THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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File No: 360.38.002

May 26, 2015

Lori Roy
AFCE/OLAR
18291 Tarabrooke Drive
Gulfport, MS 39503

Stacie McIntosh
BLM – Arctic Field Office
1150 University Avenue
Fairbanks, AK 99709

Decision Document: Wainwright DEW Line/LIZ-3/Garage Area SS007 Cleanup Complete Determination

Dear Ms. Roy and Ms. McIntosh:

The Alaska Department of Environmental Conservation (ADEC) has reviewed the environmental records for the Wainwright Distant Early Warning (DEW) Line LIZ-3 Garage Area SS007 site near Wainwright, Alaska. This decision letter memorializes the site history, cleanup actions, and standard conditions for long-term site management. No further remedial action is required.

Site Name and Location
Wainwright Short Range Radar Station (SRRS), Garage Area SS007
Kuk River on the Chukchi Sea, 4.5 miles southeast of the village of Wainwright

Responsible Party
United States Air Force

Landowner
United States Department of the Interior, Bureau of Land Management

DEC Site Identifiers
File No: 360.38.002 Hazard ID: 796

Regulatory Authority for Determination
18 AAC 75

Site Description and Background

The Wainwright SRRS is located on federal lands within the National Petroleum Reserve-Alaska (NPR-A), approximately 4.5 miles southeast of the village of Wainwright. The Wainwright SRRS was constructed as a DEW Line Station in 1953 and was an active manned station until 1989. It was converted into an unmanned SRRS in 1994. The station was closed by the U.S. Air Force in 2008. The Air Force contractor completed site demolition activities in 2013. The Technical Services Building and the Radar Building/Radar Antenna remain on site. All other buildings, including all structures at the garage area, have been demolished and all tanks and fuel pipelines have been removed.

The Garage Area SS007 is located on a gravel pad north of the former Module Train and includes the former garage building and culvert outfall area, the former petroleum, oil, and lubricants (POL) hut, and the former base equipment and supplies building. The garage building was used for vehicle maintenance and storage. It is raised above the surrounding gravel pad on wooden piles. Used oil and other fluids and wastes were discarded through floor drains directly onto the surface of the gravel pad below. Culverts drained the area under the garage building into the surrounding tundra. The POL hut was a wooden building on skids used to store petroleum products. The base equipment and supplies building was a small wooden shed on skids located northeast of the garage building.

Record of Decision

The Air Force prepared a Record of Decision (ROD) in 2011 selecting removal and off-site disposal of contaminated soil as the final remedy at this site. The ROD selected the ADEC's Method Two Arctic Zone cleanup levels, 18 AAC 75.341, Tables B1 and B2, for this site. The table below presents the contaminants of concern identified in the ROD and their cleanup levels for this site.

Contaminants of Concern and Cleanup Levels

Contaminant	Cleanup Level
Diesel Range Organics (DRO)	12,500 mg/kg
Residual Range Organics (RRO)	13,700 mg/kg
Polychlorinated Biphenyls (PCBs)	1 mg/kg

mg/kg = milligrams per kilogram

Characterization and Cleanup Activities

Investigations of the Garage Area site occurred in 1993, 2004, 2007, and 2009. Based on these investigations, a remedial action was performed in 2011. All of the buildings and associated infrastructure at the Garage Area were demolished by the Air Force in 2013.

Garage Building and Culvert Area

During previous investigations, soil, sediment, and surface water samples were collected from under the garage building and at the culvert outfall and analyzed for gasoline, diesel, and residual range organics (GRO, DRO, and RRO), volatile organic compounds (VOCs), including benzene, toluene, ethylbenzene, and xylenes (BTEX), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), pesticides, and metals. GRO and fuel related VOCs (ethylbenzene, xylene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzne, 4-isopropyltoluene, naphthalene, and tetrachloroethene) have been detected at the site but did not exceed the established cleanup levels. DRO, RRO, and PCBs were the detected above cleanup levels under the garage building and at the outfall of a culvert on the west side of the building.

A remedial action in 2011 included the removal and off-site disposal of approximately 60 cubic yards of PCB and petroleum contaminated soil from under the garage building and 21 cubic yards of contaminated soil from the culvert area. Confirmation results were below the cleanup levels for DRO, RRO, and PCBs. One sample from below the garage building contained naphthalene at 165 mg/kg, above the outdoor inhalation cleanup level of 42 mg/kg, but below the direct contact cleanup level of 1900 mg/kg.

POL Hut

In 2007, soil samples were collected from soil borings at the POL hut. Samples were analyzed for GRO, DRO, RRO, and BTEX. Based on the sample results, RRO was the only contaminant that exceeded the cleanup level. Results for GRO, DRO, and BTEX were below cleanup levels.

