



Corrective Action Plan
Travel Centers of America #116
Cottondale, Tuscaloosa County,
Alabama
Facility I.D # 17050-125-014907
Incident # UST 24-01-05

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1.0 Introduction

S&ME, Inc. (S&ME) has prepared this Corrective Action Plan on behalf of TA Operating LLC. These field activities were performed according to Cost Proposal No. 08 as approved by the Alabama Department of Environmental Management (ADEM) in correspondence dated October 6, 2025. A summary of the work performed is presented herein.

1.1 Site Description

The subject site is located at 3501 Buttermilk Road, Cottondale, Tuscaloosa County, Alabama. Specifically, the site is located on the USGS Cottondale, Alabama Quadrangle, 7.5-minute topographic map at 33° 10' 33.24" north latitude, 87° 26' 47.30" west longitude. A topographic map identifying the general location of the site and a Site Diagram may be found in **Appendix I**.

1.2 Project History

The TravelCenters of America #116 site is an active, full-service truck-stop with a restaurant, travel store, automobile fuel islands, truck fuel islands, and truck repair shop. The facility stores gasoline, diesel fuel, and motor oil in USTs for retail dispensing. A release of diesel fuel was discovered at the truck fuel island under dispenser #7S by TravelCenters of America (TA) staff. Line and tank testing performed on July 7, 2009 revealed a faulty flex hose connector, which was promptly repaired by TA staff. A new release was assigned (UST22-05-01) when 11.22 feet of free product was observed in monitoring well MW-4 during a MEME event conducted April 4, 2022. TravelCenters of America contracted line and tank tightness testing and repairs.

1.2.1 Initial Notification (UST24-01-05)

On October 6, 2023 two new releases were reported, one was reported as a diesel release at fueling bay 5 and the other was reported as a gasoline release at the supreme gasoline tank. These releases were reported following failed tightness tests which resulted from a reported loss of inventory. New incident numbers were assigned in January 2024.

1.2.2 Preliminary Investigation (UST24-01-05)

Following notification, the Alabama Department of Environmental Management (ADEM) directed TA to perform a Preliminary Investigation of the site. Four (4) groundwater monitoring wells were installed in the vicinity of the gasoline tank, MW-1t through MW-4t. BTEX, MTBE, and naphthalene were not detected in the eight soil samples sent for analysis. Free product was observed in MW-4t. S&ME began free product recovery efforts on MW-4t by hand bailing and the placement of an absorbent sock. Chemicals of concern were detected in the four wells above the Alabama Risk Based Corrective Action (ARBCA) Initial Screening Levels (ISLs). Details of the Preliminary Investigation are presented in S&ME's report dated June 20, 2024.



1.2.3 *Secondary Investigation (UST24-01-05)*

Following results of the Preliminary Investigation, the Alabama Department of Environmental Management (ADEM) directed TA to perform a Secondary Investigation of the site. Six groundwater monitoring wells were installed around the wells in the preliminary investigation, MW-5t through MW-10t. MW-5t was placed in a lower aquifer to function as a deep well. BTEX, MTBE, and naphthalene were not detected in the twelve soil samples sent for analysis. Chemicals of concern were detected in the MW-1t, MW-2t, MW-3t, MW-4t, MW-8t, MW-9t, and MW-10t above the ARBCA ISLs. Details of the Secondary Investigation are presented in S&ME's report dated February 24, 2025.

2.0 Summary of Previous Investigation Results

Previous investigations have identified absorbed, dissolved, and free product at the subject site. The Site Diagram in **Appendix I** illustrates the locations of the borings and monitoring wells that were installed during investigations. Data from previous analyses is presented in **Appendix II**.

2.1 Groundwater Flow Direction

Groundwater elevation data from previous investigations and monitoring events are presented in Table 1 in **Appendix II**. Groundwater surface maps for the last three monitoring events are presented in **Appendix I**. These maps appear to indicate a southwestern flow direction. This corresponds with the topography of the site.

2.2 Soil Analytical Results

Analytical results for benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tertiary butyl ether (MTBE), and naphthalene are presented on the Soil Concentration Maps in **Appendix I**. The lateral extent of absorbed product appears to be centered around RW-12t. The extent to the west is unknown.

The detections of BTEX, MTBE, and naphthalene constituents were east of the tank pit in soil boring B-12t.

2.3 Free Product

During previous investigations and groundwater monitoring events, each well was monitored for the presence of free product using an oil/water interface probe. Free product has been observed in monitoring well MW-4t. Free product was first observed in MW-4t on March 29, 2024 during the Preliminary Investigation. Free product has not been observed since June 25, 2025; however, socks have been placed in the well and changed regularly. Staining on the socks indicate the presence of product in the well.

2.4 Vapor Product

Analytical results of vapor stream monitoring conducted during the pilot study are presented in Table 4 in **Appendix II**.



2.5 Groundwater Analytical Results

Table 2 in **Appendix II** summarizes groundwater analytical results to date. Table 3 in **Appendix II** summarizes water quality results to date. Contour maps for benzene, total BTEX, MTBE, and naphthalene concentration are presented in **Appendix I**.

The dissolved plume appears to be centered around monitoring wells MW-3t, MW-4t, MW-9t, and MW-10t. The plume appears to have spread southwest to include MW-9t and MW-10t. The plume appears to be defined to the north, but not to the south, east, and west.

2.6 Water Well Survey Information

A water well survey was conducted by S&ME personnel during the preliminary investigation conducted under Cost Proposal 1. S&ME checked the frontage of nearby houses within 1,000 feet of the site for the presence of water meters and evidence of wells. No evidence of private water wells was observed at the residential properties within 1,000 feet of the site.

According to the Tuscaloosa City Water Department website, no public water supply wells are located within the city.

2.7 Site Geology and Hydrogeology

The subject site is located in an area that generally slopes to the east. The USGS topographic map indicates that the elevation of the site is approximately 260 feet above mean sea level (msl). A topographic map is located in **Appendix I**.

Shallow groundwater generally flows in directions subparallel to the ground surface and under the influence of gravity toward points of discharge such as creeks, swamps, drainage swales, or pumped groundwater wells. Based upon groundwater elevation data, it appears that the primary groundwater flow direction in the uppermost water-bearing unit across the subject property should be to the southwest.

2.8 Alabama Risk Based Corrective Actions

A risk assessment was conducted as part of cleanup activities during a previous release located on the same property. The target levels of the previously completed risk assessment may not be appropriate for this release due to the different chemicals of concern, different source size, different source location, and different distance to potential receptors.

S&ME recommends the development of Site Specific Target Levels (SSTLs) using the Fate and Transport parameters for the gasoline release.



3.0 Previous Findings and Calculations

3.1 Vapor Radius of Influence

The vacuum response data were used to estimate the radius of influence (ROI) generated by the pilot study dual-phase extraction (DPE) system. The estimated vapor ROI can be used for designing the permanent DPE system for the site.

The induced vacuum data were plotted vs. distance from the recovery well on a semi-logarithmic graph. This Distance-Vacuum Diagram is included with Table 5 in **Appendix II**. A straight line drawn through these points may be used to estimate the distance at which vacuum would be zero, or the ROI. As indicated on the diagram, the estimated vapor ROI is approximately 43 feet at 22 "H₂O of vacuum on the recovery wellhead and 47 feet at 44 "H₂O on the recovery wellhead.

The following equation from Kuo, 1998, and the data from MW-1t at 44 "H₂O on the recovery wellhead, was also used to calculate radius of influence:

$$P_r^2 - P_w^2 = (P_{RI}^2 - P_w^2) * [\ln(r/R_w)/\ln(R_I/R_w)]$$

Where:

P_r =	Pressure at radial distance r from extraction well	= -2.64 in H ₂ O = -0.006483 atm = 1 - 0.006483 atm = 0.993517 atm
P_w =	Pressure at extraction well	= -44 in H ₂ O = -0.108058 atm = 1 - 0.108058 atm = 0.891942 atm
P_{RI} =	Pressure at radius of influence (atmospheric)	= 1.0 atm
r =	Radial distance from the extraction well	= 16.3 feet
R_I =	Radius of influence where pressure is atmospheric	= ROI
R_w =	Well radius of vapor extraction well	= 0.33 feet

The radius of influence was estimated using the data from monitoring wells MW-1t and MW-2t, where at 44 "H₂O on the recovery wellhead, -2.64 inches H₂O and -0.40 inches H₂O, respectively, were observed during the Pilot Study, and an average extraction vacuum of -44 inches H₂O. Using these data with the above-given formula, the radii of influence were calculated at 21.2 feet and 45.1 feet.

The variation in the radii of influence may represent an irregular cone of influence, which should be considered normal for soils that are not uniform in nature (as are those observed at the site). Due to the wide range of results for vacuum pressure during the pilot study data, a conservative Radius of Influence of 40 feet was chosen for this project. This radius should be reasonably representative of the site and also somewhat conservative in nature with respect to the available data.



3.2 Groundwater Radius of Influence

The total drawdown data at the completion of system operation were plotted vs. distance from the recovery well on a semi-logarithmic graph. The Distance-Drawdown diagram is included with Table 6 in **Appendix II**. A straight line drawn through these points may be used to estimate the distance at which drawdown would be zero, or the ROI. As indicated on the diagram, the estimated groundwater ROI is approximately 135 feet from the recovery well. It should be noted that ROI occurred under vacuum conditions and may not be observed otherwise with ordinary pumping under atmospheric pressure.

3.3 Performance Curve

A Performance Curve was generated for the recovery well using data from the Pilot Study. This curve establishes a relationship between the applied vacuum and the airflow rate. The data used and the curve generated from this data are presented in Table 7 in **Appendix II**. This curve was used in the design process to estimate the airflow at applied vacuums that are different from those used in the Pilot Study. A best fit line was plotted using the data and was used to estimate an air flow of approximately 170 ACFM per well at a vacuum of 18 inches Hg.

3.4 Soil Air Permeability

The steady-state flow equation for air extraction was used in conjunction with the Pilot Study data to estimate the intrinsic permeability of the soil zone. The equation is (Kuo, 1999):

$$\text{Intrinsic Permeability, } k \text{ (cm}^2\text{)} = \frac{Q * \mu * \ln(R_w/R_l)}{H * \pi * P_w[1-(P_{atm}/P_w)^2]}$$

Where:

Q =	Air flow rate	= 64 ACFM = 0.0302 m ³ /sec
H =	Screen height	= 17 feet = 5.1816 m (top of screen to groundwater surface)
R _l =	Radius of Influence	= 40 feet = 12.192 m (estimated)
R _w =	Radius of well	= 4 inches = 0.102 m
P _w =	Well Pressure (vacuum)=	0.891942 atm = 90.376 kg/m-sec ²
P _{atm} =	Atmospheric Pressure=	1 atm = 1.01x10 ⁵ kg/m-sec ²
μ =	Viscosity of air	= 1.8 x 10 ⁻⁴ poise = 1.8 x 10 ⁻⁵ kg/m-sec

The flow and vacuum readings were taken from the final reading of the 2/12/26 data.

Substituting the numbers into the equation and converting to cm² yields an estimated k of approximately 6.88 x 10⁻⁸ cm².

3.5 Calculation of Aquifer Properties

Rising head "slug" tests were conducted at monitoring wells MW-5t through MW-10t during the Secondary Investigation (CP02). The data from MW-5t through MW-10t were used to calculate the aquifer properties. The average hydraulic conductivity for the uppermost hydrogeologic unit was measured at 2.24 X 10⁻³ cm/sec.



The following equation from the EPA Guidance Manual titled How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites: A Guide for Corrective Action Plan Reviewers (May 1995) was used to calculate intrinsic permeability using the average conductivity result of the project hydraulic conductivity testing:

$$k = K (\mu/\rho g)$$

Where:

k = Intrinsic Permeability (cm^2)
 K = Hydraulic Conductivity = $2.24 \times 10^{-3} \text{ cm/sec}$
 μ = Fluid Viscosity (at 20°C) = $0.01002 \text{ g/cm}\cdot\text{s}$
 ρ = Fluid Density = 0.998207 g/cm^3
 g = gravitational constant = 980 cm/s^2
At 20°C : $(\mu/\rho g) = 1.02 \times 10^{-5} \text{ cm/sec}$

The resulting intrinsic permeability is $2.28 \times 10^{-8} \text{ cm}^2$, which is lower than that calculated for the unsaturated zone.

3.6 Groundwater Recovery Rate

Approximately 742 gallons of groundwater were recovered during the 10-hour pilot study performed at the site. This can be used to calculate a flow rate of approximately 1.24 gallons per minute (gpm) per well. However, the vacuum was increased throughout the duration of the pilot study. Table 8 in **Appendix II** shows the flow rates throughout the test. The highest flow rate was 2.35 gpm. The flow rate increased at higher vacuums. Table 9 in **Appendix II** shows the trend line between air flow rate and groundwater flow rate. A best fit line was plotted using the data and was used to estimate a groundwater flow rate of approximately 5.56 gpm per well at a vacuum of 18 inches Hg.

4.0 Corrective Action Technologies

This review of available Corrective Action Technologies (CATs) was conducted in order to verify the appropriate remediation technology using pilot study data. The review was conducted with respect to known site factors in order to select the appropriate CAT(s) for the site. The EPA Guidance Manual titled How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites: A Guide for Corrective Action Plan Reviewers (May 1995) was employed to select the CATs for consideration and the known site factors for the evaluation process.

Soil Vapor Extraction, Biosparging, and In-Situ Groundwater Bioremediation appear to be generally effective remediation methods due to the hydraulic conductivity at the site. Soil Bioventing does not appear to be effective for remediating the vapor and adsorbed product phases due to the low pH value for the site. Natural Attenuation does not appear to be an option due to the stability of the dissolved product plume and the presence of free product.

Of the CATs evaluated, a DPE system or an AS/SVE system appear to have the greatest potential to effectively remediate the identified petroleum product phases at the site. Based on the Cost Effectiveness Comparison, an AS/SVE system appears to be the most cost-effective method. However, due to the continued spreading of the



dissolved product plume, DPE appears to be a more effective option. Potential disadvantages of a DPE system include off-gas treatment, wastewater treatment, equipment costs, and operation and maintenance costs. A major advantage of DPE systems is their effectiveness in low permeability soils. Additionally, DPE systems require minimal site disturbance, and can be applied at sites with free product.

5.0 Proposed Remediation Method

S&ME proposes a remediation system the utilizes DPE technology for the site.

A DPE system installed in a portable building will be mobilized to the site and used for soil vapor extraction, groundwater extraction, vapor treatment and groundwater treatment. The work to be performed includes:

- Installation of extraction wells
- Installation of monitoring wells
- Installation of piping trench
- Installation of DPE system
- Installation of NPDES discharge line
- Installation of enclosure around the system
- System start-up monitoring

These items are discussed separately herein.

5.1 Design and Installation of Recovery Wells

S&ME proposes installing four recovery wells as shown on Figure 10 in **Appendix I**. The proposed recovery wells are in addition to the recovery well installed during the pilot study and will be located approximately 40 feet apart across the adsorbed and dissolved product plumes. These locations provide a slight overlap of the vacuum radii of influence (ROI) as depicted in Figure 10 presented in **Appendix I**.

The recovery wells will be constructed of flush threaded 4-inch diameter, schedule 40 PVC material with 0.01-inch slotted screen sections with a 20-foot screened interval. The proposed wells will have 20-foot screens so that the well is screened throughout the adsorbed product plume. The wells will be drilled to 40 feet below ground surface.

Submersible pumps will be installed in each recovery well and will be set near the bottom of the wells. This is intended to increase groundwater recovery and limit the spread of dissolved product.

An S&ME engineer will supervise the installation of the wells and to prepare soil-boring logs and well construction diagrams. The wells will be constructed as 4-inch diameter Type II monitoring wells in general accordance with ADEM guidelines. The wells will be completed with 24-inch X 24-inch locking well vaults set in a concrete pad.



5.2 Design and Installation of Monitoring Wells

S&ME proposes installing seven monitoring wells as shown on Figure 10 in **Appendix I**. The wells are intended to further delineate the dissolved product plume.

The monitoring wells will be constructed of flush threaded 2-inch diameter, schedule 40 PVC material with 0.01-inch slotted screen sections with a 10-foot screened interval. The proposed well will have a 10-foot screen so that the well is screened throughout the groundwater table. The wells will be drilled to 30 feet below ground surface.

An S&ME engineer will supervise the installation of the wells and to prepare soil-boring logs and well construction diagrams. The wells will be constructed as 2-inch diameter Type II monitoring wells in general accordance with ADEM guidelines. The wells will be completed with 8-inch locking well lids.

5.3 Desing and Layout of Piping Trench

The proposed layout of the vacuum lines is shown on Figure 11 in **Appendix I**. The vacuum lines will have an internal diameter of 2 inches to minimize frictional head loss across the DPE network. These lines will connect each extraction well with the DPE system, located in a 20' x 8' building wesr of USTs. All sub-surface lines and lines under vacuum will be constructed of schedule 40 PVC, unless otherwise noted.

The vacuum extraction lines and the discharge line will be installed in a trench approximately 2 feet deep; the total length of the trenches will be approximately 262 feet. A backhoe will be used to dig the trenches. The trenches will then be backfilled and resurfaced as appropriate.

5.4 DPE System

The DPE system and storage building will be provided by a contractor who specializes in the construction and operation of these systems. The DPE system will feature an oil sealed liquid ring pump (LRP) for soil vapor/groundwater extraction and a treatment system for adsorbed, vapor, free, and dissolved product phases. The proposed 60 hp LRP pump will be sized to handle an air flow greater than 850 ACFM at 16 inches of mercury. The system will also be equipped to handle 50 gpm flow rate which exceeds the expected groundwater flow rate of approximately 5.56 gpm for each of the five recovery wells.

One vacuum line will be plumbed to the building for each of the five recovery wells. Mounted inside of the building will be a manifold with a vacuum gauge, sampling valve, and view port for each recovery well.

The combined vapor and groundwater stream will be condensed in a 220-gallon knock-out tank. The vapor phase, after passing through the LRP will be sent to two 1,000-lb vapor phase carbon vessels piped in series.

A transfer pump will pump the water to an oil/water separator. Free product (oil) will be collected and stored in a holding tank until disposal. The transfer pump will have a 3 Hp, 230V, single-phase motor.

The water phase will be pumped to the air stripper to remove volatiles. The air stripper is equipped with a 320 CFM blower. The water will then be pumped to two #2 stainless steel bag filters, in series to remove sediment. The



groundwater will then be filtered through two carbon steel filters containing 1,000 lbs of bone charcoal each to remove lead. Treated groundwater will discharge to the storm sewer system.

The DPE system will require three-phase power, which is readily available at the subject site. The system will have multiple controls, sensors and status lights with the ability to be remotely operated.

5.5 System Enclosure

The system will be enclosed by a privacy fence with a locking gate. A placard will be placed on the outside of the fence stating that the equipment contained within is groundwater remediation equipment. The placard will also list the name, address, and telephone number for S&ME. An emergency responder phone number will also be listed for after hour emergencies.

5.6 Vapor Treatment and VOC Emissions

The ADEM Air Division regulates the discharge of air from treatment systems associated with groundwater remediation action. S&ME will conduct quarterly monitoring and report the results to the ADEM at least semiannually as required by the Air Division. S&ME sent Form 448 to the Air Division and has not heard back at this time. The form is located in **Appendix V**.

5.7 Treatment and Discharge of Extracted Groundwater

Treated water from the DPE system will be discharged to the storm sewer system. S&ME will prepare an NPDES general permit for approval by ADEM. S&ME started an NPDES general permit but was unable to finish prior to plan submittal. A draft of the permit application is located in **Appendix VI**.

The treatment system is designed to allow the water quality of the effluent to meet or exceed the conditions set forth by the NPDES permit. The extracted groundwater will be treated using an oil/water separator, air stripper treatment system, and lead treatment system. The system will be equipped with inlet and outlet sampling ports. S&ME will conduct monthly NPDES monitoring and report the results to ADEM semiannually as required.

5.8 Free Product Disposal

Extracted groundwater will be sent through an oil/water separator to remove any free product. Free product will be collected in a 55-gallon holding drum. Levels in the drum will be monitored and disposal will be scheduled as required.

5.9 Start-up Monitoring

After the installation of the system is complete, S&ME proposes monitoring of the system for one day. During the start-up monitoring S&ME will record observations of the system and, at a minimum, the following parameters will be measured and recorded daily:

Air Flow: The overall vapor flow through the system

Water Flow: The discharge measured at the NPDES discharge point



Vacuum: The vacuum of each recovery well

Concentration: The VOC concentration at the liquid ring pump exhaust

The VOC concentration at the vapor phase carbon unit exhaust

5.10 Clean-up Time Estimates

Using the following first-order equation for decay, a decay constant (k) can be calculated.

$$C = C_i e^{-kt}$$

Where:

C = Final concentration

C_i = Initial concentration

k = Decay constant

t = Time

Using the BTEX data from MW-1t through MW-4t, MW-8t through MW-10t, and RW-12t, the decay constants listed in Table 10 **Appendix II** were calculated for remediation by Dual Phase Extraction (DPE). The data from the January 28, 2026 sampling event was used as the initial concentration for the monitoring wells. The April 11, 2026 sampling event was used as the initial concentration for RW-12t. The April 16, 2026 sampling event was used for the final concentrations to calculate the decay constant. A 10-hour pilot study was performed on April 12, 2026. Assuming negligible biodegradation occurred during this period of time, the decay constants calculated should result from the pilot study.

Clean-up time (t) was then solved for by using the calculated decay constant for each parameter and the desired clean-up target concentration. Times to clean-up were then calculated using the site concentrations from the April 12, 2026 groundwater monitoring event and groundwater ARBCA ISL concentrations.

