



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: 900.38.001

February 16, 2024

Beth Astley, Section Chief
Formerly Used Defense Sites Program
United States Army Corps of Engineers, Alaska District
P.O. Box 6898
JBER, AK 99506-0898

Re: Decision Document: Haines-Fairbanks Pipeline MP 569- Birch Lake
Cleanup Complete Determination

Dear Ms. Astley:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with the Haines-Fairbanks Pipeline MP 569- Birch Lake located in the Birch Lake State Recreation Area at milepost 305 of the Richardson Highway near Fairbanks (64.316306°N, 146.640694°W). 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 Haines-Fairbanks Pipeline MP 569-Birch Lake maintained by DEC. This decision letter summarizes the site history, cleanup actions and levels, and site closure conditions that apply.

Site Name and Location:

Haines-Fairbanks Pipeline MP 569-Birch Lake
Mile 305 Richardson
Salcha, Alaska 99714

Name and Mailing Address of Contact Party:

Fomerly Used Defense Sites Program
United States Army Corps of Engineers, Alaska District
P.O. Box 6898
JBER, AK 99506-0898

DEC Site Identifiers:

File No.: 900.38.001
Hazard ID.: 4483

Regulatory Authority for Determination:

18 Alaska Administrative Code (AAC) 75

Site Description and Background

The Haines-Fairbanks Pipeline (HFP) extended 626 miles from Haines to Fairbanks and delivered fuel to Eielson Air Force Base (AFB), Fort Greely and Fort Wainwright (formerly Ladd AFB). The Birch Lake Storage Area was a bulk fuel storage facility with 2 tanks, 277,000 gallons each, a 3-inch “take off” line from the main pipeline at milepost 569 of the HFP, and a truck-loading rack. The facility, built in the 1960s, was located at milepost 305 of the Richardson Highway within the Birch Lake State Recreation Area (State of Alaska), and adjacent to the Birch Lake Recreation Area (Air Force). The tanks were built over an Air Force recreation site’s “camp dump.” In the 1970s, the tanks and accompanying piping and truck-loading rack were decommissioned and, reportedly, soil directly under and around the tanks was removed. An investigation in 2007 identified petroleum contamination around Tank 1. A subsequent removal action in 2017 revealed pesticide contamination related to the military recreation site’s camp dump. The pesticide contamination is a collocated site known as Eielson AFB (SER-2) (DP55) Birch Lakes.

Contaminants of Concern

During the site investigation and cleanup activities at this site, samples were collected from soil and analyzed for Resource Conservation and Recovery Act (RCRA) metals, residual range organics (RRO), diesel range organics (DRO), gasoline range organics (GRO), volatile organic compounds (VOC), polynuclear aromatic hydrocarbons (PAH), polychlorinated biphenyls (PCB), and pesticides. Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern (COCs) at this site. Additional contaminants of concern are present and associated with the collocated pesticide site.

- DRO
- GRO
- Benzene
- Toluene
- Ethylbenzene
- Total Xylenes
- Naphthalene
- 1,2,4-trimethylbenzene
- 1,3,5- trimethylbenzene
- 1,2- dibromoethane (EDB)
- 1-methylnaphthalene
- 2-methylnaphthalene

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. Groundwater was not encountered at the site.

Table 1 – Approved Cleanup Levels

Contaminant	Soil (mg/kg)
DRO	250
GRO	300

Benzene	0.022
Toluene	6.7
Ethylbenzene	0.13
Total Xylenes	1.5
Naphthalene	0.038
1,2,4-trimethylbenzene	0.61
1,3,5-trimethylbenzene	0.66
1,2- dibromoethane	0.00024
1-methylnaphthalene	0.41
2-methylnaphthalene	1.3

