



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: 650.38.006

August 24th, 2021

William Stamm  
Alaska Village Electric Corporation  
4831 Eagle Street  
Anchorage, AK 99501

Re: Decision Document: Stebbins AVEC Power Plant Tank Farm  
Cleanup Complete Determination

Dear Mr. Stamm,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Stebbins AVEC Power Plant Tank Farm. 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 Stebbins AVEC Power Plant Tank Farm. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

**Site Name and Location:**

Stebbins AVEC Power Plant Tank Farm  
E of Terminal Street and Southern Street Intersection; Near W End of Airport Runway  
Stebbins, AK 99671

**Name and Mailing Address of Contact Party:**

William Stamm  
4831 Eagle Street  
Anchorage, AK 99501

**ADEC Site Identifiers:**

File No.: 650.38.006  
Hazard ID.: 26178

**Regulatory Authority for Determination:**  
18 AAC 75

**Site Description and Background**

The site is located at the former tank farm and power plant in Stebbins, Alaska. The facility is located on land leased by the Alaska Department of Transportation and Public Facilities (ADOT&PF). The original facility consisted of thirteen vertical aboveground storage tanks (ASTs). The ASTs ranged in size from 6,300 to 9,400 gallons (gal). The ASTs primarily contained number one diesel. Ten of the ASTs were stationed together in a partially lined and bermed containment area (west tank area) and the remaining three were stationed in a smaller lined and bermed area (east tank area) (see figure 1). The power plant consisted of three shipping containers and a small pre-fabricated metal building, named the Butler Building. The shipping container housed the control room for the power plant and was a storage room. Power generators were located in the Butler Building. The power plant was located adjacent to the ASTs on the north side. A total of eight electrical transformers were present on site during the initial inspection in 2011, some of the transformers were leaking oil.

A phase one environmental site assessment (ESA) was conducted in 2011. During the phase one ESA some staining and leaks from ASTs were observed. AVEC personnel sampled the transformer oil in January 2012 and tested them for polychlorinated biphenyls (PCBs). As a follow up to the phase one ESA, soil samples were collected in the tank farm areas in June 2012. Diesel range organics (DRO), gasoline range organics (GRO), benzene, and xylene were above ADEC most stringent cleanup levels for the under 40 inch climate zone (18 AAC 75.341 (c) table B1 and table B2). Characterization and remediation took place in 2014 and 2015. Contaminated soil was treated at an office site landfarm between 2015 and 2019.

**Contaminants of Concern**

During the site characterization and cleanup activities at this site, samples were collected from soil and groundwater, and analyzed for RRO, DRO, GRO, VOC, and PAH. Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern at this site:

- Diesel Range Organics (DRO)
- Gasoline Range Organics (GRO)
- Xylene
- Benzene

**Cleanup Levels**

DRO, GRO, benzene, and xylene were detected in soil above the migration to groundwater cleanup levels for the under 40 inch climate zone established in 18 AAC 75.341 (d), Table B1 and B2. Contamination was not detected in groundwater.

**Table 1 – Approved Cleanup Levels**

<b>Contaminant</b>	<b>Soil (mg/kg)</b>	<b>Groundwater (µg/L)</b>
DRO	250	1500
GRO	300	2200
Benzene	0.022	4.6
Xylene	1.5	190

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

### **Characterization and Cleanup Activities**

Characterization and cleanup activities conducted under the regulatory authority of the Contaminated Sites Program began in 2006. These activities are described below. Site characterization under 18 AAC 75.335 conducted between 2011 and 2019.

A phase one environmental site assessment (ESA) was conducted in 2011. During the phase one ESA some staining and leaks from ASTs were observed. AVEC personnel sampled the transformer oil in January 2012 and tested them for PCBs (Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260). PCBs were not detected in any of the oil sampled. As a follow up to the phase one ESA, soil samples were collected in the tank farm areas in June 2012. Soil samples were analyzed for diesel range organics (DRO), gasoline range organics (GRO), BTEX (benzene, toluene, ethylbenzene, and xylene). GRO, DRO, benzene, and xylene were above ADEC most stringent cleanup levels for the under 40 inch climate zone (18 AAC 75.341 (c) table B1 and table B2).

