



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND
RESPONSE

Contaminated Sites Program

555 Cordova Street
Anchorage, AK 99501

Phone: 907-269-7557

Fax: 907-269-7687

www.dec.alaska.gov

File: 2657.38.001

December 27, 2022

Electronic Delivery Only

Richard A. Ragle

CEPOA-PM-C-FUDS

Alaska District U.S. Army Corps of Engineers

PO Box 6898

JBER, AK 99506-6898

**Re: Decision Document: Tigalda Island
Cleanup Complete Determination**

Dear Mr. Ragle,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Tigalda Island, Alaska. Based on the information provided to date, it has been determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment and no further remedial action will be required unless information becomes available that indicates residual contaminants may pose an unacceptable risk.

This Cleanup Complete determination is based on the administrative record for the Tigalda Island, which is located in the ADEC office in Anchorage, Alaska. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

Site Name and Location:

Tigalda Island

30 Miles East of Akutan

Aleutian Islands, Alaska, 99553

Name and Mailing Address of Contact Party:

Richard A. Ragle CEPOA-PM-C-FUDS

Alaska District U.S. Army Corps of Engineers

PO Box 6898

JBER, AK 99506-6898

DEC Site Identifiers:

File No.: 2657.38.001

Hazard ID.: 2825

Regulatory Authority for Determination:

18 AAC 75

Site Description and Background

Tigalda Island and adjacent islands compose the Krenitzin/Fox Islands group of the eastern Aleutian Islands. Tigalda Island is approximately 12 miles long and 4 miles wide and has gently to steeply sloped mountains that rise to more than 1,000 feet above mean sea level. Most of the terrain is covered by tundra. The United States Army began construction of an Aircraft Warning Station (AWS) on the southeast corner of Tigalda Island (Figure 1) in 1943 which became operational in 1944. The AWS comprised of a 14-building arrangement consisting of six Quonset hut barracks, a kitchen/mess facility, a storage warehouse, a radio building, a powerhouse, radio van antenna structures, latrines, and a water pump house (Figure 2). Tigalda Island is now owned and managed by the Akutan Corporation, except for the parcel of land that includes the AWS which is still managed by the United States Fish and Wildlife Service.

During the 1999 site investigation, soil contamination above the applicable cleanup levels related to Department of Defense use was discovered at the site.

Contaminants of Concern

During the site characterization and cleanup activities at this site, samples were collected from soil, groundwater and surface water and analyzed for diesel range organics (DRO), residual range organics (RRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), polycyclic aromatics hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total metals, total organic carbon (TOC) and pesticides. Results for groundwater and surface water were below the applicable cleanup levels.

Based on the analyses listed, the following contaminants were detected in soil above the applicable cleanup levels and are considered Contaminants of Concern at this site:

- DRO
- RRO
- 1-Methylnaphthalene
- 2-Methylnaphthalene
- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Chrysene
- Dibenz(a,h)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-c,d)pyrene
- Naphthalene
- Phenanthrene
- Pyrene

Cleanup Levels

Soil analytical results were compared to the more restrictive of either 18 AAC 75.341(c) Method Two Table B1 and B2, Migration to Groundwater or Over 40 Inch Zone ingestion and inhalation cleanup levels apply to this site.

Groundwater and surface water analytical results were compared to ADEC Groundwater Cleanup Levels 18 AAC 75.345 Table C. and Alaska Water Quality Standards 18 AAC 70 Human Health for Consumption criteria. All results were below the most stringent cleanup levels.

Table 1- Approved Cleanup Levels

Contaminant	Soil (mg/kg)
DRO	260
RRO	8,300
Acenaphthene	37
Acenaphthylene	18
Anthracene	390
Benzo(a)anthracene	0.70
Benzo(a)pyrene	1.2
Benzo(b)fluoranthene	12
Benzo(g,h,i)perylene	1,900
Benzo(k)fluoranthene	120
Chrysene	600
Dibenz(a,h)anthracene	1.2
Fluoranthene	590
Fluorene	36
Indeno(1,2,3-c,d)pyrene	12
1-Methylnaphthalene	0.41
2-Methylnaphthalene	1.3
Naphthalene	0.038
Phenanthrene	39
Pyrene	87

mg/kg = milligrams per kilogram

Bold Human Health (Inhalation/Ingestion) cleanup levels are more stringent than Migration to Groundwater cleanup levels

Characterization and Cleanup Activities

The 1993 initial field investigation was conducted to identify and categorize if there were Defense Environmental Restoration Program (DERP)-eligible hazards and to identify potential public health and/or environmental hazards related to DoD use of the site. Sampling was not performed.

