCLS for Arachlor 1254 and Lindane.

Low levels of DROs and benzene have been detected in Snake River sediments. Contamination has migrated underground on the property across Port Road. A pipeline was removed in April 1994; but possible contamination along the underground portion of the pipeline has not been evaluated. Epidemiologists have suggested that people eating Nome Harbor fish should rely on common sense and avoid fish from areas that are obviously impacted by oil.

Preliminary results of groundwater sampling and analysis conducted in summer 2003 suggested that free product is migrating to river (13.6 mg/L 20 feet away from river bank); contamination migrating off-site onto Alaska Gold property. Following this report, Chevron Texaco agreed to take the lead on sampling Snake River sediment. Purpose of sediment sampling was to justify limiting treatment to Air Force property instead of performing off-site treatment near river. There was concern that a new Nome water line will become contaminated. Clean up in 2004 called for contaminated soils to be either directed to the landfill, back into the excavation or stockpiled for treatment. One truckload of soil was mistakenly sent to the landfill. It had a preliminary field screening of 32,000 ppm DRO. Contaminated groundwater that accumulated during dewatering exceeded permit limits for the wastewater treatment facility on several occasions.

Nome Joint Utilities (NJU) is installing a water line in an area at the tank farm with up to a foot of free product. The Chevron Texaco consultant is managing contaminated soil and groundwater during construction. In 2006, they will carry out performance testing of the free-product collection system and will conduct another round of groundwater monitoring after NJU finishes construction. Also in 2006, Chevron expects to begin treatment for 10,000+ cubic yards of contaminated soil in summer 2006.

REF: USACE: Site#F10AK0052  
ADEC File #400.38.001F  
ADEC File #400.38.001G  
ADEC File #400.38.001I  
ADEC File #400.38.001J  
ADEC File #400.38.001K  
ADEC File #400.38.001L  
ADEC File #400.38.002  
ADEC File #400.38.013  
ADEC File #400.38.014

ADEC File #400.38.015  
ADEC File #400.38.017  
ADEC File #400.38.018  
ADEC File #400.38.019  
ADEC File #400.38.031

### **Cape Nome ACS Receiver Site**

LOCATION: LAT 64.2600 N; LON 164.5500 W. This site is located approximately 13 miles southeast of Nome.

DESCRIPTION: The 3,132 acre site was acquired from the Civil Aeronautics Administration in 1944. During WWII, the site was intended to avert a Japanese attack and provided a communications station for the Russian-American aircraft Lend/Lease Program. It was relinquished to the CAA in 1954 and is now owned by the Sitnasuak Native Corporation. Site is lowland tundra with few ponds.

CONTAMINANTS/CLEAN-UP: South of the southern most concrete building foundation is a 20 x 25 foot area of sunken ground stained black with odor of oil, vegetation stressed. In 2002 DEC and the Corps signed a record of decision closing this site under Method 2, under 40-inch zone. Pathways of exposure were determined to be soil inhalation and soil ingestion. Clean-up involved removal of 121 drums, Quonset hut frames, radio antennas, communications poles, lumber concrete pads, and miscellaneous debris. Soil at one petroleum-contaminated soil was removed. Disturbed areas were revegetated. DROs were the only contaminant requiring cleanup and final levels were 1910 mg/kg at biovent area, and 567 mg/kg at soil removal area.

REF: USACE Site#F10AK0293  
ADEC File#400.38.00IM

### **Davidson's Landing Emergency Airfield**

LOCATION: LAT 65.1422 N; LON 165.1623 W. Davidson's Landing is located on the Kaviruk River, 41 air miles North of Nome and 32 miles east of Teller.

DESCRIPTION: This 80 acre site was developed as an emergency satellite airfield and fuel cache during WW II, to be used during the Russian-American Lend Lease Program. The site was relinquished to BLM in 1949. A large portion of the site is owned by Mary's Igloo Native Corporation of Teller. The site is primarily flat tundra, which becomes a wetland during the summer.

