



THE STATE
of **ALASKA**
GOVERNOR MIKE DUNLEAVY

**Department of Environmental
Conservation**

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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File: 2542.38.023
Hazard ID: 2891

October 16, 2023

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

Re: Decision Document: Dutch Hbr-Unalaska Vly UST 3465
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 3465, located on Ptarmigan Road in the main Ski Bowl 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 3465, 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 3465
Bldg 3465
Ptarmigan Road
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.: 2891

Regulatory Authority for Determination:

18 AAC 78 and 18 AAC 75

Site Description and Background

Underground Storage Tank (UST) 3465 was associated with the remnants of a former latrine, Building 3465, located on Ptarmigan Road in Unalaska, Alaska. During a Remedial Investigation (RI) and interim

removal actions (IRA) in 1997, a single-walled steel 300-gallon UST with heavy corrosion was located near the former latrine building, just below the ground surface. Approximately 350 gallons of water were pumped from the tank prior to its removal. The UST was excavated from the site in 1997, resulting in a 15 square foot excavation. Field screening did not indicate the presence of contamination, therefore no soils were removed from the site. Two soil samples were collected from the excavation area and one sample was collected from a test pit advanced to bedrock approximately 12 feet downgradient of the UST. Diesel range organics (DRO) exceeded the DEC Method Two Soil Cleanup Levels in the two confirmation samples, at concentrations of 670 milligrams per kilogram (mg/kg) and 2,500 mg/kg. Only a gravel pad currently remains at the site.

Contaminants of Concern

During the site characterization and cleanup activities at this site, soil and groundwater samples were collected 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 soil cleanup levels and are considered Contaminants 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 0.24 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	8,300

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 is the Ingestion Soil 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 (SI) in Unalaska to find and dispose of remaining debris, USTs, and other potential contaminant sources. During the RI and IRA activities in 1997, a single-walled steel 300-gallon UST with heavy corrosion was identified near the former latrine building 3465 in the main Ski Bowl Valley. In September 1997 the tank was removed from the ground after pumping approximately 350 gallons from the tank. Field screening did not indicate the presence of contamination therefore no soils were removed from the site. Two soil samples were collected at the base of the 15 square foot excavation at 3.6 and 4.0 feet below ground surface to characterize the area. An additional soil sample was collected from a test pit (TP-1) at the soil-bedrock interface in a test pit dug 12 feet downgradient of the excavation. Both test pit and excavation samples were analyzed for DRO, RRO, and BTEX, and one of the excavation samples was also analyzed for PAHs.

RRO was detected in both of the excavation soil samples with concentrations of 380 mg/kg and 1,100 mg/kg. RRO was not detected in the TP-1 soil sample. BTEX constituents were not detected in any of the soil samples. Five different PAHs were detected in sample 3465-02SO, but at low concentrations. DRO was detected in all of the soil samples with concentrations ranging between 7.6 mg/kg and 2,500 mg/kg. The soil sample from TP-1 had the lowest DRO concentration (7.6 mg/kg).

Due to the 1997 exceedances of DEC Method Two cleanup levels, a 16-foot by 20-foot area was excavated in October 2000 in the vicinity of the previously detected contamination during an Islandwide Site Investigation and Interim Removal Action (SI/IRA). The excavation was continued until groundwater was encountered at 6 feet below ground surface and field screening results did not indicate the presence of contamination. Approximately ten cubic yards of potentially contaminated soil was removed from the center of the excavation and transported off-site for storage and treatment. Five soil analytical samples were collected from the excavation: four samples from the sidewalls and one from the floor. Three excavation sidewall samples and the floor sample, collected at contact with bedrock, all detected DRO concentrations above the DEC Method Two migration to groundwater cleanup level. Concentrations ranged from 191 mg/kg to 1,380 mg/kg, with the highest detection being at the floor sample collected at the bedrock interface. The excavation was backfilled with clean fill and reseeded.