These estimates indicate it will take less than less than 1 year for monitoring wells MW-1t, MW-2t, MW-8t, and MW-9t to clean up to the ARBCA ISL values for the site after free product has been removed. Recovery well RW-12t and monitoring well MW-4t experienced an increase in dissolved concentrations immediately following the 10-hour pilot study, which may be due to contamination being pulled toward the well. Increases at monitoring wells MW-3t and MW-10t are likely due to the continued spread of the dissolved product plume. Please note these clean-up times are estimates. The site experienced changing groundwater levels during the time between the sampling events. This has the potential to affect concentration levels, which may be a cause of the changing concentration levels. Due to the potential for fluctuations in the groundwater recovery rate and based on our experience with DPE systems at other sites, S&ME estimates the time to clean-up will be between 3 and 5 years for this site. We will continue to update these estimates as part of each O&M report for the site.



Based on the similarity of the soil and groundwater plumes, the soil contamination appears to be a result of contaminated groundwater that has saturated the sampled soil zones. This indicates the groundwater clean-up should be the controlling factor in calculating clean up times.

6.0 Operation and Maintenance Plan

The operation and maintenance (O&M) program includes:

- monthly sampling and analysis of discharged treated groundwater;
- quarterly sampling and analysis of extracted vapors;
- quarterly sampling and analysis of air emissions;
- quarterly sampling and analysis of groundwater;
- periodic maintenance of the system.

These items are discussed separately herein.

6.1 Groundwater Monitoring

Quarterly groundwater monitoring events will be performed as part of the O&M plan. Groundwater samples will be collected from monitoring wells and recovery wells. The samples will be analyzed for BTEX, MTBE, and naphthalene. The monitoring well and recovery well samples will also be field-tested for pH, conductivity, dissolved oxygen (DO), temperature and oxygen-reduction potential (ORP).

6.1.1 *Analytical Protocol*

Groundwater samples will be analyzed in the laboratory for BTEX, MTBE, and naphthalene according to EPA Method 8260.

Analyses will be conducted in the field for pH, conductivity, DO, and ORP using portable field instruments. Manufacturer's instructions will be adhered to when performing the field analyses.

6.1.2 *Sampling Protocol*

Prior to each of the groundwater sampling events, the wells will be purged according to ADEM and EPA protocols. Disposable bailers and cotton twine will be employed to minimize decontamination procedures. Any groundwater sampling equipment employed that requires decontamination will be cleaned using the following procedure:

- Tap water rinse.
- Detergent wash with laboratory-grade, nonphosphatic detergent solution.
- Distilled water rinse.
- Alcohol wash.
- Distilled water rinse.
- Air dry.



6.2 Air Emissions Monitoring

Vapor samples will be collected from the pump exhaust and air stripper exhaust in an effort to estimate the quantity and composition of the hydrocarbons of those emitted to the atmosphere.

6.2.1 Analytical Protocol

The vapor samples will be collected in one-liter Tedlar bags. These bags will be analyzed for BTEX and MTBE constituents in accordance with EPA Method 18 modified.

6.2.2 Sampling Protocol

Vinyl tubing will be used to connect to sampling ports installed with the system. This tubing will be dedicated to each sample port and replaced if the tubing becomes discolored. Samples will be collected quarterly in accordance with ADEM Air Division requirements.

6.3 Discharge Monitoring

The discharge of groundwater and/or stormwater associated with groundwater remediation action is permitted by the ADEM under General Permit No. ALG340000. This permit requires monitoring of discharges, places limitations on discharges and requires reporting of monitoring results by the permittee.

6.3.1 Analytical Protocol

Samples of groundwater, prior to treatment and after treatment, will be collected and analyzed for BTEX, MTBE, naphthalene, oil and grease and lead in the laboratory according to EPA Methods. Sample shipping and handling is discussed in Section 6.4.

The flow and pH of the discharged groundwater will be measured using portable field instruments. Manufacturer's instructions will be adhered to when performing the field analyses. Field observations of the discharge will be made in regards to sheen, visible oil, floating solids, and visible foam.

6.3.2 Sampling Protocol

Extracted groundwater and treated groundwater samples will be collected according to ADEM and EPA protocols. Water sampling equipment employed that requires decontamination will be cleaned using the procedures described in section 6.1.2.

6.4 Sample Shipping and Handling

Upon collection of a sample, the sample container will be sealed, properly labeled, and immediately cooled in a protective container for shipment to the analytical laboratory. A chain of custody form will be completed and will accompany the samples from the field to the laboratory. The chain of custody will be provided in the monitoring report.



6.5 QA/QC Procedures

The decontamination and sample handling procedures mentioned in previous sections of this plan will be employed as part of the quality assurance and quality control procedures. Field duplicate samples will be collected during each sampling event. These samples will be submitted to the laboratory with a separate sample ID number and will not be identified as a duplicate sample. A trip blank will also accompany the samples for quality control purposes.

6.6 DPE System Maintenance Schedule

Maintenance, repairs, and system down time will be recorded and logged. Regular maintenance will be performed on the scheduled recommended by the manufacturer, with additional maintenance performed as it is needed.

7.0 Proposed Reporting Requirements

S&ME proposes the following reporting schedule:

- System Delivery Notification-15 days after delivery
- Start-up Notification -15 days after start-up
- Report of Corrective Action Implementation - 30 days after completion of installation
- Quarterly Report of Corrective Action Effectiveness – Quarterly after start-up for 1 year or until SSTLs for the site have been achieved. The quarterly report will include the System Effectiveness Monitoring Report form, contour maps, lab results, water level measurements, and waste water discharge rates and volumes.
- Request for Cessation of Corrective Action – 1 year after start-up or after SSTLs have been achieved.
- Site Closure Report – 60 days after completion of all site activities.

8.0 Schedule of implementation

S&ME will schedule the implementation of the proposed CAP within 10 days of approval by the ADEM. Equipment and supplies will need to be ordered. Due to unstable supply chains, it is unknown how long this process will take. S&ME estimates that the installation and start-up will require approximately 8 weeks following acquisition of supplies. Start-up Notification will be sent to the ADEM within 15 days of corrective action start-up.

S&ME proposes the following schedule for the installation and initial start-up of the DPE system:

Week 1	Arrange and pay deposits for electrical through Alabama Power and water through Coaling Water Authority. Electrical and Water service installation at the site can take several weeks. System startup typically is dependent on the installation of the power pole and water meter. Lay out system. Locate the recovery wells, the piping channels, the building pad and the NPDES discharge point. Contact Alabama One Call and other necessary utility locators for utility clearance (typically takes 3 days).
Week 2	Drilling. Install soil borings.



Week 3	Develop and sample recovery wells.
Week 4-6	Cut the concrete for piping channels. Dig the trench for the water line. Install the water line, well vaults, and pumps. Dig the piping and discharge channels using the backhoe. Install vacuum lines. Complete vacuum line and discharge line installation. Backfill trenches to grade. These tasks may be performed in stages for minimal disruption to the operating business.
Week 7	Building delivered. Resurface piping channels as appropriate with asphalt or concrete. Install electrical circuit breaker box. Run power to pumps. Turn on pump and check vacuum lines for leaks.
Week 8	Perform system start-up monitoring and adjustments. Monitor flow, vacuum, and VOC concentrations. Take vapor samples for BTEX. Adjust flow rates and vacuums so that each well has maximum vacuum and flow.

Within 30 days of completion of the installation, S&ME will submit a report of CAP Implementation that will include as-built drawings of the DPE system, observations and results of the system start-up, and copies of analytical results.

9.0 References

Kuo, J., *Practical Design Calculations for Groundwater and Soil Remediation*, Lewis Publishers, Boca Raton, 1999.

Zheng, C., Bennett, G. D., and Andrews, C. B., Analysis of Ground-Water Remedial Alternatives at a Superfund Site, *Groundwater*, Vol. 29, No. 6, 838-848, 1991.

U.S. EPA, *How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites: A Guide for Corrective Action Plan Reviewers*, EPA 510-B-94-003, U.S. EPA, Washington, DC, 1994 (and revisions, May 1995).

10.0 Limitations and Qualifications

When performing this scope of services, S&ME, Inc., observed the degree of care and skill generally exercised by other consultants undertaking similar studies at the same time, under similar circumstances and conditions, and in the same geographic area. Conclusions regarding the subject property are based on observations of existing conditions, available documentation, and our interpretation of the collected data.

S&ME cannot state that the site contains no hazardous or toxic materials, or other latent conditions, beyond those noted by its personnel during the performance of assessment activities. Subsequent changes in land use or other activities on or near the site could invalidate those findings. If additional or corrected information becomes available, we request the opportunity to review and modify our opinions, if warranted.

The findings and conclusions of S&ME, Inc., must be considered not as scientific certainties, but as probabilities based on our professional judgment concerning the significance of the data gathered during the course of the site



evaluation. S&ME, Inc., does not and cannot represent beyond that observed by S&ME, Inc., during this site evaluation. No warranty is expressed or implied.

11.0 Conclusions and Recommendations

S&ME has reviewed the data available on current site conditions and has reviewed several potential remediation technologies. Based on this review, S&ME has proposed a DPE corrective action system for the removal of remaining free product, and to reduce the migration of contamination from the subject site. Updated quotes for the construction and installation of this system have been requested. Upon receipt of these quotes, the cost proposals for the purchase, installation, and the first year of operation and maintenance for the system will be submitted.

12.0 Acknowledgement

I acknowledge under penalty of law that this Corrective Action Plan (CP No. 08) and all plans, specifications, and technical data submitted within were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiring of the person or persons who directly gathered the enclosed information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information.



Nathanael A. Wade

Signature

Nathanael A. Wade, P.E.
Alabama Engineer Number 55671

May 29, 2026

Date

13.0 Project Personnel

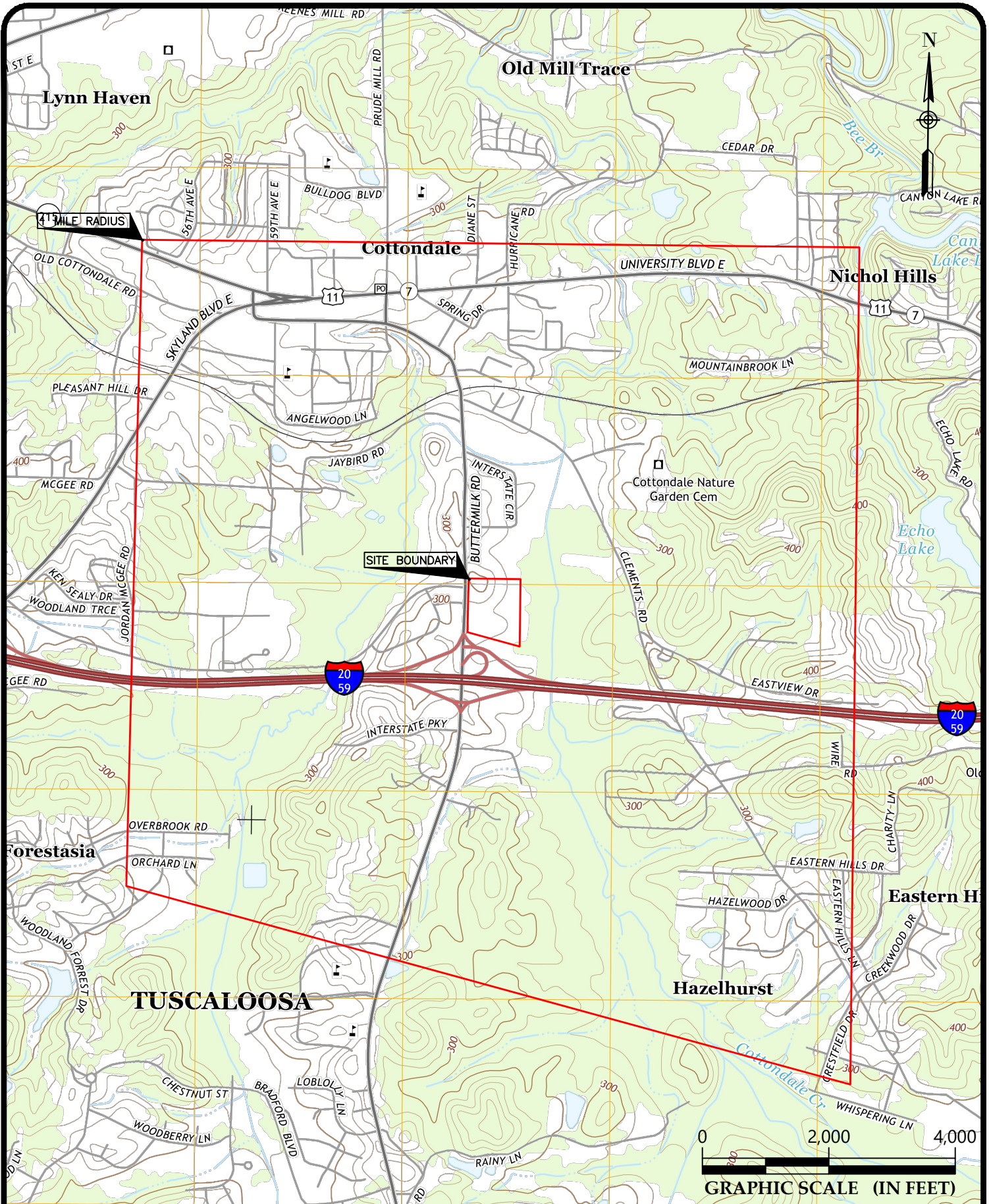
Table 13-1 S&ME Personnel and Project Roles

Name of Personnel	Title
Nathanael A. Wade, P.E.	Project Manager / Draftsman
Deborah Jones, P.E.	Senior Engineer / Senior Reviewer
Kate McDonough	Administrative Assistant

Appendices

Appendix I – Figures

Drawing Path: T:\Huntsville-1820\Projects\2022\22820236_Travel Centers of America_TCA #116_Cottondale AL4 ENV\CAD\22820236-Maps.dwg



SITE VICINITY MAP

TRAVEL CENTERS OF AMERICA TA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1"=2,000'

DATE:

02/15/2024

PROJECT NUMBER

22820236

FIGURE NO.

1

Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood ALIENVCAD\24820047-Maps Fixed.dwg



WELL LOCATION MAP

TRAVEL CENTERS OF AMERICA TA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 50'

DATE:

4/8/2026

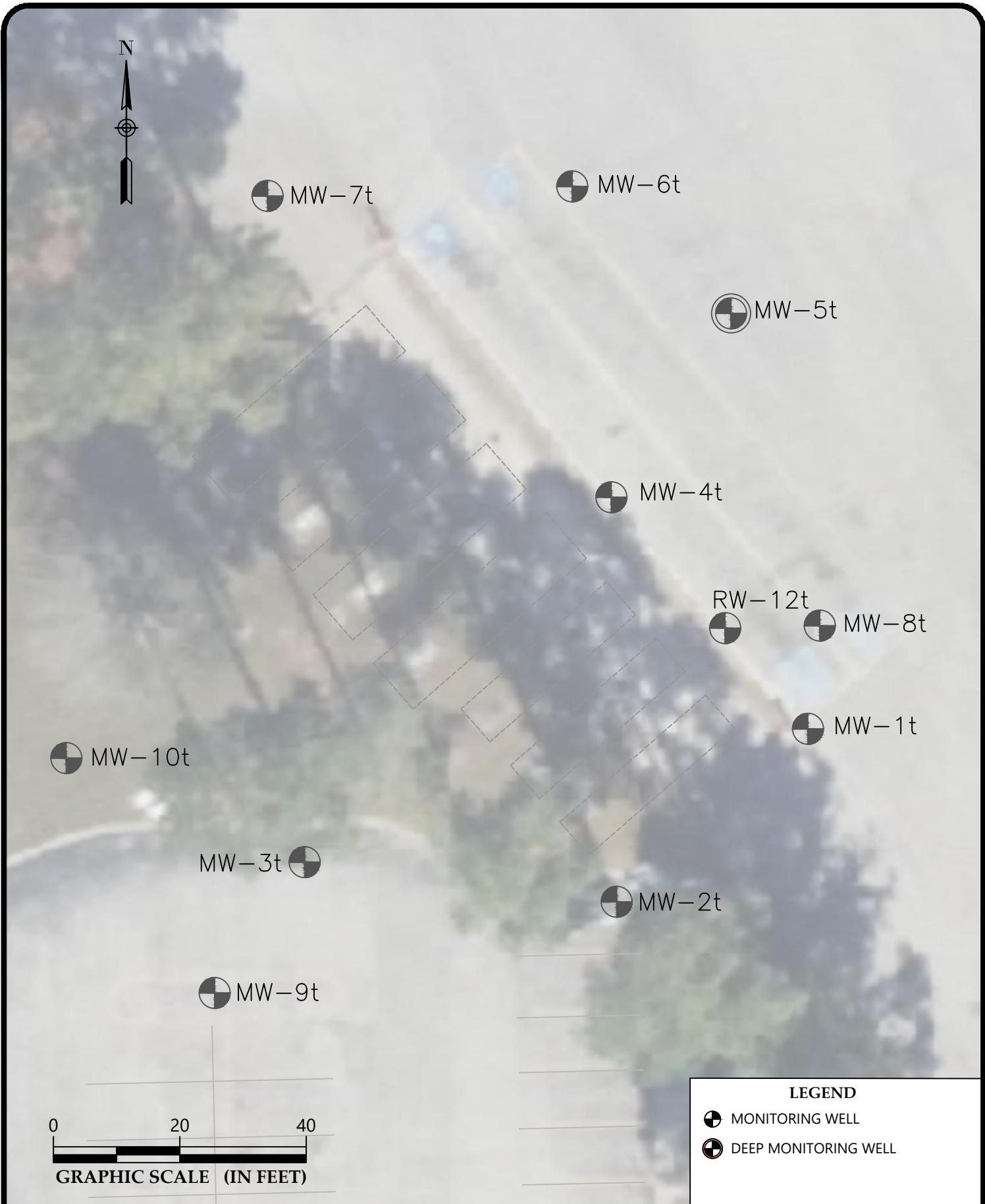
PROJECT NUMBER

24820047

FIGURE NO.

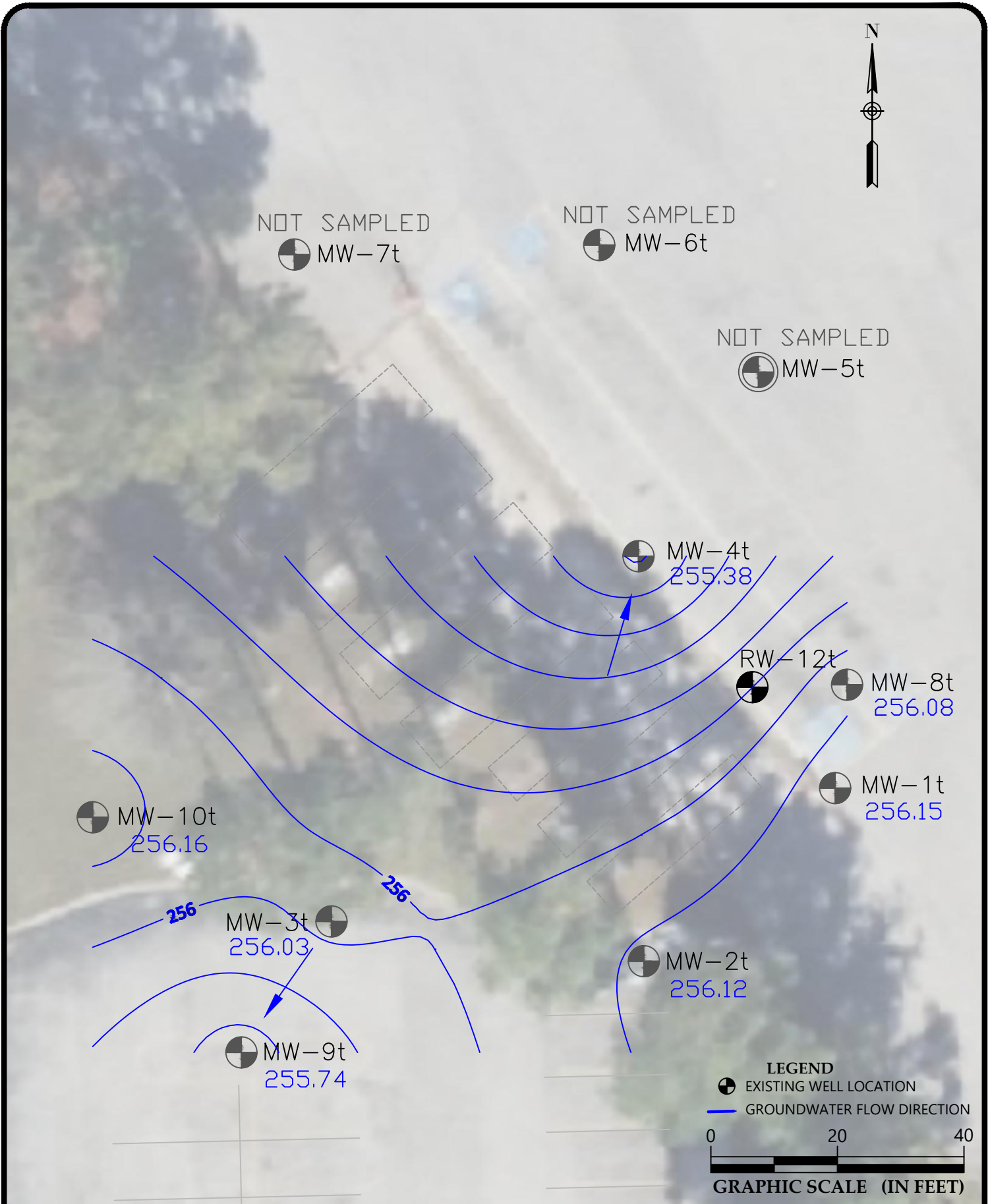
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Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood ALLEN\CAD\24820047-Maps Fixed.dwg



