



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Mr. Alan Frazer, Vice President
United Food Store, Inc.
904 Schofield Lane
Farmington, New Mexico 87401

Subject: Conditional No Further Action Determination
7-2-11 Food Stores #31, Leaking Underground Storage Tank (LUST) Site
Southeast Corner of Navajo Route 12 & Navajo Route 54
Fort Defiance, AZ 86504 (EPA Site ID# NAV036)

Dear Mr. Frazer:

The United States Environmental Protection Agency (“EPA”) has completed a review of actions taken to investigate and address a gasoline release from an underground storage tank (“UST”) at the 7-2-11 Food Stores service station #31 in Fort Defiance, Arizona (“Site”). The Site is an operating gas station within the exterior boundary of the Navajo Nation, and the installation of new cathodic protection equipment in 2010 revealed the release. All three USTs from 2010 remain in use today, and each passed a tank tightness test after release discovery. Groundwater monitoring conducted between 2011 and 2018 demonstrated to the satisfaction of the EPA and the Navajo Nation EPA (“NNEPA”) that contamination remained confined to pea gravel immediately surrounding the USTs.

The extent of the release appears to have been limited by using product recovery pumps in leak detection wells adjacent to the USTs, and by natural clay soils surrounding the tank pit. Furthermore, your representatives removed between 4,100 and 13,300 gallons of contaminated water from the tank pit on four separate occasions in 2010, 2012, 2016 and 2020 (see enclosure for more detailed summary of site history).

The EPA has reviewed the information in its Site file, including the November 2012 Compliance Testing Certification Report prepared by CGRS Inc., numerous groundwater monitoring reports prepared by Advanced Corrosion & Environmental Services, LLC (ACES), the October 2018 Well Plugging & Abandonment Report prepared by ACES, and the January 2020 Tank Excavation Pit Water Removal & Disposal Report also prepared by ACES.

Based on the findings from these reports, the EPA is issuing a *Conditional* No Further Action (“Conditional NFA”) determination for this Site. The EPA and NNEPA have discussed the Site history and agree that no additional site investigation or cleanup is warranted at this time. As discussed with you in July 2018, the EPA and NNEPA have determined that you or the future UST owner shall arrange for water level monitoring of leak detection well LD-2. Recordkeeping for the water level monitoring shall be provided to the NNEPA during their biennial UST facility compliance inspections. The NNEPA suggests the water level gauging be performed on a monthly or annual basis. Each UST facility on the Navajo Nation is required to perform a monthly and annual inspection of the UST system and to record the status on a checklist.¹ The water level monitoring can be incorporated in the monthly or annual checklist. Therefore, all records pertaining to UST leak detection and leak prevention, including the monthly or annual water level monitoring on LD-2, shall be readily available for the NNEPA inspection.

If the depth to water in LD-2 rises to 5.00 feet below the top of the well casing, or higher, you or the future UST owner must either (1) collect a water sample from LD-2 for laboratory analysis, or (2) empty the tank pit of water for proper offsite disposal within four months.

- 1) If you or the future UST owner opt to collect and analyze a water sample, a comparison of the sample to Navajo Nation Soil and Water Cleanup Standards for benzene, toluene, ethylbenzene, xylenes, naphthalene and MTBE will dictate whether the water should be removed from the tank pit.² If the water sample exceeds any of the Navajo Nation cleanup standards referenced above, the tank pit shall be emptied of water, and both the laboratory analysis and a water removal report shared with NNEPA and EPA. If the water sample does not exceed any of the Navajo Nation cleanup standards referenced above, the laboratory report shall be shared with NNEPA and EPA, and our Conditional NFA determination will be replaced with a standard NFA determination.
- 2) If you or the future UST owner empty the tank pit of water for proper offsite disposal, a water removal report shall be shared with NNEPA and EPA, and water level monitoring of leak detection well LD-2 shall continue. Water level monitoring shall continue until either the water meets the Navajo Nation cleanup standards referenced above, or the current UST systems are removed in accordance with all applicable NNEPA standards.³

If additional information becomes available in the future regarding hydrocarbon contamination in soil and/or groundwater, or if NNEPA determines that you are not meeting the conditions outlined above, EPA may reopen the case and require additional site assessment and/or corrective action.

