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SANDIA NATIONAL LABORATORIES LAND USE PERMIT FOR OPERATIONS AT OLIKTOK ALASKA LONG RANGE RADAR STATION

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Abstract

The property subject to this Environmental Baseline Survey (EBS) is located at the Oliktok Long Range Radar Station (LRRS). The Oliktok LRRS is located at 70° 30' W latitude, 149° 53' W longitude. It is situated at Oliktok Point on the shore of the Beaufort Sea, east of the Colville River. The purpose of this EBS is to document the nature, magnitude, and extent of any environmental contamination of the property; identify potential environmental contamination liabilities associated with the property; develop sufficient information to assess the health and safety risks; and ensure adequate protection for human health and the environment related to a specific property

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List of Abbreviations and Acronyms

AC	Acres
ACM	Asbestos Containing Material
AFI	Air Force Instruction
AFMC	Air Force Material Command
ARM	Atmospheric Radiation Measurement Program
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DEW	Distant Early Warning
DFA	Diesel Fuel Arctic
DoD	Department of Defense
DOE	Department of Energy
EBS	Environmental Baseline Survey
EPA	Environmental Protection Agency
ERP	Environmental Restoration Program
FAST	Fixed Activated Sludge Treatment
ft	feet
in	inches
Hq	Headquarters
LRRS	Long Range Radar Station
MOGAS	Motor Gasoline
NA	Not Applicable
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NEPA	National Environmental Policy Act
NFA	No Further Action
OSHA	Occupational Safety and Health Administration
O/WS	Oil/water separators
POL	Petroleum, oil, and lubricant
PCBs	Polychlorinated Biphenyls
RCRA	Resource, Conservation, and Recovery Act
Sq.	Square
SNL	Sandia National Laboratories
U.S.	United States
USAF	United States Air Force
U.S.C	United States Code
UST	Underground Storage Tank
~	Approximately

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SECTION 1.0 PURPOSE

1.1 Purpose of the Action

This Phase I Environmental Baseline Survey (EBS) provides the findings of a survey and assessment for a proposed land use permit by Sandia Corporation for operations at the United States Air Force Long Range Radar Station located at Oliktok, Alaska. The purpose of this document is to provide information regarding baseline environmental conditions of the proposed sites. This document was prepared in accordance with U.S. Air Force (USAF) policy, as defined by Air Force Instruction (AFI) 32-7066, *Environmental Baseline Surveys in Real Estate Transactions* (1994), as supplemented by the Headquarters Air Force Materiel Command memorandum *HQ AFMC Supplemental Guidance for the Environmental Impact Analysis Process and Environmental Baseline Surveys*, dated 11 April 2011. To ensure that all site conditions are addressed, the American Society for Testing and Materials (ASTM) Standard E1527-05, 2005, "Practice for Environmental Site Assessments: Phase I Site Assessments"; E1528-06, 2006, "Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process"; and ASTM Standard D6008-96, Reapproved 2005, "Standard Practice for Conducting Environmental Baseline Surveys" are also followed. In accordance with this guidance, this Phase I EBS will provide some of the information needed for the following objectives:

- Document the nature, magnitude, and extent of any environmental contamination of the sites.

- Identify potential environmental contamination liabilities associated with the sites.

- Develop sufficient information to assess the health and safety risks and to ensure adequate protection for human health and the environment related to the sites.

- Provide the basis for notice, when required under Section 120(h)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 United States Code (U.S.C.) 9620 (h)(1), of the disposal of a hazardous substance on the sites.

The preparation of this document is limited to existing information that can be garnered through records searches, reviews of historical photographs, interviews, and field observations of the site. Field activities (e.g. trenching, drilling, or sample collection) would have to be used to quantify and confirm possible contamination and would need to be conducted under a Phase II EBS.

This document does not address possible effects on property valuation from discovered contamination; effects on property valuation can only be effectively evaluated after the nature and extent of contamination are fully understood.

1.2 Boundaries of the Property and Survey Area

The property subject to this EBS is located at the Oliktok Long Range Radar Station (LRRS). The Oliktok LRRS is located at 70° 30' W latitude, 149° 53' W longitude. It is situated at Oliktok Point on the shore of the Beaufort Sea, east of the Colville River. The installation is approximately 30 miles northeast of the Village of Nuiqsut and approximately 50 miles northwest of Deadhorse (Prudhoe Bay), Alaska. It is accessible by air, barge, or motorized vehicle via the Dalton Highway and then through the Prudhoe Bay and Kuparuk oil fields. See Appendix A of this document for location map.

SECTION 2.0 SURVEY METHODOLOGY

2.1 Approach and Rationale

The approach of this action is to perform a document search and preliminary site investigation in order to identify potential environmental contamination associated with the sites. The EBS process involved the review of records compiled for the sites. The records reviewed included information on environmental restoration activities, testing activities (e.g., Safety Assessments), and the results of regulatory reports, and investigations (e.g., biological, cultural/archaeological) relevant to the sites. A thorough review of reasonably obtainable state, federal, local government and United States Air Force (USAF) records has been performed as part of this EBS. Additionally, Interviews were held with Joint Base Elmendorf Richardson personnel to further discuss the history and surroundings, underground storage tanks, releases or spills, and permit and enforcement history. The information collected is presented in this EBS Phase I Environmental Site Assessment.