The tank farm and power plant were demolished in July 2014. Field screening indicated that the soil beneath the west tank area and the Butler Building were contaminated. The area beneath the east tank area was not contaminated. 150 cubic yards of contaminated soil was excavated from the Butler Building and west tank farm area. Excavation was limited by storage capacity for stockpiles. Soils were stored at the landfill and adjacent lot. The excavation at the former Butler Building location extend vertically to 10.5 feet below ground surface (bgs), wherein groundwater was encountered. The excavation at the west tank area extended to eight feet bgs, wherein groundwater was encountered. Step out test pits were dug to delineate the extent of contamination. Both excavations were backfilled with clean fill. The stockpiles and excavation were samples for RRO, DRO, GRO, and BTEX. One samples was analyzed for polynuclear aromatic hydrocarbons (PAH). All of the samples collected from the east tank area were below the most stringent ADEC cleanup levels. DRO was present above cleanup levels at the west tank area and the Butler Building. All other contaminants of concerns were below ADEC cleanup levels. At one location, DRO was present above maximum allowable concentration (12,600 mg/kg).

In 2015 additional characterization and excavation of contaminated soil was performed. Based on the previous results, 250-350 cyd soil was excavated from around the southwest side of the west tank area near the 2014 sample called AW-TP2. AW-TP2 was the location where DRO was above maximum allowable cleanup levels (see figure 4). The excavation and stockpiled soil were analyzed for RRO,

DRO, and BTEX. All samples came back below ADEC migration to groundwater cleanup levels. As such, the soil was placed back in the excavation and the area was leveled and graded. The concentration of DRO at this location decreased drastically between 2014 and 2015. It was speculated that the 2014 excavation aerated the soil and accelerated the natural attenuation. In addition, the area is influenced by Norton Sound and the tidal action may have influenced the attenuation of contaminants in this area. Contamination may remain in the area beneath the former Butler Building up to 1,580 mg/kg DRO (see table 2) but it is anticipated that it has significantly attenuated, like other portions of the site have.

Three test pits were dug around the site to horizontally delineate the extent of contamination (see figure 2). Test pits were 8 to 9 feet bgs. Samples were taken at the base of the test pits. The samples were analyzed for RRO, DRO and BTEX. All samples came back below ADEC migration to groundwater cleanup levels.

Temporary groundwater monitoring wells were installed in the three test pits and the excavation to determine if contamination had migrated to groundwater. Groundwater samples were analyzed for RRO, DRO, BTEX, and salinity. Low concentrations of RRO and DRO were present in groundwater, but were below cleanup levels (18 AAC 75 341 (C) Table C).

All stockpiled soil generated in 2014 were transported quarry located 1.5 miles outside of Stebbins on the Stebbins/St. Michael Road for landfarming (see figure 5&6). Upon review and approval of the 2015 report ADEC determined that residual DRO contamination at the site did not pose an unacceptable risk (see Appendix B).

The landfarm was tilled periodically between 2015 and 2019 so that the contamination concentrations could attenuate. In 2019, the landfarm was field screened with a photo-ionization detector (PID) and analytical samples were collected from the locations with the highest PID results. Six analytical samples were collected and one duplicate. Samples were analyzed for RRO, DRO, PAH, and volatile organic compounds (VOCs). Samples were below ADEC cleanup levels for RRO, PAH, and VOCs. One samples had a concentration of 259 mg/kg DRO, which is above the ADEC cleanup level of 250 mg/kg. All other samples were below the ADEC cleanup level. Given the concentration was on 9 mg/kg above the cleanup level, ADEC determines that the concentration of DRO de minimis.. The landfarm soils were left in place for future unrestricted use.

