SJR

12

<TARGET><BILL>SJR 12</BILL><SUBJECT>SJR 12</SUBJECT><COMM>SSTA28</COMM></TARGET>

ALASKA STATE LEGISLATURE

SENATOR DONALD C. OLSON

SENATE DISTRICT T

Session
Alaska State Capitol, Rm. 508
Juneau, AK 99801
(907) 465-3707
Fax (907) 465-4821
Sen.Donny.Olson@akleg.gov

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Anchorage, AK 99501
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(907) 269-0254
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Date: February 10, 2014

To: Senator Fred Dyson
Chair, Senate State Affairs

From: Senator Donald Olson

I respectfully request a hearing for SJR 12 – Supporting the introduction and enactment of federal legislation acknowledging that the federal government is financially responsible under the Alaska Native Claims Settlement Act for the remediation of contaminated land subject to conveyance under the Act.

My staff contact for this legislation is David Scott, who can be reached at 465-3877.

Thank you for your consideration of this request.

ALASKA STATE LEGISLATURE

Senator Donald C. Olson

Alaska State Capitol
Room 508
Juneau, Alaska 99801-1182
(907) 465-3707
sen.donny.olson@akleg.gov

SPONSOR STATEMENT

SJR 12 – SUPPORTING THE INTRODUCTION AND ENACTMENT OF FEDERAL LEGISLATION ACKOWLEDGING THAT THE FEDERAL GOVERNMENT IS FINANCIALLY REPOSONSIBLE UNDER THE ALASKA NATIVE CLAIMS SETTLEMENT ACT FOR THE REMEDIATION OF CONTAMINATED LAND SUBJECT TO CONVEYANCE UNDER THE ACT

When the Alaska Native Claims Settlement Act (ANSCA) was passed in 1971, a new chapter in first peoples' history was created. Rather than being confined to the reservation system of the continuous forty-eight states, Alaska Natives had lands conveyed to them through their corporations to own. However, another tear in this transition has continued to plague the conveyance process. In December of 1998, the Department of the Interior released its required report to Congress. The report stated that approximately 650 contaminated sites were on lands conveyed pursuant to ANSCA. Because the lands are now held privately, Native Corporations are subject to liability by the State of Alaska and the Federal Government to remediate those lands. Congressman Don Young said it best "It was clearly not the intention of ANSCA to extinguish Native claims by conveying contaminated property to recipients."

Senate Joint Resolution 12 asks the Alaska Legislature, to encourage the United States Congress to pass legislation, holding the federal government responsible for the remediation of contaminated lands under ANSCA. It is right that operations that were overseen or accepted by the federal government should not be the financial burden of owners who had no hand in creating the environmental degradation. Native Corporations have already spent millions of dollars in remediation sites. Now is the time to hold public entities and persons accountable for shirking their responsibilities.

I urge your support for SJR 12. Our state needs to say, in a unified voice, that if private industry should be held to strict environmental standards, even from years before, then federal actions need to be raised to the same standard. We owe it to the Native Alaskan community to not have their rights trampled on yet again. Let us right this wrong.

Fiscal Note

State of Alaska
2014 Legislative Session

Bill Version: HJR 15
Fiscal Note Number:
() Publish Date:

Identifier: HJR15-LEG-SESS-02-10-14
Title: FEDERAL CONTAMINATION OF ANCSA LANDS
Sponsor: MILLETT
Requester: House Resources

Department: Alaska Legislature
Appropriation: Legislative Operating Budget
Allocation: Session Expenses
OMB Component Number: 782

Expenditures/Revenues

Note: Amounts do not include inflation unless otherwise noted below. (Thousands of Dollars)

	FY2015 Appropriation Requested	Included in Governor's FY2015 Request	Out-Year Cost Estimates				
OPERATING EXPENDITURES	**FY 2015**	**FY 2015**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**
Personal Services							
Travel							
Services							
Commodities							
Capital Outlay							
Grants & Benefits							
Miscellaneous							
Total Operating	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Fund Source (Operating Only)							
None							
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Positions							
Full-time							
Part-time							
Temporary							
Change in Revenues							

Estimated SUPPLEMENTAL (FY2014) cost: 0.0 *(separate supplemental appropriation required)*
(discuss reasons and fund source(s) in analysis section)

Estimated CAPITAL (FY2015) cost: 0.0 *(separate capital appropriation required)*
(discuss reasons and fund source(s) in analysis section)

ASSOCIATED REGULATIONS

Does the bill direct, or will the bill result in, regulation changes adopted by your agency?
If yes, by what date are the regulations to be adopted, amended or repealed?

Why this fiscal note differs from previous version:

Initial Version

Prepared By: Jessica Geary, Finance Manager — Phone: (907)465-6626
Division: Legislative Affairs Agency — Date: 02/10/2014 08:18 AM
Approved By: Pamela Varni, Executive Director — Date: 02/10/14
Agency: Legislative Affairs Agency

FISCAL NOTE ANALYSIS

STATE OF ALASKA
2014 LEGISLATIVE SESSION

BILL NO. HJR 15

Analysis

This Legislative has zero fiscal impact on the Legislative Affairs Agency.

THE SECRETARY OF THE INTERIOR
WASHINGTON

JAN 10 2014

The Honorable Don Young
House of Representatives
Washington, DC 21515

Dear Representative Young:

Thank you for your letter of September 18, 2013, concerning the Department of the Interior (Department) 1998 Report to Congress: "Hazardous Substance Contamination of Alaska Native Claims Settlement Act Lands in Alaska." You cite several recommendations from the report and ask what implementation steps have subsequently been taken.

The Department recognizes the serious concerns of Alaskans who are potentially exposed to contaminated lands. During my August trip, Senator Murkowski and I had the opportunity to see firsthand the effects that leaking wells can have on the environment. The Department and I are particularly concerned that contaminated public lands may have been conveyed to Alaska Native Claims Settlement Act (ANCSA) corporations.

For over 40 years the Bureau of Land Management (BLM) has been charged with conveying public land under the terms of ANCSA. It is the BLM's longstanding policy not to transfer title to property known to be contaminated – even when requested by a corporation. However, with nearly 43 million of the over 45 million acres of ANCSA entitlements already conveyed, some lands, usually former Department of Defense or Federal Aviation Administration sites, were conveyed before it was recognized that contaminants existed on the lands.

The BLM headed the Federal working group that conducted years of research in cooperation with the State of Alaska and ANCSA corporations to produce the 1998 Report. At this time, BLM is reviewing the sites listed in the report to better determine if the lands were ANCSA conveyances. It appears that not all are. Additionally, BLM has met with members of the Alaska Native Village Corporation Association to discuss this issue and has been working cooperatively with the Association on the review.

The Department is committed to determining what sites identified in the 1998 Report were conveyed under ANCSA in order to continue follow-up on the six recommendations. We will continue to work collaboratively with the Environmental Protection Agency, the State of Alaska, ANCSA corporations, and tribal governments as appropriate.

We will continue to keep you apprised of further actions on this matter. Similar letters are being sent to Senators Lisa Murkowski and Mark Begich.

Sincerely,

Sally Jewell

Sally Jewell

THE SECRETARY OF THE INTERIOR
WASHINGTON

JAN 10 2014

The Honorable Mark Begich
United States Senate
Washington, DC 21510

Dear Senator Begich:

Thank you for your letter of September 18, 2013, concerning the Department of the Interior (Department) 1998 Report to Congress: "Hazardous Substance Contamination of Alaska Native Claims Settlement Act Lands in Alaska." You cite several recommendations from the report and ask what implementation steps have subsequently been taken.

The Department recognizes the serious concerns of Alaskans who are potentially exposed to contaminated lands. During my August trip, Senator Murkowski and I had the opportunity to see firsthand the effects that leaking wells can have on the environment. The Department and I are particularly concerned that contaminated public lands may have been conveyed to Alaska Native Claims Settlement Act (ANCSA) corporations.

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Sincerely,

Sally Jewell

THE SECRETARY OF THE INTERIOR
WASHINGTON

JAN 10 2014

The Honorable Lisa Murkowski
United States Senate
Washington, DC 21510

Dear Senator Murkowski:

Thank you for your letter of September 18, 2013, concerning the Department of the Interior (Department) 1998 Report to Congress: "Hazardous Substance Contamination of Alaska Native Claims Settlement Act Lands in Alaska." You cite several recommendations from the report and ask what implementation steps have subsequently been taken.

The Department recognizes the serious concerns of Alaskans who are potentially exposed to contaminated lands and I appreciate the leadership you have shown on this issue. I am glad that you and I had the opportunity to view the leaking wells during my August trip. It helped me better understand the consequences contaminated lands have on the environment. The Department and I are particularly concerned that contaminated public lands may have been conveyed to Alaska Native Claims Settlement Act (ANCSA) corporations.

For over 40 years the Bureau of Land Management (BLM) has been charged with conveying public land under the terms of ANCSA. It is the BLM's longstanding policy not to transfer title to property known to be contaminated – even when requested by a corporation. However, with nearly 43 million of the over 45 million acres of ANCSA entitlements already conveyed, some lands, usually former Department of Defense or Federal Aviation Administration sites, were conveyed before it was recognized that contaminants existed on the lands.

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We will continue to keep you apprised of further actions on this matter. Similar letters are being sent to Senator Mark Begich and Representative Don Young.

Sincerely,

Sally Jewell

Congress of the United States
Washington, DC 20510

September 18, 2013

The Honorable Sally Jewell
Department of the Interior
1849 C Street, N.W.
Washington, D.C. 20240

Dear Secretary Jewell:

Section 103 of Public Law 104-42, dated November 2, 1995, directed the Secretary of the Interior to prepare a report on the extent of hazardous substance contamination on lands in Alaska transferred to Alaska Native corporations under the Alaska Native Claims Settlement Act (ANCSA) of 1971, (Public Law 92-203, 85 Stat. 688) as amended. In December of 1998, the Department submitted a report to Congress entitled *Hazardous Substance Contamination of Alaska Native Claims Settlement Act Lands in Alaska.*

In that report, the Department acknowledged conveying approximately 650 contaminated sites to Alaska Native corporations. Apparently recognizing the unjustness of conveying contaminated lands to Alaska Native corporations in settlement of aboriginal rights to land, the report (at page 2) "recommends an approach to fully identify contaminated sites and cleanup needs on ANCSA lands," including the following six recommendations:

1. Establish a forum of ANCSA landowners and federal, state, local and tribal agencies for exchanging information, discussing issues, and setting priorities;

2. Compile a coordinated, comprehensive inventory of contaminated sites with input from all parties;

3. Apply EPA policies to ANCSA landowners, not to impose landowner liability to federal transferees for contamination existing at the time of conveyance, where the landowner has not contributed to the contamination;

4. Analyze the data collected and report to Congress on sites not covered in existing programs and recommend whether further federal programs or actions are needed;

5. Modify policies, where needed, to address contaminants and structures that may affect public health and safety on ANCSA lands; and

6. Continue to develop, under the leadership of the EPA and any other relevant agencies, a process to train and enable local residents to better participate in cleanup efforts.

The Department stated that it would "coordinate the implementation of these recommendations…."

After 15 years, the Department has had sufficient time to act on the six recommendations in its own report to address contamination on Native lands. We believe it is imperative that progress be made now to clean these lands so they can fulfill the goals of the aboriginal lands claims settlement. We hope for a timely reply listing the actions the Department has and intends to undertake in the future to remedy federal contamination of these lands.

Sincerely,

Mark Begich	Lisa Murkowski	Don Young
United States Senator	United States Senator	United States Representative

cc: Neil Kornze, Acting Director, BLM
Bud Cribley, Alaska State Director, BLM

Appropriation of clean-up funds is urgently needed.

Our Story

On February 7, 1986, Ukpeagvik Iñupiat Corporation and the United States of America, acting through the Secretary of the Navy, for and on behalf of the Secretary of Defense and the Secretary of the Interior, entered into a land exchange pursuant to Section 22(f) of ANCSA wherein the Navy determined that the Naval Arctic Research Laboratory (NARL) was "no longer needed for defense purposes" and exchanged NARL for some of UIC's selected lands "to promote important National interests, including arctic research, energy resource development, and continued provision of essential services to the remaining federal installations at Point Barrow, Alaska".

Section 15 of the agreement provides "Navy shall **undertake a program of restoration, demolition, and cleanup of environmental hazards at the NARL site.** All such work to be undertaken by the Navy is subject to the availability of funds appropriated by the Congress for such purpose. Navy will obligate the funds from fiscal year 1986 appropriations, once such funds have been appropriated; provided such appropriations are sufficient to complete the commitments herein. If the FY 1986 appropriations are not sufficient, Navy will obligate the funds to complete this work from the first subsequent appropriations under which funds become available....Nothing contained in this agreement relieves the United States from responsibility for environmental restoration or liability which may arise under existing or future Federal law. ...(j) The Navy will undertake a feasibility study and take any remedial actions to eliminate the leaching of fuels from the soil, south and east of the hangar (Building 136) into Imikpuk Lake, to the satisfaction of the State regulatory agencies."

Our Drinking Water is at risk

Contamination on old Navy sites is still a threat to Barrow's only fresh water source at Imikpuk Lake

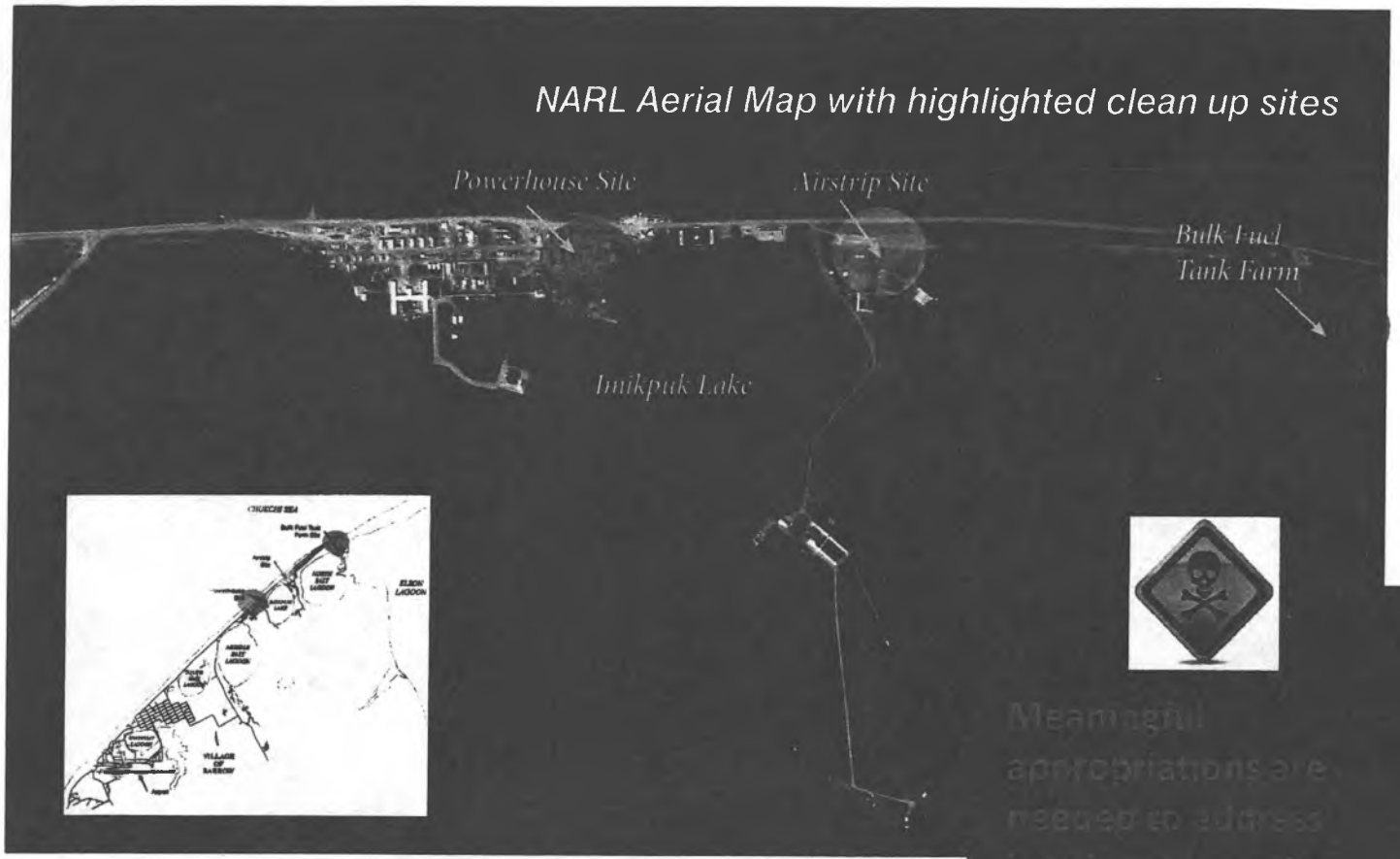
The Navy has spilled more than 700,000 gallons of diesel and gasoline dating from the 1950s.

60 years later GRO, DRO, RRO, and Benzene remain contaminants of concern in amounts exceeding cleanup levels in active water zones threatening the primary fresh water source for Barrow, Alaska residents.

Questions? Contact Delbert Rexford, UIC Vice President of Lands (907) 852-4460 or Erin Sedor, UIC Vice President Risk and Quality (907) 677-5200

// www.uicalaska.com

UKPEAGVIK IÑUPIAT CORPORATION



Timeline

1952: 15,000 gallons fuel spilled at Powerhouse

1958: 10,000 gallons JP-5 spilled at Powerhouse

1970: 100,000 gallons JP-5 spilled at Bulk Fuel Tank Farm

1976: 48,000 gallons gasoline spilled at Airstrip

1978: Over 300,000 gallons jet fuel and gasoline spilled at Airstrip

1986: Unknown quantity JP-5 floating on active zone water surface

1986: 16,000 gallon jet fuel spill at the airstrip

1986: Land Exchange Agreement executed between Navy and UIC

1995: US Navy Risk Evaluation ranked all three sites as "High"

2002: ADEC Decision Document requiring remediation and monitoring to protect Imikpuk Lake -All three decision documents name the U.S. Navy as the party responsible for the contamination

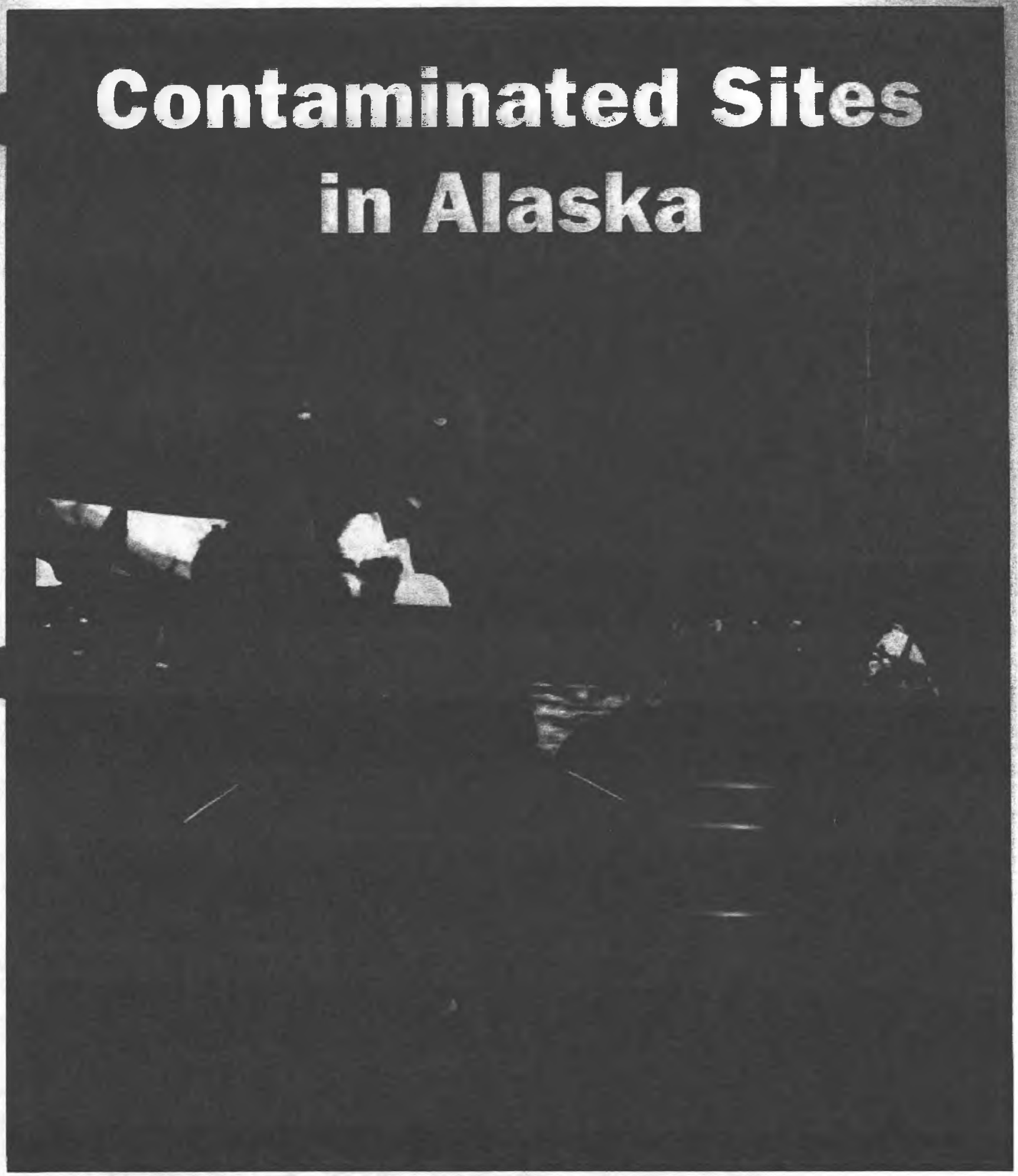
2008: 1st 5-Year Monitoring Review shows majority of wells tested above acceptable levels

2012: 2nd 5-Year Monitoring Review show contamination levels increasing at many shoreline wells around Impikuk Lake

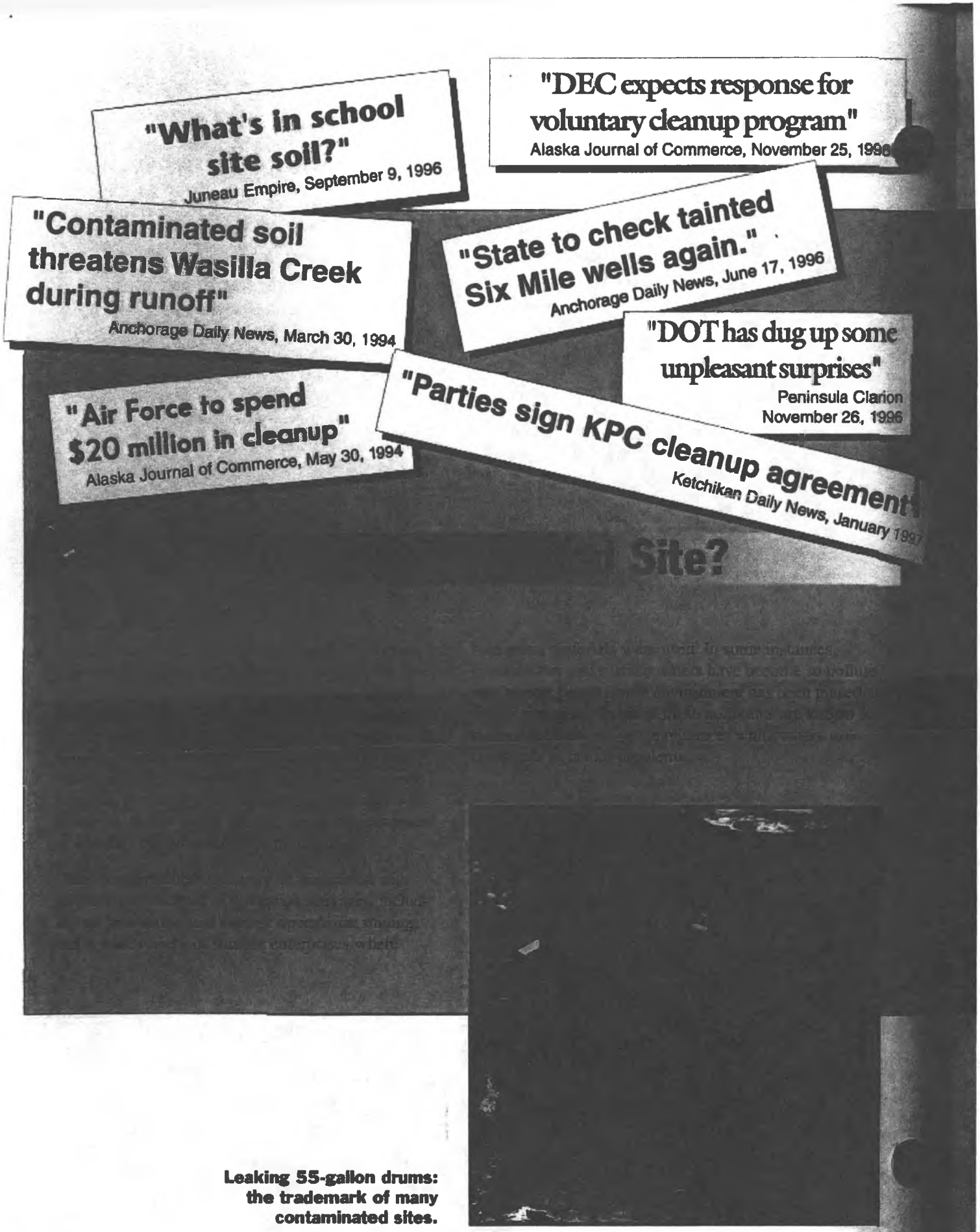
www.uicalaska.com

Section 15 of the agreement provides "Navy shall undertake a program of restoration, demolition, and cleanup of environmental hazards at the NARL site. All such work to be undertaken by the Navy is subject to the availability of funds appropriated by the Congress for such purpose."

Contaminated Sites in Alaska



Alaska Department of Environmental Conservation



Leaking 55-gallon drums: the trademark of many contaminated sites.

The Contaminated Sites Remediation Program within the Alaska Department of Environmental Conservation (DEC) is charged with protecting human health and the environment from sites contaminated by oil or other hazardous substances. The program seeks to ensure that contaminated sites are evaluated and cleaned up in order of the greatest risk posed to human health and the environment. In most cases, this means overseeing companies or individuals who have taken responsibility for cleaning up contamination found on their property. In cases where a responsible person cannot be found or is unable to act, the DEC may take a direct role in cleaning up a site.

A remote Alaska site is marred by abandoned drums containing hazardous waste.

Abandoned military sites may become active contaminated sites.

Transformers containing PCBs can release hazardous chemicals into soils.

How many sites are there?

The Contaminated Sites Reclassification Program database lists 1,063 sites as of January 1997. This does not include sites occurring from leaks of commercial aboveground storage tanks, which are managed under a separate DEC program. Each year the Department provides a summarized listing to the Legislature of active sites and those which have been closed. Sites are scored and ranked according to the severity of risk to human health and/or the environment. A total of 423 sites have been determined to be high priority for cleanup.

The federal Environmental Protection Agency (EPA) also ranks sites and maintains a list of those most seriously contaminated in the nation. These sites are placed on a "National Priorities List" and are commonly known as "Superfund" sites. At the eight Superfund sites in Alaska, DEC works in partnership with the EPA to ensure their cleanup.

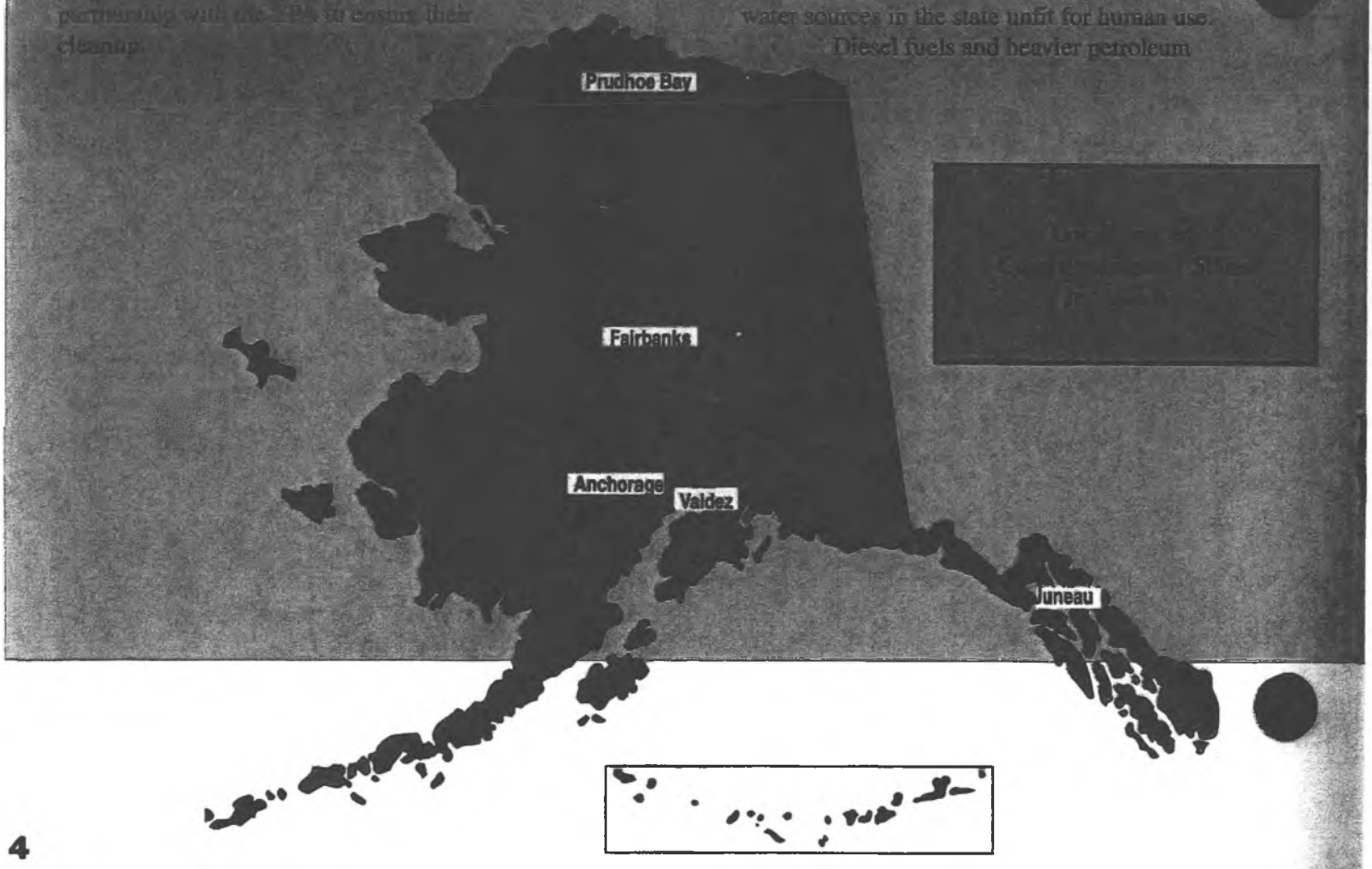
Where are they?

Although the majority of sites are clustered around urban areas, it is also apparent that these sites have followed human activities of the last century throughout the state.

What hazardous substances are found at these sites?

Many different types of hazardous substances are found at contaminated sites in Alaska. Petroleum products are by far the most common. The toxic nature of petroleum compounds can be quite high for "light" products such as gasoline or aviation fuel, which contain high levels of the most harmful "aromatic" constituents such as benzene, ethylbenzene, toluene, and xylene. Benzene is a known cancer-causing agent (carcinogen). Aromatic compounds tend to be the most easily dissolved in water and are responsible for making many drinking water sources in the state unfit for human use.

Diesel fuels and heavier petroleum



products, although hazardous, have lower concentrations of the most harmful chemicals.

Other contaminated sites can have chlorinated solvents, heavy metals, synthetic organic pesticides, non-chlorinated solvents, and inorganic acids and bases. The most toxic of these tend to be the chlorinated compounds, including: chlorinated solvents, polychlorinated biphenyls (PCBs), and herbicides, including dioxin-containing herbicides. The banned pesticide DDT has also been found at several sites. Heavy metal contamination can also pose a serious threat to human health, such as where improper disposal of lead acid batteries has occurred, or where mercury was once used in mining retort operations. Cadmium, chromium and arsenic also show up as heavy metal contaminants.

Abandoned hazardous materials which are ignitable, corrosive, reactive, and toxic all can threaten health and welfare. Exposure to these chemicals can cause a wide range of acute and chronic health effects. In some cases the most important risks may be ecological rather than human health based, particularly in remote locations where human exposure is less likely.

Who is responsible for cleanup?

In Alaska, about one-third of the sites in the DEC inventory are on federal lands, most of these on military bases. Another third are privately owned commercial and/or industrial properties. The rest are owned by state and local governments. DEC participates with other local, state and federal agencies in cooperative cleanup operations.

In most cases, the responsible person contracts with an environmental consulting firm to clean up the site, with oversight provided by DEC. When a responsible person cannot be identified, however, and a site is a serious threat to human health or the environment, the state may bear the cost of site investigation and/or cleanup.

The Alaska Legislature created the Oil and Hazardous Substance Release Response Fund to cover the costs of oversight and cleanup. Alaska law requires that state funds be recovered from responsible parties, however the responsible person is not always able to pay.

How are Alaskans affected?

Contamination of groundwater is the most serious problem posed by contaminated sites, and the most costly to solve. Many sites currently listed on the inventory have drinking water which exceeds state and EPA health standards for contamination. Groundwater also enters into streams, rivers and oceans, and contamination could affect wildlife as well.

Populations of fish and other wildlife, on which many Alaskans depend for subsistence, sport, and commercial harvest, may be impaired.

Contamination may also result in significant economic losses. For example, property transfers can be delayed or may not occur if a site is suspected or known to be contaminated.

Contaminated sites must be thoroughly investigated and cleaned up to protect the quality of life that Alaskans deserve.

- Follow up on citizen complaints and review existing records on areas suspected to have been contaminated.
- Manage state-lead projects in cases where the responsible party has not been identified or is not financially able to clean up a site. This often includes direct contractor oversight.
- Develop innovative programs, such as the Voluntary Cleanup Program, to encourage responsible persons to clean up their sites.
- Develop new regulations and policy so responsible persons and DEC staff use the most scientifically advanced methods and information to clean up sites.
- Determine if cleanup actions and quality assurance procedures are adequate, and evaluate whether chosen technologies and methods are appropriate, by review of site assessments, risk assessments and cleanup workplans and reports.

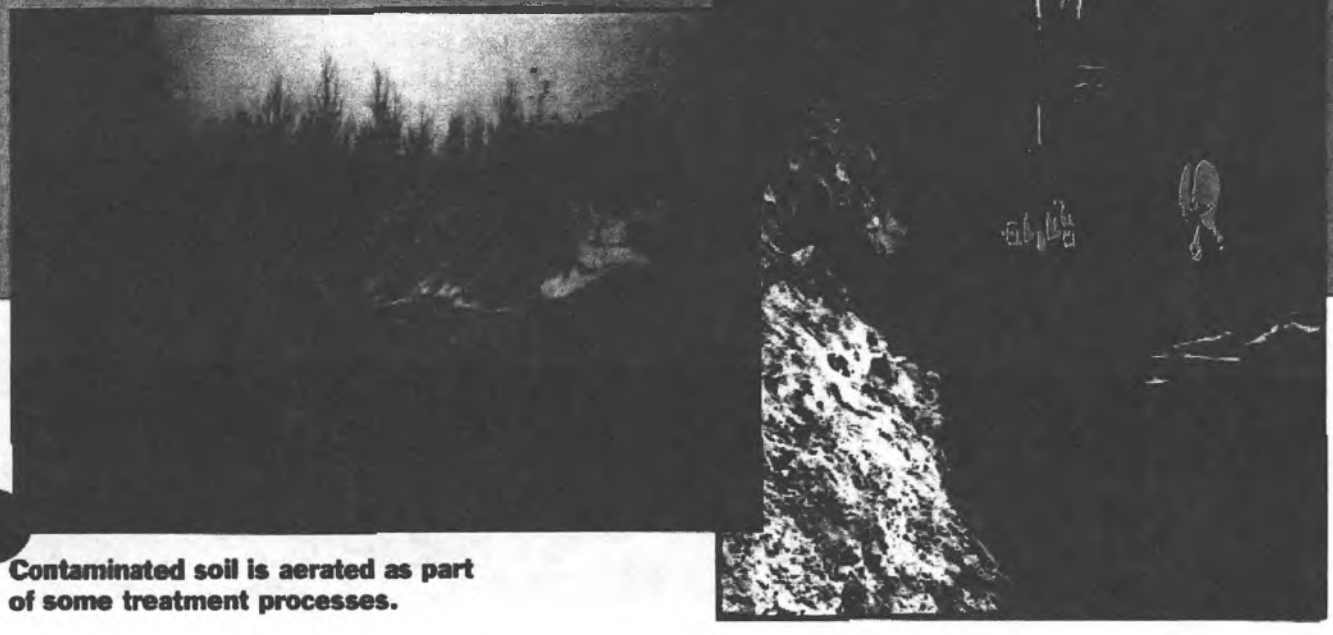
A worker at a cleanup operation dressed in "Level C" protective gear.

- Travel to the site
  and ensure
  according to
- Work with
  military
- Recover
  incurred by

As of Octobe
nated sites
An equally
existing sites
If you know of
your community
offices listed on
also provide you
update you on
refer you to any
be of assistance to you.

A drilling contractor may be employed
samples during the site investigation
This soil core sample will be
to a laboratory to determine its
and detect specific contaminants.

A lined trench intercepts
substances during a major site



Contaminated soil is aerated as part of some treatment processes.

January 1997

The Alaska Department of Environmental Conservation conducts all programs and activities free from discrimination on the basis of sex, color, race, religion, national origin, age, marital status, pregnancy, parenthood, or disability. For information on alternative formats available for this and other department publications, please contact the department ADA Coordinator at (voice) 907-465-5040 (TDD/TTY phone), or (fax) 465-5098. Any person who believes s/he has been discriminated against should write to: ADEC, 410 Willoughby Avenue, Suite 105, Juneau, AK 99801-1795; or O.E.O., U.S. Department of the Interior, Washington, D.C. 20240.

Printed on recycled paper

Contaminated Sites Remediation Program
Alaska Department of Environmental Conservation
410 Willoughby Avenue, Suite 105
Juneau, AK 99801-1795

PCBs Contamination Continues to Affect the Health of Unalakleet's Residents

> "Parkinson's disease had not been seen in the Alaska Native population in the past. I believe PCBs and other toxics left behind by the military contributed to the disease I and others have been diagnosed with." - *Stephen Ivanoff, Unalakleet resident*

Issue: The U.S. Government left contaminated debris on traditional subsistence hunting lands in Unalakleet, Alaska.

Requested Action: Meaningful appropriations are needed to expedite clean-up of PCBs contamination in Unalakleet. Further studies need to occur to test for exposure of PCBs amongst Unalakleet's residents and their possible side effects.

Unalakleet, population 800, is located on the Norton Sound at the mouth of the Unalakleet River, which is 395 miles northwest of Anchorage, Alaska.

From 1958 to 1978, the U.S. Air Force operated the North River Radio Relay Station (RRS) in the Unalakleet area for defense and civilian communications. When military activities in the surrounding area ended, buildings, debris, and thousands of 55-gallon drums were left behind, saturating the tundra and infecting the local food and water sources.

In fact, the land around the former RRS is used for hunting, berry picking, and recreation. Soil contaminated by polychlorinated biphenyls (PCBs) was discovered on the site on July 10, 2003.

The presence of PCBs is a significant environmental concern. Local residents are regularly exposed to these PCBs through direct contact with the contaminated soil. In the late 1950s and early 1960s, all Unalakleet residents received their local drinking water from below the air force base installation of RRS. Residents are concerned that the early exposure to PCBs have led to degenerative diseases and death.

Timeline:

1958-1978: U.S. Air Force operated the North River Radio Relay Station.

1986-1989: U.S. Army Corps of Engineers investigated the site and published three sampling reports.

1993-1995: Two Army Corps contractors demolished buildings at North River RRS and buried all debris.

2002: An Army Corps contractor removed approximately 3,300 drums scattered across a 10-square mile area, including Alaska Native allotment sites.

July 10, 2003: Air Force was notified by Emily Nanouk, a Native allotment owner, that she suspected there was contaminated soil on her property. The Air Force personnel confirmed high levels of PCBs on her soil. In September the Air Force removed 31,350 pounds of contaminated soil from near her property.

2004: Clean-up actions for the remainder of the sites near RRS began in the summer of 2004, but a larger volume than estimated was found and logistical complications prevented the removal of all contaminated soil. The contaminated soil still exists with fencing and warning signs around it.

August 2, 2013: Native allotment resident, Emily Nanouk, wrote to the Alaska delegation requesting new allotment lands due to the continued contamination on her soil.

August 27, 2013: Unalakleet resident, Stephen Ivanoff, testified in front of the Environmental Protection Agency that PCBs still exist on Unalakleet homelands and may have contributed to his autoimmune disease.

Questions?

Contact Stephen Ivanoff, Village Transportation Planner,
Kawerak (907) 624-3299

ANIAK WHITE ALICE SITE

HISTORY

The Aniak Middle School building and property was initially developed and used by the Air Force in the 1950s in the military/civilian "White Alice" communication system during the Cold War. By the late 1970s the military facility was obsolete and was turned over to the School District, which renovated the main building and used it for a school from 1981 until 2003. The Alaska Department of Transportation and Public Facilities has owned the property since 1965 and currently leases the site to the Kuskokwim School District and AT&T Alascom.

TIMELINE

1950's:

During White Alice operations and renovation of the school by contractors, fluids containing polychlorinated biphenyls (PCBs) were spilled in and around the generator room and onto the ground outside the building, resulting in soil contamination. Hazardous materials were placed into drums that were moved to various locations on the property, where additional spills reportedly occurred. Most of those drums were ultimately shipped to a disposal facility out of state.

1979 -1983

The U.S. Air Force and Alaska Department of Environmental Conservation (DEC) conducted some PCB cleanup at the site.

1981:

A sealant was applied to the floor of the former generator room, which in later years was used as a wood shop, and a better sealant was added to the floor in 1983.

1983:

DEC conducted environmental sampling.