2.1.1 Description of Reviewed Documents

The following documents were reviewed in preparation of this EBS:

- Department of Energy, NEPA Compliance Review dated March 28, 2012: SNA12-0175, *Additions to Measurement Capabilities and Facilities at DOE ARM Sites in Alaska.*
- *Oliktok Long Range Radar Station Road Project Environmental Assessment*. Prepared by 611 Civil Engineer Squadron Environmental Planning Section Elmendorf Air Force Base, Alaska. Dated October 2005.
- *Environmental Information Document Nikaitchuq Development Project Beaufort Sea, Alaska.* Prepared for KERR-McGee Oil & Gas Corporation Houston, Texas. Dated July 5, 2005.
- Environmental Baseline Survey Eni US Operating Co., Inc. Proposed

Pipeline Easement and Land Use License Oliktok LRRS, Alaska; dated August 2009.

- Elmendorf Air Force Base real property (673 MSG/CECR) files.

2.1.2 Property Inspections

A Sandia Corporation Environmental Technical Professional conducted a visual and physical walk-through inspection of the land use permit site on August 21, 2012. No environmental concerns or issues were observed: no odors; pools of liquid; drums; hazardous substance and petroleum product containers; potential asbestos-containing material (ACM); polychlorinated biphenyl (PCB)-containing electrical equipment; drains and sumps; pits, ponds, and lagoons; stained soil or pavement; stressed vegetation; wastewater; or dead or diseased wildlife. No concerns relating to the health and safety of individuals or local flora or fauna, such as stains or leaks, were observed (See Appendix D for site photographs).

2.1.3 Personnel Interviews

The following personnel were interviewed in preparation of this document:

- A Sandia Corporation employee associated with the Geophysics and Atmospheric Sciences Organization 06913 was interviewed on August 20, 2012.
- A Sandia Corporation employee associated with the B61-12 Program Management Organization 02127 was interviewed on August 21, 2012.
- An Arctec Contractor stationed at LRRS was interviewed August 21, 2012.
- The Elmendorf Air Force Base National Environmental Policy Act (NEPA) Compliance Officer was interviewed on August 23, 2012.
- The Elmendorf Air Force Base Project Manager for Environmental Restoration was interviewed on August 23, 2012.
- No other USAF personnel were contacted regarding the proposed Land Use Permit area. USAF personnel other than those associated with the 673 MSG/CECR, Natural Resources Management Branch are not considered to be a source of authoritative environmental information related to operations/activities within the land use permit site boundaries.

2.1.4 Sampling

As indicated by the negative findings in Section 2.1.2, Property Inspections, there were no observations that warranted sampling and analysis of drinking water quality, radon, asbestos, PCBs or lead based paint within the land use permit site. As a result, sampling was not conducted as part of this EBS.

SECTION 3.0 FINDINGS

3.1 History and Usage

3.1.1 History

During the 1950s, America's military and national leaders became aware of the need for an early warning system to alert the United States and neighboring countries of an airborne attack by potential enemies. It was decided that a system of early warning radar stations should be constructed as close to potential enemies as possible. The Oliktok LRRS, also known as POW-2, was a Distant Early Warning (DEW) Line station constructed by the USAF as an auxiliary station between 1955 and 1956. The installation consists of 672 acres (ac) of low-lying tundra adjacent to the Beaufort Sea that is contained within U.S. Survey 4275. It has been operated by contractors since 1957. In the mid-1980s, a Minimally Attended Radar was installed, which still operates today. Most of the excess facilities were removed during the 2004 and 2005 Clean Sweep activities.

3.1.2 Current and Future Use

The site continues to operate as a radar site. Currently, there are no military personnel stationed at Oliktok LRRS; management and maintenance of the LRRS are performed by a third-party contractor.

SNL personnel are proposing to utilize the site for measurement capabilities for the Department of Energy (DOE) Atmospheric Radiation Measurement (ARM) Program and a continuation of the use of unmanned vehicles in support of ARM efforts, which would include: Unmanned aircraft, tethered balloons, surface vehicles, and/or underwater vehicles. There are two, half acre, primary locations proposed for use by SNL (Appendix A). The first site is located approximately 100 feet (ft) northwest of the main (Module Train). The second site is located directly outside of the opening to the aircraft hangar, and includes the continued use of the western half of the inside of the aircraft hangar.

3.1.3 Activities, Structures, and Buildings

The area of the LRRS consists of the following buildings, structures, and features:

- Aircraft shelter- Constructed in 1957, this 17,400 sq. ft. structure with a dirt floor served as a hangar for aircraft. This structure has also been referenced as the "Air Freight Terminal" in historical documentation. It is considered deactivated and is currently utilized for storage of miscellaneous items by the USAF.
- Module Train 1- Constructed in 1957, this serves as the main facility for the site. The Module Train consists of electronics equipment areas, bedrooms, administration offices, mechanical rooms, sewage treatment plant, diesel engine generators and boiler, dining, kitchen, and recreation areas.

- Garage Facility 2- Constructed in 1957, it houses a stand-by generator and provides space for warm storage of vehicles and maintenance of equipment.
- Warehouse Facility 8- Constructed in 1960, this facility is utilized as a warehouse for the USAF.
- A 4,020 foot-long lighted gravel runway.

(ARCTEC, 2004) (USAF, 2007)

3.2 Environmental Setting

Average annual precipitation recorded at nearby Kuparuk is 4.00 inches (in), including 31.8 in. of snowfall. The average maximum temperature for the month of July is 55.9 degrees Fahrenheit (ºF), and the average minimum temperature is -24.4ºF for the month of February. Strong wintertime westerly winds are common and often occur with snowstorms and drifting new-fallen snow. Winds are generally milder in the summer and come from the east.

Daily maximum temperatures are below freezing from October through May. The Beaufort Sea is usually frozen during that period. The ice pack generally breaks from shore ice in June, and the shore is typically free of ice from July until mid-September. In summer, the cold air mass associated with the Arctic Ocean rides over the Arctic Coastal Plain, creating temperature inversions with cold air below and warmer air above. Such inversions break up when winds from the south or west bring warmer air into the coastal areas.