	UST24-01-05 WELLS	SCALE:	FIGURE NO.	
		1" = 20'	3	
	TRAVELCENTERS OF AMERICA #116			DATE:
	3501 BUTTERMILK ROAD			4/8/2026
	COTTONDALE, TUSCALOOSA COUNTY, ALABAMA			PROJECT NUMBER
		24820047		

Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood ALLEN\CAD\24820047-Maps Fixed.dwg



GROUNDWATER ELEVATIONS 1/28/2026

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

2/19/2026

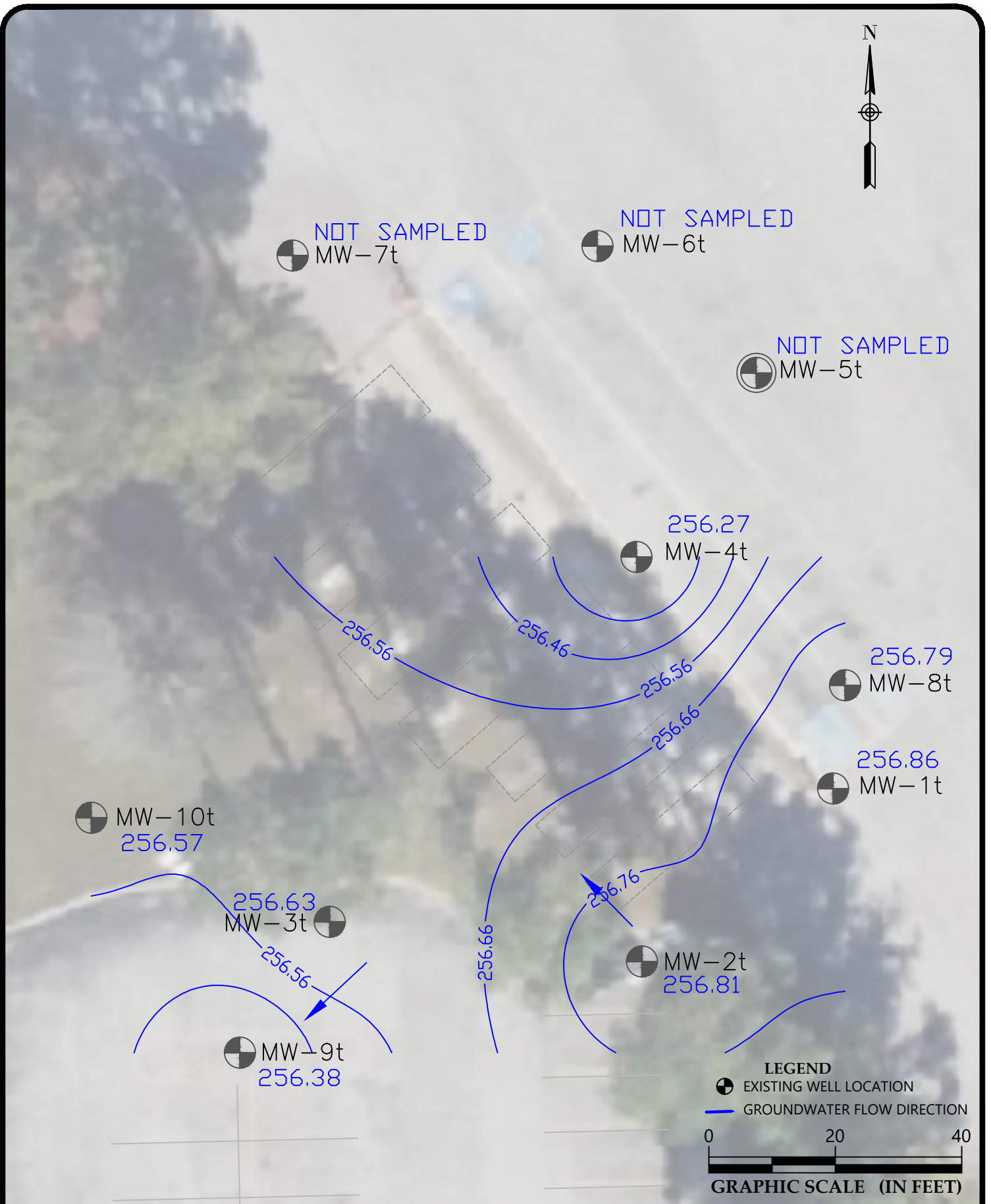
PROJECT NUMBER

24820047

FIGURE NO.

4A

Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood AL\ENVCAD\24820047-Maps Fixed.dwg



GROUNDWATER ELEVATIONS 10/22/2025

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

12/10/2025

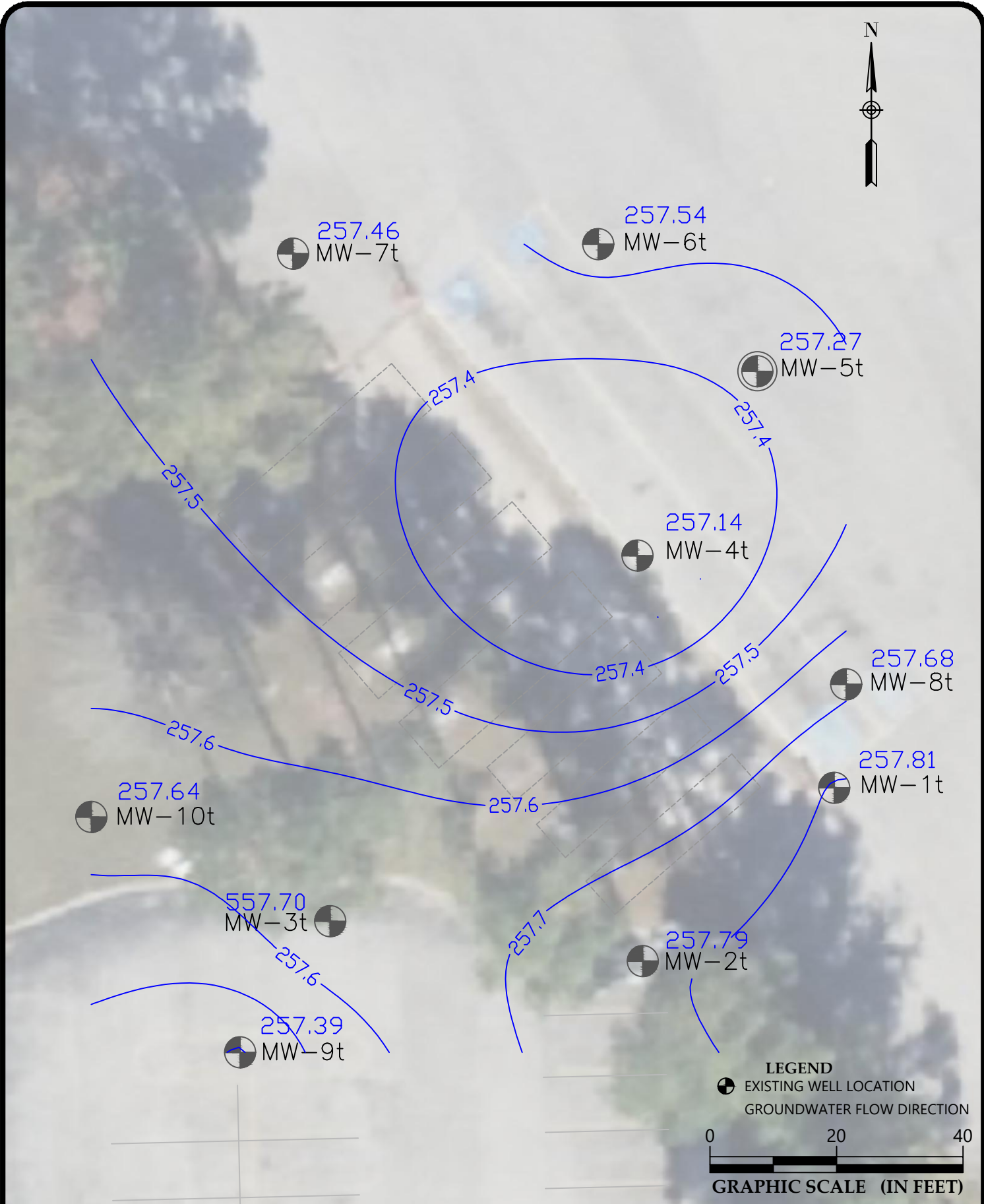
PROJECT NUMBER

24820047

FIGURE NO.

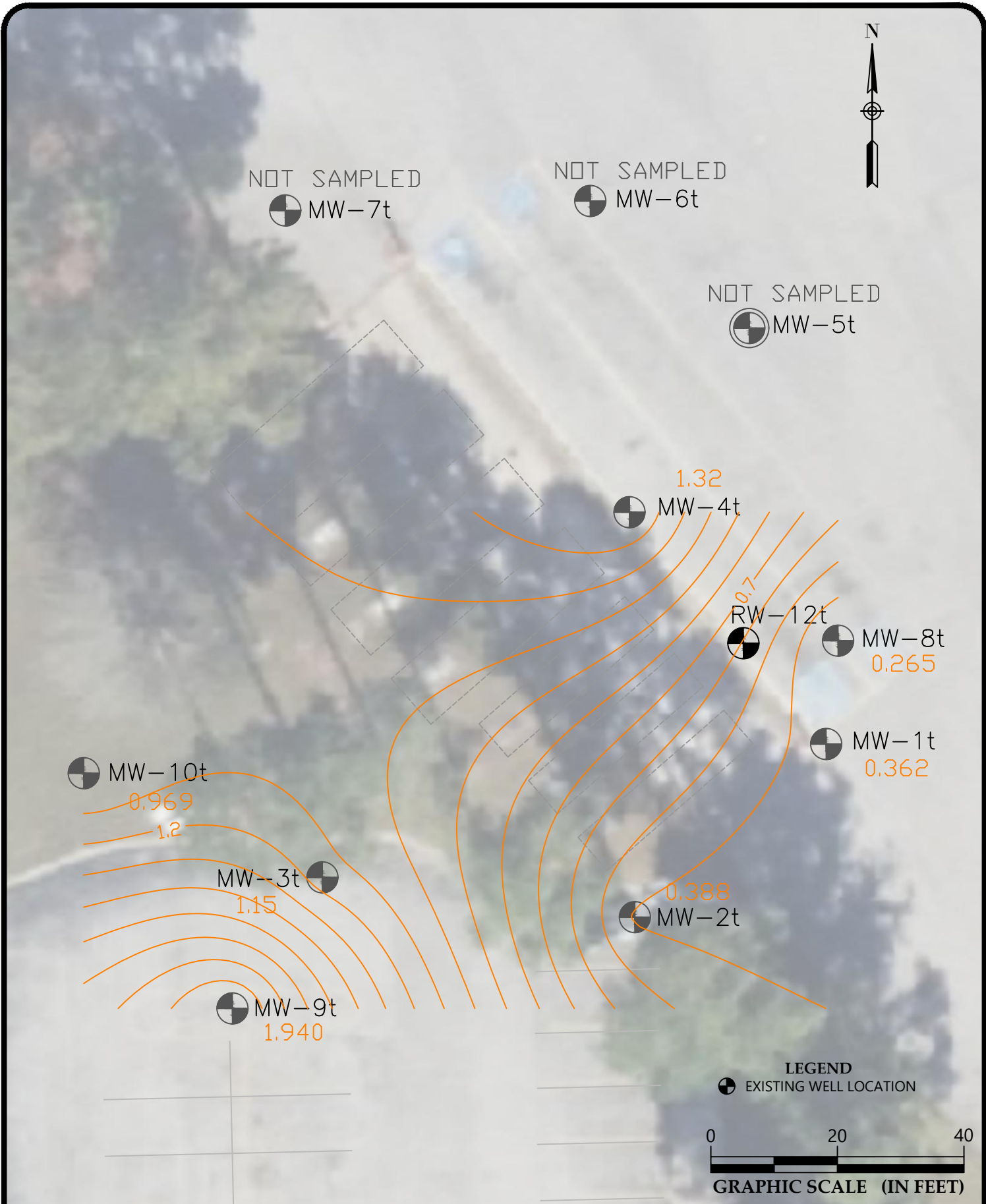
4B

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	GROUNDWATER ELEVATIONS 7/22/2025	SCALE:	FIGURE NO.
		1" = 20'	4C
	DATE:		
	8/8/2025		
	PROJECT NUMBER		
TRAVELCENTERS OF AMERICA #116 3501 BUTTERMILK ROAD COTTONDALE, TUSCALOOSA COUNTY, ALABAMA		24820047	

Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood ALLEN\CAD\24820047-Maps Fixed.dwg



BENZENE CONCENTRATIONS 1/28/2026

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

2/19/2026

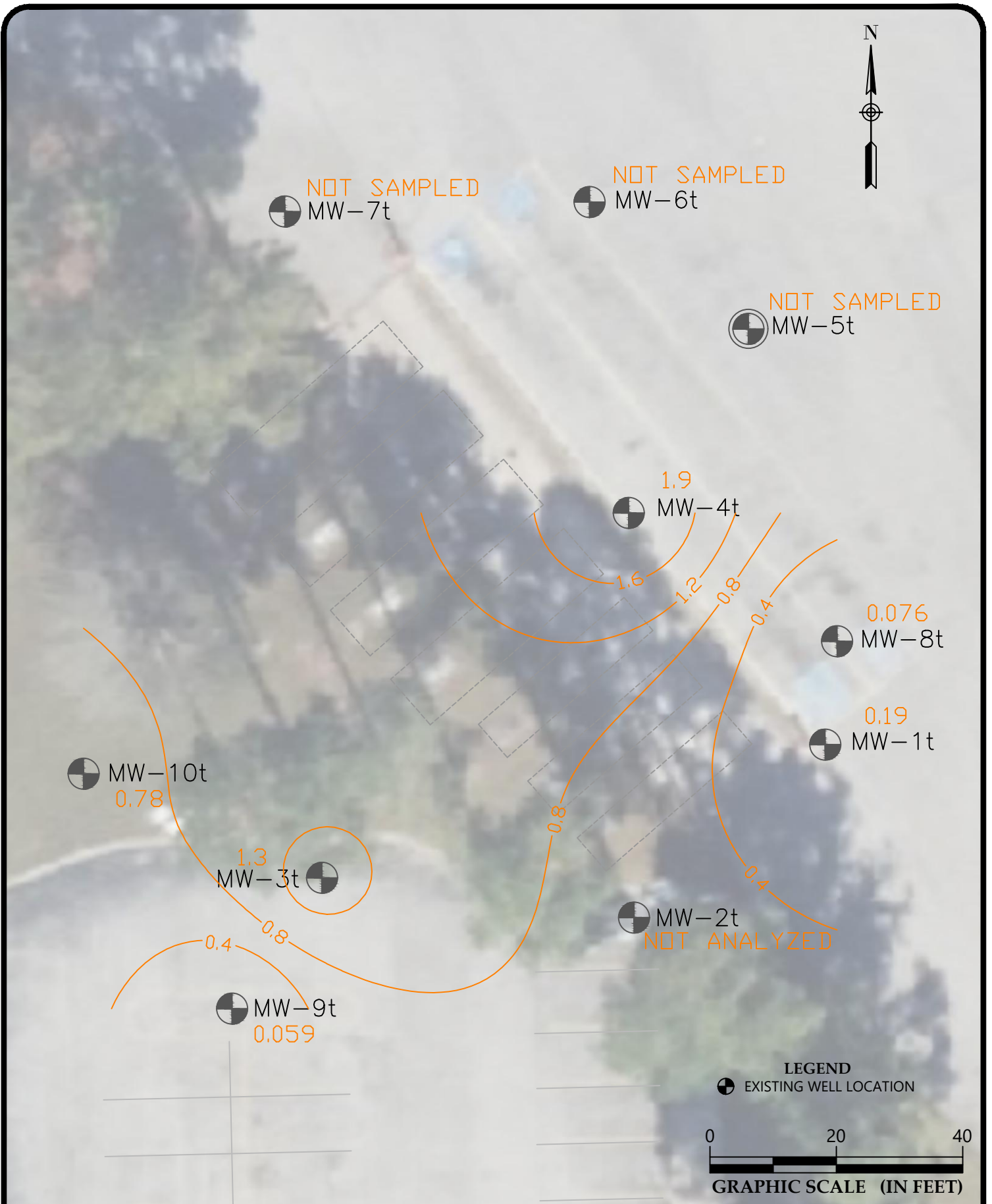
PROJECT NUMBER

24820047

FIGURE NO.

5A

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BENZENE CONCENTRATIONS 10/22/2025

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

12/10/2025

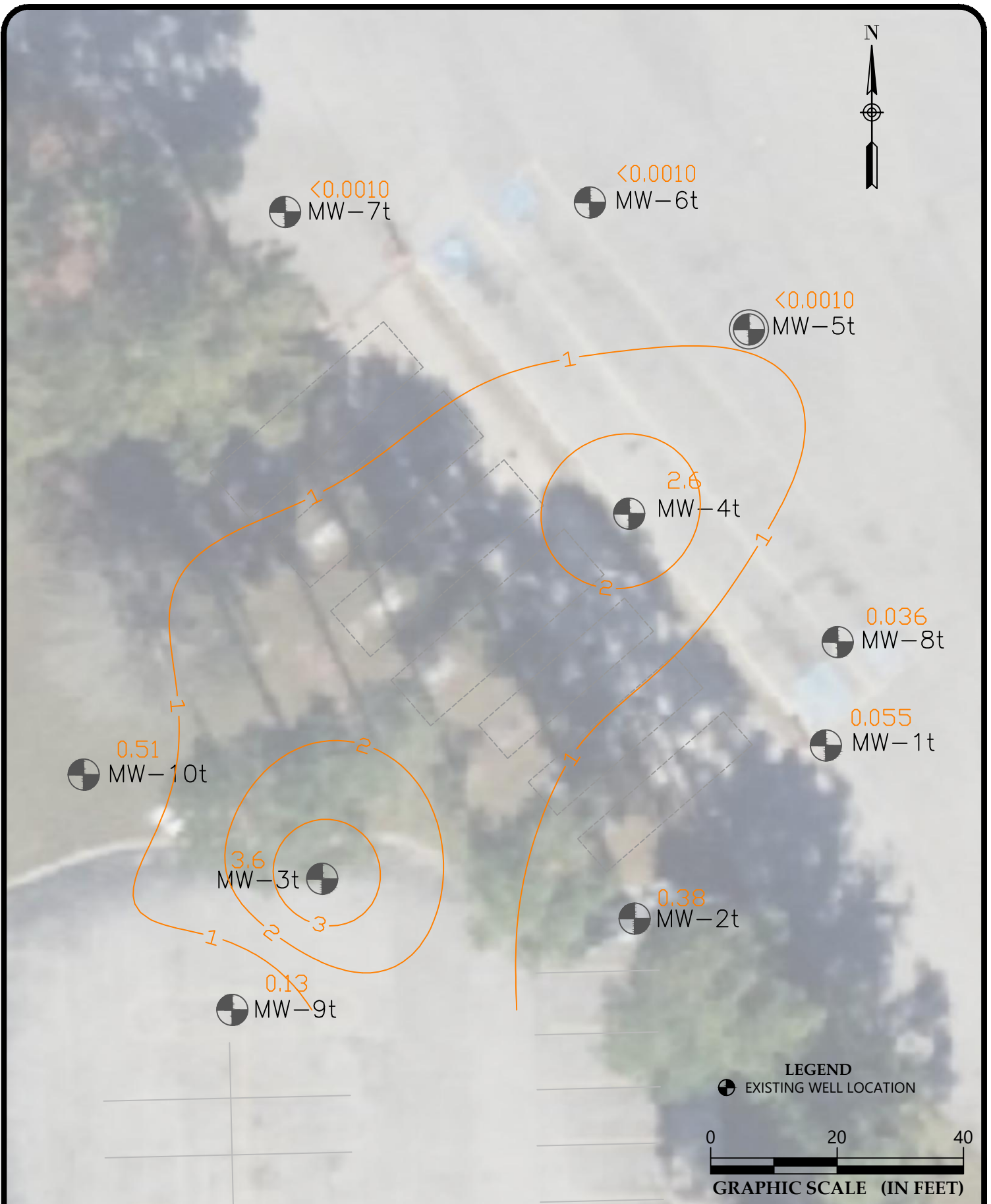
PROJECT NUMBER

24820047

FIGURE NO.

