ADEQ Arizona Department of Environmental Quality

PUBLIC NOTICE

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 # 2672.01-.02	**Frog Service Center (former ARCO No. 1488)**
Facility ID # 0-007862	**381 South Arizona Boulevard**
Pinal County	**Coolidge, Arizona 85228**

The site is located at 381 South Arizona Boulevard in Coolidge. The site was a former ARCO branded service station between 1958 and 1974. An automotive repair shop (Ed's Body Shop) and a used vehicle sales lot (Dreamline Motors) have also operated at the site after the ARCO station closed. Gasoline sales reportedly ceased in 1975, and the three underground storage tanks (USTs) reportedly were closed-in-place between 1975 and 1983 and were located south of the building structure. An additional 300-gallon waste oil tank was removed in 1995 and the UST was located where the existing building sits.

In 1993 a voluntary site assessment was performed as part of a property transfer. Soil contamination was identified and LUST case #2672.01 was assigned to the gasoline USTs. Between 1995 and 1999, multiple soil borings and three monitoring wells (MW-2 through MW-4) were installed. A nested shallow vapor, monitoring well and sparge well was also installed (MW-1). In October 1999, ADEQ issued a letter stating that the site was designated as having multiple LUST releases and LUST case #2672.02 was assigned to the former dispenser pump island. ADEQ issued a letter in May 2000 that the soil contamination was fully characterized, but the groundwater plume needed additional characterization due to an adjacent LUST site (Ray Bell Oil #416) located to the northwest and down gradient of this LUST site. In September 2003, ADEQ issued a letter rescinding the requirement for additional characterization of the groundwater based on the denial of property access from the Arizona Department of Transportation (ADOT), and a review of the LUST files for both sites. In 2004, four additional groundwater monitoring wells were installed. In March 2011, the current consultant for Tesoro Companies, Inc [Antea Group], submitted a *Corrective Action Plan* to ADEQ proposing a series of soil vapor extraction (SVE) and air sparge (AS) events. However, the consultant was denied site access by the property owner for any reason. In 2013, the property owner only allowed site access during evening hours and site work was limited to groundwater gauging and sampling. The property owner would not allow any intrusive work or the placement of any remediation equipment at the site. In 2015, Antea Group again attempted to get off site access from ADOT to install a monitoring well in the center median of State Route 87 (Arizona Boulevard). The request was again denied. Antea Group conducted a soil vapor survey in 2017 to assess the potential vapor intrusion risk from any remaining subsurface soil contamination.

Current data provided by Antea Group, and all other available site information has been used by ADEQ to determine whether remaining levels of contaminants at the site are adequately protective of human health and the environment. A site specific risk assessment and detailed file/information search were also completed. Volatile organic compound (VOC) analytical groundwater results in MW-7 show that 1, 2-dichloroethane (1, 2-DCA) concentrations remain above Aquifer Water Quality Standard of 5.0 µg/L. 1, 2-DCA and ethylene dibromide (1, 2-DCA and EDB) were leaded gasoline additives. Benzene concentrations in MW-5 exceed the AWQS of 5.0 µg/L. The results for all other monitoring wells show no contamination present and is available in the LUST file.

Based upon the results of remedial activities and site specific information, 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 allows case closure of a LUST site with groundwater contamination above the Arizona Aquifer Water Quality Standards (AWQS) or Tier 1 Corrective Action Standards. ADEQ has considered the results of a site specific assessment and the rule specific criteria below:

1. *Threatened or impacted drinking water wells*: According to the Arizona Department of Water Resources (ADWR) records, there are no threatened or impacted drinking water wells within 1/2 mile of the site. The depth to groundwater is approximately 85 feet below ground surface. The Arizona Water Company's Pinal Valley water system provides potable water to Coolidge. The wells are located throughout the Casa Grande and Coolidge area. The nearest Arizona Water Company well (55-616606) is located within 1 mile from the site. The depth of the well is 1,100 feet bgs. The well was modified in 2007 with new copper-bearing 16" casing to a depth of 584 feet bgs. The new casing is slotted between 200 and 584 feet bgs. The original 20" slotted casing remains in the deeper half of the well. There is no record of any VOC contamination for this well. The Arizona Water Company was provided a Water Provider Questionnaire, and did submit it to ADEQ. Coolidge is located within the Eloy Groundwater Sub-Basin, which is part of the Pinal Active Management Area. Groundwater flow is generally to the north towards the Gila River, and the Phoenix Active Management Area. The principal aquifers are within the conglomerate of the lower unit and the sand and gravel interbeds within the alluvial facies of the middle and upper units. The upper and lower aquifers are poorly connected hydraulically.

