

PROPOSED LEAKING UST (LUST) CASE CLOSURE

The Arizona Department of Environmental Quality (ADEQ) is considering closure of the following leaking underground storage tank (LUST) cases:

LUST Case File #: 0541.01-.04
Facility ID # 0-002803
Graham County

Giant 908
300 E. U.S. Highway 70
Safford, Arizona 86025

This site is located at 300 E. Highway 70 in Safford. The site is currently operating as a Shell Service Station, located at the northeast corner of U.S. Highway 70 and Kay Lane. The current UST system consists of two 12,000-gallon gasoline USTs, one 8,000-gallon diesel fuel UST and four dispensers. The original UST system had an additional 12,000-gallon UST (UST #3) which was closed in place in 2004. Kaibab Industries (Kaibab) was the UST owner/operator prior to Giant Industries (Giant) being the UST owner/operator. LUST release 0541.01 and .02 were assigned by ADEQ in 1988 and 1996, respectively to gasoline product lines. Kaibab is responsible for these releases under the name Whiting Station No. 130. LUST releases 0541.03 and .04 were assigned by ADEQ in 2002 and 2005, respectively to the north 12K-gallon unleaded UST and the north gasoline fuel dispenser island. The releases were discovered while Giant operated the USTs.

Giant retained several consulting firms to conduct corrective action activities. ADEQ determined that LUST release 0541.03 was within the soil and groundwater contamination area of the preexisting LUST release 0541.01. ADEQ concluded that additional characterization of LUST release 0541.03 was unnecessary, and any corrective actions for LUST release 0541.01 would also remediate the contamination associated with LUST 0540.03. Western Refining Southwest Inc. (WRS) acquired Giant Industries from Kaibab Industries in May 2007. WRS and its consultant Tetra Tech conducted corrective actions which included soil boring and monitor well installation and operation and soil vapor extraction (SVE) between 2007 and 2011. In October 2011, Groundwater & Environmental Services, Inc. (GES) to continue corrective actions.

In 2007, three soil borings were installed to characterize LUST release 0540.04. Trimethylbenzene (TMBs) contamination at a depth of 20 feet bgs was present at SB-1 at concentrations that exceeded applicable regulatory standards. Giant submitted a *Site Characterization Report* in October 2007 summarizing the data. ADEQ denied the report in January 2008, and requested another vertical soil boring at the north dispenser island. SB-4 was installed in May 2008, and completed as monitoring well (MW-6). Soil samples collected at 15 and 20 feet bgs contained benzene, toluene, ethylbenzene and xylene (BTEX), TMBs, and naphthalene at concentrations that exceeded applicable regulatory standards. These compounds are all volatile organic compounds (VOCs).

SVE operation began in June 2008 and was permanently shut down in November 2011 due to low contaminant mass removal rates. Low contaminant removal rates limit the cost-effectiveness of the system. The post remediation groundwater data collected in February 2018 shows that the VOC concentrations have significantly decreased so that only MW-6 shows any VOC (benzene) in concentrations that exceed an applicable regulatory standard. Other VOCs were reported but at concentrations below their applicable regulatory standard.

A site specific risk assessment and detailed file/information search have been completed. Based upon the results of remedial activities and site specific information provided by GES, the above-referenced LUST site is eligible for alternative LUST closure under Arizona Revised Statutes (A.R.S.) §49-1005(E). Arizona Administrative Code (A.A.C.) R18-12-263.04 (A) and (B) allows case closure of a LUST site with groundwater contamination above the Aquifer Water Quality Standard (AWQS) or Tier 1 Corrective Action Standards. ADEQ has considered the results of the site specific assessment and the rule specific criteria below:

1. *Threatened or impacted drinking water wells:* The site is situated above the Gila Valley sub-basin of the Safford Basin, which contains alluvial fill. Groundwater is typically unconfined in the upper aquifer, but occurs under artesian conditions in the lower aquifer. The two units are generally separated by a thick clay layer. Recharge occurs via mountain runoff and infiltrations from the Gila River which is located approximately $\frac{3}{4}$ mile north of the site. GES evaluated registered wells within $\frac{1}{4}$ mile of the site. ADEQ evaluated registered wells located between $\frac{1}{4}$ and $\frac{1}{2}$ mile from the site. According to the Arizona Department of Water Resources (ADWR), there are 119 registered wells located within $\frac{1}{2}$ mile of the site. Of the 119 registered wells, 101 wells are registered as monitoring or other (many are remediation wells). There are three registered exempt wells, but two of them have been abandoned and were within 500 feet of the LUST site. The third well is identified as 55-642481 (McGaughey). There is no pumping data available for this well, so it is not known if the well is actually used. There are 15 registered non-exempt wells and two of them are listed as irrigation wells and are located within 500 feet of the LUST site. There is no pumping data associated with these two wells. According to the ADWR *List of Municipal Water Providers Designated as Having an Assured or Adequate Water Supply* dated January 4, 2018, The City of Safford has DWR 40-900011.0000. This designation means the City of Safford has an assured 100 year water supply. Any new or replacement well located at or near this site would need to meet the criteria of A.A.C. R12-18-1302 (B) (3). The City of Safford Public Water System number is #0405-005. The City of Safford has 15 wells in their system and none of them are within $\frac{1}{2}$ mile of the LUST site. The City of Safford was sent a Water Provider Questionnaire and submitted it to ADEQ. The City confirmed they have no wells within 1 mile of the LUST site and have no plans of installing any in that area.

2. *Other exposure pathways:* Current groundwater levels at the site are approximately 25 feet bgs. GES evaluated the vapor intrusion pathway from dissolved VOCs in the groundwater. GES evaluated the groundwater data using the EPA on-line screening version of the Johnson & Ettinger model and the BioVapor vapor intrusion model with oxygen-limited aerobic degradation. The data supports that there is no unacceptable cancer or non-cancer risk associated with the inhalation exposure pathway. Groundwater data and the low soil vapor concentrations from the SVE system support that any residual contamination will not continue to degrade groundwater quality. There are no sensitive receptors like schools, day care centers, etc. within $\frac{1}{4}$ mile of the site. The site is located in an area that includes commercial, industrial and residential properties.

3. *Groundwater plume stability:* Between January 1993 and April 2011, groundwater depth beneath the site in the upper aquifer was approximately 16 to 28 feet bgs. During the summer of 2009, the water levels decreased approximately 8 feet in 3 months due to drought conditions and increased irrigation pumping. VOC concentrations generally increased in wells located near the source areas, suggesting that submerged contamination became exposed. VOC mass removal (approximately 12,000 pounds of VOCs) was substantially increased by the SVE system during that time frame. The benzene contamination in groundwater was much less than previously detected under similar groundwater conditions. GES

conducted a trend analysis of several VOCs using the GSI Mann-Kendall Toolkit for Constituent Trend Analysis. A summary of the analysis indicate that all of the analyzed CoC concentrations are decreasing in both MW-6 and VR-9. The output concentration trends suggest long-term stability of the groundwater plume. The wells that show contamination present over an applicable regulatory standard are near the source area. Monitoring wells located down gradient of the source area have not shown VOC contamination present over an applicable regulatory standard since May 2011. The down gradient on-site perimeter wells have not exhibited VOC contamination above a reporting limit, but below an applicable regulatory standard since 2009. The off-site down gradient well has historically been non-detect for VOCs.

4. *Characterization of the groundwater plume:* The groundwater was characterized as of September 1998 based on the approved *Site Characterization Report*. Groundwater samples have been collected at the site since 1991. Free product has not been seen in the source well since 1995. The latest groundwater sampling event was in February 2018. Benzene was reported in MW-6 at a concentration that exceed the aquifer water quality standard (AWQS) of 5 µg/L. Several other VOCs were reported in concentrations less than their respective AWQS, but above laboratory reporting limits. The dissolved benzene plume has been contained to on site. The benzene concentrations in MW-6 has decreased from a maximum of 17,000 µg/L in June 1998. The historic VOC concentrations have decreased throughout the site.

5. *Natural Attenuation:* The site was actively remediated between June 2008 and November 2011. Records indicate that depleted oxygen levels measured in the extracted soil gas during SVE operation confirm that aerobic biodegradation was occurring in the subsurface soil and was a contributor to overall VOC mass removal.

6. *Removal or control of the source of contamination:* SVE was used to remove the source of contamination in the soil between 2008 and 2011. The system removed approximately 101,359 pounds of VOCs from the soil and the groundwater. Approximately 28,928 pounds were removed through extraction and oxidation of volatilized soil and groundwater contaminants. Approximately 72,430 pounds of VOCs biodegraded within the subsurface, as evidenced by depleted oxygen concentrations in the extracted soil vapor. The pounds of VOCs removed is equivalent to approximately 17,845 gallons of gasoline.