Three test pits were dug surrounding the excavation to delineate the contaminated area. One test pit, TP-1, was dug immediately east of the excavation between the former UST location and a small creek. TP-1 was advanced until groundwater was encountered at seven feet bgs. One soil analytical sample was collected from the floor of TP-1 at seven ft bgs and the sample did not detect any contaminants that exceeded ADEC Method Two migration to groundwater cleanup levels. A well point was installed at the west edge of TP-1. Two additional test pits, TP-2 and TP-3 were dug west of the excavation approximately six feet and 12 feet west of the edge of the excavated area. Both test pits were advanced to five feet below ground surface. One total organic carbon (TOC) sample was also collected from the uncontaminated soil stockpile and from an uncontaminated section of the TP-1 wall at four feet below ground surface. A Method Three alternative cleanup level was calculated for DRO using site specific TOC data. The resulting site-specific alternative cleanup level for DRO is the Ingestion soil cleanup level of 8,300 mg/kg and no soil samples exceeded the DEC Method Three cleanup level. The Method Three ACLs are shown in Figure 2. In addition, the sample chromatograms indicated biogenic interference in three sidewall samples and the floor sample.

One sediment and one surface water sample were collected from the creek approximately 20 feet east of the excavation. The creek flows to the south at approximately 15-20 gallons per minute. The creek surface water sample did not detect contaminants that exceeded 18 AAC 75, Table C groundwater cleanup levels or 18 AAC 70, surface water cleanup levels. One groundwater sample was collected from the monitoring well and the groundwater sample did not detect contaminants that exceeded 18 AAC 75 groundwater cleanup levels. Sampling locations and results are shown in Figure 1.

Following the 2000 field activities, no further action was recommended at the site based on the following:

- The primary (former UST) and secondary (contaminated soil) sources of contamination have been removed.
- No soil contamination remains at the site above the calculated ACLs.

- The surface water in the downgradient creek and groundwater in the downgradient well point do not exceed 18 AAC 75, Table C groundwater cleanup levels or 18 AAC 70, surface water cleanup levels. Since contaminants have not migrated to the groundwater or surface water downgradient at the time of sampling, it is unlikely that they will migrate in the future with the primary and secondary sources of contamination removed.

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	Pathway Incomplete	Contamination is not present in surface soil (0-2 ft bgs)
Sub-Surface Soil Contact	De Minimis Exposure	Contamination remains in the sub-surface (>2 ft bgs) but is below the ingestion cleanup level.
Inhalation – Outdoor Air	Pathway Incomplete	Contaminants in soil are not volatile.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	Contaminants in soil are not volatile. There are no occupied buildings at the site.
Groundwater Ingestion	De Minimis Exposure	Groundwater samples are below Table C cleanup levels. Contaminants in soil are below the site-specific calculated migration to groundwater cleanup levels. Site is underlaid by bedrock and 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 significantly impact surface water. A small stream is located 20 feet from the site and surface water samples did not detected contaminants that

		exceed 18 AAC 75, Table C groundwater cleanup levels or 18 AAC 70, surface water 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	Contaminants are not present in surface soil and are not expected to impact surface water.

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,

A handwritten signature in cursive script, appearing to read "Cas Galasso".

