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 No. 190.38.006

January 31, 2023

Electronic Delivery Only

Sam Myers
ADOT&PF Maintenance & Operations
2301 Peger Road
Fairbanks, Alaska 99709

Re: Decision Document: ADOT&PF Cantwell Maintenance Station Class V Injection Well Cleanup Complete Determination

Dear Mr. Myers,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Alaska Department of Transportation and Public Facilites (ADOT&PF) Cantwell Maintenance Station Class V Injection Well contaminated site. 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 ADOT&PF Cantwell Maintenance Station Class V Injection Well site, which is located in the ADEC office in Fairbanks Alaska. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

Site Name and Location:
ADOT&PF Cantwell Maintenance Station
Class V Injection Well
Mile 135 Denali Highway
Cantwell, AK 99729

Name and Mailing Address of Contact Party:
Sam Myers
ADOT&PF Maintenance and Operations
2301 Peger Road
Fairbanks, AK 99709

DEC Site Identifiers:
File No.: 190.38.006
Hazard ID.: 26345

Regulatory Authority for Determination:
18 AAC 75

Site Description and Background

The ADOT&PF Cantwell Maintenance station is located on the Denali Highway in Cantwell, Alaska. The garage bays in the old shop are used for vehicle maintenance and contain multiple floor drains that discharged to two underground injection wells (IWs) located outside the building: CW-IW-1 and CW-IW-2. The injection wells were part of a combined use septic system, receiving domestic wastewater from bulding plumbing in addition to snowmelt and incidental amounts of fuel, oil, lubricants, and degreasers from the maintenance shop floor drains. These wells were classified as Class V motor vehicle waste disposal wells which are also subject to EPA closure requirements.

Contaminants of Concern

During the site characterization and cleanup activities at this site, samples collected from injection well contents and excavation limit soils were analyzed for gasoline range organics (GRO), diesel range organics (DRO), residual range organics (RRO), volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), and metals. Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern at this site:

- DRO
- RRO
- chloroform
- ethylbenzene
- xylenes
- benzo(a)anthracene
- benzo(a)pyrene
- naphthalene

Cleanup Levels

The most stringent of the Method Two cleanup levels for the under 40-inch zone established in 18 AAC 75.341, Tables B1 and B2 apply at this site. DRO, RRO, and chloroform were detected above the most stringent cleanup levels. The groundwater cleanup levels established in 18 AAC 75.345 Table C apply at this site.

Table 1 – Approved Cleanup Levels

Contaminant	Soil (mg/kg)	Groundwater (µg/L)
DRO	250	1,500
RRO	10,000	1,100
chloroform	0.0071	2.2
ethylbenzene	0.13	15
xylenes	1.5	190
benz(a)anthracene	0.7	0.3
benzo(a)pyrene	1.9	0.25
naphthalene	0.038	1.7

mg/kg = milligrams per kilogram
µg/L = micrograms per liter

Characterization and Cleanup Activities

Two injection wells, CW-IW-1 and CW-IW-2 were present at the old Cantwell maintenance station, both received effluent from multiple floor drains located inside the shop. CW-IW-1 was installed

when the building was built in 1954 and discharged until 2006. The combined use septic system CW-IW-2 began discharging in 2006 and was disconnected in 2016.

In May of 2006, ADOT&PF removed CW-IW-1 and rerouted the floor drains to the septic system (creating CW-IW-2). The CW-IW-1 discharge point was a 8 ft. x 10 ft. x 2 ft tall wooden crib. The bottom of the discharge point was buried 5 feet below ground surface (ft. bgs). CW-IW-1 was 5 ft. northwest of the old maintenance shop and received effluent from floor drains in the shop through wood stave piping. The crib was excavated and removed and the piping was abandoned in place. The crib was empty and there was no staining, odors, or other signs of obvious contamination noted during injection well closure, though analytical samples were not collected during the removal event.

The CW-IW-2 discharge point consisted of a 2000-gallon septic tank which discharged to a leachfield through two sets of 48 ft perforated piping buried 5 ft. bgs. The septic tank received domestic wastewater and floor drain effluent through 75 feet of ABS pipe.

In 2010 and 2016, soil borings and temporary well points were advanced at both IWs and along the piping run for CW-IW-2. Soil and groundwater samples were collected to determine impacts from both injection wells. Solid and liquid effluent samples were also collected from the floor drains and septic tank which contained DRO and RRO in excess of the cleanup levels.

Analytical soil and groundwater samples from borings and temporary well points at CW-IW-1 confirmed that all contaminants were below the applicable cleanup levels and that CW-IW-1 did not cause significant releases to the environment.