During the 1998 site investigation, sixteen soil samples at background locations and various areas of concern (AOCs) were collected at the Tigalda AWS. Soil samples were analyzed for DRO, GRO, RRO, VOCs, SVOC, PCBs, pesticides, and metals. The analytical results indicated soil at the Radar Van Shelter had concentrations of RRO, benzo(a)anthracene and benzo(a)pyrene above the applicable

cleanup levels. Soil at the Power Plant Site had benzo(a)pyrene contamination above applicable cleanup levels. The 1998 site investigation recommended further investigation at both sites.

Sampling and field screening was conducted during the 1999 site visit at the Power House and Radar Van Shelter. Samples from the Power House were analyzed for DRO, RRO, BTEX and PAHs and all contaminant concentrations were below applicable cleanup levels. Samples from the Radar Van Shelter were analyzed for DRO, RRO, BTEX and PAHs. Only DRO concentrations were above the applicable cleanup levels. The site visit report recommended removal of the underground storage tank (UST) at the Kitchen/Mess Hall and excavation of contaminated soil at the Radar Van Shelter.

The 2017 site visit included logistical reconnaissance for a future Removal Action/Remedial Investigation. Sampling was not performed.

During the 2018 removal action, all identified containerized hazardous, toxic, and radioactive waste (CON/HTRW) items were removed, transported, and disposed offsite. The CON/HTRW items removed included two USTs, one hot water heater mercury switch, and a total of approximately one cubic yard of petroleum oil lubricant (POL)-contaminated soil from the Power House and Kitchen/Mess Hall AOCs. Samples were collected from soil, groundwater and surface water and analyzed for DRO, RRO, BTEX, PAHs, PCBs, total metals, TOC and pesticides. Sample results confirmed that the detected soil concentrations were present above migration to groundwater cleanup levels at the Radar Van Shelter, Kitchen/Mess Hall, and Latrine/Bathhouse AOCs and was recommended for future Removal Action/Remedial Investigation.

During the 2021 removal action, a total of 78.95 tons of petroleum contaminated soil were removed from the Radar Van Shelter, Kitchen/Mess Hall, and Latrine/Bathhouse AOCs, transported, and disposed offsite. Confirmation soil sample results indicated that all potential contaminant sources were removed, and remaining contaminant concentrations were below the most stringent cleanup levels.

Note: No evidence of groundwater was identified during the 2017 and 2021 site visits. Groundwater was observed in two of the six temporary piezometers installed during the 2018 Removal Action/Remedial Investigation. The two piezometers where groundwater was sampled were installed to depths of 1.88 feet (ft) below ground surface (bgs) and 0.58 ft bgs. Most of the piezometers were dry upon installation and only contained water after a significant rainfall event. Observations of groundwater suggest that groundwater is only present at the Tigalda AWS as sheet flow during high precipitation events. Groundwater and surface water are not at risk since all soil above migration to groundwater has been removed from the site.

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 meet the human health cumulative risk criteria for residential land use.

Exposure Pathway Evaluation

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using ADEC’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 included in Table 2.

Table 2 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	De-Minimis Exposure	Contamination remains in the surface soil (0 to 2 feet below ground surface) at concentrations below the most stringent cleanup levels.
Sub-Surface Soil Contact	De-Minimis Exposure	Contamination remains in the subsurface soil (2 to 15 feet below ground surface) at concentrations below the most stringent cleanup levels.
Inhalation – Outdoor Air	De-Minimis Exposure	Contamination remains in the subsurface but below the most stringent cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	No buildings are present at the site, and remaining contaminant concentrations are below the most stringent cleanup levels.
Groundwater Ingestion	Pathway Incomplete	Contamination is below the migration to groundwater cleanup levels, and therefore not expected to migrate to groundwater.
Surface Water Ingestion	Pathway Incomplete	Contamination was detected in the surface water but below the most stringent cleanup levels.
Wild and Farmed Foods Ingestion	Pathway Incomplete	Contaminants of concern do not have the potential to bioaccumulate in plants or animals.
Exposure to Ecological Receptors	Pathway Incomplete	The remaining contaminants are below the most stringent cleanup levels and are not present at concentrations to indicate that exposure to ecological receptors is occurring.

Notes to Table 2: “De-Minimis Exposure” means that in ADEC’s judgment receptors are unlikely to be adversely 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.

