



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: 102.26.107

May 25, 2021

Petro Star, Inc.  
ATTN: Lisa Lewis  
3900 C Street, Suite 802  
Anchorage, AK 99503

Re: Decision Document: Sourdough Fuel (Former Fbks. Fuel)  
Cleanup Complete Determination

Dear Ms. Lewis:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Sourdough Fuel (Former Fbks. Fuel) contaminated site located at 1555 Van Horn Road in Fairbanks, 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 new information becomes available that indicates residual contaminants may pose an unacceptable risk.

This Cleanup Complete determination is based on the administrative record for the Sourdough Fuel (Former Fbks. Fuel) 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:**

Sourdough Fuel (Former Fbks. Fuel)  
1555 Van Horn Road  
Fairbanks, AK 99701

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

Lisa Lewis  
Petro Star, Inc.  
3900 C Street, Suite 802  
Anchorage, AK 99503

**ADEC Site Identifiers:**

File No.: 102.26.107  
Hazard ID.: 24440

**Regulatory Authority for Determination:**

18 AAC 78

**Site Description and Background**

The Sourdough Fuel (Former Fbks. Fuel) site is an active gas station that has operated since the 1980s. In 1993, Petro Star, Inc. (Petro Star) applied for financial assistance from the ADEC for the Tank Upgrade and Closure Grant Program and the Tank Cleanup Grant and Loan Program. The application

noted that USTs and associated piping were upgraded in 1992 to meet requirements for leak detection and monitoring as well as spill prevention, however the existing UST system was not removed at the time of the upgrade. The application also stated that Petro Star planned to remove the old system in the future, at which time a site assessment would be conducted. Contamination was initially reported to the department in April 1994, at which time it was listed in the contaminated sites database. In May 1995, AGRA Earth and Environmental (AGRA) collected soil samples from excavations conducted during upgrades to the UST system and dispenser islands. Results indicated that gasoline range organics (GRO) and volatile organic compounds (VOCs) including benzene were detected at levels exceeding migration to groundwater cleanup levels at the extent of excavation. Approximately 285 cubic yards of soil were excavated and thermally remediated. In July 1995, AGRA conducted a phase II environmental site assessment that included the installation and sampling of borings and monitoring wells. Quarterly monitoring well sampling of wells installed in 1993 detected benzene at concentrations that varied seasonally but sometimes exceeded applicable cleanup levels. Quarterly sampling continued for several years, however additional assessment and characterization work was not conducted until the early 2000s under the oversight of the Contaminated Sites Program.

### **Contaminants of Concern**

During the site characterization and cleanup activities at this site, samples were collected from soil and groundwater, and analyzed for GRO, diesel range organics (DRO), residual range organics (RRO), volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), lead, 1,2-dichloroethane (EDC) and 1,2-dibromoethane (EDB). Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern at this site:

- Gasoline Range Organics (GRO)
- Diesel Range Organics (DRO)
- Benzene
- Ethylbenzene
- Toluene
- Xylenes
- Naphthalene
- Benzo(a)anthracene
- Benzo(a)pyrene
- 1-methylnaphthalene
- 2-methylnaphthalene
- Dibenzo(a,h)anthracene
- Lead

### **Cleanup Levels**

The soil cleanup levels are established in 18 AAC 75.341(c), Tables B1 and B2, under 40 inch zone, migration to groundwater. Because there is no migration to groundwater cleanup level established for lead, the applicable soil cleanup level for lead is the Human Health cleanup level from table B1. Groundwater cleanup levels are established in 18 AAC 75.345, Table C.