A remedial action in 2011 included the removal and off-site disposal of approximately 6 cubic yards of petroleum contaminated soil from the POL hut. Nine confirmation samples were collected from the limits of the excavation. The laboratory reported that one sample had RRO at 14,000 mg/kg, which was revised from an initial reported 9,300 mg/kg due to a laboratory dilution error. A corresponding duplicate from this location had a concentration of 8,700 mg/kg. All other sample results were below the cleanup levels.

Base Supplies and Equipment Building

In 2007, soil samples from the perimeter of the Base Supplies and Equipment Building were analyzed for VOCs, DRO, RRO, and PCBs. PCBs were detected above the cleanup level in one sample. All other contaminants were below cleanup levels. Additional characterization was performed in 2009 to further delineate the extent of PCB contaminated soil.

A remedial action in 2011 included the removal and off-site disposal of approximately 23 cubic yards of PCB contaminated soil at the base supplies and equipment building. Confirmation sampling results for PCBs were all below the cleanup level.

Cumulative Risk Evaluation

Pursuant to 18 AAC 75.325(g), when detectable contamination remains on-site following a cleanup, a cumulative risk determination must be made that the risk from hazardous substances does not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed a cumulative noncarcinogenic risk standard at a hazard index of one across all exposure pathways.

Based on a review of the environmental record, ADEC has determined that residual contaminant concentrations do not pose a cumulative human health risk.

Exposure Pathway Evaluation

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using DEC's Exposure Tracking Model (ETM). Exposure pathways are the conduits by which contamination may reach human or ecological receptors. ETM results show all pathways to be one of the following: De-Minimis Exposure, Exposure Controlled, or Pathway Incomplete. A summary of this pathway evaluation is presented below.

Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	De Minimis	Contaminated soil has been removed from this site. One confirmation sample collected at 2 feet below the ground surface had a result for naphthalene above the outdoor air inhalation level, but below the direct contact cleanup level. Adjacent confirmation sample results were all below the cleanup level and the remaining volume of contaminated soil has been determined to be de minimis.
Sub-Surface Soil Contact	De Minimis	Contaminated soil has been removed from this site. One confirmation sample result for RRO was above the applicable cleanup level, however all other confirmation sample results were below the cleanup level. The remaining volume of contaminated soil has been determined to be de minimis.
Inhalation – Outdoor Air	De Minimis	Contaminated soil has been removed from this site. One confirmation sample collected at 2 feet below the ground surface had a result for naphthalene above the outdoor air inhalation level, however the adjacent confirmation sample results were all below the cleanup level and the remaining volume of contaminated soil has been determined to be de minimis.
Inhalation – Indoor Air (vapor intrusion)	De Minimis	Contaminated soil has been removed from this site. One confirmation sample had a result for naphthalene above the outdoor air inhalation level, however the adjacent confirmation sample results were all below the cleanup level and the remaining volume of contaminated soil has been determined to be de minimis. No buildings are present at the Garage Area.
Groundwater Ingestion	Pathway Incomplete	The ADEC has made a general determination that the presence of continuous permafrost in the Arctic Zone acts as a barrier for soil contaminant migration to a groundwater zone of saturation (ADEC Guidance No. SPAR 99-3, Policy for Establishing Cleanup Levels for Sites in the Arctic Zone in Accordance with 18 AAC 75, Article 3)
Surface Water Ingestion	Pathway Incomplete	Contaminated soil has been removed from this site. Results from surface water samples in 2007 were all below the applicable cleanup levels.
Wild and Farmed Foods Ingestion	De Minimis	PCBs are a potential concern for bioaccumulation, however the PCB contaminated soil has been removed from this site and all confirmation samples for PCBs were below the cleanup levels.
Exposure to Ecological Receptors	Pathway Incomplete	Contaminated soil has been removed from this site. An ecological risk assessment was performed in 1993 and determined that ecological risk at the Garage Area is not significant.

Notes to Table 2: "De-Minimis Exposure" means that in ADEC's judgment receptors are unlikely to be affected by the minimal volume or concentration of remaining contamination. "Pathway Incomplete" means that in ADEC's judgment contamination has no potential to contact receptors. "Exposure Controlled" means there is an administrative mechanism in place limiting land or groundwater use, or a physical barrier in place that deters contact with residual contamination.

ADEC Decision

Remedial actions at the Garage Area included the removal and off-site disposal of petroleum and PCB contaminated soil. One sample from below the garage building contained naphthalene at 165 mg/kg, above the outdoor inhalation cleanup level of 42 mg/kg, but below the direct contact cleanup level of 1900 mg/kg. Adjacent confirmation sample results were all below the cleanup level. At the POL hut, one sample had RRO at 14,000 mg/kg, which is above the approved cleanup level of 13,700 mg/kg. All other sample results were below the cleanup levels. DEC has determined that these results represent a de minimis volume of contaminated soil above the approved cleanup levels. This site will receive a "Cleanup Complete" designation on the Contaminated Sites Database, subject to the following standard conditions.