(Eni, 2009)

3.2.1 Geology

Soils and the surficial geology at the Oliktok LRRS are typical of the Arctic Coastal Plain. The principal soils consist of a tundra mat underlain by 21 to 33 ft. of poorly drained Holocene and Pleistocene sands, gravels, silts, clays, and organic silt and sand. These materials were deposited in marine, alluvial, fluvial, eolian, and lacustrine environments that comprise the Gubik Formation. The Gubik Formation overlies the consolidated Cretaceous sedimentary bedrock of the Nanushuk Group. No bedrock outcrops occur due to the relatively thick (up to 150 ft.) mantle of unconsolidated Quaternary sediments.

At the Oliktok LRRS, these unconsolidated surficial sediments consist of shallow-water marine materials deposited during periods of higher sea levels. Marine deposits are primarily sandy silts containing scattered pebbles and beds or lenses of clay, sand, and fine gravel. Marine sediments are mantled by 6 to 10 feet of late Pleistocene and Holocene thaw-lake sediments, consisting of peat and muds, commonly with a mixture of coarser pebbles, cobbles, and boulders. Although surficial sediments are unconsolidated, they are perennially bounded by frozen interstitial pore water (i.e., permafrost).

Coal, oil, and gas deposits are present in the area. Significant oil exploration and production facilities have been constructed south of the installation at Kuparuk and Prudhoe Bay. In December 1993, an earthquake measuring 5.7

on the Richter scale was recorded, with the epicenter 60 miles southeast of Prudhoe Bay at the foot of the Brooks Range.

(Eni, 2009)

3.2.2 Hydrology

The subject area is located on an area of continuous permafrost (frozen year-round) up to 2,000 feet deep. Potable groundwater is not present beneath the continuous permafrost. Perched groundwater above the permafrost is found during the summer months when the surface layer thaws. This zone above permafrost is called the active zone because it freezes and thaws with seasonal temperature changes. Groundwater is not presently used as a drinking water source due to continuous permafrost. Permafrost acts as a barrier to vertical movement of groundwater because the pore spaces are ice-filled in the zone of saturation.

Surface hydraulic features impact the subsurface distribution of permafrost because they influence heat transfer. Permafrost may be discontinuous or present at greater depths near large water bodies such as rivers and deep lakes. Therefore, shallow groundwater may be present in river gravel and in thaw bulbs beneath deep lakes. Permafrost is absent under the ocean except along the coastline and shallow shelf areas. The coastline is a transition zone at which the depth to permafrost gradually deepens and eventually becomes absent.

(Eni, 2009)

3.2.3 Vegetation and Wildlife

Vegetation and wildlife is consistent with other Arctic coastal areas and include lagoons along the Beaufort coast, thaw lakes, and shallow streams. Oliktok Point and much of the area around the LRRS is dotted with many small lakes and wetlands. Larger thaw lakes exist approximately 0.5 – 1.5 miles south of the facility. String bogs are typical features of the flat thaw-lake plains. Drainage is poor, and most runoff occurs as suprapermafrost sheet flow.

(Eni, 2009).

Vegetation within the Oliktok LRRS and surrounding areas is primarily wetland-specific. Dominant plants in the area include cottongrass (*Eriophorum*), water sedge (*Carex aquatilis*), and pendant grass (*Arctophila fulva*). Dwarf willow (*Salix*), alpine bearberry (*Arctostaphylos alpina*), and northern Labrador tea (*Ledum decumbens*) are also present in the area.

(USAF, 2005)

Notable wildlife near the Oliktok LRRS includes caribou, moose, salmon, polar bear, arctic fox, and brown lemming. The numerous ponds and standing water in depressions in, and around, the LRRS ensure nesting

and rearing habitats for the many species of birds that visit the area during the summer. Birds present in the area are predominantly migratory, and include:

- Northern Pintail (*Anas acuta*)
- American Wigeon (*Anas Americana*)
- Northern Shoveler (*Anas clypeata*)
- Mallard (*Anas platyrhynchos*)
- Gadwall (*Anas strepera*)
- Greater White-fronted Goose (*Anser albifrons*)
- Ruddy Turnstone (*Arenaria interpres*)
- Greater Scaup (*Aythya marila*)
- Brant (*Branta bernicla*)
- Canada Goose (*Branta canadensis*)
- Rough-legged Hawk (*Buteo lagopus*)
- Lapland Longspur (*Calcarius lapponicus*)
- Dunlin (*Calidris alpina*)
- Baird's Sandpiper (*Calidris bairdii*)
- White-rumped Sandpiper (*Calidris fuscicollis*)
- Pectoral Sandpiper (*Calidris melanotos)*
- Semipalmated Sandpiper (*Calidris pusilla*)
- Common Redpoll (*Carduelis flammea*)
- Hoary Redpoll (*Carduelis hornemanni*)
- Black Guillemot (*Cepphus grille*)
- Semipalmated Plover (*Charadrius semipalmatus*)
- Long-tailed Duck (*Clangula*
- Red-throated Loon (*Gavia stellata*)
- Barn Swallow (*Hirundo rustica*)
- Willow Ptarmigan (*Lagopus lagopus*)
- Glaucous Gull (*Larus hyperboreus*)
- Long-billed Dowicher (*Limnodromus scolopaceus*)
- White-winged Scoter (*Melanitta fusca*)
- Surf Scoter (*Melanitta perspicillata*)
- Yellow Wagtail (*Motacilla flava*)
- Red-breasted Merganser (*Mergus serrator*)
- Snowy Owl (*Nyctea scandiaca*)
- Savannah Sparrow (*Passerculus sandwichensis*)
- Red Phalarope (*Phalaropus fulicaria*)
- Red-necked Phalarope (*Phalaropus lobatus*)
- Snow Bunting (*Plectrophenax nivalis*)
- American Golden-plover (*Pluvialis dominica*)
- Spectacled Eider (*Somateria fischeri*)
- Common Eider (*Somateria mollissima*)
- King Eider (*Somateria spectabilis*)
- Long-tailed Jaeger (*Stercorarius longicaudus*)
- Parasitic Jaeger (*Stercorarius parasiticus*)
- Pomarine Jaeger (*Stercorarius pomarinus*)
- Arctic Tern (*Sterna*