**Table 1 – Approved Cleanup Levels**

| <b>Contaminant</b>     | <b>Soil<br/>(mg/kg)</b> | <b>Groundwater<br/>(µg/L)</b> |
|------------------------|-------------------------|-------------------------------|
| GRO                    | 300                     | 2200                          |
| DRO                    | 250                     | 1500                          |
| Benzene                | 0.022                   | 4.6                           |
| Ethylbenzene           | 0.13                    | 15                            |
| Toluene                | 6.7                     | 1100                          |
| Xylenes                | 1.5                     | 190                           |
| Naphthalene            | 0.038                   | 1.7                           |
| Benz(a)anthracene      | 0.70                    | 0.30                          |
| Benzo(a)pyrene         | 1.9                     | 0.25                          |
| 1-Methylnaphthalene    | 0.41                    | 11                            |
| 2-Methylnaphthalene    | 1.3                     | 36                            |
| Dibenzo(a,h)anthracene | 6.3                     | 0.25                          |
| Lead                   | 400                     | 15                            |

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

**Characterization and Cleanup Activities**

This site was initially grouped with the contaminated site on the adjacent property, Sourdough Fuel/Tanana Petroleum, Inc. Bulk Fuel (TPI; file number 102.26.110), and early site characterization work plans and report include both sites. In September 2001, Travis/Peterson Environmental Consulting, Inc. (TPECI) submitted an “Environmental Monitoring Work Plan” to install additional borings and monitoring wells at the sites to better define the extent of contamination. In December 2002, a conceptual site model (CSM) letter report was submitted that included the results from the 2001 well installation effort and semi-annual sampling through 2002. The CSM also attempted to describe the potential exposure risk at the site. TPECI installed four wells and sampled all of the site wells for GRO, DRO, and benzene, toluene, ethylbenzene, and xylenes (BTEX, collectively). Benzene was detected above cleanup levels in several site wells during one or more sampling events, with concentrations fluctuating seasonally with the highest benzene results generally occurring in the spring sampling event. Quarterly sampling of wells B-1, B-2, and MW-1 was reduced to biannual sampling in 2003.

Additional investigation was performed in 2002 through 2004, including the installation of three additional monitoring wells in 2002 and 2003, two of which (YG-1 and YG-2) were on the property west of the site owned by the business Young’s Gear and Drivelines. Wells B-1, B-2, MW-1, MW-6, and MW-7 were sampled for petroleum and BTEX biannually from 2003 through 2006, in addition to the new wells YG-1, YG-2, and C-1. This work was performed without ADEC oversight and reports for the well installation were not received until 2009; Sampling data from these wells showed higher benzene concentrations compared to the UST source area wells, and the contamination is suspected to be from a separate source area. A fingerprinting analysis conducted in 2006 supports the hypothesis that

contamination in downgradient wells YG-1 and YG-2 may be from a different, unknown source. Additional investigation of this contamination is being conducted under file number 100.38.197.

Additional work was performed without an approved work plan in 2004, when TPECI advanced 12 soil borings in the right-of-way west of the two sites to investigate the possibility of contaminant migration and the presence of a filled-in slough channel. The report documenting this work was given to ADEC staff during a site visit in 2006, and no analytical data were provided with the report. However, the report stated that analytical results from samples guided by field screening were all below applicable cleanup levels, despite elevated field screening results.

Also in 2006, TPECI conducted a soil gas investigation to better refine the understanding of contaminant distribution at the sites. Soil gas concentrations decreased with distance from the UST source area, but were elevated at the furthest west location that was sampled, north of Young's Gear in the Van Horn right-of-way, further supporting the hypothesis of a source on or near the Young's Gear property.

During groundwater monitoring from 1995 through 2009, the highest concentrations of contaminants in monitoring wells on property was 750 µg/L benzene in MW-1 in December 1997, with ethylbenzene at 43 µg/L and GRO at 5.1 mg/L during the same sampling event. Contaminant concentrations decreased and remained below cleanup levels for several years, then increased in 2005 and 2006.

In 2007, monitoring wells B-1, B-2, and MW-1 were decommissioned and groundwater sampling frequency was reduced to annual monitoring for the other wells, although no work plan or report documenting the decommissioning or its approval exists. All site wells were sampled for petroleum fractions GRO, DRO, and RRO and BTEX through 2009, with the exception of YG-1 and YG-2 due to the owner of Young's Gear refusing access to the property (these wells are believed to have been decommissioned by the property owner at some point prior to 2008).

