



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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

December 6, 2018

Wilson Stewart, Jr.  
Navajo Nation Ft Defiance Chapter  
P.O. Box 366  
Ft. Defiance, Arizona 86504

Subject: No Further Action  
Former Amoco Station Leaking Underground Storage Tank (LUST) Site  
Ft. Defiance, Arizona (EPA ID# NAV335)

Dear Mr. Stewart:

The U.S. Environmental Protection Agency (EPA) has completed its review of documents pertaining to the former Amoco Station leaking underground storage tank (LUST) cleanup site. EPA has determined, with concurrence from the Navajo Nation Environmental Protection Agency (NNEPA), that no further action (NFA) is necessary for the Site based on the findings from the site assessment and remediation activity conducted on November 13-14, 2018. Specifically, this NFA determination is based on the following:

- No residual soil contamination was identified after 330 cubic yards of soil were excavated in November 2018; and
- No groundwater was encountered during site investigation activities in 2009, 2013 or 2018.

Based on the information cited above, EPA has determined that No Further Action is necessary at this time. However, if additional information becomes available in the future regarding hydrocarbon contamination in soil and/or groundwater at the Site, EPA may determine that additional site assessment and/or corrective action is warranted.

If you have any questions regarding the information contained in this letter, please contact Pam Maples of the NNEPA at 928-971-7764, Rebecca Jamison of my staff at (415) 972-3365, or you can contact me directly at (415)-972-3369.

Sincerely,

A handwritten signature in blue ink, which appears to read "Steve Linder", is positioned above the printed name of the signatory.

Steven C. Linder, P.E., Manager  
Underground Storage Tanks Program

cc: Lorraine Nelson, Chapter Manager – Ft. Defiance Chapter  
Bart Stevens/G. Padilla, BIA-Navajo Region  
Navajo RBDO-Ft Defiance Office  
D. Malone/P. Maples, NNEPA

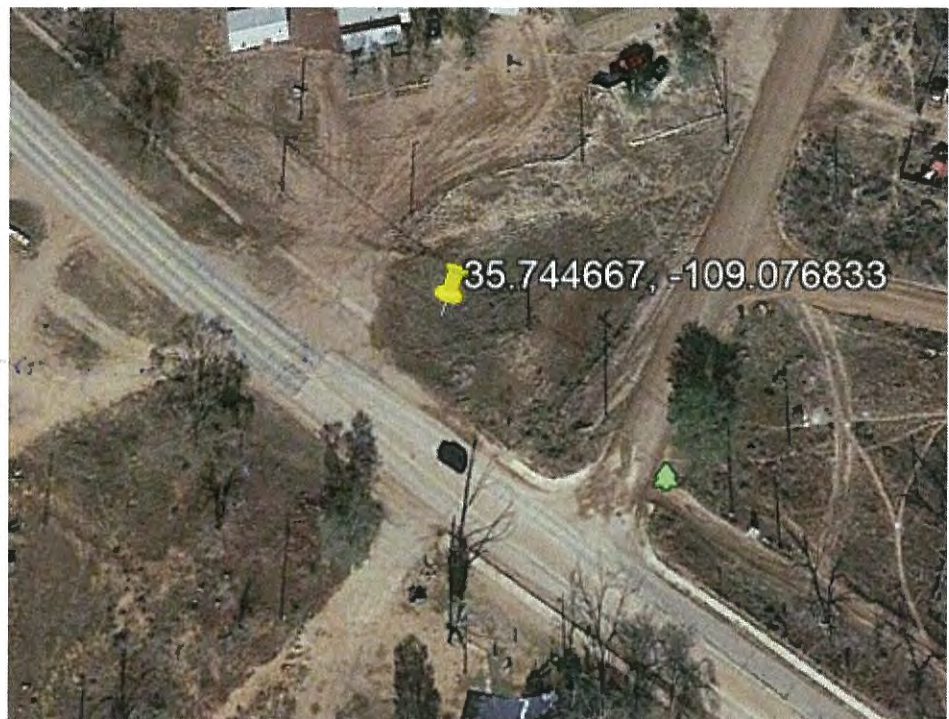
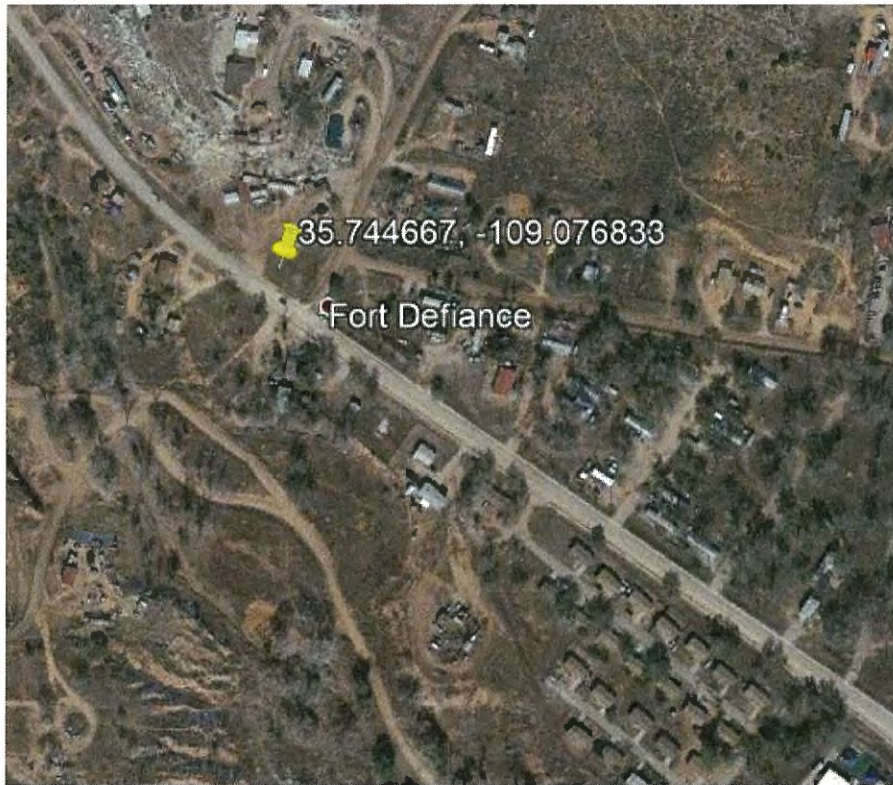
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*Enclosure A*

