



THE STATE
of **ALASKA**
GOVERNOR SEAN PARNELL

Department of
Environmental Conservation

DIVISION OF SPILL PREVENTION & RESPONSE
Contaminated Sites Program

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File No: 108.26.034
108.38.072

December 12, 2013

Dept. of the Army
Directorate of Public Works
Attn: IMPC-FWA-PWE (Malen)
1060 Gaffney Rd, #4500
Fort Wainwright, Alaska 99703-4500

Re: Cleanup Complete Determination – Institutional Controls, Fort Wainwright Vehicle Wash Rack/ Fort Wainwright Forward Area Refueling Point

Dear Mr. Malen;

The Alaska Department of Environmental Conservation (ADEC) has reviewed the environmental records for the referenced collocated sites. This decision letter memorializes the site history, cleanup actions, and specific conditions required to effectively manage remaining contamination. No further remedial action will be required as long as compliance with these conditions is maintained.

Site Name and Location:

Vehicle Wash Rack/Forward Area Refueling Point
East End Airfield/Ketchum
Fort Wainwright Alaska 99703

DEC Site Identifiers:

File No: 108.26.034
108.38.072

Regulatory Authority for Determination:

18 AAC 75

Site Description and Background

Vehicle Wash Rack

The Vehicle Wash Rack was used as a staging area to clean Army vehicles. It consisted of a concrete pad (still remaining), an oil water separator (OWS), and a waste oil tank. Water generated from washing vehicles flowed to a drain connected to an OWS. The original OWS and 3,500-gallon waste

oil tank were removed in 1995 and replaced. Approximately 110 cys of soil was excavated during the UST removal and thermally treated.

A UST Release Investigation was conducted during 1996 that involved drilling soil borings and collecting soil samples and groundwater samples from the north and east ends of the former UST location. DRO and benzene were detected in soil samples exceeding the Alaska Department of Conservation (ADEC) cleanup level. Groundwater samples from one groundwater probe had a benzene concentration of 16.2 micrograms per liter ($\mu\text{g/L}$), while a second groundwater probe had a DRO concentration of 1.83 milligrams per liter (mg/L). The FARP fueling system was being constructed at the time of the investigation, which limited the extent of the investigation. The replacement OWS and 2000-gallon waste oil tank were removed during 1999. During 2004, one soil boring was drilled and sampled and then converted to a monitoring well. The Monitoring well was located approximately 10 feet west of an existing groundwater probe that had the highest benzene concentration observed during the 1996 investigation. Soil and groundwater samples collected from new boring were below ADEC cleanup levels. DRO in groundwater was below the cleanup level, in the monitoring well during 2004, 2009, and 2010; however, DRO increased by an order of magnitude during 2011 and has remained above the cleanup level.

Forward Area Refueling Point

The FARP is located directly west of the Vehicle Wash Rack area. The FARP is used as a storage and distribution facility for helicopter fueling. The FARP was originally constructed in the early 1990's and has been reconfigured several times. Presently, the FARP consists of two 40,000-gallon fuel tank, a pump house, fueling hydrants, and associated distribution piping. Environmental investigations of the FARP had not been conducted prior to 2009, although the 1996 and 2004 investigations of the Vehicle Wash Rack may have encountered contamination associated with the FARP. A UVOST investigation was conducted in 2009 that found POL contamination in the soils at the FARP. New monitoring wells were also installed at that time, but groundwater sampling results from September 2009 did not exceed cleanup levels.

Contaminants of Concern

The following contaminants of concern, those above approved cleanup levels, were identified during the course of the site investigations summarized in the Characterization and Cleanup Activities section of this decision letter.

- Diesel Range Organics (DRO)
- Trichloroethene (TCE)

Cleanup Levels

	Soil	Groundwater
DRO	250 mg/kg	1.5 mg/L
TCE	0.020 mg/kg	0.005 mg/L

Diesel range organics and TCE were detected in soil above the approved Method 2 migration to groundwater cleanup levels for the under 40-inch precipitation zone, established in 18 AAC 75.341(c), Table B1, and 18 AAC 75.341 (d), Table B2. The migration to groundwater soil cleanup levels are applicable in this situation because of the presence of groundwater contamination and the need to stop further contaminant migration through soil and into groundwater.

Diesel range organics and TCE were detected in groundwater above the approved cleanup levels established in 18 AAC 75.345 Table C.

Characterization and Cleanup Activities

DRO and trichloroethene (TCE) contamination was identified above the ADEC cleanup level in soil samples collected as part of the 2009 UltraViolet Optical Screening Tool (UVOST) investigation and monitoring well installation. TCE was detected at one location in a soil sample associated with the installation of a monitoring well at a depth of 17 to 18 feet below ground surface, (bgs) with a concentration of 0.086 mg/kg, which exceeds the ADEC cleanup level of 0.020 mg/kg. DRO was detected above the ADEC migration to groundwater cleanup level in soil samples collected adjacent to three UVOST locations and in two soil samples that were collected in association with installation of two monitoring wells. The highest concentration of DRO was detected between 9 and 10 feet bgs at a concentration of 15,000 mg/kg.