5B

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BENZENE CONCENTRATIONS 7/22/2025

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

8/8/2025

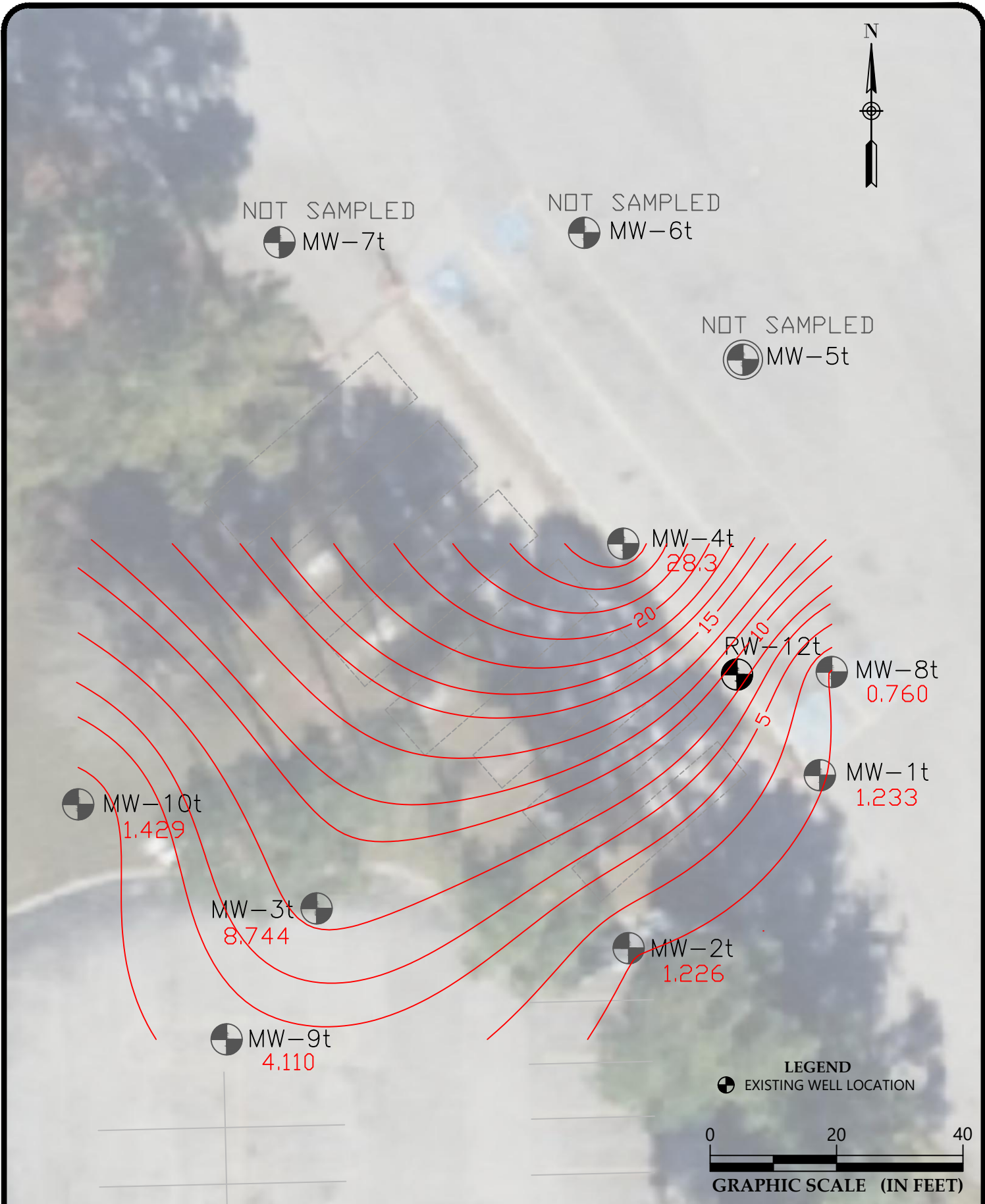
PROJECT NUMBER

24820047

FIGURE NO.

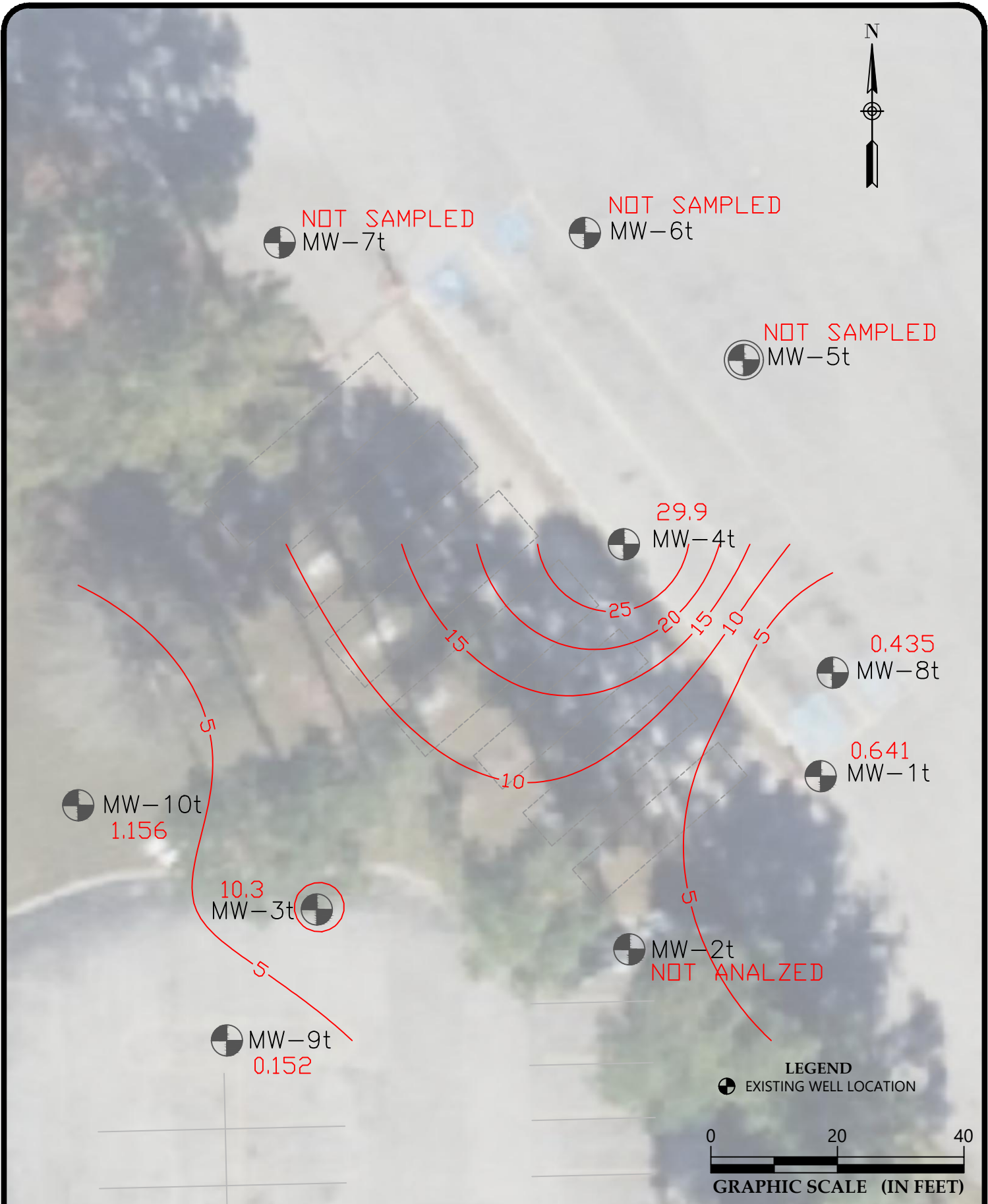
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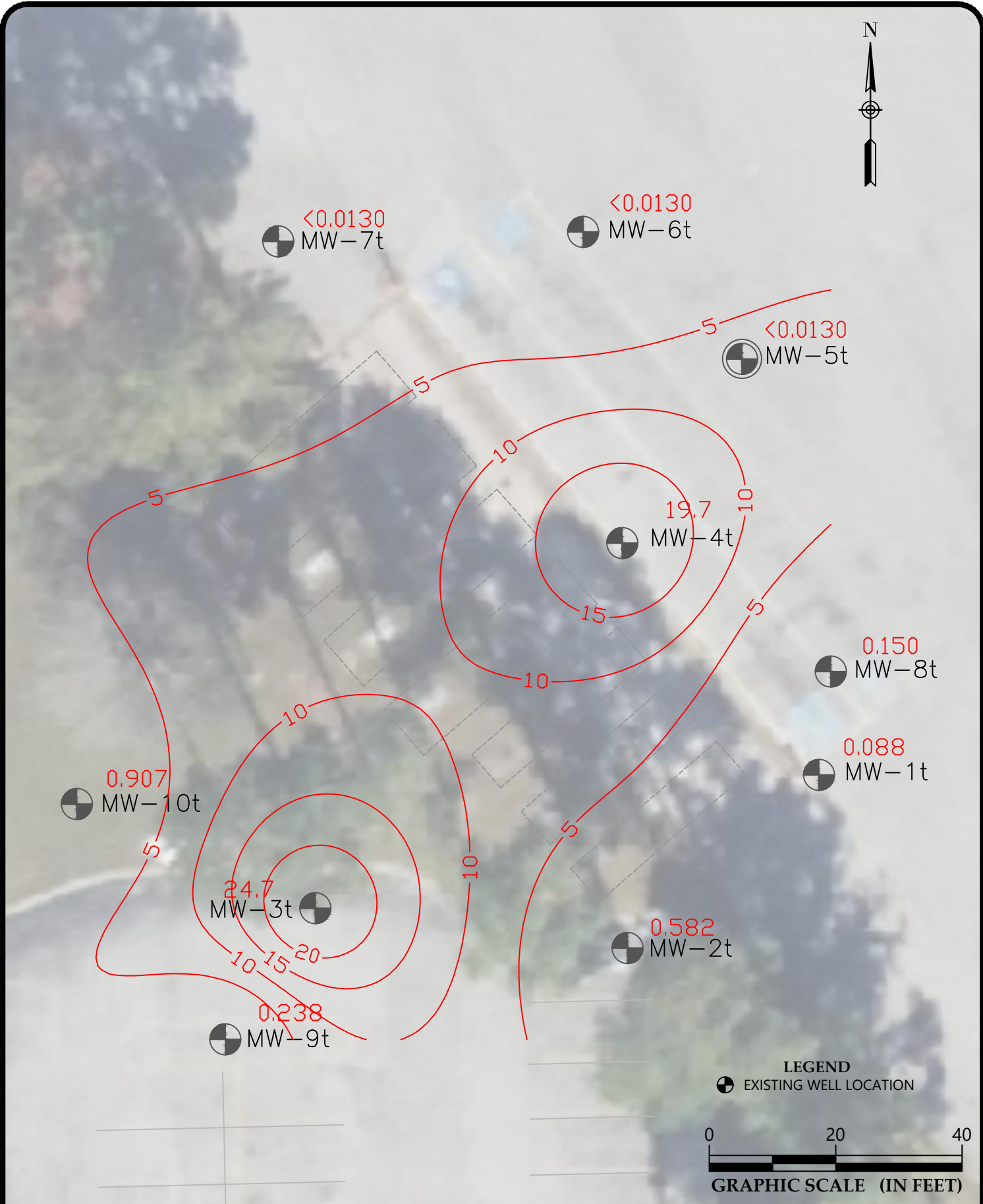
	TOTAL BTEX CONCENTRATIONS 1/28/2026		SCALE:	FIGURE NO.
			1" = 20'	6A
	TRAVELCENTERS OF AMERICA #116 3501 BUTTERMILK ROAD COTTONDALE, TUSCALOOSA COUNTY, ALABAMA		DATE:	
			2/19/2026	
			PROJECT NUMBER	
			24820047	

Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood ALLEN\CAD\24820047-Maps Fixed.dwg



	TOTAL BTEX CONCENTRATIONS 10/22/2025		SCALE:	FIGURE NO.
	TRAVELCENTERS OF AMERICA #116 3501 BUTTERMILK ROAD COTTONDALE, TUSCALOOSA COUNTY, ALABAMA		1" = 20'	6B
			DATE:	
			12/10/2025	
			PROJECT NUMBER	
			24820047	

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TOTAL BTEX CONCENTRATIONS 7/22/2025

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

8/8/2025

PROJECT NUMBER

24820047

FIGURE NO.

6C

Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood ALLEN\CAD\24820047-Maps Fixed.dwg



MTBE CONCENTRATIONS 1/28/2026

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

2/19/2026

PROJECT NUMBER

24820047

FIGURE NO.

7A

Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood AL\ENVCAD\24820047-Maps Fixed.dwg



MTBE CONCENTRATIONS 10/22/2025

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

12/10/2025

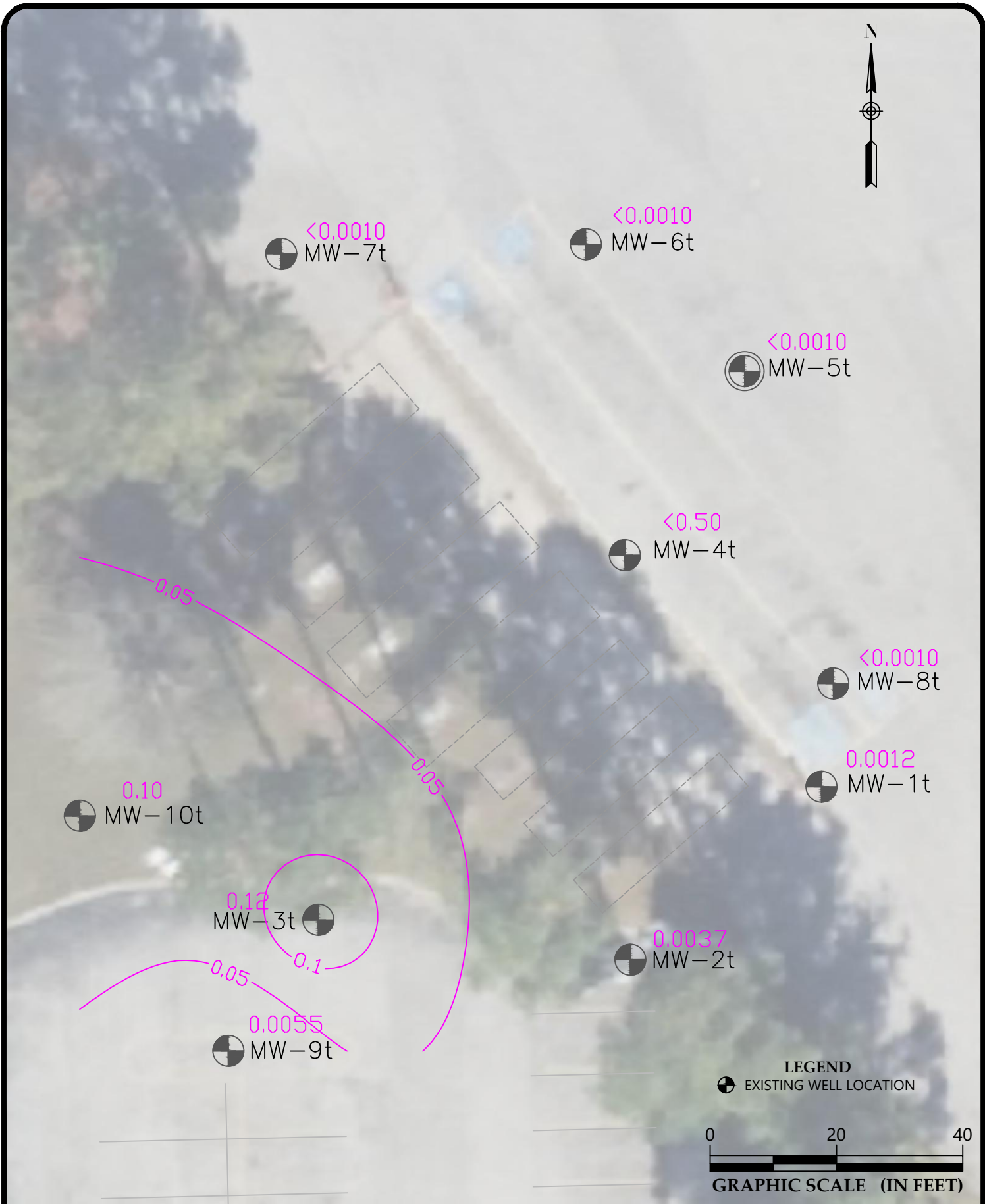
PROJECT NUMBER

24820047

FIGURE NO.

7B

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MTBE CONCENTRATIONS 8/8/2025

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

8/8/2025

PROJECT NUMBER

24820047

FIGURE NO.

7C

Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood ALLEN\CAD\24820047-Maps Fixed.dwg



NAPHTHALENE CONCENTRATIONS 1/28/2026

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

2/19/2026

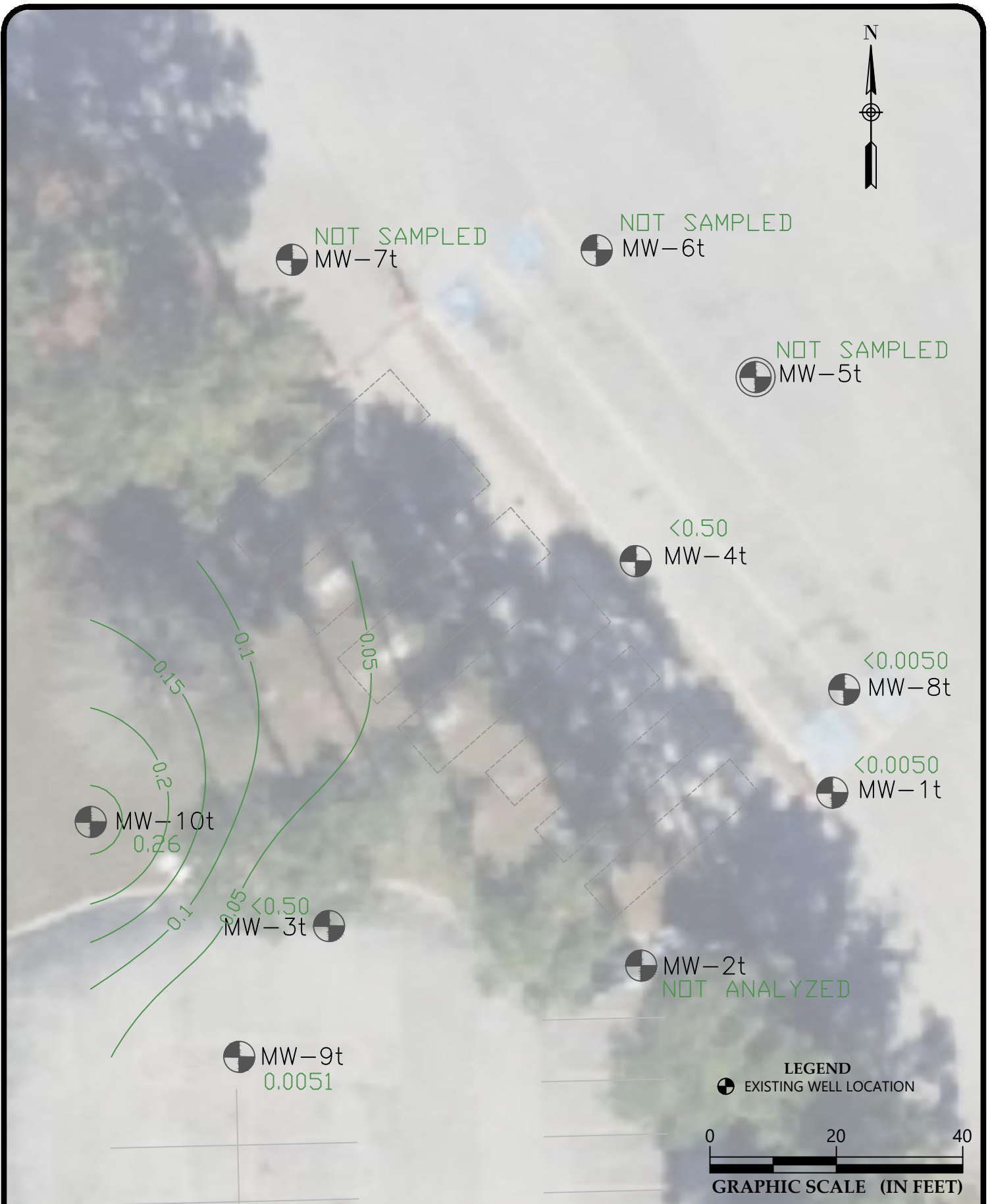
PROJECT NUMBER

24820047

FIGURE NO.

8A

Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood AL\ENVCAD\24820047-Maps Fixed.dwg



NAPHTHALENE CONCENTRATIONS 10/22/2025

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

12/10/2025

PROJECT NUMBER

24820047

FIGURE NO.