2. *Other exposure pathways*: Historic soil analytical data showed VOC contamination present between 35 and 85 feet below ground surface (bgs) at concentrations that exceeded applicable residential Soil Remediation Levels (rSRLs). Historic soil analytical data showed no other contamination present over applicable regulatory standards. A shallow soil vapor survey was conducted in May 2017 to evaluate any residual subsurface VOC soil contamination for possible vapor intrusion risk. The soil vapor samples were analyzed for VOCs by EPA Method TO-15 and did include the ADHS approved additional compounds. Laboratory and field quality assurance (QA) measures are adequate for risk assessment data quality objectives. The risk assessment includes all compounds of concern (CoCs) associated with the fuel release and also non-petroleum related compounds. Antea Group conducted the risk assessment. The vapor intrusion risk to indoor air was determined to be acceptable modeled using the Johnson and Ettinger model (on-line screening version). Ultra conservative residential parameters were used in the model. Antea Group did not separate out the non-petroleum CoC from the petroleum related CoC in the modeling interpretation. The cancer risk for the non-petroleum CoC (1, 4-dioxane) is 1.2×10^{76} and the non-cancer risk is 2.08×10^{-2}. The cancer risk for the petroleum related CoC (ethylbenzene) is 7.6×10^{-8} and the non-cancer risk is 7.4×10^{-5}. These values demonstrate acceptable vapor intrusion risk since they are less than 10^{-6} for the cancer risk and less than 1 for the non-cancer risk. The risk associated with dermal contact with the groundwater is considered *de minimis* risk. In a ¼ mile receptor survey, there are no identified sensitive receptors.

3. *Groundwater plume stability*: Groundwater plume stability is demonstrated by the remaining 1, 2-DCA contamination present over a regulatory standard is limited to MW-5 and MW-7,

which are on site. Antea Group provided evidence of a decreasing and/or stable trend in CoC concentrations as demonstrated by the Mann-Kendall test. The Mann-Kendall test is a non-parametric analysis that compares the relative magnitude of data in a temporal order. Antea Group used up to twenty of the most recent groundwater sampling events. All five monitoring wells showed ether a stable or decreasing trend for both benzene and 1, 2-DCA groundwater concentrations. Based on the interpretation from BIOSCREEN using the first order decay model, Antea Group concluded that the dissolved phase plume containing 1, 2-DCA extends no more than 74 feet from the dispenser area at 23 years after the release had occurred, and the benzene contamination extends no more than 74 feet after 14 years after the release had occurred. The groundwater data for MW-5 and MW-7 only are presented in this notice. No other on site or off site monitoring wells show VOC contamination present over a regulatory standard. MW-3 and MW-6 which are located on site and down gradient depending on flow direction, have never shown any VOC contamination above laboratory reporting limits based on groundwater data collected between 2006 and 2015. Several of the monitoring wells have gone dry.

4. *Characterization of the groundwater plume:* Monitoring wells were installed and the collection of groundwater data has taken place since 1999. Dissolved-phase petroleum hydrocarbons have been characterized. The groundwater plume does not extend off site based on groundwater data collected from MW-3, MW-6 and MW-8 which are cross and down gradient of the source areas. MW-5 (located at the UST basin) and MW-7 up gradient from the source area, are the only wells that has VOC contamination present over an applicable regulatory standard. The other on site monitoring wells do not have any VOC or PAH contamination present over an applicable regulatory standard. It appears that the contamination is confined within the smear zone and the concentration will change as the groundwater elevation changes. The 1, 2-DCA contamination in MW-7 may be coming from an off-site source since it is not near the former UST basin or the dispenser island.

5. *Natural Attenuation*: The groundwater plume has no migrated off site as demonstrated by the contamination present only in monitor wells located on site. The UST tank area (MW-5) does have VOC contamination present over a regulatory standard. Between 2015 and 2018, biodegradation parameters (nitrate, ferrous iron, sulfate and methane) were collected from all of the monitoring wells. The data collected demonstrates that natural attenuation is occurring as biodegradation. BIOSCREEN (the first order decay model) affirmed that natural attenuation was occurring. 1, 2-DCA is a recalcitrant compound, so it does take longer for it to degrade. The overall CoC concentrations have decreased over time.