7. *Requirements of A.R.S. §49-1005(D) and (E):* The results of the corrective action completed at the site assure protection of public health, welfare and the environment, to the extent practicable, the clean-up activities completed at this site allow for the maximum beneficial use of the site, while being reasonable, necessary and cost effective.

8. *Other information that is pertinent to the LUST case closure approval:* The facility and LUST files were reviewed for information regarding prior cleanup activities, prior site uses and operational history of the UST system prior to removal.

Groundwater information: MW-6

Date	Benzene AWQS is 5 µg/L	Depth to water (Feet)
06/09/2008	13,900/17,000	21.84
09/23/2008	13,400	22.78
02/04/2009	2,200	18.59
07/30/2009	5,880	27.82
01/13/2010	136	25.08
04/20/2010	44.8	22.93
07/20/2010	71.7	25.49
11/09/2010	63.4	23.13
02/02/2011	2.47	21.73
05/18/2011	231	26.85
03/20/2012	26	28.83
4/13/2015	37	27.80
11/28/2017	51.6	25.75
2/9/2018	52.8	24.59

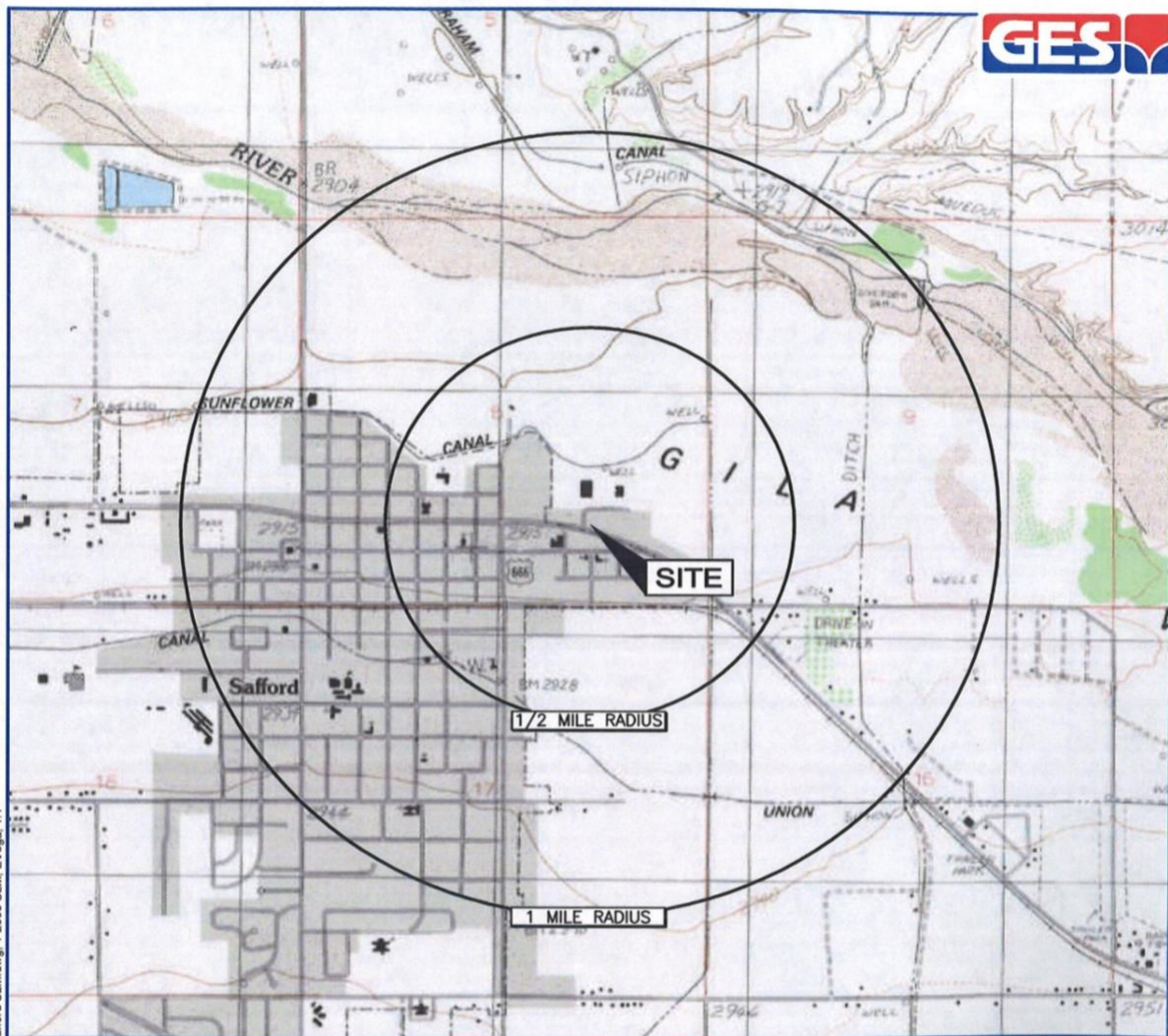
Site specific information concerning this closure is available for review during normal business hours at the ADEQ Records Center <http://www.azdeq.gov/function/assistance/records.html> , 1110 W. Washington St., Suite 140, Phoenix, AZ 85007. ADEQ welcomes comments on the proposed LUST case closure. Please call the Records Center at 602-771-4380 to schedule an appointment. A 30-day public comment period is in effect commencing **May 29, 2018 and ending, June 29, 2018**. Comments should be submitted in writing to the Arizona Department of Environmental Quality, Waste Programs Division, Attention Tiffany Yee, and 1110 W. Washington Street, Phoenix, AZ 85007.