8B

Drawing Path: T:\huntsville-1820\projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood AL\ENV\CAD\24820047-Maps_Fixed.dwg



NAPHTHALENE CONCENTRATIONS 7/22/2025

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

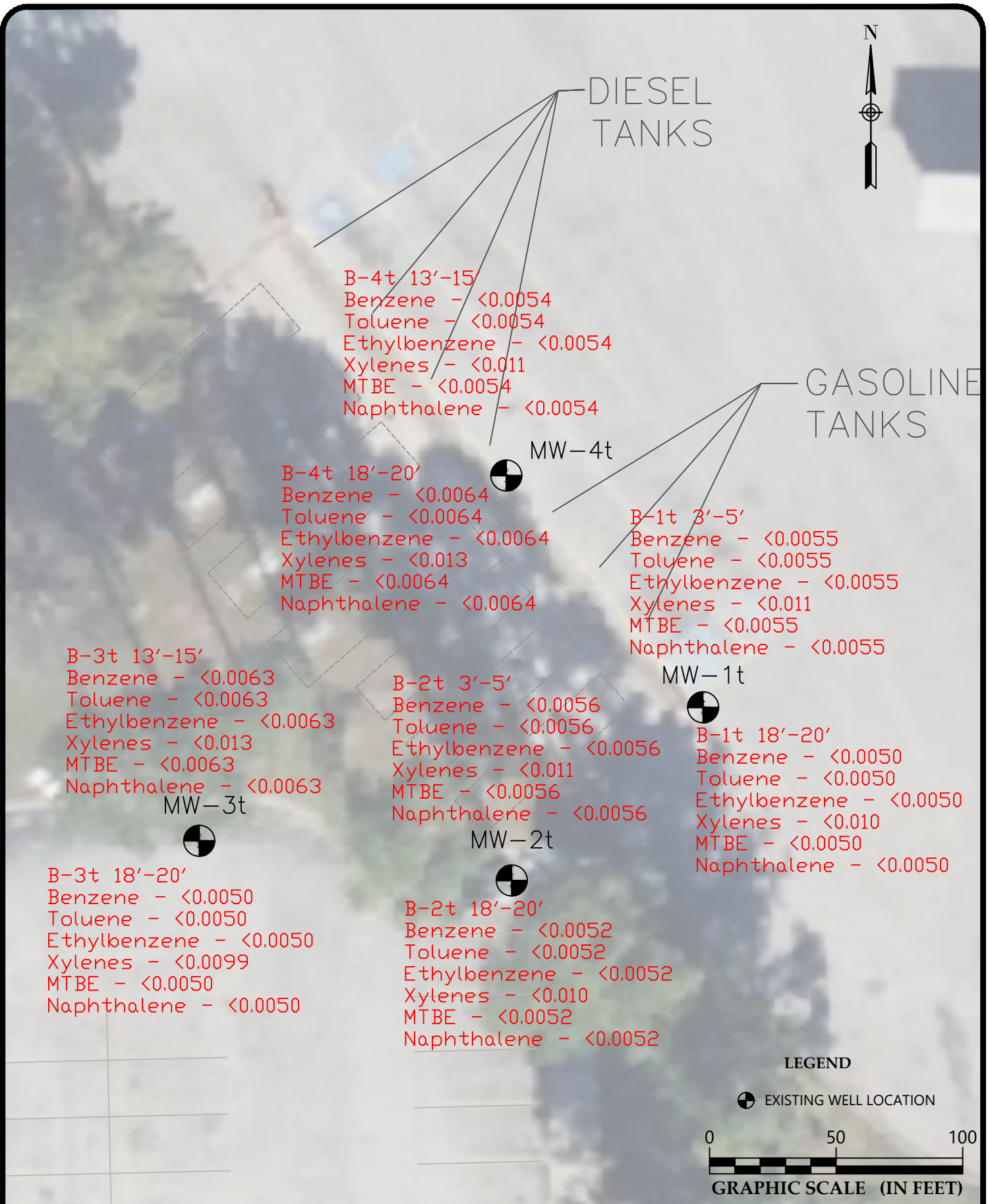
8/8/2025

PROJECT NUMBER

24820047

FIGURE NO.

8C



Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood AL\ENVCAD\24820047-Maps Fixed.dwg

B-7t 1'-5'
Benzene - <0.0053
Toluene - <0.0053
Ethylbenzene - <0.0053
Xylenes - <0.011
MTBE - <0.0053
Naphthalene - <0.0053



B-6t 1'-5'
Benzene - <0.0052
Toluene - <0.0052
Ethylbenzene - <0.0052
Xylenes - <0.010
MTBE - <0.0052
Naphthalene - <0.0052



B-5t 5'-10'
Benzene - <0.0053
Toluene - <0.0053
Ethylbenzene - <0.0053
Xylenes - <0.011
MTBE - <0.0053
Naphthalene - <0.0053



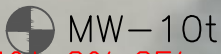
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Benzene - <0.0050
Toluene - <0.0050
Ethylbenzene - <0.0050
Xylenes - <0.010
MTBE - <0.0050
Naphthalene - <0.0050

B-6t 20'-25'
Benzene - <0.0053
Toluene - <0.0053
Ethylbenzene - <0.0053
Xylenes - <0.011
MTBE - <0.0053
Naphthalene - <0.0053

B-5t 20'-25'
Benzene - <0.0053
Toluene - <0.0053
Ethylbenzene - <0.0053
Xylenes - <0.011
MTBE - <0.0053
Naphthalene - <0.0053



B-10t 15'-20'
Benzene - <0.0048
Toluene - <0.0048
Ethylbenzene - <0.0048
Xylenes - <0.0097
MTBE - <0.0048
Naphthalene - <0.0048



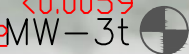
B-8t 10'-15''
Benzene - <0.0051
Toluene - <0.0051
Ethylbenzene - <0.0051
Xylenes - <0.010
MTBE - <0.0051
Naphthalene - <0.0051



B-8t 20'-24'
Benzene - <0.0051
Toluene - <0.0051
Ethylbenzene - <0.0051
Xylenes - <0.010
MTBE - <0.0051
Naphthalene - <0.0051



B-10t 20'-25'
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Toluene - <0.0059
Ethylbenzene - <0.0059
Xylenes - <0.012
MTBE - <0.0059
Naphthalene - <0.0059



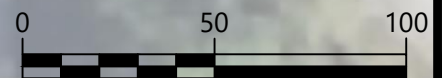
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Toluene - <0.0052
Ethylbenzene - <0.0052
Xylenes - <0.010
MTBE - <0.0052
Naphthalene - <0.0052



B-9t 15'-20'
Benzene - <0.0055
Toluene - <0.0055
Ethylbenzene - <0.0055
Xylenes - <0.011
MTBE - <0.0055
Naphthalene - <0.0055

LEGEND

EXISTING WELL LOCATION



GRAPHIC SCALE (IN FEET)



SOIL CONCENTRATIONS 1/28/2025-1/29/2025

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

2/24/2025

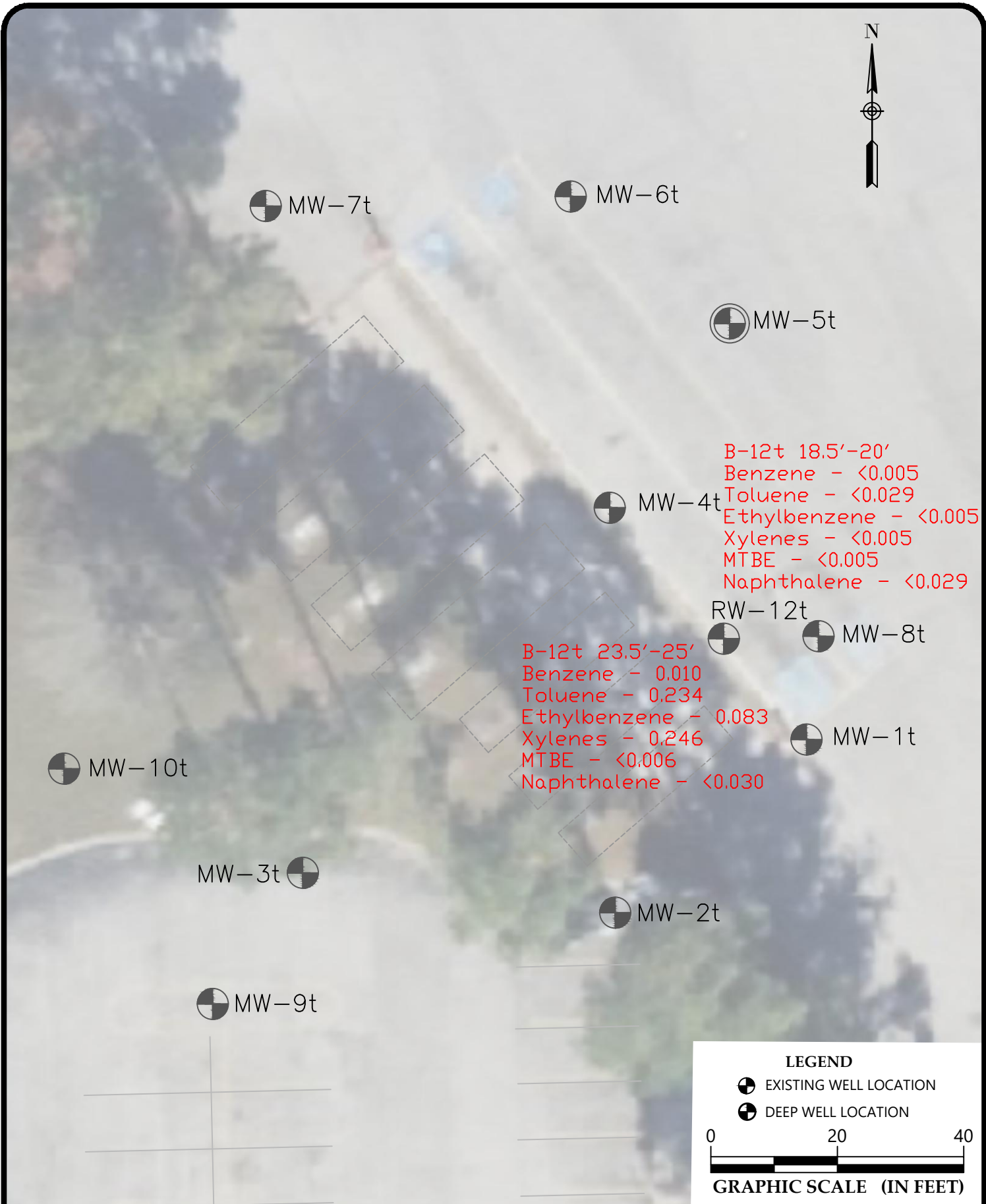
PROJECT NUMBER

24820047

FIGURE NO.

9B

Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood AL\ENV\CAD\24820047-Maps Fixed.dwg



SOIL CONCENTRATIONS 2/9/2026

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 20'

DATE:

4/8/2026

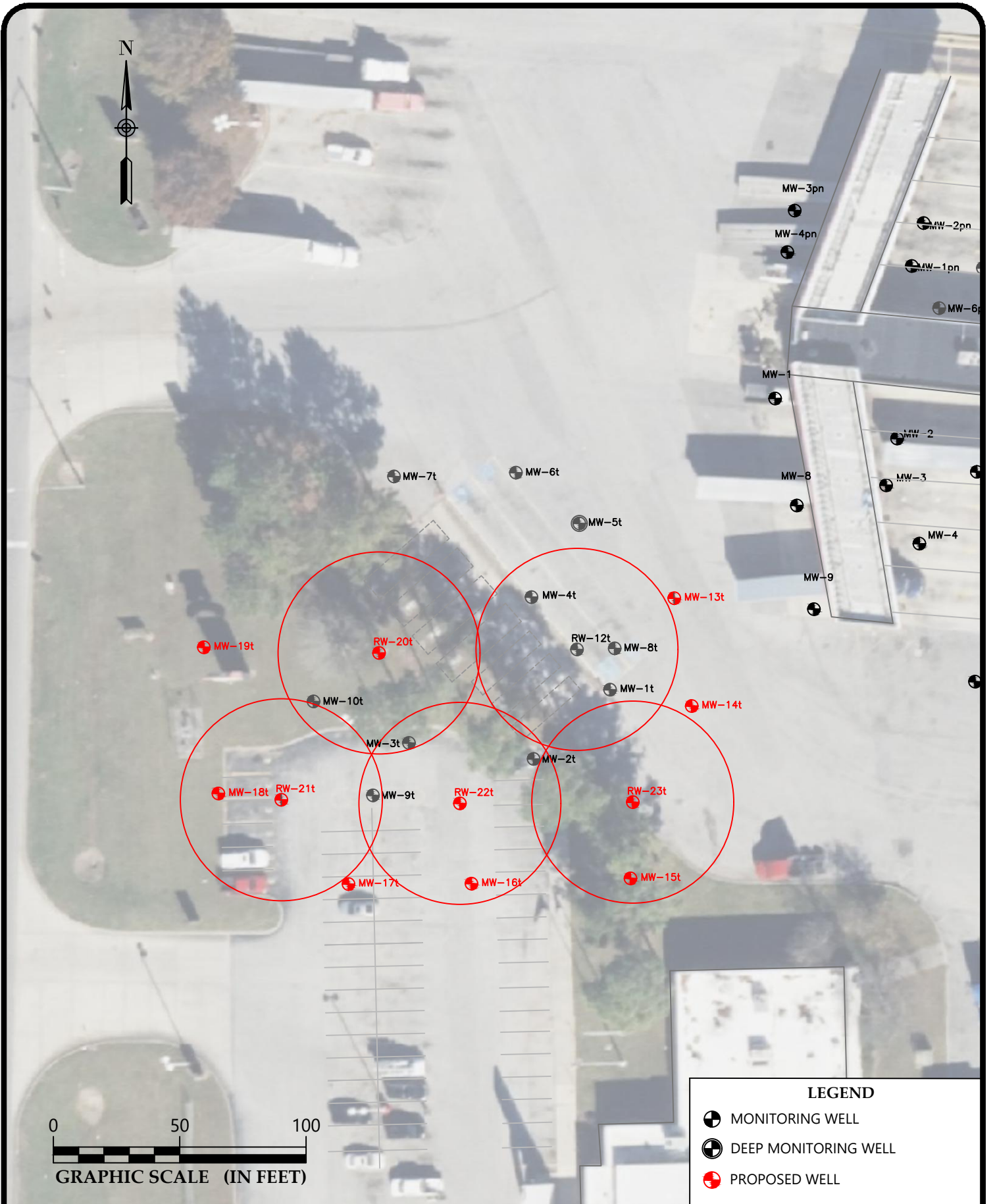
PROJECT NUMBER

24820047

FIGURE NO.

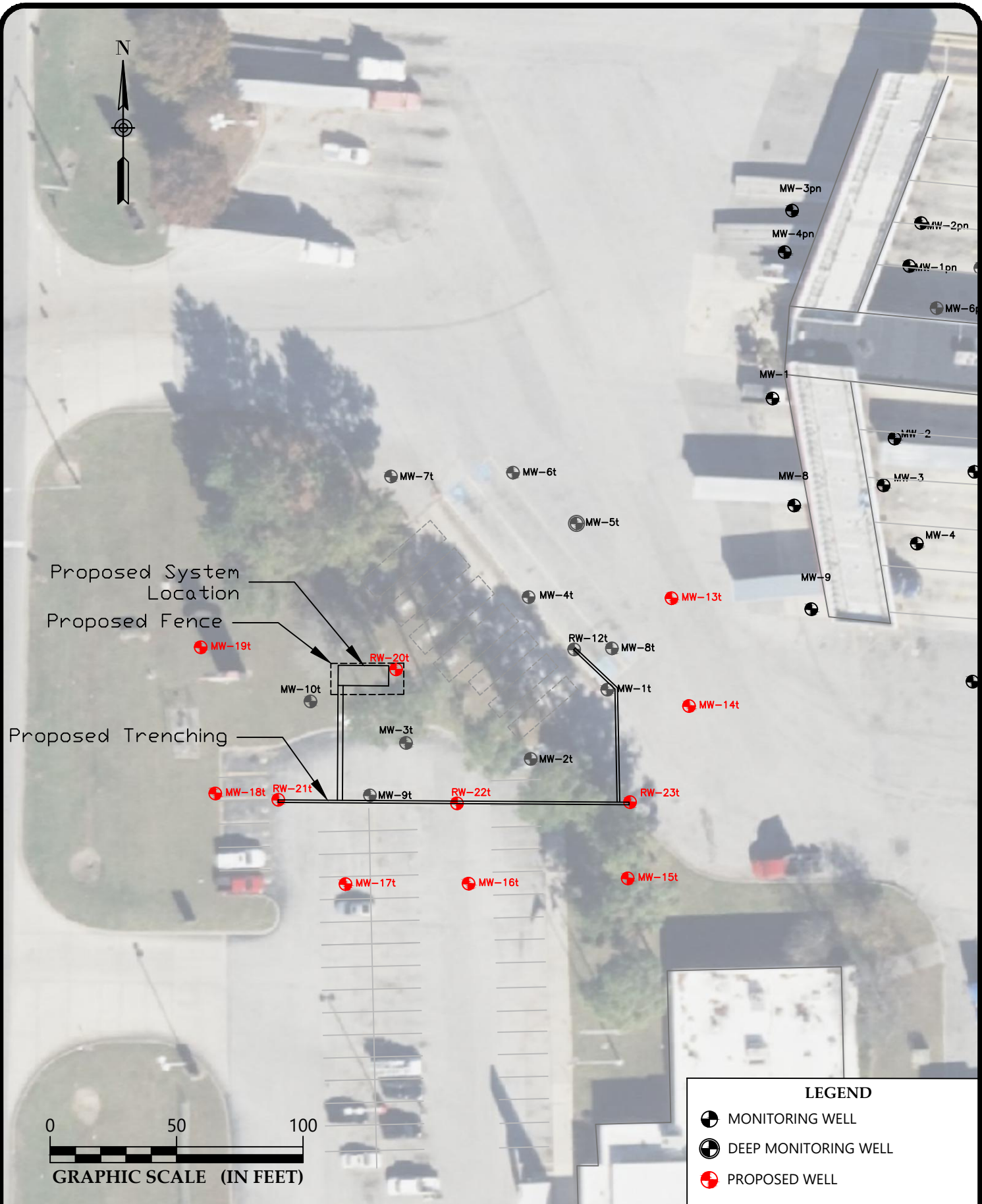
9C

Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood ALLEN\CAD\24820047-Maps Fixed.dwg



	PROPOSED WELLS	SCALE:	FIGURE NO.
		1" = 50'	10
	DATE:		
	4/24/2026		
	PROJECT NUMBER		
TRAVELCENTERS OF AMERICA #116 3501 BUTTERMILK ROAD COTTONDALE, TUSCALOOSA COUNTY, ALABAMA	24820047		

Drawing Path: T:\Huntsville-1820\Projects\2024\24820047_Travel Centers of America_TCA #116 - Gasoline Release_Cottonwood AL\ENVCAD\24820047-System Layout.dwg



PROPOSED SYSTEM LAYOUT

TRAVELCENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

1" = 50'

DATE:

4/27/2026

PROJECT NUMBER

24820047

FIGURE NO.

11

Appendix II – Tables

TABLE 1 GROUNDWATER ELEVATION SUMMARY**TRAVEL CENTERS OF AMERICA #116**

COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

FACILITY ID NO. 17050-125-014907

UST INCIDENT NO. 24-01-05



MONITOR WELL NO.	TOG ELEV. (ft)	TOC ELEV. (ft)	DATE	DTW (TOC) (ft)	GROUND WATER ELEV. (ft)	TOTAL DEPTH OF WELL (ft)
MW-1t	282.24	282.00	4/5/2024	24.63	257.37	30
			1/31/2025	26.02	255.98	
			7/22/2025	24.19	257.81	
			10/22/2025	25.14	256.86	
			1/28/2026	25.85	256.15	
			4/16/2026	25.50	256.50	
MW-2t	280.72	280.39	4/5/2024	23.05	257.34	30
			1/31/2025	24.44	255.95	
			7/22/2025	22.60	257.79	
			10/22/2025	23.58	256.81	
			1/28/2026	24.27	256.12	
			4/16/2026	23.96	256.43	
MW-3t	280.95	280.64	4/5/2024	23.48	257.16	30
			1/31/2025	24.28	256.36	
			7/22/2025	22.94	257.70	
			10/22/2025	24.01	256.63	
			1/28/2026	24.61	256.03	
			4/16/2026	24.40	256.24	
MW-4t	282.20	281.90	4/5/2024	24.69	257.21	30
			1/31/2025	26.58	255.32	
			7/22/2025	24.76	257.14	
			10/22/2025	25.63	256.27	
			1/28/2026	26.52	255.38	
			4/16/2026	26.28	255.62	

TABLE 1 GROUNDWATER ELEVATION SUMMARY

TRAVEL CENTERS OF AMERICA #116

COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

FACILITY ID NO. 17050-125-014907

UST INCIDENT NO. 24-01-05



MONITOR WELL NO.	TOG ELEV. (ft)	TOC ELEV. (ft)	DATE	DTW (TOC) (ft)	GROUND WATER ELEV. (ft)	TOTAL DEPTH OF WELL (ft)
MW-5t	281.93	281.26	1/31/2025	26.86	254.40	49
			7/22/2025	23.99	257.27	
MW-6t	281.84	281.54	1/31/2025	25.84	255.70	30
			7/22/2025	24.00	257.54	
MW-7t	282.62	282.31	1/31/2025	26.75	255.56	30
			7/22/2025	24.85	257.46	
MW-8t	281.76	281.55	1/31/2025	25.64	255.91	30
			7/22/2025	23.87	257.68	
			10/22/2025	24.76	256.79	
			1/28/2026	25.47	256.08	
			4/16/2026	25.13	256.42	
MW-9t	280.37	280.09	1/31/2025	25.53	254.56	30
			7/22/2025	22.70	257.39	
			10/22/2025	23.71	256.38	
			1/28/2026	24.35	255.74	
			4/16/2026	24.04	256.05	
MW-10t	281.73	281.53	1/31/2025	25.82	255.71	30
			7/22/2025	23.89	257.64	
			10/22/2025	24.96	256.57	
			1/28/2026	25.37	256.16	
			4/16/2026	25.34	256.19	
RW-12t	282.72	282.41	2/11/2026	26.19	256.22	33
			4/16/2026	25.85	256.56	

TOC - Top of casing

DTW - Depth to water

DTP - Depth to product

ELEV - Ground water elevation relative to mean sea level

Ground water elevation adjusted for free product using the following equation:

Adjusted level=ground water elevation + (0.74 x free product thickness), where 0.74 represents the density of gasoline

TABLE 2 GROUNDWATER ANALYTICAL SUMMARY

TRAVEL CENTERS OF AMERICA #116
 COTTONDALE, TUSCALOOSA COUNTY, ALABAMA
 FACILITY ID NO. 17050-125-014907
 UST INCIDENT NO. 24-01-05