CONTAMINANTS/CLEAN-UP: Contaminants of concern include total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), diesel range organics (DRO), total metals and battery acid. The Preliminary Assessment Report (Ecology and Environment, Inc. 1996) reported that major organic contaminants detected during the sampling included fuel compounds above levels of concern. PAHs, chromium and lead were also detected above levels of concern in soil and sediment samples. Chromium and lead were also detected in water samples. Both arsenic and barium exceeded levels of concern in sediment samples.

According to the FUDS Site Summary of 1996, the remains at the site consisted of three wood-frame buildings, four Quonset huts, three concrete foundations, over 1,000 petroleum, oil, and lubricant barrels, metal pipe and a ton of miscellaneous iron. A removal action took place at this site from 1994 to 1996. The DEC report lists: 2,100 empty drums, 3 full grease drums, and partial full 5-gallon oil cans for a total of 175 gallons of POL. 1,000 cubic yards of soil contaminated with diesel fuel, bunker oil and volatile organics near empty drums. Cleanup was conducted in 1994-1995, including on-site treatment of petroleum-contaminated soil and demolition/debris removal. Elevated petroleum remained after this action, and unknown amount of buried debris was reported throughout the site. In 1996 a DEC file notes that there were significant problems with logistics of getting to the site and that there were safety issues in working adjacent to a slough where barrels and contamination were found.

In the summer of 2000, approximately 15-cubic yards of petroleum-contaminated soil was excavated and removed from a former biovent location at Davidson's Landing. The biovent, located adjacent to the slough off of the Kaviruk River, was in operation during a cleanup action during 1995 through 1996 and was designated as Biovent #1. Elevated levels of diesel and DROS remained in Biovent #1 soil at the end of 1996 cleanup activities. During the 2000 removal action, the soil was excavated to permafrost, a depth of three to four feet, and transported off site for treatment and disposal. Confirmation sampling showed maximum levels of 23 mg/kg DROs at the bottom of the excavation. Benzene, toluene, ethylbenzene, xylenes, and semivolatile organic compounds were not detected. Based on this information, it was determined that no further cleanup is required at Biovent #1. As of December 2005, the Corps intends to close out the site as soon as funding is available.

REF: USACE Site# F10AK0086  
ADEC File# 475.38.006  
EPA ID# AK0000262097

### **Kougarok Air Force Base**

LOCATION: LAT 65.2200 N; LON 164.4100 W. Located approximately 60 miles north of Nome.

DESCRIPTION: The site was used by the Army Air Force as a satellite field for Marks Air Force Base in Nome. The airfield and its emergency fuel cache were designed to support the Russian-American Aircraft Lend Lease Program. A 1,500-foot by 50-foot airstrip and 10 small buildings were constructed on the site. The land was relinquished to BLM in 1949.

CONTAMINANTS/CLEAN-UP: A 10-acre stretch along the Kougarok access road contained approximately 400 55-gallon POL drums, few with product. No contaminants in excess of regulatory limits were detected in a preliminary soil sample obtained next to the drums. This site was closed in February 2002. Cleanup involved removal of 586 55-gallon drums, and sampling of soil under drum piles. Most drums were empty. No soil cleanup was required because contamination did not exceed Method 1 cleanup levels. Maximum concentration of DRO remaining on site is 94mg/kg; maximum TPH is 320 mg/kg.

REF: USACE Site# F10AK0142  
ADEC File# 401.38.001

### **Kougarok Railroad**

LOCATION: LAT 65.000 N; LON 165.0000 W. The Kougarok Railroad, also known as the Seward Peninsula Railroad, was an 86 mile long narrow gauge line that began in Nome and ended at Shelton on the Kuzitrin River.

DESCRIPTION: The Kougarok Railroad was constructed in 1906 and operated commercially for about 5 years. After 1910, it had several owners before being purchased by the Territory of Alaska in 1921. During WW II the Army built an auxiliary airfield 4.5 miles north of Nome and took over operations. The Army used it to freight materials to the Moonlight Springs Airfield. Portions of the track were torn up by the Army for its airfield and by the Alaska Road Commission in 1955 for part of a highway roadbed.