1994:

DEC was notified of additional drums and possible contamination at the site. It takes 2 years for them to be inspected.

1996:

Site is inspected and 60 drums are found in the woods between the school and the airport runway. The U.S. Army Corps of Engineers tested the ground beneath the drums and documented petroleum contamination.

1997:

The U.S. Environmental Protection Agency (EPA) released a report that showed PCBs remained in soil outside the middle school wood shop, which was the former generator room at the White Alice Site.

1998:

A health study tested the school's students, faculty and maintenance staff. The report concluded that residents have not been exposed to harmful levels of PCBs at the site. However ten years later the DEC found large amounts of PCB and TCE in the soil, water and buildings.

"This is a school where children are suppose to be safe. This is totally unacceptable." — Maver Carey

TIMELINE CONTINUED...

2002-03:

DEC hired a contractor to complete a feasibility study to evaluate seven different alternatives for completing the cleanup.

2006:

Soil samples were provided from around the septic system and near a former drum storage area. The results showed concentrations of PCBs, arsenic, chromium and TCE above cleanup levels in the septic system and soil, thus expanding the area of concern that warrants additional cleanup.

2008:

DEC hired a contractor to complete the PCB cleanup work. Workers found a significantly larger amount of soil contaminated with PCBs behind the Vocational Technology building than expected. The septic tank contained elevated levels of PCB and TCE. PCBs were found in the wood shop area and were above applicable federal standards.

2009:

Vapor Intrusion was detected from under-ground TCE containers. Air purification filters were installed.

2010:

Oasis Environmental installed and turned on sub-slab depressurization system.

2012:

TCE concentration is found below target levels, except for beneath the metals shop.

Health Effects of PCBs and TCEs

Cancer
- Kidney
- Lung
- Liver
- Cervix

Miscarriages

Attacks the Central Nervous System

Suppresses the Immune System
- Pneumonia
- Non-Hodgkin's
- Lymphoma
- Viral Infections

Neurological Effects
- Learning Deficits
- Short Term Memory
- Learning Difficulties

Endocrine Disruption
- Decreases Thyroid Levels
- Effects normal growth patterns

Elevated Blood Pressure

CONTAMINANTS FOUND IN THE AREA:

Polychlorinated biphenyls (PCBs), and chlorinated solvent (trichloroethylene or TCE).

THE KUSKOKWIM CORPORATION

cutting a path to a better future

"Cleanup requires money."

— John Halverson, Project Manager, DEC

THE KUSKOKWIM CORPORATION

cutting a path to a better future

RED DEVIL MINE:
A Threat to Our Health and Traditions

What is Red Devil?

Red Devil is an abandoned cinnabar and mercury mine site at the mouth of Red Devil Creek on the Kuskokwim River. From 1933 to 1971, mining operations included extensive underground and surface mining, on-site processing and waste disposal. The Bureau of Land Management assumed control of the site in 1987.

Legacy of Contamination

Piles of mine tailings, leaking underground fuel tanks, and processing chemicals were left on site. These hazardous materials have been leaking mercury, arsenic and other toxins into the groundwater and surrounding river system for more than four decades.

Unprecedented Fish Consumption Warning

For the first time in the history of fish and wildlife management in Alaska, officials issued guidelines restricting the consumption of fish in the middle Kuskokwim River area. Tests show dangerously elevated levels of mercury in pike, lush, Dolly Varden, Arctic grayling and other subsistence fish, as well as in the snails, larvae and small fish they eat.

Mercury can cause brain damage in infants and young children. That means women who are or can become pregnant, mothers who are nursing babies, and children 12 and under are at risk. Depending on the type and size of the fish, women and children are limited to 12 to 16 portions of fresh fish and one to four portions of dried fish per month.

The Math

Three meals a day for 30 days is 90 meals. If women of childbearing age and children eat pike or lush for only 16 meals, that leaves 74 meals to account for. In the winter, when dried fish provides the staple of the traditional diet, they are effectively cut off from the region's primary food source.

Who is Responsible for Cleanup?

THE SHORT ANSWER: [illegible]

[illegible]

ANCSA Land Conveyance

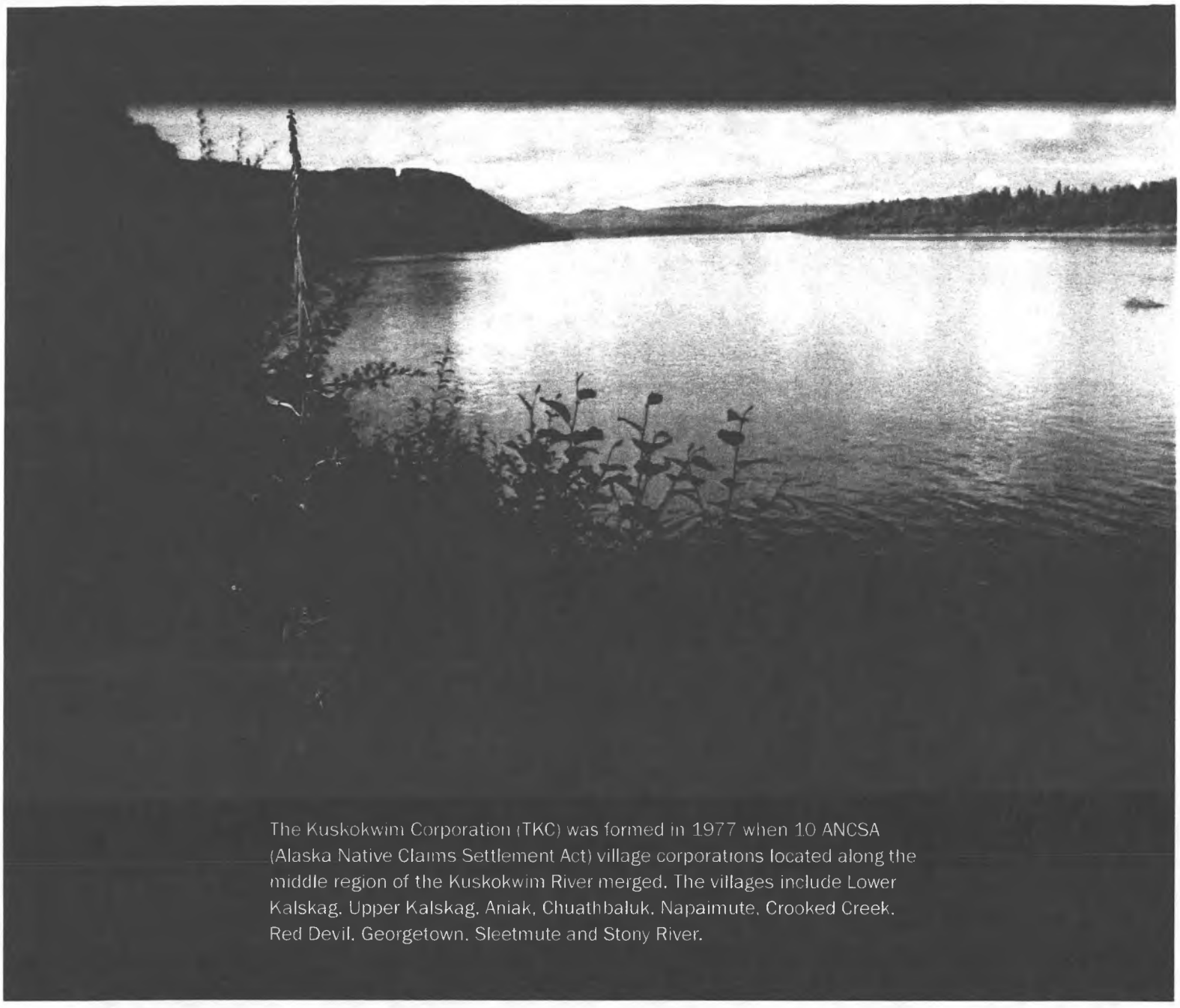
[illegible]

[illegible]

Congressional Action Is Needed

SHORT TERM: TKC requests the assistance of Alaska's congressional delegation to place the Red Devil Mine site on the NPL.

LONG TERM: TKC stands by Resolution 12-42, passed at the 2012 Alaska Federation of Natives Convention, supporting the introduction and enactment of federal legislation to acknowledge the financial responsibility of the federal government to remediate contaminated lands conveyed pursuant to ANCSA.



The Kuskokwim Corporation (TKC) was formed in 1977 when 10 ANCSA (Alaska Native Claims Settlement Act) village corporations located along the middle region of the Kuskokwim River merged. The villages include Lower Kalskag, Upper Kalskag, Aniak, Chuathbaluk, Napaimute, Crooked Creek, Red Devil, Georgetown, Sleetmute and Stony River.

THE KUSKOKWIM CORPORATION

cutting a path to a better future

Contact Us:

The Kuskokwim Corporation
4300 B St., Suite 207
Anchorage, AK 99503

Toll Free: 1-800-478-2171
Main: (907) 243-2944
Fax: (907) 243-2984

KUSKOKWIM.COM

Our Story

The Pribilof Islands are remote islands located on the Bering Sea, where military debris was stored and left without remediation.

The islands are 240 miles north of the Aleutian Islands, 300 miles west of the Alaska mainland, and 750 air miles west of Anchorage. Petroleum contamination was detected at a number of properties currently and formerly owned and operated by National Oceanic and Atmospheric Administration (NOAA) and its predecessor agencies. Some of these sites occur within the two cities (St. Paul and St. George), and others are scattered across each island. NOAA's National Ocean Service Office of Response and Restoration is responsible for site restoration activities at St. George and St. Paul Islands in Alaska. NOAA is the last of a series of federal agencies which managed the fur trade on the islands.

The contamination posed risks to the human health, safety, welfare, and the local environment. Much of the contamination included petroleum whereby people may have been exposed to pollutants through vapor inhalation, direct contact with the skin, or accidental ingestion of contaminated soil at the sites. Clean-up was also required to facilitate the land transfers to the local entities of Tanadgusix Corporation (TDX) and the St. Paul Island stakeholders.

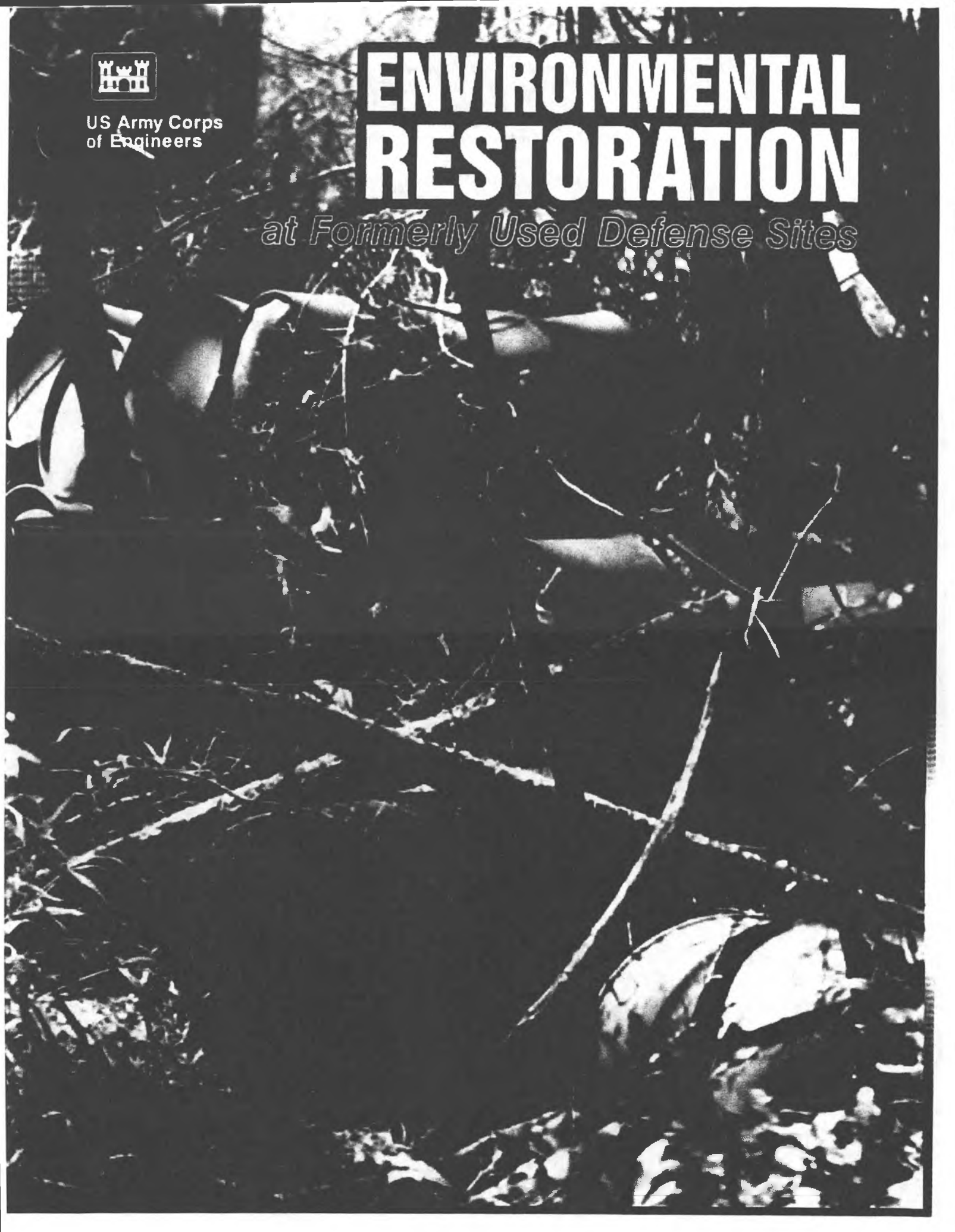
In and effort to clean up the mess left by the federal government, TDX Corporation created an 8(a) subsidiary called Bering Sea Eccotech Inc. (BSE). BSE conducted several large environmental clean-up operations for the community of Saint Paul primarily under the Formerly Used Defense Sites (FUDS) and NOAA/Alaska Department of Environmental Conservation two party agreements. The clean-up employed 99% local shareholder hire. Some $76 million has been spent on cleaning up the islands since the mid-1990s.

The cleanup operations varied in size and scope which included removal and recycling of many tons of decrepit vehicles and heavy equipment, disposal of hazardous materials, removal of above and underground storage tanks, and the removal of stockpiling and treatment of several thousands of cubic yards of Petroleum Contaminated Soils (PCS).

Starting in the mid-1960s, an area on St. Paul Island known as the vehicle bone yard site was used to dispose of vehicle and equipment hulks. The bone yard site included debris burial and surface dumping of fur seal carcasses.

Same site Post Clean-up.

TDX TANADGUSIX


US Army Corps
of Engineers
ENVIRONMENTAL
RESTORATION
at Formerly Used Defense Sites

FUDS

Formerly Used Defense Sites

ENVIRONMENTAL RESTORATION

at Formerly Used Defense Sites

Rising to the Challenge:
Cleaning up Formerly Used Defense Sites

The Department of Defense (DoD) is committed to correcting environmental damage caused by its activities. The Defense Environmental Restoration Program (DERP) is the vehicle to accomplish this. The cleanup of Formerly Used Defense Sites (FUDS) is a part of this program. FUDS are those properties that the Department of Defense once owned or used, but no longer controls. These properties can range from privately owned farms to National Parks. They also include residential areas, schools, colleges, and industrial areas. The FUDS program includes former Army, Navy, Air Force, or other defense agencies' properties.

Two important laws established the Defense Environmental Restoration Program. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, and the Superfund Amendments and Reauthorization Act (SARA) of 1986, gave DoD the authority for certain cleanup activites at former DoD sites in the United States and its territories.

ENVIRONMENTAL RESTORATION

The U.S. Army Corps of Engineers is DoD's manager for the FUDS program. Our experience in various environmental projects makes our organization uniquely qualified to restore the environment at these sites.

The Corps' efforts in environmental cleanup have grown steadily. In 1988, we invested $500 million in the environmental restoration program. By 1994, that investment had grown to $1.3 billion. The share of 1994 investment for the FUDS program is $332 million.

The goals of FUDS cleanup are:

- Identification, investigation and cleanup of contamination from DoD hazardous substances;
- Detection and disposal of unexploded ordnance; and
- Demolition and removal of unsafe buildings and structures, located on a formerly owned Defense property, currently owned by a state, a municipality, or a Native Corporation in Alaska.

SITE ELIGIBILITY

The FUDS program requires that a site must have been owned by, leased to, possessed by, or otherwise under the jurisdiction of DoD. The hazardous environmental conditions must be from past DoD activities.

A FUDS may include manufacturing facilities which were owned or leased by DoD, but operated by contractors. FUDS also include National Guard and Reserve facilities where property accountability at one time rested with DoD. Further, it includes sites where DoD had a documented presence and sites that were used for the disposal of DoD materials or waste where the installation responsible for the waste is permanently closed.

The following sites are not eligible for cleanup or reimbursement:

- Sites outside U.S. jurisdiction.
- Sites where current owners have used facilities such as underground storage tanks or buildings, or have expended funds to clean up contamination or remove unsafe debris.
- Sites for which the DoD component that owned or used the site has accepted full restoration responsibility.
- United Services Organization sites.
- Civil Works sites.
- Cemeteries.
- Sites for which no records are available.

TYPES OF PROJECTS

Projects at a FUDS fall within one or more of the following categories:

Hazardous, Toxic, and Radioactive Waste: Cleanup and removal of hazardous substances. Projects in this category include removal of underground and aboveground storage tanks, drums, and electrical transformers. These projects are called containerized hazardous, toxic and radioactive waste projects. Other projects in this category include removal of soil or groundwater contaminated with hazardous substances. Also included are projects for removal of other hazardous substances or wastes. In addition, this category includes projects for cleanup of environmental problems associated with contaminated landfills.

Building Demolition and/or Debris Removal: Demolition and removal of structurally unsafe buildings or towers and removal of unsafe debris.

Ordnance and Explosive Waste: Identification and removal of abandoned ordnance and explosive waste such as bombs, bullets, and rockets. Also included are projects for removal or remediation of explosive-contaminated soil and chemical warfare material.

PROGRAM PHASES

The FUDS program has three major phases: inventory, study, and removal/ remediation.

Inventory: The inventory phase includes searches of real estate records to verify previous DoD ownership or usage. As part of the inventory process, a preliminary assessment is made to determine the site eligibility and the need for cleanup. The Corps' districts work to identify sites within their regional boundaries. We determine whether the site is eligible for cleanup. We also evaluate the severity of environmental problems. If no contamination is found, no further action (NOFA) will be taken. However, if the property owners or regulators later find that contamination exists and was caused by DoD, they can contact us for reevaluation of that site.

Study: The study phase consists of a site inspection to confirm contamination. We undertake studies to determine the extent of environmental damage and how best to clean up the contamination. The selection of an environmentally safe cleanup method is also part of this phase. At sites where numerous parties may have contributed to the contamination, the share of DoD liability is also determined.

Removal/Remediation: This phase consists of the engineering design and the necessary action to clean up the site. Sometimes it also includes additional operations and maintenance phases to eliminate contamination completely.

After work on a site is completed, including regulatory agency review, it is inspected to confirm that it no longer poses a problem.

PROGRAM MANAGEMENT

Headquarters, U.S. Army Corps of Engineers is the overall program manager for the FUDS program. We develop policies based on DoD guidance and provide funds to local Corps' divisions and districts to perform FUDS cleanup.

Work is accomplished on a priority basis - the worst sites are cleaned first. Priority of funds goes to sites with the greatest potential danger to the human population. Normally these are areas where people live, work, or go to school.

A typical project can take anywhere from two years to many years (5 to 10). Project duration depends on how large the site is, what work is involved, and what level of funding is available. In addition, if operation and maintenance activities are required, the project can extend beyond ten years.

No two projects are ever quite the same. One thing that does remain constant is the partnership between the Corps of Engineers, the environmental regulators, and the property owners.

PUBLIC INVOLVEMENT

Public values and concerns are an important element of the cleanup process. We work closely with the current site owner and adjacent residents prior to and while working on a site. Through personal contacts, small group meetings, workshops, and public meetings, we gather important information from the public that is critical in decision making. Through information meetings, brochures and media tours we keep the public constantly apprised of the progress of the work. These contacts also allow us to immediately address concerns about the work.

A Restoration Advisory Board (RAB) can be established at a site where there is sufficient community interest. The purpose of the RAB is to review progress of projects and initiate dialogue between the Corps and the local community. The RAB is comprised of representatives from the Corps, U.S. Environmental Protection Agency and/or state regulatory agency, and members of the local community. The RAB is jointly chaired by the Corps staff and a community representative.

PROGRAM STATUS

Approximately 8,100 FUDS have been identified since the program began in 1984. The Corps has completed preliminary assessments for 5,723 sites. We expect to complete the rest by September 30, 1995. As of April 1994, we had determined that 4,020 sites require no further action; that is, no DoD contamination exists at those sites. The other 1,703 properties require cleanup projects. As of April 1994, we had completed 185 cleanup projects.

BUDGET

In Fiscal Years (FY) 92 and 93, $126.6 million and $145.5 million, respectively, were spent on cleanup activities at FUDS. The FY 94 budget is $332.7 million, and the FY 95 budget will be similar. The overall cleanup estimate for FUDS is approximately $7 billion.

FURTHER INFORMATION ON SPECIFIC FUDS:

Contact the U.S. Army Corps of Engineers FUDS Coordinator in the state/territory where the FUDS is located:

ME, NH, VT MA, RI, CT	U.S. Army Engineer Division, New England ATTN: CENED-PD, 424 Trapelo Road, Waltham, MA 02254-9149
NY, NJ	U.S. Army Engineer District, New York ATTN: CENAN-DP, Jacob K. Javits Federal Building New York, NY 10278-0090
PA, DE, MD DC	U.S. Army Engineer District, Baltimore ATTN: CENAB-EN, P.O. Box 1715, Baltimore, MD 21203-1715
VA	U.S. Army Engineer District, Norfolk ATTN: CENAO-PM-M, 803 Front Street, Norfolk, VA 23510-1096
NC	U.S. Army Engineer District, Wilmington ATTN: CESAW-LC, P.O. Box 1890, Wilmington, NC 28402-1890
SC	U.S. Army Engineer District, Charleston ATTN: CESAC-DP, P.O. Box 919, Charleston, SC 29402-0919
GA	U.S. Army Engineer District, Savannah ATTN: CESAS-PM, P.O. Box 889, Savannah, GA 31402-0889
FL,PR VI	U.S. Army Engineer District, Jacksonville ATTN: CESAJ-DP, P.O. Box 4970, Jacksonville, FL 32232-0019
AL	U.S. Army Engineer District, Mobile ATTN: CESAM-PM, P.O. Box 2288, Mobile, AL 36628-0001
MI	U.S. Army Engineer District, Detroit ATTN: CENCE-ED, P.O. Box 1027, Detroit, MI 48231-1027
IL	U.S. Army Engineer District, Chicago ATTN: CENCC-ED, 111 North Canal Street, Suite 600 Chicago, IL 60606-7206
MN,WI	U.S. Army Engineer District, St. Paul ATTN: CENCS-ED, 180 East Kellogg Blvd, St. Paul, MN 55101-1479
IN,KY	U.S. Army Engineer District, Louisville ATTN: CEORL-DL, P.O. Box 59, Louisville, KY 40201-0059
WV,OH	U.S. Army Engineer District, Huntington ATTN: CEORH-DL, 502 8th Street, Huntington, WV 25701-2070
TN	U.S. Army Engineer District, Nashville ATTN: CEORN-ER, P.O. Box 1070, Nashville, TN 37202-1070

MS	U.S. Army Engineer District, Vicksburg ATTN: CELMK-ED, 2101 N. Frontage Road, Vicksburg, MS 39180-5191
LA	U.S. Army Engineer District, New Orleans ATTN: CELMN-PP, P.O. Box 60267, New Orleans, LA 70160-0267
NE, IA, MT, ND SD, WY, CO	U.S. Army Engineer District, Omaha ATTN: CEMRO-MD, 215 North 17th Street, Omaha, NE 68102-4978
MO, KS	U.S. Army Engineer District, Kansas City ATTN: CEMRK-ED, 700 Federal Bldg, Kansas City, MO 64106-2896
AR	U.S. Army Engineer District, Little Rock ATTN: CESWL-PM, P.O. Box 867, Little Rock, AR 72203-0867
OK	U.S. Army Engineer District, Tulsa ATTN: CESWT-PP, P.O. Box 61, Tulsa, OK 74121-0061
TX	U.S. Army Engineer District, Fort Worth ATTN: CESWF-PM, P.O. Box 17300, Ft. Worth, TX 76102-0300
TX	U.S. Army Engineer District, Galveston ATTN: CESWG-ED, P.O. Box 1229, Galveston, TX 77553-1229
NM	U.S. Army Engineer District, Albuquerque ATTN: CESWA-PP, P.O. Box 1580, Albuquerque, NM 87103-1580
AK	U.S. Army Engineer District, Alaska ATTN: CENPA-PM, P.O. Box 898, Anchorage, AK 99506-0898
WA	U.S. Army Engineer District, Seattle ATTN: CENPS-PM, P.O. Box 3755, Seattle, WA 98124-2255
OR	U.S. Army Engineer District, Portland ATTN: CENPP-PE, P.O. Box 2946, Portland, OR 97208-2946
ID	U.S. Army Engineer District, Walla Walla ATTN: CENPW-PJ, Bldg 602, City-County Airport, Walla Walla, WA, 99362-9265
CA(N), UT NV(N)	U.S. Army Engineer District, Sacramento ATTN: CESPK-ED, 1325 J Street, Sacramento, CA 95814-2922
AZ, CA(S) NV(S)	U.S. Army Engineer District, Los Angeles ATTN: CESPL-PM, P.O. Box 2711, Los Angeles, CA 90053-2325
HI,GU,AS CN,TT	U.S. Army Engineer Division, Pacific Ocean ATTN: CEPOD-ED, Bldg 230, Ft. Shafter, HI 96858-5440

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FUDS

Formerly Used Defense Sites

EP-200-1-3
August 1994

Mitigation of Department of Defense Environmental Impacts to Native American Lands

Assessment, Documentation and Reporting Environmental and Cultural Impacts (Phase 2)

In the FY96 Defense Authorization Act, Congress directed the Department of Defense to provide for:

"the mitigation of environmental impacts, including training and technical Assistance to tribes, related administrative support, the gathering of information, documenting environmental damage, developing a system for prioritization of mitigation on Indian land resulting form Department of Defense activities."

The Indian Head Division of the Naval Surface Warfare Center, NSWC/IHDIV, has been directed by the Office of the Deputy Under Secretary of Defense for Environmental Security, ODUSD(ES), to perform the "Document and Reporting" phase of DoD's Mitigation of Environmental Impacts on Native American Lands Program. NSWC/IHDIV has been tasked with:

- ***"training and technical assistance,"***
- ***"gathering information,"***
- ***"documenting environmental damage"***

ODUSD(ES) has developed a database, NATRMIS, to inventory, prioritize, and track the mitigation of DoD environmental impacts on Native American Lands. ODUSD(ES) will use NATRMIS to report to Congress the number and status of sites, sequence sites for funding, and track the status of sites.

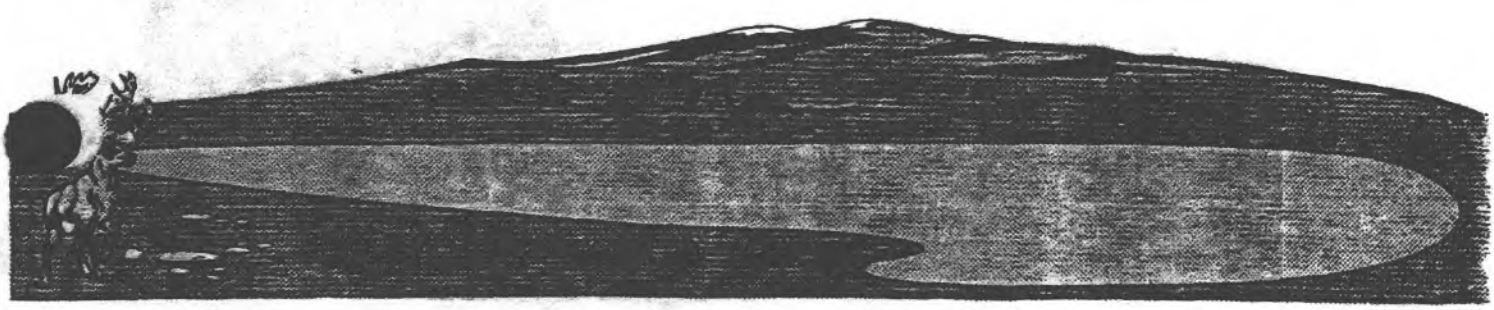
The NSWC team is gathering the data for the NATRMIS database, by conducting various assessments at each site.

To the best extent possible the NSWC team will use existing data collected by the Tribal Governments and the local DoD activities with on site verification of the nature and extent of the impact.

The NSWC team has started the assessment process on the 54 sites in the baseline inventory listed in the *"Department of Defense Report to Congress on Environmental Impacts to Native American Lands (1996)."*

NSWC Team Goals:

- **Respect Tribal Sovereignty and strengthen the Government-to-Government relationship with the Native American Governments.**
- **Communicate issues and concerns of the Native American Governments to the policy makers at the Office of the Secretary of Defense.**
- **Identify, document, and report all DoD environmental and cultural impacts to Native American Lands.**
- **Promote a closer working relationship between the Native American Governments and local DoD activities responsible for conducting the cleanup process.**
- **Discuss the DoD environmental cleanup process with the Native American Government, to provide a clear understanding of the DoD offices involved,realistic program time frames, and funding realities.**
- **Mentoring in the environmental field when desired by the Native American Government.**



Mitigation of Department of Defense Environmental Impacts to Native American Lands

Assessment, Documentation and Reporting Environmental and Cultural Impacts (Phase 2)

For further information, contact:

John Stacy
Naval Surface Warfare Center, Indian Head Division
Phone: (301) 743-4365
Fax: (301) 743-4717
Internet: johnstacy@chem.ih.navy.mil

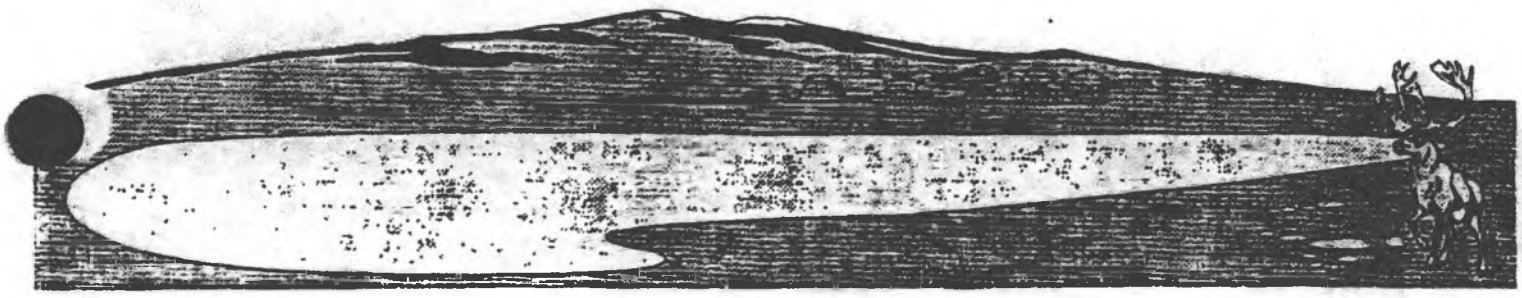
The NSWC Team

- **NSWC/ IHDIV will conduct the Government-to-Government relationship with the Native American Governments**
- **NWSC/ IHDIV is responsible for the overall management of the program.**

- **Portage Environmental Inc., is a Native American owned environmental firm.**
- **Portage will be responsible for conducting the site assessments in Alaska.**

- **Tecumseh Professional Associates is a Native American owned environmental firm.**
- **Tecumseh will be responsible for conducting the site assessments in the lower 48 states.**

- **EG&G will assist NSWC/ IHDIV in the management of the program.**
- **EG&G will manage field operation of the subcontractors, data assembly, and reporting.**



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ALASKA STATE OFFICE
222 W. 7th Avenue, #13
ANCHORAGE, ALASKA 99513-7599

1703 (931)

12 APR 1996

ANCSA Corporation Landowner:

Section 103 of Public Law No. 104-42, entitled "Settlement of Claims Arising From Hazardous Substance Contamination of Transferred Lands," requires the Secretary of the Interior to prepare a report to Congress which addresses certain issues presented by the presence of contaminants on lands conveyed or prioritized for conveyance to ANCSA Native Corporations.

The attachments provide some of the details of this effort, an action plan for accomplishing this project, and some information about hazardous materials.

There is a growing awareness of the need to address the public health, safety, and environmental impacts of past degradation and to reduce and repair those impacts. Congress recognized that locating and determining the nature and size of the potential problems is the first step toward solving them.

The Bureau of Land Management, as the lead agency for this project, requests your assistance and cooperation to help inventory the presence of contaminants on lands conveyed or prioritized for conveyance pursuant to ANCSA and provide input into this report to Congress. Please forward to us any information you may have no later than September 13, 1996. Attached is an example site assessment or inventory report to assist you. Your involvement is critical to the success of this effort.

There could be hundreds of sites around the state that may involve hazardous materials. Many of these sites have been identified by the Environmental Protection Agency, the U.S. Army Corps of Engineers, and the Alaska Department of Environmental Conservation, but specific details are lacking. If you have not identified any contaminated sites on your lands or do not feel this is an issue at this time, please indicate this on the self addressed letter enclosed and return it to us.

We understand some landowners may be reluctant to provide detailed information on the existence of contaminated sites due to concerns over potential liabilities associated with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended and other Federal or state laws. It seems impractical however, to think the problems can be addressed without a comprehensive inventory of some kind.

It is our intention to forward whatever information we obtain to Congress for their consideration and appropriate action.

Preparing a suitable report to Congress is a significant and important task. We look forward to your participation. If you have questions or need assistance please feel free to contact Mike Haskins in the Division of Lands, Minerals, and Resources at (907) 271-3351 or fax at (907) 271-5479.

Tom Allen

State Director

7 Attachments

1 - Action Plan (5 pp)
2 - Sample Potentially Contaminated Site Report (8 pp)
3 - Site Report Instruction Guide (6 pp)
4 - Section 103, P.L. 104-42 (1 p)
5 - Background Materials on Hazardous Materials and Toxic Substances (8 pp)
6 - Information on the restoration of formerly used defense sites (2 pp)
7 - Self Addressed Response Letter (1 p)

ACTION PLAN TO DEVELOP A REPORT TO CONGRESS

Subject: Claims Arising From Contamination of Transferred Lands to ANCSA Corporations

Background: This is a brief summary of events relating to this issue.

Certain lands conveyed to Alaska Native Corporations under ANCSA may contain hazardous wastes and toxic substances originating during Federal ownership. Congress is concerned about the inequities these contamination issues may present to the affected Native corporations and their shareholders.

In 1991, legislation was passed which required a report on lands which were transferred under ANCSA and subsequently discovered to be contaminated. Unfortunately only three months were provided to complete the work and the Bureau of Land Management (BLM) received only 22 responses out of more than 200 mail out inquiries. A report dated April 15, 1991, was never acted on by Congress.

The Department of the Interior (DOI) has worked with the Alaska Federation of Natives and others on the legislative language that resulted in Section 103 of Public Law 104-42.

Authority: Congress authorized and directed this report in November of 1995.

Section 103 of Public Law 104-42, dated November 29, 1995, requires the Secretary to prepare a report to Congress within 18 months (May 28, 1997) addressing certain issues presented by the presence of contaminants on lands 1) conveyed or 2) prioritized for conveyance to ANCSA Native corporations. The law does not require the Department to conduct on-the-ground field examinations or inventories and did not provide any funding to accomplish this project. The responsibility for preparing this report was assigned to the BLM as the lead agency.

Report Content: Congress specified that the following items would be addressed in the report.

1) Nature and types of contaminants present at the time of conveyance;
2) Existence and availability of potentially responsible parties for removal and remediation of the effects of any contaminants;
3) Identification of existing remedies;
4) Recommendations for any additional legislation to remedy the problems;
5) Identification of structures known to have asbestos present and recommendations on how to inform Native landowners on the containment of asbestos.

NOTE:

- Definition of "contaminant" - For the purposes of this report it means: hazardous substance harmful to public health or the environment, including friable asbestos.

- Consultation with the Secretary of Agriculture, State of Alaska, and appropriate Alaska Native Corporations and organizations is also required.

Known Native Concerns: Congress directed this report to address issues and concerns raised by ANCSA landowners over the presence of contaminants on lands conveyed to them under ANCSA.

Native corporations have indicated to Congress over the last several years that lands conveyed to them under ANCSA contain contamination. The presence of contaminants on conveyed lands create harmful economic, legal, and other conditions which serve to undermine the intent of ANCSA. This issue needs to be addressed by Congress.

Some Native corporations are reluctant to provide information due to the strict liability provisions of CERCLA (Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended). Under CERCLA 107, landowners are strictly liable for releases of hazardous wastes on their lands, without regard to actual fault. Accordingly, Native corporations become liable parties for any wastes that may have been deposited on conveyed lands at any time in the past.

Implementation Timeframes: Congress allowed 18 months for preparation of this report. The following is a breakdown of the critical steps and time allocated for each.

* April 15, 1996 - Mail out letter to ANCSA Corporations and Federal Agencies with action plan, example site inventory reports, copy of the act, and some information about asbestos, hazardous materials, and toxic substances.

* April, May, June, July, August, September 13th - Information gathering and feedback by Native landowners/agencies. All information should be submitted as soon as possible to the BLM, attention: Mike Haskins (931). Develop computerized program to record information received.

* September, October, November - Analysis of responses, data input into database, follow-up with corporations, etc.

* December, January, February - Write report.

* March 10, 1997 - Send report to Washington Office for review and surname.

* May 28, 1997 - Deadline for submitting report to Congress.

Implementation Strategy: Preparing this report is an important task that will require maximum involvement of all Native land owners and Federal land managers in Alaska.

-- Mike Haskins in the Division of Lands, Minerals, and Resources is the project leader. Questions or requests for assistance should be directed to Mike at (907) 271-3351 or fax at (907) 271-5479.

-- A core team of realty and hazardous materials specialists has been formed with representatives from the BLM, the National Park Service, the Fish and Wildlife Service, the Bureau of Indian Affairs, the U.S. Forest Service, and the DOI.

-- The basic components of the project are: 1) action plan/data base development, 2) data gathering/outreach/consultation, 3) analysis of responses, 4) development of remedies, 5) report preparation, and 6) transmittal to Congress.

-- All ANCSA landowners and affected Federal agencies will be contacted by a mailout consisting of a cover letter, site assessment/inventory reports with an instruction guide and example, and some information on hazardous substances. This mail out will begin in April 1996.

-- Approximately 5 months (April - September) will be provided for information gathering and input. The example site assessment/inventory reports are intended to assist landowners in recording important information about a site. A computerized data base is being developed to assist in collecting the information received.

-- A letter will be sent to: the Alaska Federation of Natives, Tanana Chiefs Conference, Association of Village Council Presidents, the Alaska Intertribal Council, Bristol Bay Native Association, Copper River Native Association, Aleutian/Pribilof Islands Native Association, and other Native organizations explaining the project strategy and timeframes and allow an opportunity for comments and suggestions. Informational press releases will be distributed to local newspapers and briefings will be provided upon request. The support and participation in this project by the Native community is important to the overall success of this project.

-- Contact will be made with the various branches of the military (Army, Navy, Air Force) and Coast Guard to explain our project and obtain any information they may have which will assist this project.

-- Contact will be made with the Environmental Protection Agency (EPA), the State Department of Environmental Conservation (DEC), the State Department of Natural Resources (DNR), the former Bureau of Mines (BOM), and the Army Corps of Engineers (COE) to obtain their registers of contaminated sites in Alaska and discuss our project.

-- Contact will be with other state or Federal agencies that have constructed or operated facilities on lands that have subsequently been transferred to Native landowners.

-- We will begin drafting sections of the report as soon as possible.

General Information:

The information submitted to the BLM by a landowner should not be considered confidential or proprietary in nature. It may be shared with interested parties, including regulatory agencies, as permitted under the Freedom of Information Act.

Properly used and maintained asbestos is not a danger to public health. Health concerns may arise when friable asbestos is released into the environment.

If a potentially dangerous situation or site is encountered, do not approach it. These sites should be evaluated from the perimeter. Do not take samples or try to pry open containers.

At this time, we do not know how Congress will use this report or what future action may be taken in this matter.

Types of Hazardous Wastes Common in Alaska:

Solvents	Mining Waste Chemicals
PCB's (polychlorinated biphenyls)	Spilled Fuels
Explosives (including Ordnance)	Antifreeze
Batteries	Oil and Gas Chemicals
Pesticides	Friable Asbestos
Mercury	Arsenic
Benzene	Lead

Types of Sites Which May be Reportable:

- Drum storage/disposal (above and below ground)
- Fuel tanks (above and below ground)
- Oil and Gas Wells
- Buildings which contain asbestos
- Mines
- Landfills
- Water treatment
- Power plants

Note: Photos may also be submitted.

Additional Information: Federal Workgroup Contacts

This core team of realty and environmental specialists from these agencies will assist in implementing Section 103 of the Act (Public Law 104-42, dated November 29, 1995).

Bureau of Land Management - Lead Agency

*Mike Haskins, Project Leader	271-3351	271-5479 (fax)
Wayne Svejnoha, Haz Mat Specialist	271-3807	271-5479 (fax)

U.S. Fish and Wildlife Service

*Sharon Janis, Chief Div. of Realty	786-3490	786-3901 (fax)
Lucy Blix, Realty	786-3566	786-3901 (fax)
Danielle Jerry, Biological Resources	786-3335	786-3901 (fax)

National Park Service

*Arvilla McAllister,Paralegal-Lands	257-2497	257-2510 (fax)
Alec Carter, Haz Mat Specialist	257-2627	257-2448 (fax)

Bureau of Indian Affairs

*Frank Andrews, Haz Mat Specialist	586-7616	586-7104 (fax)
Charlie Bunch, ANCSA Coordination	271-3695	271-4083 (fax)

U.S. Forest Service

*Jim Wolfe, Dir. Engineering/Aviation	586-7957	586-7555 (fax)

****

DOI Regional Solicitor's Office

Regina Sleater, Attorney/Advisor	271-4131	271-4143 (fax)

DOI Office of the Secretary - Alaska

Doug Mutter, Env. Policy and Compliance	271-5011	271-4102 (fax)

*Principal Agency Contact

POTENTIALLY CONTAMINATED SITE REPORT

Purpose: The Secretary of the Interior must prepare a report to Congress on contamination issues affecting Alaska Native Claims Settlement Acts lands (Section 103 of H.R. 402, Public Law 104-42, dated November 29, 1995).