WELL/ SAMPLE NO.	DATE	BENZENE	TOLUENE	ETHYL- BENZENE	XYLENES	TOTAL BTEX	MTBE	NAPHTHA LENE
MW-1t	04/05/24	0.011	0.030	0.0073	0.020	0.068	<0.0010	<0.0050
	01/31/25	0.091	0.020	0.057	0.036	0.204	<0.0010	<0.0050
	07/22/25	0.055	0.0071	0.026	<0.010	0.088	0.0012	<0.0050
	10/22/25	0.19	0.27	0.089	0.092	0.641	<0.0010	<0.0050
	01/28/26	0.362	0.469	0.194	0.208	1.233	<0.010	<0.050
	04/16/26	0.119	0.0170	0.0230	0.00511	0.164	<0.0010	<0.0050
MW-2t	04/05/24	0.055	0.094	0.013	0.023	0.185	<0.0010	<0.0050
	01/31/25	0.19	0.041	0.055	0.031	0.317	<0.0010	<0.0050
	07/22/25	0.38	0.095	0.045	0.062	0.582	0.0037	<0.0050
	01/28/26	0.388	0.421	0.186	0.231	1.226	<0.010	<0.050
	04/16/26	0.354	0.207	0.0945	0.0113	0.667	<0.010	<0.050
MW-3t	04/05/24	0.77	2.3	0.27	0.76	4.10	<0.020	<0.100
	01/31/25	1.0	2.6	0.46	1.2	5.26	0.027	<0.10
	07/22/25	3.6	14	1.9	5.2	24.7	0.12	<0.25
	10/22/25	1.3	5.8	0.89	2.3	10.3	<0.10	<0.50
	01/28/26	1.15	3.98	0.974	2.64	8.744	<0.020	<0.100
	04/16/26	2.05	5.51	0.910	2.21	10.68	<0.250	<0.0500
MW-4t	04/05/24	8.0	33	2.9	5.6	49.5	<0.250	<1.300
	01/31/25	10	53	7.6	15	85.6	<0.50	<2.5
	07/22/25	2.6	12	1.7	3.4	19.7	<0.50	<0.25
	10/22/25	1.9	18	3.4	6.6	29.9	<0.10	<0.50
	01/28/26	1.32	15.6	3.77	7.57	28.3	<0.050	<0.250
	04/16/26	3.37	21.5	3.25	4.96	33.1	<0.200	<1.00
MW-5t	01/31/25	<0.0010	<0.0010	<0.0010	<0.010	<0.0130	<0.0010	<0.0050
	07/22/25	<0.0010	<0.0010	<0.0010	<0.010	<0.0130	<0.0010	<0.0050
MW-6t	01/31/25	<0.0010	<0.0010	<0.0010	<0.010	<0.0130	<0.0010	<0.0050
	07/22/25	<0.0010	<0.0010	<0.0010	<0.010	<0.0130	<0.0010	<0.0050
MW-7t	01/31/25	<0.0010	<0.0010	<0.0010	<0.010	<0.0130	<0.0010	<0.0050
	07/22/25	<0.0010	<0.0010	<0.0010	<0.010	<0.0130	<0.0010	<0.0050
MW-8t	01/31/25	0.077	0.19	0.063	0.17	0.500	<0.0010	<0.0050
	07/22/25	0.036	0.046	0.027	0.041	0.150	<0.0010	<0.0050
	10/22/25	0.076	0.24	0.043	0.076	0.435	<0.0010	<0.0050
	01/28/26	0.265	0.260	0.150	0.0849	0.760	<0.010	<0.050
	04/16/26	0.102	0.0546	0.0221	0.0171	0.196	<0.0010	<0.0050
MW-9t	01/31/25	0.15	0.10	0.029	0.049	0.328	<0.0010	<0.0050
	07/22/25	0.13	0.037	0.042	0.029	0.238	0.0055	<0.0050
	10/22/25	0.059	0.036	0.028	0.029	0.152	0.0092	0.0051
	01/28/26	1.940	0.844	0.878	0.448	4.110	0.0344	<0.050
	04/16/26	0.948	0.119	0.158	<0.0100	1.225	0.0293	<0.0500

TABLE 2 GROUNDWATER ANALYTICAL SUMMARY

TRAVEL CENTERS OF AMERICA #116
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA
FACILITY ID NO. 17050-125-014907
UST INCIDENT NO. 24-01-05



WELL/ SAMPLE NO.	DATE	BENZENE	TOLUENE	ETHYL- BENZENE	XYLENES	TOTAL BTEX	MTBE	NAPHTHA LENE
MW-10t	01/31/25	0.088	0.0020	0.15	0.012	0.252	0.082	0.29
	07/22/25	0.51	0.027	0.21	0.16	0.907	0.10	0.15
	10/22/25	0.78	0.042	0.24	0.094	1.156	0.082	0.26
	01/28/26	0.969	<0.020	0.353	0.107	1.429	0.0339	0.129
	04/16/26	1.080	<0.0200	0.207	<0.0100	1.287	0.0258	0.0713
RW-12t	02/11/26	0.378	1.540	0.282	0.758	2.958	<0.00100	<0.00500
	04/16/26	1.160	2.390	0.601	1.480	5.631	<0.0200	<0.100
Duplicate of RW-12t (MW-11t)	04/16/26	1.090	2.300	0.567	1.390	5.3	<0.0200	<0.100
ARBCA ISLs		0.005	1	0.7	10	NA	0.02	0.02

Results in milligrams per liter (ppm)

NA- Not Analyzed

BDL - Below Detection Limit

ARBCA ISLs-Alabama Risk Based Corrective Action Initial Screening Levels

Values in bold above ARBCA ISL, values shaded above SSTL

SSTLs not established

TABLE 3 SUMMARY OF WATER QUALITY RESULTS

TRAVEL CENTERS OF AMERICA #116
 COTTONDALE, TUSCALOOSA COUNTY, ALABAMA
 FACILITY ID NO. 17050-125-014907
 UST INCIDENT NO. 24-01-05



WELL/ SAMPLE NO.	DATE	DO (mg/l)	TEMP (C)	pH (s.u.)	CONDUCTIVITY (uS/cm)	ORP (mV)
MW-1t	4/5/2024	2.81	20.5	5.98	200.0	207.7
	1/31/2025	3.30	22.2	5.50	129.0	68.3
	7/22/2025	4.25	26.9	5.33	148.5	95.3
	10/22/2025	3.95	23.5	5.81	127.5	24.8
	1/28/2026	2.66	20.7	5.68	145.3	-16.7
	4/16/2026	2.47	24.9	5.44	142.7	15.1
MW-2t	4/5/2024	3.72	20.7	6.09	168.0	195.2
	1/31/2025	3.18	22.2	5.66	130.0	44.5
	7/22/2025	3.84	25.5	5.84	197.5	-5.8
	10/22/2025	6.15	22.5	6.17	144.2	-65.0
	1/28/2026	3.03	20.3	5.75	152.6	-34.4
	4/16/2026	2.74	24.2	5.64	161.1	-33.9
MW-3t	4/5/2024	3.05	22.5	6.24	318.9	0.2
	1/31/2025	2.31	21.7	5.90	222.0	47.8
	7/22/2025	2.23	26.0	5.97	912	-58.1
	10/22/2025	3.47	24.0	5.72	431	17.3
	1/28/2026	2.89	21.1	5.45	308.9	-26.5
	4/16/2026	1.70	24.2	5.49	584.0	-31.9
MW-4t	4/5/2024	3.42	22.0	5.75	205.1	41.9
	1/31/2025	3.41	22.0	5.47	124.0	146.8
	7/22/2025	3.32	27.2	5.33	112.7	78.9
	10/22/2025	4.33	24.1	5.98	139.5	63.1
	1/28/2026	2.66	19.9	5.30	118.7	9.1
	4/16/2026	2.11	24.0	5.34	132.4	2.1

TABLE 3 SUMMARY OF WATER QUALITY RESULTS

TRAVEL CENTERS OF AMERICA #116
 COTTONDALE, TUSCALOOSA COUNTY, ALABAMA
 FACILITY ID NO. 17050-125-014907
 UST INCIDENT NO. 24-01-05



WELL/ SAMPLE NO.	DATE	DO (mg/l)	TEMP (C)	pH (s.u.)	CONDUCTIVITY (uS/cm)	ORP (mV)
MW-5t	1/31/2025	4.43	21.6	6.32	159.0	-151.8
	7/22/2025	2.64	25.6	6.53	183.2	-55.1
MW-6t	1/31/2025	3.29	22.6	5.64	140.0	88.5
	7/22/2025	3.26	25.7	5.48	120.9	98.2
MW-7t	1/31/2025	5.39	22.1	5.76	141.0	126.2
	7/22/2025	4.02	25.8	5.67	175.3	189.1
MW-8t	1/31/2025	2.84	22.1	5.67	153.0	-21.5
	7/22/2025	2.92	25.0	5.07	94.2	116.1
	10/22/2025	4.06	23.2	5.29	115.1	119.2
	1/28/2026	2.75	18.0	5.29	120.6	20.4
	4/16/2026	3.27	23.5	4.93	115.4	57.3
MW-9t	1/31/2025	4.26	22.4	6.03	131.0	9.3
	7/22/2025	3.75	26.3	6.09	244.9	-26.4
	10/22/2025	4.97	22.8	6.35	284.3	-68.4
	1/28/2026	2.27	18.9	5.78	224.9	-39.1
	4/16/2026	2.28	24.1	5.71	243.2	-43.3
MW-10t	1/31/2025	2.69	21.7	3.27	231.0	-51.1
	7/22/2025	2.59	27.9	6.25	368.9	-56.4
	10/22/2025	4.28	22.3	6.51	258.9	-103.5
	1/28/2026	2.14	20.1	6.14	295.1	-92.1
	4/16/2026	1.97	23.7	6.06	248.0	-78.8
RW-12t	2/11/2026	3.69	21.8	5.90	254.2	16.3
	4/16/2026	3.35	24.5	5.49	177.9	11.5

mg/l - Milligrams per liter (ppm)

DO - Dissolved Oxygen

mV - Millivolts

TEMP - Temperature

NS - Not Sampled

C - Degrees Celsius

ORP - Oxygen Reduction Potential

s.u. - Standard Units

uS - MicroSiemens

TABLE 4 PILOT TEST RECOVERY WELL VAPOR CONCENTRATION SUMMARY

TRAVEL CENTERS OF AMERICA #116

COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

FACILITY ID NO. 17050-125-014907

UST INCIDENT NO. 24-01-05



MONITOR WELL NO.	TIME (Eastern Time)	INTERVAL (Min)	EXTRACTION WELL APPLIED VACUUM (H2O)	BLOWER VACUUM (H2O)	FLOW TEMPERATURE (°F)	INLET FLOW (FPM)	FLOW RATE (SCFM)	INFLUENT CONCENTRATION (PPM)	REMOVAL RATE (LBS/HR)	INTERVAL REMOVAL (LBS)
RW-12t	10:45 AM	0	0	0	0	0	0	0	0.0	0.0
	11:15 AM	30	14	18	75	726	15	60520	5.7	2.9
	12:15 PM	60	19	30	78	1330	27	72060	12.1	12.1
	1:15 PM	60	22	40	71	1620	32	68200	13.6	13.6
	2:15 PM	60	29	62	72	2028	38	67180	15.7	15.7
	3:15 PM	60	35	78	72	2696	48	53790	16.0	16.0
	4:15 PM	60	38	90	72	2952	50	48600	15.2	15.2
	5:15 PM	60	42	100	70	3365	55	45920	15.9	15.9
	6:15 PM	60	44	100	66	3514	58	44190	15.9	15.9
								Vapor Hydrocarbons Removed		107.2
								Total Equivalent Gallons of Gas		17.3

HR - Hour

Min - Minutes

H2O - Water

°F - Degrees Fahrenheit

FPM - Feet per minute

SCFM - Standard cubic feet per minute

PPM - Parts per million

LBS - Pounds

TABLE 5 PILOT TEST VACUUM RADIUS OF INFLUENCE SUMMARY

TRAVEL CENTERS OF AMERICA #116
 COTTONDALE, TUSCALOOSA COUNTY, ALABAMA
 FACILITY ID NO. 17050-125-014907
 UST INCIDENT NO. 24-01-05



MONITOR WELL NO.	TIME (Eastern Time)	RECOVERY WELL PRESSURE (H2O)	MONITORING WELL ID AND DISTANCE FROM RECOVERY WELL (Ft)								
			Pressures in Inches of H2O								
			MW-8t	MW-1t	MW-4t	MW-2t	MW-3t	MW-6t	MW-9t	MW-7t	MW-10t
			13.4	16.3	19.6	43.0	73.0	75.0	91.5	110.6	116.0
RW-12t	10:45 AM	0	0.00	0.00	0.00	0.06	0.06	0.03	0.03	0.02	0.00
	11:15 AM	14	0.63	0.58	0.33	0.03	0.03	0.02	0.09	0.07	0.09
	12:15 PM	19	1.19	0.95	0.49	0.07	0.06	0.07	0.08	0.13	0.07
	1:15 PM	22	1.52	1.18	0.62	0.09	0.02	0.05	0.07	0.09	0.03
	2:15 PM	29	2.03	1.60	0.88	0.22	0.00	0.05	0.02	0.14	0.05
	3:15 PM	35	2.53	2.03	1.10	0.27	0.00	0.01	0.01	0.06	0.05
	4:15 PM	38	2.73	2.17	1.21	0.32	0.00	0.00	0.02	0.07	0.02
	5:15 PM	42	3.11	2.49	1.40	0.39	0.02	0.11	0.00	0.00	0.00
	6:15 PM	44	3.33	2.64	1.43	0.40	0.06	0.07	0.00	0.00	0.02

Ft - Feet
 Min - Minutes
 H2O - Water

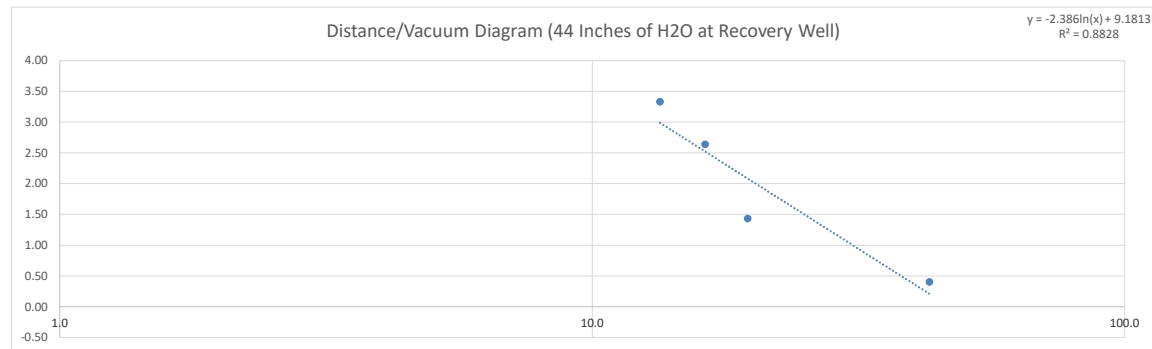
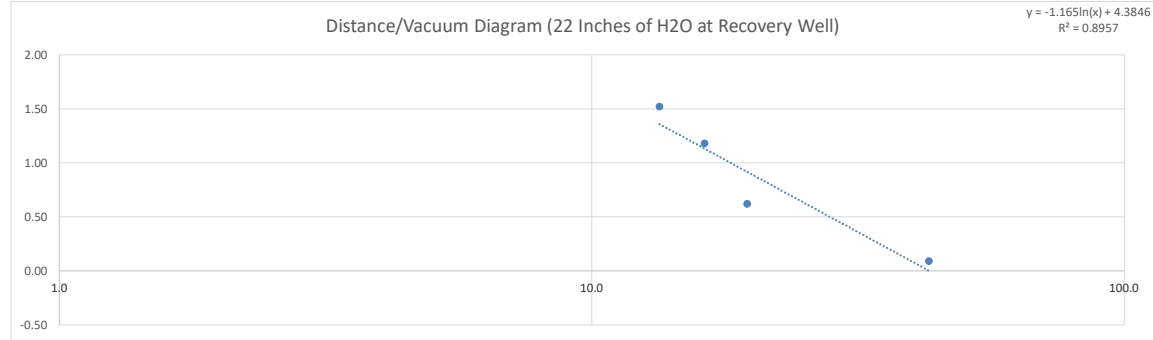


TABLE 6 PILOT TEST GROUNDWATER RADIUS OF INFLUENCE SUMMARY

TRAVEL CENTERS OF AMERICA #116
 COTTONDALE, TUSCALOOSA COUNTY, ALABAMA
 FACILITY ID NO. 17050-125-014907
 UST INCIDENT NO. 24-01-05



MONITOR WELL NO.	TIME (Eastern Time)	RECOVERY WELL PRESSURE (H2O)	MONITORING WELL ID AND DISTANCE FROM RECOVERY WELL (Ft)								
			Drawdowns in Ft								
			MW-8t	MW-1t	MW-4t	MW-2t	MW-3t	MW-6t	MW-9t	MW-7t	MW-10t
			13.4	16.3	19.6	43.0	73.0	75.0	91.5	110.6	116.0
RW-12t	8:30 AM	0	25.44	25.79	26.30	24.20	24.61	25.65	24.27	26.51	25.52
	9:00 AM	0	25.46	25.80	26.31	24.21	24.63	25.66	24.28	26.54	25.55
	9:30 AM	0	25.47	25.80	26.32	24.22	24.62	25.65	24.29	26.52	25.56
	10:00 AM	0	25.44	25.80	26.32	24.21	24.62	25.66	24.26	26.52	25.54
	10:30 AM	0	25.45	25.80	26.31	24.21	24.62	25.66	24.26	26.53	25.55
	11:15 AM	14	25.46	25.80	26.33	24.20	24.62	25.66	24.26	26.53	25.54
	12:15 PM	19	25.45	25.81	26.34	24.22	24.62	25.66	24.29	26.52	25.52
	1:15 PM	22	25.49	25.82	26.38	24.22	24.62	25.65	24.29	26.52	25.53
	2:15 PM	29	25.49	25.83	26.39	24.23	24.62	25.64	24.27	26.51	25.53
	3:15 PM	35	25.52	25.84	26.41	24.24	24.62	25.64	24.26	26.51	25.52
	4:15 PM	38	25.52	25.85	26.44	24.25	24.64	25.66	24.26	26.56	25.53
	5:15 PM	42	25.52	25.87	26.46	24.27	24.62	25.66	24.29	26.52	25.54
	6:15 PM	44	25.54	25.87	26.49	24.28	24.64	25.66	24.28	26.53	25.54
Total Drawdown			0.10	0.08	0.19	0.08	0.03	0.01	0.01	0.02	0.02

Ft - Feet

Min - Minutes

H2O - Water

Distance/Groundwater Diagram (After 585 Minutes)

$$y = -0.056 \ln(x) + 0.2748$$

$$R^2 = 0.6415$$

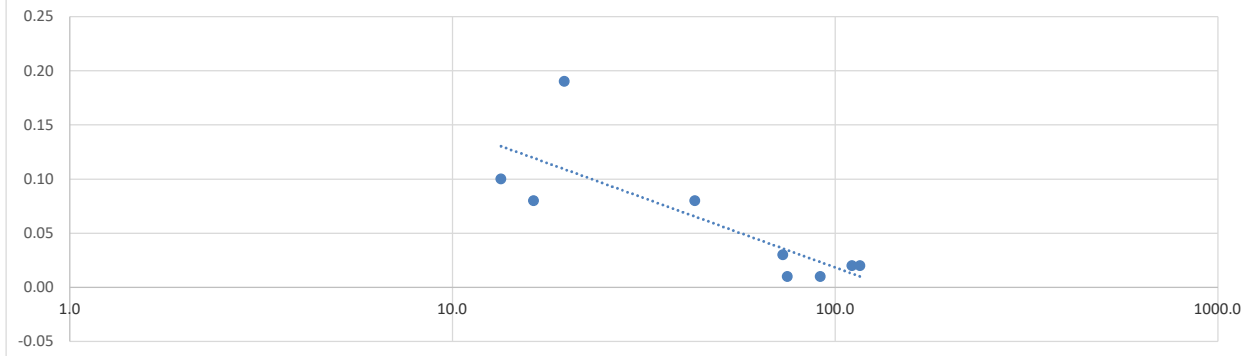


TABLE 7 CORRECTIVE ACTION PLAN PERFORMANCE CURVE SUMMARY**TRAVEL CENTERS OF AMERICA #116**

COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

FACILITY ID NO. 17050-125-014907

UST INCIDENT NO. 24-01-05



MONITOR WELL NO.	BLOWER VACUUM (H2O)	OBSERVED AIR FLOW RATE (SCFM)	CALCULATED AIR FLOW RATE (ACFM)
RW-12t	0	0	0
	18	15	16
	30	27	28
	40	32	35
	62	38	43
	78	48	58
	90	50	63
	100	55	72
	100	58	75