Soil samples collected from borings adjacent to CW-IW-2 in 2016 confirmed that DRO and chloroform contamination in excess of the cleanup levels was present in soils at 10 ft. bgs. Groundwater samples collected from four temporary well points did not contain detectable quantities of any contaminants. Soil boring samples did not indicate any release from the ABS pipe between the maintenance shop and CW-IW-2.

In May of 2020, CW-IW-2 was removed. The septic tank and leachfield piping were excavated and the ABS injection well piping was cut off and abandoned in place. The septic tank was in poor condition and some contamination was excavated under the tank. No staining or signs of contamination were observed during leach field excavation. Effluent sludge samples collected from the septic tank contained DRO, RRO, petroleum VOCs and PAHs in excess of the cleanup level.

The final excavation for CW-IW-2 was approximately 100 ft. by 25 ft. and reached up to 11.5 ft. bgs. Injection well end-point samples were collected from soils prior to excavation at 10 points underneath the leachfield piping and septic tank. All end-point samples were below the the applicable cleanup levels. Excavation continued after removal of the leachfield, septic tank and piping, a total of 31 cubic yards of minorly contaminated soil from near the septic tank were disposed of at the Moose Creek Thermal Treatment Facility in Moose Creek, Alaska.

Samples were collected from the final excavation sidewalls and base at 9.5 to 11.5 ft. bgs. Out of 18 excavation limit samples, five exceeded the migration to groundwater cleanup levels, four for chloroform (0.00838 – 0.0212 mg/kg), and one for DRO (258 mg/kg).

One boring sample, CW-B4-2, collected during the 2016 soil boring investigation contained DRO in excess of the cleanup level (2,730 mg/kg). The location of this boring was not excavated in 2020 due to the new septic system being installed above where the sample was collected. Maximum contaminant concentrations remaining after the 2016 and 2020 sampling events are listed in Table 2

Table 2 – Remaining Soil Contamination

Contaminant	Soil (mg/kg)	Sample Location	Date Sampled
DRO	2,730	CW-B4-2	8/10/16
chloroform	0.0227	CW-B9-1	8/10/16

In 2022, ADOT&PF mobilized to the site to determine the extent of DRO contamination at the location of CW-B4-2. Two soil borings advanced to the north and west were completed as temporary groundwater sampling points. All soil and groundwater samples were below the cleanup levels.

Though chloroform and DRO exceed the migration to groundwater cleanup level, these contaminants were not detected in groundwater samples collected from a total of six temporary well points sampled in 2016 and 2022. Contaminants of concern have not been detected in the on-site drinking water well. Additionally chloroform was not detected in effluent samples from the floor drains or septic tank. Low level chloroform exceedances found in the leach field are likely naturally occurring or a secondary product from domestic wastewater discharge.

CW-IW-1 was decommissioned in 2006, CW-IW-2 was disconnected from the floor drains in 2016 and a new EPA and ADEC approved floor drain effluent handling system was installed.

Cumulative Risk Evaluation
Pursuant to 18 AAC 75.325 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, ADEC 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 ADEC'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 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	Pathway Incomplete	Contamination is not present in surface soil (0 to 2 ft. bgs).
Sub-Surface Soil Contact	De Minimis Exposure	Contamination is present in sub-surface soils (2 to 15 ft. bgs), but is below the human health and ingestion cleanup levels.
Inhalation – Outdoor Air	De Minimis Exposure	Contamination is present in sub-surface soils (2 to 15 ft. bgs), but is below the human health and inhalation cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	De Minimis Exposure	Petroleum contamination remaining near the CW-IW-2 leachfield is not expected to significantly impact indoor air based on depth of the contamination and distance to the nearest occupied building.
Groundwater Ingestion	De Minimis Exposure	Contamination exceeding the migration to groundwater cleanup levels remains on site but groundwater samples indicate
Surface Water Ingestion	Pathway Incomplete	Remaining contamination is not expected ot impact the nearest surface water, the Jack River, 0.25 miles away.
Wild and Farmed Foods Ingestion	Pathway Incomplete	Remaining contamination is not impacting an area where wild or farmed foods could be impacted.
Exposure to Ecological Receptors	Pathway Incomplete	Remaining contamination is not impacting an area where ecological receptors will be impacted.

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

DEC Decision

Contamination remains above the migration to groundwater cleanup levels in soil but groundwater has not been impacted. 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.

Appeal

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 610 University Avenue, Fairbanks, Alaska 99709, within 20 days after receiving the department's decision reviewable under this section. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, P.O. Box 111800, Juneau, Alaska 99811-1800, within 30 days after the date of issuance of this letter, or within 30 days after the department issues a final decision under 18 AAC 15.185. If a hearing is not requested within 30 days, the right to appeal is waived.