6. *Removal or control of the source of contamination*: Gasoline sales were discontinued in 1975. Source control has been completed by the closure-in-place of the gasoline USTs sometime in the 1980s. The vent lines were removed in 1993. The *Corrective Action Plan* approved monitored natural attenuation as the remedial method since the property owner would not allow site access to conduct remedial actions.

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 competed 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 data for MW-5 (near UST basin)

Date	**Benzene AWQS is 5 µg/L**	**1,2-DCA AWQS is 5 µg/L**	**Depth to water (feet)**
11/23/04	**1,100**	**36**	82.78
06/07/05	**18,000**	**730**	85.72
4/11/06	**18,000**	**600**	83.22
4/20/07	**17,000**	**590**	82.75
3/14/08	**8,700**	**390**	79.66
Submerged screen	**---**	**---**	---
7/23/14	4.3	**100**	74.99
6/10/15	<5.0	**250**	83.63
8/26/15	<5.00	**238**	83.98
11/05/15	<5.00	**312**	83.05
2/15/16	1.51	**211**	82.52
5/16/16	**62.5**	**315**	84.67
8/23/16	**18.2**	**302**	86.26
12/13/16	**69.1**	**279**	85.43
2/21/17	**284**	**389**	84.82
8/29/17	**128**	**317**	89.18
12/12/17	**---**	**---**	Covered by equip
2/27/18	---	---	Covered by equip
3/16/18	**129**	**185**	86.50

Groundwater data for MW-7

Date	Benzene AWQS is 5 µg/L	1,2-DCA AWQS is 5 µg/L	Depth to water (feet)
11/23/04	**22**	**22**	81.66
06/07/05	**660**	**52**	84.62
4/11/06	**180**	**33**	82.11
4/20/07	**520**	**20**	81.62
3/14/08	**180**	**12**	78.73
Submerged screen	**---**	**---**	------
7/23/14	<2.0	**54**	82.35
6/10/15	<1.0	**6.8**	82.72
8/26/15	<1.00	**15.8**	83.30
11/05/15	<1.00	<1.0	82.05
2/15/16	<1.00	**14.7**	81.61
5/16/16	<1.00	<1.0	83.73
8/23/16	<1.00	<1.0	85.40
12/13/16	<1.00	1.79	84.54
2/21/17	<1.00	<1.0	83.82
8/29/17	<1.00	3.62	88.32
12/12/17	2.31	**18.7**	86.22
2/27/18	<1.00	<1.0	85.25