This form is intended to assist you in recording information. Please complete one form for each site and provide as much information as you can.

POINT OF CONTACT:

1. Corporation Landowner: XYZ Denali Corporation
2. Contact Person: Mr. John Smith
3. Title: Land Manager
4. Address: P.O. Box 11 anywhere, Alaska 99999
5. Phone No.: 777-6666 6. Fax No.: 777-7777

SITE LOCATION: Please complete all that applies.

7. Site Name: Anchorage Power Station
former Federal Energy Commission withdrawal
8. Location: Meridian Seward Township 13N Range 3W
Section 21 Quarter Section SW¼ Survey Number _____
and/or
9. Latitude Degrees 49° Minutes 11 Seconds 09.213
Longitude Degrees 94° Minutes 52 Seconds 46.906

10. Lands are conveyed? [X] Yes [ ] No
11. Lands are prioritized? [ ] Yes [ ] No
12. Agency Reference/File No. wdl file AA-076999 PLO XXXX

Comments: This site is 3 miles east of Anchorage. Near U.S. Survey No. 333 on the west side of Eagle River.

SITE INFORMATION: What is on the site? Complete all that applies.

BUILDINGS: Complete all that applies.

13. Are there buildings on the site? [X] Yes [ ] No How many? 3

14. If yes, year constructed? 1942 and 1967

15. Is the building(s) abandoned? [X] Yes [ ] No How many? 2

16. If yes, year abandoned? 1967

17. If abandoned, is it secured/barricaded? [X] Yes [ ] No

18. What was the building used for? Power plant operations office, mechanical and storage building.

19. What is the present condition?

[ ] Good/Useable [X] Fair/Needs work [ ] Poor/Unuseable

20. If it is being used, what is it used for? The operations office is still used. The other buildings are abandoned.

21. Is there asbestos materials in the building?

[X] Yes [ ] No [ ] Unknown

22. If yes: Is it friable[1]? [ ] Yes [X] No Damaged? [ ] Yes [X] No

Comments on building use and condition: The 1967 building needs some roof repairs but is still used. The shop and storage buildings should be removed and may be unsafe.

[1]Friable - When asbestos can be crushed by hand pressure, or the surface is not sealed to prevent small pieces from escaping, the material is considered friable.

DRUMS/TANKS: Complete all that applies.

	Drums		Tanks	
23. Number on site	12		2	
24. Approx. size (gallons/dimensions)	55 gallon		500gallons each	
25. Do any have materials in them?	[X] Yes	[ ] No	[X] Yes	[ ] No
26. Are any leaking now?	[ ] Yes	[X] No	[ ] Yes	[X] No
27. Have any leaked in the past?	[X] Yes	[ ] No	[ ] Yes	[X] No
28. If contents are known, what are they?	Fuel, Pesticides		diesel fuel	
29. Above ground?	[X] Yes	[ ] No	[X] Yes	[ ] No
30. Buried?	[X] Yes	[ ] No	[ ] Yes	[X] No
31. Are there markings present?	[X] Yes	[ ] No	[ ] Yes	[X] No
32. What are they?	Jet Fuel A, 24-D			
33. Currently used?	[ ] Yes	[ ] No	[X] Yes	[ ] No
34. What for?			generators	

Comments: There may be some buried drums behind the shop. It appears some drums have leaked in the past. The large fuel tanks look good.

LANDFILL/DUMPSITE: Complete all that applies.

35. Is there a landfill or dump site? [X] Yes [ ] No

36. Approximate size: _____ acres 50 feet x 100 feet

37. Is it permitted/authorized? [ ] Yes [ ] No By whom? Don't Know

38. Year use began? 1942

39. Year use ended/closed? 1967

40. If closed, has it been covered? [X] Yes [ ] No

Comments: It looks like a garbage pit was used behind the shop. It has now been covered over with 2-3 feet of soil. Unsure what is buried.

-- PIPELINE: Complete all that applies.

41. Is there a pipeline on the site? [X] Yes [ ] No

42. What type of pipeline? [ ] Sewer [ ] Gas [ ] Oil [ ] Water

[X] Other What? Diesel

43. Is it leaking? [ ] Yes [X] No

44. Is it above ground? [X] Yes [ ] No [ ] Partially

45. If there are markings, what are they? fuel line emergency shutoff

46. Approximate diameter: 4 inches

47. Length: 40 feet

48. What facilities does the pipeline serve? fuel tanks to generator

49. Is it in use? [X] Yes [ ] No

Comments: Some of the fittings look new. The line is in good condition

OIL OR GAS WELL: Complete all that applies.

50. Is there currently or was there an oil or gas well on site? [ ] Yes [X] No

51. What kind of well? [ ] Gas [ ] Oil

52. Is it active? [ ] Yes [ ] No

53. If abandoned, year: _____

54. Is there a reserve pit? [ ] Yes [ ] No

Comments: _____

-- **MINE: Complete all that applies.**

55. **Is there a mine on the site?** [ ] Yes [X] No

56. **Is it active?** [ ] Yes [ ] No

57. **Abandoned?** [ ] Yes [ ] No

58. **If abandoned, what year?** _____

59. **What type of mineral was mined?** _____

60. **What type of mining operation was used?**

[ ] Placer [ ] Open Pit [ ] Underground [ ] Floating Dredge

61. **Are there mine tailings present?** [ ] Yes [ ] No

62. **Is there a mill present?** [ ] Yes [ ] No

63. **Is there a settling pond present?** [ ] Yes [ ] No

Comments: _____

OTHER: Are there other sources of contamination not described above? Please describe.

There may be some misc. containers in the old shop building that contain pesticides, chemicals, and old motor oil.

SITE CONDITION: What is the condition of the site and what signs of contamination exist?

64. Is there stained soil at the site? [X] Yes [ ] No

65. Approximate size of the stained area: 25 ft. x 25 ft. dimensions; or

_____ acres

66. Is there dead/dying vegetation? [X] Yes [ ] No

67. How big an area is affected? 100 ft. x 100 ft. dimensions; or

_____ acres

68. Is there a pool of liquid, seepage, or a sheen on the surface? [X] Yes [ ] No

69. How big is the pool? 50 ft. x 100 ft. dimensions; or

_____ acres

70. Is there unusual chemical or other smell in the area? [ ] Yes [X] No

71. Are there signs the wildlife has been adversely affected? [ ] Yes [X] No

72. Are there warning signs posted at the site that indicate a known hazard? [X] Yes [ ] No

73. How close is the site to surface water? _____ feet 300 yards _____ miles

74. How close is the site to a water well or drinking source?

_____ feet _____ yards _____ miles Unknown

75. How close to the village is the site? [ ] In the village [ ] Less than 1 mile

[X] 1 to 5 miles [ ] Beyond 5 miles

76. Is there an environmental damage report available? [X] Yes [ ] No

77. Are there photos of the site? [X] Yes [ ] No

Comments: EPA did a report in 1982. I can send you a copy if you ask.

SITE USER/OPERATOR: List who constructed, operated, or used the site.

78. If known, who constructed building or facilities?

Agency Federal Power Authority Agency Representative John Doe ?

Contractor A Construction Contractor Representative ?

Individual(s) There was a caretaker who did some work at the site from 1970 - 1973.

79. What was the period of use by each?

(Agency) 1940 year begin Present year end

(Contractor) 1940 year begin 1943 year end

(Individual/Operator) _____

80. Is the site still in use by anyone? [X] Yes [ ] No

81. Who? Agency Federal Power Auth Corporation _____

Other _____ Operator _____

82. Who is recognized as the owner/operator of the site within the local community?

federal government operates the site. XYZ Denali

Comments: Corp. owns the land.

Please return completed reports and information to:

Bureau of Land Management
Alaska State Office
Attention: Mike Haskins (931)
222 W. 7th Avenue, #13
Anchorage, Alaska 99513-7599

or fax to: (907) 271-5479

Thank you for your response!

ADDITIONAL COMMENTS:

There are two buildings on the land that are not being used. They should be torn down and the area cleaned up.

Someone should check to see what is buried behind the shop. No grass grows over this area 50' x 100'.

The stained area by the drums is probably from spilling contents and not from leaking.

The asbestos insulation is sealed tight but should be removed when the building is closed down.

Site Report Instruction Guide

The following is a guide to assist you in the completion of your *Potentially Contaminated Site Report*. If you have any additional questions, please contact Mike Haskins, Division of Lands, Minerals, and Resources at (907) 271-3351. Blank copies of the site report are available upon request.

Point of Contact: The purpose of this section is to identify the affected corporation/landowner and determine who has knowledge of the site and can be contacted if there are questions, or more information is needed.

Item #1: List name of corporation responding.
Item #2: Contact person or person completing site report.
Item #3: Title of contact person.
Item #4: Optional - Please provide if different from corporation address.
Item #5: Phone number of contact or corporation.
Item #6: Optional.

Site Location: The purpose of this section is that there may be several sites in a village or on Native lands and some sites have local names in addition to project names, etc. A legal description is critical for mapping purposes and to distinguish one site from another. At a minimum, the section, township, range, and meridian is needed. Maps may also be submitted.

Item #7: List the common site name which will be used in the report to identify the site. Other names can also be referenced to help identify the site.
Item #8: Section, Township, Range, and Meridian are critical elements in the description. Quarter sections, U.S. Survey numbers, and lot and block numbers are very helpful. If you have the survey number or longitude and latitude, you don't have to include Township and Range.
Item #9: Longitude and Latitude is optional if you completed #8. This information is usually not easily available.
Item #10: Confirms title has transferred from the United States.
Item #11: Indicates title has not been transferred to corporation but the corporation has prioritized lands and expects to receive title in the future.
Item #12: Reference any docket numbers used by the Environmental Protection Agency, the U.S. Army Corps of Engineers, the Department of Environmental Conservation, or Bureau of Land Management withdrawal casefile numbers that help identify the site and/or history of use.
Comments: Provide any explanations to a response or give additional information about a site's location.

Site Information: This information will tell us about possible sources of contamination or indicate potential problems. A site can contain several sources or types of contamination. We have created six standard categories plus a general category. Please give as much detailed information as possible. This is one of the most important sections. If you cannot answer "Yes" or "No" to a question, please write "Unknown".

Buildings:

Item #13: Indicate how many buildings are on the site, if any.
Item #14: Indicate approximate year of construction, if known. Estimates are acceptable.
Item #15: Indicate if any of the buildings are abandoned.
Item #16: Indicate the year or years the buildings were closed down.
Item #17: Indicate if the building was boarded up or locked to prevent use by anyone or reduce safety risks?
Item #18: Give the past use or uses of building.
Item #19: Indicate building condition. Use comments section, also, if needed.
Item #20: Give current use or uses of building.
Item #21: Indicate if asbestos is present in the building(s).
Item #22: If known, is asbestos friable or damaged. See information on asbestos provided in the mailout.
Comments: Provide additional information on past and present use of the building(s) and its present condition.

Drums and Tanks:

Item #23: Complete if either or both tanks and drums are on site. Give total numbers known either buried or on the surface. Also, specify other types of containers that may be present.
Item #24: Give the size of the drums and/or tanks in gallons, if known, or give the approximate dimensions.
Item #25: Are there contents in some or all of the tanks/drums? If known, you can specify if empty, full, or partially full.
Item #26: Indicate if you observe anything leaking now.
Item #27: If not leaking now, are there signs of a past leak based on stained soils or smells.
Item #28: Without testing or posing a danger to yourself, do you know what the contents are or is there a label. Indicate content materials, if known.
Item #29: Indicate if they are above ground.
Item #30: Indicate if they are buried below ground.
Item #31: Are there any markings which would show who placed them on the site or what the contents may be.
Item #32: Indicate what the markings are.

Item #33: Indicate if the drums or tanks are still actively used.
Item #34: Indicate what the current use is.
Comments: Give information to assist in determining who owns the drums/tanks, their purpose, use, and condition.

Landfill and Dumpsites:

Item #35: Indicate if there is any type of landfill, dump site, or garbage pit on the lands.
Item #36: Give approximate size or dimensions of the area.
Item #37: Indicate if a permit or other authorization was given for the site and who may have issued it.
Item #38: Tell us when the use began or when the materials were noticed on the land.
Item #39: Tell us when use ended, when the site was closed, or when the area was cleaned up or covered.
Item #40: Is the site covered with soil?
Comments: Give information about past and current uses, types of materials placed on the land, and if the site is active or inactive. Also, indicate how many are on the site, if more than one.

Pipeline:

Item #41 Indicate if there is a pipeline on the site.
Item #42: If there is a pipeline, indicate what kind it is.
Item #43: Indicate if the pipeline has any leaks now.
Item #44: Indicate if the pipeline is above ground, underground, or both.
Item #45: Indicate if there are any markings on the pipeline.
Item #46: Indicate the size of the pipeline in inches.
Item #47: Indicate the approximate length of the pipeline in feet or yards.
Item #48: Indicate the buildings or facilities served by the pipeline. Who benefits from or is the primary user of the pipeline?
Item #49: Indicate if the pipeline is actively used today.
Comments: Provide more information as needed about the condition and use of the pipeline.

Oil or Gas Well:

Item #50: Indicate if any type of well site was ever on the lands or if an exploratory or production well is now on the site.
Item #51: Indicate type of well drilled on the site, i.e., oil exploration, oil production, etc.
Item #52: Tell us if the well site is actively being worked and maintained.

Item #53: If the well was abandoned, indicate the approximate year this happened.
Item #54: Some of the old wells used a reserve pit for drilling muds, etc. Indicate if a reserve pit exists.
Comments: Indicate more information about the past or present activities and status of site if abandoned.

Mine:

Item #55: Indicate if there is a mine on the site.
Item #56: Indicate if the site is still regularly used. A mine may not be used every year but is still active because it has not been officially abandoned.
Item #57: Indicate if the site has been closed or abandoned by the claimant.
Item #58: If the mine was closed/abandoned, indicate the year this happened.
Item #59: Indicate the type of mineral or ore that was mined - Gold, Silver, asbestos, gravel, etc.
Item #60: Indicate the type of operation used to mine.
Item #61: Mine tailings can be the source of contaminants or cause problems if not properly rehabilitated. Indicate if mine tailings are on the site.
Item #62: Indicate if there is a mill present that may have been used to process minerals. A mill site could contained stored chemicals such as mercury which is used to separate gold.
Item #63: Indicate if there is a settling pond on the site which has not be fully restored or rehabilitated.
Comments: Please provide as much information as you can about the past and current mining operations, the condition of the lands, and the equipment that might be on the site. Also, indicate if there are any discharge or water quality problems.

Other:

We have tried to cover the basic sources of contamination that might be found in Alaska. Use this area to cover a contamination site/source not covered or use this to give more information about a site.

Site Condition: This is an important section that will give an indication of the signs or effects of a contamination problem. This information could be used to determine priorities for follow-up actions etc.

Item #64: Is there a patch of stained or discolored soils near tanks, drums, or work area?
Item #65: Indicate the approximate size of the stained area.

Item #66: Indicate if there is an area that grass or trees, etc. will not grow or they are a different color, or they look like they are dying for reasons besides a lack of water.

Item #67: Indicate the size of the affected area or dead zone.

Item #68: Indicate if there is a liquid or substance that will not sink into the ground or where the ground is saturated and is bubbling near the surface.

Item #69: Indicate the approximate size of the pool or problem area.

Item #70: Indicate if there is a strong chemical smell or a smell that is unusual or strong like fumes.

Item #71: Indicate if there are dead birds, rodents, or other small animals in the area or if other wildlife that frequent the area show signs of problems which may relate to contamination.

Item #72: Indicate if there are signs that indicate a chemical hazard exists or if someone has determined that an area may be unsafe for humans or a signs says to stay out of an area. Indicate what the sign says in comments.

Item #73: Surface water can be a pathway for contamination to get into the ground water. Indicate approximately how close to the site is the nearest lake, pond, river, or standing water.

Item #74 See #73. Indicate the approximate distance to a well or fresh water drinking source from the site.

Item #75: How close is the contaminated site or hazard from the community or population center.

Item #76: Has anyone done a hazardous materials report or environmental audit on the site to determine if a problem exists or if one did that it was resolved? You do not have to send a copy at this time but please indicate if a report does exist. We may ask for a copy later. Please indicate who did the report, when, and the general findings.

Item #77: Indicate if photos or negatives of the site exist. We may ask for copies later or you could provide either color or black and white photos of the site/facility.

Site User or Operator: Congress asked that this report identify to the extent practical, the existence and availability of potentially responsible parties for removal or clean-up of contaminated lands. Please give as much information as possible about who built, used, operated, or leased any buildings, facilities, improvements, mines, wells, etc. on the lands and when these actions were taken. In some cases, several parties may have been involved. Please list as many as is known.

Item #78: List the agency and specific agency employee who worked at the site, if known. List the contractor, company, or builder of the site and the individual foreman or supervisor, if known. List any individuals or groups of individuals that may have used the site.

Item #79: List the periods of time the lands were used by the agencies, individuals, or contractors listed above.
Item #80: Indicate if the site is still being used by anyone at all.
Item #81: Indicate who or which agency still maintains or uses a site.
Item #82: Indicate who is the recognized owner or operator of a site. Who would you get permission to use the site or facility from? Who do you think should take care of any problem that might exist?

Additional Comments: Use this back page for any additional information or clarification to a numbered question. Please provide any input you might think is important to consider in this report to Congress.

This guide is intended to help you record information about a site. Please provide whatever additional information you think is important to know.

SEC. 103. SETTLEMENT OF CLAIMS ARISING FROM HAZARDOUS SUBSTANCE CONTAMINATION OF TRANSFERRED LANDS.

The Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.) is amended by adding at the end the following:

'CLAIMS ARISING FROM CONTAMINATION OF TRANSFERRED LANDS

'SEC. 40. (a) As used in this section the term 'contaminant' means hazardous substance harmful to public health or the environment, including friable asbestos.

'(b) Within 18 months of enactment of this section, and after consultation with the Secretary of Agriculture, State of Alaska, and appropriate Alaska Native corporations and organizations, the Secretary shall submit to the Committee on Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate, a report addressing issues presented by the presence of contaminants on lands conveyed or prioritized for conveyance to such corporations pursuant to this Act. Such report shall consist of--

'(1) existing information concerning the nature and types of contaminants present on such lands prior to conveyance to Alaska Native corporations;

'(2) existing information identifying to the extent practicable the existence and availability of potentially responsible parties for the removal or remediation of the effects of such contaminants;

'(3) identification of existing remedies;

'(4) recommendations for any additional legislation that the Secretary concludes is necessary to remedy the problem of contaminants on the lands; and

'(5) in addition to the identification of contaminants, identification of structures known to have asbestos present and recommendations to inform Native landowners on the containment of asbestos.'.

SEC. 104. AUTHORIZATION OF APPROPRIATIONS FOR THE PURPOSES OF IMPLEMENTING REQUIRED RECONVEYANCES.

Section 14(c) of the Alaska Native Claims Settlement Act (43 U.S.C. 1613(c)) is amended by adding at the end the following:

'There is authorized to be appropriated such sums as may be necessary for the purpose of providing technical assistance to Village Corporations established pursuant to this Act in order that they may fulfill the reconveyance requirements of section 14(c) of this Act. The Secretary may make funds available as grants to ANCSA or nonprofit corporations that maintain in-house land planning and management capabilities.'.

ASBESTOS

The following information was extracted from asbestos waste management materials prepared by the Environmental Protection Agency.

Asbestos is the name for a group of naturally occurring minerals that separate into strong, very fine fibers. The fibers are heat-resistant and extremely durable, and, because of these qualities, asbestos has become very useful in construction and industry. In buildings it may or may not pose a health hazard to the occupants, depending on its condition. When it can be crushed by hand pressure or the surface is not sealed, to prevent small pieces from escaping, the material is considered FRIABLE. In this condition fibers can be released and pose a health risk. However, as long as the surface is stable and well-sealed against the release of its fibers and not damaged, the material is considered safe until damaged in some way.

Asbestos tends to break down into a dust of microscopic size fibers. Because of their size and shape, these tiny fibers remain suspended in the air for long periods of time and can easily penetrate body tissues after being inhaled or ingested. Because of their durability, these fibers can remain in the body for many years and thereby become the cause of asbestos related diseases.

Asbestos had very little use until the early 1900's when it was employed as thermal insulation for steam engines. Since then, asbestos fibers have been mixed with various types of binding materials to create an estimated 3,000 different commercial products. Asbestos has been used in brake linings, floor tile, sealants, plastics, cement pipe, cement sheet, paper products, textile products, and insulation. The amount of asbestos contained in these products varies significantly, from 1 to 100 percent, depending on the particular use. (Refer to Table 1 for more information.)

The fibrous or fluffy spray-applied asbestos materials found in many buildings for fireproofing, insulating, sound proofing, or decorative purposes are generally considered friable. Pipe and boiler wrap are also friable and found in numerous buildings. Some materials, such as vinyl-asbestos floor tile, are considered nonfriable and generally do not emit airborne fibers unless subjected to sanding or sawing operations. Other materials, such as asbestos cement sheet and pipe, can emit asbestos fibers if the materials are subjected to breakage or crushing in the demolition of structures that contain such materials.

Points to Remember:

Asbestos is only dangerous when it's deteriorated to the point where its tiny fibers can be released into the air and inhaled. If the material is solid (in appearance and to touch) and maintained in good condition, it presents no problem.

If the asbestos-containing material has become deteriorated for some reason, there's a good chance you can solve the problem without removal. Removal is generally the last resort, because it involves disturbing the material and sending more fibers into the air.

The asbestos fibers that would cause health problems are much too small to be seen without a powerful microscope. In fact, an average human hair is approximately 1200 times thicker than an asbestos fiber.

TABLE 1

Summary of Asbestos-Containing Products

Product	Average percent asbestos	Binder	Dates used
Friction products	50	Various polymers	1910-present
Plastic products			
Floor tile and sheet	20	PVC, asphalt	1950-present
Coatings and sealants	10	Asphalt	1900-present
Rigid plastics	<50	Phenolic resin	?-present
Cement pipe and sheet	20	Portland cement	1930-present
Paper products			
Roofing felt	15	Asphalt	1910-present
Gaskets	80	Various polymers	?-present
Corrugated paper pipe wrap	80	Starches, sodium silicate	1910-present
Other paper	80	Polymers, starches, silicates	1910-present
Textile products	90	Cotton, wool	1910-present
Insulating and decorative products			
Sprayed coating	50	Portland cement, silicates, organic binders	1935-1978
Trowelled coating	70	Portland cement, silicates	1935-1978
Preformed pipe wrap	50	Magnesium carbonate, calcium silicate	1926-1975
Insulation board	30	Silicates	Unknown
Boiler insulation	10	Magnesium carbonate, calcium silicate	1890-1978
Other uses	<50	Many types	1900-present

Toxic Chemicals - What They Are, How They Affect You

This fact sheet was abstracted from materials prepared by the Environmental Protection Agency. It explains what harmful toxic chemicals are and what they're used for.

What Does Toxic Mean?

A chemical is toxic if it damages living tissue, impairs the central nervous system, or causes birth defects, illness, or death when eaten, drunk, inhaled, or absorbed through the skin.

How Much Exposure To A Chemical Causes Harm?

It depends on the chemical. The amount needed to trigger a toxic reaction varies with the nature of the substance, the route of exposure, the length of exposure, and individual tolerance. Acute toxicity refers to an exposure of short duration. Chronic toxicity refers to repeated or prolonged exposures - often in tiny doses - to substances that in any single exposure would cause little or no harm.

Some chemicals are so toxic that they are measured in parts per million (ppm) or even smaller parts per billion (ppb). One ppb would be one pound of a chemical in a billion pounds of soil.

Why Are Such Small Doses Of Some Toxic Chemicals Hazardous?

Besides being poisonous at low levels, Polychlorinated Biphenyls lead, and various other chemicals are also extremely persistent. These chemicals don't break down easily and therefore remain in the environment for years. Prolonged exposure to small doses of such chemicals are thought to cause a variety of health problems, including cancer.

Bioaccumulation:

Bioaccumulation is another reason why prolonged exposure to low-level doses can be dangerous. Chemicals such as Polychlorinated Biphenyls and mercury build up in the tissues of humans and animals through the process of bioaccumulation. It works like this: A chemical spilled into a river or lake is ingested and stored by small organisms like plankton; small fish eat the plankton; and larger fish eat the smaller fish. As the process works its way up the food chain, the chemical may become thousands of times more concentrated in the tissues of the large fish than in the plankton. That's why some fish from parts of the Great Lakes are unsafe to eat.

What Is the Environmental Protection Agency Doing About Toxic Wastes?

Three major Federal laws help the Environmental Protection Agency (EPA) control toxic substances. The Toxic Substances Control Act (TSCA) regulates the production of a substance that poses an unreasonable risk to human health or the environment. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly called Superfund, enables the Environmental Protection Agency to address immediate dangers, long-range hazards, and spills at old or abandoned waste sites. It establishes a process for identifying, reporting, investigating, and cleanup of hazardous releases from uncontrolled or abandoned waste sites. The Resource Conservation and Recovery Act (RCRA) allows the State and the Environmental Protection Agency to track hazardous wastes from generation through final disposal. It applies to anyone who generates, transports, treats, stores, or disposes of hazardous wastes. Hazardous wastes can be specific listed chemicals or characteristic wastes. (Refer to Table 2.) It also regulates underground & leaking storage tanks. There are various Federal and State laws which apply to hazardous materials and toxic waste management; including but not limited to the Clean Water Act, Clean Air Act, Federal Insecticide, Fungicide and Rodenticide Act, and Hazardous Materials Transportation Act.

Toxic Substances Commonly Found by EPA on Superfund Sites

Most toxic substances can be handled safely. Depending on the substance, however, certain methods of manufacturing, use, and disposal are preferable over others. High-temperature incineration, for example, is highly effective in destroying Polychlorinated Biphenyls and other toxic chemicals, but not toxic metals such as lead and mercury. Secure, lined landfills can be an acceptable disposal option for some toxic substances. Here are some of the toxic chemicals the Environmental Protection Agency often finds when studying or cleaning up a Superfund site.

Asbestos
Asbestos - a building and insulating material widely used for years. If not completely sealed in a product, asbestos can break into tiny fibers that float almost indefinitely in air. These fibers are smaller and more buoyant than ordinary dust particles and therefore are easily inhaled or swallowed. In 1972, asbestos was banned for use in clothing. In subsequent years it was banned in fire-proofing materials, in electric hair dryers, and in many other products.

Arsenic
Arsenic - a grayish white element found naturally in the environment. Arsenic has been used in the production of boric acid, pharmaceutical products, and pesticides. It is a byproduct of copper, zinc, and lead smelting.

Benzene
Benzene - used more and more in recent years in the synthesis of chemical compounds and drugs and in the rubber industry. It is also added to gasoline as an octane booster. Eight million tons are produced annually. Benzene is released into the air primarily through the distribution and use of petroleum products.

Cyanide
Cyanide - a poison that asphyxiates the cells in the body. Warning signs of cyanide poisoning include dizziness, numbness, rapid pulse, and nausea. A large dose can cause immediate unconsciousness. It is primarily used in the extraction of ore, in electroplating, and in metal treatment. It is also used in fumigation and in the manufacturing of pharmaceuticals.

Dioxin
Dioxin - a generic term for a group of 75 related compounds known as polychlorinated dibenzo-p-dioxins. The most toxic compound of this group is 2,3,7,8-tetrachloro-dibenzo-p-dioxin (2,3,7,8-TCDD). Nobody produces dioxin on purpose. It is an unwanted but almost unavoidable byproduct that comes from manufacturing several commercial substances, chiefly the pesticide 2,4,5-TCP. Dioxin was also a contaminant in Agent Orange, the defoliant used during the Viet Nam War.

Formaldehyde
Formaldehyde - a colorless, pungent gas used in plastics, plywood, foam insulation products, textiles, embalming fluids, room deodorants, and as a preservative in cosmetics.

Leachate
Leachate - a common term when talking about landfills. Leachate is not a specific chemical itself; it's a liquid that has formulated through waste and contains components of those wastes. For instance, water may mix with leaking wastes inside a landfill, become contaminated, and then seep into the water table, polluting drinking water wells.

Polychlorinated Biphenyls
Polychlorinated Biphenyls (PCB) - are a family of organic compounds used since 1926 in electric transformers as insulators and coolants, in lubricants, carbonless copy paper, adhesives, and caulking compounds. They are also produced in certain combustion processes. Polychlorinated Biphenyls are extremely persistent in the environment because they do not break down into new and less harmful chemicals. Polychlorinated Biphenyls are stored in the fatty tissues of humans and animals through the bioaccumulation process. The Environmental Protection Agency banned the use of Polychlorinated Biphenyls in 1976. In general, Polychlorinated Biphenyls are not as toxic in acute short-term doses as some other chemicals.

Heavy Metals

Cd
Cadmium - used in electroplating, in the manufacturing of batteries, and as a pigment.

Cr
Chromium - used in electroplating, in photography, and as a paint pigment. It may also be found in some drilling muds.

Pb
Lead - a byproduct of metal smelting, it is used in the manufacture of batteries and lead based paint.

Hg
Mercury - a silvery, liquid heavy metal. Mercury is highly toxic and can be absorbed through the skin. It is used in thermometers, batteries, florescent light bulbs, pharmaceuticals, and many other products. Mercury is sometimes used to separate gold in mining operations.

Chlorinated Organic Compounds

Carbon Tetrachloride is a colorless liquid used in refrigerants and metal degreasers.

Dichloroethane (EDC) is used in the production of vinyl chloride and as a chemical feedstock. It's also used as a lead scavenger, a leaded-gas additive, an extraction agent for caffeine, and a dry cleaning agent.

Dichloroethylene is a clear, colorless, volatile liquid used in lacquers, paper coatings, and certain fibers.

Tetrachloroethylene (PCE) is used in dry cleaning, metal degreasing, textile dyeing, and various pesticides.

Trichloroethylene (TCE) is used as an industrial degreaser; a solvent for oils, paints, and varnishes; a dry-cleaning agent; and an anesthetic. TCE is most often found in ground water because of spills at industrial facilities and other locations where TCE is used as a cleaning agent.

Vinyl Chloride is a gaseous raw material used in plastics, floor tiles, food packaging, and as a propellant in aerosol containers.

TABLE 2

Characteristic Hazardous Wastes

Ignitable

A liquid with a flash point of less than 140°, or

Not a liquid and capable of causing fire through friction, absorption of moisture, or spontaneous chemical change, or

An ignitable compressed gas, or

An oxidizer.

Examples may include:
paint, paint thinners, waste gasoline/fuel that is not recycled, discarded solvent

Corrosive

A liquid with a pH of less than or equal to 2.0 or greater than or equal to 12.5, or

A liquid that corrodes steel more than ¼ inch/year, or

A solid that when mixed with an equal weight of water results in a solution with a pH of less than or equal to 2.0 or greater than or equal to 12.5.

Examples may include:
rust removers, acids or caustics for surface preparation, acids from broken batteries.

Reactive

The waste is normally unstable and readily undergoes violent change without detonating, or

React violently, forms potentially explosive mixtures, or generates toxic fumes that pose a threat to human health when mixed with water, or

Is a cyanide-or sulfide-bearing waste.

Examples may include:
explosives, lithium cells such as radio batteries.

Toxic

The waste is tested using the Toxicity Characteristic Leaching Procedure (TCLP), and

Contains one or more of 40 metals, pesticides, or organics in the leachate and is at or above the regulatory level.

The TCLP, a laboratory analysis of the waste, is used to identify wastes that meet the Toxic Characteristic Definition.

Examples may include:
paints/coatings, solvents, treated wood products.

Where to call or write for information on asbestos or hazardous and Toxic Substances:

- U.S. Environmental Protection Agency, Region 10
  1200 Sixth Avenue
  Seattle, Washington 98101
  (800) 424-4372

- U.S. Environmental Protection Agency
  Alaska Operations
  222 West 7th Avenue, #19
  Anchorage, Alaska 99513
  (907) 271-5083

- Alaska Department of Environmental Conservation
  Southeastern Regional Office
  P.O. Box 32420
  Juneau, Alaska 99803
  (907) 789-3151

- Alaska Department of Environmental Conservation
  Southcentral Regional Office
  555 Cordova
  Anchorage, Alaska 99501-2617
  (907) 269-7500

- Alaska Department of Environmental Conservation
  Northern Regional Office
  1001 Noble Street, Suite 350
  Fairbanks, Alaska 99701
  (907) 452-1714

U.S. Army Corps of Engineers Environmental Restoration at Formerly Used Defense Sites

The Department of Defense (DOD) has established a program to correct environmental damage caused by its activities. The Defense Environmental Restoration Program (DERP) was established in 1983 to clean up formerly used defense sites (FUDS) which include former Army, Navy, Air Force, or other defense agencies' properties.

In Alaska, the manager for formerly used defense sites' clean-up under the Defense Environmental Restoration Program is the U.S. Army Corps of Engineers (COE), Alaska District on Elmendorf Air Base in Anchorage. The U.S. Army Corps of Engineers establishes each site as a project and uses both in-house U.S. Army Corps of Engineers personnel and contractors for assessment and clean-up work. There are an estimated 550 sites in Alaska.

The primary goals of formerly used defense sites clean-up are:

* Identification, investigation, and clean-up of contamination from the Department of Defense hazardous substances;

* Detection and disposal of unexploded ordnance; and

* Demolition and removal of unsafe buildings and structures, located on a formerly owned Defense property, currently owned by a state, a municipality, or a Native Corporation in Alaska.

Examples of formerly used defense sites in Alaska include: air bases/landing fields, fueling stops, Distant Early Warning (DEW) Line facilities, radar sites, Army camps, military landfills, docks, contracted manufacturing facilities, and National Guard and Reserve facilities.

Three major phases of the formerly used defense sites program:

Inventory: This phase includes record searches to verify previous Department of Defense ownership or use. A preliminary assessment is made to determine the site eligibility, the need for clean-up, and the severity of the environmental problems.

Study: This phase consists of a site inspection to confirm contamination and to determine how best to clean up the contamination. At sites where numerous parties may have contributed to the contamination, the share of Department of Defense liability is also determined.

Removal/Remediation: This phase consists of the engineering design and the necessary action to clean up the site. Sometimes it also includes additional operations and maintenance phases to eliminate contamination completely.

Program Management: Headquarters, U.S. Army Corps of Engineers is the overall program manager for the formerly used defense sites program. They develop policies based on Department of Defense guidance and provide funds to local Corps' districts to perform clean-up activities.

Work is accomplished on a priority basis, the worst sites are cleaned first. Priority funds go to the sites with the greatest potential danger to the human population. A typical project can take anywhere from 2 years to many years (5 to 10). It depends on how large the site is, what work is involved, and what level of funding is available.

After work on a site is completed, including regulatory agency review, it is inspected to confirm that it no longer poses a problem.

Other Agency Involvement: The Alaska Department of Environmental Conservation (ADEC) provides the U.S. Army Corps of Engineers and land managers with technical assistance and, in some instances, regulatory oversight. They may help determine when a site is clean and no longer a hazard. The Environmental Protection Agency (EPA) monitors the clean-up of hazardous waste sites on Federal lands through the listing of sites on the Federal Facility Docket. Sites on the Docket must be assessed and action taken according to a schedule.

Public Involvement: Public values and concerns are an important element of the clean-up process. The U.S. Army Corps of Engineers works closely with the current site owner and adjacent residents prior to and while working on a site. Through personal contacts, small group meetings, workshops, and public meetings, important information is gathered that assists with decision making.

A restoration advisory board can be established at a site where there is sufficient community interest. This board is usually comprised of representatives from the U.S. Army Corps of Engineers, the Environmental Protection Agency, the Alaska Department of Environmental Conservation, and members of the local community.

Further Information on formerly used defense sites in Alaska:

U.S. Army Corps of Engineers formerly used defense sites project managers in Alaska are:

- Greg Smith/Gail Braten, Program Manager (907) 753-5793
- Ron Pflum, Project Manager (907) 753-5785
- Don Bethel, Project Manager (907) 753-5789.

NOTE: This information was taken from U.S. Army Corps of Engineers publication (EP-200-1-3, dated August 1994).

Bureau of Land Management
Alaska State Office
Attention: Mike Haskins (931)
222 West 7th Avenue, #13
Anchorage, Alaska 99513

Regarding: ANCSA Contaminated Lands Report to Congress

This letter acknowledges receipt of the information package you sent us concerning preparation of a report which addresses certain issues relating to the presence of contaminants on lands conveyed or prioritized for conveyance to ANCSA Native Corporations.

