



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

**Department of Environmental
Conservation**

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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DEC File No: 141.38.066

August 1, 2023

U.S. Army Garrison Alaska, Fort Greely
ATTN: Chief, Environmental Division, Directorate of Public Works (Crofford)
P.O. Box 31310
Fort Greely, Alaska 99731-1310

Re: Decision Document: Fort Greely Bldg 159 BRAC 98
Cleanup Complete Determination

Dear Mr. Crofford,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with the Fort Greely Bldg 159 site located in Old Post, between A, C, 5th, and 6th Streets in Fort Greely. 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 "Fort Greely Bldg 159 BRAC 98" site maintained by DEC. This decision letter summarizes the site history, cleanup actions and levels, and site closure conditions that apply.

Site Name and Location:

Fort Greely Bldg 159 BRAC 98
Old Post, Between A, C, 5th, and 6th Streets
Fort Greely, AK 99731

Name and Mailing Address of Contact Party:

U.S. Army Garrison Alaska, Fort Greely
ATTN: Chief, Environmental Division,
Directorate of Public Works (Crofford)
P.O. Box 31310
Fort Greely, Alaska 99731-1310

DEC Site Identifiers:

File No.: 141.38.066
Hazard ID.: 2949

Regulatory Authority for Determination:

18 AAC 75

Site Description and Background

The Fort Greely Building 159 site was used as a boat shop, warehouse, and hangar, and was the location of a 3,000-gallon underground storage tank (UST), used for heating the building. The tank was installed in or around 1948. The Army removed the building in 1990, and an investigation in 1993 reported a partially exposed UST with a disconnected supply line near the building. The UST was removed in July 1994. During tank removal efforts, the Army detected petroleum contamination at the site. 200 cubic yards (cy) of contaminated soil was excavated to a depth of 20 feet and temporarily stockpiled. Soil samples indicated exceedances of the applicable cleanup levels, listed below. The stockpiled soil was returned to the excavation and the site was designated as contaminated.

In 1995, the Base Realignment and Closure (BRAC) Commission listed Fort Greely for realignment and partial closure. Portions of the post were closed, with the land proposed for eventual transfer to the City of Delta Junction. To prepare for the land transfer, the main cantonment area and Allen Army Airfield (AAAF) were divided into parcels and allocated a BRAC designation and investigated to determine whether environmental issues would prohibit the land transfer. The Building 159 site was allocated BRAC 98.

Soils in the Fort Greely area are comprised of mainly shallow, well-drained silt loams with sandy to gravelly underlying material. Borings in the area show that sandy gravels dominate but are interlaced with discontinuous silt-rich zones that are less permeable and can slow migration of contaminants through the substrate. Groundwater at Fort Greely fluctuates, but typically sits at around 200 feet below ground surface (bgs).

Contaminants of Concern

During the site investigation and cleanup activities at this site, samples were collected from soil and groundwater and analyzed for diesel, gasoline, and residual range organics (DRO, GRO, RRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), and polycyclic aromatic hydrocarbons (PAHs). Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern (COCs) at this site:

- DRO
- Ethylbenzene
- Xylenes
- Naphthalene
- 1- and 2- Methyl-naphthalene

Cleanup Levels

Soil cleanup levels applicable to the site are the most stringent Method 2 cleanup levels for the under 40-inches of precipitation climate zone found in 18 AAC 75.341(c), Table B1 and 18 AAC 75.341(d), Table B2. These are identified in Table 1. Groundwater cleanup levels applicable to this site are found in 18 AAC 75.345, Table C. Groundwater samples at the site never showed exceedances of Table C values, and so are not represented in Table 1.

Table 1 – Approved Cleanup Levels

Contaminant	Soil (mg/kg)
DRO	250
Ethylbenzene	0.13
Xylenes, total	1.5

Naphthalene	0.038
1-Methylnaphthalene	0.41
2-Methylnaphthalene	1.3

Notes:

1. mg/kg = milligrams per kilogram

Characterization and Cleanup Activities

After the removal of the UST in 1994, and initial site characterization efforts, the Army conducted a site investigation in 1995. Four soil borings were advanced in the area, resulting in detections above the migration to groundwater cleanup level for DRO at 32 feet bgs. No further remedial work was completed until 2010, when the Army advanced six soil borings to characterize the vertical extents of contamination (see Figure 3). Soil samples were collected and analyzed for DRO, GRO, RRO, BTEX, and PAHs. DRO was detected above its migration to groundwater cleanup level in two borings between 10-55 feet bgs. Other COCs were detected above migration to groundwater cleanup levels at up to 55 feet bgs. Vertical delineation showed clean samples below these exceedances, indicating groundwater was not impacted. Based on the screening results of the soil borings, the Army excavated approximately 375 cy of impacted soil to a depth of fifteen feet. No exceedances of human health remain at the site. Monitoring wells were never installed for sampling at the Building 159 site specifically, however a nearby monitoring well (MW-15) was sampled and showed an exceedance of Table C for one contaminant, naphthalene, in 2021. Due to the complete vertical delineation at the site, and the known naphthalene plume from an upgradient site (Fort Greely Building 163, BRAC 94, see modified Figure 8-3 from the *2016 Groundwater Monitoring and Data Analysis Report*, attached), the Army has demonstrated the contamination is not due to the release at this site.