In July 2010, Petro Star decommissioned four USTs and a pump island at the facility. Field screening and observations by personnel indicated that soil contamination was present. Following the removal of the tanks, additional contaminated soil was excavated from the area surrounding the tanks and the pump island. Confirmation samples were taken from the base of the excavation and analyzed for DRO, GRO, PAHs, and BTEX. Results indicated contaminants remained at the base of the excavation beneath the gasoline tanks at concentrations up to 0.318 mg/kg benzene, 8.53 mg/kg toluene, 1.15 mg/kg ethylbenzene, and 8.96 mg/kg xylenes. DRO, GRO, and several PAHs were detected at concentrations below cleanup levels. Stockpile samples from excavated soil contained contaminants up to 1450 mg/kg DRO, 467 mg/kg GRO, 1.97 mg/kg benzene, 45.4 mg/kg toluene, 12.5 mg/kg toluene, and 107.4 mg/kg total xylenes. Contaminated soils were thermally treated off site at Organic Incineration Technologies, Inc.

In 2011, TPECI conducted a follow up site characterization effort to further delineate contamination at all source areas, identify potential preferential pathways, and ensure that all regulatory requirements for sampling contaminants of potential concern were met. Twenty-four soil borings were installed, with two soil samples and a groundwater sample being collected from each location. Groundwater was sampled using steel push points with foot-long screens. Well points were not developed before purging and sampling. Soil and groundwater samples were analyzed for GRO, DRO, BTEX, PAHs, EDB, EDC, and lead. Analytical results indicated that petroleum related contamination remained in the vicinity of the USTs that were removed in 2010. A single groundwater sample from boring B14 contained lead above

cleanup levels at a concentration of 16.7 µg/L. With the exception of very low levels of DRO, no other analytes were detected in groundwater at this location, suggesting that fuel is not the source of the lead contamination. There is no documentation of leaded fuel being stored or distributed at the gas station. In addition, the levels are within the range of values that were detected in a March 1994 regional background study by the United States Army Corps of Engineers. Because the elevated lead in this sample does not appear to be associated with site activities, and because lead was not detected above groundwater cleanup levels in any other samples, the ADEC has determined that there is no threat to human health, safety, or welfare, or to the environment and requires no further action for lead.

In 2016, TPECI installed and sampled temporary well point MW-11 in the vicinity of the gasoline USTs that were removed in 2010 and sampled it for GRO, DRO, and VOCs. Benzene was detected above cleanup levels at a concentration of 7.37 µg/L. The well was decommissioned after sampling.

In 2018, Shannon & Wilson, Inc. (SWI) sampled monitoring wells C-1 and MW-7 for petroleum, BTEX, and PAHs. Analytical results showed contaminant concentrations below cleanup levels. In the report for the sampling event, SWI noted that although the location of MW-11 was sampled only once in 2016, the concentration of benzene was much lower than the concentrations found in the same area in the 2011 sampling effort, indicating that attenuation is occurring. The report also indicated that benzene and DRO were detected above cleanup levels in a sample from MW-6, however this well included as a downgradient well for the monitoring network for the adjacent site, and the report states that increased concentrations in this well are likely attributable to contamination from the TPI source area.

In 2019, SWI installed four temporary well points downgradient of the 2010 UST removal excavation and a soil boring near the northwest corner of the excavation. Monitoring wells C-1, MW-6, and MW-7 were also sampled. Samples were analyzed for petroleum and VOCs. Soil samples did not contain detectable concentrations of contaminants, except chloroform, however chloroform was also detected in the blank sample, so the data were flagged and noted to be considered non-detect. Chloroform was the only analyte detected above cleanup levels in groundwater. Onsite property uses and activities were evaluated and there is no indication of a former property use or activity which may be a contributor to chloroform contamination. There are indications that chloroform can be produced by natural processes and is also a byproduct that is generated from disinfectants used in the municipal water supply. Based on information provided in site investigation reports, there does not appear to be a discernable source of chloroform associated with this site.

The 2019 Site Characterization report provided an updated conceptual site model (CSM) for the site and requested closure based on the indication that contaminants at the site have attenuated and the site does not appear to present a risk to human health or the environment.