Our response in this matter is checked below:

_____ At this time, we have not identified any known sources of contamination on our lands and have nothing to report.

Comments: _____

_____

_____ At this time, we do not have any unresolved contamination issues which affect our lands.

Comments: _____

_____

_____ Other: _____

_____

_____

_____ _____
(Signature/Title) (Date)

Corporation Name: _____

2435
UNC
Attn: Director
P.O. Box 33
Unalakleet AK 99684

359
Afognak Native Corporation
P.O. Box 1277
Kodiak AK 99615

1881
Afognak Native Corporation
Attn: Chief Forester
P.O. Box 1277
Kodiak AK 99615

2468
Afognak Native Corporation
Attn: Peter J. Olsen
P.O. Box 1277
Kodiak AK 99615

347
AHTNA Inc.
P.O. Box 649
Glennallen. AK 99588-0649

348
AK Federation of Natives
1577 C Street #100
Anchorage. AK 99501-5127

216
AK Native & American Indian
Attn: Sally Smith
222 W 7th Avenue, #23
Anchorage AK 99513

3431
AK Native Tourism Council
1577 C Street, Ste. 304
Anchorage AK 99501

360
Akiachak LTD
General Delivery
Akiachak AK 99551

361
Akutan Corporation
General Delivery
Akutan AK 99553

362
Alakanuk Native Corporation
Box 89
Alakanuk AK 99554

839
Alaska Indian Art Dist.
Rentals/AVA
P.O. Box 271
Haines AK 99827-0271

3907
Alaska Native Tourism Council
Attn. Ann Campbell, Exec. Dir.
1577 C Street, Suite 304
Anchorage, AK 99501

349
Aleut Corporation
4000 Old Seward Hwy, #300
Anchorage AK 99503-6087

363
Aleutian/Pribilof Islands
Association, Inc.
401 E. Fireweed Lane, #201
Anchorage AK 99503-2111

364
Alexander Creek, Inc.
8126 Wisteria
Anchorage AK 99502

1577
Native Village of Ambler
Attn: President
General Delivery
Ambler AK 99786

350
Arctic Slope Regional Corp.
P.O. Box 129
Barrow AK 99723-0129

365
Arviq, Incorporated
General Delivery
Platinum AK 99651

366
Askinuk Corporation
General Delivery
Scammon Bay AK 99662

3451
Fairbanks Native Association
201 1st Avenue
Suite 200
Fairbanks AK 99701

367
Atkasook Corporation
General Delivery
Atkasook AK 99723

368
Atmautluak LTD
Attn: President
General Delivery
Atmautluak AK 99559

197
ATXAM Corporation
Attn: Lawrence Prokopeuff
P.O. Box 47001
Atka AK 99547

369
Azachorok Corporation
Attn: President
Box 213
Mt. Village AK 99632

370
Baan Oyeel Kon Corporation
Attn: President
Box 74558
Fairbanks AK 99707

371
Bean Ridge Corporation
Attn: Dixie Dayo
General Delivery
Manley Hot Springs AK 99756

372
Becharof Corporation
Attn: President
Box 40
Egegik AK 99579

373
Belkofski Corporation
Attn: President
General Delivery
King Cove AK 99612

374
Bell Flats Natives, Inc.
Attn: President
Box 3473
Kenai AK 99611

2146
Bering Straits Native Corp.
P.O. Box 1008
Nome AK 99762

2343
Bering Straits Native Corp.
Attn: Lonnie O'Connor
P.O. Box 1008
Nome AK 99762

3775
Bering Straits Native Corp.
Attn: Jack Carpenter
P.O. Box 1008
Nome AK 99762

375
Bethel Native Corporation
Attn: President
Box 719
Bethel AK 99559

873
Bethel Native Corporation
Attn: George Cannelos
Box 719
Bethel AK 99559

1578
Village of Brevig Mission
Attn: President
General Delivery
Brevig Mission AK 99785

376
Brevig Mission Native Corp.
Attn: President
General Delivery
Brevig Mission AK 99785

352
Bristol Bay Native Assn.
P.O. Box 310
Dillingham AK 99576

377
Bristol Bay Native Assn.
Attn: Dugan Nielson
P.O. Box 238
Dillingham AK 99576

351
Bristol Bay Native Corp.
P.O. Box 100220
Anchorage AK 99510-0220

1973
Bristol Bay Native Corp.
Attn: Stephen P. Tolton
800 Cordova
Anchorage AK 99501

1579
Native Village of Buckland
Attn: President
General Delivery
Buckland AK 99727

353
Calista Corporation
601 W. 5th Avenue, #200
Anchorage AK 99501-2226

1363
Calista Corporation
Attn: June McAtee
601 W. 5th Avenue, Suite 200
Anchorage AK 99501

2358
Calista Corporation
Attn: Sue Gamache
601 W. 5th Avenue, Suite 200
Anchorage, AK 99501-2225

378
Cape Fox Corporation
Attn: President
Box 8558
Ketchikan AK 99901

379
Caswell Native Association
Attn: President
12020 Old Seward Highway
Anchorage AK 99515

380
Chalkyitsik Native Corp.
Attn: Woody Salmon
General Delivery
Chalkyitsik AK 99788

381
Chaluka Corporation
Attn: President
General Delivery
Nikolski AK 99638

382
Chefarmmute Incorporated
Attn: President
General Delivery
Chefornak AK 99561

383
Chenega Corporation
Attn: President
P.O. Box 60
Chenega Bay AK 99574-9999

1584
Chinik Eskimo Community
Attn: President
P.O. Box 62020
Golovin AK 99762

384
Chitna Native Corporation
Attn: President
Box 3
Chitna AK 99566

385
Chogglung LTD
Box 330
Dillingham AK 99576

354
Chugach Alaska Corporation
560 E. 34th Avenue, Suite 20
Anchorage AK 99503-4196

386
Chuloonawick Corporation
Attn: President
General Delivery
Emmonak AK 99581

3917
CIRI
Nancy Moses
P.O. Box 93330
Anchorage, AK 99509

355
Cook Inlet Region, Inc.
2525 C Street, #500
Anchorage AK 99509-2689

906
Cook Inlet Region, Inc.
Attn: Oil & Gas Department
P.O. Box 93330
Anchorage AK 99509-3330

387
Copper River Native Assn.
Attn: President
Drawer H
Copper Center AK 99573

3899
Copper River Native Assoc.
Natural Resources
Drawer H
Copper Center, AK 99573

388
Council Native Corporation
Attn: President
3106 Cottonwood
Anchorage AK 99501

389
Cully Corporation
Attn: President
General Delivery
Point Lay AK 99723

1580
Native Village of Deering
Attn: President
P.O. Box 36043
Deering AK 99736

390
Deloycheet, Inc.
Attn: S. Dementieff
Box 206
Holy Cross AK 99602

391
Dineega Corporation
Attn: Donald Honea, Sr.
Box 28
Ruby AK 99768

392
Dinyee Corporation
Attn: Dave Lacey, Gen. Mgr.
P.O. Box 71372
Fairbanks AK 99707-1372

1581
Native Village of Diomede
Attn: President
General Delivery
Diomede AK 99762

394
Dot Lake Native Corporation
Attn: President
Box 2275
Dot Lake AK 99737

356
Doyon LTD
201 1st Ave., Doyon Bldg.
Fairbanks AK 99701-4898

109
Doyon Newsletter
Attn: Editor
201 1st Avenue
Fairbanks AK 99701

395
Eklutna, Incorporated
Attn: President
510 L St. #200
Anchorage AK 99501-1449

396
Ekwok Natives LTD
Attn: President
Box 196
Dillingham AK 99576

1582
Native Village of Elim
Attn: President
P.O. Box 39070
Elim AK 99739

397
Emmonak Corporation
Attn: President
General Delivery
Emmonak AK 99581

398
English Bay Corporation
Attn: President
English Bay Via
Homer AK 99603

399
Eskimos, Incorporated
Attn: President
Box 536
Barrow AK 99723

400
Evansville, Inc.
Attn: President
214 2nd Avenue
Fairbanks AK 99701

401
Eyak Corporation
Attn: President
Box 340
Cordova AK 99574

1583
Native Village of Gambell
Attn: President
P.O. Box 133
Gambell AK 99742

402
Golovin Native Corporation
Attn: President
P.O. Box 62099
Golovin AK 99762

403
Gwitchyaa Zhee Corporation
Attn: President
Box 57
Fort Yukon AK 99740

404
Haida Corporation
Attn: President
Box 89
Hydaburg AK 99922

405
Hee-Yea-Lingde Corporation
Attn: Gabriel Nicholt
Box 9
Grayling AK 99590

406
Huna Totem Corporation
Attn: President
9309 Glacier Hwy. #A-103
Juneau AK 99801-9300

407
Hungwitchin Corporation
Attn: Ruth S. Ridley
Box 8
Eagle AK 99738

408
Igiugig Natives LTD
Attn: President
General Delivery
King Salmon AK 99613

409
Iliamna Natives Limited
Attn: President
Box 34
Iliamna AK 99606

393
Inalik Native Corporation
Attn: Manager
P.O. Box Dio
Diomede AK 99762

410
Inalik Native Corporation
Attn: President
General Delivery
Diomede AK 99762

411
Iqfijouaq Corporation
Attn: President
General Delivery
Eek AK 99570

412
Isanotski Corporation
Attn: President
General Delivery
False Pass AK 99583

993
Barbara Janitscheck
Manillaq Corp.
Box 235
Kotzebue AK 99952

438
K'oyitl'ots'ina LTD
Attn: President
1603 College Road
Fairbanks AK 99701

413
Kake Tribal Corporation
Attn: President
Box 263
Kake AK 99830

414
Kaktovik Inupiat Corp.
Attn: President
General Delivery
Kaktovik AK 99747

415
Kasigluk Incorporated
Attn: President
General Delivery
Kasigluk AK 99609

416
Kavilco Incorporated
Attn: President
P.O. Box KXA (Kasaan)
Ketchikan AK 99950-0340

231
Kawerak, Inc.
Reindeer Herders Assn.
Box 948
Nome AK 99762

417
Kawerak, Inc.
Attn: President
P.O. Box 948
Nome AK 99762

418
Kikiktagruk Inupiat Corp.
Attn: President
Box 1050
Kotzebue AK 99752

420
King Island Native Corp.
Attn: President
Box 992
Nome AK 99762

2467
Native Village of Kivalina
Attn: Tribal Administration
P.O. Box 50051
Kivalina AK 99750

423
Klukwan, Inc.
Attn: President
P.O. Box 1389
Haines AK 99827

425
Kodiak Area Native Assn.
402 Center Avenue
Kodiak AK 99615

428
Kongnikilnomuit Yuita Corp.
Attn: President
General Delivery
Kotlik AK 99620

430
Kotlik Yupik Corporation
Attn: President
P.O. Box 20207
Kotlik AK 99620-0207

431
Koyuk Native Corporation
Attn: President
Box 50
Koyuk AK 99753

434
Kuskokwim Native Assn.
Attn: Natural Resource Dir.
P.O. Box 127
Aniak AK 99557

436
Kwethluk Inc.
Attn: President
General Delivery
Kwethluk AK 99621

1585
Native Village of Kiana
Attn: President
P.O. Box 69
Kiana AK 99749

419
King Cove Corporation
Attn: President
General Delivery
King Cove AK 99612

421
Kiutsarak, Inc.
Attn: President
General Delivery
Goodnews Bay AK 99589

3404
Village of Kivethluk
Attn: Realty Department
P.O. Box 129
Kivethluk AK 99621

424
Knikatnu, Inc.
Attn: President
Box 2130
Wasilla AK 99687

426
Kokarmuit Corporation
Attn: President
General Delivery
Aklak AK 99552

357
Koniag Incorporated
4300 B Street, #407
Anchorage AK 99503-5926

1589
Native Village of Kotzebue
Attn: President
P.O. Box 296
Kotzebue AK 99752

432
Kugkaktlik LTD
Attn: President
General Delivery
Kipnuk AK 99614

1021
Kuskokwim Native Assn.
Attn: Sue Detwiler
Box 106
Aniak AK 99625

4027
Kwethluk Inc.
Attn: George Guy
Box 109
Kwethluk. AK 99621

3464
Kijik Corporation
Attn: Sarah Clamplt
4155 Tudor Centre Dr. #104
Anchorage AK 99508

1586
King Island Native Communit
Attn: Chief
P.O. Box 992
Nome AK 99762

1587
Native Village of Kivalina
Attn: President
P.O. Box 32
Kivalina- AK 99750

422
Klawock Heenya Corporation
Attn: President
P.O. Box 129
Klawock AK 99925

1588
Native Village of Kobuk
Attn: President
General Delivery
Kobuk AK 99751

427
Koliganek Natives LTD
Attn: President
General Delivery
Koliganek AK 99576

429
Kootzhoowoo, Inc.
Attn: President
Box 116
Angoon AK 99820

1590
Native Village of Koyuk
Attn: President
P.O. Box 81
Koyuk AK 99753

433
Kuskokwim Corporation
Attn: President
645 G Street, #305
Anchorage AK 99501-3451

435
Kuugpik Corporation
Attn: President
General Delivery
Nuiqsut AK 99723

1022
Kwethluk Incorporated
Attn: Guy Phillip
General Delivery
Kwethluk AK 99621

437
Kwik Incorporated
Attn: President
General Delivery
Kwigillingok AK 99622

439
Levelock Natives LTD
Attn: President
General Delivery
Levelock AK 99625

440
Lime Village Company
Attn: President
General Delivery
McGrath AK 99627

441
Manokotak Natives LTD
Attn: President
General Delivery
Manokotak AK 99628

442
Manuneluk Assocation
Attn: President
Box 256
Kotzebue AK 99752

443
Marys Igloo Native Corp.
Attn: President
P.O. Box 572
Teller AK 99778

444
Maserculiq, Inc.
Attn: President
General Delivery
Marshall AK 99585

445
Mendas Chaag Native Corp.
Attn: President
Box 60300
Fairbanks AK 99706-0300

446
MTNT, Limited
P.O. Box 309
McGrath AK 99627

2347
Trad. Village of Mumtraq
Traditional Village Council
P.O. Box 70
Goodnews Bay AK 99589

358
NANA Regional Corporation
1001 E. Benson Boulevard
Anchorage AK 99508

447
Napakiak Corporation
Attn: President
General Delivery
Napakiak AK 99634

448
Napaskiak, Inc.
Attn: President
General Delivery
Napaskiak AK 99559

1554
National Congress of
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900 Pennsylvania Avenue SE
Washington DC 20003

1605
Native Village Mary's Igloo
Attn: President
P.O. Box 572
Teller AK 99778

1606
Native Village of Soloman
Attn: President
P.O. Box 243
Nome AK 99762

1601
Native Village of Teller
Attn: President
P.O. Box 548
Teller AK 99778

1603
Native Village of Wales
Attn: President
General Delivery
Wales AK 99783

1602
Native Village Unalakleet
Attn: President
P.O. Box 70
Unalakleet AK 99684

1604
Native Village White Mtn.
Attn: President
P.O. Box 82
White Mountain AK 99784

449
Natives of Kodiak, Inc.
Attn: President
Box 164
Kodiak AK 99615

450
Neechootaalichaagat Corp.
Attn: President
Box 24
Nenana AK 99760

451
Neets AL Corporation
Attn: Allen Trit
General Delivery
Arctic Village AK 99722

452
Nelson Lagoon Corporation
Attn: President
General Delivery
Nelson Lagoon AK 99695

453
Nerklikmute Native Corp.
Attn: President
General Delivery
St. Marys AK 99658

454
Newtok Corporation
Attn: President
General Delivery
Newtok AK 99559

455
Ngta Incorporated
Attn: President
General Delivery
Nightmute AK 99690

456
Nima Corporation
Attn: President
Box 52
Mekoryuk AK 99630

457
Ninilchik Native Assn.
Attn: President
703 W. Tudor, #101
Anchorage AK 99503

1591
Native Village of Noatak
Attn: President
P.O. Box 89
Noatak AK 99761

1592
Nome Eskimo Community
Attn: President
P.O. Box 401
Nome AK 99762

3044
Nome Eskimo Community
Attn: Nancy Patton
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2350
Nondalton City Hall
Attn: Mayor
General Delivery
Nondalton AK 99640

2351
Nondalton Clinic
General Delivery
Nondalton AK 99640

1593
Noorvik Native Community
Attn: President
P.O. Box 71
Noorvik AK 99763

458
Northway Natives, Inc.
Attn: President
P.O. Box 401
Northway AK 99764

459
Nunakauiak Yupik Corp.
Attn: President
Nelson Island
Toksook Bay AK 99637

460
Nunamiut Corporation
Attn: President
General Delivery
Anaktuvik Pass AK 99721

461
Nunapiglluraq Corporation
Attn: President
General Delivery
Kotlik AK 99620

462
Nunapitchuk LTD
Attn: President
P.O. Box 129
Nunapitchuk AK 99641

463
Oceanside Corporation
Attn: President
Box 487
Perryville AK 99648

464
Olgoonik Corporation, Inc.
Attn: President
Main Street
Wainwright AK 99782

465
Oscarville Native Corp.
Attn: President
General Delivery
Oscarville AK 99695

466
Ounalashka Corporation
Attn: President
Box 149
Unalaska AK 99685

467
Ouzinkie Native Corporation
Attn: President
Box 1123
Ouzinkie AK 99644

468
Paimiut Corporation
Attn: President
General Delivery
Hooper Bay AK 99604

469
Paug-Vik Incorporated LTD
Attn: President
Box 61
Naknek AK 99633

470
Pedro Bay Corporation
Attn: Debi Wilson-Jacko
P.O. Box 47015
Pedro Bay AK 99647

471
Pilot Point Native Corp.
Attn: President
Box 482
Pilot Point AK 99649

472
Pilot Station Native Corp.
Attn: President
General Delivery
Pilot Station AK 99650

473
Pitka's Point Native Corp.
Attn: President
General Delivery
St. Marys AK 99658

474
Port Graham Corporation
Attn: President
P.O. Box 5569
Port Graham AK 99603-5569

475
Qanirtuug Incorporated
Attn: President
General Delivery
Quinhagak AK 99655

2518
Qawalangin Tribe of Unalask
P.O. Box 334
Unalaska AK 99685

476
Qeniralet Coast Corporation
Attn: President
General Delivery
Kongiganak AK 99559

477
Russian Mission Native Corp
Attn: President
General Delivery
Russian Mission AK 99657

478
Saguyak, Incorporated
Attn: President
General Delivery
Clark's Point AK 99569

479
Salamatof Native Assn.
Attn: Randy Johnson
Box 2682
Kenai AK 99611

480
Sanak Corporation
Attn: President
Box 76
Sand Point AK 99661

1595
Native Village of Savoonga
Attn: President
P.O. Box 129
Nome AK 99769

481
Sea Lion Corporation
Attn: President
Box 44
Hooper Bay AK 99604

258
Sealaska Corporation
1 Sealaska Plaza, Suite 400
Juneau AK 99801-1276

2459
Sealaska Corporation
Attn: E. Hillman
1 Sealaska Plaza, Suite 400
Juneau AK 99801-1276

1596
Native Village of Selawik
Attn: President
P.O. Box 59
Selawik AK 99770

482
Seldovia Native Association
Attn: President
Drawer L
Seldovia AK 99663

483
Seth-De-Ya-Ah Corporation
Attn: Ken Charlie
Box 849
Fairbanks AK 99707

1597
Native Village Shaktoolik
Attn: President
P.O. Box 75
Shaktoolik AK 99771

3116
Shaktoolik Native Corp.
P.O. Box 46
Shaktoolik AK 99771

484
Shan-Seet Inc.
Attn: President
Box 90
Craig AK 99921

1598
Native Village Shishmaref
Attn: President
General Delivery
Shishmaref AK 99772

485
Shishmaref Native Corp.
Attn: President
General Delivery
Shishmaref AK 99772

486
Shumagin Corporation
Attn: President
P.O. Box 189
Sand Point AK 99661

1599
Native Village of Shungnak
Attn: President
General Delivery
Shungnak AK 99773

487
Shuyak, Inc.
Attn: President
Box 727
Kodiak AK 99615

488
Sitnasuak Native Corp.
Attn: President
Box 905
Nome AK 99762

1348
Siana Alaskans Unite
P.O. Box 821
Siana, AK 99586

2464
Soil Conservation Service
Attn: Dan Laplant
949 E. 36th Ave., Suite 400
Anchorage AK 99508-4362

489
Solomon Native Corp.
Attn: President
Box 243
Nome AK 99762

491
St. George Tanaq Corp.
Attn: President
3000 C Street #201
Anchorage AK 99503-3914

490
St. Mary's Native Corp.
Attn: President
Box 162
St. Marys AK 99658

1594
Native Village St. Michael
Attn: President
P.O. Box 59090
St. Michael AK 99659

492
St. Michael Native Corp.
Attn: President
P.O. Box 59049
St. Michael AK 99659

1600
Stebbins Community Assn.
Attn: President
P.O. Box 42
Stebbins Ak 99761

493
Stebbins Native Corporation
Attn: President
P.O. Box 110
Stebbins AK 99671

494
Stuyahok LTD
Attn: President
General Delivery
New Stuyahok AK 99636

495
Swan Lake Corporation
Attn: President
General Delivery
Sheldons Point AK 99666

912
T&H Indian Delegate
Attn: Joe Paddock
Box 198
Sitka AK 99855

3916
Taheta Arts Cultural Group
Martin C. Smith, Manager
605 A Street
Anchorage, AK 99501

496
Tanacross Incorporated
c/o Robert L. Brean
333 W. 4th Ave., Suite 220
Anchorage AK 99501-2341

497
Tanadgusix Corporation
Attn: President
Box 88
St. Paul Island AK 99660

1138
Tanana Chiefs Conference
Attn: George Yaska
122 1st Avenue
Fairbanks AK 99701

1139
Tanana Chiefs Conference
Attn: Village Land Planner
Box 99
Togiak AK 99678

3463
Tanana Chiefs Conference
Attn: Perry R. Ahsogeak
122 1st Avenue
Fairbanks AK 99701-4897

498
Tatitlek Corporation
Attn: President
P.O. Box 650
Cordova AK 99574

499
Teller Native Corporation
Attn: President
P.O. Box 509
Teller AK 99778

1876
Teller Traditional Council
Native Village of Teller
Grantley Avenue
Teller AK 99778

3975
Thirteenth Regional Corp.
4370 NE Halsey St.
Portland, OR 97213-1566

500
Tigara Corporation
Attn: President
General Delivery
Point Hope AK 99766

501
Tihteet'ali Incorporated
Attn: President
Birch Creek
Ft. Yukon AK 99740

893
Tlingit & Haida Central Cnl
Attn: Teresa Cato
320 W. Willoughby Ave., #300
Juneau AK 99801

502
Toghotthele Corporation
Attn: Winnie Atwood
P.O. Box 249
Nenana AK 99760

503
Togiak Natives LTD
Attn: President
Box 109
Togiak AK 99678

504
Tulkisarmute Incorporated
Attn: President
General Delivery
Tuluksak AK 99679

505
Tuntutuliak Land LTD
Attn: President
General Delivery
Tuntutuliak AK 99680

506
Tununrmiut Rinit Corp.
Attn: President
General Delivery
Tununak AK 99681

507
Twin Hills Native Corp.
Attn: President
General Delivery
Twin Hills AK 99576

508
Tyonek Native Corporation
Attn: President
200 W. 34th Ave., #731
Anchorage AK 99503

510
Ukpeagvik Inupiat Corp.
Attn: President
Box 427
Barrow AK 99723

511
Umkumiute LTD
Attn: President
General Delivery
Nightmute AK 99690

512
Unalakleet Native Corp.
Attn: President
Box 100
Unalakleet AK 99684

513
Unga Corporation
Attn: President
P.O. Box 130
Sand Point AK 99661

3092
United Consv. Alliance
1101 14th Street, NW #725
Washington DC 20002

514
Uyak Natives, Inc.
Attn: President
Box 136
Kodiak AK 99615

515
Wales Native Corporation
Attn: President
P.O. Box 529
Wales AK 99783

516
White Mountain Native Corp.
Attn: President
General Delivery
White Mountain AK 99784

517
Yak-Tat Kwaan, Incorporated
Attn: President
Box 416
Yakutat AK 99689

518
Zho-Tse, Incorporated
Attn: President
General Delivery
Shageluk AK 99665

REPORT TO CONGRESS

HAZARDOUS SUBSTANCE CONTAMINATION OF ALASKA NATIVE CLAIMS SETTLEMENT ACT LANDS IN ALASKA

U.S. DEPARTMENT OF THE INTERIOR

DECEMBER, 1998

Report to Congress

Hazardous Substance Contamination of Alaska Native Claims Settlement Act Lands In Alaska

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Glossary of Acronyms and Abbreviations

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AFN	Alaska Federation of Natives
ANA	Administration for Native Americans
ANCSA	Alaska Native Claims Settlement Act
AS	Alaska Statute
ATSDR	Agency for Toxic Substances and Disease Registry
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CIRI	Cook Inlet Region, Incorporated
COE	Corps of Engineers
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DEW	Distant early warning
DOD	Department of Defense
DOI	Department of the Interior
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FTE	Full time equivalent
FWS	Fish and Wildlife Service
FUDS	Formerly Used Defense Site(s)
GIS	Geographic Information System(s)
IHS	Indian Health Service
JRETC	Joint Regional Environmental Training Center
LD	Lands Decisions
NPL	National Priorities List(s)
NOAA	National Oceanic and Atmospheric Administration
PCB	Polychlorinated biphenyl
PLO	Public Land Order
POL	Petroleum, oil, lubricants
PRP	Potentially responsible party
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
U.S.C.	United States Code

EXECUTIVE SUMMARY

Contamination of ANCSA Lands

Section 103 of Public Law 104-42, dated November 2, 1995, directed the Secretary of the Interior to prepare this report on the extent of hazardous substance contamination on lands in Alaska transferred to Alaska Native corporations under the Alaska Native Claims Settlement Act of 1971, (Public Law 92-203, 85 Stat. 688) as amended.

ANCSA was enacted in 1971 to provide a fair and just settlement of aboriginal land claims in Alaska. ANCSA directed the conveyance of 44 million acres of land and payment of $962.5 million to Alaska Natives as compensation for the extinguishment of claimed aboriginal title. As of September 30, 1998, all of the funds and approximately 37.3 million acres of land had been conveyed to ANCSA Native Corporations. (Approximately 6.7 million acres remained to be conveyed.) Over the last several years, the Native community has expressed concerns over health, safety, and economic issues relating to the presence of hazardous materials or other forms of contamination and hazards such as abandoned buildings, bunker structures, abandoned equipment and so forth, on lands conveyed to them under ANCSA. There is no accurate means of knowing precisly the extent of environmental contamination that existed on public lands at the time of conveyance from the United States. The law did not require DOI to conduct physical inspections of Federal lands or property before transferring them to Native corporations; the lands to be conveyed were vast (the equivalent of nearly half the State of California); and the concepts of what constitutes contamination have evolved with the passage of various environmental laws since ANCSA was passed.

Data collected during this and an earlier study indicate that there are at least 383 sites in existing Federal cleanup programs on ANCSA lands (see table, p.18). This represents most known sites. While we believe most hazardous sites have been identified and placed on Federal cleanup program lists, it is difficult to determine the exact number of sites because there is no comprehensive inventory, agencies have not all focused equally as yet on inventory of such sites, and the several existing inventories of Federal and State agencies are incomplete and in incompatible formats, resulting in inaccuracies and duplication. It is also not known how many of these sites existed prior to conveyance. Another problem complicating site identification is the concern of landowners for potential legal liability attached to contamination on their land to which they may not have contributed. Thus, ANCSA landowners[1] are understandably reluctant to report potential sites. We believe that these concerns can be alleviated by a better understanding of EPA's policies concerning transferees of federal property, described further in section 5 and Appendix K.

[1] For purposes of this report, Native or ANCSA landowner refers to the current owner of land originally transferred to an Alaska Native corporation pursuant to the Alaska Native Claims Settlement Act.

This report recommends an approach to fully identify contaminated sites and cleanup needs on ANCSA lands. With respect to lands yet to be conveyed, we will take all practicable steps to avert the future conveyance of contaminated land. With active involvement by Native, State of Alaska, Federal, and other stakeholders, an accurate inventory will be developed identifying as yet unknown and currently known, but possibly unreported, sites that are not covered by an existing program. This will enable the Department to report back to Congress regarding additional action that may be required for sites that are not covered in current cleanup programs. The report recommends in Section 7.0 that six steps be taken.

1. Establish a forum of ANCSA landowners and Federal, State, local and Tribal agencies for exchanging information, discussing issues, and setting priorities;

2. Compile a coordinated, comprehensive inventory of contaminated sites with input from all parties;

3. Apply EPA policies to ANCSA landowners, not to impose landowner liability to federal transferees for contamination existing at the time of conveyance, where the landowner has not contributed to the contamination;

4. Analyze the data collected and report to Congress on sites not covered in existing programs and recommend whether further Federal programs or actions are needed;

5. Modify policies, where needed, to address contaminants and structures that may affect public health and safety on ANCSA lands; and

6. Continue to develop, under the leadership of the EPA and any other relevant agencies, a process to train and enable local residents to better participate in cleanup efforts.

The Department of the Interior will coordinate implementation of these recommendations, although other agencies such as EPA and the Corps of Engineers may take the lead in certain aspects of the recommendations. See section 7 for further details.

1.0 PURPOSE OF THE REPORT

In November, 1995, Congress passed Section 103 of Public Law 104-42 amending ANCSA.[2] This amendment resulted, in part, from concerns put forward by Alaska Native corporations about the presence of hazardous wastes on lands transferred from Federal ownership to the Native corporations pursuant to ANCSA. In this amendment to ANCSA, Congress directed the Secretary of the Interior, who is responsible for the transfer of ANCSA lands, to examine and report back to Congress on this issue. We regret that for a variety of reasons, including the complexity of the subject matter, the need to search and organize a large amount of information from many scattered sources, the number of agencies involved, and the difficulty of resolving policy considerations and possible cost impacts of the report, the report has taken longer than the established time. Section 103 defined the issues to be addressed in this report.

Public Law 104-42, Section 103
Settlement of Claims Arising from Hazardous Substance Contamination of Transferred Lands

The Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq) is amended by adding at the end the following:

Claims Arising From Contamination of Transferred Lands
Sec. 40. (a) As used in this section the term "contaminant" means hazardous substance harmful to public health or the environment, including friable asbestos.

(b) Within 18 months of enactment of this section, and after consultation with the Secretary of Agriculture, State of Alaska, and appropriate Alaska Native corporations and organizations, the Secretary shall submit to the Committee on Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate, a report addressing issues presented by the presence of contaminants on lands conveyed or prioritized for conveyance to such corporations pursuant to this Act. Such report shall consist of:

(1) existing information concerning the nature and types of contaminants present on such lands prior to conveyance to Alaska Native corporations;

(2) existing information identifying to the extent practicable the existence and availability of potentially responsible parties for the removal and remediation of the effects of such contaminants;

(3) identification of existing remedies;

(4) recommendations for any additional legislation that the Secretary concludes is necessary to remedy the problem on the lands; and

(5) in addition to the identification of contaminants, identification of structures known to have asbestos present and recommendations to inform Native landowners on the containment of asbestos.

[2] 43 U.S.C. 1601

2.0 PERSPECTIVE ON ALASKA NATIVE LANDS

When the Alaska Statehood Act was enacted in July, 1958, approximately 99 percent of the land in Alaska was Federally owned.

ANCSA was enacted in 1971 to provide a fair and just settlement of aboriginal land claims in Alaska. ANCSA directed the conveyance of 44 million acres of land and payment of $962.5 million to Alaska Natives as compensation for the extinguishment of claimed aboriginal title. Native corporations formed under ANCSA had to select the lands to which they would obtain title from lands withdrawn from the public domain by the Secretary of the Interior. The majority of the lands received under ANCSA were traditionally used and occupied by the respective Native villages. The land transfer process is administered by the Bureau of Land Management (BLM).

Under ANCSA, the Native village corporations are entitled to receive surface rights to approximately 22 million acres of land. Individual village corporations are entitled to receive between 69,120 to 161,230 acres, depending on the Native population of the village in 1970. The Native regional corporations, generally speaking, hold subsurface rights to the lands selected by the village corporations. Those regional corporations that had small enrolled populations, but covered large land areas, were entitled to select, under a complex "land lost" formula, an additional 16 million acres to which they hold surface and subsurface rights.

Another 4 million acres was conveyed to Village Corporations occupying former reservations. Any village corporation which elected to receive its former reservation did not receive any money or other benefits under ANCSA. Native village corporations were given a three-year period to make their selections and Native regional corporations were given an overlapping four-year period to select their lands. Originally there were 213 village corporations. Because of mergers, there are now 173 village corporations and 13 regional corporations.[3]

A report entitled *Alaska Natives and the Land*, a study mandated by Congress to assess the current status of Alaska Natives, states that in 1966 about 70 percent of Alaska's 53,000 Native people lived in 178 predominantly Native communities. The communities were small, the median size was 155 people. They were remote, with fewer than a dozen on the State's limited road network, and only 23 had telephone service linking them to other places. The people relied on hunting, fishing, trapping, and other food-gathering activities for their livelihood.

The legislative history of ANCSA indicates that it was intended to compensate Alaska Natives for the extinguishment of title to lands they claimed. At the same time, Congress intended to address the social, cultural, and economic history of the Native people. The majority of Native

[3] The thirteenth Native regional corporation is a landless corporation.

communities are remote and the people continue to depend on the lands for their sustenance and cultural traditions.

ANCSA required Native village corporations to select all available public lands within the core townships surrounding their villages. Section 3(e) of ANCSA defines the term public lands as "all Federal lands and interests therein located in Alaska except: 1) the smallest practicable tract, as determined by the Secretary of the Interior, enclosing land actually used in connection with the administration of any Federal installation ..." "Public lands," as defined by Section 3(e), were available for selection by Native corporations, except where such lands were reserved for military or park purposes. To implement Section 3(e), each Federal agency in Alaska with any landholdings was requested by BLM in 1972 to determine which, if any, lands could be relinquished without adversely affecting their programs or goals. In response, the FAA, military departments, and other Federal agencies made some of their holdings available for Native selection. In some instances, Federal improvements were conveyed to Native corporations. Also, some Federal improvements, including former military sites, were conveyed to CIRI, pursuant to a property pool agreement, so that CIRI's land entitlement could be fulfilled (Subsection 12(b)(6) of the Act of January 2, 1976).

Once a Native village corporation receives its land conveyances it is obligated to reconvey up to 1,280 acres of land, unless mutually agreed otherwise by the parties, for present or future municipalities for use as community developments or for future community expansion. In addition, the village must reconvey to individual residents for primary place of residence, business, headquarter sites, reindeer husbandry and subsistence campsites; to nonprofit corporations for hospitals, churches, etc.; and to the State of Alaska for existing airports and air navigation facilities.

ANCSA fashioned a complex settlement for a complex situation. The claims resolution ANCSA formulated was unprecedented in spirit, in scope, and in substance. Nevertheless, few realized at the time of passage how long and difficult the implementation of ANCSA would be. This has necessitated various amendments to ANCSA.

The first ANCSA conveyance occurred in March, 1974. As of September 30, 1998, approximately 37.3 million acres of land had been conveyed to ANCSA Native Corporations. Approximately 6.7 million acres remained to be conveyed.

Over the last several years, the Native community has expressed concerns over health, safety, and economic issues relating to the presence of hazardous materials or other forms of contamination and hazards such as abandoned buildings, bunker structures, abandoned equipment and so forth, on lands conveyed to them under ANCSA. It is hoped that this report will lead to understanding the scope of the problem and its resolution. It is important that local concerns and life-styles be considered in the identification and remediation of contaminated sites, because of the closeness of the Native people to the land in both proximity and ideology. With respect to lands yet to be conveyed, we will take all practicable steps to avert the future conveyance of contaminated land.

Cash and budgets are critical issues. Most communities faced with several important competing priorities and limited resources are not likely to identify contamination issues to be the most critical need requiring attention. For instance, it is estimated by the Indian Health Service that needed water and wastewater projects alone will cost approximately $880 million to complete.

The maps in Appendix B show the extent of ANCSA transferred lands in Alaska. Since priorities for selection may vary by Native corporations over time, it is not feasible to identify lands "prioritized for conveyance."

FIGURE 1

Native Corp. Boundaries

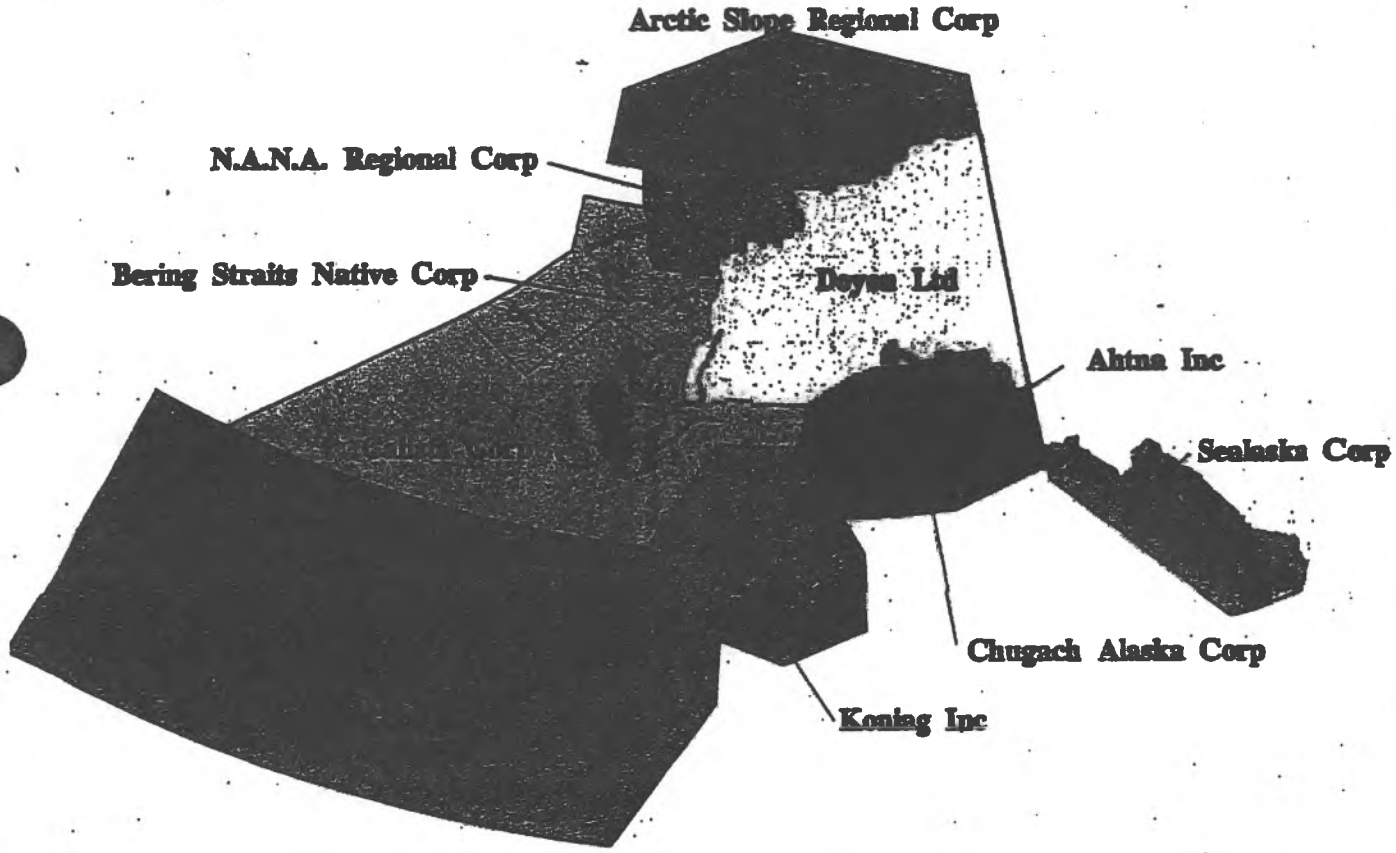

Table 1.

Native Population by ANCSA Region

Source: 1990 Census Data

CORPORATION	NATIVE POPULATION	TOTAL POPULATION (INCLUDING NON-NATIVE)
AHTNA, INC.	592	3,089
ALEUT CORP.	2,118	11,942
ARCTIC SLOPE	4,336	5,979
BERING STRAITS	6,418	8,288
BRISTOL BAY	4,639	7,028
CALISTA CORP.	16,775	19,447
CHUGACH ALASKA	1,550	11,450
COOK INLET REGION	18,581	302,473
DOYON, LTD.	10,793	91,936
KONIAG, INC.	2,126	13,309
NANA	5,209	6,113
SEALASKA CORP.	11,622	67,520
TOTAL	84,489	548,574

Total Native Population is 84,489 or 15.4% of the total State population as of the 1990 Census.

3.0 NATURE AND TYPES OF CONTAMINANTS PRESENT AT THE TIME OF CONVEYANCE

There is no accurate means of knowing precisely the extent of environmental contamination that existed on the public lands at the time of conveyance from the United States to ANCSA Native corporations. Many sites were known. However, the law did not require DOI to conduct physical inspections of Federal lands or property before transferring them to Native corporations; the lands to be conveyed were vast (the equivalent of nearly half the State of California); and the concepts of contamination have evolved with the passage of various environmental laws since ANCSA was passed.

The nature and types of contamination that may exist on ANCSA conveyed lands varies depending on the type of site and previous history of use. It is possible some sites that are now posing contamination issues were not contaminated at the time of conveyance. This could be true in cases involving: storage tanks that may be leaking now but were not at the time of conveyance; buildings containing asbestos that may be friable now but was not friable or damaged at the time of conveyance; or open dump sites that have been established after conveyance.

In many cases, the signs of contamination are obvious; in other cases, it is much less obvious. The detection and measurement of contamination at a site takes place in many steps over a period of time. Determining the nature and size of the problem is the first step toward solving it; however, determining the full cost of environmental cleanup is time consuming and involves an assessment of potential problems at each site.

Contamination of lands is often the result of uses to which the land was put. Section 3.2 discusses military land uses in Alaska, and Section 3.3 discusses civilian uses. The land uses discussed in these sections have the potential for leaving contaminated sites on ANCSA transferred lands. Except for the formerly used defense sites program, many Federal agencies have focused their efforts on inventorying lands they currently manage. Many are just beginning to assess contamination issues on formerly owned or used facilities. Uncertainty remains as to what contaminants lie on the millions of acres of lands conveyed to Native corporations. The possible examinations can be quite difficult and costly, given the great distances, remoteness, and difficult conditions in many cases in Alaska. Deployment alone, even for assessments, can be very costly.

3.1 Potential Types of Contamination

Types of hazardous wastes which may be found on ANCSA conveyed lands include: solvents, mining waste chemicals, PCBs, spilled fuels, explosives (including ordnance), antifreeze, batteries, oil and gas exploration wastes, pesticides, friable asbestos, mercury, arsenic, benzene, lead and leaded paint, dioxin, and POL.

Buildings containing friable asbestos, leaded paint, or other hazardous materials are another source of potential contamination. Some of these buildings are still in use today, and where they have been properly maintained, they do not pose an immediate hazard. If buildings containing asbestos were not maintained after ownership transfer, they may pose a hazard. (Where facilities have been transferred in good condition and have been allowed to deteriorate by the transferee, the Department would maintain that the responsibility for any resulting hazard should rest with the transferee.) In most cases, lands containing improvements or other facilities were conveyed at the request of the respective Native corporation. These types of sites include formerly used defense sites, FAA sites, and former BIA school sites.

Also, naturally occurring mineralized areas in some regions of the State have the potential to form acid and metal-rich waters that can carry high concentrations of toxic metals such as lead, zinc, and cadmium. Mercury-rich mineral deposits are another type of deposit scattered over a wide region in southwestern Alaska. The primary sources of mercury are naturally occurring mineral deposits (cinnabar), rocks, soils, and volcanic eruptions. We do not believe there is liability attached to naturally occurring minerals.[4] See Appendix G.

Causes of contamination can include: above and underground fuel storage tanks, landfills and open dump sites, storage areas (fuels, chemicals, barrels, batteries, and so on), disposal pits (oil and gas exploration and development), surface impoundments and sewage lagoons, improvements with asbestos and/or leaded paint, pipelines, mine sites, formerly used defense sites, and airports.

The extent of contamination is generally of concern in five media, which could impact human health and the environment: ground water, soils, surface water, sediments, and air.

Generally, to begin to investigate a site one must determine the location and boundaries of the site, how the property has been used in the past, the type of hazardous substances that may have been released, and whether there is an obvious or known release that occurred which warrants immediate action. If immediate action is necessary, a removal action should be done according to applicable statute. If a removal action is not needed, a site investigation may need to be done to determine the extent of impacts from any releases. Depending on the magnitude of the potential problems at a site, it may be appropriate to start cleanup actions concurrently with the site investigation work. In more complex cases, a remedial investigation and baseline risk assessment may be needed. Remedial investigations are done to define the extent of contamination. Risk assessments include: 1) an exposure assessment; 2) a toxicity assessment; and 3) risk

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[4] CERCLA §104(a)(3) Limitations on Response

"The President shall not provide for a removal or remedial action under this section in response to a release or threat of release—"

"(A) of a naturally occurring substance in its unaltered form, or altered solely through naturally occurring processes or phenomena, from a location where it is naturally found."

characterization. The risk assessment results are used to make risk management decisions on whether a cleanup is necessary and to help establish cleanup levels. Assessments should analyze potential risks through the subsistence consumption of fish, wildlife, or plants.

Field investigations are necessary to characterize the nature and extent of contamination and to determine if contamination occurred prior to, or after, conveyance to an ANCSA Native corporation. Federal facilities were usually authorized by land withdrawals via PLOs or by Federal appropriations under the principles of 44 LD 513. If a PLO was issued, case file records are available that may provide some information on the Federal agency's use. Past aerial photography may also be helpful to determine contamination at the time of conveyance. However, precisely identifying the sources of particular contaminants can be very difficult in some cases; for instance, in cases of landfill sites in continuous use before and after transfer.

3.2 Military Land Uses

World War II, the Japanese invasion of the Aleutians, and the Cold War had profound influence on military activities in Alaska. The military in Alaska played a significant role in the development of the territory and State. In many areas, military improvements concurrently supported civilian economic development. This was especially true in the areas of highway construction, port construction, airfield/airport expansion, and communications.

The Federal government spent over $1.25 billion in Alaska between 1941 and 1945 in military activities and the construction of installations and facilities for the defense of the nation and in support of offensive operations. The military buildup in Alaska grew rapidly during this time. In addition, the Navy's construction battalions constructed facilities for submarines, aircraft and surface vessels in southeastern Alaska and out along the Aleutian chain. Meanwhile, numerous defense installations in central and southeastern Alaska had been completed and manned with infantry, coast artillery, and supporting branches. Before World War II had ended over 300,000 soldiers had seen duty in Alaska.

Soon after the Alaska National Guard was established in 1949, National Guard Armories were *constructed in 48 remote villages, often of surplus World War II Quonset huts.*

The end of the Cold War and the accompanying military drawdown has resulted in an increase in the number of closed and abandoned Alaskan military facilities. Even before the collapse of the Berlin Wall and Communism in 1989, there were about 150 closed and abandoned Cold War *facilities in Alaska. A report by the General Accounting Office prepared in September, 1980,* estimated that about $110 million worth of military improvements were reported as no longer being needed.

According to the EPA, an approximate survey of what was abandoned by the military included over 6,100 Quonset and Pacific huts, 2,100 wood frame buildings, tens of thousands of POL

barrels, and countless bits and pieces of military debris. This debris includes the remains of troop quarters, mess halls, gymnasiums, warehouses, power plants with engines and generators, ammunition magazines and bomb dumps, fuel depots, garages, and workshops, runways, gun emplacements, bunkers, and miscellaneous material including live and detonated ordnance, vehicles and heavy machinery, pierced steel airstrip matting, barbed wire, communications and utility poles, cable, and pipelines. In many cases, it was cheaper to junk surplus material where it was than to remove it.