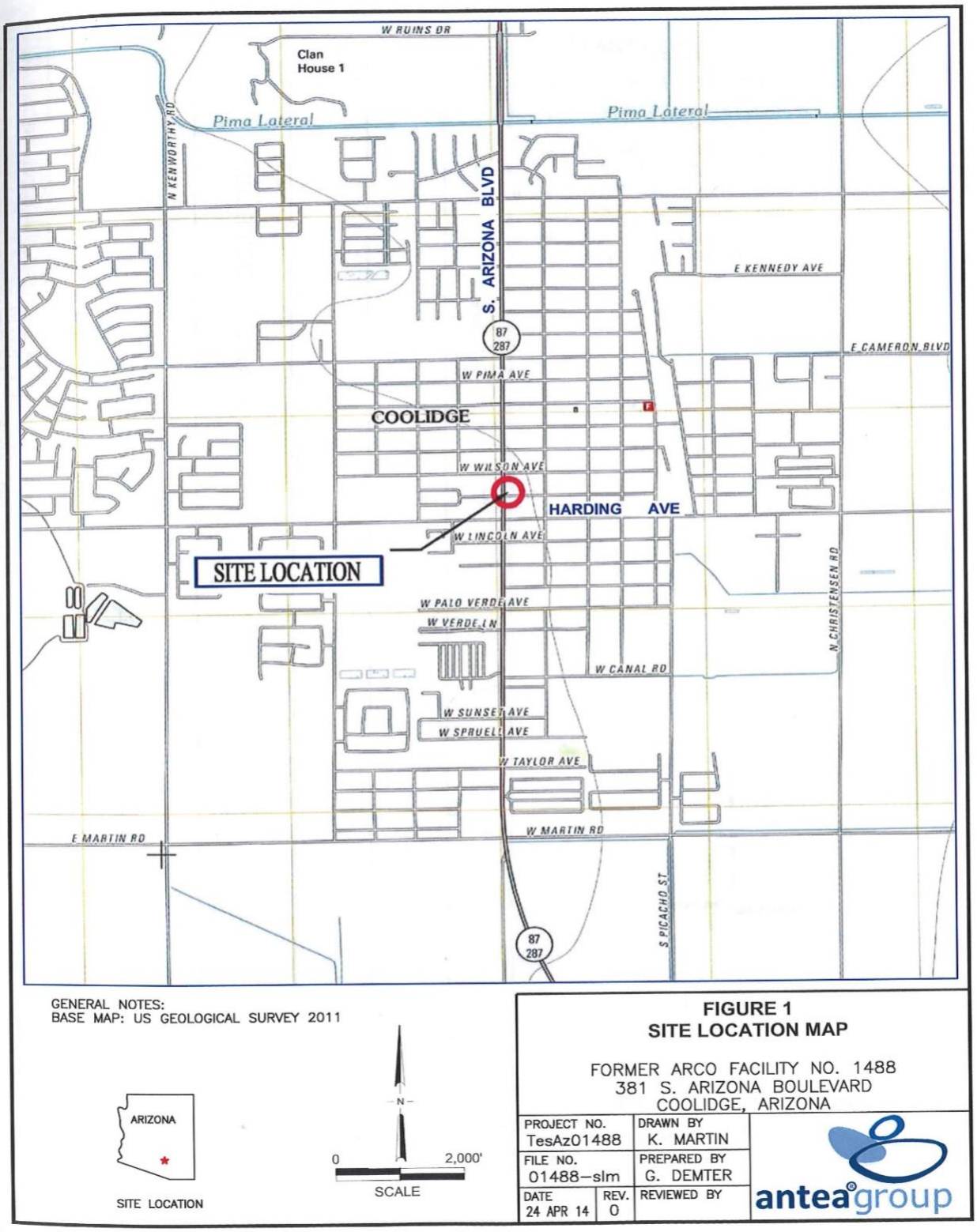
Site specific information concerning this closure is available for review during normal business hours at the ADEQ Records Center http://www.azdeq.gov/function/assistance/records.html , 1110 W. Washington St., Suite 140, Phoenix, AZ 85007. ADEQ welcomes comments on the proposed LUST case closure. Please call the Records Center at 602-771-4380 to schedule an appointment. A 30-day public comment period is in effect **commencing July 17, 2018 and ending August 17, 2018**. Comments should be submitted in writing to the Arizona Department of Environmental Quality, Waste Programs Division, and Attention: Debi Goodwin, 1110 W. Washington Street, Phoenix, AZ 85007.

If sufficient public interest is demonstrated during the public comment period, ADEQ may announce and hold a public meeting. ADEQ will consider all submitted written comments and reserves the right to respond to those comments following the public comment period. For more information on this notice, please contact the Sr. Risk Assessor, Debi Goodwin at (602) 771-4453 or at dg1@azdeq.gov.