If sufficient public interest is demonstrated during the public comment period, ADEQ will announce and hold a public meeting. ADEQ will respond to written comments following the public comment period. For more information on this notice, please contact the Case Manager, Tiffany Yee at 602-771-2316 or 800-234-5677 ext. 771-2316 or at tjy@azdeq.gov or the Sr. Risk Assessor, Debi Goodwin at 602-771-4453 or 800-234-5677 ext. 771-4453 or at dgl@azdeq.gov or

Copies of the cited statutes and rules can be found at:
<http://www.azleg.gov/ArizonaRevisedStatutes.asp?Title=49>, and
http://www.azsos.gov/public_services/Title_18/18-12.html

ADEQ will take reasonable measures to provide access to department services to individuals with limited ability to speak, write, or understand English and/or to those with disabilities. Requests for language interpretation services or for disability accommodations must be made at least 48 hours in advance by contacting: 7-1-1 for TDD; (602) 771-2215 for Disability Accessibility; or Ian Bingham, Title VI Nondiscrimination Coordinator at (602) 771-4322 or idb@azdeq.gov.



ADEQ tomará medidas razonables para proveer acceso a los servicios del departamento para personas con capacidad limitada para hablar, escribir o entender Inglés y / o para las personas con discapacidad. Las solicitudes de servicios de interpretación del lenguaje o de alojamiento de discapacidad deben hacerse por lo menos 48 horas de antelación poniéndose en contacto con Ian Bingham, Title VI Nondiscrimination Coordinator al (602) 771-4322 o idb@azdeq.gov.