mg/kg = milligrams per kilogram

Characterization and Cleanup Activities

In 2007 United State Army Corps of Engineers contractors excavated within and near the footprints of the two tanks. Within the Tank 1 footprint, a north-south trench (40 feet long) was excavated up to 4.5 feet below ground surface (bgs). A west-east trench (20 feet long) was excavated up to 3.5 feet bgs. A deep test pit to 15 feet bgs was excavated near Tank 1. Seven primary laboratory samples were collected from the Tank 1 excavations. Those samples were analyzed for RCRA metals, RRO, DRO, GRO, PAH, benzene, toluene, ethylbenzene, and xylenes (BTEX). Samples collected from the Tank 1 footprint had detections above the migration to groundwater cleanup levels of GRO up to 4,900 mg/kg, DRO up to 2,400 mg/kg and naphthalene up to 17 mg/kg. Concentrations of contaminants exceeding current human health cleanup levels were detected with benzene up to 23 mg/kg, toluene up to 770 mg/kg, ethylbenzene up to 190 mg/kg, and total xylenes up to 1,000 mg/kg. Within the Tank 2 footprint, a north-south trench (40 feet long) was excavated up to 3 feet below ground surface (bgs). An east-west trench (40 feet long) was excavated up to 3 feet bgs. Eight primary laboratory samples were collected from the Tank 2 excavations and samples were analyzed for RCRA metals, RRO, DRO, GRO, PAH, and BTEX. Except for presumed naturally-occurring arsenic and chromium, analytes for all Tank 2 samples were below the current migration to groundwater cleanup levels. No groundwater was encountered during the 2007 investigation. Eighty cubic yards of contaminated soil was excavated and sent to the former Organic Incineration Technology, Inc (OIT), currently known as the Moose Creek Facility, for treatment.

In 2008 a Rapid Optical Screening Tool/laser-induced fluorescence (ROST/LIF) investigation was conducted on the HFP and included the Birch Lake Storage Area. At the Birch Lake Storage Area, 37 ROST probes were advanced ranging from 2.5 to 17 feet bgs with most terminating at refusal due to shallow bedrock. No groundwater was encountered. The investigation focused on Tank 1, with only a few probes around Tank 2. Five primary laboratory samples were collected around the Tank 1 footprint from the areas of the highest LIF responses and were analyzed for RRO, DRO, GRO, PAH, RCRA metals, and VOC. In the Tank 1 footprint, DRO above the migration to groundwater cleanup levels was detected in one sample at 2 to 3 feet bgs at 1,800 mg/kg. Naphthalene was detected above current cleanup levels in three samples up to 3 mg/kg. Arsenic up to 33 mg/kg was detected in all five samples above cleanup levels. Chromium was detected in one sample up to 60 mg/kg. In one sample, 1,2-dibromoethane (EDB) was detected at 0.0075 mg/kg. The extent of contamination was not determined and no removal took place.

In 2017, Formerly Used Defense Sites Program (FUDS) undertook contaminated soil removal at three sites including the Birch Lake Storage Area. During excavation at the site inert metal debris, 55-gallon drums, and empty cans were encountered around 3 to 4 feet bgs. Some of the cans were marked as “Insecticide DDT Residual Spray Roach and Ant Control.” Discovery of pesticides and other waste stopped the

excavation so that an investigation of the pesticide area and characterization of the 270 cubic yard stockpile could be conducted.

The final excavation was approximately 22 feet by 26 feet and between 4 and 6 feet deep. Ten primary confirmation samples were collected from the base and sidewalls in locations with the highest photo-ionization detector (PID) readings and were analyzed for RRO, DRO, GRO, RCRA metals, VOC, PAH, and pesticides. Four additional confirmation samples were collected in the base of the excavation near the pesticide cans. These samples were analyzed for VOC, PCB, and pesticides. One sample was also analyzed for dioxins and furans. No PCB were detected. The excavation confirmation sample results indicated that DRO, GRO, arsenic, VOC, PAH, and pesticides remained in place in excess of the most stringent cleanup levels. Contamination remaining related to the petroleum releases included DRO up to 13,400 mg/kg, and PAH and VOC concentrations exceeding both the most stringent and human health cleanup levels. Organochlorides detected in the confirmation samples included 1,4-dichlorobenzene up to 0.0623 mg/kg, 4,4'-DDD up to 375 mg/kg, 4,4'-DDE up to 7.71 mg/kg, chlordane up to 162 mg/kg, lindane up to 0.762 mg/kg, heptachlor up to 1.27 mg/kg, and heptachlor epoxide up to 0.0394 mg/kg.