Min - Minutes

H2O - Water

SCFM - Standard cubic feet per minute

ACFM - Actual cubic feet per minute

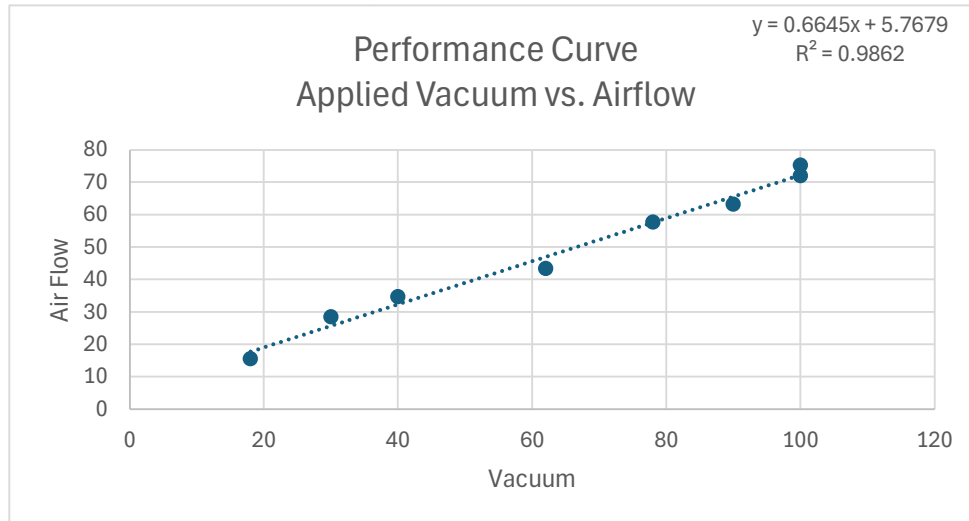


TABLE 8 PILOT TEST RECOVERY WELL PUMP RATE SUMMARY**TRAVEL CENTERS OF AMERICA #116**

COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

FACILITY ID NO. 17050-125-014907

UST INCIDENT NO. 24-01-05



MONITOR WELL NO.	TIME (Eastern Time)	INTERVAL (Min)	FLOW RATE (GPM)	TOTAL PURGE (Gal)
RW-12t	8:30 AM	0	0.00	0.0
	9:00 AM	30	0.10	3.0
	9:30 AM	60	0.04	4.1
	10:00 AM	90	0.05	5.6
	10:30 AM	120	0.04	6.9
	11:15 AM	165	0.30	20.3
	11:45 AM	195	0.47	34.5
	12:15 PM	225	0.91	61.9
	12:45 PM	255	0.89	88.5
	1:15 PM	285	1.13	122.5
	1:45 PM	315	1.19	158.1
	2:15 PM	345	1.47	202.1
	2:45 PM	375	1.48	246.6
	3:15 PM	405	1.98	305.9
	3:45 PM	435	1.90	363.0
	4:15 PM	465	2.05	424.4
	4:45 PM	495	2.08	486.9
	5:15 PM	525	2.21	553.2
	5:45 PM	555	2.25	620.8
	6:15 PM	585	2.35	691.2
	6:37 PM	607	2.30	741.8

Min - Minutes

Gal - Gallons

GPM - Gallons per minute

TABLE 9 AIR FLOW VS. GROUNDWATER FLOW RATE SUMMARY**TRAVEL CENTERS OF AMERICA #116**

COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

FACILITY ID NO. 17050-125-014907

UST INCIDENT NO. 24-01-05



MONITOR WELL NO.	BLOWER VACUUM (H2O)	OBSERVED AIR FLOW RATE (SCFM)	CALCULATED AIR FLOW RATE (ACFM)	GW FLOW RATE (GPM)
RW-12t	0	0	0	0.04
	18	15	16	0.30
	30	27	28	0.91
	40	32	35	1.13
	62	38	43	1.47
	78	48	58	1.98
	90	50	63	2.05
	100	55	72	2.21
	100	58	75	2.35

Min - Minutes

H2O - Water

SCFM - Standard cubic feet per minute

ACFM - Actual cubic feet per minute

GPM - Gallons per minute

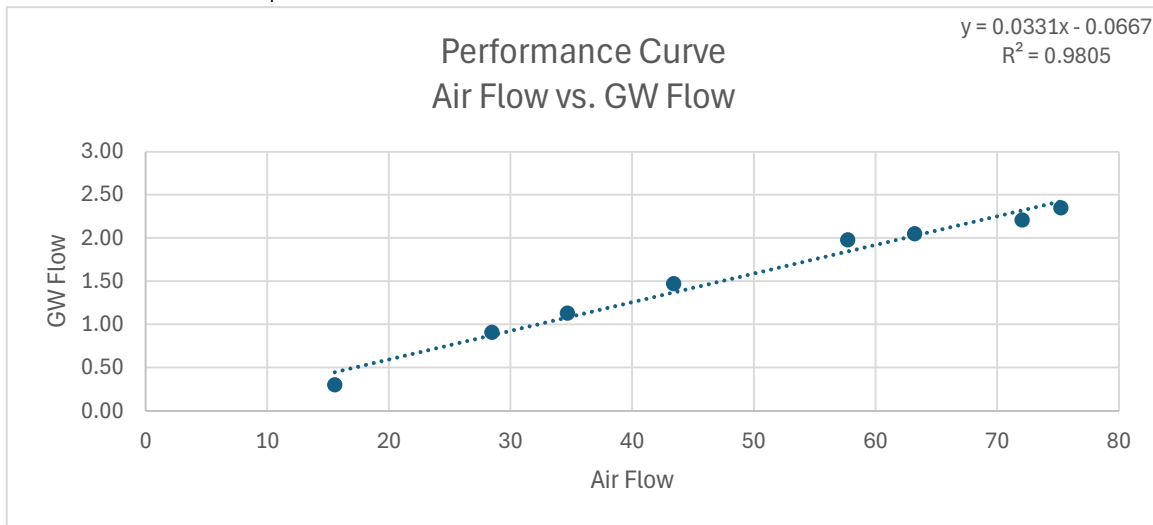


TABLE 10 ESTIMATED CLEANUP TIME CALCULATIONS SUMMARY**TRAVEL CENTERS OF AMERICA #116**

COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

FACILITY ID NO. 17050-125-014907

UST INCIDENT NO. 24-01-05



WELL NO.	PARAMETER	DISSOLVED CONCENTRATIONS (mg/L)		ARBCA ISLs (CLEANUP TARGET)	DECAY CONSTANT	TIME TO CLEANUP (HOURS)	TIME TO CLEANUP (YEARS)
		INITIAL (1/28/26)	CURRENT (4/16/26)				
MW-1t	Benzene	0.362	0.119	0.005	0.11	28.491	0.003
MW-2t	Benzene	0.388	0.354	0.005	0.01	464.500	0.053
MW-3t	Benzene	1.15	2.050	0.005	-0.06	No Decay	
	Toluene	3.98	5.510	1	-0.03	No Decay	
	Ethylbenzene	0.974	0.910	0.7	0.01	38.602	0.004
MW-4t	Benzene	1.32	3.370	0.005	-0.09	No Decay	
	Toluene	15.6	21.500	1	-0.03	No Decay	
	Ethylbenzene	3.77	3.250	0.7	0.01	103.445	0.012
MW-8t	Benzene	0.265	0.102	0.005	0.10	31.584	0.004
MW-9t	Benzene	1.94	0.948	0.005	0.07	73.244	0.008
	Ethylbenzene	0.878	0.158	0.7	0.17	Meets ARBCA ISL	
	MTBE	0.0344	0.0293	0.02	0.02	23.796	0.003
MW-10t	Benzene	0.969	1.080	0.005	-0.01	No Decay	
	MTBE	0.0339	0.0258	0.02	0.03	9.326	0.001
	Naphthalene	0.129	0.0713	0.02	0.06	21.439	0.002
RW-12t	Benzene	0.378	1.160	0.005	-0.11	No Decay	
	Toluene	1.540	2.390	1	-0.04	No Decay	

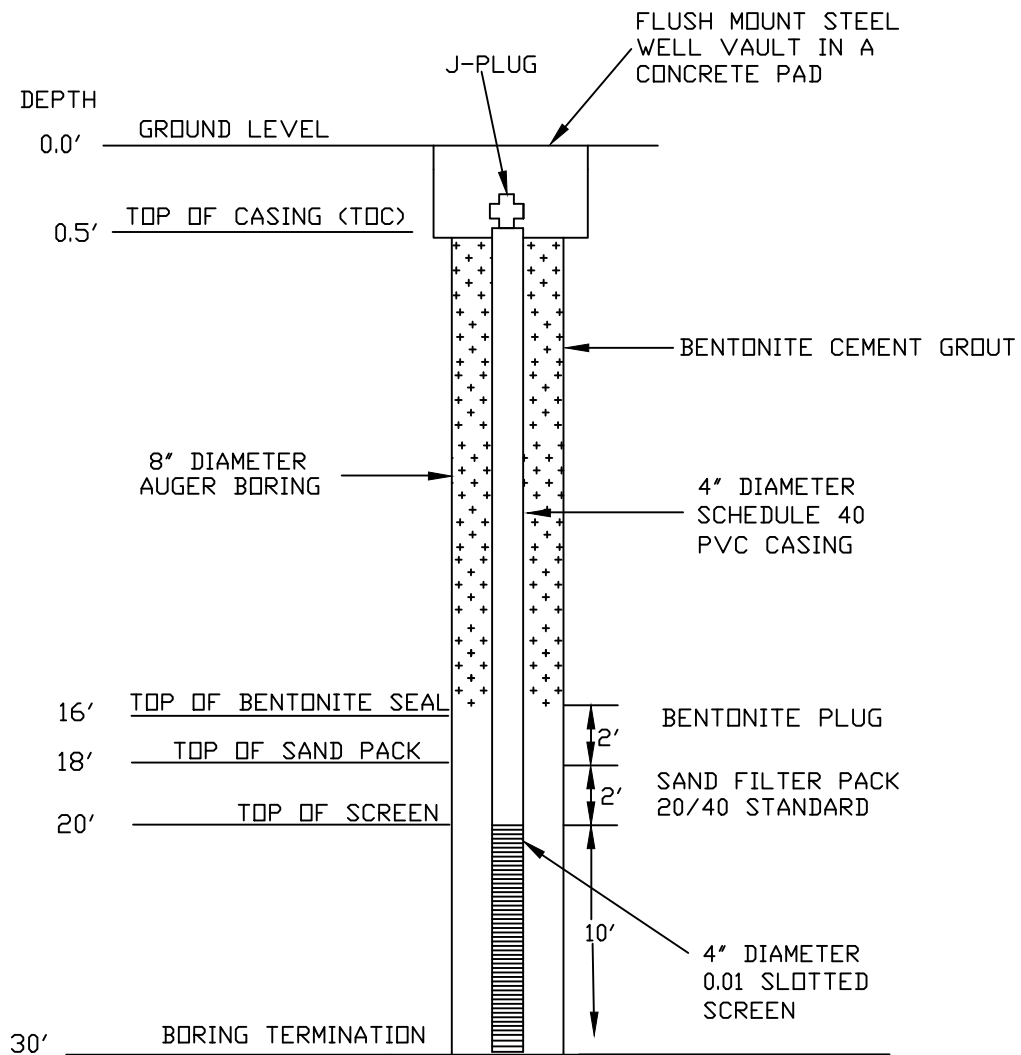
mg/L - milligrams per liter

ARBCA ISL - Alabama Risk Based Corrective Action Initial Screening Level

Appendix III – Diagrams



TCA #116 – GASOLINE RELEASE
TYPICAL TYPE II MONITORING WELL
CONSTRUCTION DIAGRAM

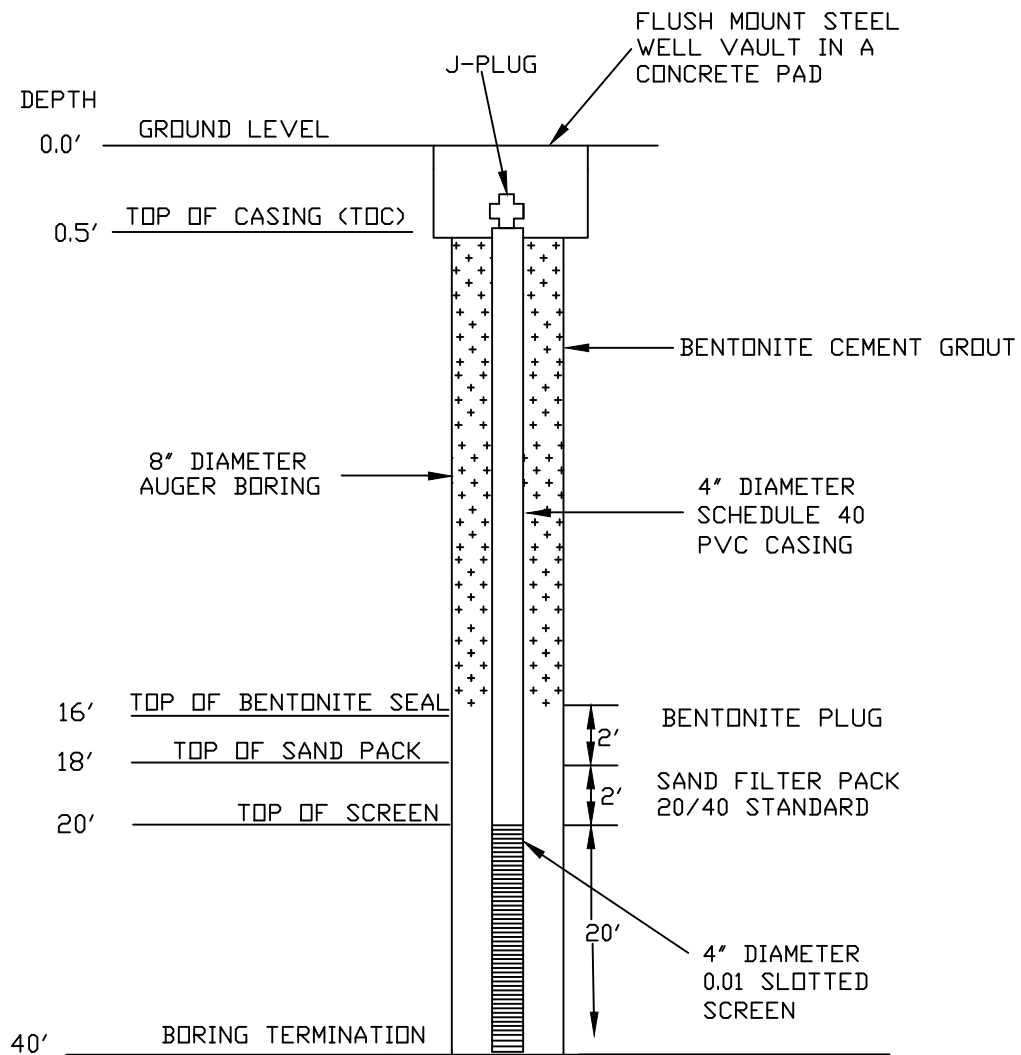


24820047

NTS



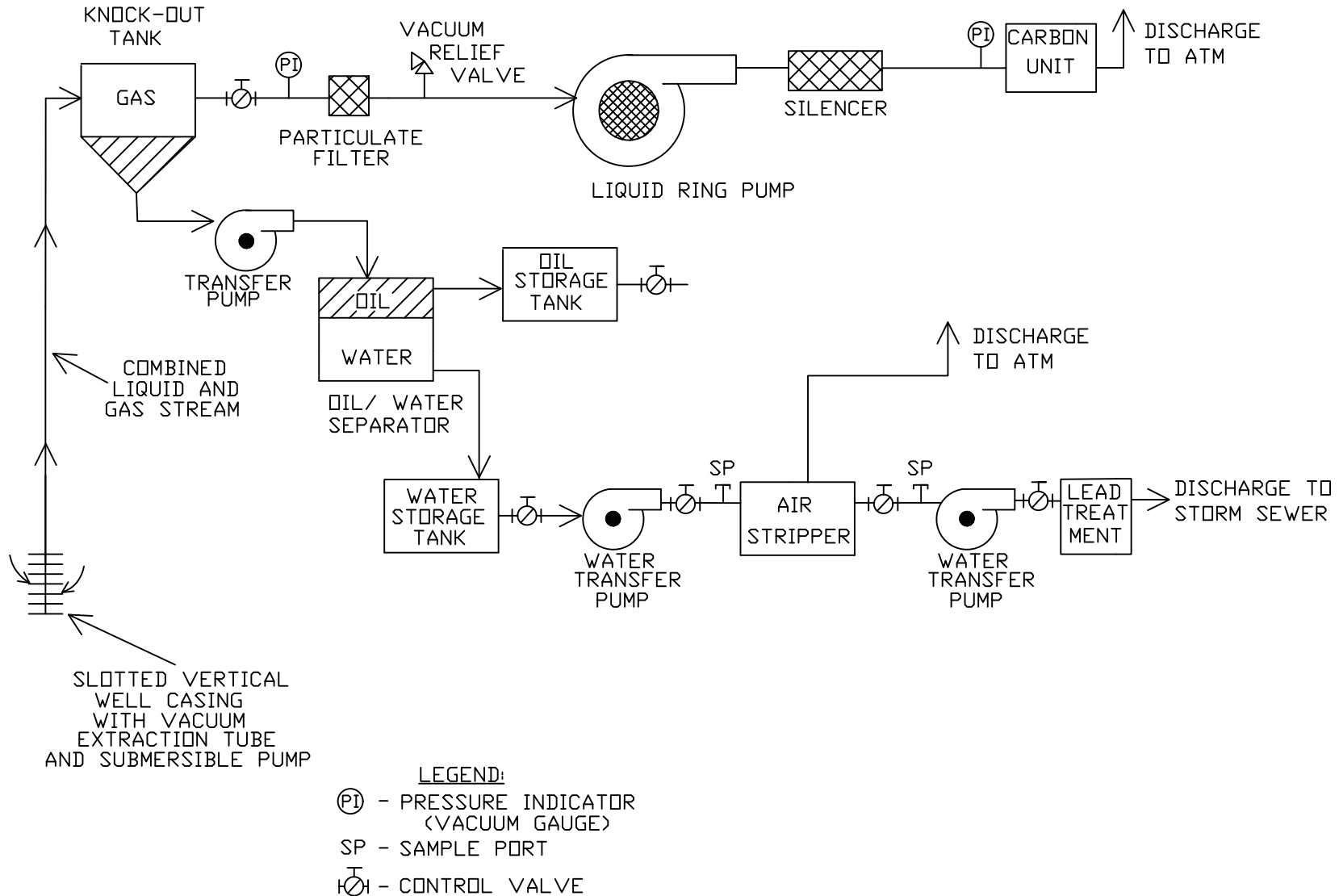
TCA #116 – GASOLINE RELEASE
TYPICAL TYPE II RECOVERY WELL
CONSTRUCTION DIAGRAM



24820047

NTS

DUAL PHASE EXTRACTION SYSTEM (WITH WATER TREATMENT)



PROCESS DIAGRAM

TRAVEL CENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

NTS

DATE:

5/18/2026

PROJECT NUMBER

24820047

FIGURE NO.

12

Appendix IV – Health and Safety Plan



Site Specific Health & Safety Plan

Project Name:	S&ME Project No.:	Project City, State:
S&ME Project Manager:		Phone No.:
Local Regional Safety Coordinator:		Phone No.:
 WorkCare™ (888)449-7787 In the event of an emergency, contact 911		
Address for 911 Response:		Nearest Medical Facility:
Project Start Date:		Estimated Project Duration:
Project Contact List		
Name	Phone Number	Project Role
		S&ME Project Manager
		S&ME Site Manager
		S&ME Site Safety Officer
		First Aid Attendant
Subcontractor Information		
<i>Only complete this section if subcontractors will be working for S&ME on the project.</i>		
Company Name		
Contact Name	Contact Phone No.	
Job Safety Analysis		
Review the following information carefully and check all known hazards for the project. Review with on-site staff.		
<u>Personal Protective Equipment</u>	<u>General</u>	<u>Site Conditions</u>
Level A PPE	Confined Space Entry	Biological Hazards
Level B PPE	Fatigue	Poison Ivy/Oak
Level C PPE	Hazardous Chemicals	Snakes, Animals, Insects, Birds
Level D PPE	In, Around or On Water	Lone Worker
	Lock Out/Tag Out	Terrain Hazards
	Overhead Work	Weather Hazards
	Pinch Points	Heat Stress
	Rotating Equipment	Cold Stress
	Struck-By	
	Trenching and Excavations	
	Working From Heights	

ATTACHMENTS

- A. Proposal
- B. Project Location Map
- C. Directions to Nearest Medical Facility
- D. Work Site Roster and Compliance Dates
- E. Daily JSA Form
- F. General Information
- G. Health and Safety Plan Acknowledgement
- H. Confined Space Entry Procedures (if applicable)

In the Event of An Emergency - Contact Numbers
National Response Center (NRC) 800-424-8802
Utility Locating Commission (One Call Nationwide) 811
Agency for Toxic Substances & Disease Registry (24 Hours)
404-488-4100
US EPA Emergency Response 800-424-8802
National Poison Center 800-222-1222

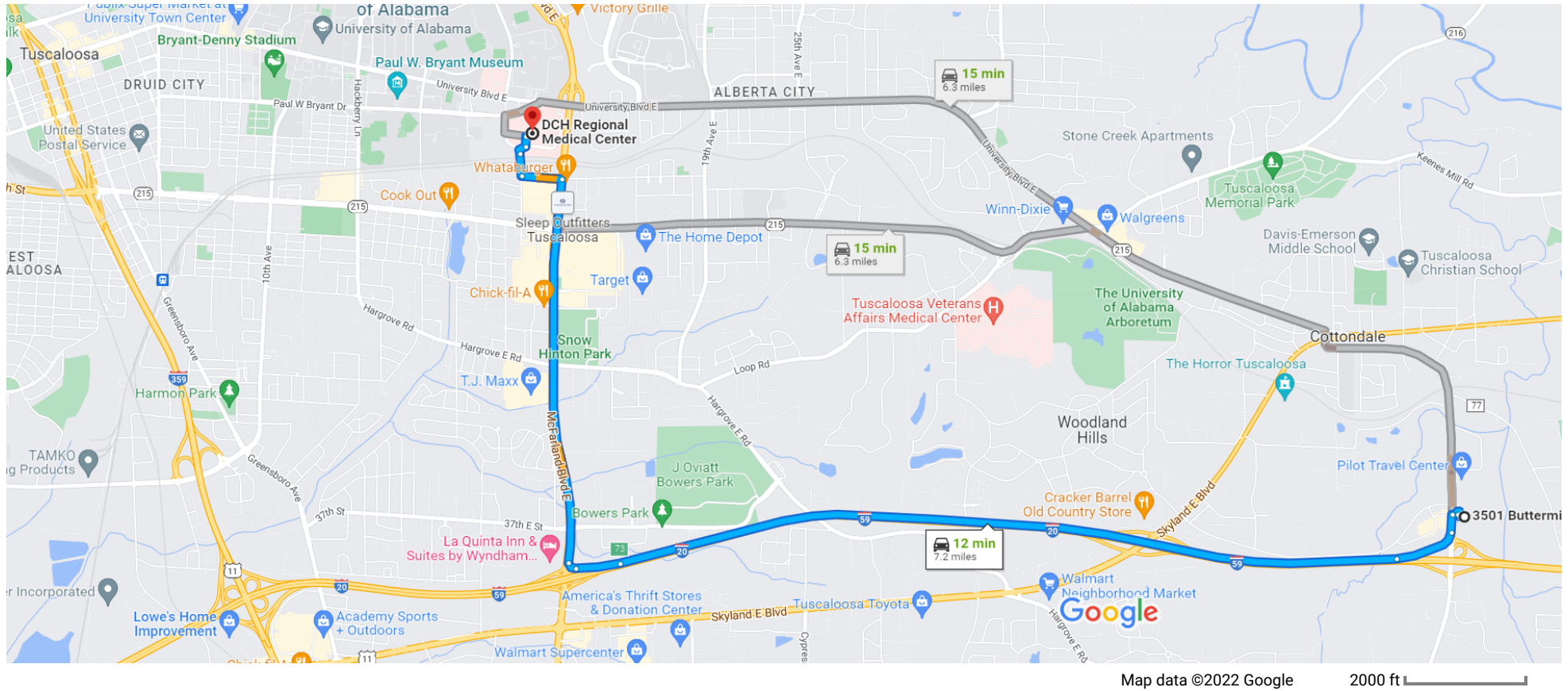
 JOB HAZARD ANALYSIS	Job Description: site assessment for soil and groundwater conditions Monitor wells for free product. Monthly Multiphase Enhanced Mobile Extraction events.	Date: 7/22/2021 New or Revised Date: 6/2/2022
	Training Requirements: Safe conduct around MEME equipment, soil & groundwater sample collection. Oil water interface probe use.	
	JHA Author: Jaime S. Curry, P.G.	Reviewed by:
	Required and/or recommended Personal Protective Equipment: Hearing protection, steel toe boots, gloves, safety glasses, safety vest.	