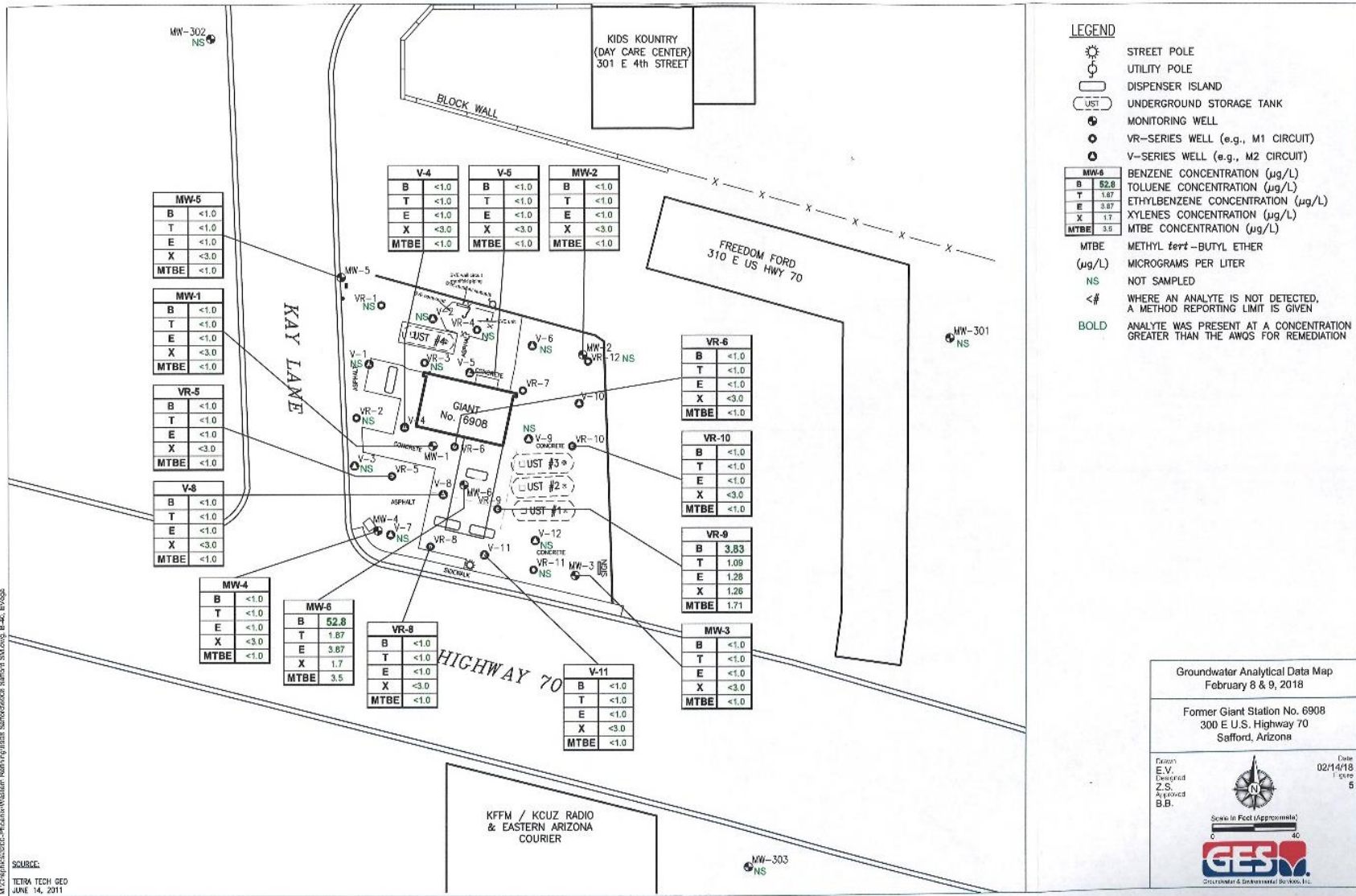


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SOURCE: USGS 7.5 MINUTE SERIES
 TOPOGRAPHIC QUADRANGLE 1985
 SAFFORD, ARIZONA
 CONTOUR INTERVAL = 20'
 TOWNSHIP - 7S
 RANGE - 26E
 SECTION - 8