Standard Conditions

1. Any proposal to transport soil or groundwater off-site requires DEC approval in accordance with 18 AAC 75.325. A "site" [as defined by 18 AAC 75.990 (115)] means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership.

2. Soil remains onsite with residual levels of diesel and residual range organics at concentrations with the potential to cause a water quality violation if placed in direct contact with wetlands or surface water. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.

This determination is in accordance with 18 AAC 75.380 and does not preclude DEC from requiring additional assessment and/or cleanup action if future information indicates that this site may pose an unacceptable risk to human health or the environment.

Appeal

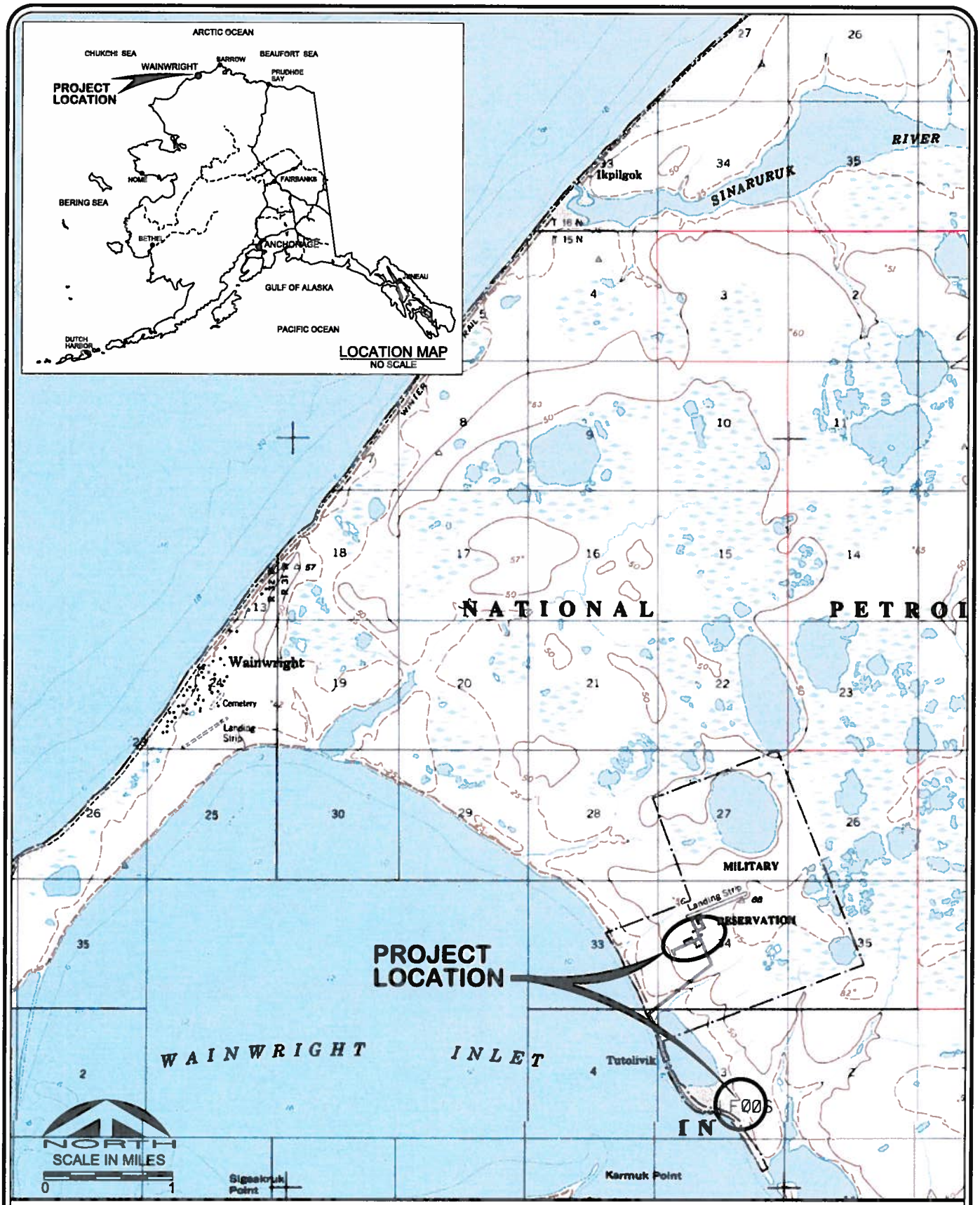
Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99811-1800, within 15 days after receiving the department's decision reviewable under this section. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99811-1800, within 30 days after the date of issuance of this letter, or within 30 days after the department issues a final decision under 18 AAC 15.185. If a hearing is not requested within 30 days, the right to appeal is waived.