Cas Galasso
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit

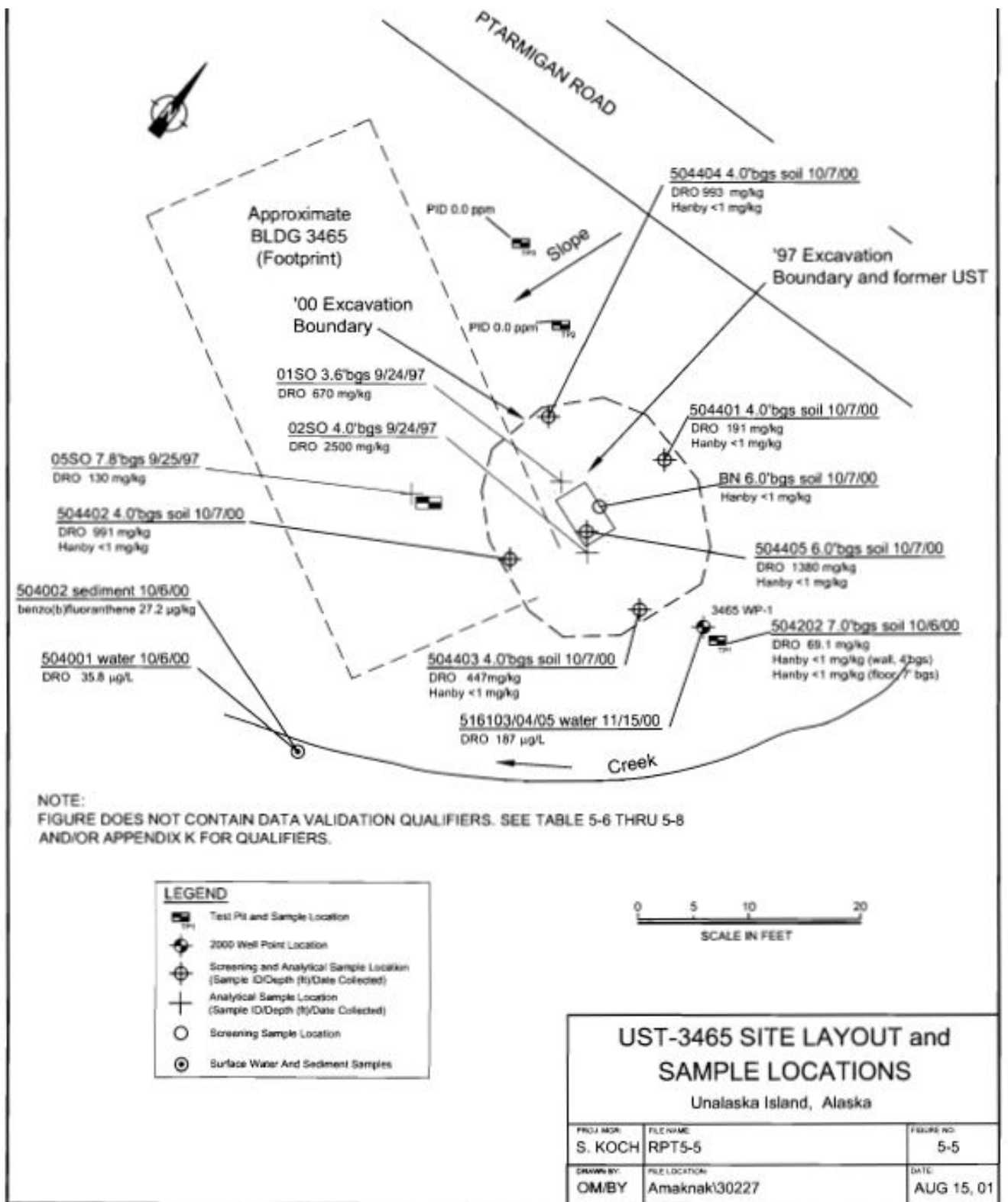


Figure 1 - Site figure of sampling locations and results from the 2000 fieldwork



STEP 4:

The following are the calculated cleanup levels for each chemical and pathway. Where values are provided for more than one pathway, the lowest of the values should be used as the soil cleanup level. All cleanup levels are in units of mg/kg. Any other chemical-specific requirements that must be considered follow the table of cleanup levels.

Chemical Name	Chemical Type	Ingestion	Inhalation	Migration to GW
DRO (Total)	Petroleum	8300	12500	12500
RRO (Total)	Petroleum	8300	22000	22000

Chemical	Notes
DRO (Total)	The Maximum Allowable DRO concentration is 12500 mg/kg.
RRO (Total)	The Maximum Allowable RRO concentration is 22000 mg/kg.

These cleanup levels should be printed. To print, please select the print function on your web browser. This page may also be saved and emailed for documentation of the calculated cleanup levels. For best results, save the page as a "Web Archive for email" file (.mht) if your browser supports this; in Internet Explorer 5 choose "Save as..." from the file menu and change the "Save as type" to "Web Archive for email". Other browsers should have a similar choice.

For reference, the parameters used to calculate these levels are as follows (with defaults that have been changed listed in parentheses):

Volatilization Pathway:

- ρ_b : Dry soil bulk density (g/cm³): 1.5 (Default: 1.5)
- n : Total soil porosity (L_{pore}/L_{soil}): 0.434 (Default: 0.434)
- θ_w : Water-filled soil porosity (L_{water}/L_{soil}): 0.15 (Default: 0.15)
- θ_a : Air-filled soil porosity (L_{air}/L_{soil}): 0.284 (Default: 0.284)
- w : average soil moisture content (g_{water}/g_{soil}): 0.1 (Default: 0.1)
- f_{oc} : organic carbon content of soil (g/g): 0.24 (Default: 0.001)

Groundwater Pathway:

Figure 2 - Unalaska Valley UST 3465 Method 3 Alternative Cleanup Level calculations