**Table 2 – Highest Concentration of Contamination Remaining on Site**

<b>Contaminant</b>	<b>Soil (mg/kg)</b>
DRO	1,580

mg/kg = milligrams per kilogram

### **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 non-carcinogenic 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	De Minimis Exposure	Contamination in surface soil is below ADEC cleanup levels.
Sub-Surface Soil Contact	De Minimis Exposure	Contamination remains in the sub-surface, but does not pose a risk to human health or the environment.
Inhalation – Outdoor Air	Pathway Incomplete	Contaminants remaining in soil are not volatile enough to reach outdoor air.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	Volatile compounds are not present in the soil or groundwater.
Groundwater Ingestion	De Minimis Exposure	Concentration of contaminants in groundwater was below the groundwater cleanup level.
Surface Water Ingestion	Pathway Incomplete	Contamination did not migrate to off-site to surface water bodies.
Wild and Farmed Foods Ingestion	Pathway Incomplete	No wild or farmed foods occur on site.
Exposure to Ecological Receptors	Pathway Incomplete	No ecological exposure is present at the site

**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.

### ADEC Decision

Soil and groundwater contamination at the site have been cleaned up to concentrations protective of human health and the environment. Sufficient site characterization has been completed and the Contaminated Sites Program has determined that the contaminants in soil have achieved steady-state equilibrium and will not migrate to groundwater. 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 75.325(i). A “site” [as defined by 18 AAC 75.990 (115) 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 75.380 and does not preclude ADEC 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, 555 Cordova Street, Anchorage, Alaska 99501-2617, 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) 451-2056, or email at [erin.gleason@alaska.gov](mailto:erin.gleason@alaska.gov).