ADEC Decision

Soil contamination at the site have been cleaned up to concentrations below the most stringent cleanup levels and the site is suitable for residential land use. 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 from a site that is subject to the site cleanup rules or for which a written determination from the department has been made under 18 AAC 75.380(d)(1) that allows contamination to remain at the site above method two soil cleanup levels or groundwater cleanup levels listed in Table C requires DEC approval in accordance with 18 AAC 75.325(i) 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. (See attached site figure.)
2. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.
3. Groundwater throughout Alaska is protected for use as a water supply for drinking, culinary and food processing, agriculture including irrigation and stock watering, aquaculture, and industrial use. Contaminated site cleanup complete determinations are based on groundwater being considered a potential drinking water source. In the event that groundwater from this site is to be used for other purposes in the future, such as aquaculture, additional testing and treatment may be required to ensure the water is suitable for its intended use.

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

Informal Reviews and Adjudicatory Hearings

A person authorized under a provision of 18 AAC 15 may request an informal review of a contested decision by the Division Director in accordance with 18 AAC 15.185 and/or an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340. See DEC’s “Appeal a DEC Decision” web page <https://dec.alaska.gov/commish/review-guidance/> for access to the required forms and guidance on the appeal process. Please provide a courtesy copy of the adjudicatory hearing request in an electronic format to the parties required to be served under 18 AAC 15.200. Requests must be submitted no later than the deadline specified in 18 AAC 15.

If you have questions about this closure decision, please feel free to contact me at (907) 269 7552, or email at daniela.fawcett@alaska.gov.

Sincerely,

Daniela Fawcett

Daniela Fawcett
Project Manager

Enclosures:

- Figure 1: Site location
- Figure 2: Project site features of interest

cc: Spill Prevention and Response, Cost Recovery Unit

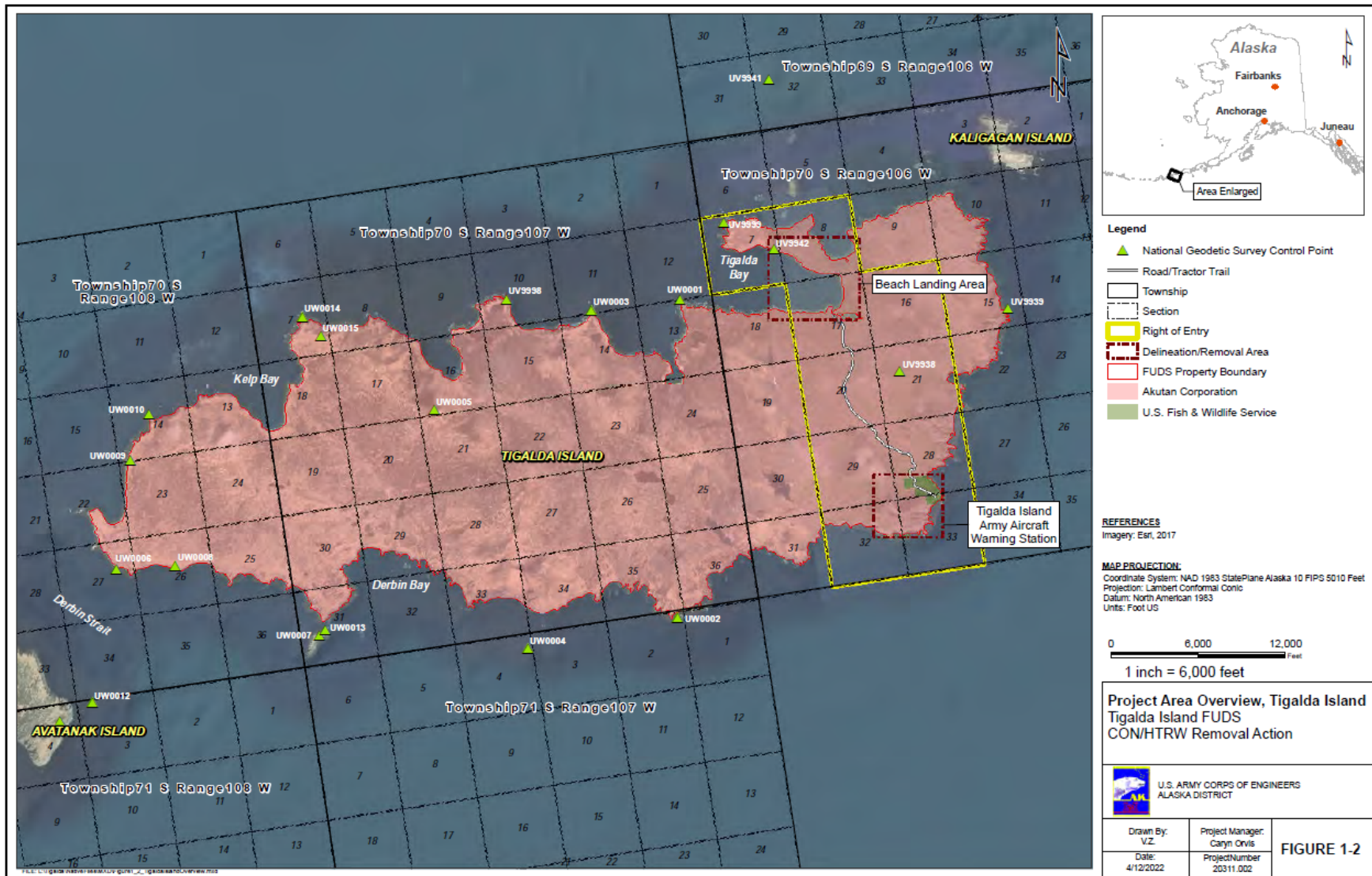


Figure 1: Site location

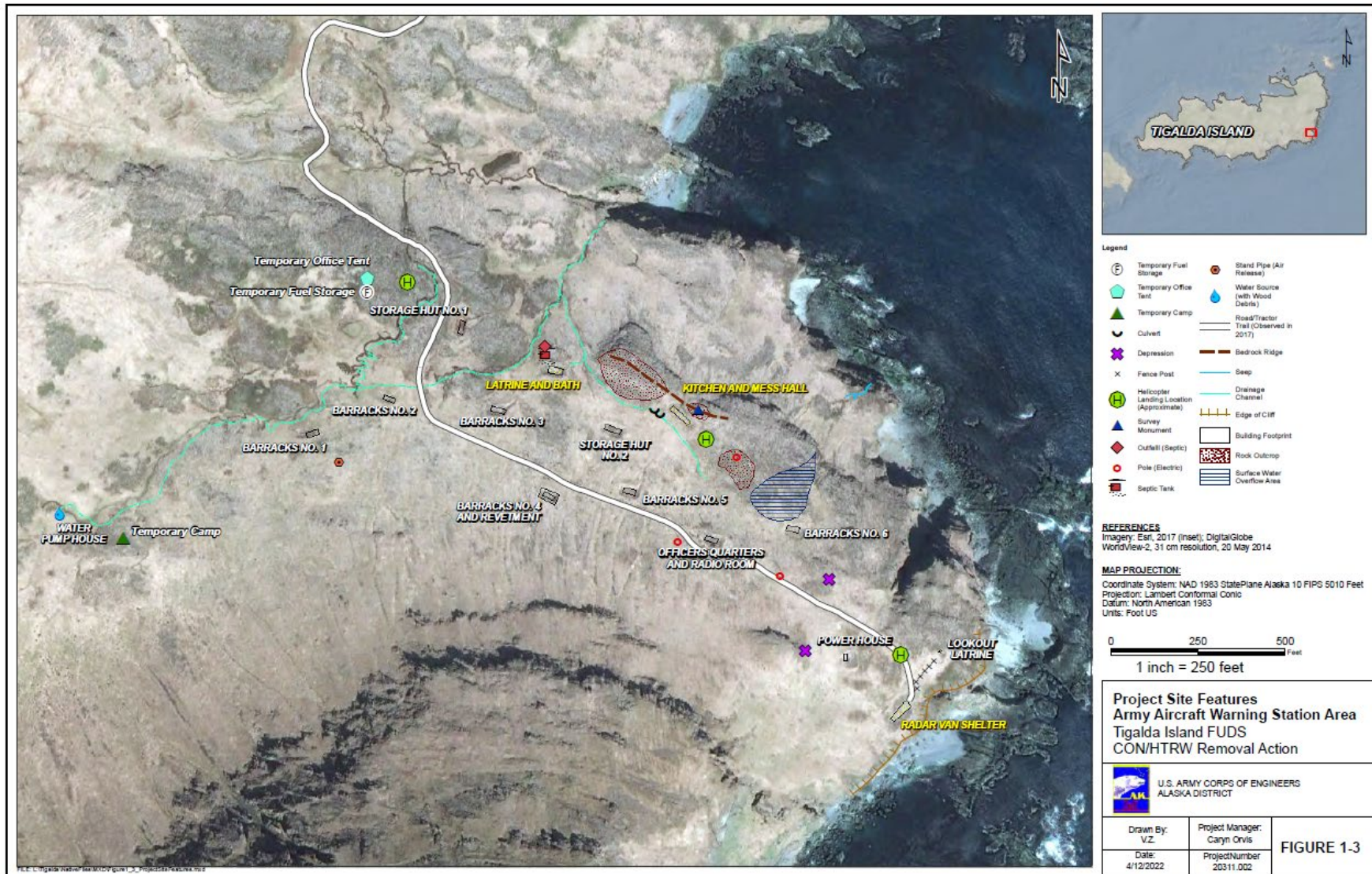


Figure 2: Project site features of interest