hyemalis)
- Common Raven (*Corvus corax*)
- Tundra Swan (*Cygnus columbianus*)
- Yellow-rumped Warbler (*Dendroica coronata*)
- Yellow-billed Loon (*Gavia adamsii*)
- Pacific Loon (*Gavia pacifica*)

paradisaea)
- Buff-breasted Sandpiper (*Tryngites*
- *subruficollis*)
- Sabine's Gull (*Xema sabini*)

(USAF, 2005)

The following federally listed protected, threatened, and endangered species are found in the area of the Oliktok LRRS (Alaska Department of Fish and Game 2012):

- Polar bear, *Ursus maritimus* (threatened);
- Stellar's Eider, *Polysticta stelleri* (threatened);
- Spectacled Eider, *Somateria fischeri* (threatened);
- Bowhead whale, *Balaena mysticetus* (endangered); and
- Blue whale, *Balaenoptera musculus* (endangered)

(Alaska, 2012a)

Of these species, only the polar bear is known to have critical habitat that overlaps the area of the Oliktok LRRS. The U.S. Secretary of the Interior has exempted the Oliktok LRRS from the Polar Bear Critical Habitat designation under section 4(a)(3) of the *Department of the Interior, Fish and Wildlife Service*, 50 CFR, Part 17.

3.3 Hazardous Substances

The information in Sections 3.3 through 3.18 is based upon personnel interviews, records review, and the preliminary site inspection.

3.3.1 Hazardous Materials and Petroleum Products

The Oliktok LRRS has historically received and stored small quantities of hazardous materials, including a variety of flammable and combustible liquids such as diesel fuels and gasoline. Additional hazardous materials utilized by the station include acids, corrosives, compressed gases, hydraulic fluids, solvents, paints, paint thinners, and lubricants.

Records search and site investigations revealed there is no evidence that hazardous materials or petroleum products have been released within the Oliktok LRRS site boundaries outside of those discussed in Section 3.4.

3.3.2 Hazardous and Petroleum Waste

Hazardous waste generated at Oliktok LRRS have historically consisted of solvents, petroleum oil and lubricants, fuel wastes, batteries, asbestos, and wastes generated from site remediation activities.

Records search and site investigations revealed there is no evidence that hazardous materials or petroleum waste has been released within the Oliktok LRRS site boundaries outside of those discussed in Section 3.4.

3.4 Environmental Restoration Program (ERP) Contamination

Review of the *Oliktok Long Range Radar Site Environmental Restoration Program (ERP) Sites* map indicated that 10 ERP Sites are located within the boundaries of the Oliktok LRRS. The following provides the current status of the ERP sites:

LF001, Old Landfill- This site received wasted generated by the installation from 1956 to approximately 1978. The surface of the site was cleaned, covered, and reseeded between 1978 and 1980. Buried debris remains at the site. Current and future land use is industrial.

ST003, Dock Storage Area- The dock storage area was operated from 1956 until at least 1971, but not past 1987. Approximately 1/2-acre in size adjacent to the Beaufort Sea and a barge landing site. The site was used for drum storage. Sampling was completed in 1993 and again in 2002 and 2003. Petroleum and PCBs were detected in the soils at low levels. Exposure pathways and potential receptors determined insignificant. The Decision Document lists the selected remedy as No Further Action (NFA) and closure under CERCLA and Alaska State laws and regulations. Current and future land use is residential.

LF002, Dump Site- This site was used from the late 1970s to the 1980s for dumping debris from the installation. Current and future land use is industrial.

ST006, Module Train Spills- The site encompasses the gravel pad and tundra near the western end of the Module Train. Current and future land use is industrial.

ST008, Gasoline Storage Area- The gasoline storage area has been operated from 1956 to the present. The soil and surrounding tundra areas are impacted with petroleum. The Decision Document states that no remedy was proposed under CERCLA because releases were only petroleum. The selected remedy under state law was conditional closure. No contaminants exceeded the Method Two cleanup levels; therefore, site conditions are protective of human health and of the environment under all current and projected future uses, including residential land use.

SS010, Garage- The Garage is an active vehicle maintenance and storage building. Until 1993, the floor drains within the Garage discharged directly to

the ground surface below the building. Current and future land use is industrial.

SS007, Diesel Storage Area- The sites consist of the tundra to the north west of the Module Train that is impacted with diesel and gasoline constituents. The source is not clear, but could be the Module train diesel spill, the Petroleum, oil, and lubricant (POL) tanks in the tank farm, or other tanks no longer present. The Decision Document lists the selected remedy as NFA and closure under CERCLA and conditional closure under State of Alaska laws and regulations. No contaminants exceeded the Method Two cleanup levels; therefore, site conditions are protective of human health and of the environment under all current and projected future uses, including residential land use. This site is now closed on the Alaska Department of Environmental Compliance Contaminated Sites database with a cleanup complete determination.

ST004, POL Storage- The POL products site was used for storage until 1987. The suspected source of contaminants was from fuel spills and/or leaks from drum storage activities. Based upon a 1993 evaluation and 2004 sample results, it was determined that there was no significant risk to human health or the environment. This site was recommended for NFA.