The numbers given here are statewide totals and do not represent the totals on ANCSA-conveyed lands. The following are examples of the types of facilities and the extent they were constructed throughout the State.

White Alice sites. The White Alice tropospheric communications system was "state of the art" when introduced in 1955 but became obsolete with the introduction of satellite communications in the 1970s. White Alice communications sites were used from 1955 through 1979. There were 23 sites of varying designs. The White Alice stations were deactivated and abandoned.

Alaska Communication System sites. The Alaska Communications System was built by the Army in the early 1900s to provide communications to the military and civilian communities of Alaska. It was transferred to the Air Force in 1962 and sold to RCA Alascom in 1971, pursuant to special legislation. The 24 sites included station buildings (wood frame, concrete, or prefabricated metal), radio towers, and homes for operators.

Aircraft Control and Warning Intelligence Radar sites. The Aircraft Control and Warning Intelligence Radar was used from 1949 through 1984. The design of the 18 sites consisted of a complex of 10 to 15 wood frame buildings. The central features were the radomes and operations building; however a complete complex also included: an administration building, quarters and dormitories, recreation buildings, enclosed walkways, power plant and water systems, garages, shops, warehouses and storage, an airstrip, a weather building, and a tramway. These complexes were too large and inefficient to remain in service, and the U.S. Air Force buried a number of them *in situ*.

DEW Line stations. DEW Line stations were used from 1953 through 1985. There were 19 sites of three types of DEW line stations (Main, Auxiliary, and Intermediate). The features of a main station were: a radome, four module trains of prefabricated plywood panels (for operations and living), a steel power generation building, steel hangars, a steel air terminal, a steel recreation building, a radio building, and storage warehouses and maintenance shops.

Aleutian DEW Line and White Alice Sites. Consisted of: concrete composite buildings, four billboard antennas, a steel garage, two ammunition bunkers, airstrip, a weather/terminal building, and a water pumphouse. There were 8 sites.

Testing and Monitoring Sites. There were several sites used for monitoring and material development, including three nuclear sites and four seismic sites. Nuclear activities in Alaska included nuclear tests, nuclear experiments, and seismic stations to monitor Soviet nuclear explosions.

Airbases, Ports, Loran Stations, and Garrisons. A number of airfields, navy bases, army forts, and related defense sites have been abandoned throughout the State. These sites are potential ANCSA land selections.

The process used to close some former Federal facilities has reduced opportunities for reuse or has driven up environmental restoration costs. For example, when some sites were closed and abandoned, equipment and supplies were sometimes left behind. Among the supplies were containers of hazardous substances such as brake fluid, fuel drums containing petroleum products, antifreeze, and even containers of 100 per cent PCBs. Above and underground fuel tanks containing fuel were sometimes abandoned in place. Left on site were transformers which have since been shot-up or broken open to remove copper from inside, letting cooling oils containing PCBs spill onto the ground. Vandalism, the severe Alaskan climate, and a lack of proper maintenance combined to reduce the value and opportunity for reuse of some sites.

3.3 Civilian Land Uses

Personal and community uses. ANCSA village residents have been living on and using the lands in the vicinity of their village for many years before title transferred to the respective Native corporations. Very few land use permits were ever granted to rural villages for common uses such as dump sites, fuel storage areas, power plants, and so on. In some cases, these uses by individuals, nonprofit organizations, and local governments qualified them to receive title to the land from the respective ANCSA corporation.

Approximately 140 BIA schools were formerly operated in various communities in Alaska. Upon statehood in 1959, the BIA began a process of transferring these sites to the State of Alaska. School sites were also transferred to local governments and school districts, and approximately 13 to Native corporations. These buildings typically contained asbestos and leaded paint, but were in good condition at the time of transfer. They may also have had power plants and fuel storage facilities associated with them. Appendix C provides information on the history of DOI schools in Alaska.

Airports and airstrips. Extensive development began in 1940 throughout Alaska for World War II, including the establishment of landing areas and airstrips under the coordinated effort of the War Department and numerous other federal agencies. The result was a network of airfields and runways. While some later became useful as civilian and military aviation grew, others were transferred to other ownership and use.

Storage tanks. Leaking storage tanks, both above and underground, and related pipelines, can cause ground water contamination. Leaking tanks must be removed. The procedures and technology for removing them are proven. Many small businesses and regulators perform this task on a routine basis. In some cases, even tanks that are not leaking should be removed within a reasonable period of time because of degradation over the years. Underground storage tanks are regulated under RCRA[5] and by ADEC, which also regulates above-ground tanks at bulk fuel storage facilities with a non-crude oil storage capacity of 420,000 or more gallons, or a crude oil storage capacity of 210,000 or more gallons.

Active and Abandoned Mines. The 1872 Mining Law encouraged the exploration and production of minerals from the public lands by providing for minimal governmental involvement. As a result, miners have drilled, blasted, or excavated many areas of public domain without the activity or location being recorded or subject to any permit requirements by the United States. If the mines did not produce any valuable minerals or after production ceased, the miners often left the site with open adits (entrances), pits, tailings, and spoil piles. As the adits and piles are exposed to rain and snow the materials may break down and leach into the surrounding environment. Resulting drainage from these areas may contain heavy metals, sulfur compounds and chemicals, such as mercury and arsenic, used in the mining process. Liquid mercury has been used for the extraction of gold (amalgamation) for many years in placer operations because the gold is fine grained. While gold amalgamation is rarely used today, some liquid mercury may remain in streams near old placer operations because it was sometimes spilled, lost, or discarded.

In Alaska, the mining of gold and other valuable mineral deposits has been a major industry since the early 1900s. Many mine sites have not been located since they did not have to be recorded with the Federal government until October of 1976, at the earliest. Also, because of the vast size of the State, the time and expense of conducting field surveys are prohibitive. The map in *Appendix B shows the locations of some known sites with potential mercury. Generally, mine* sites are identified when a problem arises, such as pollution of a water course, which causes State or Federal regulatory agencies to investigate an active pollution source. The issue of identification and cleanup of abandoned mine sites is a statewide problem for all lands. See Appendix G for more information about environmental issues related to mineral deposits.

Dumps and solid waste disposal sites. These sites consist of general purpose landfills, as well as sludge ponds, dry wells and hazardous waste disposal areas. Some dump sites contain everything from household wastes, to batteries, pesticides, and industrial chemicals. Some landfills also include building and other debris. Site characterization, waste removal, containment, or on-site treatment are largely technical and financial issues. Typically, landfills are capped with low permeability covers, surface water diversion and leachate collection and treatment may be necessary; and in some cases, removal may be viable. Appropriate institutional controls should be established for inactive disposal sites to minimize future exposure and risks to human health.

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[5] 42 U.S.C. 6901–6992k

The Indian Health Service has identified, in a report to Congress pursuant to the Open Dumps on Indian Lands Act of 1994 (Public Law 103-399), 153 sites that appear to be on ANCSA conveyed lands. Not all of these sites are necessarily contaminated, and, it should be noted, communities will continue to need landfills.

Oil and Gas Exploration. Abandoned oil and gas wells and survey sites are located in various places throughout the State. The primary sources of contamination are the drilling mud and reserve pits, if any exist. Heavy metals, petroleum products, or solvents are the primary contaminants that may be found.

Contaminated Buildings. The primary source of contamination in buildings is leaded paint and asbestos, although some buildings may be found to have been contaminated by other hazardous materials.

3.4 Contaminated Site Inventories

Under Federal law, if anyone has knowledge of, or discovers a release of a hazardous substance as defined in CERCLA[6] or RCRA, that information should be reported to the EPA. The EPA maintains an inventory of those sites. Under Alaska Statutes, hazardous releases are to be reported to ADEC, which also maintains a site inventory. It would be a useful management tool to have a database with mapping capabilities to record every known contaminated site in the State.

The inventories and databases identified below were used, along with the survey of Native corporations, to compile information about the nature and extent of potential contamination on lands transferred to Native corporations pursuant to ANCSA. The tables in Appendix A and maps in Appendix B are based on known information. The information depicted in the maps was acquired from various inventories. Data have not been reviewed for accuracy or field-proofed. These graphics are intended for illustrative purposes only, and do not indicate that there exists contamination at any location depicted.

Developing this information was complicated by the fact there is not a single database in the State that contains a comprehensive inventory of contaminated sites in Alaska. Often, current landowners are not identified and there is duplication between agency listings resulting from overlapping jurisdictions and varying site names.

U. S. Army Corps of Engineers (COE), Formerly Used Defense Sites (FUDS). The COE maintains a database of FUDS on all lands in Alaska, including those on Native corporation lands. The inventory for Alaska currently lists 545 sites and identifies the project name, location (by community), site number, landowner, list of contaminants, and cleanup schedule. There are approximately 112 identified FUDS on lands conveyed to ANCSA corporations. This

[6] 42 U.S.C. 9601–9675

represents 19 percent of the statewide FUDS total. In addition, there are approximately 77 identified FUDS on ANCSA selected lands. The COE has inspected almost all eligible FUDS and has determined that no further action is required relative to hazardous materials cleanup on 80 percent of the total sites, and investigation or cleanup is in progress on most of the remaining sites. Either the COE or the EPA plans to revisit a number of these sites to verify no further action is required. The Environmental Justice Program of the EPA prepared a report in July, 1996, titled *The Alaska Military Sites Project*, (see Appendix F), which used the FUDS database and identified past and present military sites in Alaska. A number of former military sites were sought by and granted to Alaskan Native corporations.

IHS Facility Data System. This system was established by the Office of Environmental Health and Engineering to help identify health service workloads, and it identifies solid waste disposal sites. There are currently 153 open dump sites identified for purposes of compliance with the Indian Lands Open Dump Cleanup Act of 1994 (Public Law 103-399). The system includes facilities or sites where solid waste is disposed of: a sanitary landfill, open dump, and modified landfill that is not a facility for the disposal of hazardous waste. All sites are one-half acre or larger in size. Not all of these pose hazardous material issues or risks. The IHS data provides an inventory and overview of open dump sites on Native lands and does not reflect a comprehensive analysis of each site.

State of Alaska Department of Environmental Conservation—Contaminated Sites Database. Approximately 2,200 open sites are listed in this database. The majority of sites in this database involve petroleum releases, most of which were reported after the lands were conveyed to ANCSA Native corporations. At many sites where historic releases have occurred, it is nearly impossible to accurately determine when the actual release(s) occurred. This database identifies site locations by longitude and latitude coordinates for a community or known geographic area, and does not identify the current landowner. Approximately 317 sites appear to affect ANCSA-conveyed lands. This information includes sites listed in other inventories.

State of Alaska Department of Natural Resources. This list identifies of 586 petroleum exploration/production wells, water wells, injection wells, and gas wells plugged and abandoned that are onshore and not on State land that have been reported or discovered in Alaska over the years. This report lists the operator, well name, legal description, lease number, status, date completed, and other information. It is difficult to know which of these sites are located on ANCSA conveyed lands. It appears the majority are on Federal or State lands.

Environmental Protection Agency Lists. CERCLIS is a database used by EPA to list sites which have the potential for releasing hazardous substances into the environment. EPA learns of these sites through notification by the owner, citizen complaints, State and local government identification, and other EPA programs. Of the 1,676 sites listed in Region 10 EPA, 80 sites are in Alaska. A preliminary review of this list indicates there are not any sites that have been transferred to Native corporations.

EPA maintains the Federal Facilities Hazardous Waste Compliance Docket, which lists Federal facilities that require assessment to determine if they pose a threat to public health or the environment. The Docket, which lists the official name and location of all known contaminated Federal facilities, was created by Section 120(c) of CERCLA and is updated approximately twice each year. All Docket updates are published in the *Federal Register* and only deal with Federal lands, including those that may be selected for transfer to Native corporations.

1991 ANCSA Contaminated Lands Inventory. An earlier survey on this issue resulted in a report to Congress on April 15, 1991. In 1991, Section 326 of Public Law 101-512, The Interior Appropriations Bill, required the Secretary of the Interior to report to Congress information concerning lands and properties which: 1) at the time of transfer were represented or disclosed by the Federal government as being free from contaminants and subsequent to transfer, were discovered to be contaminated; or, 2) were knowingly transferred to Alaska Native corporations with contaminants. The BLM received 22 responses out of more than 200 mail-out inquiries to Native landowners and other interested parties (see Appendix A).

1996 ANCSA Contaminated Lands Inventory. As a result of over 236 mail-out inquiries sent to Native landowners and organizations as part of this project, 98 potentially contaminated sites were generally identified by 14 Native entities. Sixty-seven of these sites were found to actually be located on Native conveyed or selected lands. The reported sites involve a small number of acres situated in close proximity to some villages. Many of these sites have been identified by the COE, EPA, ADEC, other Federal or State agencies (see Appendix A).

Table 2.

Summary of Potentially Contaminated ANCSA Lands[1]

Source: see Appendices A, B, and C

Site Type/Inventory	Estimated Number of Sites on Conveyed Lands
Alaska Department of Environmental Conservation Database	317[2]
Formerly Used Defense Sites (U.S. Army Corps of Engineers)	112[3] 77 (selected lands)
Indian Health Service Open Dump Sites Inventory	153[4]
Mining Sites with Mercury	30[5]
Federal Aviation Administration Database	25[6]
U.S. Air Force Inventory	13[7]
U.S. Coast Guard Inventory	3[8]

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[1] Estimates of known and potential sites are based on an analysis of the inventory databases discussed herein. Duplicate sites may exist. Site investigation may be required to determine whether contamination exists and if it was present at the time of conveyance.

[2] Includes duplicates of other sites, e.g., FUDS.

[3] Included in an active program.

[4] Included in an active program.

[5] Includes naturally occurring instances.

[6] Funding requested for 13 sites in FY 1999.

[7] Included in an active program.

[8] Included in an active program.

Figure 2.
FUDS Project Before Cleanup of 35,000 Drums at Prince of Wales

Figure 3.
FUDS Project After Cleanup of Drums at Prince of Wales

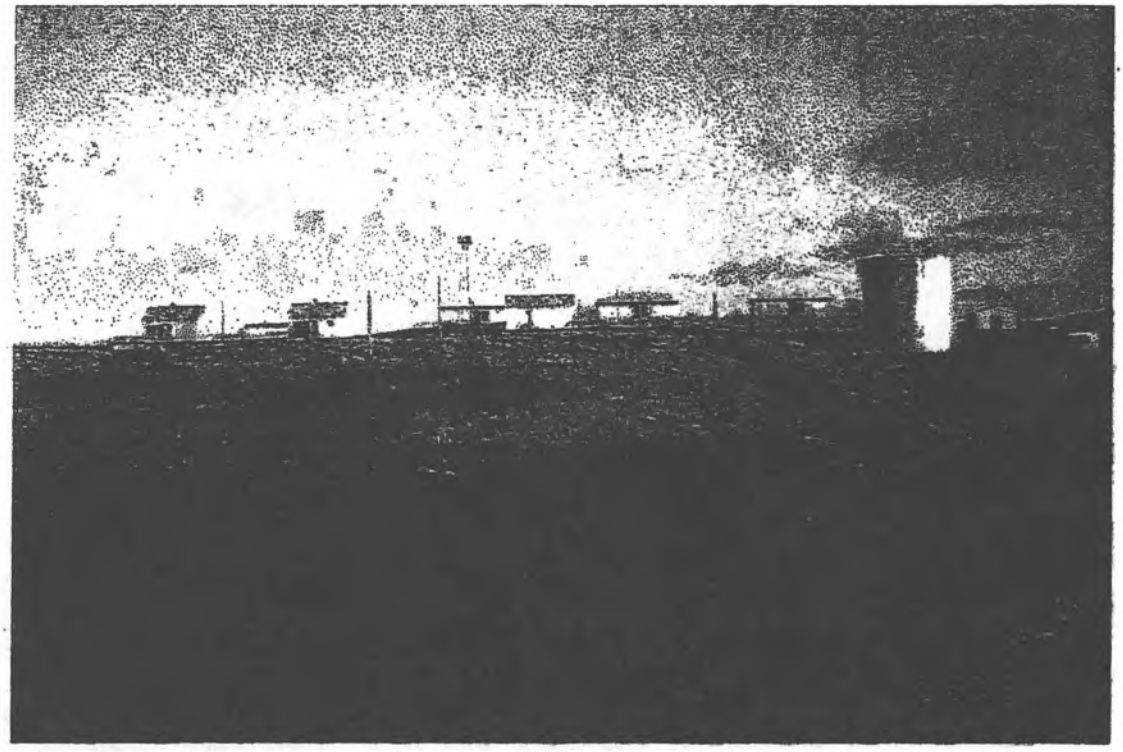

Figure 4.
Former FAA Site
at Middleton Island

Figure 5.
Tank Farm/Power Generation Building
at Middleton Island

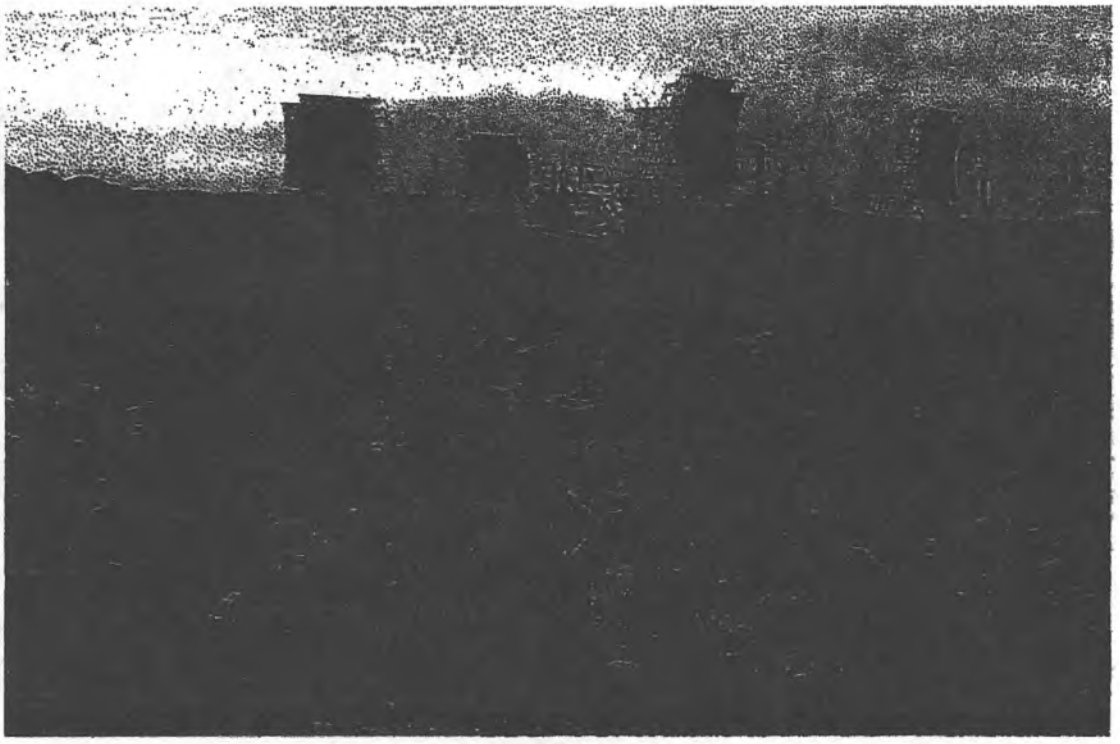

Figure 6.
DEW Line Site at Port Heiden
(ANCSA selected, not conveyed)

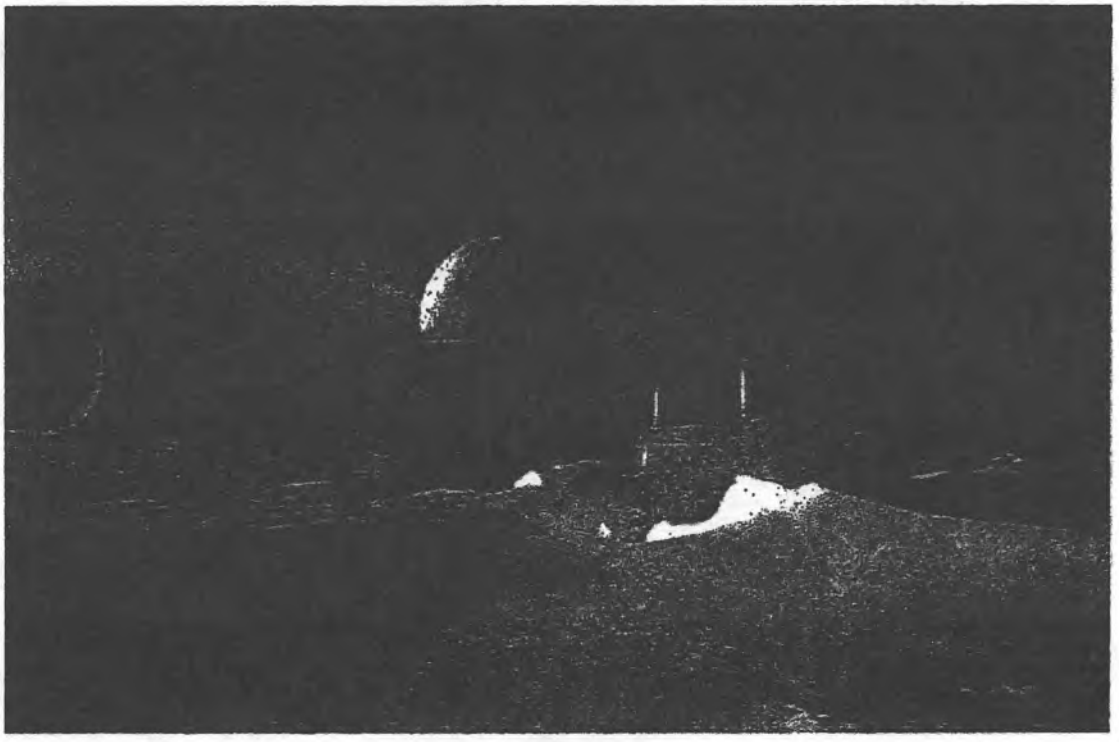

Figure 7.
Typical Radome at a
DEW Line Site in Winter

Figure 8.
Batteries inside Building (since removed)
at Middleton Island

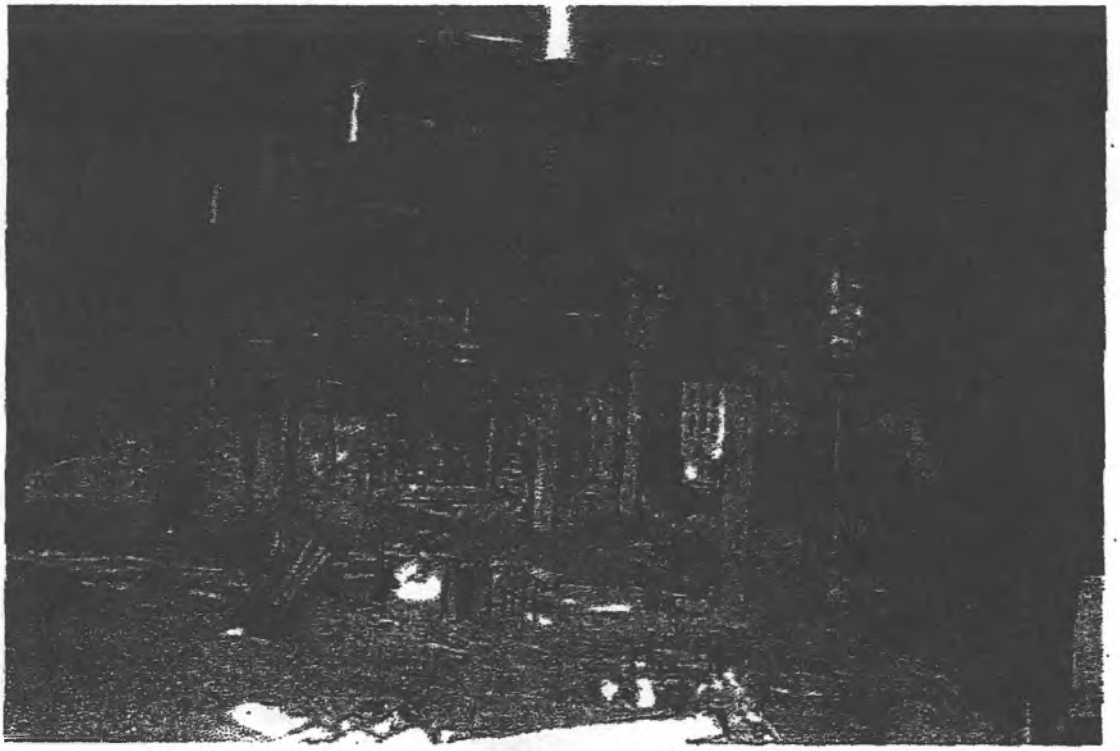

Figure 9.
Transformers Containing PCB's at Driftwood Bay
(ANCSA selected, not conveyed)

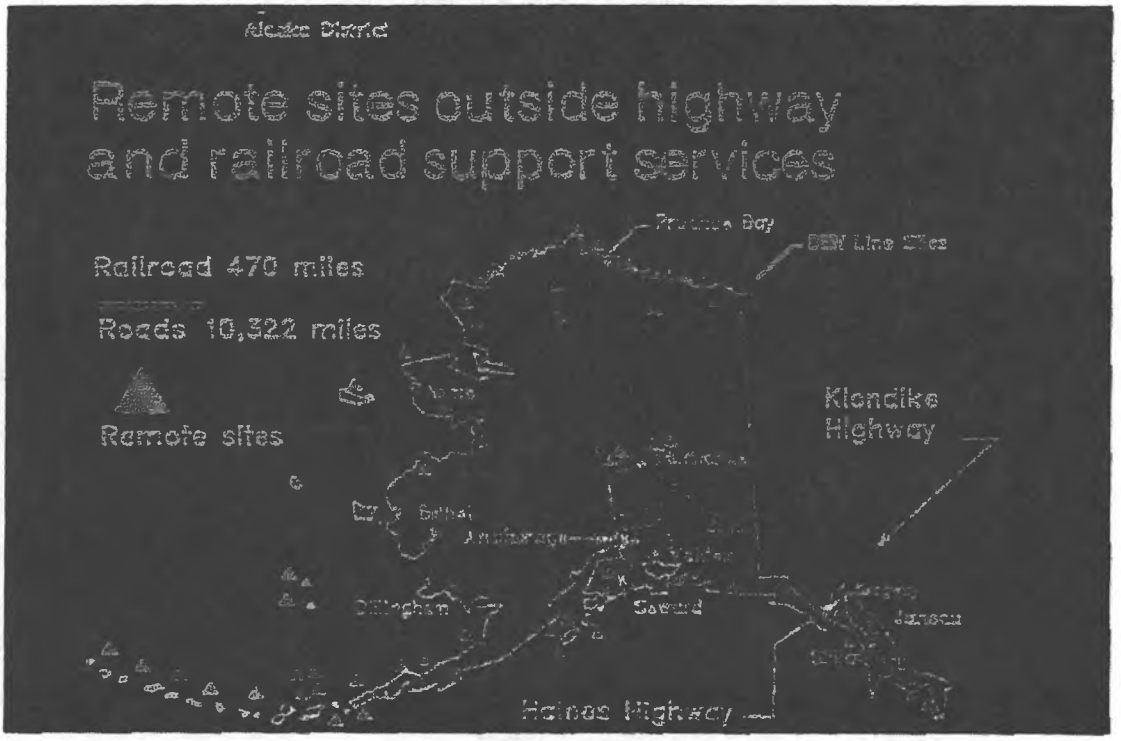

Figure 10.
Remote FUDS in Alaska

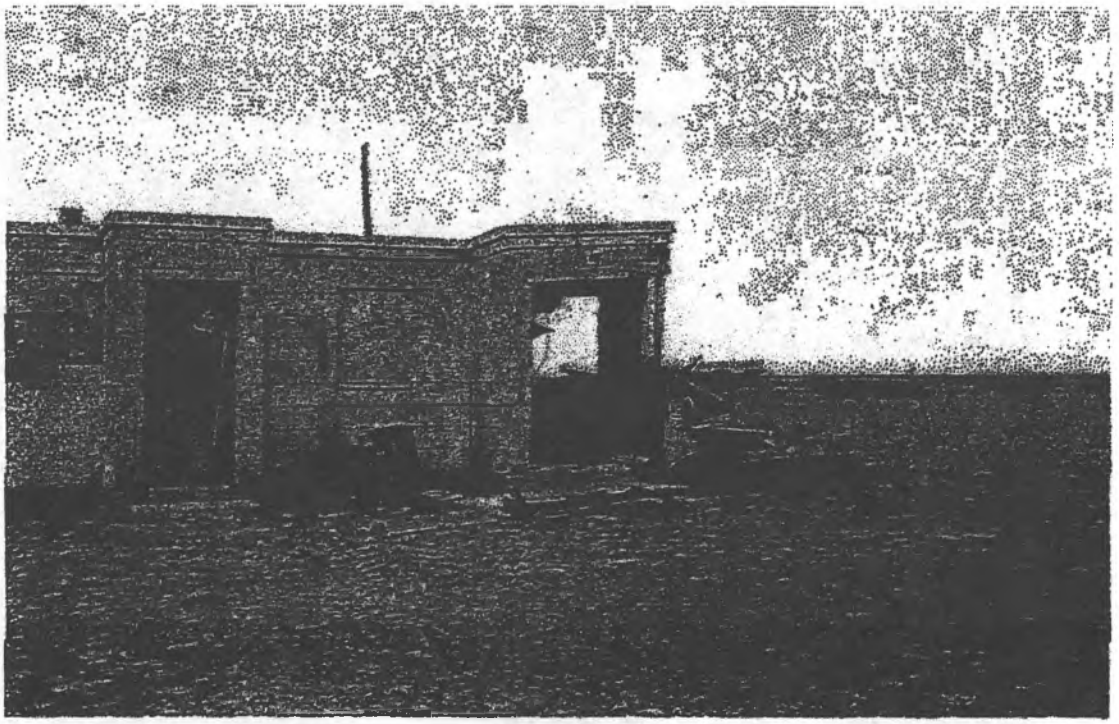

Figure 11.
Former FAA Site at Middleton Island
Known to Contain Asbestos

4.0 STRUCTURES KNOWN TO HAVE ASBESTOS

Asbestos is the name for a group of naturally occurring minerals that separate into strong, very fine fibers. Because asbestos is heat resistant and extremely durable, it was commonly used in pipe insulation, wallboards, and floor and ceiling tiles.

The regulations of the EPA and the Occupational Safety and Health Administration regard asbestos that is free in the air as a hazard, but generally do not consider properly used asbestos products to be a hazard. There is generally no remedial responsibility for asbestos that is properly contained or maintained and we believe that generally there should be no Federal responsibility where asbestos was properly contained upon transfer. Responsibility is more likely in the case of a release or potential release to the environment of friable asbestos.

Structures Known to Have Asbestos Present. Most of the buildings in Alaska constructed between the 1940s and the 1970s contain asbestos. Some are still in regular use without violating any law or regulation. It is difficult to give a precise total, but it would be the exception for a building constructed in Alaska between the 1940s and 1970s not to contain some asbestos.

Conveyed to ANCSA corporations, there are at least 13 former BIA school sites, 47 buildings from former FAA sites, and 30 buildings from former defense sites. The 1996 ANCSA contaminated lands survey reported an estimated 45 buildings suspected to contain asbestos.

Recommendations to Inform Native Landowners on the Containment of Asbestos. Native landowners and Corporations were provided general information about asbestos through the mail-out package sent out in April of 1996 (see Appendix I). This mailout contained information prepared by EPA about the nature of asbestos and when it becomes hazardous. Also included was a list of possible products that could be sources of asbestos, and a list of State and Federal agencies that have knowledge of asbestos problems and how to solve them.

Additional information about BIA schools is provided in Appendix C. Most of these school sites have been conveyed to the State of Alaska. Some were also conveyed to municipal corporations and ANCSA Native corporations. The Federal records do not indicate that hazardous materials and contaminants were present on the sites at the time of conveyance. However, asbestos was present in the building materials of the schools, since many of the sites were constructed when asbestos was not known to be hazardous and was commonly used and may now be friable if not properly maintained.

The EPA and other agencies or contractors regularly provide workshops on asbestos management, safety, and abatement. More information about asbestos is available from the EPA Region 10 Asbestos Division.

It is recommended that the EPA consider an agreement with the U.S. Army's Joint Regional Environmental Training Center[7] in Anchorage, Alaska, to make its training programs available to employees or representatives from ANCSA Native corporations and Tribes. Training could be provided on environmental issues, policies, regulations, and practices involving asbestos monitoring, abatement, management, inspection, and assessment.

[7] This training center was established in June of 1994 as a consortium of fourteen Federal, State, and local agencies to train their respective personnel on environmental and hazardous materials matters. The JRETC became operational the fall of 1997. It provides resident and nonresident environmental training in a state-of-the-art multi-media environmental training facility with fully trained and certified faculty members.

5.0 INFORMATION ABOUT POTENTIALLY RESPONSIBLE PARTIES

It is clear from the examination of past civilian and military land uses on ANCSA transferred or selected lands that both government agencies and private parties may have responsibility for cleanup of contaminated sites on ANCSA land.

One problem this study identified is the fact that ANCSA Native corporations were given this land by the United States under ANCSA as an equitable settlement based on historic interests and use, and now, under certain circumstances, ANCSA Native corporations believe they may be responsible as landowners under Federal and State environmental laws for the cleanup of contamination that was present on the lands at the time of conveyance.

However, on June 13, 1997, EPA distributed the "Policy Towards Landowners and Transferees of Federal Facilities." (Copy attached as Appendix K) The policy addresses EPA's intent to exercise their enforcement discretion and not to initiate enforcement actions against landowners and transferees for contamination existing as of the date of the conveyance of the property. The policy provides that where a person or entity acquires property from the United States that is subject to the covenants provided by section 120(h)(3) or (4) of CERCLA, EPA will not take enforcement action against a person or entity, or its transferees or successors to require the performance of response action or payment of response costs incurred to respond to contamination existing as of the date that person or entity acquires the property from the United States. EPA is also aware that even preliminary assessment and evaluation can be burdensome and expensive to a landowner, and will not seek to impose these costs against ANCSA landowners relative to contamination or potential contamination that was on their property at the time of conveyance. (However, EPA may take a CERCLA enforcement action against landowners and transferees who cause, contribute to, or exacerbate the release or threat of release of any hazardous substance, through act or omission, and EPA may seek information and access from any person pursuant to CERCLA.)

Many land transfers under ANCSA were finalized before CERCLA was enacted and the statutory covenants were required. However, EPA applies this policy to transferees and successors that acquired property from the United States in this type of situation in which the property transferred before CERCLA was enacted.[8]

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[8] Other EPA policies concerning enforcement discretion may apply to ANCSA-specific transferred lands and landowners, such as " Final Policy Toward Owners of Property Containing Contaminated Aquifers," May 24, 1995) ; "Interim Policy on CERCLA Settlements Involving Municipalities and Municipal Wastes," (December 6, 1989); "Policy for Municipal and Municipal Solid Waste CERCLA Settlement at NPL Co-Disposal Sites," (February 5, 1998); or "Policy Towards Owners of Residential Property at Superfund Sites," (July 3, 1991).

Generally, under section 107(a) of CERCLA, the following four classes of parties may be held liable for response costs or natural resource damages without regard to fault:

1) The current owner and/or operator of the facility;

2) Past owner(s) or operator(s) of the facility at the time of hazardous substance disposal, or release;

3) Any person who arranged for disposal, treatment or transport of hazardous substances (commonly known as "generators"); and

4) Any person who accepted hazardous substances for transportation to the facility selected by that person.

The potentially responsible party (PRP) search process includes gathering information on the past history and uses of the site with a focus on those activities that may have used or disposed of hazardous substances. Previous owners and/or operators are identified and, if they are extant and can be located, they may be sent a request for information pursuant to CERCLA section 104(e). Federal, State, and local land records and archives will also be examined. If former employees of the facility can be identified, they may be interviewed. All of this information is compiled into a chronological history of the site.

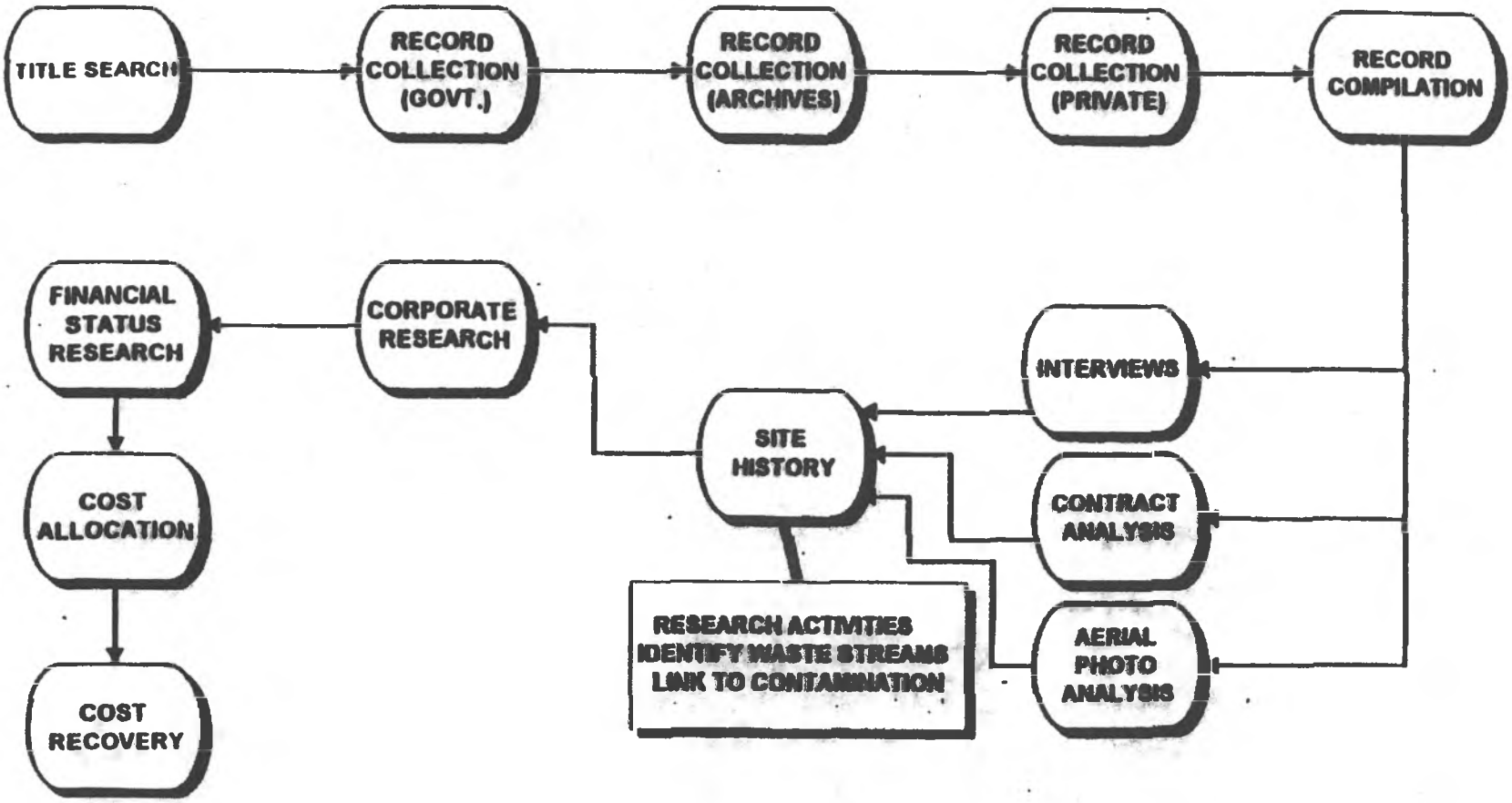
In order to perform a thorough evaluation of responsibility, every party associated with the property should, if possible, be identified and the activities of each party at the site should be determined. These activities can then be evaluated for generation of waste streams that may have resulted in the release or potential release of hazardous substances to the environment. The legal relationship of each party to the site should also be characterized so that legal responsibility can be assigned appropriately.

When contaminated sites are identified, often the party responsible for the contamination is either unknown or economically unviable. The Federal government may not be a PRP for cleanup, for instance, where it had no authority to prevent or deny permission to conduct a polluting activity by another party, such as mining activity under the Mining Law of 1872.

Appendix D includes tables identifying currently available sources of information about PRPs from local and State governments, Federal government agencies, the military, archives and libraries, recording offices, universities, museums and historical societies, and private businesses and organizations.

FIGURE 12

PRP SEARCH ELEMENTS



Source: *Potentially Responsible Party Searches* (February 1995) Techlaw Inc. Prepared for Department of the Interior, Office of Environmental Policy and Compliance.

6.0 EXISTING REMEDIES

The following are the remedies provided by Congress for dealing with hazardous substances cleanup.

CERCLA. In 1980, Congress passed CERCLA to address the cleanup of sites contaminated with hazardous substances. CERCLA has two key components. The first is a program for cleanup of hazardous waste sites. Secondly, CERCLA has a comprehensive liability scheme that enables the government or a private party to recover money spent on the cleanup, or in the case of the government, order cleanup, of a site. CERCLA established a trust fund to allow the government to conduct cleanups of hazardous substance sites. CERCLA was later amended by the SARA of 1986.

For More Information Contact:

U.S. Environmental Protection Agency
Alaska Operations
(907) 271-5083 or Fax (907) 271-3424

RCRA. RCRA was adopted as an amendment to the Solid Waste Disposal Act of 1965. It was passed in order to establish a combined Federal and State regulatory program for hazardous waste sites. RCRA provides for citizen suits to abate some types of pollution.

For More Information Contact:

U.S. Environmental Protection Agency
Alaska Operations
(907) 271-5083 or Fax (907) 271-3424

Alaska Department of Environmental Conservation
South Central Regional Office
(907) 269-7500 or Fax (907) 269-7649

DERP. In 1983, DERP[9] was formally established by Congress. It provides centralized management for the cleanup of DOD hazardous waste sites. DERP also provides for limited activities to reduce the amount of hazardous waste generated and disposed and for building demolition and debris removal at FUDS. DERP is funded by five special accounts, DERA (Army, Navy, Air Force, and Defense) and the FUDS Account. This program covers cleanup of the following contaminants:

1. **Hazardous and Petroleum Waste.** This group covers identification, investigation, and cleanup of contamination at installations (including areas off the installation where

[9] 10 U.S.C. 2701–2707 and 2810

contamination has migrated), and at FUDS. This program is focused on cleanup of contamination associated with past DOD activities to ensure that threats to public health and the environment are eliminated. The term "contaminant" is as defined in CERCLA, and also includes petroleum, oil and lubricants, and unique materials, such as biological/chemical warfare materials. This group also includes toxicological data collection.