Sincerely,



Erin Gleason  
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit

Appendix A: Figures

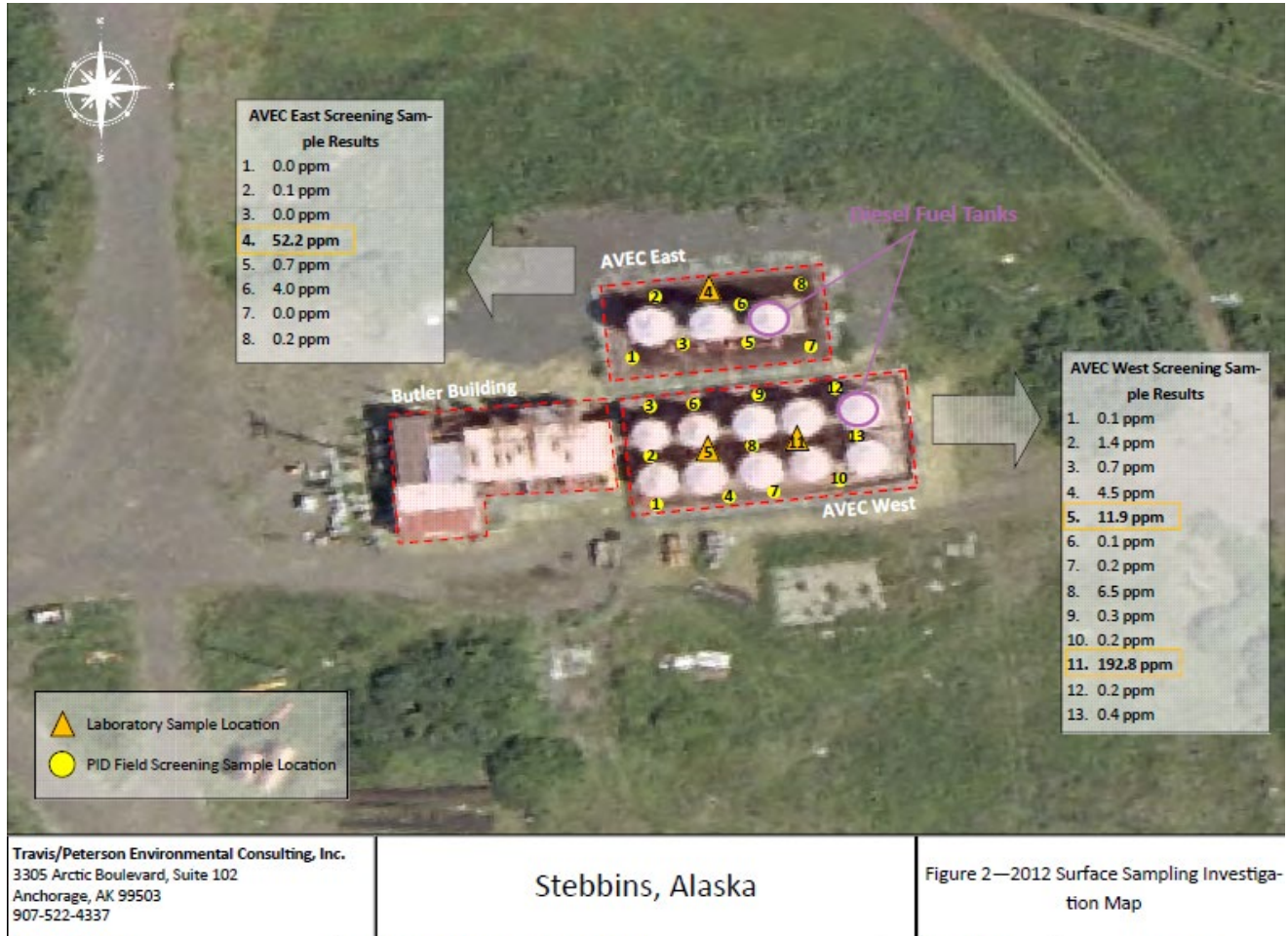


Figure 1. 2012 sampling investigation map. The east tank area, west tank area, and Butler Building are outlined in red.