SS005, Diesel Spill- This site was the location of a 300 gallon diesel fuel spill that occurred in 1978. The source of the spill was most likely the overfilling of the diesel day tank located near the northeast corner of the hanger. A 1993 risk assessment concluded that risks posed to human health or ecological receptors by site contaminants are minimal given current site uses. Current and future land use is industrial.

SS009, Diesel Storage Tanks- This site is associated with a former tank farm where two 65,000 gallon tanks stored arctic grade diesel fuel to supply the Oliktok LRRS installation. Current and future land use is industrial.

(USAF, 2007) (Alaska, 2012b)

3.5 Storage Tanks

A review of the Alaska Department of Environmental Conservation Underground Storage Tank (UST) database found no tanks associated with the Oliktok LRRS. Furthermore, no active or abandoned pipelines, hydrant fueling, or transfer systems were associated with the Oliktok LRRS. Section 3.5.1 provides information regarding Aboveground Storage Tanks at the Oliktok LRRS.

(Alaska, 2012c).

3.5.1 Aboveground Storage Tanks

Historically, operations at the Oliktok LRRS has involved the use of Aboveground Storage Tanks (AST)s containing bulk arctic-grade diesel fuel the largest of which were 65,000 gallons located within a POL tank farm,

which has been decommissioned. The following provides a historical listing of aboveground storage tanks at the Oliktok LLRS and their contents:

Tank Number	Contents	Capacity (gallons)
NA	Diesel Fuel Arctic (DFA)	275
NA	DFA	500
NA	DFA	500
NA	DFA	275
NA	DFA	275
7	DFA	4,000
NA	DFA	275
NA	DFA	275
NA	DFA	275
NA	DFA	275
NA	DFA	275
NA	DFA	275
NA	DFA	4,000
1	DFA	65,000
2	DFA	65,000
3	DFA	20,000
4	DFA	20,000
5	DFA	20,000
6	DFA	20,000
21	Motor Gasoline (MOGAS)	6,000
22	MOGAS	6,000
23	MOGAS	4,000
15	DFA	65,000
16	DFA	65,000

(USAF, 2003)

SNL activities would not take place within locations that previously or currently contain ASTs.

3.5.2 Underground Storage Tanks

This topic is not applicable to this land use permit site.

3.5.3 Pipelines, Hydrant Fueling, and Transfer Systems

There no underground water supply pipelines within the area of the subject property. No other known pipelines, hydrant fueling, or transfer systems are associated with this area.

3.6 Oil/Water Separators

There are no oil/water (o/ws) separators associated with subject property. No preexisting facilities of this nature are known to have existed within the Oliktok LRRS.

3.7 Pesticides

Records review, interviews, and site inspections revealed no evidence that pesticides or herbicides have resulted in any contamination within the Oliktok LRRS.

3.8 Medical or Biohazardous Waste

Records review and site inspections revealed there is no known medical or biohazardous waste associated with the Oliktok LRRS.

3.9 Energetic Material

Records review and site inspections revealed there has been no evidence to date which would confirm or deny the presence of ordnance at Oliktok LRRS. Past history and use would indicate that there were no USAF ordnance disposal areas at Oliktok LRRS.

3.10 Radioactive Waste

Records review and site inspections revealed that there has been no generation or storage of radioactive materials or waste at the Oliktok LRRS.

3.11 Solid Waste

In the past, Oliktok LRRS site waste disposal has consisted of waste incineration for all permitted materials combined with use of the local landfills. Waste is currently hauled off-site to the Oxbow Landfill. The visual site inspection of the hanger encountered a significant number of items being stored which may no longer serve a purpose. Appendix C provides a sample of site photographs of storage items.

3.12 Groundwater

Records review and site inspections revealed that there are no known groundwater impacts associated with the Oliktok LRRS.

3.13 Wastewater Treatment, Collection, and Discharge

Wastewater and sewage are disposed by means of a Smith and Loveless model D4S Fixed Activated Sludge Treatment (FAST) sewage treatment package plant. The system has a design hydraulic loading of 720 gallons per day, and an organic loading of 2.55 pounds per day biochemical oxygen

demand designed for approximately 15 persons. Treated effluent water is pumped onto the tundra in an area north-northwest of the radar station. These activities will not directly impact proposed SNL operational activities.

(ARCTEC, 2004) (Eni, 2009)

3.14 Drinking Water Quality

Drinking water for Oliktok LRRS is procured from the local commercial sources and trucked in to the installation and stored in tanks. No water lines or usage occur at the subject property. There is no known drinking water withdrawal at the subject property. Surface and subsurface water at the parcels is immediately adjacent to marine waters and will likely be brackish and not suitable as a drinking water source without treatment.

3.15 Asbestos

ACM and ACM abatement are regulated by the United States Environmental Protection Agency (EPA) and Department of Transportation, Occupational Safety and Health Administration (OSHA). Emissions of asbestos fibers into the ambient air are regulated in accordance with Section 112 of the Clean Air Act, which established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). The NESHAP addresses the demolition or removal of buildings containing ACM.

The current USAF practice is to manage or abate ACM in active facilities and abate ACM per regulatory requirements prior to facility demolition. Abatement of ACM occurs when there is potential for asbestos fiber releases to affect the environment or human health.

After visual site inspection and historical records review showing the date of construction, it is suspected that the Aircraft Hangar would contain ACM. If ACM is assumed or confirmed to be present, the friable ACM must be removed, if it is likely to release airborne fibers and cannot be reliably maintained, repaired, or isolated. All ACM identified as non-friable does not present a health hazard at this time as long as the ACM is not disturbed. It is not anticipated that any SNL activities would disturb areas of suspected ACM as SNL personnel would use the Aircraft Hangar for the purpose of a temporary work space sheltered from the outside elements.

