THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

610 University Avenue
Fairbanks, AK 99709-3643
Phone: 907-451-2143
Fax: 907-451-2155
www.dec.alaska.gov

File: 2542.38.023
Hazard ID: 2877

November 3, 2023

Rena Flint
USACE, Alaska District
PO Box 6898
JBER, AK 99506-0809

Re: Decision Document: Dutch Hbr-Unalaska Vly UST 2060
Cleanup Complete Determination

Dear Ms. Flint,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with the Dutch Hbr-Unalaska Vly UST 2060, located in Unalaska Valley in Unalaska, 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 Dutch Hbr-Unalaska Vly UST 2060, which is located in the DEC 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:
Dutch Hbr-Unalaska Vly UST 2060
Former Bldg 2060
Unalaska Valley
Unalaska, AK, 99685

Name and Mailing Address of Contact Party:
Rena Flint
USACE, Alaska District
PO Box 6898
JBER, AK 99506-0809

DEC Site Identifiers:
File No.: 2542.38.023
Hazard ID.: 2877

Regulatory Authority for Determination:
18 AAC 78 and 18 AAC 75

Site Description and Background
Underground Storage Tank (UST) 2060 was associated with a former mess hall, Building 2060, located in Unalaska Valley, Unalaska, Alaska. During a Remedial Investigation and interim removal actions (IRA) in 1997, a single-walled steel 300-gallon UST with heavy corrosion was located near the

remnants of the Building 2060 structure. The UST and 880 cubic yards (cy) were removed from the site in August and September 1998 and thirteen confirmation samples were collected from the base and sidewalls from the excavation. Two soil samples were found to exceed the most stringent migration to groundwater DEC Method Two soil cleanup level for DRO (230 mg/kg), at a maximum detected concentration of 670 mg/kg.

Contaminants of Concern
During the site characterization and cleanup activities at this site, samples were collected from soil and analyzed for DRO, residual range organics (RRO), benzene, toluene, ethylbenzene, and xylenes (BTEX), and polycyclic aromatic hydrocarbons (PAHs). Based on these analyses, the following contaminant was detected above the default DEC cleanup levels and is considered a Contaminant of Concern at this site:

- DRO

Cleanup Levels
The applicable cleanup levels at the site are the calculated method three site-specific alternative cleanup level (ACL) under 18 AAC 75.340 (e). A site-specific organic carbon content of soil (foc) value of 0.034 grams per gram (g/g) was used in the Petroleum Cleanup Level Calculator, as opposed to the default Method Two foc value of 0.001 g/g.

Table 1 – Approved Cleanup Levels

Contaminant	Soil[1] (mg/kg)
DRO	7,500

[1] Alternative Cleanup Level based on approved site-specific soil data and the equations set out in the department's *Procedures for Calculating Cleanup Levels,* dated February 1, 2018. The most stringent ACL value for DRO is the Migration to Groundwater Cleanup Level.
mg/kg = milligrams per kilogram

Characterization and Cleanup Activities
In the mid 1990's, the Formerly Used Defense Sites (FUDS) program conducted site inspections in Unalaska to find and dispose of remaining debris, USTs, and other potential contaminant sources. During a Remedial Investigation (RI) and interim removal action (IRA) in 1997, a single-walled steel 300-gallon heating oil UST with heavy corrosion was identified at the former Mess Hall Building 2060. During subsequent IRA activities in 1998, approximately 150 gallons of water with a hydrocarbon odor were pumped from the tank and the UST was removed. Approximately 880 cy of soil were excavated and identified as contaminated by visual and olfactory evidence, in addition to field screening results. Excavation extent was limited to the east due to the presence of a gravel road and pond. Offsite water continually flowed into the excavated area during excavation activities, likely due to the nearby upgradient pond to the east. Approximately 7,350 gallons of impacted water were pumped from the excavation during site activities and transferred to the wastewater treatment plant.

The excavation area was approximately 5,500 square feet, with the vertical extent averaging 4 feet to 6 feet bgs. Approximately 70 cubic yards of presumed clean soil excavated was stockpiled soil (soil that

passed field screening) and imported gravel and thermally treated soils were used to backfill the excavation.