1 40 CFR 280.36(a) and (b) Periodic operation and maintenance walkthrough inspection. Musts for USTs Page 21 (EPA 510-K-15-001) and Operating and Maintaining UST Systems Page 52-54 (EPA-510-K-16-001)

2 NN Leaking Storage Tank Soil and Water Cleanup Standards 2012 §V Appendix C, Table 4.

3 NN Storage Tank Act 2012 §1542 (C)(1) Permanent closure of UST system shall be accomplished by removal.

Please note that this NFA letter, as well as supporting documentation, will be available to the general public. If you have any questions regarding this letter, please contact me at (415) 972-3065, or Kenneth Dixon of my staff at (415) 972-3343.

Sincerely,

Alison Fong, Manager
Underground Storage Tanks Program Office

Enclosure: Site Summary

cc:

Diane Malone, Navajo Nation EPA
Warren Roan, Navajo Nation EPA
Sharon LeBeau, Navajo Nation EPA
Kenneth Dixon, U.S. EPA
Simona Platukyte, U.S. EPA
Al Chaharlang, Advanced Corrosion & Environmental Services, LLC

Enclosure – UST Cleanup Site Summary

7-2-11 Food Stores #31 – EPA ID #NAV036
Southeast Corner of Navajo Routes 12 & 54
Fort Defiance, AZ 86504

Site Background & UST Release

The operating 7-2-11 Food Stores service station in Fort Defiance, Arizona (“Site”) includes three underground storage tanks (“USTs”) installed in 1990. United Food Store, Inc. owns and operates two 10,000-gallon USTs and one 6,000-gallon UST on land leased from the Navajo Nation. All three systems include double-walled STI-P3 steel tanks. Product delivery piping appears to have been changed from an unknown construction to single-walled flexible plastic piping sometime before May 2010.



Figure 1: Approximate location of USTs on Site, as indicated by the green-and-white star icon from aerial view.

In May 2010, United Food Store retained Advanced Corrosion & Environmental Services, LLC (ACES) to upgrade the cathodic protection system for all three USTs. The sacrificial anode for the smaller UST was mostly consumed, and its cathodic protection no longer met regulatory criteria. Soil borings were installed in the tank pit for the placement of new anodes, and petroleum contamination was encountered.

Groundwater Investigation & Well Abandonment

Four groundwater monitoring wells were installed in December 2010 and monitored quarterly through 2015 by ACES, with no petroleum constituents detected above laboratory reporting limits.

Groundwater elevation data was difficult to interpret, however, as well MW-4 was shallower than the other wells and its water elevation data implied that groundwater flowed to the north or northeast. With no monitoring wells on this side of the tank pit, EPA and NNEPA requested drilling MW-4 deeper and installing new wells north and northeast of the tank pit. In March 2015, ACES completed the requested work. ACES monitored all six wells semiannually through April 2018, with no petroleum constituents detected above laboratory reporting limits. After incorporating the improved MW-4 and new wells MW-5 and MW-6, groundwater modeling predicted flow to the south or southwest, matching other sites in Fort Defiance.

In July 2018, EPA and NNEPA suggested that United Food Store properly abandon all Site monitoring wells. Groundwater had been monitored for eight years, and petroleum constituents had not once been detected above laboratory reporting limits. United Food Store agreed, and in October 2018, ACES overdrilled each well, removed the well casings, and plugged each with a cement/bentonite slurry.

The Site monitoring wells were distinct from and deeper than four leak detection wells that still exist in the pea gravel surrounding the operating USTs. Groundwater was encountered at 18 to 22 feet below ground surface in the six monitoring wells between 2010 and 2018. During the same time period, surface runoff that had infiltrated the tank pit was encountered at 2 to 11 feet below ground surface in the leak detection wells. Impermeable clay separates the tank pit water and the underlying aquifer.