3.16 Polychlorinated Biphenyls (PCBs)

According to past EBS reports, all transformers at Oliktok LRRS are the dry-type, which do not contain PCB-laden oil. Additionally, no spills of PCB oil have been reported. A PCB paint survey was conducted as part of a 2005 environmental investigation; a paint sample was collected from each of the diesel ASTs on the subject property. PCB concentrations in these paint samples were below the detection limits for the laboratory analysis. No PCB-amended paint is present at the subject property in excess of regulatory levels.

(Eni, 2009) (USAF, 2003)

3.17 Radon

A radon assessment has not been conducted at Oliktok LRRS. However, the lack of basements and the practice of elevating the buildings off the ground decreases the possibility of radon contamination of the facilities. The tundra location is noted for having an extremely low probability of radon contamination.

3.18 Lead-Based Paint

Due to the age of the structures, it should be assumed that most facilities constructed prior to the implementation of the Department of Defense (DoD) ban on the use of lead-based paint in 1978 are likely to contain one or more coats of such paint.

SECTION 4.0 FINDINGS FOR ADJACENT PROPERTIES

4.1 Land Uses

Adjacent properties to the Oliktok LRRS include the Eni petroleum production plant and undeveloped land. No contamination from USAF property was identified outside of the boundaries of the Oliktok LRRS.

4.2 Surveyed Properties

Adjacent property was visually inspected via a “windshield” tour. As a result of the records search and site inspections of properties adjacent to the LRRS boundaries, it has been determined that no contamination has occurred at any of the off-site properties.

SECTION 5.0 APPLICABLE REGULATORY COMPLIANCE ISSUES

This section presents the findings of the EBS as they relate to the environmental regulatory compliance issues identified during the assessment of the land use permit site that could pose either a risk of liability or a risk to human health or the environment.

5.1 List of Compliance Issues

There are no compliance issues identified during assessment of the land use permit site that might pose either a risk of liability or risk to human health or the environment. The USAF has responsibility for remediation of ERP sites on the installation.

5.2 Description of Corrective Actions

This topic is not applicable to this land use permit site.

5.3 Estimates of Various Alternatives

Proposed Action:

This topic is not applicable to this land use permit site.

5.4 Other Alternatives

No Action Alternative:

This topic is not applicable to this land use permit site.

SECTION 6.0 CONCLUSIONS

To the best of the author's knowledge there are no known or undisclosed environmental impacts at this permit site, unless otherwise noted within this document.

6.1 Facility Matrix

Category 1 – Areas where no release or disposal of hazardous or petroleum substances has occurred (including no migration of these substances from adjacent areas).

6.2 Property Categories Map

This topic is not applicable to this land use permit site.

6.3 Resources Map

This topic is not applicable to this land use permit site.

6.4 Data Gaps

There appears to be sufficient information to categorize the subject sites and no further effort needs to be made to obtain additional information.

SECTION 7.0 CERTIFICATION

"I have conducted this Environmental Baseline Survey in cooperation with the U.S. Air Force in accordance with the requirements contained in Air Force Instruction 32-7066, *Environmental Baseline Surveys in Real Estate Transactions.* I have reviewed all reasonably obtainable records and conducted visual site inspections of the selected facilities following an analysis of information during the record search. The information contained within the survey report is based on records made available and, to the best of my knowledge, is correct and current as of February 20, 2013."

Certified by:

_____ Date: _____

Christopher S. Catechis,
Sandia National Laboratories

Accepted by:

_____ Date: _____

Susan D. Lacy
Department of Energy,
Sandia Field Office (SFO)

LIST OF APPENDICES

Appendix A **Land Use Permit Site Location Maps**

Appendix B **Oliktok Long Range Radar Station Environmental Restoration Program Site Location Map;**