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.htm

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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Clan House 1
Pima Lateral
Pima Lateral
N NEWMAN RD
S. ARIZONA BLVD
E KENNEDY AVE
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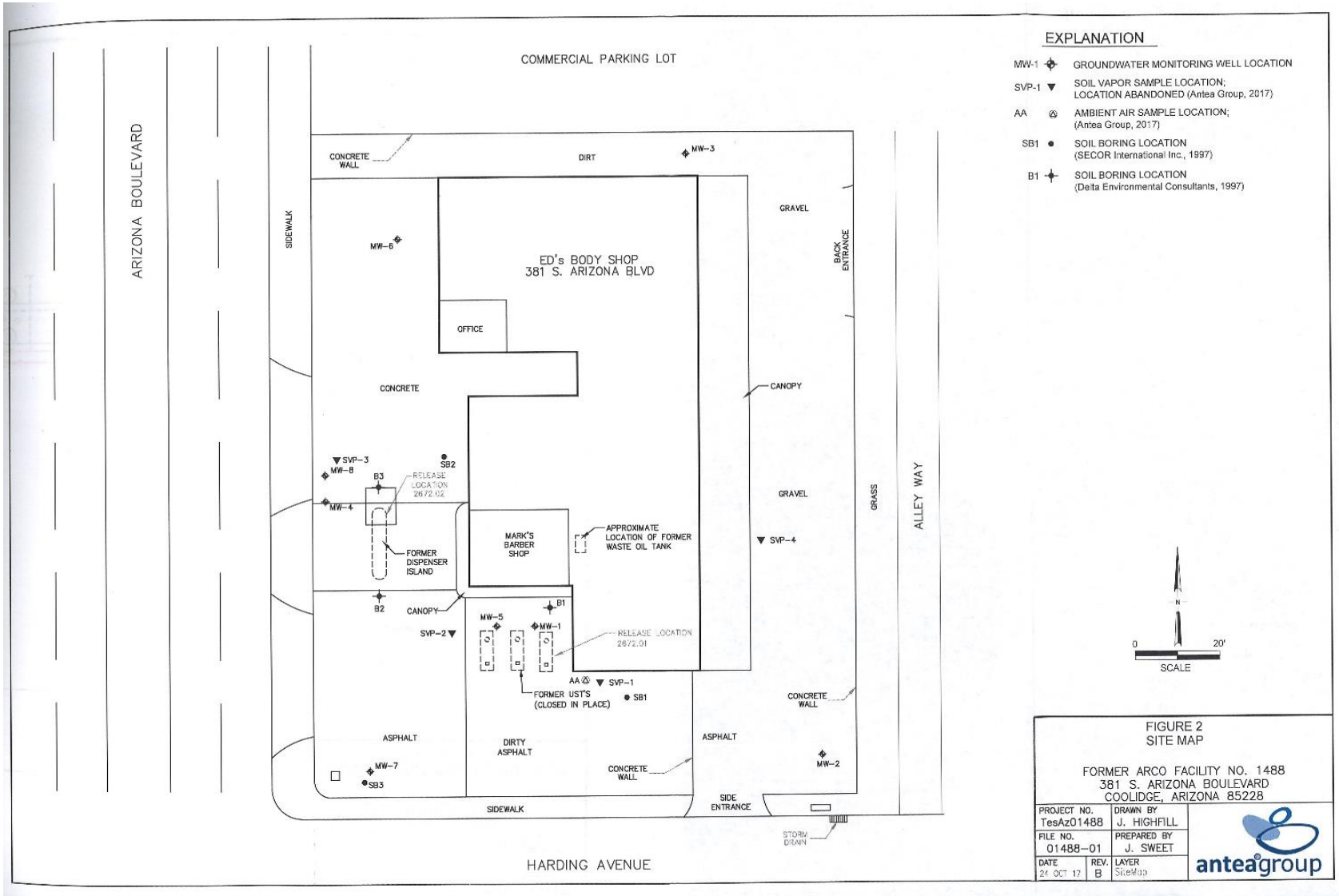
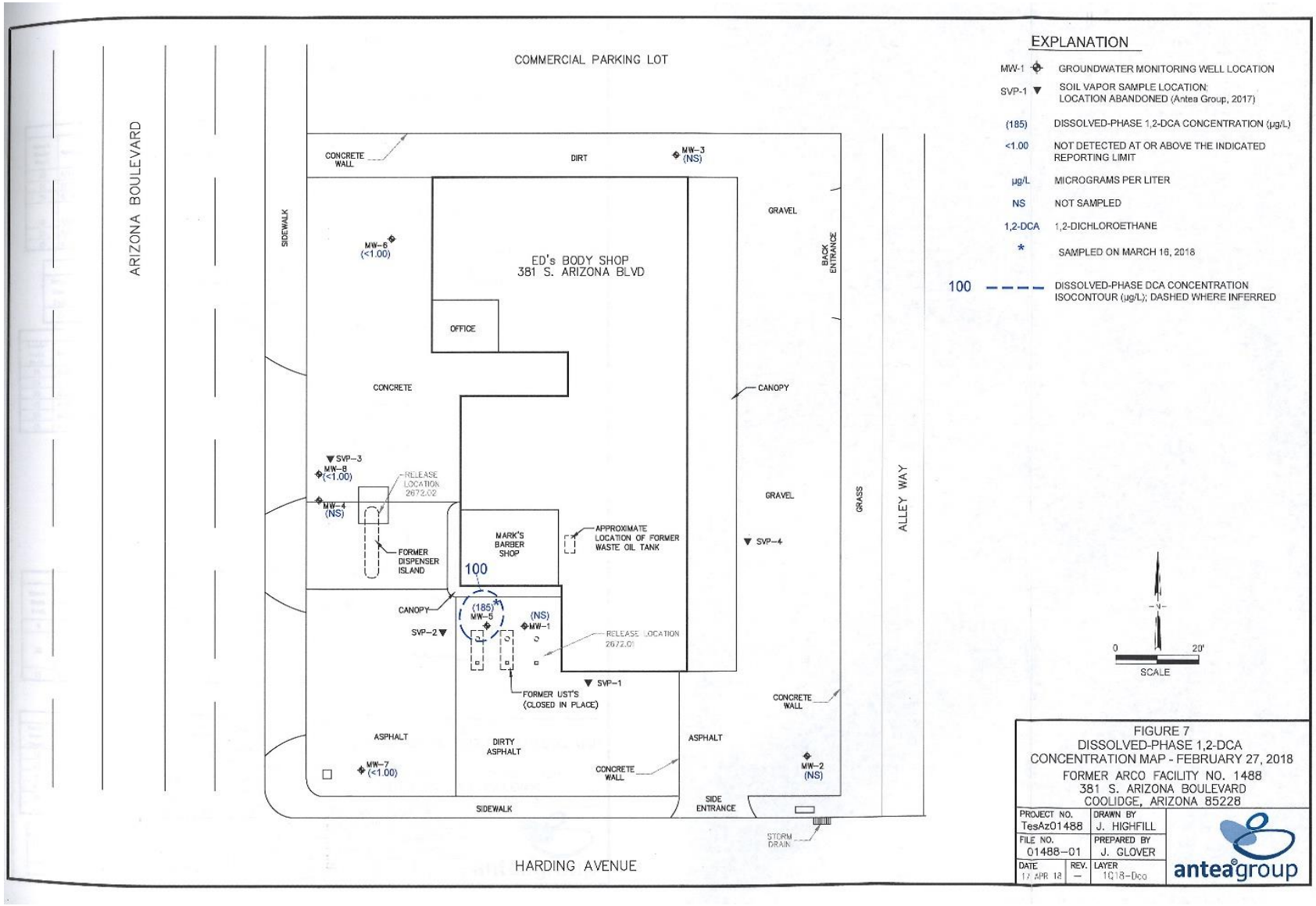
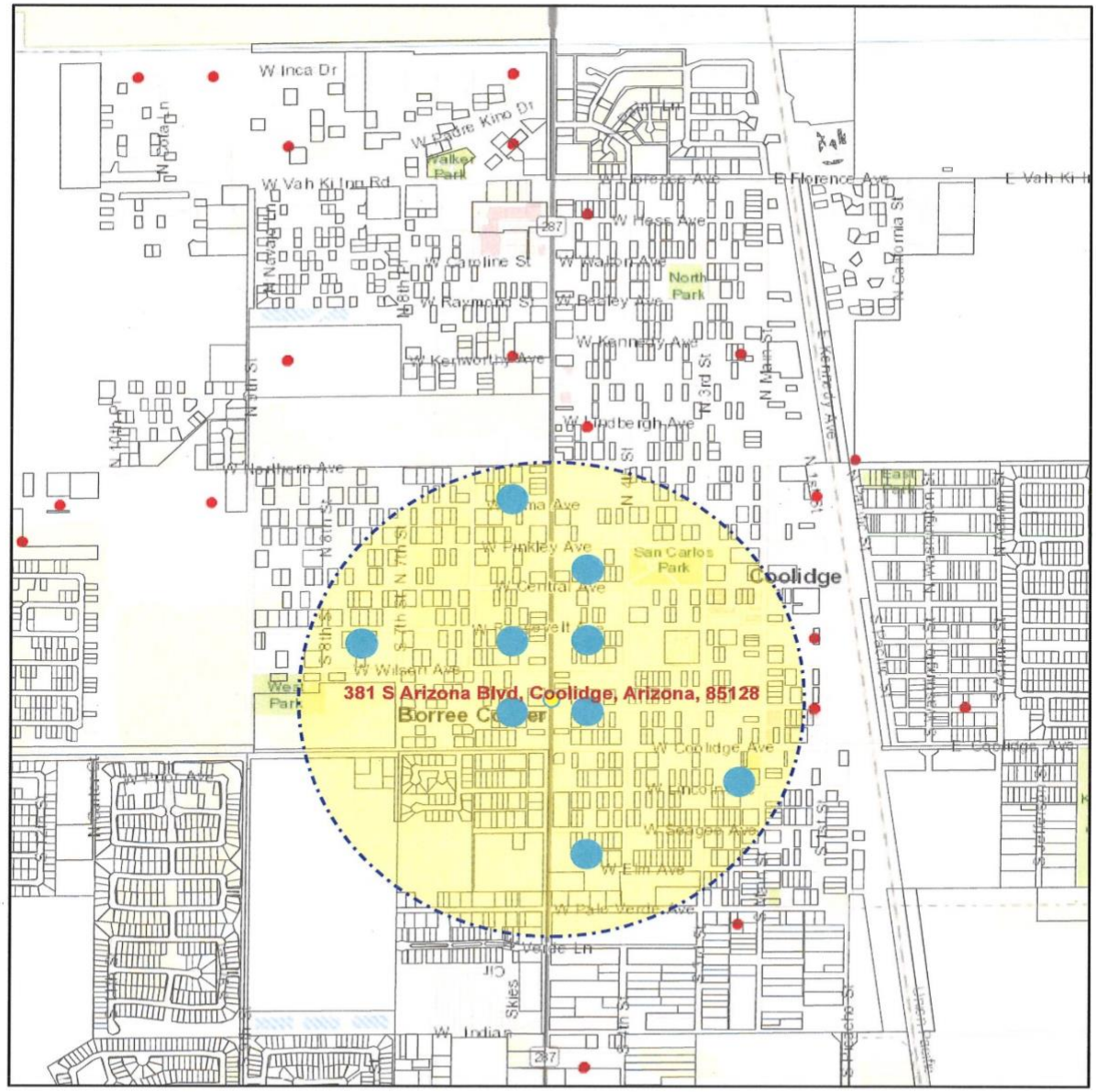
287
E CAMERON BLVD
W PIMA AVE
COOLIDGE
W WILSON AVE
HARDING AVE
W LINCOLN AVE
SITE LOCATION
W PALO VERDE AVE
W VERDE LN
N CHRISTENSEN RD
W CANAL RD
W SUNSET AVE
W SPRUELL AVE
W TAYLOR AVE
E MARTIN RD
W MARTIN RD
S PICACHO ST
87
287
GENERAL NOTES:
BASE MAP: US GEOLOGICAL SURVEY 2011
ARIZONA
SITE LOCATION
N
0
2,000'
SCALE
FIGURE 1
SITE LOCATION MAP
FORMER ARCO FACILITY NO. 1488
381 S. ARIZONA BOULEVARD
COOLIDGE, ARIZONA
PROJECT NO.
TesAz01488
DRAWN BY
K. MARTIN
FILE NO.
01488–slm
PREPARED BY
G. DEMTER
DATE
24 APR 14
REV.
0
REVIEWED BY
antea group