Remaining Contamination

The maximum concentrations of contaminants remaining at the site are shown in Table 2. These concentrations are below the human health cleanup levels identified in 18 AAC 75.341, Tables B1 and B2. Sample locations referred to in Table 2 are shown in Figure 3.

Table 2 – Maximum Contaminant Concentrations Remaining in Soil

Contaminant	Soil (mg/kg)	Depth (feet)	Sample Location	Date Sampled
DRO	6,320	20-22	AP-676	1995
Ethylbenzene	0.504 J	35	1008BRAC98 ISB-04035-10	2010
Xylenes, total	5.81 J	35	1008BRAC98 ISB-04035-10	2010
Naphthalene	7.96	35	1008BRAC98 ISB-04035-10	2010
1-Methylnaphthalene	15.1	35	1008BRAC98 ISB-04035-10	2010
2-Methylnaphthalene	21.9	35	1008BRAC98 ISB-04035-10	2010

Notes:

1. J = estimated value

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 (HI) of 1 across all exposure pathways.

Based on a review of the environmental record, DEC 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 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 either De Minimis Exposure or Pathway Incomplete. A summary of this pathway evaluation is included in Table 3.

Table 3 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	De Minimis Exposure	Contamination has been cleaned up in surface soil to below human health cleanup levels.
Subsurface Soil Contact	De Minimis Exposure	Contamination remains in the subsurface soil below human health cleanup levels in 18 AAC 75.341, Tables B1 and B2. Contamination is at a depth below 15 feet and is not expected to be encountered during normal construction excavation or maintenance activities.
Inhalation – Outdoor Air	De Minimis Exposure	Contamination remains in the subsurface soil below human health and inhalation levels identified in 18 AAC 75.341, Tables B1 and B2.
Inhalation – Indoor Air (vapor intrusion)	De Minimis Exposure	The site background indicates there is clean fill material overlying and mitigating volatile petroleum related compounds from the residual soil contamination. No structures are present in the area of contamination and residual soil contamination is not above inhalation levels.
Groundwater Ingestion	Pathway Incomplete	Subsurface sampling at depth indicated contamination is below migration to groundwater cleanup levels identified in 18 AAC 75.341, Tables B1 and B2 beneath the source area. Contamination did not reach groundwater.
Surface Water Ingestion	Pathway Incomplete	Contaminants are not expected to migrate to surface water. The closest surface water to the site is over a ½ mile downgradient.
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 site is on an active military installation and there are no terrestrial or aquatic exposure routes.
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Notes:

1. “De Minimis Exposure” means that, in DEC’s judgment, the receptors are unlikely to be adversely affected by the minimal volume or concentration of remaining contamination.
2. “Pathway Incomplete” means that, in DEC’s judgment, the contamination has no potential to contact receptors.

DEC Decision

Soil contamination at the site has been cleaned up to concentrations below the approved cleanup levels suitable for residential land use. This site will receive a “Cleanup Complete” designation on the Contaminated Sites Database.

DEC approval is required for movement and disposal of soil and/or groundwater subject to the Site Cleanup Rules, in accordance with 18 AAC 75.325(i). Please contact DEC for information about applicable regulations and requirements. A “site”, as defined by 18 AAC 75.990, means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership.

Movement or use of contaminated material in an ecologically sensitive area or in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited. Furthermore, 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. If, in the future, groundwater from this site is to be used for other purposes, 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 DEC 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 the project manager Erica Blake at (907) 451-2182, or at erica.blake@alaska.gov. You may also contact me at (907) 451-2131, or email at tim.sharp@alaska.gov.

Sincerely,

Timothy Sharp

Environmental Program Specialist

cc: DEC, Division of Spill Prevention and Response, Cost Recovery Unit
Erica Blake, DEC
Dennis Shepard, DEC
Sam Klein, USAEC
Justin Hogrefe, FGA ENVR
Chris Locke, FGA ENVR
Guy Warren, USACE

Figure 8-3 BRAC Site 94 DRO Plume, September 2016 Concentrations