Appendix C **Site Inspection Photographs**

Appendix D **References**

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Appendix A

Land Use Permit Site Location Maps

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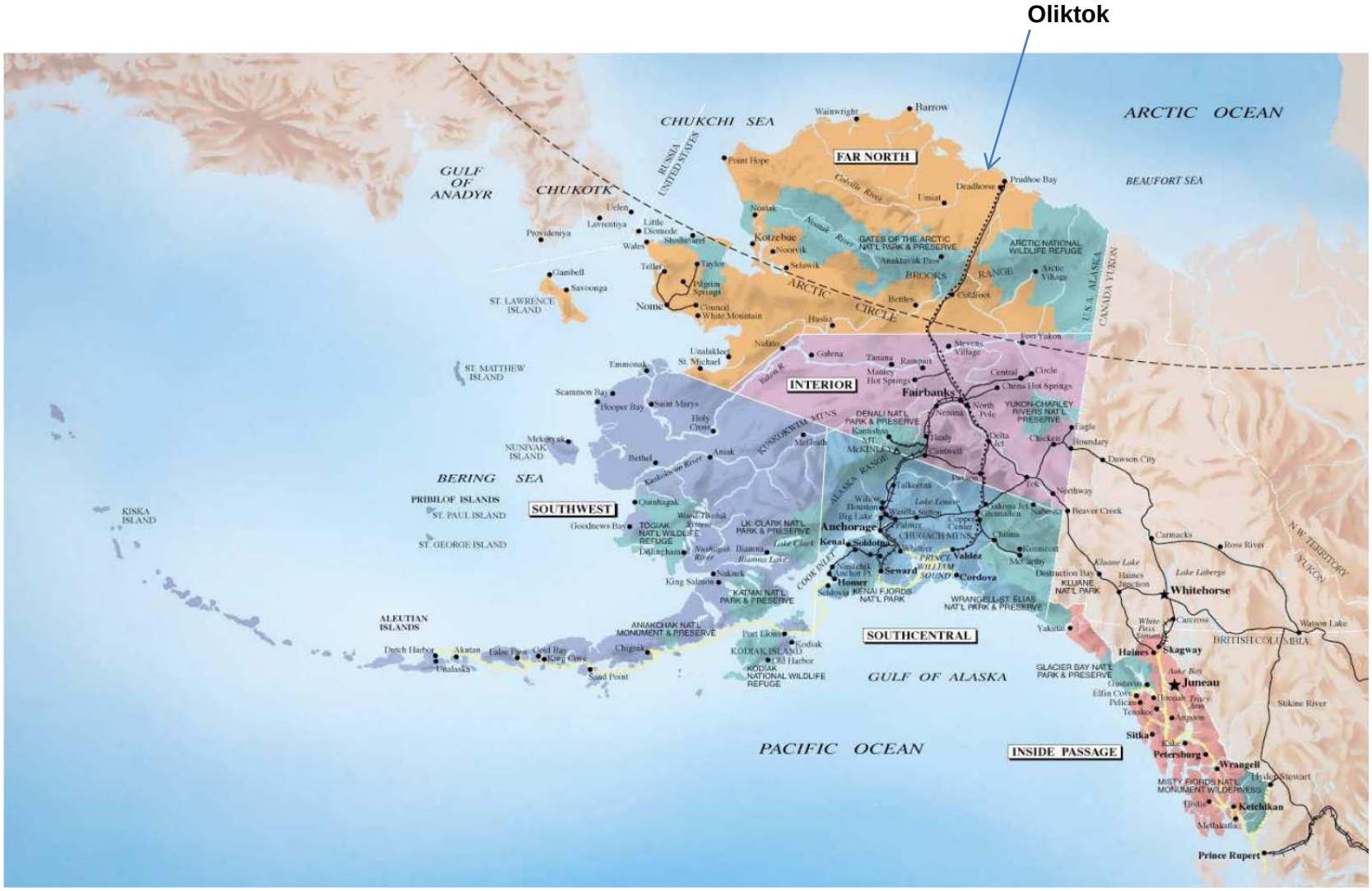
SANDIA NATIONAL LABORATORIES LAND USE PERMIT FOR OPERATIONS AT OLIKTOK ALASKA LONG RANGE RADAR STATION

General Site Location Map



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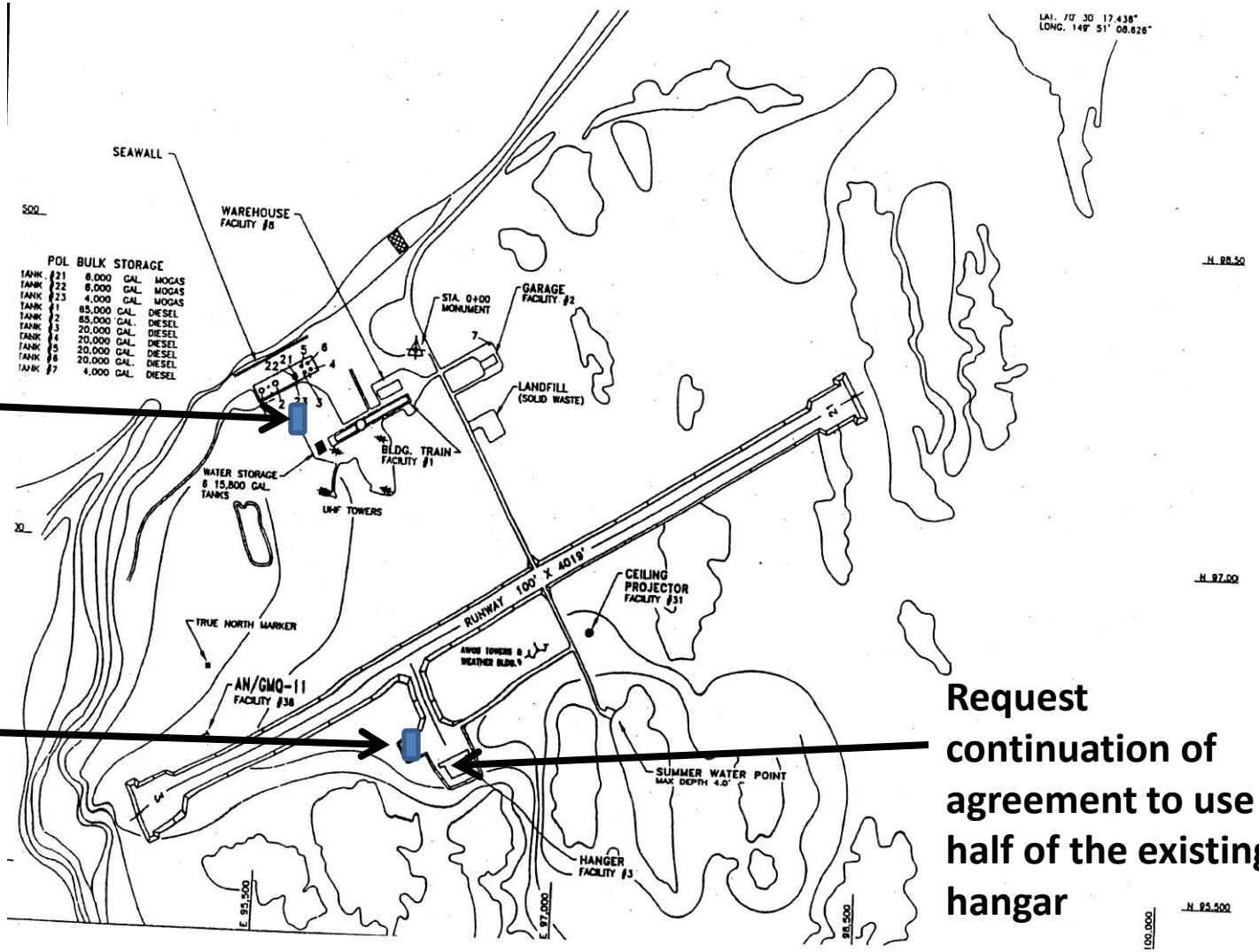
Oliktok LRRS: Request for Land and Facility Use by Sandia National Labs