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**NAV335- Former Amoco-Ft Defiance, NW Corner of IR10 and IR12, Fort Defiance, AZ, Apache**

Former Amoco-Ft Defiance is located on Kit Carson Drive in Ft Defiance  
Latitude 35.744667 N, Longitude -109.076833 W



## Background

The former Amoco station previously dispensed petroleum products (gasoline grade of motor fuel) and stored used motor oil in two (2) separate underground storage tank (UST) basins onsite until the early 1980s. Five (5) USTs were located within a single tank basin containing a 3,000-gallon gasoline UST; a 380-gallon gasoline UST; two (2) 1,000-gallon used motor oil USTs, and a single 380-gallon used motor oil UST. An isolated 10,000-gallon gasoline UST was located north and west of these USTs that was likely a later (newer) installation for the store. The six (6) USTs were removed in June of 2004 (by *iiná bá*) with no evidence of impact to the environment in the vicinity of the larger, more-recent UST. All impacts documented to soil originated from the other multiple USTs located adjacent to the two (2) fuel dispensing islands that were believed to be original to the store. An outside hydraulic vehicle lift was also located onsite to the east of the former store and UST basins.

In 2009, Bristol installed a bioventing remediation system and collected vapor samples from the two (2) existing SVE wells, with a follow-up sampling event six (6) months later. The initial vapor concentrations from SVE-2 at start-up were 18,000 milligrams per cubic meter (mg/m<sup>3</sup>) or 3.73 ppm and 3,400 mg/m<sup>3</sup> or 0.70 ppm at six (6) months. In June of 2013, approximately four (4) years after start-up, *iiná bá* collected additional soil vapor samples from SVE-1 and SVE-2 to evaluate current conditions. The sample results indicated a concentration of 3,400 ppm in soil vapors collected from SVE-2, which indicated there were still elevated soil gas concentrations in soil from the former UST removal basin. Remedial options were explored, and it was concluded that either in-situ injection of a remediation compound or petroleum contaminated soil (PCS) removal were viable actions for the subject site.

## Current Status

On Tuesday, November 13, 2018 and Wednesday, November 14, 2018, *iiná bá* initiated soil removal actions within the targeted PCS area. PCS was anticipated to be present beneath and around the vicinity of SVE-2, starting at a depth of approximately 18 feet below ground surface (bgs) and extending outwards and vertically to an anticipated depth of 28 feet bgs. In order to extend the viable reach of the excavator from 26 feet bgs to at least the target PCS depth of 28 feet bgs, the northern side of the excavation was “benched” with the removal of a 3-foot deep area to allow the excavator to be positioned lower in elevation.

During soil removal, it was noticed that the upper two (2) to three (3) feet of overburden appeared “dirty” with the presence of disturbed and in-place asphalt, as well as the presence of an “oily” odor. The previous backfill used after UST removal was evident as an orange-red sandy material that was uniform and contained no visible structure. Once at the target depth of 18 feet bgs, evidence of PCS was evaluated using olfactory, staining observations, and field screenings with a calibrated photoionization detector (PID). None of these conditions were noted, so excavation and monitoring continued. Only very faint odors were periodically noted, but it was believed that these indications were coming from the shallow interval described above. Measurements within the excavation were routinely obtained for total depth and it was noticed that with the complete removal of all pipe from SVE-2 that a depth of 30 feet bgs had been reached. Screening of soils at this depth did not reveal any different conditions, with only a faint odor of petroleum, no staining and PID screening levels under 10 parts per million (ppm). The excavation at this depth was widened to the available extent possible given the easterly constraints of the



overhead power lines and Kit Carson Drive BIA right-of-way to the west. Given these conditions, it was determined that the resulting excavation should be sampled to document existing subsurface conditions within the targeted PCS removal area and then backfill the excavation. A final excavation (excluding disturbed areas for proper sideslope and benching) measuring 20 feet by 23 feet by 16 feet by 10 feet at a depth of 30 feet had been created requiring confirmation sampling.

Following the removal of an estimated 330 cubic yards (CY) of soil from the target area, grab samples from each sidewall (2 each sidewall for a total of 8) and from the floor of the excavation (2 total) were collected for laboratory analysis. The sidewall samples were collected from a depth of approximately 18 to 20 feet bgs (top of PCS target interval) and from a depth of 28 to 30 feet bgs (bottom of PCS target interval) and from the bottom of the excavation (28 to 30 feet bgs).

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*No Further Action*

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No olfactory (PID) or staining was observed within the target PCS removal interval of 18 to 28 feet bgs to indicate the presence of grossly-impacted soils. The post-excavation sampling of soils from the sidewalls and floor of the excavated area did not detect the presence of residual petroleum hydrocarbon impacts above the Navajo Nation Environmental Protection Agency (NNEPA) Soil Cleanup Standards.

No groundwater was encountered during the excavation.