### **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, 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, Exposure Controlled, or Pathway Incomplete. A summary of this pathway evaluation is included in Table 2.

**Table 2 – Exposure Pathway Evaluation**

| <b>Pathway</b>                            | <b>Result</b>       | <b>Explanation</b>   |
|---|---------------------|--|
| Surface Soil Contact                      | Pathway Incomplete  | Contamination is not present in surface soil (0 to 2 feet below ground surface).   |
| Sub-Surface Soil Contact                  | De Minimis Exposure | Contamination may remain in the sub-surface, but is below ingestion/human health cleanup levels.   |
| Inhalation – Outdoor Air                  | De Minimis Exposure | Contamination may remain in the sub-surface, but is below inhalation cleanup levels.   |
| Inhalation – Indoor Air (vapor intrusion) | De Minimis Exposure | Soil and groundwater data indicate that any contaminants that may remain in the subsurface are well below levels of concern for vapor intrusion. |
| Groundwater Ingestion                     | De Minimis Exposure | Contaminants in groundwater have attenuated below cleanup levels.  |
| Surface Water Ingestion                   | Pathway Incomplete  | Surface water is not present near the site.  |
| Wild and Farmed Foods Ingestion           | Pathway Incomplete  | The site is located in an industrial area where wild or farmed food harvesting is unlikely to occur.   |
| Exposure to Ecological Receptors          | Pathway Incomplete  | The site is located in an industrial area where ecological exposure routes are not present.  |

**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. “Exposure Controlled” means there is an institutional control in place limiting land or groundwater use and there may be a physical barrier in place that prevents contact with residual contamination.

**ADEC Decision**

Soil and groundwater contamination attributable to site activities at the site have been cleaned up to concentrations below the approved cleanup levels suitable for residential land use. The detection of lead above cleanup levels in a single groundwater sample from 2011 is within the range of expected background concentrations in the Tanana Valley, there is no evidence that leaded fuels were used at the site, and the sample did not detect fuel related contamination suggesting a different source for lead.

The most recent sampling event detected chloroform above cleanup levels in groundwater. This contaminant has been detected at number of sites in Alaska in the absence of known sources. Based on information provided in site investigation reports, there does not appear to be a discernable source of chloroform associated with this site, suggesting a natural source.

Sampling data for petroleum and associated contaminants indicate that no exceedances of human health cleanup levels remain at the site. Soil sampling data from 2011 include detections of VOCs and PAHs above migration to groundwater cleanup levels at the former locations of USTs that were removed in 2010, however subsequent groundwater sampling did not detect these contaminants in excess of groundwater cleanup levels, indicating that the soil is not currently acting as a source to groundwater. Soil sampling from 2019 at a nearby location also did not detect COCs above cleanup levels. Locations where contaminants may remain at concentrations below human health cleanup levels but in excess of migration to groundwater cleanup levels are documented in the enclosed figure by the orange outlines documenting 2010 UST excavation extents. These soils are subject to standard condition (1) below.

The ADEC has determined that there is no threat to human health, safety, or welfare, or to the environment at this site. 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 ADEC approval in accordance with 18 AAC 78.600(h). A “site” as defined by or 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 ADEC from requiring additional assessment and/or cleanup action if future 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.

Ms. Lisa Lewis  
Petro Star, Inc

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May 25, 2021

If you have questions about this closure decision, please feel free to contact me at (907) 451-2153, or email at [Robert.burgess@alaska.gov](mailto:Robert.burgess@alaska.gov).