EXPLANATION
MW-1 GROUNDWATER MONITORING WELL LOCATION
SVP-1 SOIL VAPOR SAMPLE LOCATION; LOCATION ABANDONED (Antea Group, 2017)
AA AMBIENT AIR SAMPLE LOCATION; (Antea Group, 2017)
SB1 SOIL BORING LOCATION (SECOR International Inc., 1997)
B1 SOIL BORING LOCATION (Delta Environmental Consultants, 1997)
COMMERCIAL PARKING LOT
ARIZONA BOULEVARD
SIDEWALK
CONCRETE WALL
DIRT
MW-3
GRAVEL
BACK ENTRANCE
MW-6
ED's BODY SHOP
381 S. ARIZONA BLVD
OFFICE
CONCRETE
CANOPY
SVP-3
MW-8
SB2
B3
RELEASE LOCATION 2672.02
MW-4
GRAVEL
GRASS
ALLEY WAY
MARK'S BARBER SHOP
APPROXIMATE LOCATION OF FORMER WASTE OIL TANK
SVP-4
FORMER DISPENSER ISLAND
B2
CANOPY
B1
MW-5
MW-1
SVP-2
RELEASE LOCATION 2672.01
AA
SVP-1
FORMER UST'S (CLOSED IN PLACE)
SB1
CONCRETE WALL
ASPHALT
DIRTY ASPHALT
ASPHALT
MW-7
SB3
CONCRETE WALL
MW-2
SIDE ENTRANCE
SIDEWALK
STORM DRAIN
HARDING AVENUE
N
0
20'
SCALE
FIGURE 2
SITE MAP
FORMER ARCO FACILITY NO. 1488
381 S. ARIZONA BOULEVARD
COOLIDGE, ARIZONA 85228
PROJECT NO. TesAz01488
DRAWN BY J. HIGHFILL
FILE NO. 01488-01
PREPARED BY J. SWEET
DATE 24 OCT 17
REV. B
LAYER SiteMap
anteagroup