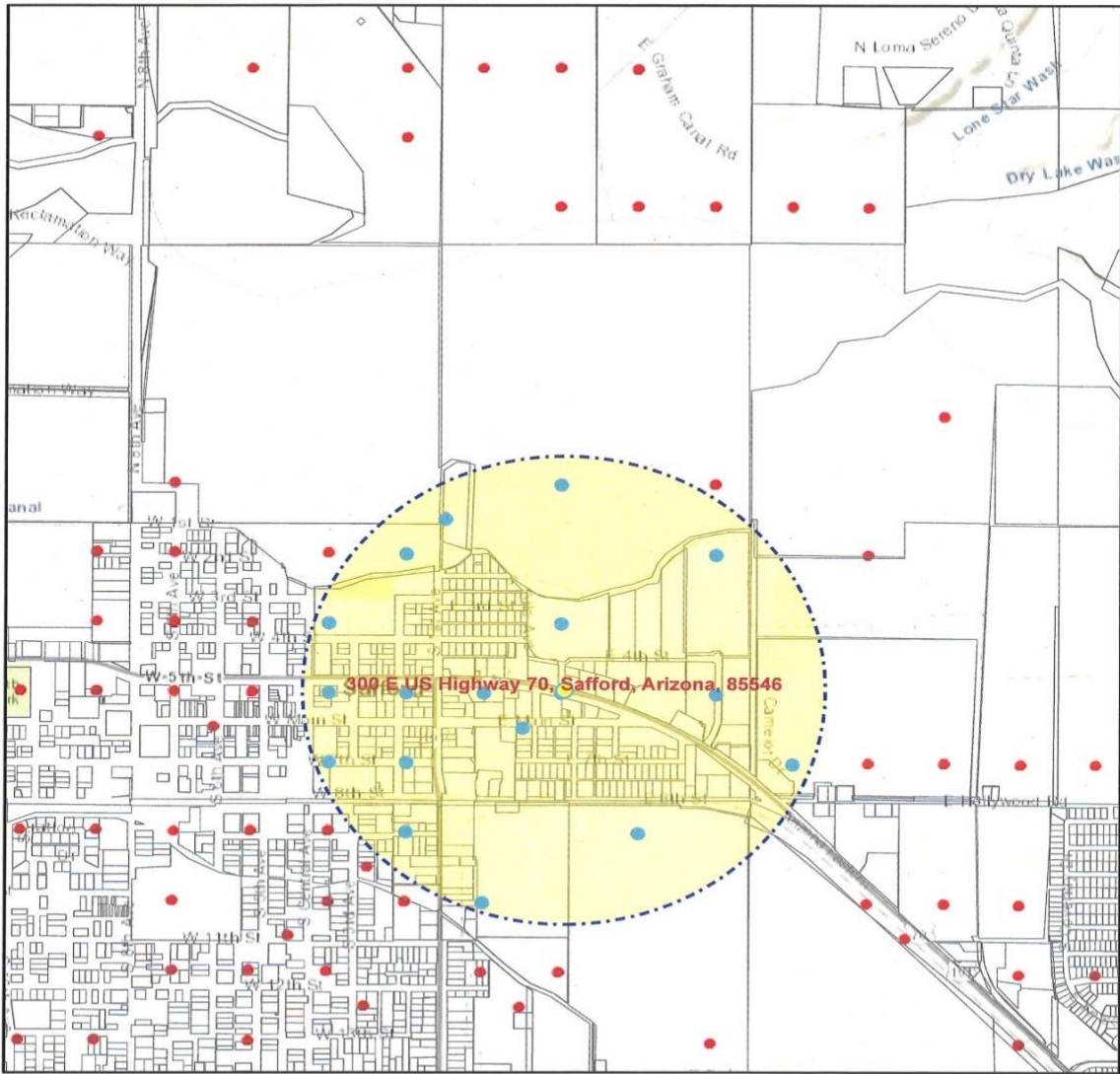


DRAFTED BY: E.V. (N.J.)	SITE LOCATION MAP	
CHECKED BY: MK		
REVIEWED BY: BB		
NORTH 	Groundwater & Environmental Services, Inc.	
SCALE IN FEET 	DATE 2-7-12	FIGURE 1

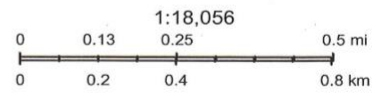


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 SOURCE: TETRA TECH GEO JUNE 14, 2011

Giant Station No. 6908



May 7, 2018



Arizona Department of Water Resources, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS

Arizona Department of Water Resources



ARIZONA DEPARTMENT
OF ENVIRONMENTAL
QUALITY

Email completed
form to (preferred):
DG1@azdeq.gov

Or mail completed form to:
UST-LUST Section
1110 W Washington St
Phoenix, AZ 85007

GROUNDWATER USE QUESTIONNAIRE

LUST FACILITY NAME former Giant Station No. 6908

ADDRESS 300 E. Highway 70

LUST FACILITY ID 0-002803

LUST CASE NO 0541.01-.04

Please answer all questions. Mark "UNK" if the answer is unknown to you at the time of completion. Please attach any additional pages as needed.

Water user municipality/utility name: City of Safford

Date Questionnaire was completed: 05/16/18

Contact Name: Morgan Seale

Title: Water Quality Supervisor

Address: 405 W. Discovery Park Blvd. Safford Az, 85546

Phone Number: (928) 432-4243

Email address: mseale@saffordaz.gov

1. Please indicate current or near future anticipated groundwater development by the municipality/utility within 1 mile of the above named LUST site.

N/A



2. What is the future use (up to 100 years) for groundwater within 1 mile of the above named LUST site?

N/A

3. Is the municipality/utility currently sampling groundwater wells within 1 mile of the above named LUST site? If so, how often is the sampling conducted? Are analytical results being submitted electronically to ADEQ's the groundwater database? If not, will you share the data with ADEQ?

N/A

4. Are there any groundwater wells owned by the water provider that are known to have been affected by the above named LUST site? If so, please list the ADWR well identification numbers. What is the current status of these wells (e.g. shut down, still pumping)?

N/A

5. What is the future use (up to 100 years) for any wells that have been impacted by the above named LUST site?

N/A

6. Is there any other information you wish to provide to assist ADEQ in the LUST case closure evaluation of this site?

N/A