CONTAMINANTS/CLEAN-UP: Area covered by the railroad is owned by a multitude of parties, including Nome, BLM and the Sitnasuak Native Corporation. The site is part of the Nome Area Defense Region but there are no records of contamination or clean-up.

REF: USACE#F10AK0448

### **Lava Lake Weather Station**

LOCATION: LAT 65.3600 N LON 163.5000 W. Site is near the center of Seward Peninsula, on the east shore of Lava Lake.

DESCRIPTION: A weather station was established at Lava Lake in April 1945 to supply weather data for pilots on the Seward Peninsula, especially Lend-Lease flights. The station was only open from April – November 1945 and was manned by four soldiers. A small airfield was constructed at the station.

CONTAMINATION/CLEAN-UP Debris consists of two Quonset hut frames, two standing wood buildings, one collapsed building, and other scattered items. The 1.1 acre site is in the Bering Land Bridge National Preserve under the jurisdiction of the National Park Service (DoI).

REF: USACE Site#F10AK0061

### **Sledge Island Shipwreck**

LOCATION: LAT 64.2900 N; LON 166.0900 W. Sledge Island is located approximately 25 miles west of Nome in Norton Sound.

DESCRIPTION: Residents of Nome reported a shipwreck leaking oil 10 miles east of the island in 1984. The wreck was alleged to be a WWII Army transport. Early reports show that the wreck was indicated on charts, but no such indication is found now on 1990 revisions of the navigational charts.

CONTAMINATION/CLEAN-UP: Two site visits and an aerial inspection from a helicopter failed to locate a shipwreck or evidence of leaking oil. The water at the site did not have a sheen or evidence of POL contamination.

REF: USACE Site#F10AK0614

### **Cape Rodney Observation Post**

LOCATION: LAT 64.3800 N; LON 166.23 W. Cape Rodney is located on the north coast of Norton Sound approximately 25 miles west of Nome.

DESCRIPTION: Cape Rodney was never formally acquired from the public domain and no information is available on its acreage or exact location. The site was used by the Army Air Force during WWII as a satellite observation post to Marks Field at Nome. The site was abandoned with no formal disposal action and remained under the jurisdiction of BLM. The site was conveyed to the Sitnasuak Native Corporation.

CONTAMINANTS/CLEAN-UP: In 1986 the site consisted of 12 Quonset hut frames, 1 collapsed wooden building, 32 POL drums and miscellaneous wood and debris. The findings of the 1986 investigation determined that POL drums and BD/DR material existed on the site but soil found in the drums did not contain hazardous material. Supposedly Cape Rodney was included in the demolition plan of James M Montgomery and Removal Action contract of 1989.

REF: USACE Site#F10AK0294

### **Anvil Mountain Aircraft Warning Station**

LOCATION: LAT 64.30 N; LON 165.25 W. Anvil Mountain AWS is situated on top of Anvil Mountain seven miles north of Nome.

DESCRIPTION: Site was closed by the Air Force in 1957. Approximately 10 acres with surface debris consisting of concrete pads and piers, steel rock anchors, steel pip, Quonset hut frames and components, 55 gallon drums, guy wire, heavy equipment engines, insulation materials, wood debris, cans and partially buried landfill materials.

CONTAMINANTS/CLEAN-UP: Local residents state remaining debris was bulldozed over the edge of the mountain or buried at site.

REF: USACE Site# F10AK1018 combined with Anvil Mtn. WAS report

### **Anvil Mountain White Alice Site**

LOCATION: LAT 64.563917 N; LON 165.37589 W. Located 6.5 miles north of Nome.

DESCRIPTION: Anvil Mountain was a White Alice tropo facility constructed in 1957, opened in 1958 and deactivated in 1979. The main facility was a 6720 sf equipment/power building. No dormitory was needed because lodging was



obtained in Nome. There was one 1600 barrel POL tank. (Reynolds 1988). The site has been demolished with the exception of one antenna retained as a navigational aid (Cultural Heritage Studies 2002). The site has been a popular tourist spot for visitors to Nome.