Exceedances of ADEC cleanup levels for benzene and DRO in groundwater were observed at the site in 1996. These concentrations were detected within the source area, in wells that no longer exist at the site. A new well, was installed in 2004 at the location of the decommissioned well with the previous highest COC concentrations. This well has been sampled five times since 2004 and COC concentrations for DRO, GRO, and VOC have been below ADEC cleanup levels during each sampling event, with the exception of DRO in 2011 and 2012. DRO increased by an order of magnitude in this well during the 2011 sampling event and concentrations remain elevated in the 2012 sampling event. TCE is consistently observed in groundwater samples from the well; however, TCE has not exceeded the cleanup level.

Two additional wells, were installed in the vicinity of the source area in 2009 and have been sampled annually since they were installed. No COC has been detected above cleanup levels in either of these wells. TCE is also consistently observed in groundwater samples from both of these wells; but has not exceeded the cleanup level. Two downgradient wells, were also installed in 2009. No COC has been detected above cleanup levels in either of these wells. DRO and TCE have been detected in these wells at concentrations below ADEC cleanup levels.

Exposure Pathway Evaluation

The human health conceptual site model indicates that there are no currently completed exposure pathways at the site. Exposure pathways could be completed if the groundwater is used as a drinking water source, excavation occurs to a depth greater than 4 to 6 feet bgs, or buildings are constructed on top of the site.

ADEC Decision

Fort Wainwright has institutional controls in place to prevent these scenarios from occurring. The site is expected to remain as an industrial land use area, and the information regarding the residual contamination would be provided as part of a pre-construction environmental survey. Since residual contamination remains associated with the subsurface soils, institutional controls will remain in place at the Vehicle Wash Area/FARP site. The institutional controls are maintained by Fort Wainwright to prevent unauthorized land use changes, excavation, and/or groundwater use that may result in inadvertent exposure to the residual contamination. The information regarding the contamination remaining in place is included in the review of any proposed construction activities, and is provided as part of a pre-construction environmental survey. The data are also maintained in the Fort Wainwright GIS.

ADEC has determined that a Cleanup Complete with Institutional Controls (ICs) decision is appropriate based on the following information:

- The Vehicle Wash Rack/FARP site has a small area of residual TCE contamination remaining above the ADEC cleanup levels in soil. The TCE contamination is below 15 feet bgs (detected at 17 to 19 feet bgs). There have been no exceedances of the ADEC cleanup levels for TCE in groundwater samples collected from wells in the vicinity of the TCE detection in soil. Due to the depth, the isolated quantity, and the low concentration, it is not expected that the TCE contamination can be feasibly or practically addressed. However, potential future exposure to residual TCE contamination will be managed through the use of ICs.
- DRO contamination in soil remaining at the site is partially covered by a concrete pad. Additionally, this is an active refueling site; infrastructure (underground piping, storage and distribution equipment, etc.) poses a hazard for additional excavation. However, potential future exposure to residual DRO contamination will be managed through the use of ICs.
- The residual soil contamination does not cause a violation of 18 AAC 70 water quality standards as the site is located approximately 600 yards from a surface water body (Chena River) and contaminant concentrations in downgradient wells are below ADEC Table C cleanup levels.
- DRO remains above the ADEC cleanup level in groundwater in only one well, AP-9081. DRO is the only contaminant detected above cleanup levels in groundwater at this site. While contaminant concentrations in AP-9081 increased to above cleanup levels in 2011 after being below cleanup levels since 2004, surrounding wells and downgradient wells, sampled between 2009 through 2012, do not have DRO in concentrations exceeding the cleanup level. This indicates that there is an isolated DRO groundwater plume in the vicinity of AP-9081, and the contaminant plume is not increasing.

- Potential future exposure to residual contamination will be managed through the use of ICs. The ICs are maintained through the established IC program at Fort Wainwright (Garrison Policy #38). ICs restrict all soil disturbing activities impacting soils six inches or more below the ground surface anywhere on the installation. ICs also restrict groundwater use and prohibit the drilling of water wells for potable water, fire suppression, irrigation or other purposes anywhere on the installation without authorization by DPW Environmental. ICs are enforced by requiring that contractors performing these types of soil disturbing activities submit a DPW approved DA Form 4283 (Work Order) or DPW approved Service Order, a signed and approved Excavation Clearance Request know as a Dig Permit. Any work being conducted at this site will require a work plan approved by ADEC. An IC inspection will also be conducted annually as part of the enforcement of ICs at this site. The Army has developed a GIS layer and Source Area Description Tables for tracking and recording LUC/ICs on Fort Wainwright. The GIS database and Source Area Description Tables are continually updated and additional information is added where applicable. A map of IC boundaries has also been created by the GIS. The US Army will enforce ICs on Fort Wainwright and institutional controls will remain in place until ADEC and the Army mutually decides that the contamination has been reduced through cleanup activities or natural attenuation to levels protective of human health and the environment.

The ADEC Contaminated Sites Database will be updated to reflect the change in site status as detailed above, and will include a description of the contamination remaining at the site. Institutional controls will be removed in the future if documentation can be provided that shows cleanup levels have been met.

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

Sincerely,



Deb Caillouet
Environmental Program Specialist