2. **Ordnance and Explosive Waste.** This group covers identification, investigation, and removal of DOD owned and abandoned ordnance and explosives wastes that present an explosive hazard to human safety. This does not include targets and ordnance debris. This group is limited to FUDS unless specific approval is obtained. Remediation or cleaning of active ranges/disposal sites are another DOD component's responsibility.

3. **Building Demolition/Debris Removal.** This includes demolition and removal of unsafe buildings or structures at FUDS properties that were unsafe at the time of the transfer and that have not had beneficial use since transfer to State or local governments or Alaska Native corporations.

For More Information Contact:

U.S. Army Corps of Engineers
Alaska District
Formerly Used Defense Sites, Project Manager
(907) 753-5782 or Fax (907) 753-5626

Administration for Native Americans (ANA) and Department of Defense Environmental Mitigation Program. Congress recognized that DOD activities may have caused environmental problems for Indian Tribes and Alaska Native village governments and provided for the ANA to administer an Indian Lands Mitigation Program.

The program was started pursuant to the DOD Appropriations Act of November 11, 1993. This program continues under Public Law 103-335, dated September 30, 1994. Section 8094 of the Act states, "Of the funds appropriated to the DOD for Operations and Maintenance Defense-Wide, not less than $8,000,000 shall be made available until expended to the Administration for Native Americans..."

ANA promotes the goal of social and economic self-sufficiency. ANA, through its policy and *programs, supports self-determination and self-governance in accordance with the government-to-*government relationship between the Federal government and the Tribes. The ANA administers several national programs and initiatives.

In 1994, Congress made $8 million available through the ANA to provide financial assistance to Tribal entities and corporations for the express purpose of addressing site cleanup issues as a result of DOD activities. In 1995, funds were announced in the ANA's Program Announcement No. 93612-952, *Availability of Financial Assistance for the Mitigation of Environmental Impacts*

to Indian Lands due to Department of Defense Activities. Tribes were not expected to match the funding. The program was divided into four phases, covering research, planning, development, and implementation of an environmental mitigation strategy. The purpose of the announcement was to invite one to three-year proposals to undertake "any or all of the phases" of the program.

Of the 29 applications received under the first program announcement, 20 were funded. Seven grants were awarded to Native organizations in Alaska. They were as follows: Aleutian Pribilof Islands Association, Inc. ($200,000 two year grant); Bethel Native Corporation ($100,000 two year grant); Kuigpagmuit, Incorporated ($100,000 one year grant); Louden Village Council ($99,793 two year grant); Metlakatla Indian Community ($299,020 one year grant); Uwalangin Tribe of Unalaska ($34,945 one year grant); and Tanana Chiefs Conference, Incorporated ($50,000 one year grant). In 1996, funds were announced in the ANA's Program Announcement No. 93612-972. Of the 25 applications receive under the second program announcement, 12 were funded. These grants were awarded to Tribes in Alaska, as follows: Arctic Slope Native Association, Limited ($170,000 two year grant), Hughes Village Council ($50,000 one year grant), and Yakutat Tlingit Tribe ($174,230 one year grant).

For More Information Contact: Administration for Native Americans
Department of Health and Human Services
(202) 690-7777 or Fax (202) 690-7441

The Indian Lands Open Dump Cleanup Act of 1994. Public Law 103-399, was enacted on October 22, 1994, to: 1) identify the location of open dumps on Indian and Alaska Native lands; 2) assess the relative health and environmental hazards posed by such dumps; and 3) provide financial and technical assistance to Indian Tribal governments and Alaska Native entities, either directly or by contract, to close such dumps in compliance with applicable Federal standards and regulations, or standards promulgated by an Indian Tribal government or Alaska Native entity, if such standards are more stringent than the Federal standards.

The Director of the Indian Health Service, in cooperation with the Administrator of the EPA, is to carry out the functions and purposes of this act. Among other things, the Act required a study and inventory to be completed within 12 months from enactment; annual updates to Congress concerning priorities, funding, and progress on addressing deficiencies; and a 10-year plan addressing Indian and Alaska Native solid waste deficiencies.

For More Information Contact: *Alaska Area Native Health Service*
Office of Environmental Health & Engineering
(907) 729-3500 or Fax (907) 271-4734

Department of Commerce—Pribilof Islands. Section 3(a) of Public Law 104-91, dated January 6, 1996, provides that the Secretary of Commerce shall, subject to the availability of appropriations, cleanup landfills, wastes, dumps, debris, storage tanks, property, hazardous or

unsafe conditions, and contaminants, including petroleum products and their derivatives left by the National Oceanic and Atmospheric Administration on the Pribilof Islands, Alaska.

For More Information Contact:

National Oceanic and Atmospheric Administration
Facilities and Logistics Division
Western Administrative Service Center
(206) 526-6191

FAA—Environmental Remediation Program. In accordance with RCRA section 3016, the FAA Alaskan Region has established a continuing program to compile and submit to the EPA an inventory of current and formerly owned or operated FAA sites at which hazardous waste is stored, is treated or has been released. In accordance with CERCLA section 120, preliminary assessments have been and continue to be conducted at sites with suspected contamination. Additional investigations and removal actions are performed when required, within the risk parameters established by EPA and the State of Alaska. To date, the majority of work conducted by this program has been on currently owned or operated FAA sites, with adjacent former sites incorporated when applicable. Because of the nature of established reporting requirements, information gathered to date has not included a designation of whether sites addressed or considered were on ANCSA lands. The FAA Alaskan Region continues to proactively work with EPA, ADEC, and colocated Federal agencies to address all environmental requirements.

For More Information Contact:

Federal Aviation Administration
Alaska Region Program Manager
Environment and Safety
(907) 271- 5373 or Fax (907) 271-4470

FY 1996 Defense Authorization Act. Congress directed the Department of Defense to provide for: "the mitigation of environmental impacts, including training and technical assistance to Tribes, related administrative support, the gathering of information, documenting environmental damage, developing a system for prioritization of mitigation on Indian land resulting from Department of Defense activities."

For More Information Contact: Office of Environmental Security
Conservation Team
(703) 604-0518/1747 or Fax (301) 607-3124

State of Alaska Mini-CERCLA Statute. This statute (AS 46.03.822) was amended in 1990 to address cleanup and damages resulting from the release of oil and other hazardous substances. Unlike CERCLA, Alaska's statute specifically includes liability for releases of oil and other petroleum products. AS 46.03.822 adopts CERCLA categories of parties liable for cleanup costs but also includes the owner of a hazardous substance at the time of release. AS 46.03.822 enables the State or a private party to recover money spent on the cleanup of a site. AS 46.03.822(c)(3) provides for a limited defense to liability for a Native corporation that acquired a contaminated

site under ANCSA, if the corporation begins operations to contain and cleanup the hazardous substance within a reasonable time of learning of the release.

For More Information Contact: Alaska Department of Environmental Conservation
Contaminated Sites Remediation Program
(907) 269-7664 or Fax (907) 269-7649

State of Alaska Oil and Hazardous Substance Release Prevention and Response Fund. The Alaska Legislature created this fund (AS 46.08) to provide, in part, for the cleanup of oil and hazardous substances at sites that pose an imminent and substantial threat to public health or welfare, or to the environment. ADEC can use these funds for cleanup actions, but is required to seek recovery of monies expended for site cleanup from those parties responsible under Federal or State law.

For More Information Contact: Alaska Department of Environmental Conservation
Contaminated Sites Remediation Program
(907) 269-7664 or Fax (907) 269-7649

State of Alaska Underground Storage Tank Requirements. These statutes and regulations (AS 46.03.360–AS 46.03.450, and 18 AAC 78) govern the cleanup of releases from regulated underground storage tanks. There is a financial assistance program in place for owners and operators of underground storage tank systems. The State also updated its Above Ground Storage Tank Master Plan and Issued an August, 1997, report with recommendations for bulk fuel storage improvements throughout the State.

For More Information Contact: Alaska Department of Environmental Conservation
Storage Tank Program
(907) 451-2182 or Fax (907) 451-2188

State of Alaska Solid Waste Disposal. The operation and closure of active and nonactive solid waste disposal sites are regulated by these regulations (18 AAC 60). Limited financial assistance is available in the form of solid waste facility grants (AS 46.03.030).

For More Information Contact: Alaska Department of Environmental Conservation
Division of Environmental Health
(907) 465-5162 or Fax (907) 465-5164

Other sources of information continue to evolve. For instance the University of Alaska Anchorage, Institute of Social and Economic Research, through a grant from the Environmental Protection Agency, is compiling information about contaminants in the subsistence food chain. Part of this project will entail developing a computer data base showing information that is available for each community. The Tanana Chiefs Conference is also gathering contaminants *information for Native allotment lands within their region.*

Agency for Toxic Substances and Disease Registry. This agency carries out public health activities required under CERCLA section 104(i) for sites where hazardous substances have been released into the environment. These activities include public health assessments and health consultations for individual sites, and, if necessary, follow-up public health studies, health surveillance, and health education for exposed communities and their health care providers.

For More Information Contact: Associate Administrator for Federal Programs
Agency for Toxic Substances and Disease Registry
(404) 639-0730

7.0 RECOMMENDED REMEDIES

Much has been done to identify and cleanup sites under the existing remedies discussed earlier. However, the full extent of the contaminated ANCSA lands cannot be reliably determined today and additional contaminated sites may be identified. A majority of currently known sites are being addressed under existing Federal agency programs, within available funding that must be allocated by agencies with cleanup responsibilities among the contiguous 48 states as well as in Alaska. DOI will continue to work with these programs to ensure that cleanup efforts will continue.

This report represents the compilation of available information through 1996. There is a need to do more. There have been several barriers to more complete information on the extent of the contaminated lands problem. There have been no comprehensive hazardous material surveys conducted on the bulk of the ANCSA conveyed lands. The information systems of the various Federal and State entities involved in the cleanup programs identified in Section 6.0 are not compatible or coordinated. Thus, complete information, even among current programs, may not be fully compiled. Also, under the principles of CERCLA, land ownership alone can carry with it legal responsibility for hazardous waste remediation, ANCSA landowners have been understandably reluctant to even collect, much less report to the Federal government such information concerning lands that have been conveyed to them. We need information from the affected ANCSA landowners in order to develop a suitable program.

This report recommends that the ANCSA landowners be fully informed of EPA's policy toward transferees of Federal property with respect to contamination that was on the land at the time of conveyance. We hope this will make owners more comfortable with participating in the information process. It may be that a comprehensive approach toward resolving the cleanup of ANCSA lands is needed. However, without an accurate inventory it is not possible to know if an additional Federal program is necessary. A common statewide inventory would assist in identifying sites that are not covered by an existing program. If a new program to clean up sites is necessary (phase two), it could be proposed by DOI at the end of the inventory period (phase one).

Therefore, DOI recommends the following (phase one), to be coordinated by DOI with full participation of ANCSA landowners and appropriate Federal and State agencies, to enable development of a program based on accurate data. DOI estimates currently identifiable and unfunded total costs to all Federal agencies over a three fiscal year period to accomplish phase one will be at least $1,200,000, and possibly much more.

1. Establish a forum for ANCSA landowners and Federal, State, local, and Native agencies in Alaska. Members will include representatives of ANCSA landowners, regional and village corporations and, where appropriate, Tribes, and Federal and State regulators and cleanup program managers. DOI will establish and coordinate

this forum. The forum will meet at least four times a year to exchange information on existing cleanup programs; to discuss issues related to identification, assessment, and cleanup of contaminated sites; to identify a funding strategy; and to generally inform Native landowners about contaminants issues. This will not replace other statutory programs in place dealing with cleanup of contamination at existing sites. It is, likewise, consistent with the recommendations for stakeholder participation put forth in the Federal Facilities Environmental Restoration Dialogue Committee Final Report.

Estimated minimum costs to create and operate the ANCSA landowner/government forum (assume 14 members at 4 two-day meetings per year in Anchorage for 3 years at a cost of $10,000 per meeting for travel and *per diem* for non-Federal members, and ¼ FTE DOI staff support at $22,600 per year): $187,800.

2. Create and maintain a coordinated, comprehensive inventory database of contaminated sites in Alaska, based on an existing system, such as the Corps of Engineers database, which is linked to a GIS and has Internet access, and already includes detailed information about several hundred sites, many of which are on ANCSA lands. We suggest that other agencies convert site data on their inventories to a compatible format and provide this for inclusion in the comprehensive inventory. (The integrity of the existing data bases of the participating agencies would, of course, be maintained.) DOI will compile and input ANCSA landowner data into the database. An interagency database offers reduced costs and improved sharing of information by users, as well as reduced duplication of data consistent with the Information Technology Management Reform Act. Randomly sampled site visits to evaluate and verify the database would be established pursuant to the Government Performance and Results Act.

   Estimated minimum costs to compile a coordinated comprehensive inventory of contaminated sites, add sites to an existing GIS database, eliminate duplicate site records, prepare and distribute reports (assume ¼ FTE Federal staff for data input/manipulation at $22,600 per year and $50,000 for software support and computer operations and supplies, site visits and inventory review at $500,000): $617,800.

   Contaminated sites shall be reported to the responsible agency within 18 months after provision of funds for implementation of this recommendation. (The time frame chosen should allow for two summers in order to gain meaningful information.)

3. Provide ANCSA landowners full knowledge of the EPA's policy not to apply CERCLA landowner liability to transferees of federal lands containing contamination at the time of ANCSA conveyance where transferees did not cause, contribute to, or *exacerbate the contamination. (Estimated costs, minimal)*

Sections 120(h)(3) and (4) of the CERCLA or "Superfund" address contaminated real property owned by the United States and conveyed to another party. The EPA has promulgated a related policy, Policy Towards Landowners and Transferees of Federal Facilities. EPA believes it appropriate to apply this policy to former Federal lands and facilities[10] in Alaska that have been conveyed to ANCSA Native Corporations. See Section 5 for further discussion. A copy of the policy is attached as Appendix K.

4. Direct that within 30 months (12 months after the 18-month reporting period), DOI report back to Congress on sites that were identified and not covered by existing programs, and whether an additional Federal program is necessary to address those sites. Copies of the report should be forwarded to all appropriate agencies and interested parties. If sites are identified during the site inventory period that appear imminently hazardous, an analysis of the situation will be conducted to determine what response is necessary. This analysis will be carried out by the Department or agency which formerly operated the facility; if the release appears to have been created by a private party or if the earlier governmental operator cannot be identified, the analysis will be done by the EPA.

   Estimated minimum costs to provide a DOI point of contact for ANCSA landowners during the project, analyze newly collected site data from the landowners and from agency site visits, coordinate with other agencies, and develop recommendations and a report on the level of program required to cleanup sites not covered in existing programs (assume ½ FTE DOI staff at $45,200 plus $5,000 administrative expenses per year for 3 years): $150,600.

5. Review and, where appropriate, revise relevant policies covering existing programs that clean up contaminated ANCSA lands to address, as appropriate, the remediation of petroleum, oil, and lubricants; leaded paints; friable asbestos; and the removal of unsafe or unwanted buildings, structures, and debris. Policy adjustments to address issues of local concern would be consistent with the Federal government's special relationship with Native Americans.

   Estimated costs for Federal agencies to evaluate and expand cleanup parameters for existing programs: unknown cost.

6. *Continue to develop, through the EPA Tribal assistance program and in coordination* with EPA and any other appropriate agencies, a process involving technical training, education, and presentation of public information in written, video, and oral formats,

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[10] The term "facility" is defined in CERCLA §101(9) to include "any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located."

to enhance the ability of local residents to participate in cleanup programs. Specific needs will be identified through the Forum.

Estimated minimum costs for EPA to train and educate ANCSA landowners through a variety of media (assume preparation of educational materials and a video at $70,000; and instructors, materials and student travel and *per diem* for 2 classes of 30 persons each in Anchorage per year for 3 years): $250,000.

8.0 CONSULTATIONS

This project was undertaken by the BLM, as the lead bureau for DOI, in cooperation with various Federal agencies, and with a goal of involving all ANCSA Native landowners and related Native organizations.

A Federal working group was formed that consisted of representatives from the Bureau of Indian Affairs, National Park Service, U.S. Fish and Wildlife Service, DOI Regional Solicitor's Office, and DOI Office of Environmental Policy and Compliance. The Department of Agriculture, U.S. Forest Service, also had a representative on the working group. The Federal Aviation Administration, U.S. Army Corps of Engineers, Environmental Protection Agency, and Indian Health Service were also consulted and provided assistance to this project.

Efforts made to notify, consult with, and inform all Native, Federal, and State stakeholders in this matter, Include the following actions: (see also Appendices I and J).

1. A formal press release discussing the legislation (Public Law 104-42) and this project was distributed to all Alaska newspapers and radio stations in the State.

2. A radio interview discussing the project was taped on April 26, 1996, with the Alaska Public Radio Network. This interview was aired during two prime-time slots across more than 300 communities in the State.

3. More than five months were provided for information gathering and input from all ANCSA landowners and Native organizations. More than 236 project surveys were sent (see Appendix I). Responses were received from 18 Native entities; however, only 14 reported specific sites.

4. Before the survey was mailed out, the Alaska Federation of Natives was consulted and briefed on the project; and they reviewed the final draft survey package before it was distributed.

5. Information about the goals and objectives of this project, along with the site surveys were sent to: the Alaska Federation of Natives, the Tanana Chiefs Conference, the Association of Village Council Presidents, the Alaska Intertribal Council, the Bristol Bay Native Association, the Copper River Native Association, the Aleutian/Pribilof Islands Native Association, and many other Native organizations and Tribal entities. An explanation of the project strategy, and time frames, were included, as well as an opportunity for comments and suggestions.

6. Nearly 30 telephone calls were received from ANCSA landowners, attorneys, or individuals to discuss this project. Information packages were distributed upon request.

7. Contact was made with branches of the military (Army, Navy, and Air Force) and the Coast Guard to inform them of this project and seek their assistance in providing data.

8. Contact was made with the Regional Forester's Office, U.S. Forest Service, as representative of the Department of Agriculture.

9. The Alaska Departments of Law, Environmental Conservation, and Natural Resources were consulted.

10. Several meetings were held with the U.S. Army Corps of Engineers.

11. All Alaska Native corporations were contacted.

12. The Alaska Native organizations listed in Appendix I were contacted.

13. Preliminary Draft Report was prepared on February 20, 1997. Copies of this preliminary draft were sent for review and comment to the Federal agency working group, the Alaska Departments of Law and Environmental Conservation, and several Native corporations and associations for review and comment.

14. A meeting with the AFN Land Committee to discuss the preliminary draft report was convened in Anchorage, March 13, 1997 (see Appendix J for a meeting summary).

15. A Federal interagency review of the final draft report was held during the spring and summer of 1997. Review meetings were held with: Environmental Protection Agency, Department of Justice, Department of Health and Human Services, Indian Health Service, Department of Defense, Corps of Engineers, Office of Management and Budget, Federal Aviation Administration, and various DOI bureaus and offices.

16. A January 15, 1998, meeting with the Alaska Department of Environmental Conservation was held to discuss the latest revisions to the draft report.

17. At the January 16, 1998, meeting of the AFN Land Committee, the latest revisions to the draft report recommendations were presented and discussed.

18. February 6 and 12, 1998, Federal interagency reviews of modifications made since August, 1997 were held.

19. February 11 and 12, 1998, meetings with the Environmental Protection Agency were held to discuss report recommendations.

20. March 3-5, 1998, an interagency coordination meeting was held with EPA, ADEC, NOAA, COE, FWS, FAA, BLM, U.S. Air Force, and Department of Defense representatives; followed up by a discussion session with ANCSA landowner and Tribal representatives.

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EPA 910-R-96-004

United States
Environmental Protection
Agency

Region 10
1200 Sixth Avenue
Seattle WA 98101

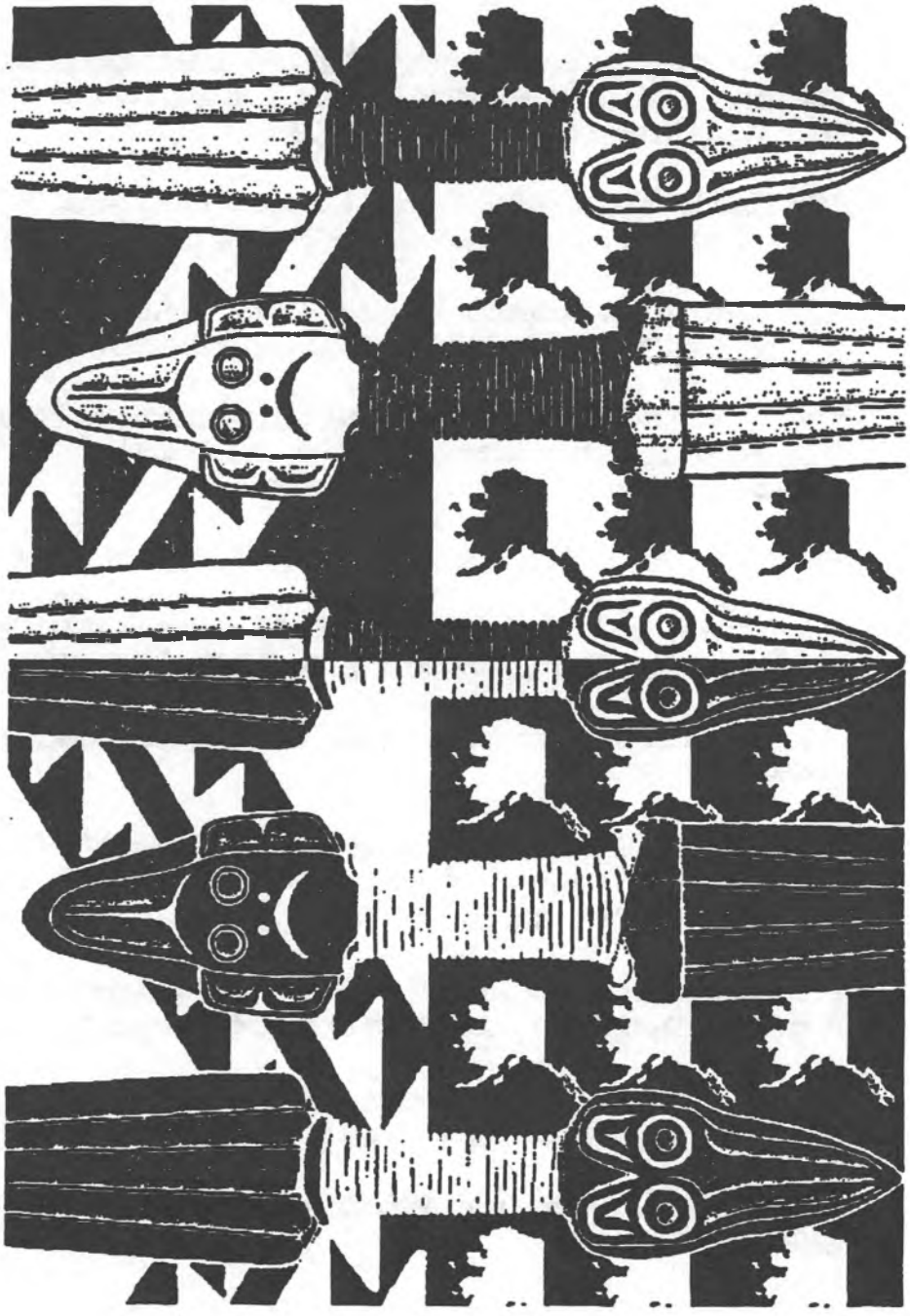
Alaska
Idaho
Oregon
Washington

Environmental Justice Program/Office for Innovation

July 1996

EPA

The Alaska Military Sites Project



The Alaska Military Sites Project

Environmental Protection Agency - Region 10
Environmental Justice Program/Office for Innovation
Gary Idleburg - Project Manager

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

Reply To
Attn Of: OI-085

MEMORANDUM

To: The Alaska Military Sites Review Group

From: Gary Idleburg, Joyce Kelly
Office of Environmental Justice

Subject: Many thanks to everyone

On behalf of the Environmental Justice Program and the Office for Innovation at the Environmental Protection Agency-Region 10 (EPA), we would like to extend sincere thanks and appreciation to each of you (inside and outside the agency) for your assistance on our Alaska Military Sites Project. Your time, efforts, support and input has made this project a success. We also believe that our interactions were good examples of intra and inter-agency partnership and cooperation. We would especially like to extend thanks to Ray Peterson for sharing his time and expertise in developing and generating our maps, to Beth Garza for her research on Alaska military history and to Matt Ganley (Bering Straits Native Corporation) for his research on traditional land-use. Their help was invaluable.

Members of the Alaska Military Sites Project Review Group:

Sandra Borbridge/Bill Viera/Beth Garza - EPA Region 10 Alaska Operations Office
Kathy Hill/Kathy Veit - EPA Region 10, Tribal Office
Christine Psyk - EPA Region 10, Environmental Cleanup
Fran Stefan - EPA Region 10, Waste & Chemical Management
Al LaTourette - EPA Region 10, Waste & Chemical Management
Mark Ader - EPA Region 10, Environmental Cleanup
Ray Peterson - EPA Region 10, Environmental Assessment
Dan Strausbaugh - Tanana Chiefs Conference Inc.
Guy Martin - Bering Straits Native Corporation
Cindy Thomas - Alaska Native Health Board
Jean Gamache/Pam Miller - Greenpeace (Alaska)
National Environmental Justice Advisory Committee (members)

Individuals and Agencies ouside of the Review Group:

Greg Smith - U.S. Army Corps of Engineers
Tim Hansen - U.S. Air Force
Robert Deering - U.S. Coast Guard
Ken Lauzen - Federal Aviation Administration
Dax Jolly - North Slope Borough - Barrow, Ak
Robert Wolfe - Alaska Department of Fish & Game
Patricia Cochran - Alaska Native Science Commission

Executive Summary

The project began to fulfill three main purposes: 1) to fill in gaps of information on the location of all military sites across the State of Alaska (contaminated or not) and traditional land-use , 2) begin to identify which sites may be impacting traditional land-use activities across the state and 3) educate the U.S. military, state, local agencies, the Alaska public and EPA - Region 10 employees about the spatial distribution of contaminated military sites in Alaska. This project was initiated at the suggestion of people involved in environmental justice in Alaska and the Environmental Protection Agency-Region 10.

This project provides three main products 1) a geographic information system (GIS) map (roughly 1:2,500,000 scale), 2) a report that provides details of the project and 3) a spatial statistical analysis of the distribution of the military sites across the state (software and results included in report).

The map depicts the location of 649 military sites (information provided by the Army Corps of Engineers, U.S. Air Force, U.S. Coast Guard and Federal Aviation Administration). One hundred-sixty two of these sites are being actively mitigated by one of the mentioned organizations. The map also contains the administrative boundaries of the Alaska Native Corporations and traditional land-use information from the Arctic Slope region provided by the North Slope Borough GIS office - Barrow, Ak.

A 'Nearest-neighbor statistical analysis' was performed on the 649 military sites. This provided information on how clustered or how dispersed the military sites were within each of the twelve Native Corporation boundaries within the state. The clustering indices ranged from .03 to .11 all of which represent "very clustered" patterns military sites. (A value of 0.0 represents a "completely clustered" pattern and a value of 2.15 represents a completely dispersed pattern.)

The two main limitations of our map information were: 1) we could not depict the range of influence that any one particular site might have in its area and 2) traditional land-use information is very limited in GIS format...only the North Slope Borough was able to provide us with this type of information. The limitations with the map information also limited our ability to be more interpretive with our spatial statistics.

From our research, it is still obvious that the ambient environment, health, and way of life of many people in Alaska has been and continues to be threatened by abandoned contaminated military waste sites. Based on our research, we make the following recommendations:

1) *The State, local governments, Tribal governments, Native Corporations, Native nonprofit organizations plus all other interested parties should make the development of a statewide G.I.S. with detailed and specific traditional land-use information a top priority.*

2) *The U.S. military, State, local governments, Tribal governments, Native Corporations, Native nonprofit organizations plus all other interested parties should make the development of a statewide G.I.S. that allows on-going updating and documentation of the status of all abandoned military sites a top priority.*

3) *On-going (multivariate) health risk assessment matrices should be developed for all regions of the state.*

4) *Congress, Department of Defense, and EPA should be focused on providing the regulatory flexibility, monetary and technical resources to allow more contaminated military sites to be remediated faster.*

5) *EPA, the U.S. military and State of Alaska should jointly publish quarterly progress reports and outreach literature to educate and inform the public, especially rural Alaska Natives, as to the dangers that the contaminated sites pose in the various regions and as to what progress is being made toward remediation.*

6) *It is imperative that local concerns and life-styles receive serious consideration in the site identification and remediation process (e.g. more Restoration Advisory Boards (RABs) due to the closeness of the native people to the land in both proximity and ideology.*

I. Introduction

Environmental Justice is the fair treatment of people of all races, cultures, incomes and education levels with respect to the development of environmental laws, regulations and policies. Fair treatment implies that no population of people should be forced to shoulder a disproportionate share of negative environmental impacts of pollution or environmental hazards due to a lack of political or economic strength. The main Environmental Protection Agency-Region 10 (EPA) environmental justice goal is to serve as a focal point for ensuring that communities comprised predominantly of people of color, minorities, low income populations or native tribes receive fair protection under environmental laws and have increased access to EPA.

The Alaska Military Sites Project was begun essentially because a number of people involved in environmental justice in the State of Alaska and at EPA-Region 10 had identified the lack of locational information on abandoned and/or contaminated military facilities as a critical information gap that needed to be filled. In depth research and action on this information should serve to better protect and improve health and quality of life for all Alaskans especially rural Alaskan Natives.

This project is important because it provides statewide spatial distribution information about former and present military sites in Alaska and may be used as a tool for exploring environmental and health risks in any part of the state. This project is also important because Native Alaskan communities and organizations throughout the state will have general knowledge of where contaminated military sites are relative to their homes and areas of traditional land-use. Knowing the location of contaminated sites relative to the areas of traditional use is critically important because it not only concerns environmental/public health, but also preservation of Alaska's native cultural traditions and ways of life. Providing this knowledge is a major component in the EPA-Region 10 Environmental Justice goal of serving as a focal point for ensuring that communities comprised predominantly of people of color, minorities, low income populations and/or native tribes receive fair protection under environmental laws and have increased access to EPA.

This report is to serve as a foundation of information that begins to depict where abandoned military sites may be impacting health and the environment in Alaska including traditional land-use.

II. Background

A. GENERAL HISTORY

The study of the impact of abandoned military sites across the State of Alaska is a study of a spatial distribution question -i.e. the spatial distribution of abandoned military sites across the state. In order to begin to understand the situation we must first understand something of the environmental geography of Alaska and the sites history relative to military activity.

Alaska is the largest state in the union - approximately one fifth the size of the lower 48 states. It's land area is 945,826 square kilometers (568,421 square miles) that are comprised of six distinct climate areas: the Southcentral Coastal areas, the Southeast, Southwest/Aleutians, Western/Bering Sea Coast, Arctic and Interior. Each supports distinctive types of human activities from fishing on the coasts and rivers to farming and hunting of caribou in the southcentral interior (tundra), to whaling and harvesting of other sea mammals in the Arctic. Climates in these areas are very diverse as well from high precipitation areas and somewhat moderate temperatures in the Southeast, to relatively dry constant winter-like conditions in the Arctic.

Human history began in Alaska between 6,000 and 11,000 years ago. The following timeline summarizes some significant events in Alaska's human history:

6,000 to 11,000 years ago	First human culture/society in Alaska: Southeast; Tlingit, Haida, Aleutians; Aleuts, Interior; Athabascan and Northwestern Arctic Alaska, Eskimo.
3,000 to 5,000 years ago	Human Culture present on Bering Sea Coast (Eskimo)
1725-1866	Russian influence in Alaska
1867	United states "buys" Alaska from Russia for $7.2 million - beginning of U.S. presence and influence in Alaska
1887	Tsimshians enter Alaska
1879	U.S. Navy battles and defeats Tlingit tribe at Sitka Island, U.S. military presence begins.
1900-1901	Ft. Michael and Ft. Davis established in Nome.
1940-1941	U.S. Military buildup in Alaska increases with development of Ft. Richardson, Elmendorf Air Force Base, Kodiak Naval Air Station, Ft. Abercrombie and Ft. Greely. Weapons and material are also being sent to Soviet Union via Alaska.
1942	Dutch Harbor bombed, Attu & Kiska Islands are occupied by Japanese. ALCAN Highway was built (completed) by U.S. Army.
1943	Japanese forces are driven from Alaska. Amchitka Island facility is established.
1945	World War II ends, some military facilities are abandoned.

II. Background

1952-1971	Cold War and Korean conflict take place, military build up continues, including Federal Aviation Administration landing facilities, Distant Early Warning (DEW) stations and ground troop winter exercises on a yearly basis at Fort Greely. Nuclear experiments take place between 1961 and 1971: Ft. Greely nuclear reactor, Three atomic test detonations on Amchitka Is. and Project Chariot (radioactive nucleotide movement tests on the tundra). Pesticide and biocide spraying parallels many of these activities. Chemical weapons storage facilities are also established.
1971	Alaska Native Claims Settlement Act (ANCSA) passed
1989-present	Expansion of military actively ends clean up of some military sites by the Army Corps of Engineers, U.S. Air Force, U.S. Coast Guard is initiated.

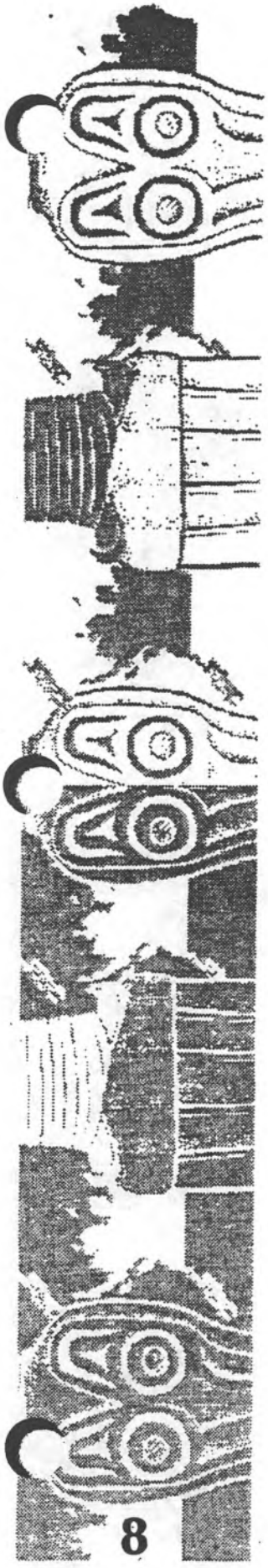
The segment of time where U.S. military build up occurred in Alaska is important to understand and study because many of the materials and instruments used to establish the defense facilities have become the current contaminants and environmental hazards at numerous locations across Alaska.

One of the most controversial and important environmental issues in Alaska is that of traditional land-use. The extent to which contaminants from abandoned military facilities have impacted traditional land-use areas has not been quantified on a regional or statewide basis. Understanding traditional land-use intrinsically is an important step toward fully understanding the impact that contaminated sites could have.

B. TRADITIONAL LAND-USE

Traditional land-use by Alaskan Natives can be described as both a life-style and a world view. An Alaskan Native view of traditional land-use is that it is an eternal and sacred trust which includes responsibility for people to care for each other, the animals and the land. The life-style is highly variable, depending on the region, the resources available, and the Native group being discussed. To some outsiders, the existence of a cash economy is misconstrued to mean that people are no longer pursuing traditional uses of the lands or that the cash economy and traditional economy are separable spheres of daily life. In fact, modern Native communities represent complete units where people utilize all resources, whether they be fish or money, to fulfill a life style which is guided by a tradition of using all the available resources. While the means through which various Native groups fulfill this life-style varies greatly, the worldview shared by all groups has many strengths and tenets in common.

From the rainforests of southeast Alaska to the North Slope, Native people have survived and flourished for many thousands of years because of their understanding of and respect for the resources that have nurtured them. In one area, salmon may be the most important resource for sustenance, in another it may be caribou or whales. Regardless of the methods or resources, a deep respect for the spirituality of the animals and the lands has been maintained. This connection continues today despite the rapid changes wrought in the 20th century. Involvement in wage labor and corporate politics has changed the Native communities, but only at a superficial level. The majority of communities are remote and the people continue to depend



II. Background

on the lands for their sustenance and cultural traditions. This is the most important factor that all Native groups have in common.

It is the sense of land and culture that was instrumental in the passage of the Alaska Native Claims Settlement Act (ANCSA) of 1971. In the process of its passage, Native leaders came together to consider the issues of land, heritage and their legal rights to these cultural imperatives. Since it's passage ANCSA has been amended and problems with the act can still be seen at many levels. However, it is the land that was and still is recognized as an asset...not so much in monetary terms, but in terms of continuation of traditions and ways of life.

With ANCSA, Native groups and communities received title to some of the lands they have traditionally occupied. On these lands, military installations and activity areas present an unmeasured threat (as of yet) to the health of the ecosystems and people who live there. Now that Alaska's Native people have been rapidly thrust into the realm of the corporate world and government regulations, they must deal with the legacy of contaminated sites on lands conveyed to them pursuant to ANCSA.

It is imperative that local concerns and life-styles receive serious consideration in the site identification and remediation process due to the closeness of the native people to the land in both proximity and ideology. The intimate knowledge and understanding of the land which has developed through thousands of years of Native stewardship can provide valuable insight to the impacts on the health and life-style of the Native people caused by the contamination of their natural resources. It is logical to assume that if contaminants in the environment cause traditional land-use to become an inviable way of life, then many unique cultures and societies will be destroyed as well.

Abandoned military facilities and equipment have caused documented contamination of the environment in Alaska. The total extent of the impact on flora, fauna, soil and water is not exactly known. Thus, one of this projects underlying objectives is to bring more attention to the potential hazards of abandoned military sites (and equipment) to human health and the way of life of many Alaskan Native people.

III. Purpose of the Project

The three main purposes of the Alaska Military Sites Project are to: 1) fill in gaps of information on the location of contaminated (or potentially contaminated) military sites across the State of Alaska, especially those sites that could be impacting tribal communities, 2) begin to identify which sites may be impacting traditional land-use activities across the state and 3) educate the U.S. military, state, local agencies, the Alaska public and EPA-Region 10 employees about the spatial distribution of contaminated military sites in Alaska.

A number of technical objectives had to be accomplished in order to complete this project: 1) develop a geographic information system (GIS) data base that included locations of past and present military sites (especially those that have become known contaminated sites), the locations of all Alaska Native Villages and traditional land-use patterns, 2) perform a spatial analysis on the distribution of the military sites and 3) develop this summary package of information which includes map(s) plus recommendations for the future.

IV. Map Development

A. METHODOLOGY

The geographic information system (GIS) used to create this map was ARC/INFO. The spatial information presented is composed of five separate information files from various sources: 1) the State of Alaska outline (from preexisting ARC/INFO information), 2) the outline of the Native Corporation boundaries (from Alaska Department of Natural Resources (AKDNR)), 3) the locations of the Alaska Native Villages (from 1990 Census Tiger Data-U.S. Census Bureau), 4) locations of military sites (from the U.S. Army Corps of Engineers (ACOE), U.S. Air Force (USAF), U.S. Coast Guard (USCG) and the Federal Aviation Administration (FAA) 5) Traditional land-use information (from the North Slope Borough-GIS Office). A full listing of the latitudes and longitudes of the Alaska Native Villages and x and y coordinates translated from the latitudes and longitudes of the military sites are in appendices 1 and 2 respectively.

Most of the spatial information was relatively easy to obtain in compatible formats with our GIS. Written and/or verbal agreements were made with the appropriate military, state or local agency to obtain the locational data used. EPA worked with all the agencies (at separate times) to quality assure the locational data.

B. RESULTS

In total, we have located and performed a subsequent spatial analysis on 649 military sites scattered across Alaska. One hundred-sixty two of these sites are being actively mitigated in some fashion according to the military. The map also contains the administrative boundaries of all the ANCSA Native Corporations and the traditional land-use boundaries in the Arctic Slope region. The following table summarizes the military sites data on the map.

SUMMARY OF MILITARY SITES DATA DEPICTED ON G.I.S. MAP

TYPE OF FACILITY	NUMBER OF SITES BEING REMEDIATED*	NUMBER OF SITES WHERE NO ACTION BEING TAKEN	TOTAL NUMBER OF SITES
U.S. ARMY	96*	430	526
U.S. NAVY	1**	0	1
USAF	38	4	42
FAA	20	40	60
US COAST GUARD	11	9	20
TOTALS	166	483	649

* This figure was accurate as of 01/09/96. All others are accurate as of 04/01/96.

**Adak Naval Station is scheduled for closure in January 1998.

All sites in some phase of remediation have their names spelled out on the map in either magenta or blue. The magenta represents ACOE sites, the blue represents all others...USAF, USCG and FAA. A map key is provided giving all military site names. It should be noted that in some cases not all concerned parties have concurred as to the completeness of the mitigation efforts. Anyone interested in the status of a military site(s) should check with the appropriate military agency, Alaska Department of Environmental Conservation (ADEC) and EPA Region 10 to verify the status of a site that may or may not have been mitigated. A list of contact people is in Appendix 4.

IV. Map Development

B. RESULTS (continued)
SUMMARY LIST OF POSSIBLE HAZARDS FOR 93 ACOE SITES

- Petroleum/Oil/Lubricants (POL) *Most prevalent contaminant
- Low Level Radiation/Radioactive Waste
- Waste - Drums, Tanks, Bulk Containers
- Polychlorinated Biphenyl
- Pesticides
- Contaminated Fill
- Building/Demolition Debris
- Refuse Without Hazardous Waste
- Scrap Metal
- Non-Chlorinated Solvents
- Heavy Metals
- Above Ground Storage Tanks
- Asbestos
- Hazardous Materials
- Explosive Ordinance Components
- Dioxin
- Chlorinated Solvents
- Paint
- Transformers/Batteries
- Chemical Agents/Nerve Gas

C. LIMITATIONS

There are particulars about some of the data that the map reader should be aware of. With regard to the military sites data, our map shows each military site as one point in space. But, each point can represent many acres or miles of influence in its' area. Also each point may have more than one environmental remediation project going on at the location. This has been documented with the ACOE sites. Specific spatial, environmental and public health impacts of the individual sites have not been determined.