**CONTAMINANTS/CLEAN-UP:** The Air Force is responsible for clean up. Preliminary assessment in 1981 found 500 gallons PCBs, 12 contaminated transformers, sulfuric acid drums, battery acid, spray paint cans, radioactive tubes, klystron tubes (with beryllium dust). An unknown quantity of PCBs was removed from the site in 1982. A 1994 site assessment lists possible contaminants include PCBs, petroleum products, acids, bases, solvents, inorganic chemicals, heavy metals. A 1996 site investigation confirmed DRO, RRO, low levels of PCBs. PCBs up to 6.2ppm in soil were found by composite building door, septic tank outfall, and maintenance building floor drain outfall. There is no drinking water near site and it was reported that there was no hazard to population or streams adjacent to site. Exposure pathways are identified on the worksheets as ingestion/inhalation of soil/dust for humans and other mammals and ingestion of soil for birds. In 1996 Work Plans called for waste to be put in a landfill and soil with PCBs in excess of 10 mg/kg to be shipped off-site to a permitted waste facility. Clean up began in 1998 and the Air Force reported that the site was vandalized, including spreading contaminated soil around the site.

DEC sent a letter to the Air Force in October 1998 to clarify the status of soil to be thermally treated off-site. One sample with low PCBs (2.2 mg/kg) can be thermally treated, but upon ultimate disposal in Nome landfill, soil can be used for daily, but not final cover. ADEC permitted the disposal of a concrete slab that had low levels of PCB contamination (under 10 mg/kg) in Nome landfill.

An ADEC assessment in 2002 agreed with the Air Force that petroleum was adequately cleaned up. Soil was sampled in the summer of 2004 to determine the extent of remaining PCB contamination at five areas. PCBs were found in excess of 1 mg/kg. No lead contamination was found. In September, 2005, ADEC reviewed an Air Force report that estimated that the total volume of soil that exceeded 1 mg/kg PCBs ranges from a lower estimate of 1,174 cubic yards to an upper estimate of 5,663 cubic yards. PCBs have been dispersed through traffic and site grading. The report evaluates four treatment and disposal options. ADEC recommended using a combination of options such as using soil under 10 mg/kg for daily cover at the Nome landfill and doing off-site disposal of soil over 10 mg/kg. Staff also recommended interim measures such as signs or fences to alert the public of areas with PCBs.

REF: USACE Site#F10AK1018  
ADEC File# 630.38.001  
EPA # AK7570028616

### **Noxapaga Airbase (Operation NAM)**

**LOCATION:** LAT 65.3000 N; LON 164.1000 W. No records are available which accurately depict the location of this site. They may exist as classified Air Force

documents. Therefore the site has been recorded as ineligible for DERP-FUDS investigation.

CONTAMINANTS/CLEAN-UP: NAM was a 1945 plan to construct at least three large airfields on the Seward Peninsula. Each airfield would have one to three 10,000-foot long runways. At Noxapaga, hangars were to be cut into a lava ridgeline (Denfeld 1994). Lava Lake weather station was at this site and may be associated with the NAM project (see Lava Lake weather station above).

REF: USACE Site# F10AK0813

### **Collins-Hannum Airbase (Operation NAM)**

LOCATION: LAT 65.300 N; LON 164.1000 W. No records are available which accurately depict the location of this site. It is assumed to be located along the Noxapaga River, northeast of Nome.

CONTAMINANTS/CLEAN-UP: This site may have been part of Operation NAM, a cold war project to construct three large airfields on the Seward Peninsula. Records may exist as classified Air Force documents, therefore, the site has been considered ineligible for DERP-FUDS investigation.

REF: USACE Site# F10AK0815

### **Alaska National Guard King Island Scout Battalion Amory**

LOCATION: LAT 65.0000 N; LON 168.0000 W. This site is located on King Island, approximately 86 miles northwest of Nome.