If you have questions about this closure decision, please feel free to contact me at (907) 451-5175 or melody.debenham@alaska.gov.

Sincerely,

Melody Debenham
Environmental Program Specialist

Attachments: Figure 1-1 – Location and Vicinity Map (MWH, 2012)
Figure 1-2 – Site Map (MWH, 2012)



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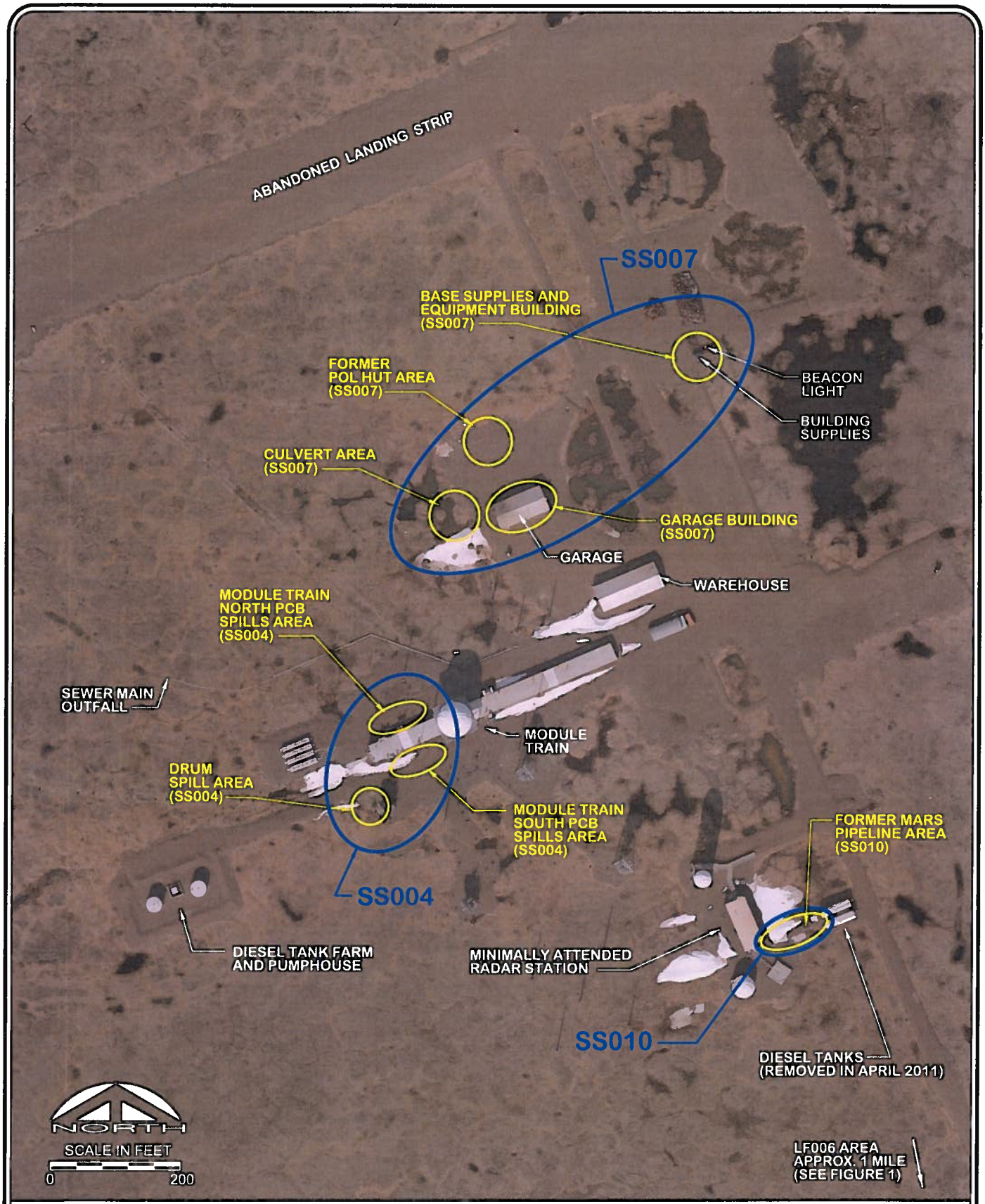
MWH
Anchorage, Alaska

FIGURE 1-1

USAF - JOINT BASE ELMENDORF-RICHARDSON
WAINWRIGHT SHORT RANGE RADAR SITE
SS004, SS007, AND LF006 REMEDIAL ACTION

LOCATION AND VICINITY MAP



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MWH
Anchorage, Alaska

FIGURE 1-2

USAF - JOINT BASE ELMENDORF-RICHARDSON
WAINWRIGHT SHORT RANGE RADAR SITE
SS004, SS007, AND LF006 REMEDIAL ACTION

SITE MAP