Removal of Contaminated Groundwater & Liquid Petroleum Hydrocarbons

At confirmation of the petroleum release in May 2010, one half inch of liquid petroleum hydrocarbon (“LPH”) was found in the leak detection wells surrounding the USTs. LPH was encountered at between two and three feet below ground surface, with petroleum-contaminated water extending to the bottom of the tank pit 11 feet below ground surface. United Food Store arranged for a contractor to pump all liquids out of the pit, ultimately reporting 13,331 gallons removed over three days in June 2010.

In June 2012, liquid levels in the tank pit rose to 8.93 feet below ground surface, and United Food Store arranged for a contractor to empty the tank pit a second time. A total of 4,100 gallons were removed on June 26, 2012, and absorbent socks were installed in all four leak detection wells to recover LPH.

In August 2013, liquid levels in the tank pit rose higher to 6.28 feet below ground surface, and a product recovery pump was installed in leak detection well LD-3 to remove more LPH than absorbent socks could manage. Between August 2013 and March 2016, more than 900 gallons of LPH was removed via the product recovery pump, with most of the LPH removed in late 2013.

Liquid levels in the tank pit rose higher to 4.85 feet below ground surface in March 2016, prompting United Food Store to arrange for a contractor to empty the tank pit of water a third time. A total of 9,500 gallons were removed between April 15 and 21, 2016.

In late 2017, United Food Store hired a contractor to alter grading of the site and clear a nearby culvert. Rainwater had historically ponded onsite above the tank pit and was reportedly being exacerbated by the clogged culvert. In August 2019, liquid levels in the tank pit were measured at 4.15 feet below ground surface, and United Food Store Inc. arranged for a contractor to pump water out of the tank pit a fourth and final time. A total of 8,500 gallons were removed during two separate visits to the site on December 19, 2019, and January 8, 2020.

Rationale for Continuing to Gauge LD-2 and Potentially Remove More Contaminated Water

Residual contamination at the Site appears trapped in the tank pit and clay soils that surround it. A significant amount of water has been removed from the pit on four occasions, with petroleum contaminants returning each time. The concentrations of benzene, MTBE, and naphthalene have remained stable or reduced with each cycle, but concentrations remained above Navajo Nation cleanup standards when leak detection well LD-2 was last sampled in August 2019. At that time, benzene was detected at 23 ug/L (NNEPA cleanup standard is 5 ug/L), MTBE at 8.6 ug/L (NNEPA cleanup standard is 2.6 ug/L), and naphthalene at 181 ug/L (NNEPA cleanup standard is 6.2 ug/L).

The highest contaminant concentrations have historically been detected at leak detection well LD-2, in

the southwest corner of the tank pit. The EPA and NNEPA therefore agree that LD-2 should be the well gauged prior to facility inspections, and it should also be the well sampled if United Food Store or a future owner is to demonstrate that tank pit water meets Navajo Nation cleanup standards.

Contamination in and immediately surrounding the tank pit has proven to be immobile, and it has not impacted underlying groundwater. Since the June 2010 removal event, however, water levels in the pit were never allowed to get much higher than five feet below the top of the well casing for LD-2, and the possibility remains that contaminated water could move laterally if allowed to rise higher. For this reason, and because any future water removal would likely reduce contaminant levels, EPA and NNEPA agree that water should be removed from the tank pit if it rises to the level cited above. Additional site investigation or remediation is unnecessary, as residual contamination will ultimately be removed via excavation when USTs are removed or replaced.

Conclusion

The EPA concludes that actions taken to date have adequately addressed contamination associated with the gasoline release discovered in 2010. Eight years of groundwater monitoring indicate that the underlying aquifer has not been impacted by the release, and monitoring wells have been properly abandoned to prevent their serving as conduits for surface contamination. The EPA and NNEPA have conditioned this determination on United Food Store and any future owner agreeing to remove tank pit water if it rises to within five feet of the top of leak detection well casings—unless laboratory analyses demonstrate that the water meets Navajo Nation cleanup standards. This will eliminate the only potentially viable path for residual contamination to spread beyond the active tank pit, whose soils will ultimately be removed when Site USTs are removed or replaced.