Thirteen soil samples were collected from the excavation sidewalls and base, and three samples were collected from a segregated presumed clean soil stockpile. All samples were submitted for DRO, RRO, and BTEX analyses. Two samples collected from the bottom of the excavation were also submitted for PAHs. DRO exceeded DEC Method Two soil cleanup levels in soil samples, at concentrations of 320 mg/kg and 670 mg/kg. RRO, VOC, and PAH concentrations did not exceed the most stringent DEC Method Two cleanup levels. Following the 1998 field activities, no further action was recommended at the site. See Figure 1 for the historical sampling locations and concentrations.

In 2002, two sediment samples were collected from the drainage ditch located adjacent to the limits of the 1998 excavation. The first sediment sample was collected approximately 6 feet downstream of the limits of the 1998 excavation, with a result of 61 mg/kg DRO. A second sediment sample was collected approximately 10 feet upstream of the excavation, and approximately 100 feet downgradient of the pond, with a result of 220 mg/kg DRO; sheen and odor were not observed during sampling. Based on the findings of the investigation, this site was recommended for no further action.

In 2009, because two historical DRO sample results were above DEC Method Two migration to groundwater cleanup level, a Method Three alternative cleanup level of 7,500 mg/kg was calculated and approved in the *Final Soil Sampling and Statistical Analysis for Background Concentrations and Alternative Cleanup Levels,* dated August 2009. All DRO sample results are below the most stringent DEC Method Three alternative cleanup level, which is the Migration to Groundwater cleanup level. The Method Three Alternative Cleanup Level calculations are shown in Figure 2.

Cumulative Risk Evaluation

Pursuant to 18 AAC 78.600(d), 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, 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 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 (<2 ft bgs) but is below the ingestion cleanup level.

Sub-Surface Soil Contact	De Minimis Exposure	Contamination remains in the sub-surface soil (>2 ft bgs) but is below the ingestion cleanup level.
Inhalation – Outdoor Air	Pathway Incomplete	Residual contaminants in soil are not volatile.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	Residual contaminants in soil are not volatile. There are no occupied buildings at the site.
Groundwater Ingestion	De Minimis Exposure	Contaminants in soil are below the site-specific calculated migration to groundwater cleanup levels. Groundwater in the vicinity of the site is not currently used as a drinking water source.
Surface Water Ingestion	De Minimis Exposure	Contaminants in soil are below the site-specific Method Three Migration to Groundwater cleanup levels for the site and contamination is not expected to migrate to surface water based on downgradient sediment sampling results showing low level concentrations. There is a nearby pond located in the upgradient direction of the site.
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	Contaminants of concern do not have the potential to bioaccumulate in plants or animals.

Notes to Table 2: "De Minimis Exposure" means that in DEC's judgment receptors are unlikely to be adversely affected by the minimal volume or concentration of remaining contamination. "Pathway Incomplete" means that in DEC's judgment contamination has no potential to contact receptors.

DEC Decision

Soil contamination at the site have 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, 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 78.600(h). A "site" [as defined by 18 AAC 78.995(134)] 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 78.276(f) 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) 451-2181, or email at cascade.galasso-irish@alaska.gov.