If you have questions about this closure decision, please feel free to contact me at (907) 451-5174 or via email at michael.hooper@alaska.gov

Sincerely,

Michael Hooper
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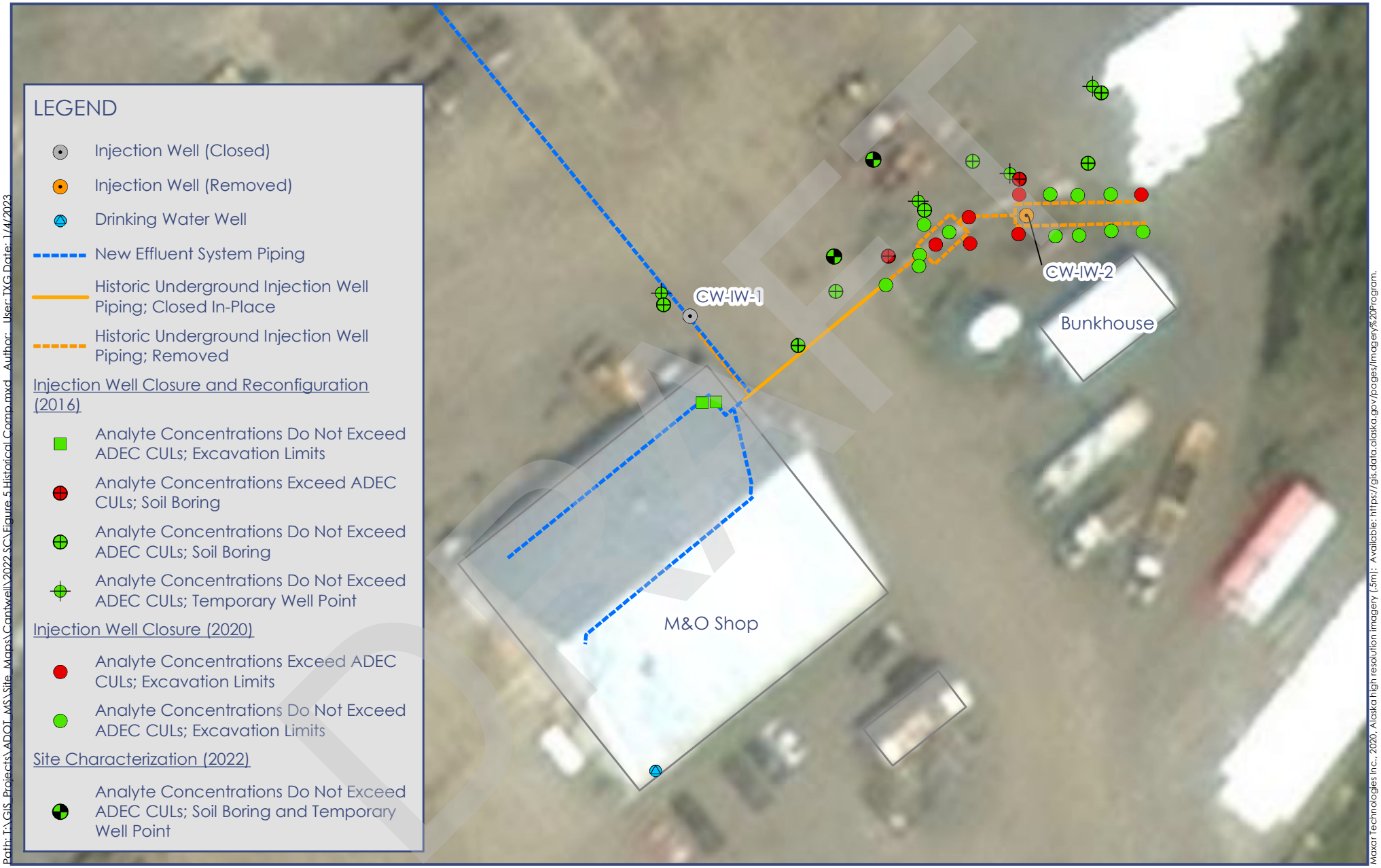
Michael Hooper
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit
Janice Wiegers, ADEC

Enclosures: Shannon & Wilson Figure showing location of former injection wells.



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Notes:
1. In-situ sample locations are displayed
2. See respective reports for additional information

ADEC = Alaska Department of Environmental Conservation

January 2023

HISTORICAL SAMPLE LOCATIONS AND EXCEEDANCES

Figure 5