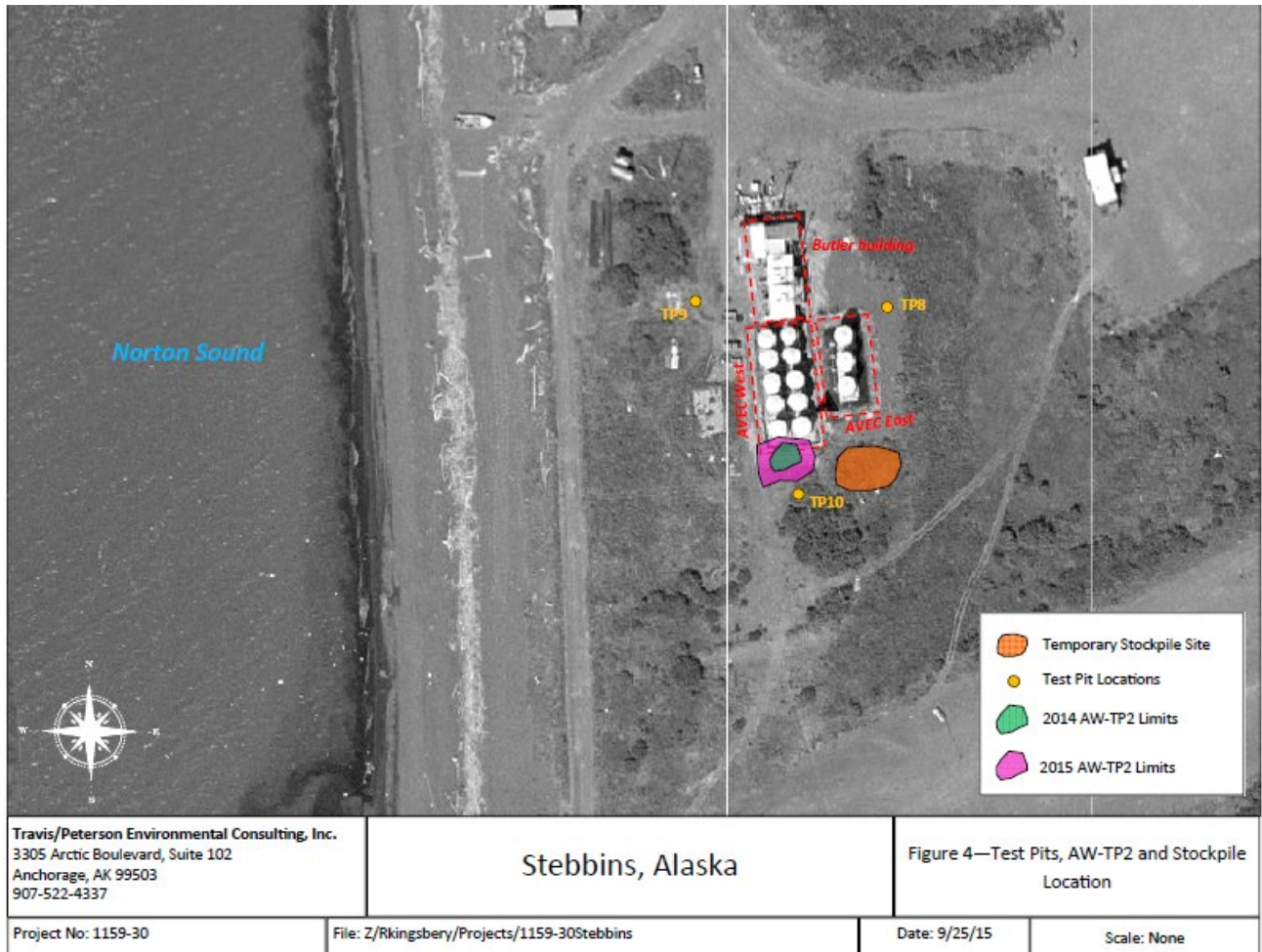


Figure 2. Map of test pits, stockpile, and AW-TP2 excavation during the 2015 field event.