DESCRIPTION: A prefabricated building was constructed on the 0.34 acre site sometime after 1959 and was used as an armory by the local unit of the Alaska Guard Scout Battalion. It was retransferred back to BLM in 1964. The Current owner is the King Island Native Corporation

CONTAMINANTS/CLEAN-UP: Correspondence with the King Island Native Corporation reported no evidence of hazards from this site. A Corp contractor contacted the owner and the U.S. Army Command in 1988 and the Adjutant General replied that the armory was dismantled and removed from this site. The Corp determined that this site requires no further action.

REF: USACE Site# F10AK0447

### **Air Force Cache #3**

LOCATION: LAT 64.5300 N; LON 165.0300 W. Located approximately 27 miles north-northeast of Nome, on the southern shore of Salmon Lake.

DESCRIPTION: Cache 3 is a one acre site that was obtained for the Air Force from BLM in 1957. Caches were to be 10' by 12', painted bright orange, and the vegetation cleared in a 100' radius for aerial visibility. Land was returned to BLM in 1961.

CONTAMINATION/CLEAN-UP: The Corp's contractor, through correspondence with the land owner, determined there was no evidence of hazardous/toxic waste, ordnance, or unsafe debris.

REF: USACE Site# F10AK0402

**Air Force Cache #6**

LOCATION: LAT 64.6200 N; LON 165.4300 W. Located approximate 24 miles northwest of Nome on the eastern shore of Glacial Lake.

DESCRIPTION: Cache 6 was obtained for the Air Force from BLM in 1958. Caches were to be 10' by 12', painted bright orange, and the vegetation cleared in a 100' radius for aerial visibility. By letter dated 17 Oct 1961, the Air Force advised they could no longer maintain the caches due to pilferage. Land was relinquished to BLM in Oct 1961.

CONTAMINANTS/CLEAN-UP: The Corp's contractor, through correspondence with the land owner in January 1988, reported no evidence of hazardous/toxic waste, ordnance, or unsafe debris.

REF: USACE Site# F10AK0405

**Air Force Cache #8**

LOCATION: LAT 65.2400 N; LON 163.1000 W. Located 90 miles northeast of Nome, on the northeast side of Kuzitrin Lake.

DESCRIPTION: Cache 8 was obtained for the Air Force from BLM in 1958 and relinquished back to BLM in 1961. Caches were to be 10' by 12', painted bright orange, and the vegetation cleared in a 100' radius for aerial visibility.

CONTAMINANTS/CLEAN-UP: The Corp's contractor, through correspondence with the landowner could find no evidence of hazardous/toxic waste, ordnance, or unsafe debris.

REF: USACE Site#F10AK0407

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<b>file name</b>	<b>contents</b>	<b>page numbers</b>
<b>Unalakleet-Draft: 2005</b>		1963 pages
<b>Barrel Removal, Contaminated Soil and Site Characterization Report for FUDS 2005</b>	read executive summary for work done summer 2005; see site characterization for sampling maps; site specific activities	p. 13-15 p. 128-130 p.134-235
<b>Unalakleet-Site Investigation FUDS Report &amp; Appendices May-03</b>	executive summary low levels of DDT, PBCs, lindane found see conclusions and recommendations maps and charts recap analysis results by site (notes berry tests)	52 pages p. 3 p. 14-15 p. 17 p. 36
<b>Unalakleet-Final Remedial Action Report for FUDS 2001</b>	executive summary sample quality control summary general site layout	160 pages p. 8 p. 16-17 p. 41
<b>Unalakleet- Final Remedial Action Report for FUDS, revised 2003</b>	summary of work recommendations for soil cleanup gravel pit- more sampling needed water and sediment- more sampling needed false positive results possible	119 pages p. 18 p. 104 p. 106 p. 107 p. 107
<b>Unalakleet- North River Relay Station Site Investigation Report 2005 USAF</b>	executive summary site description and background testing specific site inspection: activities results departures from plan charts conclusions & recommendations (further investigations recommended at WACS & Mtn Fac)	739 pages p. 7-8 p. 15-21 p. 23-28       p.39