Sincerely,

Cas Galasso
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit

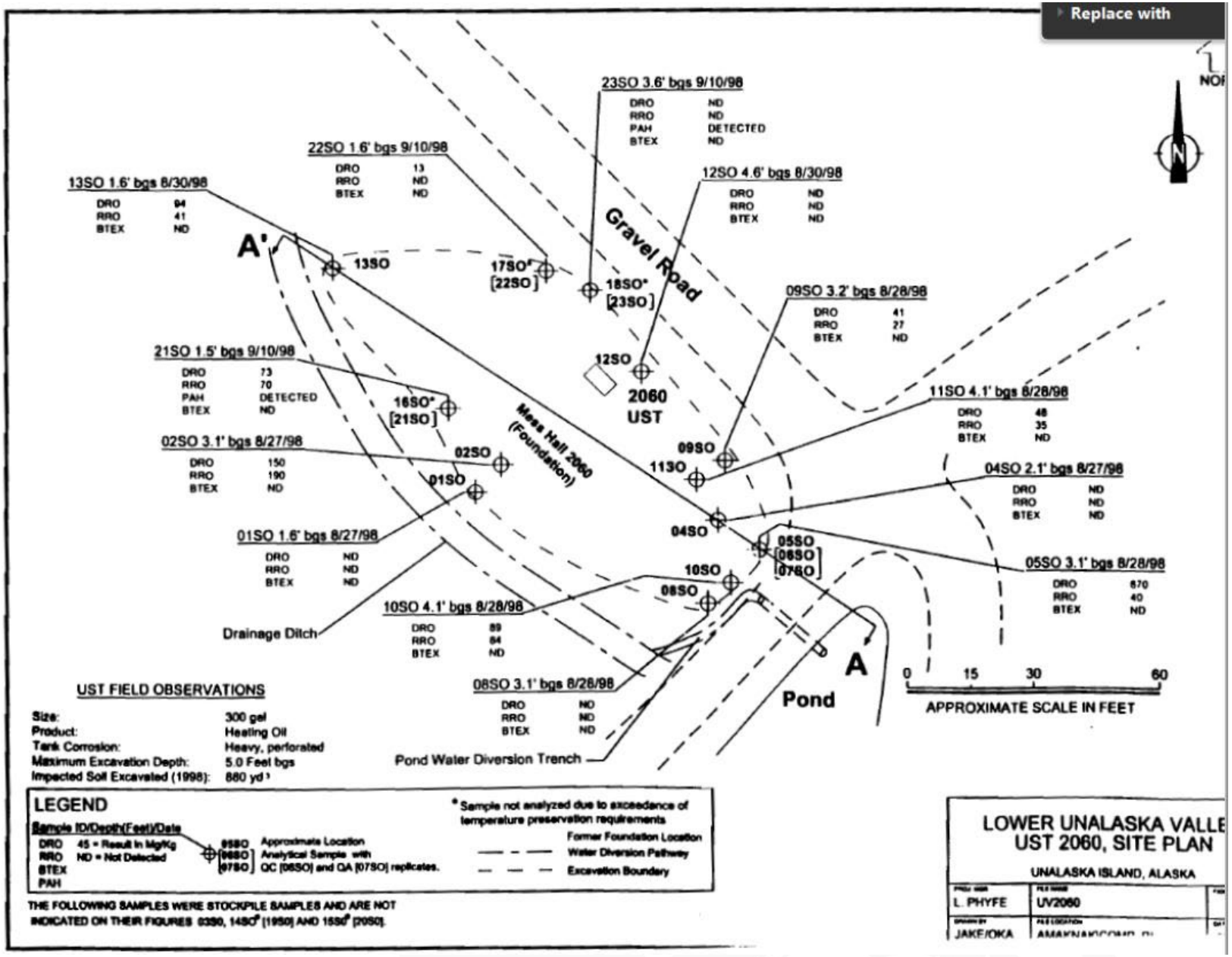

Figure 1 - Site figure of sampling locations and results from the 1998 Investigation

Division of Spill Prevention and Response

Contaminated Sites Program

Method Three & Cumulative Risk Calculator

Site Name: UST 2060 (For viewing on printout.)

Site zone and exposure scenario: Over 40-inch Zone - Residential Exposures

Cleanup Level Calculations 8/12/2009

Chemical	CAS	Type	Calculations	
DRO (Total)		Organic Non-Carcinogenic Petroleum	Ingestion Cleanup Level:	8300 mg/kg
			Inhalation Cleanup Level:	85800 mg/kg
			Groundwater Cleanup Level:	1.5 mg/L
			Migration to Groundwater:	7500 mg/kg

Please Note

Chemical	Notes
DRO (Total)	The Maximum Allowable DRO concentration is 12500 mg/kg

This page should be printed or saved so you can review it later.
To save this page on your computer, click File > "Save As...".

The parameters used to calculate the above cleanup levels and the parameters' default values are as follows:

Volatilization Pathway Parameters

Symbol	Description	Value	Default	Units
ρ_b	Dry soil bulk density	1.5	1.5	g/cm^3
n	Total soil porosity	0.434	0.434	L_{pore}/L_{soil}
Θ_w	Water-filled soil porosity	0.15	0.15	L_{water}/L_{soil}
Θ_a	Air-filled soil porosity	0.284	0.284	L_{air}/L_{soil}
w	Average soil moisture content	0.1	0.1	g_{water}/g_{soil}
f_{oc}	Organic carbon content of soil	0.034	0.001	g/g

Groundwater Pathway Parameters

Figure 2 - Unalaska Valley UST 2060 Method 3 Alternative Cleanup Level calculations