COMMERCIAL PARKING LOT
ARIZONA BOULEVARD
SIDEWALK
CONCRETE WALL
DIRT
MW-3 (NS)
GRAVEL
BACK ENTRANCE
MW-6 (<1.00)
ED's BODY SHOP
381 S. ARIZONA BLVD
OFFICE
CONCRETE
CANOPY
SVP-3
MW-8 (<1.00)
RELEASE LOCATION 2672.02
MW-4 (NS)
FORMER DISPENSER ISLAND
MARK'S BARBER SHOP
APPROXIMATE LOCATION OF FORMER WASTE OIL TANK
GRAVEL
SVP-4
GRASS
ALLEY WAY
100
CANOPY
(185) MW-5
(NS) MW-1
SVP-2
RELEASE LOCATION 2672.01
SVP-1
FORMER UST'S (CLOSED IN PLACE)
CONCRETE WALL
ASPHALT
DIRTY ASPHALT
ASPHALT
MW-7 (<1.00)
CONCRETE WALL
MW-2 (NS)
SIDEWALK
SIDE ENTRANCE
STORM DRAIN
HARDING AVENUE
EXPLANATION
MW-1 GROUNDWATER MONITORING WELL LOCATION
SVP-1 SOIL VAPOR SAMPLE LOCATION: LOCATION ABANDONED (Antea Group, 2017)
(185) DISSOLVED-PHASE 1,2-DCA CONCENTRATION (µg/L)
<1.00 NOT DETECTED AT OR ABOVE THE INDICATED REPORTING LIMIT
µg/L MICROGRAMS PER LITER
NS NOT SAMPLED
1,2-DCA 1,2-DICHLOROETHANE
* SAMPLED ON MARCH 16, 2018
100 DISSOLVED-PHASE DCA CONCENTRATION ISOCONTOUR (µg/L); DASHED WHERE INFERRED
N
0 20'
SCALE
FIGURE 7
DISSOLVED-PHASE 1,2-DCA
CONCENTRATION MAP - FEBRUARY 27, 2018
FORMER ARCO FACILITY NO. 1488
381 S. ARIZONA BOULEVARD
COOLIDGE, ARIZONA 85228
PROJECT NO. TesAz01488
DRAWN BY J. HIGHFILL
FILE NO. 01488-01
PREPARED BY J. GLOVER
DATE 17 APR 18
REV. —
LAYER 1Q18-Dco
antea group

ARCO Facility NO. 1488



July 9, 2018

1:18,056

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 km

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

ADEQ Arizona Department of Environmental Quality

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: Frog Service Center (Former ARCO)

ADDRESS: 381 South Arizona Boulevard

LUST FACIITY ID: 0-007862

LUST CASE NO: 2672.01 & 2672.02

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: Arizona Water Company (AWC)

Date Questionnaire was completed: May 21, 2018

Contact Name: Regina Lynde

Title: Environmental Compliance Manager

Address: 3805 N. Black Canyon Hwy
Phoenix, AZ 85015

Phone Number: 602-240-6860

Email address: rlynde@azwater.com

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

AWC - Coolidge Well No. 7, 55-616606. This well was identified as being within .055 mile of the LUST site. Well No. 13, 55-212419 is just over two miles from the LUST site, while well Nos. 9 and 10 are just under three miles away.

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

These wells are currently being used to supply drinking water to the community of Coolidge and AWC plans to use them for the next 100 years.

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?

All wells mentioned in question no. 1 are sampled routinely by AWC for all regulated contaminants in the Safe Drinking Water Act. VOC's are sampled every 6 years at Well Nos. 7, 9 and 10. Well No. 13 is sampled annually because it is on Initial Monitoring. Well Nos. 7, 9 and 10 were first sampled for VOCs in 2014, and there were no detects. Well Nos. 7, 9, 10 and 13 are sampled every 3 years for SOCs. They were last sampled in 2017 and all had no detects. Well Nos. 7, 9, 10 and 13 were sampled for Radiochemicals in 2017 and all were below the MCL. Nitrate is sampled annually and all are below the MCL. Sodium is sampled every three years and was sampled in May 2018. There is no MCL for Sodium. Inorganics I was sampled in 2014 at Well Nos. 7, 9 and 10 and all were less than the MCL. The next sample is scheduled in 2023. Well No. 13, which makes up EPDS 021, was sampled for Inorganics I in 2017 and all contaminants were under the MCL. The next sample will be taken in 2020. There is an arsenic removal facility at Well No. 13 and it is sampled quarterly. All data is submitted to ADEQ within 10 days after the quarter.

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)?

Unknown.

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

Unknown.

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

AWC is concerned with other potential well sites in the area.