Spatial information on traditional land-use was very difficult to obtain. Most of the information available is in hard copy maps at the Alaska Department of Fish and Game (ADF&G). This information needs to be digitized before it can be used in a GIS. The only agency that was able to supply traditional land-use information in a GIS format was the North Slope Borough. Their data file provides summary information of all traditional land-use activities (including range) without specific breakdown by activity or animal and plant species. However, the overlay of this information on the military sites is very interesting. Most of the military sites in the North Slope area are completely overlapped by the traditional land-use areas. Their specific impact(s) on human health and the health of the various plant and animal species in the area (to our knowledge) has not been investigated on a regional scale. With regard to the project, overall, we now have a generalized idea of where contaminated military sites may be impacting traditional land-use in the Arctic Slope region but almost no idea for the rest of Alaska.

While our list of military sites is extensive, we acknowledge that there may be other military sites that we do not have record of. We also only have specific contaminant and hazard information for 93 of the military sites. These 93 are being remediated by the ACOE. So, we would encourage any interested parties to contact EPA Region 10 and the appropriate military agency if you have specific locational information that does not appear in this report (see Appendix 4 for contact people).

Lastly, we want to emphasize that our files only include contaminated sites from the military. Information on contaminated sites from nonmilitary sources such as mines, land fills and solid waste have not been investigated.

V. Spatial Analysis

A. METHODOLOGY

As military sites have been developed and subsequently abandoned in Alaska, so have contaminated sites developed. This phenomenon has caused distinct patterns of contaminated and non-contaminated waste sites across the state. For the purposes of this project, we are solely interested in how clustered or dispersed the pattern(s) of military sites are across the state and within individual Alaska Native Claims Settlement Act (ANCSA) Native Corporation boundaries. The recognition and measurement of pattern in these spatial contexts is very important because the measurements can serve as foundations for future public health studies, studies on traditional land-use and studies on changing socioeconomic/settlement patterns.

A 'Nearest-neighbor statistical analysis' was chosen to analyze the pattern of military sites across the state because it provides a concise measure of pattern in terms of a single value (index). We think this is important relative to Alaska especially given the complexity of the Alaskan environment. This one statistic can be used as a variable in other multivariate or correlative studies on a regional or statewide basis.

The 'Nearest-neighbor analysis' is a relatively straight forward analysis that calculates the average distances between all points in two or three dimensions and their nearest neighbor. By dividing the observed average nearest-neighbor distance by a theoretical average nearest-neighbor distance, a nearest-neighbor index (R) can be derived. Specifically, we have calculated 13 nearest-neighbor indices, one for all the military sites in the 12 ANCSA Native Corporation boundaries and 1 for the entire state of Alaska. Some computer software in the computer language 'Basic' was developed to accomplish this task. The code generated and all equations appear in Appendix 3. The nearest-neighbor equation used is the following:

$R = \bar{D}_{obs} / \bar{D}_{exp}$
$\bar{D}_{obs}$ = average observed nearest-neighbor distance
$\bar{D}_{exp}$ = average observed nearest-neighbor distance
R = the nearest-neighbor index

$R = \bar{D}_{obs} / \bar{D}_{exp}$ $\bar{D}_{obs}$ = average observed nearest-neighbor distance
$\bar{D}_{exp}$ = average observed nearest-neighbor distance
$\bar{D}_{exp} = 1 / 2(p)^{.5}$ p = density of points per unit area
$\bar{D}_{obs} = \sum d/n$ d = nearest neighbor distance, n = number of pts

B. RESULTS

NEAREST-NEIGHBOR STATISTICAL ANALYSIS SUMMARY

REGION BEING ANALYZED	(R) CLUSTERING INDEX	LAND AREAS*	ADMINISTR. vs CONVEYED	TYPE OF PATTERN
ARCTIC SLOPE REGIONAL CORP	.08	34,827,008	21,328	very clustered
N.A.N.A. REGIONAL CORP	.04	11,214,266	5,919	very clustered
DOYON LTD	.06	52,276,671	48,635	very clustered
BERING STRAITS NATIVE CORPORATION	.07	18,963,197	8,214	very clustered
BRISTOL BAY NATIVE CORPORATION	.03	16,185,405	11,500	very clustered
ALEUT NATIVE CORP	.04	164,691,019	4,594	very clustered
KONIAG NATIVE CORP	.05	12,514,134	3,021	very clustered
COOK INLET REGION INC.	.06	11,698,294	7,310	very clustered
AHTNA INC.	.11	7,525,114	6,612	very clustered
CHUGACH ALASKA CORP	.03	10,263,875	1,791	very clustered
SEALASKA CORPORATION	.05	18,057,570	6,841	very clustered
CALISTA CORPORATION	.03	63,125,761	19,472	very clustered
STATE OF ALASKA	.05	277,160,000		very clustered

* Areas are provided in square kilometers (land and water)
R - clustering index scale:

0.0		1.1		2.15
completely clustered	very clustered	moderately clustered	very dispersed	completely dispersed

V. Spatial Analysis

The Nearest-neighbor analysis clearly showed that the pattern or spatial distribution of the military sites is "very clustered" at the regional level and state wide relative to the areas of space they occupy. This would have any number of meanings and likely would have different significance in each of the 12 regions that were analyzed. However, the Nearest-neighbor analysis tells us the following fundamental things:

1) ***There are "very clustered" patterns of military sites across Alaska.*** This means that relative to the total area, there is a reasonably high concentration of military sites (either contaminated or uncontaminated). It should be noted that the nearest-neighbor analysis will identify patterns as clustered or dispersed in either an open space or in a relatively linear context such as along a coastline or river.

2) Despite the clustering indices (R) being between 0 and 1.1 for all the regions that were analyzed, ***there is enough variance in the R values to see differences in distributions of military sites region by region.***

3) ***The indices may be used as variables in other multivariate studies because of they are well defined as "very clustered".***

C. LIMITATIONS

The Nearest neighbor analysis is very versatile and did not give us any technical restraints but our interpretation of the results relative to other factors was very limited. Most of the limitations were due to variables outside of our control:

1) The range of impact of each military site has not been quantified.

2) Hazard information was readily available only for the 93 ACOE sites.

3) Specific and detailed G.I.S. information on traditional land-use for the entire state is lacking. This was especially important because we were not able to even see the spatial relationship between the clusterings of military sites and traditional land-use areas except in the Arctic Slope region.

4) The Alaska area figures used in calculating the R values were the "administrative" areas that included land and water because of the long ranges over which traditional land-use activities are carried out. Total "administrative" land areas vs "conveyed" land areas (from federal government) summaries are provided for information comparison only. Native Corporations are legal land owners as well as administrators.

VI. Recommendations

The political, social and ambient environments in Alaska are very complex and different from the lower 48 states. Despite the complexities one fact is certain: the ambient environment, health, and way of life of many people in Alaska has been and continues to be threatened by abandoned contaminated military waste sites. To address this problem, based on our experiences with this study, we make the following recommendations:

1) ***The State, local governments, Tribal governments, Native Corporations, Native nonprofit organizations plus all other interested parties should make the development of a statewide G.I.S. with detailed and specific traditional land-use information a top priority.*** Without comprehensive spatial information on traditional land-use and contaminated military sites, it will be very difficult to understand and mitigate the impacts contaminated military sites are having on traditional land-use activities. This includes public health issues of rural Alaskan Natives.

2) ***The U.S. military, State, local governments, Tribal governments, Native Corporations, Native nonprofit organizations plus all other interested parties should make the development of a statewide G.I.S. that allows on-going updating and documentation of the status of all abandoned military sites a top priority.*** This is a corollary of our first recommendation. It is only logical to monitor the progress of the mitigation of contaminated sites so that improvement in other related areas may be documented as well.

3) ***On-going (multivariate) health risk assessment matrices should be developed for all regions of the state.*** Given the unique and complicated nature of the Alaska environs, a multivariate health risk assessment matrix for each distinct area would be very useful. Variables such as intensity of traditional land-use activities and our clustering indices could be used as parts of a region specific health risk assessment matrix...with the objectives of either clarifying and resolving current problems or projecting and avoiding future problems.

4) ***Congress, Department of Defense, and EPA should be focused on providing the regulatory flexibility, monetary and technical resources to allow more contaminated military sites to be remediated faster.***

5) ***EPA, the U.S. military and State of Alaska should jointly publish quarterly progress reports and outreach literature to educate and inform the public, especially rural Alaska Natives, as to the dangers that the contaminated sites pose in the various regions and as to what progress is being made toward remediation.***

6) ***It is imperative that local concerns and life-styles receive serious consideration in the site identification and remediation process (e.g. more Restoration Advisory Boards (RABs)) due to the closeness of the native people to the land in both proximity and ideology.*** The intimate knowledge and understanding of the land which has developed through thousands of years of Native stewardship can provide valuable insight to the impacts on the health and life-style of the Native people caused by the contamination of their natural resources.

In addition to our recommendations, we would like to clearly state that we fully support and encourage the current efforts of the State of Alaska, Tribal governments, Native Corporations, U.S. military and all other involved parties in finding solutions to the problems of contaminated military sites through cooperative action.

In the future, EPA-Region 10 should build upon this project from three different aspects: 1) Environmental Justice, 2) Public Health/environmental management and 3) Environmental cleanup (remediation).

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Sources of Spatial/Locational Data:

U.S. Army Corps of Engineers
U.S. Air Force
U.S. Coast Guard
U.S. Census Bureau
Federal Aviation Administration
Alaska Department of Natural Resources
Alaska Department of Fish and Game
North Slope Borough - G.I.S. Office

Appendix I

Locational Information - Military Sites

	109741	402950	118	SHUYAK STATION	N
Ahtna Inc	442932	1381899	100	GULKANA	N
Ahtna Inc	382129	1388985	17	LAKE LOUISE REC SITE	Y
Ahtna Inc	503490	1485768	55	LORAN STATION TOK	Y
Ahtna Inc	243440	1493822	76	SUMMIT	Y
Arctic Slope	-96544	2370679	34	BARROW	Y
Arctic Slope	-102307	2368191	78	BARROW	Y
Arctic Slope	398085	2270579	30	BARTER ISLAND	Y
Arctic Slope	275196	2257978	33	BULLEN PT	Y
Arctic Slope	-493609	2147510	20	CAPE LISBURN	Y
Arctic Slope	213050	2255142	95	DEADHORSE STATION	N
Arctic Slope	487278	2155683	112	NORTHWAY STAGING	N
Arctic Slope	155125	2284419	32	OLIKTOK	Y
Arctic Slope	27996	2325331	31	PT LONELY	Y
Arctic Slope	-353234	2223324	35	PT. LAY	Y
Arctic Slope	74054	2156445	124	UMIAT AFS	N
Arctic Slope	-229133	2302880	36	WAINWRIGHT	Y
Bering Strai	-541082	1669099	1	ANVIL MT/WHITE	Y
Bering Strai	-360865	1712507	3	BEAVER CREEK	N
Bering Strai	-333988	1735643	12	GRANITE MOUNTAIN	Y
Bering Strai	-644437	1766555	53	LORAN PORT CLARENCE	Y
Bering Strai	-383134	1660763	73	MOSES POINT	Y
Bering Strai	-546486	1663965	74	NOME	Y
Bering Strai	-541082	1669099	19	NOME FIELD TANK	Y
Bering Strai	-319154	1562145	16	NORTH RIVER	N
Bering Strai	-641636	1802031	29	TIN CITY	Y
Bering Strai	-332730	1564134	125	UNALAKLEET AIRPORT	N
Bristol Bay	-70818	1042148	5	BIG MOUNTAIN	Y
Bristol Bay	-257386	1014310	96	DILLINGHAM AIRPORT	N
Bristol Bay	-51245	1085071	104	ILIAMNA SITE	N
Bristol Bay	-165826	964944	38	KING SALMON APT	Y
Bristol Bay	-153016	967488	107	KING SALMON STATION	N
Bristol Bay	-69199	921005	18	NAKNEK REC ANNEX	Y
Bristol Bay	-280114	781228	40	PORT HEIDEN AFS	Y
Calista Corp	-424303	1224665	79	BETHEL	Y
Calista Corp	-417858	1224220	4	BETHEL	Y
Calista Corp	-386066	1155037	7	CANYON CREEK	N
Calista Corp	-466582	989795	21	CAPE NEWENHAM	Y
Calista Corp	-626572	1364638	22	CAPE ROMANZOF	Y
Calista Corp	-483127	1376770	116	SAINT MARYS	N
Calista Corp	-104776	1236873	28	SPARREVOHN	Y
Chugach Alas	449155	1199831	66	SUPPORT FACILITY CORDOVA	Y
Chugach Alas	404881	1160828	51	CAPE HINCHBROOK LIGHT	Y
Chugach Alas	634976	1176686	90	CAPE YAKATAGA FACILITY	N
Chugach Alas	466316	1187914	94	CORDOVA STATION	N
Chugach Alas	405496	1188906	70	JOHNSTONE (HINCH)	Y
Chugach Alas	433829	1076017	83	MIDDLETON ISLAND	Y
Chugach Alas	409090	1260736	64	MSO VALDEZ	N
Chugach Alas	433538	1182274	75	STRAWBERRY POINT	Y
Chugach Alas	252771	1134046	56	USCGC MUSTANG	N
Chugach Alas	449828	1201794	50	USCGC SWEETBRIER	N
Cook Inlet R	225886	1258368	86	AIR ROUTE TRAFFIC CTR	N
Cook Inlet R	213511	1294391	88	BIG LAKE VORTAC	N
Cook Inlet R	224610	1257353	10	ELMENDORF	Y
Cook Inlet R	202990	1244847	99	FIRE ISLAND AWS	N
Cook Inlet R	220972	1256938	43	FT. RICHARDSON	N
Cook Inlet R	141460	1073048	103	HOMER AIRPORT	N
Cook Inlet R	150489	1179364	106	KENAI STATION	N
Cook Inlet R	213373	1251057	109	LAKE HOOD	N
Cook Inlet R	222173	1253464	65	MSO ANCHORAGE	N
Cook Inlet R	212481	1251003	113	PT WORONZOF RTR	N
Cook Inlet R	66044	1346500	115	PUNTILLA AIR NAV STATION	N
Cook Inlet R	146909	1335280	120	SKWENTA FACILITY	N
Cook Inlet R	201872	1377901	122	TALKEETNA AIRPORT	N
Cook Inlet R	145315	1070398	54	USCGC ROANOKE ISLAND	N
Cook Inlet R	145315	1070398	49	USCGC SEDGE	N

Doyon Ltd	-272210	1636096	87	ANIAK AIRPORT	N
Doyon Ltd	105122	1702587	2	BEAR CREEK	Y
Doyon Ltd	108782	1886306	80	BETTLES	Y
Doyon Ltd	404961	1587372	67	BIG DELTA/JUNCTION	Y
Doyon Ltd	-129498	1640273	6	CAMPION	Y
Doyon Ltd	237605	1959050	91	CHANDALAR STATION	N
Doyon Ltd	233637	1599637	8	CLEAR AFS	Y
Doyon Ltd	359364	1635624	9	EIELSON	Y
Doyon Ltd	291381	1664127	98	FAIRBANKS STATION	N
Doyon Ltd	5765	1392710	81	FAREWELL	Y
Doyon Ltd	388754	1871455	68	FORT YUKON	Y
Doyon Ltd	390169	1871331	24	FORT YUKON	Y
Doyon Ltd	404576	1575070	45	FT. GREELEY	N
Doyon Ltd	308432	1600861	44	FT. WAINWRIGHT	N
Doyon Ltd	-139695	1644739	69	GALENA	Y
Doyon Ltd	-141241	1644497	37	GALENA AIRPORT	Y
Doyon Ltd	294293	1591560	11	GOLD KING CREEK	Y
Doyon Ltd	14373	1789927	25	INDIAN MOUNTAIN	Y
Doyon Ltd	-136325	1610780	13	KALAKAKET CREEK	Y
Doyon Ltd	-81149	1443584	110	MCGRATH	N
Doyon Ltd	83470	1547295	72	MINCHUMINA	Y
Doyon Ltd	267490	1676925	27	MURPHY DOME	Y
Doyon Ltd	235746	1633982	111	NORTH NENANA VORTAC	N
Doyon Ltd	557628	1463268	121	SLANA FACILITY	N
Doyon Ltd	90656	1690980	123	TANANA AFS	N
Koniag Inc	98767	869492	61	LORAN STATION KODIAK	Y
Koniag Inc	92886	867487	15	PILLAR MOUNTAIN	Y
Koniag Inc	89102	859951	60	SUPPORT CTR KODIAK	Y
Koniag Inc	99477	864855	126	WOODY ISLAND NAV STE	N
N.A.N.A. Reg	-376562	1906889	82	KOTZEBUE	Y
N.A.N.A. Reg	-377528	1905149	26	KOTZEBUE	Y
Sealaska Cor	1114630	936331	62	AIR STATION SITKA	Y
Sealaska Cor	1406693	798710	77	ANNETTE	Y
Sealaska Cor	1110026	915660	89	BIORKA ISLAND	N
Sealaska Cor	1110504	1090636	92	COGHLAN ISLAND	N
Sealaska Cor	1054529	1081775	101	GUSTAVUS AIRPORT	N
Sealaska Cor	1042539	1172797	102	HAINES AIR NAV SITE	N
Sealaska Cor	1116718	1094121	105	JUNEAU STATION	N
Sealaska Cor	1246468	945497	108	KUPREANOF, INDIAN PT, DUNCAN	N
Sealaska Cor	1266037	918615	71	LEVEL ISLAND	Y
Sealaska Cor	1407546	851052	63	LORAN SHOAL COVE	Y
Sealaska Cor	1262476	956772	114	PETERSBURG	N
Sealaska Cor	1084924	1062719	84	SISTERS ISLAND	Y
Sealaska Cor	1119939	941964	119	SITKA FACILITY	N
Sealaska Cor	1128190	1089807	59	STATION JUNEAU	N
Sealaska Cor	1260603	957919	52	USCGC ELDERBERRY	N
Sealaska Cor	1056479	1078456	58	USCGC LIBERTY	N
Sealaska Cor	1392214	827919	57	USCGC PLANETREE	Y
Sealaska Cor	802876	1143748	85	YAKUTAT	Y
The Aleut Co	-1533096	436096	46	ADAK	N
The Aleut Co	-554693	618549	23	COLD BAY	Y
The Aleut Co	-552189	612944	93	COLD BAY STATION	N
The Aleut Co	-838259	520420	42	DRIFTWOOD BAY	Y
The Aleut Co	-821367	509606	97	DUTCH HARBOR	N
The Aleut Co	-1343481	505450	39	EARECKSON AFS	Y
The Aleut Co	-1247627	605814	48	LORAN STATION ATTU	Y
The Aleut Co	-971529	913268	47	LORAN STATION ST. PAUL	Y
The Aleut Co	-992969	437764	14	NIKOLSKI	Y
The Aleut Co	-408561	685737	41	PORT MOLLER	N
The Aleut Co	-412920	609654	117	SAND POINT STATION	N

	1057666	1208728	242	PT OF HAINES DRY DOCK	N
Ahtna Inc	456879	1412751	44	AURORA RADIO RELAY	Y
Ahtna Inc	418827	1494611	81	FLDING LK REC	Y
Ahtna Inc	427766	1480293	143	PAXSON LK MAINT ANX	N
Ahtna Inc	332212	1328128	168	SHEEP MT RR	N
Ahtna Inc	350309	1334995	179	TAHNETA PASS RR	N
Ahtna Inc	405883	1371709	186	TOLSONA RADIO RELAY	N
Ahtna Inc	439566	1435361	251	GULKANA PREP & ARMY	N
Ahtna Inc	478492	1482071	350	CARLSON MICROWAVE REP	N
Ahtna Inc	630095	1325493	369	PALMER SAFE HAVEN STO	N
Ahtna Inc	430457	1471938	372	PAXSON LK RADIO RELAY	N
Ahtna Inc	522160	1475455	399	MENTASTA ACS RR SITE	N
Ahtna Inc	438914	1373271	439	GLENNALLEN ACS COMM	N
Ahtna Inc	381922	1390837	507	LAKE LOUISE	N
Arctic Slope	-498951	2065206	1	CAPE THOMPSON NAV SITE	Y
Arctic Slope	-430365	2139327	2	CAPE SABINE DEW(LIZ-A)	Y
Arctic Slope	-302834	2275829	3	ICY CPE DEW STA(LIZ-B)	Y
Arctic Slope	-167219	2321703	4	PEARD BAY DEW (LIZ-C)	Y
Arctic Slope	313632	2258745	5	BROWNLOW POINT DEW	Y
Arctic Slope	355646	2243973	6	COLLINSON POINT DEW	Y
Arctic Slope	404382	2267876	7	MANNING POINT DEW	Y
Arctic Slope	427888	2268029	8	GRIFFIN POINT DEW	Y
Arctic Slope	454309	2252195	9	NUVAGAPAK PT DEW(BAR A	Y
Arctic Slope	500371	2240310	10	DEMARCATION BAY DEW	Y
Arctic Slope	-96544	2370679	18	ELSON LAGOON	Y
Arctic Slope	-27193	2341683	19	CAPE SIMPSON DEW-POW A	Y
Arctic Slope	66324	2287814	20	KOGRU DEW (POW B)	Y
Arctic Slope	203400	2276878	21	MCINTYRE DEW STA(POW C	Y
Arctic Slope	-122681	2337313	172	SKULL CLIFF LORAN DEW	N
Arctic Slope	74054	2156445	194	UMIAT AFS	N
Arctic Slope	356643	2173853	209	LAKE PETERS	N
Arctic Slope	398721	2270679	216	BARTER ISL NGS	N
Arctic Slope	-511800	2090076	321	AFCACHE #1	N
Arctic Slope	-89625	2375859	376	POINT BARROW RADIO STA	N
Arctic Slope	-208232	2043637	481	NOATAK MILITARY CPS	N
Arctic Slope	-353082	2219607	486	POINT LAY DEW	N
Arctic Slope	74445	2156334	492	UMIAT POL DUMP	N
Arctic Slope	257564	2187795	505	JUNIPER CK FUEL DUMP	N
Bering Strai	-330978	1567073	29	UNALAKLEET AFSTA	Y
Bering Strai	-319154	1562145	30	NORTH RIVER RRS ANX	Y
Bering Strai	-550552	1661308	39	NOME AREA DEF REGION	Y
Bering Strai	-452355	1771494	48	LAVA LK WEATHER STA	Y
Bering Strai	-644984	1808445	57	CAPE PRINCE WALES AWS	Y
Bering Strai	-525364	1741829	68	DAVIDSON-S LANDING	Y
Bering Strai	-495296	1751874	110	KOUGAROK AFB	N
Bering Strai	-383120	1659013	126	MOSES POINT GARRISON	N
Bering Strai	-574559	1754457	184	TELLER SUPPLY	N
Bering Strai	-447758	1667563	212	WHITE MT NAT-L GUARD	N
Bering Strai	-523048	1650958	230	CAPE NOME ACS	N
Bering Strai	-588416	1685206	231	CAPE RODNEY (MIL SITE)	N
Bering Strai	-398496	1525928	240	FORT ST MICHAEL	N
Bering Strai	-342545	1566405	282	SOUTH RIVER REC SITE	N
Bering Strai	-521064	1701521	323	AFCACHE #3	N
Bering Strai	-552509	1705078	326	AFCACHE #6	N
Bering Strai	-540110	1761370	327	AFCACHE #7	N
Bering Strai	-424954	1745038	328	AFCACHE #8	N
Bering Strai	-437147	1639784	329	AFCACHE #9	N
Bering Strai	-294576	1649488	338	AFCACHE #20	N
Bering Strai	-615270	1811675	340	AFCACHE #22	N
Bering Strai	-655604	1740441	365	KING ISL NG SITE	N
Bering Strai	-516583	1713961	366	KOUGAROK RAILROAD	N
Bering Strai	-319602	1565930	454	UNALAKLEET REC ANX	N
Bering Strai	-326849	1559171	455	UNALAKLEET REC FISH CP	N
Bering Strai	-580499	1666701	461	SLEDGE ISL	N
Bering Strai	-861742	1650938	479	GAMBELL	N
Bering Strai	-595618	1760392	497	POINT SPENCER	N

Bering Strai	-469269	1762794	498	NOXAPAGA AIR BASE(WEAT	N
Bering Strai	-544799	1765979	499	AM RIVER AIR BASE	N
Bering Strai	-597504	1758869	504	PT CLARENCE LORAN STA	N
Bering Strai	-742513	1569156	521	NE CPE (ST LAWREN ISL)	N
Bristol Bay	-282133	781369	24	PORT HEIDEN	Y
Bristol Bay	-57273	1000918	51	BIG MT RR	Y
Bristol Bay	-51343	1084700	95	ILIAMNA ACS	N
Bristol Bay	-246111	1008458	101	KANAKANAK RADIO REL AX	N
Bristol Bay	-181303	1004810	130	NAKNEK REC ANX #1 & 2	N
Bristol Bay	-278617	982685	140	NUSHAGAK AWS STA	N
Bristol Bay	-226954	876666	193	UGASHIK LK REC ANX	N
Bristol Bay	-70174	921022	249	KATMAI SEISMIC SURVEY	N
Bristol Bay	-165826	964944	252	NAKNEK STAGING	N
Bristol Bay	-257415	1011075	362	KANAKANAK RADIO STA	N
Bristol Bay	-51343	1084700	442	ILIAMNA PETROLEUM STO	N
Bristol Bay	-152262	966246	480	KING SALMON ACS COMMO	N
Calista Corp	-293391	1301660	37	ANIAK TACAN	Y
Calista Corp	-532859	1462058	111	KWIGUK AWS STA	N
Calista Corp	-446503	1028192	147	PLATINUM BATTALION	N
Calista Corp	-549472	1385458	322	AFCACHE #2	N
Calista Corp	-466094	1373096	343	AFCACHE #55	N
Calista Corp	-293391	1301660	394	ANIAK ARPT	N
Calista Corp	-426900	1224786	403	BETHEL BIA HDQRS	N
Calista Corp	-426900	1224786	404	BETHEL RR SITE	N
Calista Corp	-420522	1226096	405	BETHEL TACAN SITE&ANX	N
Calista Corp	-415378	1222054	406	BETHEL ARPT	N
Calista Corp	-419655	1224430	407	BETHEL ACS COMM STA	N
Calista Corp	-420749	1226748	408	BETHEL TACAN ANNEX	N
Calista Corp	-293391	1301660	409	ANIAK AIRWAY&AIR COMM	N
Calista Corp	-293391	1301660	410	ANIAK TOPOGRAPHIC BTLN	N
Calista Corp	-418078	1226498	424	BETHEL NG HANGER	N
Calista Corp	-419655	1224430	425	BETHEL NG WHSE	N
Chugach Alas	253924	1117310	31	CAINES HEAD, FT MCGILV	Y
Chugach Alas	262931	1105702	45	BARWELL ISLAND	Y
Chugach Alas	430680	1185374	54	BOSWELL BAY RR	Y
Chugach Alas	250806	1094678	60	CHEVAL ISL	Y
Chugach Alas	465910	1198199	66	CORDOVA AF	Y
Chugach Alas	412479	1167308	92	HINCHINBROOK ISL AWS	N
Chugach Alas	252233	1128404	117	LOWELL POINT BAT SITE	N
Chugach Alas	434211	1075999	122	MIDDLETON ISL AFS	N
Chugach Alas	258941	1112053	154	RENARD ISL	N
Chugach Alas	263308	1116099	155	RESURRECT PENN END STA	N
Chugach Alas	223353	1100393	189	TURNAGAIN ARM RNG	N
Chugach Alas	448793	1274940	196	GLENNALLEN-VALDEZ LLIN	N
Chugach Alas	362589	1111423	254	MONTAGUE ISL	N
Chugach Alas	412188	1257341	257	FORT LISCUM	N
Chugach Alas	252899	1132186	271	SEWARD STO ANX	N
Chugach Alas	253563	1135969	272	SEWARD ACS HSG NO. 1	N
Chugach Alas	253563	1135969	273	SEWARD US ENGRG OFFICE	N
Chugach Alas	252643	1135905	274	SEWARD ACS COMM CNTR	N
Chugach Alas	257347	1108205	275	HIVE ISL DEF SITE	N
Chugach Alas	415097	1263311	285	VALDEZ GARRISON SITE	N
Chugach Alas	413320	1263103	286	VALDEZ RESEARCH ANX	N
Chugach Alas	409979	1260838	287	VALDEZ SMALL BOAT HBR	N
Chugach Alas	408662	1264439	288	VALDEZ REC CNTR	N
Chugach Alas	415314	1261460	289	VALDEZ REC SITE	N
Chugach Alas	414642	1259504	290	VALDEZ STO ANX	N
Chugach Alas	418200	1259922	291	VALDEZ CEMETERY SITE	N
Chugach Alas	415314	1261460	292	VALDEZ RADIO STA	N
Chugach Alas	410654	1262793	293	VALDEZ ACS COMM STA	N
Chugach Alas	254948	1102434	314	FORT BULKLEY	N
Chugach Alas	254355	1137892	315	FORT RAYMOND	N
Chugach Alas	448924	1201681	316	CORDOVA CABLE LAND RES	N
Chugach Alas	450350	1201295	317	CORDOVA ACS COM FAC AX	N
Chugach Alas	358380	1135358	319	GIRDWOOD AFSTA	N
Chugach Alas	300424	1206846	347	BLACKSTONE BAY GUN	N
Chugach Alas	320188	1219781	356	ESTHER LK DEF SITE	N

Chugach Alas	297693	1217842	370	PASSAGE CANAL DEF	N
Chugach Alas	302779	1222010	374	PIGOT BAY REC SITE	N
Chugach Alas	252643	1135905	378	SEWARD REC ANX BT DISP	N
Chugach Alas	252899	1132186	379	SEWARD REC BT DISP ANX	N
Chugach Alas	252899	1132186	380	SEWARD USO SITE	N
Chugach Alas	252643	1135905	401	SEWARD ACS HSG NO 2	N
Chugach Alas	436936	1194574	431	CORDOVA ACS REMOTE REC	N
Chugach Alas	464100	1197966	440	HAINES MIL CUTOFF ROAD	N
Chugach Alas	345182	1147198	449	PORT OF SEWARD	N
Chugach Alas	252643	1135905	451	SEWARD ARMY REC SITE	N
Chugach Alas	252643	1135905	452	SEWARD RADIO STA	N
Chugach Alas	638577	1174889	489	YAKATAGA RRS	N
Chugach Alas	419680	1258846	490	ROBE LAKE	N
Chugach Alas	362288	1189130	495	SMITH ISL	N
Chugach Alas	285829	1207527	515	WHITTIER GUN SITE #1	N
Chugach Alas	287337	1211388	522	PORT OF WHITTIER	N
Cook Inlet R	239853	1243404	35	ANCHORAGE USO	Y
Cook Inlet R	150680	1145229	65	CLAM GULCH RADIO RELAY	Y
Cook Inlet R	152783	1048314	72	DIAMOND RIDGE RR	Y
Cook Inlet R	243537	1281024	78	EKLUTNA ARMY SITES	Y
Cook Inlet R	257684	1301531	82	FISHHOOK RR ANX	Y
Cook Inlet R	139647	1096293	93	HOMER TACAN ANX	N
Cook Inlet R	251934	1324598	96	INDEPENDENCE MINE	N
Cook Inlet R	229227	1268856	98	INDIAN ACS	N
Cook Inlet R	158782	1149303	103	KENAI PET PROD STO ANX	N
Cook Inlet R	227499	1281820	107	KNIK OP AND RADAR	N
Cook Inlet R	217053	1249412	112	LK HOOD FLOAT PLANE BA	N
Cook Inlet R	37499	1246717	121	MERRILL PASS	N
Cook Inlet R	186786	1176759	131	NAPTOWNE RADIO RELAY	N
Cook Inlet R	253414	1304148	132	NEKLASON LK RRS	N
Cook Inlet R	154560	1162183	136	NIKISHKA ACS STA	N
Cook Inlet R	255442	1300557	142	PALMER ACS RR SITE	N
Cook Inlet R	274120	1212224	151	PORTAGE STO AND DISPER	N
Cook Inlet R	215499	1230642	158	RUSTY HILL	N
Cook Inlet R	212132	1286464	166	SAWMILL RADIO RELAY	N
Cook Inlet R	251517	1204965	169	SILVERTIP STO ANX	N
Cook Inlet R	190150	1169747	171	SKILAK LK REC SITE	N
Cook Inlet R	159471	1175456	176	SOLDOTNA RR	N
Cook Inlet R	213254	1267857	178	SUSITNA GUNNERY RNG	N
Cook Inlet R	7199	1218565	183	TELAQUANA LK	N
Cook Inlet R	146949	1180524	202	WILDWOOD AFS	N
Cook Inlet R	156616	1339529	204	WILLOW AC&W STA	N
Cook Inlet R	148159	1333561	210	SKWENTNA AIRCRAFT COM	N
Cook Inlet R	219499	1253298	213	ANCHORAGE AIR NG	N
Cook Inlet R	0	1063844	248	ILIAMNA TOPO BN SITE	N
Cook Inlet R	262793	1273062	250	PALMER ARMY RESERVE	N
Cook Inlet R	262692	1321655	253	PIONEER PEAK AFS	N
Cook Inlet R	238040	1276912	255	BIRCHWOOD ARMY SITE	N
Cook Inlet R	238630	1276952	258	BIRCHWOOD ACS STO SITE	N
Cook Inlet R	246175	1229821	259	BIRD CREEK MISSLE ANX	N
Cook Inlet R	244694	1264288	260	EAGLE RIV MISSILE ANX	N
Cook Inlet R	242776	1226786	261	BIRD CREEK ACS COM STA	N
Cook Inlet R	245517	1265279	262	EAGLE RIVER TRNG SITE	N
Cook Inlet R	229975	1324945	263	EKLUTNA AFSTA	N
Cook Inlet R	243794	1277305	264	FIRE LK ARMY RR	N
Cook Inlet R	245929	1284928	265	EKLUTNA, OBSERVE POST	N
Cook Inlet R	263906	1233890	318	GIRDWOOD ACS COMM STA	N
Cook Inlet R	53010	1098703	341	AFCACHE #25	N
Cook Inlet R	220275	1255213	345	ANCHORAGE NG	N
Cook Inlet R	222830	1257241	346	ANCHORAGE RADIO STA	N
Cook Inlet R	220621	1249632	353	CHUGACH ACS TEMP STO	N
Cook Inlet R	106956	1253723	354	COOK INLET AFRNG	N
Cook Inlet R	238725	1260143	373	PAXSON LK RESEARCH ANX	N
Cook Inlet R	231157	1239093	377	RABBIT CK RADIO RELAY	N
Cook Inlet R	203776	1246759	391	FIRE ISL AFSTA	N
Cook Inlet R	57273	1000918	393	ILIAMNA AIR BASE	N
Cook Inlet R	219499	1253298	411	90MM AAA SITE	N

Cook Inlet R	219499	1253298	412	ANCH AAA GUN POS NO 7	N
Cook Inlet R	219499	1253298	413	ANCH AAA GUN POS NO 12	N
Cook Inlet R	219499	1253298	414	ANCH ACS FAM HSG ANX 1	N
Cook Inlet R	224610	1257353	415	ANCH ACS FAM HSG ANX 2	N
Cook Inlet R	222830	1257241	416	ANCHORAGE ACS STO ANX	N
Cook Inlet R	222830	1257241	417	CIVIL WORKS HSG SITE	N
Cook Inlet R	214818	1256746	418	ANCHORAGE COAST ARTIL	N
Cook Inlet R	232338	1248510	419	ANCH INTL APRT AAA GUN	N
Cook Inlet R	222830	1257241	420	ANCH RR BN CANTONMENT	N
Cook Inlet R	224610	1257353	421	ANCHORAGE REC SITE	N
Cook Inlet R	224610	1257353	422	ANCHORAGE US ENGR OFF	N
Cook Inlet R	239368	1277002	426	BIRCHWOOD AF SITE	N
Cook Inlet R	230313	1252114	427	CPBELL CREEK RNG & MAN	N
Cook Inlet R	253255	1244332	430	CHUGACH MTS-SHIP CREEK	N
Cook Inlet R	254760	1285556	432	EKLUTNA ARMY ASP SITE	N
Cook Inlet R	230344	1319366	433	EKLUTNA DISPERSAL SITE	N
Cook Inlet R	214377	1249250	446	NIKE ALASKA POINT	N
Cook Inlet R	108079	1216457	456	WILLOW AC&W SUPPLY&HSG	N
Cook Inlet R	156616	1339529	457	WILLOW ACS	N
Cook Inlet R	122834	1097563	488	STARISKY CREEK RR	N
Cook Inlet R	158064	1248167	501	BELUGA OIL FLDS	N
Cook Inlet R	221661	1275845	509	NIKE SITE BAY	N
Cook Inlet R	138271	1083186	514	OHLSON MT	N
Doyon Ltd	547720	1502221	34	ANCHORAGE-TOK ACS	Y
Doyon Ltd	311457	1688467	40	ARCTIC AEROMED LAB ANX	Y
Doyon Ltd	97149	1700902	46	BEAR CREEK RADIO RELAY	Y
Doyon Ltd	110074	1881508	49	BETTLES ARPT	Y
Doyon Ltd	400991	1573123	50	BIG DELTA AFB	Y
Doyon Ltd	366074	1622819	56	HILL 3026(BUCK CK) ARM	Y
Doyon Ltd	510215	1530141	58	CATHEDRAL BLUFF ACS	Y
Doyon Ltd	327188	1755449	63	CHISTOCHINA ACS	Y
Doyon Ltd	433625	1755632	64	CIRCLE HOT SPRINGS AFB	Y
Doyon Ltd	402848	1584606	70	DELTA JNCT-ACS COMM ST	Y
Doyon Ltd	248756	1539185	71	DENALI PARK HOTEL	Y
Doyon Ltd	399338	1559791	73	DONNELLY RADIO RELAY	Y
Doyon Ltd	317946	1655495	75	DYKE ARMY RNG	Y
Doyon Ltd	5994	1391903	80	FAREWELL GRND CON INTC	Y
Doyon Ltd	612960	1663406	84	FORT EGBERT	Y
Doyon Ltd	89821	1692814	85	FT GIBBON	Y
Doyon Ltd	386488	1969770	86	FORT YUKON RR	Y
Doyon Ltd	441066	1567078	87	GERSTLE RIVER ACS SITE	Y
Doyon Ltd	451050	1557178	97	INDEPEND RDG ARMY SIG	N
Doyon Ltd	483090	1554262	99	JOHNSON RIVER ACS RR	N
Doyon Ltd	494759	1559784	108	KNOB RIDGE RADIO RELAY	N
Doyon Ltd	417722	1500729	119	MC CALLUM RADIO RELAY	N
Doyon Ltd	-80990	1443177	120	MCGRATH ARPT	N
Doyon Ltd	323476	1656058	125	MOOSE CREEK ARMY RNG	N
Doyon Ltd	235319	1631464	133	NENANA REDISTRIBUTION	N
Doyon Ltd	292233	1666073	134	NIKE FOX (LADD DEF)	N
Doyon Ltd	309737	1665884	135	NIKE SUGAR (LADD DEF)	N
Doyon Ltd	612783	1506096	138	NORTHWAY ACS	N
Doyon Ltd	-190610	1643366	139	NULATO RADIO STA	N
Doyon Ltd	33616	1369701	157	ROHN RIVER	N
Doyon Ltd	339478	1633432	159	SALCHA ARMY ASP	N
Doyon Ltd	295031	1618715	160	SALCHAKET LK	N
Doyon Ltd	412757	1617659	164	SAND CREEK ARMY SIGNAL	N
Doyon Ltd	286881	1740205	173	SMITH LK ARCT SURV TRG	N
Doyon Ltd	529996	1527626	180	TANACROSS AF	N
Doyon Ltd	90115	1709547	182	TANANA RIVER BOAT LAND	N
Doyon Ltd	551876	1533129	185	TOK (ACS RADIO RELAY)	N
Doyon Ltd	506817	1546572	187	TOWER BLUFF SITE	N
Doyon Ltd	290397	1598677	188	TRANS-CANADIAN RAIL S	N
Doyon Ltd	475154	1607649	197	VOLKMAR RIVER SITE	N
Doyon Ltd	-80990	1443177	198	WALSETH AFB,MCGRATH	N
Doyon Ltd	230687	1595693	205	WOODSPUR ACS COMM FAC	N
Doyon Ltd	378741	1675335	207	YUKON COMMAND DISPOSAL	N
Doyon Ltd	510457	1750607	208	YUKON-CHARLEY RIVERS	N