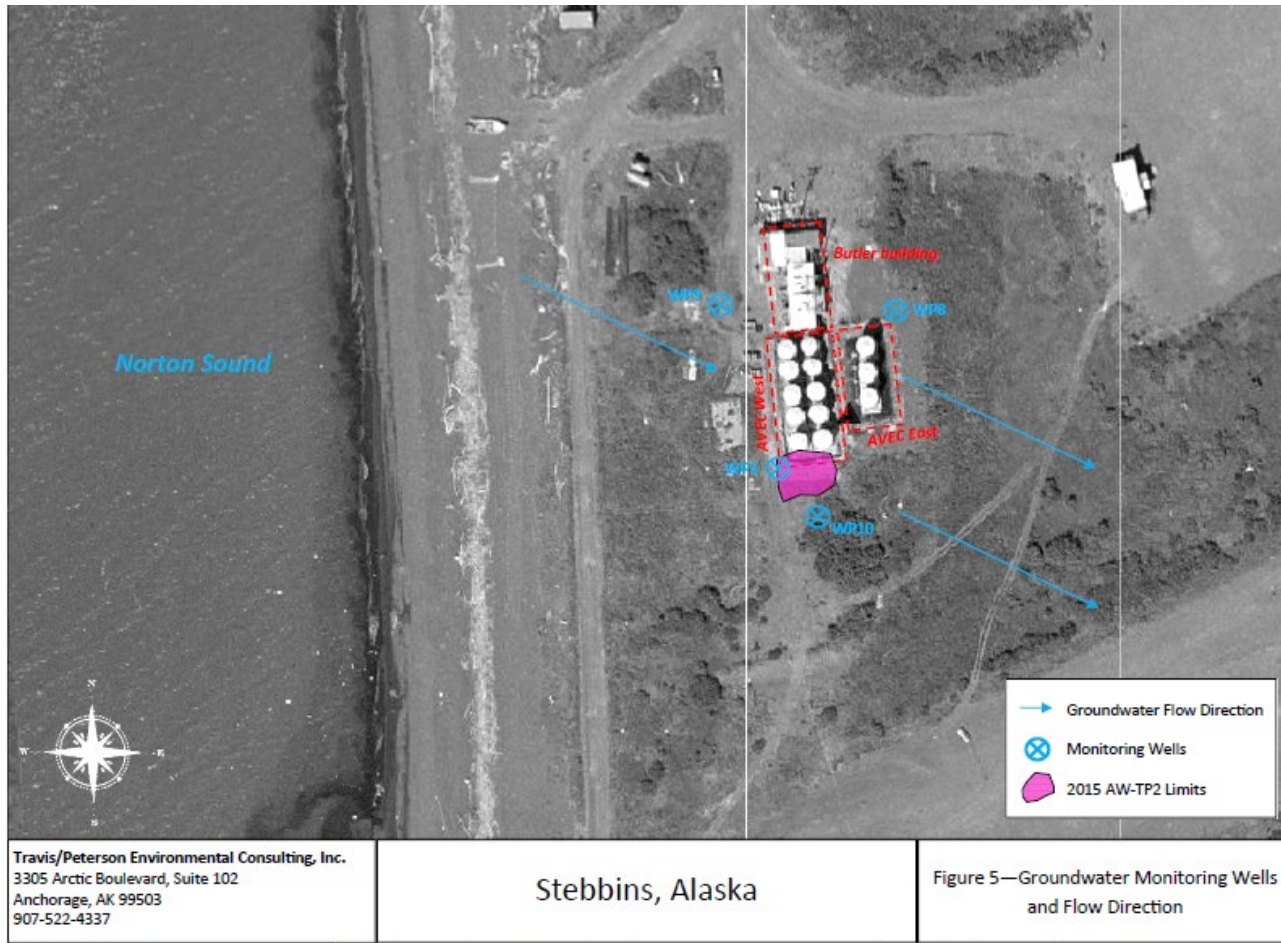


Figure 3. Location of temporary groundwater monitoring wells in the 2015 field event.



Figure 4. Photograph of 2015 excavation at AW-TP2 location (TPECI 2015)



Figure 5. Landfarm in 2015 directly after construction (TPECI 2015)