Five primary samples of the contaminated soil waste were analyzed for RRO, GRO, DRO, total lead, VOC, PAH, PCB, and pesticides. No PCB were detected but petroleum and pesticide contamination were detected in excess of the cleanup levels. The contaminated soil with organochlorides (pesticides) did not meet the acceptance criteria of OIT and approximately 270 tons were shipped to and disposed in the Columbia Ridge landfill.

In 2021 FUDS conducted a removal action near the former Tank 1 to remove and dispose of all petroleum contamination at the site related to the use of the two former tanks and appurtenances. A total of 1,907 cubic yards of comingled pesticide and petroleum contaminated soil were excavated and disposed at Moose Creek Facility which was, by this time, approved for organochlorides. The 2021 excavation encompassed the Tank 1 source areas identified by laboratory sampling in the previous investigations. Bedrock was encountered throughout the excavation and no groundwater was observed during this removal action or at any time throughout the project. A total of 27 primary laboratory confirmation samples were collected from the base and sidewalls of the excavation. Samples were analyzed for RRO, DRO, GRO, VOC, EDB, PAH, pesticides, PCB, and RCRA metals. No PCB were detected in the confirmation samples. All RRO, DRO, GRO, VOC, PAH and RCRA metals, except for arsenic, were well below the most stringent cleanup levels. Following the excavation the site was re-seeded.

Pesticide constituents remained in place including 4,4'-DDD up to 16.8 mg/kg, alpha-Chlordane up to 0.665 mg/kg, Chlordane up to 5.62 mg/kg, gamma-Chlordane up to 0.777 mg/kg, heptachlor up to 0.107 mg/kg, and heptachlor epoxide up to 0.11 mg/kg. These contaminants will be managed as part of the Eielson AFB (SER-2) (DP55) Birch Lakes contaminated site (file number 107.38.051, hazard identification number 359).

Remaining Contamination

Concentrations of petroleum contaminants of concern related to releases from the tanks, piping, and truck loading rack are all below the migration to groundwater cleanup levels. Collocated pesticide contaminants related to the dump associated with the Eielson AFB (SER-2) (DP55) Birch Lake site are considered in the cumulative risk evaluation but managed under the collocated 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 (HI) of 1 across all exposure pathways.

Based on a review of the environmental record, DEC has determined that residual contaminant concentrations do not meet the human health cumulative risk criteria for residential land when you factor in the presence of the comingled pesticide contamination related to the collocated site Eielson AFB (SER-2) (DP55) Birch Lakes. The risk posed by the pesticides will be addressed under the Eielson AFB (SER-2) (DP55) Birch Lakes.

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 included in Table 2.

Table 2 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	Contamination is not present in surface soil (0 to 2 feet below ground surface).
Subsurface Soil Contact	Pathway Incomplete	Petroleum contamination remains in the subsurface below both the most stringent and human health (inclusive of direct contact) and ingestion levels in 18 AAC 75.341, Tables B1 and B2.
Inhalation – Outdoor Air	Pathway Incomplete	Contamination remains in the subsurface below human health and inhalation levels in 18 AAC 75.341, Tables B1 and B2.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	All petroleum contamination presents is in concentrations below the most stringent cleanup levels.
Groundwater Ingestion	Pathway Incomplete	Contamination exceeding the migration to groundwater cleanup levels were excavated from the site.
Surface Water Ingestion	Pathway Incomplete	Surface water is more than 1,000 feet away and is not used as a drinking water source in the vicinity of the site.
Wild and Farmed Foods Ingestion	Pathway Incomplete	Petroleum contaminants of concern do not have the potential to bioaccumulate in plants or animals.
Exposure to Ecological Receptors	Pathway Incomplete	Contamination related to this site does not reach Birch Lake where aquatic life could be affected.

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 related to petroleum releases from the tanks and appurtenances at the site have been cleaned up to concentrations below the approved cleanup levels suitable for residential land use. Groundwater is not present at the site due to shallow bedrock. This site will receive a “Cleanup Complete” designation on the Contaminated Sites Database.

Due to the presence of comingled contamination associated with another site, 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 me at (907) 269-7691, or email at lisa.krebs-barsis@alaska.gov.

Sincerely,

DocuSigned by:

Lisa Krebs-Barsis

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Lisa Krebs-Barsis
Project Manager