Doyon Ltd	539040	1529102	211	SNOWSHOE MICROWAVE REP	N
Doyon Ltd	173677	1731709	241	RAMPART ARMY SIG STAIO	N
Doyon Ltd	407767	1603982	245	CLEARWATER LK ARMY TRG	N
Doyon Ltd	405381	1590551	246	DELTA POL DUMP	N
Doyon Ltd	607170	1499376	278	NORTHWAY STAGING FLD	N
Doyon Ltd	307737	1661952	294	FAIRBANKS ARMY AAA #4	N
Doyon Ltd	299568	1664150	295	FAIRBANKS ARMY AAA #3	N
Doyon Ltd	298426	1669457	296	FAIRBANKS ARMY AAA #8	N
Doyon Ltd	306650	1673052	297	FAIRBANKS ARMY AAA #1	N
Doyon Ltd	298614	1674142	298	FAIRBANKS ARMY AAA #2	N
Doyon Ltd	290830	1664076	299	FAIRBANKS INTN-L AAA	N
Doyon Ltd	293724	1670506	300	FAIRBKS REMOTE REC RS	N
Doyon Ltd	295906	1660816	301	FAIRBANKS RADIO STA	N
Doyon Ltd	293034	1670255	302	FAIRBANKS TSU NO. 4	N
Doyon Ltd	289594	1660228	303	FAIRBKS SIG RESCH U 3	N
Doyon Ltd	320085	1673867	304	FAIRBKS ATOMIC ENGY CO	N
Doyon Ltd	257960	1733908	324	AFCACHE #4	N
Doyon Ltd	51258	1662207	325	AFCACHE #5	N
Doyon Ltd	225467	1554286	330	AFCACHE #10	N
Doyon Ltd	182046	1747070	331	AFCACHE #13	N
Doyon Ltd	-11829	1661811	332	AFCACHE #14	N
Doyon Ltd	-110174	1713913	333	AFCACHE #15	N
Doyon Ltd	-31656	1650795	334	AFCACHE #16	N
Doyon Ltd	-140909	1651926	335	AFCACHE #17	N
Doyon Ltd	-206610	1605237	336	AFCACHE #18	N
Doyon Ltd	-303823	1431640	337	AFCACHE #19	N
Doyon Ltd	-265819	1501304	339	AFCACHE #21	N
Doyon Ltd	316885	1618011	342	AFCACHE #49	N
Doyon Ltd	275085	1653327	357	FAIRBANKS AFSTA	N
Doyon Ltd	230687	1595693	368	NENANA USARACS STA COM	N
Doyon Ltd	282680	1683859	388	TANANA NGS	N
Doyon Ltd	551876	1533129	389	TOK ARMY RADIO COMM	N
Doyon Ltd	294759	1595339	395	GOLD KING CREEK RREL	N
Doyon Ltd	508035	1527918	398	CATHEDRAL RR SITE	N
Doyon Ltd	314800	1630887	428	CHENA ANX	N
Doyon Ltd	310579	1673439	434	FAIRBKS ARCT INDOC SCH	N
Doyon Ltd	289765	1658377	435	FAIRBANKS INTN-L ARPT	N
Doyon Ltd	298885	1662965	436	FAIRBANKS USO FAC	N
Doyon Ltd	294687	1673770	437	FAIRBANKS WEATHER STA	N
Doyon Ltd	373424	1597920	441	HARDING LK ACS RR	N
Doyon Ltd	617804	1497558	447	NORTHWAY ARMY SITE	N
Doyon Ltd	633382	1460679	448	N-WAY SPUR ACS PLINE R	N
Doyon Ltd	340868	1642933	450	SALCHA OBSERVATION	N
Doyon Ltd	237520	1601788	462	CLEAR AF AUX FLD	N
Doyon Ltd	316783	1659114	464	EIELSON AFB RR R/W	N
Doyon Ltd	306676	1727972	465	EIELSON ALPA RES 2-1	N
Doyon Ltd	273647	1712925	466	EIELSON ALPA RES 2-5	N
Doyon Ltd	283322	1728748	467	EIELSON ALPA RES 2-6	N
Doyon Ltd	318322	1743623	468	EIELSON ALPA RES 3-1	N
Doyon Ltd	333533	1705485	469	EIELSON ALPA RES 3-2	N
Doyon Ltd	269787	1677339	470	EIELSON ALPA RES 3-4	N
Doyon Ltd	252269	1716511	471	EIELSON ALPA RES 3-5	N
Doyon Ltd	250079	1743315	472	EIELSON ALPA RES 3-6	N
Doyon Ltd	325368	1725442	473	EIELSON ALPA RES 3-12	N
Doyon Ltd	296052	1745523	474	EIELSON ALPA RES 3-16	N
Doyon Ltd	262611	1696464	475	EIELSON ALPA RES 3-45	N
Doyon Ltd	264041	1731630	476	EIELSON ALPA RES 3-56	N
Doyon Ltd	329409	1660412	477	EIELSON JT TRANS ANX	N
Doyon Ltd	387468	1872686	478	FORT YUKON AIR PORT	N
Doyon Ltd	305801	1689774	485	PEDRO DOME	N
Doyon Ltd	409886	1877762	487	PORCUPINE REC ANX	N
Doyon Ltd	563682	1533253	491	TETLIN ARMY CP	N
Doyon Ltd	341466	1637386	511	NIKE SITE JIG	N
Doyon Ltd	288332	1682510	512	NIKE SITE LOVE	N
Doyon Ltd	316224	1664663	513	FAIRBANKS AACS AND ACS	N
Doyon Ltd	101435	1887059	523	BETTLES RRS	N
Koniag Inc	66135	900464	33	AFOGNAK ISL COAST DEF	Y

Koniag Inc	-97843	657386	62	CHIPIKOF ISL,NAV-KODIA	Y
Koniag Inc	96563	878749	77	KODIAK (E CPE HBR DEF)	Y
Koniag Inc	65481	874042	150	PORT LIONS ACS COMM ST	N
Koniag Inc	110564	871668	217	WOODY ISL	N
Koniag Inc	101633	873290	218	CAPE CHINIAK TRACK STA	N
Koniag Inc	105088	854759	219	FT TIDBALL/LONG ISL	N
Koniag Inc	89312	850647	220	KASLIN BAY HBR DEF,KOD	N
Koniag Inc	97524	839670	221	FT SMITH/LITTLE NS	N
Koniag Inc	93430	886122	222	N CPE HBR DEF,KODIAK	N
Koniag Inc	-15372	765689	223	LAZY BAY AWS STA,KODIA	N
Koniag Inc	95059	867539	224	FT GREELY DOCK,KODIAK	N
Koniag Inc	101729	869568	225	KODIAK ACS RREL ANX	N
Koniag Inc	-8190	725005	226	SITKINAK ISL RADIO REL	N
Koniag Inc	85685	880358	227	ENTRANCE POINT, KODIAK	N
Koniag Inc	93795	870798	228	MONASHKA BAY,KODIAK	N
Koniag Inc	72171	865191	229	BURMA ROAD	N
Koniag Inc	91985	863742	234	BELLS FLATS, KODIAK NS	N
Koniag Inc	0	925975	375	PILLAR MT RR SITE	N
Koniag Inc	97779	869468	438	FORT ABERCROMBIE	N
Koniag Inc	77296	855979	502	KODIAK CG SUP CNTR	N
Koniag Inc	106379	843621	517	KODIAK TRACKING STA	N
Koniag Inc	97779	869468	518	ST PAUL/ST GEORGE	N
Koniag Inc	86544	856171	519	BRUHN PT. (KODIAK ISL)	N
Koniag Inc	90370	862246	520	BUSKIN BCH-KODIAK ISL	N
N.A.N.A. Reg	-419570	1952059	28	KRUSENSTERN RR ANX	Y
N.A.N.A. Reg	-376562	1906889	109	KOTZEBUE ACS COMM STA	N
N.A.N.A. Reg	-426200	1990415	129	MULGRAVE APS	N
N.A.N.A. Reg	-371488	1865173	214	KOTZEBUE NG SITE (NEW)	N
N.A.N.A. Reg	-278774	1858655	215	KIANA NG SITE	N
N.A.N.A. Reg	-377289	1906984	444	KOTZEBUE ACS TRANS	N
N.A.N.A. Reg	-372226	1865266	445	KOTZEBUE NG SITE (OLD)	N
N.A.N.A. Reg	-399996	1814679	463	DEERING NGS	N
N.A.N.A. Reg	-384492	1984413	482	NOATAK NG ARMORY	N
N.A.N.A. Reg	-308077	1892202	483	NOORVIK NG SITE	N
N.A.N.A. Reg	-418175	1799376	500	COLLINS HANNUM AIR	N
Sealaska Cor	1146113	999922	36	ANGOON MICROWAVE STA	Y
Sealaska Cor	1405656	799198	38	ANNETTE ISL LAND FLD	Y
Sealaska Cor	1113542	913764	41	ATAKU FIRE CONTROL STA	Y
Sealaska Cor	1115254	1090601	43	AUKE BAY	Y
Sealaska Cor	1085414	935759	47	BEAVER POINT	Y
Sealaska Cor	1108795	916276	52	FORT PIERCE	Y
Sealaska Cor	1143806	1083772	53	PT BISHOP ACS SUBCABLE	Y
Sealaska Cor	1234583	972704	55	BOULDER POINT	Y
Sealaska Cor	1114570	940186	59	CHARCOAL ISL	Y
Sealaska Cor	1115197	1054726	61	CHICHAGOF PASSIVE REF	Y
Sealaska Cor	1297466	811615	67	CRAIG ACS SITE	Y
Sealaska Cor	1407107	791842	69	DAVISON POINT	Y
Sealaska Cor	1251309	947064	74	DUNCAN CANAL	Y
Sealaska Cor	1195750	993544	76	E BKO ISL ACS SUB-CAB	Y
Sealaska Cor	1067601	1085503	79	EXCUR IN S-PORT EMB	Y
Sealaska Cor	1295911	733139	83	FORRESTER ISL AWS STA	Y
Sealaska Cor	1120864	911029	88	GOLF ISL DEF SITE	Y
Sealaska Cor	1050215	1061209	90	GUSTAVUS ARPT	Y
Sealaska Cor	1043718	1175559	91	HAINES ACS RADIO RELAY	N
Sealaska Cor	1078219	1055613	94	HOONAH RRS	N
Sealaska Cor	1108951	941472	102	KASIANA ISLS BASE STA	N
Sealaska Cor	1397895	818109	104	KETCHIKAN ACS RR ANX#1	N
Sealaska Cor	1113314	926275	106	KITA ISL DEF SITE	N
Sealaska Cor	1105408	1094622	113	LENA POINT ACS	N
Sealaska Cor	1109027	952141	114	LISIANSKI PEN BASE END	N
Sealaska Cor	944509	1081167	115	LITUYA BAY SITE	N
Sealaska Cor	1116117	934824	116	LONG ISL DEF SITE	N
Sealaska Cor	1344482	837003	118	LYMAN ANCH ACS SUBCABL	N
Sealaska Cor	1176747	1052181	123	MIDWAY ISL	N
Sealaska Cor	1114357	1098597	124	MONTANA CK LUMBER MILL	N
Sealaska Cor	1131258	1089767	127	MT ROBERTS ACS RR	N
Sealaska Cor	1092536	951299	128	MUDBAY RR	N

Sealaska Cor	1113622	921526	144	PEIGAR ISL DEF SITE	N
Sealaska Cor	1038903	1021352	145	PELICAN ACS RADIO REL	N
Sealaska Cor	1293008	931426	146	PETERSBURG ACS COM STA	N
Sealaska Cor	1057923	1076929	148	PLEASANT ISL DEF SITE	N
Sealaska Cor	1068299	1076015	149	PORPOISE ISLS DEF SITE	N
Sealaska Cor	1321568	805839	152	PRINCE OF WALES	N
Sealaska Cor	1314545	866809	153	RATZ HBR ACS SUB-CABLE	N
Sealaska Cor	1106461	976415	156	RODMAN DBL PASS REF	N
Sealaska Cor	991374	1016316	161	SALISBURY RDG TRANS LI	N
Sealaska Cor	1465135	923606	162	SALMON RIV FLOOD CON	N
Sealaska Cor	1062331	1089805	165	SAWMILL BAY CANNERY	N
Sealaska Cor	1040252	1197832	170	SKAGWAY ACS COMMS STA	N
Sealaska Cor	1407211	807612	174	SMUGGLER COVE RRS	N
Sealaska Cor	1292971	932721	175	SOKOLOF ISL ACS SUBCAB	N
Sealaska Cor	1265312	910560	177	STEAMER PT ACS SUB-CAB	N
Sealaska Cor	1263819	953820	190	TWIN CREEK TROOP HSG	N
Sealaska Cor	1030567	1200867	191	TYONEK ACS COMMS SITE	N
Sealaska Cor	1296959	901395	195	STEAMER PT ACS SUB-CAB	N
Sealaska Cor	1384167	834940	199	WARD LK HSG	N
Sealaska Cor	1104981	1047885	200	WHEELER CK ACT RFLECTO	N
Sealaska Cor	1381449	820237	201	WHIPPLE CREEK ACS	N
Sealaska Cor	1030567	1200867	203	WM HENRY BAY ACS SUBCA	N
Sealaska Cor	1292923	951005	206	WRANGELL ACS SITE	N
Sealaska Cor	1298838	933378	236	FORT STIKINE	N
Sealaska Cor	1467624	787895	237	FORT TONGASS	N
Sealaska Cor	1025432	1040831	238	GEORGE ISL ACS	N
Sealaska Cor	1026621	1040190	239	PORT ALTHORP NAVY BASE	N
Sealaska Cor	1043837	1171715	244	HAINES POL DUMP	N
Sealaska Cor	1042967	1198616	256	SKAGWAY POL TANK FARM	N
Sealaska Cor	1042708	1199511	266	SKAGWAY TROOP HOSP	N
Sealaska Cor	1042528	1201658	267	SKAGWAY STA HOSP SITE	N
Sealaska Cor	1052130	1156652	268	SITKA NG TAR RNG	N
Sealaska Cor	1116807	940444	269	SITKA DEF SITE	N
Sealaska Cor	926503	1105447	276	GLACIER BAY,MT FAIRWEA	N
Sealaska Cor	1042967	1198616	277	SKAGWAY RR YARD	N
Sealaska Cor	1112570	943481	279	FORT RAY	N
Sealaska Cor	1113600	939906	280	FORT ROSSEAU, SITKA	N
Sealaska Cor	1113085	941694	281	SITKA ACS TRANSMITTER	N
Sealaska Cor	1099598	930097	283	FORT BABCOCK, SITKA	N
Sealaska Cor	1114711	928741	284	POVOROTNI POINT DEF	N
Sealaska Cor	1120442	1095244	306	JUNEAU RADIO STA 7MI R	N
Sealaska Cor	1115108	1099471	307	MENDENHALL LK RIF RNG	N
Sealaska Cor	1116718	1094121	308	JUNEAU AF AND GARRISON	N
Sealaska Cor	1122990	1090177	309	JUNEAU ACS FIVE MI STA	N
Sealaska Cor	1129273	1086243	310	JUNEAU ACS STO ANX	N
Sealaska Cor	1132850	1091226	311	JUNEAU 12THST ACS HSNG	N
Sealaska Cor	1115392	1091777	312	JUNEAU 11 MI ACS TRANS	N
Sealaska Cor	1406764	792442	344	ANNETTE ISL ACS VHF RE	N
Sealaska Cor	1115661	932756	348	CAPE BURUNOF DEF SITE	N
Sealaska Cor	1087958	922948	349	CAPE EDGECUMBE PCS	N
Sealaska Cor	1054041	1058415	352	CHICHAGOF ISL DEF SITE	N
Sealaska Cor	1050573	1164509	358	FLAT BAY ACS SUB-CABLE	N
Sealaska Cor	1115571	938538	359	GALANKIN ISL DEF SITE	N
Sealaska Cor	1175701	1040637	360	MIDWAY PT ACS SUB-CAB	N
Sealaska Cor	1109800	1090102	361	JUNEAU RIFLE RNG	N
Sealaska Cor	1388833	824771	363	KETCHIKAN ACS RR ANX#2	N
Sealaska Cor	1391892	816008	364	KETCHIKAN RADIO STA	N
Sealaska Cor	1339706	858915	367	LEMESUR PT ACS SUB-CAB	N
Sealaska Cor	1114619	943653	381	SITKA NAT CEMETERY	N
Sealaska Cor	1115396	940295	382	SITKA RADIO STA	N
Sealaska Cor	1038085	1180372	383	SKAGWAY POWDER & DETON	N
Sealaska Cor	1042708	1199511	384	SKAGWAY QUARRY SITE	N
Sealaska Cor	1021084	1227232	385	SKAGWAY TELE LINE RW	N
Sealaska Cor	1098537	955908	386	SOUND ISL BASE END STA	N
Sealaska Cor	1095602	927515	387	ST LAZARIA ISL AWS STA	N
Sealaska Cor	1104981	1047885	390	WHEELER CK PASS REFL	N
Sealaska Cor	1107374	932313	392	MT.EDGECUMBE/SITKA NOB	N

Sealaska Cor	1133850	1091226	396	JUNEAU ACS HSG	N
Sealaska Cor	1115392	1091777	400	JUNEAU ACS RR	N
Sealaska Cor	1114054	941973	402	SITKA ACS RR SITE	N
Sealaska Cor	1134332	990567	423	ANG-CHAT ACS SUB CAB	N
Sealaska Cor	1042754	1161712	429	CHILKOOT BARRACKS	N
Sealaska Cor	1129273	1086243	443	JUNEAU SUB-PORT FMBK	N
Sealaska Cor	1117479	941026	453	SITKA ACS HSG SITE	N
Sealaska Cor	807433	1152035	458	YAKUTAT AFB	N
Sealaska Cor	796431	1149620	484	OCEAN CAPE RR SITE	N
Sealaska Cor	1016469	1036472	494	SOAPSTONE HARBOR	N
Sealaska Cor	1052393	981623	496	OUTER ISL ACRAFT WARN	N
Sealaska Cor	776428	1175808	508	YAKUTAT	N
The Aleut Co	-896461	468866	11	CHERNOFSKI HBR SUP&STO	Y
The Aleut Co	-821253	492616	12	UNALASKA DEF SITE	Y
The Aleut Co	-793970	512933	13	UNALGA ISL NAV RADIO	Y
The Aleut Co	-839156	521540	14	DRIFTWOOD BAY RR STA	Y
The Aleut Co	-832495	509863	15	FT. LEARNARD	Y
The Aleut Co	-768560	524307	16	AKUTAN	Y
The Aleut Co	-833616	527064	17	CAPE WISLOW AWS STA	Y
The Aleut Co	-2129459	793738	22	AGATTU ISLAND	Y
The Aleut Co	-410444	687791	25	PORT MOLLER	Y
The Aleut Co	-546103	518298	26	CATON ISLAND	Y
The Aleut Co	-696815	543807	27	SCOTCH CAP	Y
The Aleut Co	-1565784	451626	32	CAPE YAKAK RADIO STA	Y
The Aleut Co	-2129152	854348	42	ATTU ISL MIL SITES	Y
The Aleut Co	-1496582	474169	89	GREAT SITKIN ISL	Y
The Aleut Co	-1578373	467949	100	KANAGA ISL	N
The Aleut Co	-1905437	631791	105	KISKA ISL GARR(B & L)	N
The Aleut Co	-2092421	820147	137	NIZKI-ALAID ISLS	N
The Aleut Co	-1679509	492253	141	OGLIDGA ISL	N
The Aleut Co	-565318	530139	163	SANAK ISL NAVAL STA	N
The Aleut Co	-1774710	568529	167	SEMISOPOCHNOI ISL	N
The Aleut Co	-1637216	485877	181	TANAGA ISL	N
The Aleut Co	-809964	489068	192	UGADAGA BAY STA	N
The Aleut Co	-812788	513629	232	CONSTANTINE PT END STA	N
The Aleut Co	-802754	513625	233	ERSKINE POINT FCS	N
The Aleut Co	-917154	470359	235	FORT GLENN	N
The Aleut Co	-576299	640208	243	AMAK ISL	N
The Aleut Co	-530945	578063	247	DEER ISL AWS STA	N
The Aleut Co	-844320	495187	270	CATHEDRAL POINT	N
The Aleut Co	-722638	514436	305	TIGALDA ISLAND	N
The Aleut Co	-412920	609654	313	SAND PT NAV AUX AIR FA	N
The Aleut Co	-811322	509582	320	CAPTAINS BAY SS N WEST	N
The Aleut Co	-358159	541311	351	CHERNABURA ISL NAVY	N
The Aleut Co	-1529381	464117	355	DAVIS AFB	N
The Aleut Co	-540606	586769	371	COLD BAY PAVLOF UNIT	N
The Aleut Co	-702922	566578	397	CAPE SARICHEF	N
The Aleut Co	-826781	516304	459	HOG ISL DEF SITE	N
The Aleut Co	-824187	500718	460	UNALASKA ACS COMMO	N
The Aleut Co	-844056	462381	493	CAPE PROMINENCE AWS	N
The Aleut Co	-819212	509194	503	AMAKNAK	N
The Aleut Co	-551459	610633	506	COLD BAY ACS COM-FT RA	N
The Aleut Co	-1366563	454607	510	ATKA AF AUX FLD	N
The Aleut Co	-1819746	521479	516	AMCHITKA AF AUX FLD	N

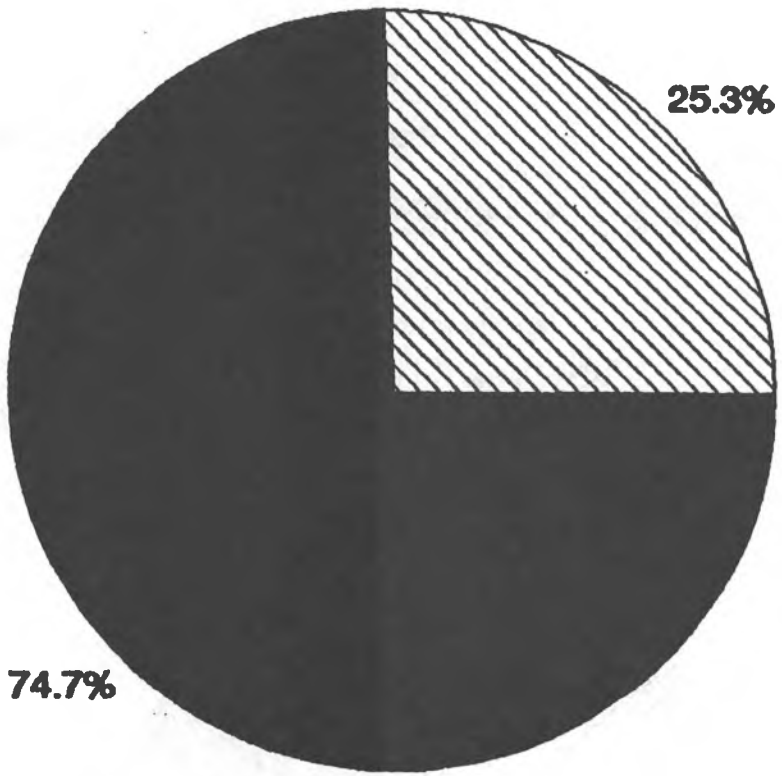
Appendix II

Locational Information - Alaska Native Villages
Demographic Information - State of Alaska

Akhiok	00650	-13,067	774,819
Akiachak	00760	-399,593	1,234,843
Akiak	00870	-387,519	1,231,200
Akutan	01090	-768,337	527,756
Alakanuk	01200	-542,016	1,458,209
Aleknagik	01420	-259,455	1,040,633
Allakaket	01860	54,819	1,843,824
Ambler	01970	-171,205	1,907,377
Anaktuvuk Pass	02080	95,537	2,020,484
Angoon	03440	1,151,471	997,383
Aniak	03550	-293,341	1,301,052
Anvik	03880	-317,082	1,422,433
Arctic Village CDP	03990	351,946	2,042,638
Atka	04210	-1,364,856	456,698
Atmautluak	04430	-446,745	1,235,826
Barrow	05200	-101,441	2,364,199
Beaver CDP	05750	299,343	1,837,285
Bethel	06520	-423,486	1,226,280
Birch Creek CDP	07620	367,010	1,833,267
Brevig Mission	08740	-577,856	1,763,304
Buckland	09600	-324,102	1,797,729
Cantwell CDP	10150	252,634	1,499,461
Chalkyitsik CDP	11800	453,290	1,888,132
Chefornak	12680	-562,887	1,171,974
Chevak	13230	-611,405	1,336,872
Chignik Lagoon CDP	13670	-277,811	709,737
Chignik Lake CDP	13780	-293,774	707,692
Chistochina CDP	14000	475,625	1,432,285
Chitina CDP	14110	502,729	1,317,042
Chuathbaluk	14330	-276,443	1,299,590
Circle CDP	14880	452,829	1,796,255
Clarks Point	15450	-259,728	991,607
Copper Center CDP	17300	449,275	1,365,108
Craig	17740	1,297,934	817,196
Crooked Creek CDP	17850	-214,363	1,332,352
Deering	18510	-395,306	1,816,307
Dillingham	18950	-257,385	1,015,779
Dot Lake CDP	19720	488,470	1,556,369
Eagle	20380	604,875	1,705,100
Eek	21040	-442,631	1,163,449
Egegik CDP	21150	-199,430	925,026
Ekwok	21810	-196,742	1,047,528
Elim	22250	-394,012	1,653,100
Emmonak	22910	-533,705	1,466,013
English Bay CDP	23130	118,026	1,039,929
Evansville CDP	23790	113,278	1,883,543
False Pass CDP	24670	-605,969	580,118
Fort Yukon	26760	389,556	1,871,808
Gakona CDP	27420	448,323	1,397,912
Galena	27530	-132,516	1,645,694
Gambell	27640	-861,468	1,645,951
Golovin	29180	-429,552	1,651,918
Goodnews Bay	29290	-429,969	1,037,971
Grayling	30060	-308,934	1,451,162
Gulkana CDP	30500	444,913	1,393,298
Healy Lake CDP	32310	456,255	1,591,945
Holy Cross	33030	-302,603	1,370,843
Hoonah	33360	1,077,771	1,052,903
Hooper Bay	33470	-638,443	1,341,190
Hughes	33910	-12,318	1,786,068
Huslia	34350	-106,192	1,750,218
Hydaburg	34460	1,325,677	790,431
Igiugig CDP	34790	-105,572	1,035,623
Iliamna CDP	35120	-49,407	1,086,372
Ivanof Bay CDP	35890	-342,095	672,865
Kake	36770	1,200,091	957,081

Kaktovik	36990	399,923	2,261,163
Kaltag	37430	-228,085	1,606,217
Karluk CDP	37540	-23,203	840,844
Kasaan	37650	1,337,334	834,854
Kiana	39300	-282,971	1,904,035
King Cove	39410	-528,312	594,697
King Salmon CDP	39630	-144,959	978,226
Kipnuk CDP	39740	-557,282	1,144,236
Kivalina	39960	-448,244	2,010,827
Knik CDP	40620	225,257	1,284,088
Kobuk	40840	-126,845	1,888,107
Koliganek CDP	41500	-181,168	1,088,281
Kongiganak CDP	41610	-492,491	1,136,537
Kotlik	41720	-481,162	1,485,064
Kotzebue	41830	-373,627	1,904,895
Koyuk	41940	-337,063	1,682,653
Koyukuk	42050	-172,760	1,664,928
Kwethluk	42380	-401,022	1,221,143
Kwigillingok CDP	42490	-506,791	1,130,178
Larsen Bay	43040	-31	838,413
Levelock CDP	43810	-165,409	1,017,169
Lime Village CDP	44030	-80,741	1,275,214
Lower Kalskag	45460	-336,897	1,298,302
Manley Hot Springs CDP	46780	161,272	1,676,452
Manokotak	46890	-285,301	1,011,508
Marshall	47000	-421,078	1,348,008
McGrath	46010	-84,608	1,443,887
Mekoryuk	47990	-671,291	1,216,260
Mentasta Lake CDP	48540	519,931	1,474,277
Minto CDP	49530	211,458	1,693,323
Mountain Village	51180	-503,833	1,383,755
Naknek CDP	52060	-165,808	978,917
Napakiak	52390	-433,447	1,212,919
Napaskiak	52720	-420,217	1,212,754
Nelson Lagoon CDP	52940	-453,027	678,003
Nenana	53050	235,346	1,627,517
New Stuyahok	53710	-186,444	1,059,450
Newhalen	53270	-50,124	1,083,434
Newtok	53820	-572,260	1,264,610
Nightmute	53930	-588,937	1,217,254
Nikolai	54150	-19,689	1,447,749
Nikolski CDP	54260	-985,079	439,573
Ninilchik CDP	54480	133,945	1,119,688
Noatak CDP	54700	-384,916	1,985,344
Nondalton	55030	-48,245	1,109,580
Noorvik	55140	-310,310	1,891,506
Northway Junction CDP	56250	614,054	1,504,784
Nuiqsut	56320	115,722	2,248,790
Nulato	56350	-201,199	1,644,825
Nunapitchuk	56680	-456,013	1,239,593
Old Harbor	57340	38,062	803,704
Oscarville CDP	58330	-421,262	1,214,881
Ouzinkie	58550	90,308	882,007
Pedro Bay CDP	59540	-6,485	1,088,946
Perryville CDP	60200	-325,538	672,684
Pilot Station	60750	-462,954	1,360,999
Pitkas Point CDP	60860	-481,747	1,373,761
Platinum	61080	-440,069	1,024,205
Point Hope	61630	-521,922	2,088,082
Point Lay CDP	61700	-349,843	2,215,138
Port Graham CDP	63280	121,651	1,040,810
Port Heiden	63390	-278,467	778,406
Port Lions	63610	65,792	876,474
Quinhagak	64600	-439,990	1,109,157
Rampart CDP	64820	187,511	1,733,120
Red Devil CDP	64930	-176,622	1,315,265
Ruby	65590	-71,552	1,640,472

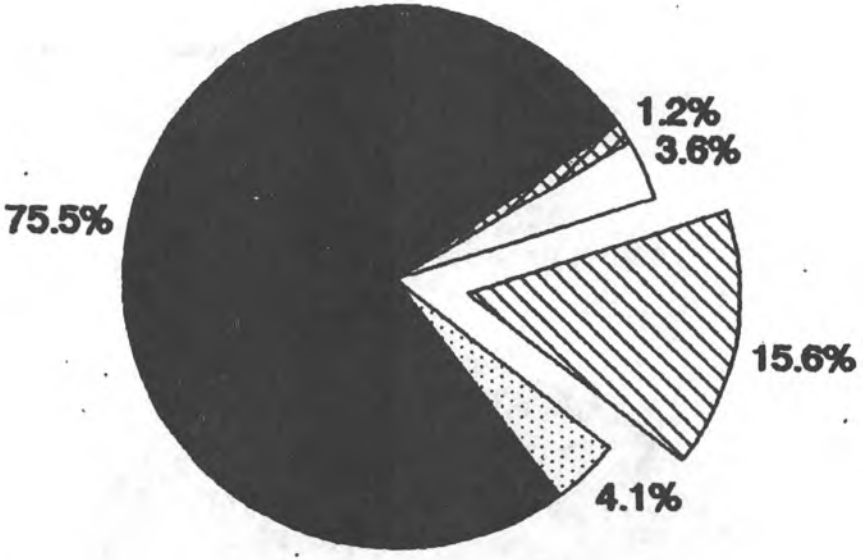
Salamatof CDP	66510	146,119	1,184,521
Sand Point	67020	-410,581	610,765
Savoonga	67460	-805,460	1,624,531
Saxman	67570	1,394,618	827,831
Scammon Bay	67680	-604,663	1,371,322
Selawik	68230	-268,335	1,861,788
Seldovia	68340	129,404	1,052,010
Shageluk	68670	-284,323	1,421,313
Shaktoolik	68890	-346,988	1,619,243
Shishmaref	69770	-543,628	1,858,873
Shungnak	70100	-139,649	1,883,090
Slana CDP	70930	509,465	1,453,616
Sleetmute CDP	71090	-170,983	1,308,878
South Naknek CDP	72190	-171,155	965,725
St. George	65800	-948,702	843,639
St. Mary's	66140	-479,410	1,378,453
St. Michael	66360	-401,847	1,526,764
St. Paul	66470	-973,246	916,949
Stebbins	72960	-408,953	1,528,046
Stevens Village CDP	73290	225,443	1,791,664
Stony River CDP	73400	-133,216	1,313,357
Takotna CDP	74610	-107,807	1,448,350
Tanacross CDP	75050	523,577	1,527,715
Tanana	75160	89,174	1,691,489
Tatitlek CDP	75380	395,295	1,234,061
Telida	75820	33,262	1,486,296
Teller	75930	-574,645	1,753,907
Tetlin CDP	76590	584,884	1,502,721
Togiak	77690	-367,302	1,024,552
Toksook Bay	78240	-605,920	1,224,093
Tuluksak	78790	-372,558	1,256,005
Tununak	79230	-611,929	1,228,887
Twin Hills CDP	79780	-356,973	1,026,815
Tyonek CDP	79890	148,976	1,237,042
Unalakleet	80660	-331,646	1,565,364
Unalaska	80770	-814,507	506,800
Venetie CDP	82420	332,011	1,912,770
Wainwright	82750	-228,607	2,301,318
Wales	82860	-645,077	1,808,349
White Mountain	84070	-446,835	1,667,786
Yakutat	86490	797,269	1,148,453



State of Alaska-People of Color
EPA-Region 10 Data

People of Color All Others

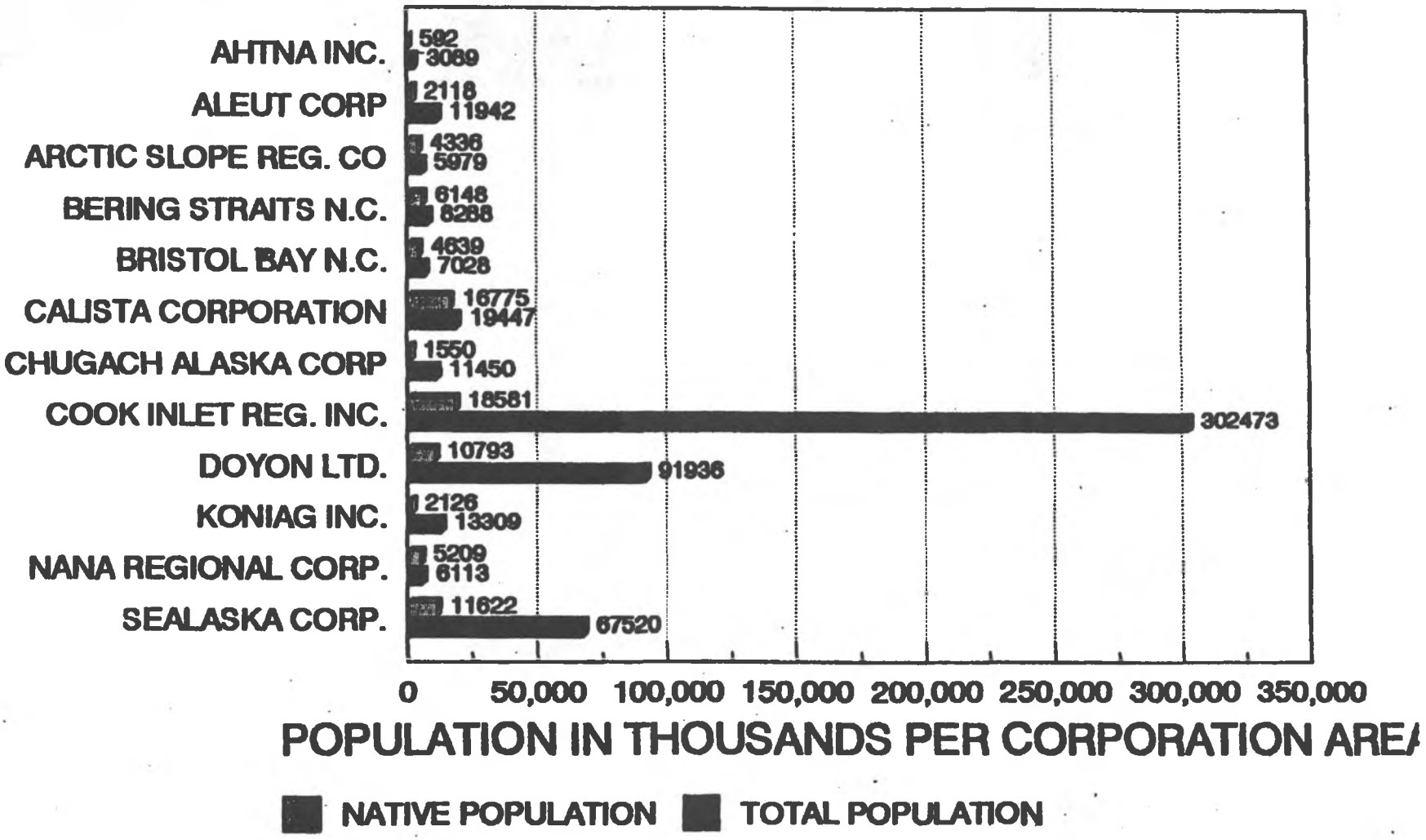
People of Color includes Native, Hispanic, Black and Asian populations.



State of Alaska Demographics
1990 Census Data

White population
Black population
Native population
Asian population
All others

NATIVE CORPORATIONS



Total Native population is 85,468 = 15.56%
(1990 CENSUS DATA)

Appendix III

Technical Details - Methodology

Nearest Neighbor Spatial Analysis

R = the nearest-neighbor index

$R = {}^{*}D_{obs} / {}^{*}D_{exp}$ ${}^{*}D_{obs}$ = average observed nearest-neighbor distance

${}^{*}D_{exp}$ = average observed nearest-neighbor distance

${}^{*}D_{exp} = 1/2(p)^{.5}$ p = density of points per unit area

${}^{*}D_{obs} = \Sigma d/n$ d = nearest neighbor distance, n = number of pts

if R = 0.0 the pattern is completely clustered

if R = 2.15 the pattern is completely dispersed

if $0 < R < 1.1$ then the pattern is very clustered

if R = 1.1 then the pattern is moderately clustered

if $1.1 > R < 2.15$ then the pattern is very dispersed

```
1 REM THIS PROGRAM PERFORMS A NEAREST NEIGHBOR (CLUSTERING) ANALYSIS BASED ON
2 REM THE EQUATIONS AND PROCEDURE FROM 'STATISTICS IN GEOGRAPHY' BY DAVID EBDON
3 REM AUTHORS: GARY IDLEBURG, EPA-REGION 10, ENVIRONMENTAL JUSTICE PROGRAM
  REM          PROF. PATRIC BUCKLEY, WESTERN WASHINGTON UNIVERSITY -
  REM          GEOGRAPHY/ENVIRONMENTAL STUDIES DEPARTMENT

10 REM "ESTABLISH PARAMETERS FOR ACCESSING A DATA FILE"

11 OPEN "I", 3, "garfile5.dat"


20 REM "READ, COUNT AND PRINT ITEMS IN AN ARRAY THEN CALCULATE DISTANCE "

21 REM "SETTING ARRAY SIZE"
22 DIM LATLONG(700, 3)


30 REM "SETTING COUNTER (TO TRACK THE NUMBER OF POINTS) TO 0"

31 LET PTSTOT = 0
32 LET A = 0
33 LET B = 0
34 LET DIST = 0


40 REM "INITIALIZING ARRAY AND MEASUREMENTS TO 0"

41 FOR R = 1 TO 5
42 FOR C = 1 TO 3
43 LET LATLONG(R, C) = 0
   NEXT C
   NEXT R


50 REM "READING IN THEN PRINTING LOCATION DATA"

51 R = 0
52 R = R + 1
53 INPUT #3, LATLONG(R, 1), LATLONG(R, 2)
54 IF LATLONG(R, 1) < -999999999 THEN 400
55 LET PTSTOT = PTSTOT + 1
62 PRINT LATLONG(R, 1), LATLONG(R, 2), PTSTOT
63 GOTO 52
64 CLOSE #3


262 REM DISTANCE AND NEAREST DISTANCE CALCULATIONS

400 LET OG = 1
404 LET DES = 1
408 LET SHRTDIS = 999999999
412 IF OG = DES THEN 432
416 A = LATLONG(OG, 1) - LATLONG(DES, 1)
420 B = LATLONG(OG, 2) - LATLONG(DES, 2)
423 DIST = (((A ^ 2) + (B ^ 2)) ^ .5) / 1000
426 PRINT A, B, DIST
428 IF DIST < SHRTDIS THEN SHRTDIS = DIST
429 REM PRINT DIST, SHRTDIS
432 LET DES = DES + 1
```

```
436 IF DES <= PTSTOT THEN 412
440 LET LATLONG(OG, 3) = SHRTDIS
441 PRINT OG, LATLONG(OG, 3), SHRTDIS
444 OG = OG + 1
448 IF OG <= PTSTOT THEN 404


500 REM NEAREST NEIGHBOR INDEX CALCULATION

530 PRINT "PLEASE INPUT THE VALUE OF AREA FOR THE EXPECTED DENSITY CALCULATION"
540 INPUT AREA
550 IF AREA <= 0 GOTO 641
551 LET P = PTSTOT / AREA
552 LET DEXP = 1 / (2 * (P ^ .5))
560 PRINT "THE EXPECTED MEAN NEAREST NEIGHBOR DISTANCE IS"; DEXP
570 REM  PTSTOT IS THE # OF POINTS, NEARN IS A SINGLE NEAREST NEIGHBOR DISTANCE
571 REM  DSUM IS THE SUM OF ALL DISTANCES, DOBS IS THE MEAN NEAREST NEIGHBOR DIS
572 LET DSUM = 0
573 FOR R = 1 TO PTSTOT
581 LET NEARN = LATLONG(R, 3)
595 DSUM = DSUM + NEARN
596 NEXT R
600 DOBS = (DSUM / PTSTOT)

610 PRINT " THE OBSERVED MEAN NEAREST NEIGHBOR DISTANCE IS "; DOBS
620 LET R = DOBS / DEXP
621 PRINT " THE NEAREST NEIGHBOR INDEX IS "; R
622 IF R = 0 THEN PRINT "THE PATTERN OF POINTS IS COMPLETELY CLUSTERED"
623 IF R = 1.1 THEN PRINT "THE PATTERN OF POINTS IS MODERATELY CLUSTERED"
624 IF R >= 2.15 THEN PRINT "THE PATTERN OF POINTS IS COMPLETELY DISPERSED"
625 IF R > 1.1 AND R < 2.15 THEN PRINT "THE PATTERN OF POINTS IS VERY DISPERSED"
626 IF R > 0 AND R < 1.1 THEN PRINT "THE PATTERN OF POINTS IS VERY CLUSTERED"
631 GOTO 651
641 PRINT " AREA VALUES <= 0 ARE INVALID"; AREA
651 END
```

Appendix IV

List of Contact People

Contact People for Contaminated Site Information

Mark Ader	EPA Region 10, Hazardous Waste Sites (206) 553-1808
Sandra Borbridge	EPA Region 10, Alaska Operations Office (907) 271-6329
Robert Deering	U.S. Coast Guard (907) 463-2440
John Halverson	Alaska Dept. of Environmental Conservation Contaminated Sites Program (907) 269-7553
Tim Hansen	U.S. Air Force - 611 Air Support Group, 6900 9th St, Suite 360 Elmendorf AFB, Alaska 99506
Kathy Hill	EPA Region 10, Tribal Office (206) 553-6220
Joyce Kelly	EPA Region 10, Environmental Justice Program (206) 553-4029
Ken Lauzen	Federal Aviation Administration (907) 271-3743
Jennifer Roberts	Alaska Dept. of Environmental Conservation Contaminated Sites Program (907) 269-7545
Greg Smith	Formerly Used Defense Sites (FUDS), Army Corps of Engineers (Alaska) (907) 753-5793
Fran Stefan	EPA Region 10, Solid Waste (206) 553-6639