Sincerely,

Robert Burgess  
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit



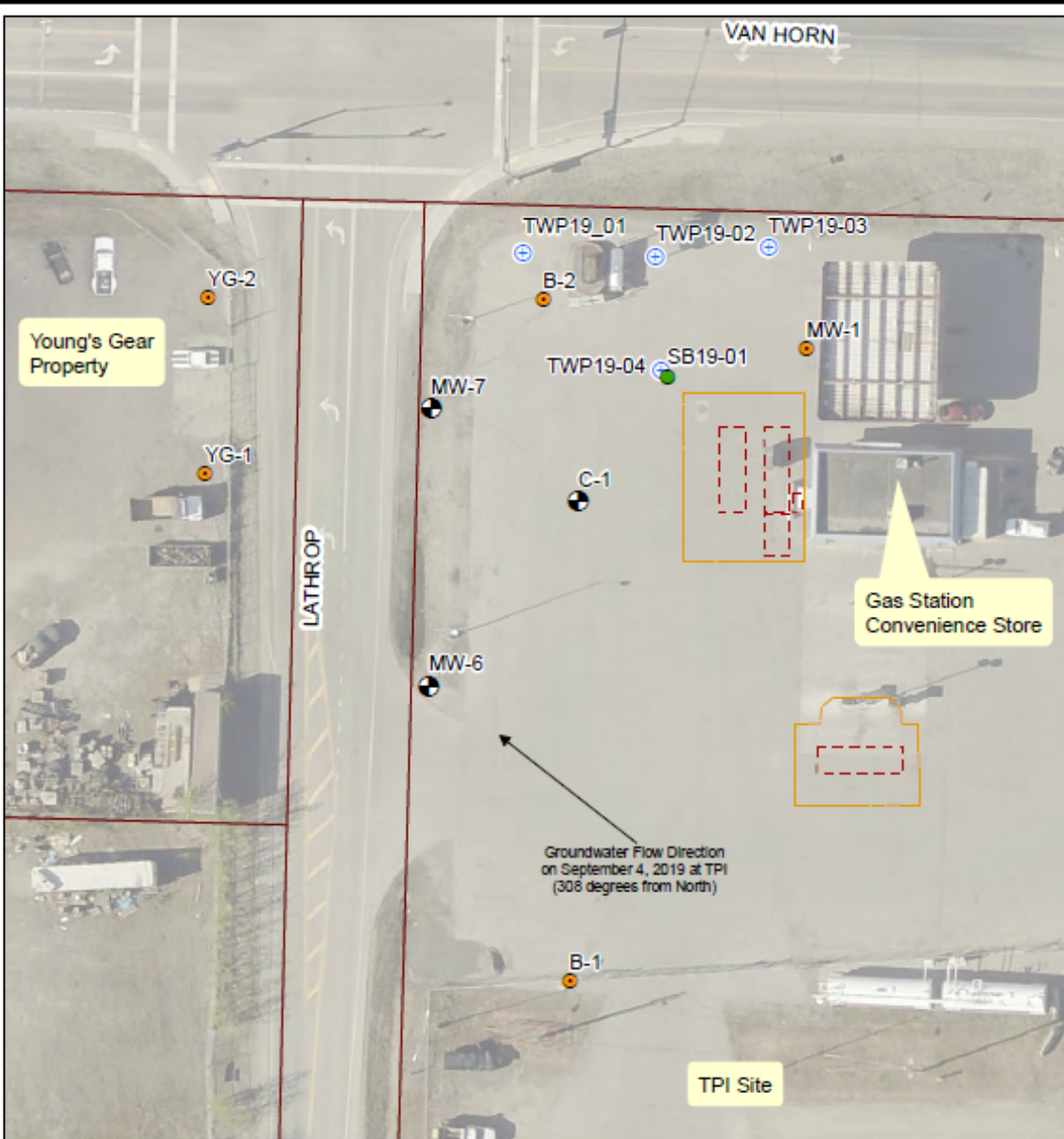
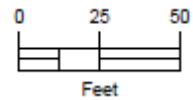


Image provided courtesy of Pictometry 2017.



**LEGEND**

- 2019 Temporary Points
- 2019 Soil Boring
- Existing Monitoring Well
- Decommissioned or Destroyed Monitoring Well
- 2010 UST Excavations
- Former UST Locations



|  |            |
|--|------------|
| Sourdough Fuel Van Horn Gas Station<br>Fairbanks, Alaska                                       |            |
| <b>SITE MAP</b>  |            |
| February 2020  | 102564-001 |
| <b>SHANNON &amp; WILSON, INC.</b><br><small>GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS</small> |            |
| <b>Figure 2</b>  |            |