Request one-half acre in roughly this location

Request one-half acre in roughly this location



Request continuation of agreement to use half of the existing hangar

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Oliktok LRRS: Request for Land and Facility Use by Sandia National Labs

Request one-half acre in roughly this location

Request one-half acre in roughly this location

Request continuation of agreement to use half of the existing hangar

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Existing Hangar at Oliktok LRRS

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Appendix B

Oliktok Long Range Radar Station Environmental Restoration Program Site Location Map

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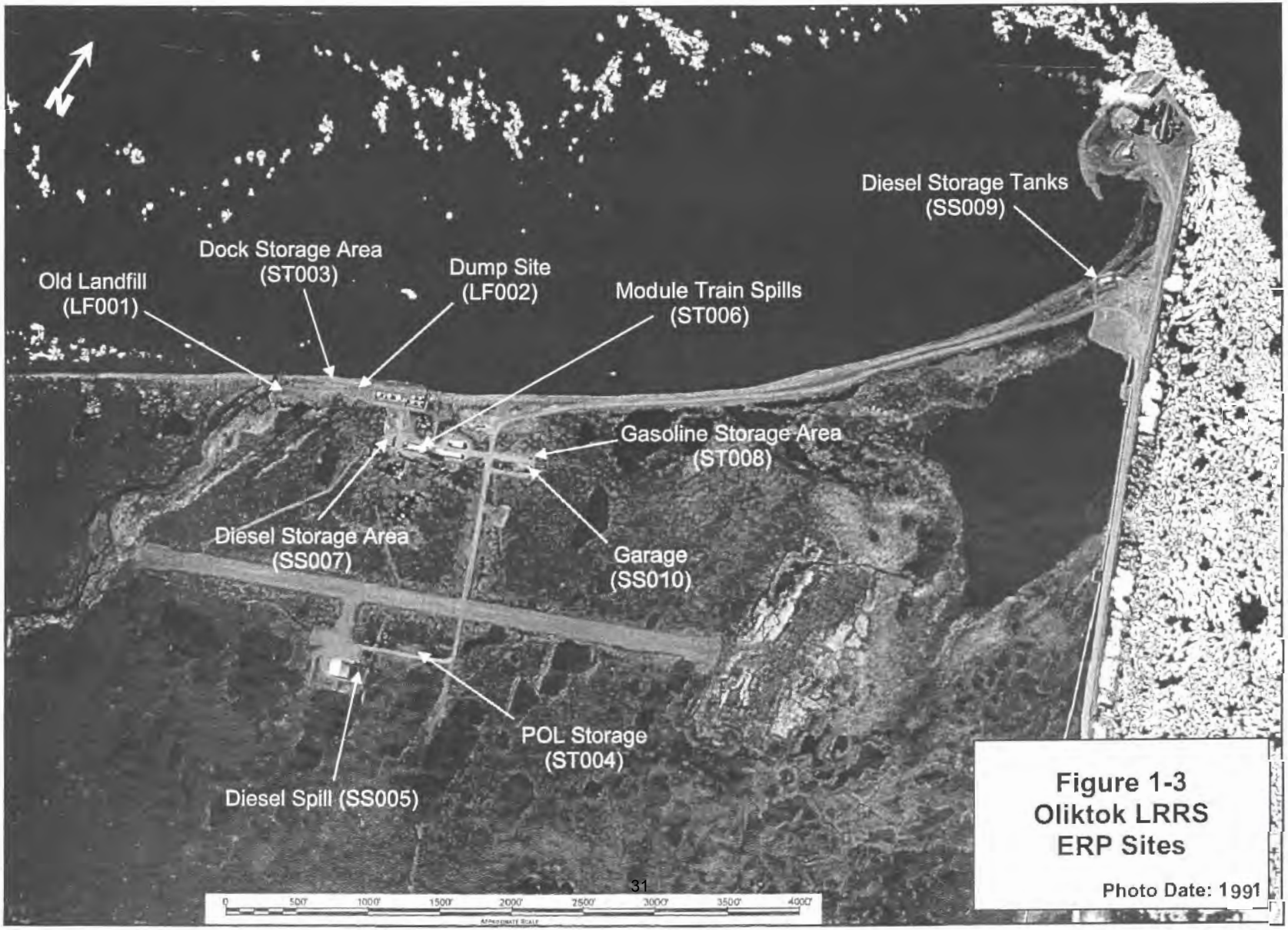

Figure 1-3
Oliktok LRRS
ERP Sites

Photo Date: 1991

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Appendix C

Site Inspection Photographs

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Site Inspection Photographs

Photograph C-1. Site A, looking east toward LRRS main facility.

Photograph C-2. Site A, looking west.

Photograph C-2. Site B, looking southeast toward hanger.

Photograph C-3. Site B, looking south from entryway toward rear of hanger.

Photograph C-4. Site B, entryway of hanger looking east.

Photograph C-5. Site B, rear of hanger looking southwest.

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Appendix D

References

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