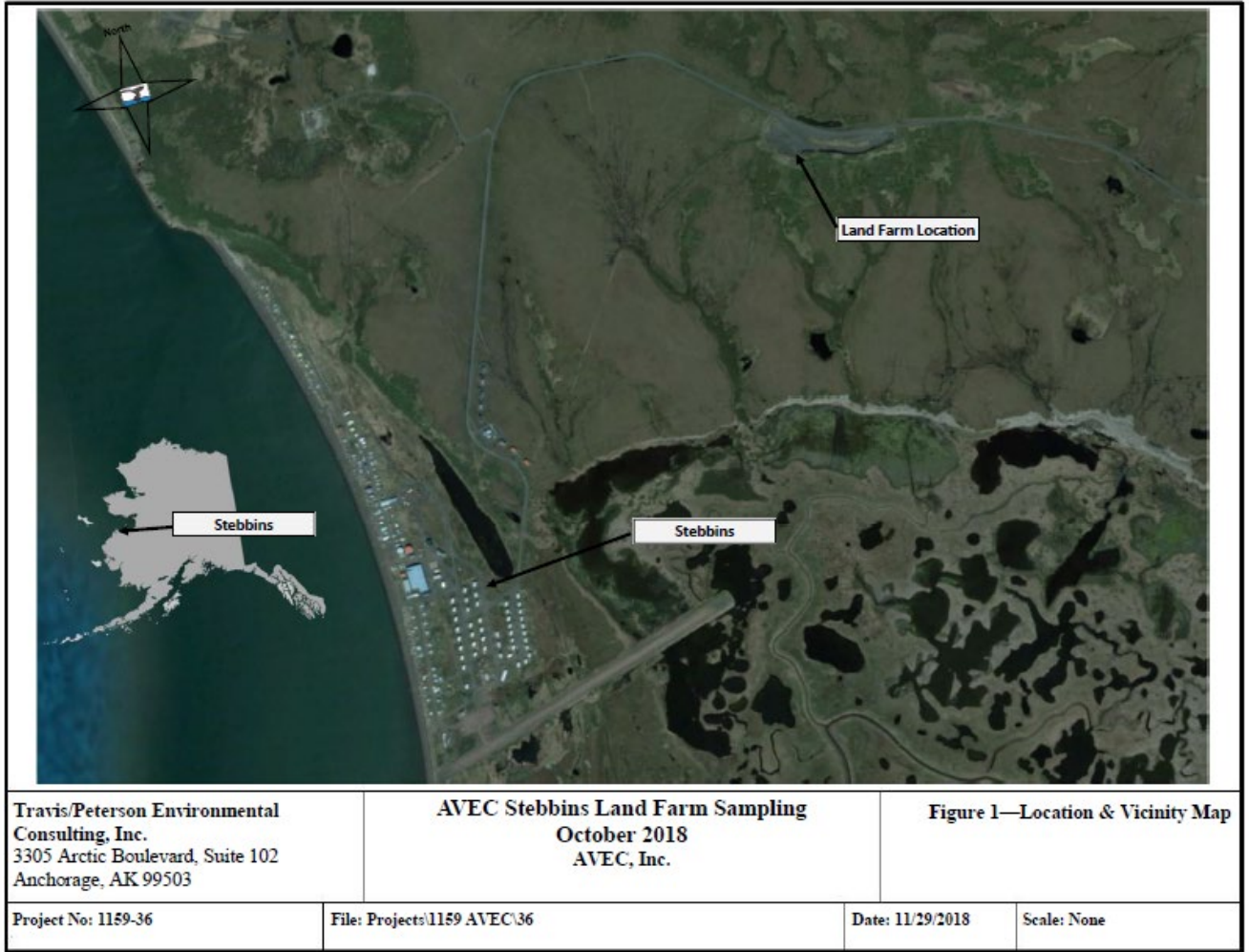


Figure 6. Location of the landfarm relative to the community of Stebbins (TPECI 2019)

Appendix B: 2015 ADEC Partial Closure Letter



THE STATE  
of ALASKA  
GOVERNOR BILL WALKER

**Department of Environmental  
Conservation**  
DIVISION OF SPILL PREVENTION AND RESPONSE  
Contaminated Sites Program

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www.dec.alaska.gov

File No: 650.38.006

November 2, 2015

Mr. Mark Bryan  
Alaska Village Electrical Cooperative  
4831 Eagle St.  
Anchorage, AK 99503

RE: AVEC Stebbins Power Plant Tank Farm

Dear Mr. Bryan:

This letter is to document the environmental status of the AVEC Former Power Plant Tank Farm in Stebbins, Alaska. This property is owned by the Alaska Department of Transportation and Public Facilities and is located adjacent to the Stebbins Airport. Petroleum contamination at concentrations above ADEC cleanup levels was first identified in soil at the site in 2012, when soil samples collected from the containment areas at the AVEC East and AVEC West Tank Farms contained diesel range organics (DRO) up to 30,000 mg/kg, above the cleanup level of 250 mg/kg. Demolition of the facility in 2014 and the ensuing remedial action resulted in the excavation of approximately 200 cubic yards of contaminated soil which was stockpiled offsite at the Stebbins landfill. Following excavation activities, DRO remained in soil at concentrations above ADEC cleanup levels in several locations, including the former AVEC West Tank Farm and the adjacent former Butler Building, where DRO was detected up to 13,500 mg/kg in a soil sample collected from the bottom of a test pit at the northern end of the former AVEC West Tank Farm.

Additional investigation was conducted in 2015 to delineate the extent of soil contamination, evaluate the potential impacts to groundwater, and excavate contaminated soil from the AVEC West tank farm. Test pits were excavated at AVEC West and also at several other locations around the perimeter of the former facility. Soil samples collected from the test pits did not contain contaminants above ADEC cleanup levels at any location, and no further soil was excavated.

Groundwater was evaluated by advancing well points into the saturated zone approximately 10-15 feet below ground surface and collecting samples, none of which contained petroleum at concentrations above ADEC cleanup levels.

Mr. Mark Bryan

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November 2, 2015

The site was graded following excavation activities and all buildings and other improvements have reportedly been removed. DRO remains in soil at the site up to 1,720 mg/kg, however based on the results of the 2014 and 2015 investigations, ADEC does not consider the remaining contamination to pose a risk to human health or the environment. ADEC's file on this site will remain open until the excavated soil has been successfully treated or disposed of, however ADEC will not be requiring any further action at the former power plant site.

If you have any questions regarding this matter or if you would like to discuss this site further you may contact me at (907) 269-3057 or via email at [bill.oconnell@alaska.gov](mailto:bill.oconnell@alaska.gov).

Sincerely,



Bill O'Connell  
Environmental Program Manager

cc: Mike McCarroll, ADOT&PF Northern Region Airport Leasing