Sequence of Basic Job	Potential Hazards	How to Protect Employee(s) from Hazards
Initial site evaluation	run over struck by	Pay attention to surroundings, focus on job, cone off work zone
MEME events conducted monthly	Fatigue, equipment, run over struck by, slips, trips, falls	Use proper ppe, cone off work zone, stay aware of what you are doing
Collection of soil and groundwater samples	Run over/struck by, chemicals in soil or groundwater	Use proper PPE, pay attention to surroundings, work on truck tailgate, cone off work zone.

Google Maps

3501 Buttermilk Road, Cottondale, AL to DCH Regional Medical Center

Drive 7.2 miles, 12 min



3501 Buttermilk Rd
Cottondale, AL 35453

Get on I-20 W/I-59 S

- ↑

1. Head north toward Buttermilk Rd

2 min (0.5 mi)
- ↘

2. Turn right toward Buttermilk Rd

282 ft
- 141 ft

- 

3. Turn left onto Buttermilk Rd

489 ft
- 

4. Use the right lane to take the ramp to Tuscaloosa

0.3 mi

Follow I-20 W/I-59 S to US-82 W/McFarland Blvd E in Tuscaloosa. Take exit 73 from I-20 W/I-59 S

- 4 min (4.2 mi)
- 

5. Merge onto I-20 W/I-59 S

4.0 mi
- 

6. Take exit 73 for US-82/McFarland Blvd

0.2 mi
- 

7. Keep right at the fork, follow signs for Bryce Partlow/Univ of Ala/Columbus and merge onto US-82 W/McFarland Blvd E

269 ft

Continue on US-82 W/McFarland Blvd E to your destination

- 8 min (2.4 mi)
- 

8. Merge onto US-82 W/McFarland Blvd E

2.0 mi
- 

9. Turn left onto 13th St E

0.2 mi
- 

10. Turn right onto Dr Edward Hillard Dr

0.1 mi
- 

11. Turn right

308 ft
- 

12. Turn left

279 ft
- 

13. Turn right

 Destination will be on the left

187 ft

809 University Blvd E, Tuscaloosa, AL 35401

DCH Regional Medical Center



Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

February 15, 2022

Ms. Kathleen Scheutzow
Truck Stops of America
24601 Center Ridge Road Suite 300
Cleveland, OH 44145

Dear Ms. Scheutzow:

RE: APPROVAL OF COST PROPOSAL #34 FOR CORRECTIVE ACTION RNA WITH MEME FROM JUNE 1 THROUGH AUGUST 31, 2022

Truck Stops of America
3501 Buttermilk Road
Cottondale, Tuscaloosa County, Alabama
Facility I.D. No.: 17050-125-014907
UST Incident No.: UST09-08-02
ADEM File Code: UST090802/CP34

Approval is granted for the above-referenced cost proposal in the amount of **\$30,847.85**.

The Department has the responsibility to deny any unreasonable costs which may be submitted for payment. Obligation of a given amount through approval of a cost proposal does not guarantee final reimbursement of that same amount. The payment request containing the costs approved on this Cost Proposal should be submitted within eighteen months (18) of the date of this letter in order to receive reimbursement.

A Corrective Action RNA/MEME Report should be submitted to the Department by **September 30, 2022**.

Should there be any questions regarding this matter, please contact me at (334)274-4209.

Sincerely,

A handwritten signature in black ink, appearing to read "Kayla White Lewis".

Kayla White Lewis
Hydrogeologist
UST Corrective Action State Fund Section
Groundwater Branch
Land Division

KMW/aw

cc: S&ME – Raleigh, North Carolina





Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

February 15, 2022

Ms. Kathleen Scheutzow
Truck Stops of America
24601 Center Ridge Road Suite 300
Cleveland, OH 44145

Dear Ms. Scheutzow:

**RE: APPROVAL OF COST PROPOSAL #35 FOR CORRECTIVE ACTION RNA WITH
MEME FROM SEPTEMBER 1 THROUGH NOVEMBER 30, 2022**

Truck Stops of America
3501 Buttermilk Road
Cottondale, Tuscaloosa County, Alabama
Facility I.D. No.: 17050-125-014907
UST Incident No.: UST09-08-02
ADEM File Code: UST090802/CP35

Approval is granted for the above-referenced cost proposal in the amount of **\$30,847.85**.

The Department has the responsibility to deny any unreasonable costs which may be submitted for payment. Obligation of a given amount through approval of a cost proposal does not guarantee final reimbursement of that same amount. The payment request containing the costs approved on this Cost Proposal should be submitted within eighteen months (18) of the date of this letter in order to receive reimbursement.

A Corrective Action RNA/MEME Report should be submitted to the Department by **December 31, 2022**.

Should there be any questions regarding this matter, please contact me at (334)274-4209.

Sincerely,

A handwritten signature in black ink, appearing to read "Kayla White Lewis".

Kayla White Lewis
Hydrogeologist
UST Corrective Action State Fund Section
Groundwater Branch
Land Division

KMW/aw

cc: S&ME – Raleigh, North Carolina





Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

February 15, 2022

Ms. Kathleen Scheutzow
Truck Stops of America
24601 Center Ridge Road Suite 300
Cleveland, OH 44145

Dear Ms. Scheutzow:

**RE: APPROVAL OF COST PROPOSAL #36 FOR CORRECTIVE ACTION RNA WITH
MEME FROM DECEMBER 1 THROUGH FEBRUARY 28, 2023**

Truck Stops of America
3501 Buttermilk Road
Cottondale, Tuscaloosa County, Alabama
Facility I.D. No.: 17050-125-014907
UST Incident No.: UST09-08-02
ADEM File Code: UST090802/CP36

Approval is granted for the above-referenced cost proposal in the amount of **\$30,847.85**.

The Department has the responsibility to deny any unreasonable costs which may be submitted for payment. Obligation of a given amount through approval of a cost proposal does not guarantee final reimbursement of that same amount. The payment request containing the costs approved on this Cost Proposal should be submitted within eighteen months (18) of the date of this letter in order to receive reimbursement.

A Corrective Action RNA/MEME Report should be submitted to the Department by **March 31, 2023**.

Should there be any questions regarding this matter, please contact me at (334)274-4209.

Sincerely,

A handwritten signature in black ink, appearing to read "Kayla White Lewis".

Kayla White Lewis
Hydrogeologist
UST Corrective Action State Fund Section
Groundwater Branch
Land Division

KMW/aw

cc: S&ME – Raleigh, North Carolina



Appendix V – Form 448



May 26, 2026

ADEM, Air Division
1400 Coliseum Blvd.
Montgomery, Alabama 36130-1463

Attention: Ms. Rebecca Arthur

Reference: **Truck Stops of America**
3501 Buttermilk Road
Cottondale, Tuscaloosa County, Alabama
Facility I.D. No. 17050-125-014907
Incident No. UST24-01-05

Dear Ms. Arthur:

S&ME is working with the Alabama Department of Environmental Management (ADEM), Underground Storage Tank (UST) Corrective Action Unit to perform Corrective Action activities for the above referenced release. S&ME is preparing a plan for the operation of a dual phase extraction (DPE) system at the site. The DPE system has two emission points, S&ME has completed the attached ADEM Form 448 (Remediation Approval) for approval by the Air Division.

Historically, free product has been observed at the site in multiple monitoring wells. S&ME understands that if free product is present, then no air samples are required. As part of operation and maintenance activities, S&ME will continue to monitor for free product. Once free product has been absent for at least one quarter, S&ME will collect air samples quarterly. The quarterly samples will be collected from the DPE system exhaust, prior to treatment, and submitted to a laboratory for analysis. S&ME plans to use two 1,000 lb. activated carbon canisters for air pollution control.

Once per month, S&ME will take Photo Ionization Detector (PID) readings from the influent and effluent of the air carbon canisters on the DPE system. S&ME will maintain a carbon log that details when PID readings are taken and when carbon is changed. S&ME will notify the Air Division of the system startup and semi-annual activities using ADEM Form 449 (Remediation Reporting) within one month of system start up.

Sincerely,

S&ME, Inc.

A handwritten signature in blue ink that reads "Nathanael A. Wade".

Nathanael A. Wade, P.E.
Professional III - Engineering

A handwritten signature in blue ink that reads "Deborah J. Jones".

Deborah J. Jones, P.E.
Senior Engineer

REMEDIATION APPROVAL

This form should be submitted to the Department to obtain Air Division approval prior to operating any type of remediation system. Depending on the type of remediation system being proposed, some of the following questions may not apply:

TYPE REMEDIATION SYSTEM: (Check One)

- ☐ Soil-Vapor Extraction (SVE) – soil only remediation
- ☐ Pump & Treat (PT) – groundwater only remediation
- ☒ Multi-Phase Vapor Extraction (MPVE) – soil & groundwater remediation
- ___ SVE (w/PT) ___ SVE (w/Air Sparging) ☒ Dual-Phase
- ☐ Mobile Enhanced Multi-Phase Extraction (MEME) – a short term remediation of soils and/or groundwater.

Is Free Product Present?

☒ Yes ☐ No

Is This a Pilot Study?

☐ Yes ☒ No

OWNER: Name Truck Stops of America **Phone No.:** (216) 533-3886

Mailing Address 24601 Center Ridge Road, suite 300

City Cleveland **State** OH **Zip** 44145

SITE: Facility Name: Truck Stops of America

Facility Address: 3501 Buttermilk Road

Location: (City) Cottdale **(County)** Tuscaloosa

Facility ID No.: 17050 - 125 - 014907 **UST Incident No.:** 24 - 01 - 05

CONTAMINANTS: On a separate page please list all contaminants along with the most recent sample data from all wells: groundwater and/or soil.

CALCULATIONS: Utilize the highest, most recent concentrations (not historical highs or averages) for each contaminant, the highest anticipated flow rate and it should be expressed in lbs/hr.

Groundwater Calculations:

Concentration (mg/L) X flow (gal/min) X Conversion (5.01×10^{-4}) = emissions (lbs/hr)

***Soil Calculations:**

Concentration (mg/m³) X flow (m³/min) X Conversion (1.32×10^{-4}) = emissions (lbs/hr)

**Please note that most soil sample concentrations are expressed in mg/kg and must be converted to mg/m³ prior to using the above formula.*

REMEDIATION SYSTEM: Please provide a brief description along with a flow diagram of the remediation system. The information should include but not be limited to the following: maximum blower speed (ft³/min) and maximum groundwater recovery rate (gal/min) of the liquid ring pump(s).

Proposed date of implementation: Fall 2026

Anticipated groundwater recovery rate: 35 gal/min

Anticipated soil vapor extraction rate: 850 ft³/min

Dry soil bulk density: 1.54 g/cm³

Proposed Air Pollution Control Device (APCD) if system does not pass modeling:

Carbon

Please include the following information for all sites (excluding MEME events):

Distances (ft) from emission point to fence: N: 10 S: 20 E: 25 W: 5
(Note: distance should reflect accessibility by the public, not necessarily property lines)

Emission Points- Should reflect the stack parameters without a APCD

From the Blower

Stack 1: Height above ground 10 ft Inside diameter 0.33 ft
Exit Velocity 77.36 ft/s Exit Temperature ~100 °F

From the Air Stripper

Stack 2: Height above ground 10 ft Inside diameter 0.33 ft
Exit Velocity 62.36 ft/s Exit Temperature ~100 °F

ADEM Project Manager: Kayla Lewis

Subcontractor: _____

Consultant Project Manager: Nathanael Wade

Consulting Firm: S&ME, Inc.

Mailing Address: 360D Quality Circle NW Suite 450

City Huntsville State AL Zip 35806

Consultant E-mail address (optional): nwade@smeinc.com

Consultant Phone No.: (256) 837-8882

Consultant Signature: _____ Date: 5/22/2026

POTENTIAL TO EMIT CALCULATIONS
EXIT VELOCITY

TO CALCULATE SCFM DISCHARGE FROM A LIQUID RING

V = VACUUM IN IN HG MEASURED AT LIQUID RING PUMP

ACFM = CORRESPONDING VALUE FROM PUMP CURVE AT A GIVEN VACUUM

30 = CONSTANT, 1 ATMOSPHERE PRESSURE IN UNITS OF INCHES HG

ROUNDED UP FROM 29.92 FOR SIMPLICITY)

SCFM = (30 - V)/30 X ACFM

exhaust stack diameter 0.33 feet

area = 0.08552986 ft²

60 hp Water sealed Liquid ring exhaust: 0- 850 ACFM, 4" pipe, 100F

At worst case, 0" hg vacuum, you get the most air: SCFM = ACFM = 850 SCFM (from curve)

At typical operating range of 16" hg, SCFM = (30 - 16)/30 X 850 (from curve) = 397 SCFM

Stack velocity = = SCFM / (cross section area of exhaust stack in ft²)

Worst Case = 850 / 0.0855299

= 9938.04971 ft/min

worst case at 0" hg vacuum

= 165.634162 ft/sec

worst case at 0" hg vacuum

Typical = 397/ 0.0855299

= 4641.6538 ft/min

at 20" hg

= 77.3608967 ft/sec

at 20" hg

10' off of ground, temp = 100F

air stripper exhaust: 320 CFM, 60F

Stack velocity = = SCFM / (cross section area of exhaust stack in ft²)

= 320 / 0.0855299

= 3741.38342 ft/min

= 62.3563903 ft/sec

ELEVATION OF DISCHARGE STACK IS 10' OFF GROUND

temp = 60F

the air stripper is designed to operate at 320 CFM, at 24" water column

equations provided by potential DPE manufacturer, MAE²

Constituent	Max Conc.	Molecular Wgt	mg/m3	lb/hr
	mg/Kg	g/mol		
Benzene	0.01	78.1	3.19E+01	2.98E-02
Toluene	0.234	92.1	8.81E+02	8.24E-01
Ethylbenzene	0.083	106.2	3.61E+02	3.37E-01
Total Xylenes	0.573	106.2	2.49E+03	2.33E+00
Mtbe	0.006	88.2	2.16E+01	2.02E-02

Source: Max soil concentration from sample B-12t 23.5-25 ft collected 2/9/2026 during Pilot study

POTENTIAL TO EMIT CALCULATIONS
AIR STRIPPER EMISSIONS (from extracted groundwater)
Assumming Free Product

Q = 35 gpm estimate flow rate from Pilot Study
Free Product Present from 4/30/2026 sampling event: sheen observed in 1 well

		convert to	
Effective Solubilities	mg/L	lb/gal	
Benzene	31.7	2.65E-04	Source: Alabama Risk Based Corrective Action Guidance Manual: Table B-1, Effective Solubility Of Chemicals Of Concern In Gasoline And Diesel
Toluene	64.5	5.38E-04	
Ethylbenzene	2.72	2.27E-05	
Total Xylenes	10.1	8.43E-05	
Naphthalene	31.0	2.59E-04	

emissions per constituent	lb/min	lb/hr	effective solubility multiplied by flow rate
Benzene	9.26E-03	5.56E-01	
Toluene	1.88E-02	1.13E+00	
Ethylbenzene	7.94E-04	4.77E-02	
Total Xylenes	2.95E-03	1.77E-01	
Naphthalene	9.05E-03	5.43E-01	

TABLE 1 SOIL ANALYTICAL SUMMARY
 TRAVEL CENTERS OF AMERICA #116
 COTTONDALE, TUSCALOOSA COUNTY, ALABAMA
 FACILITY ID NO. 17050-125-014907



SAMPLE NO.	DEPTH	DATE	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	TOTAL BTEX	MTBE	NAPHTHALENE
B-12t	18.5'-20'	02/09/26	<0.005	<0.029	<0.005	<0.005	<0.044	<0.005	<0.029
	23.5'-25'	02/09/26	0.010	0.234	0.083	0.246	0.573	<0.006	<0.030
ARBCA Residential Soil ISLs			0.00845	3.60	3.61	13.2	NA	0.00862	0.579
ARBCA Commercial Industrial Soil ISLs			0.00845	3.60	3.61	62.4	NA	0.00862	0.579

Results in milligrams per liter (ppm)

NA- Not Analyzed

BDL - Below Detection Limit

Bolded values above ARBCA Industrial Soil ISLs

ARBCA ISLs-Alabama Risk Based Corrective Action Initial Screening Levels

TABLE 1 GROUNDWATER ELEVATION SUMMARY**TRAVEL CENTERS OF AMERICA #116**

COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

FACILITY ID NO. 17050-125-014907

UST INCIDENT NO. 24-01-05



MONITOR WELL NO.	TOG ELEV. (ft)	TOC ELEV. (ft)	DATE	DTW (TOC) (ft)	GROUND WATER ELEV. (ft)	TOTAL DEPTH OF WELL (ft)
MW-1t	282.24	282.00	4/5/2024	24.63	257.37	30
			1/31/2025	26.02	255.98	
			7/22/2025	24.19	257.81	
			10/22/2025	25.14	256.86	
			1/28/2026	25.85	256.15	
			4/16/2026	25.50	256.50	
MW-2t	280.72	280.39	4/5/2024	23.05	257.34	30
			1/31/2025	24.44	255.95	
			7/22/2025	22.60	257.79	
			10/22/2025	23.58	256.81	
			1/28/2026	24.27	256.12	
			4/16/2026	23.96	256.43	
MW-3t	280.95	280.64	4/5/2024	23.48	257.16	30
			1/31/2025	24.28	256.36	
			7/22/2025	22.94	257.70	
			10/22/2025	24.01	256.63	
			1/28/2026	24.61	256.03	
			4/16/2026	24.40	256.24	
MW-4t	282.20	281.90	4/5/2024	24.69	257.21	30
			1/31/2025	26.58	255.32	
			7/22/2025	24.76	257.14	
			10/22/2025	25.63	256.27	
			1/28/2026	26.52	255.38	
			4/16/2026	26.28	255.62	

TABLE 1 GROUNDWATER ELEVATION SUMMARY

TRAVEL CENTERS OF AMERICA #116

COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

FACILITY ID NO. 17050-125-014907

UST INCIDENT NO. 24-01-05



MONITOR WELL NO.	TOG ELEV. (ft)	TOC ELEV. (ft)	DATE	DTW (TOC) (ft)	GROUND WATER ELEV. (ft)	TOTAL DEPTH OF WELL (ft)
MW-5t	281.93	281.26	1/31/2025	26.86	254.40	49
			7/22/2025	23.99	257.27	
MW-6t	281.84	281.54	1/31/2025	25.84	255.70	30
			7/22/2025	24.00	257.54	
MW-7t	282.62	282.31	1/31/2025	26.75	255.56	30
			7/22/2025	24.85	257.46	
MW-8t	281.76	281.55	1/31/2025	25.64	255.91	30
			7/22/2025	23.87	257.68	
			10/22/2025	24.76	256.79	
			1/28/2026	25.47	256.08	
			4/16/2026	25.13	256.42	
MW-9t	280.37	280.09	1/31/2025	25.53	254.56	30
			7/22/2025	22.70	257.39	
			10/22/2025	23.71	256.38	
			1/28/2026	24.35	255.74	
			4/16/2026	24.04	256.05	
MW-10t	281.73	281.53	1/31/2025	25.82	255.71	30
			7/22/2025	23.89	257.64	
			10/22/2025	24.96	256.57	
			1/28/2026	25.37	256.16	
			4/16/2026	25.34	256.19	
RW-12t	282.72	282.41	2/11/2026	26.19	256.22	33
			4/16/2026	25.85	256.56	

TOC - Top of casing

DTW - Depth to water

DTP - Depth to product

ELEV - Ground water elevation relative to mean sea level

Ground water elevation adjusted for free product using the following equation:

Adjusted level=ground water elevation + (0.74 x free product thickness), where 0.74 represents the density of gasoline

TABLE 2 GROUNDWATER ANALYTICAL SUMMARY

TRAVEL CENTERS OF AMERICA #116
 COTTONDALE, TUSCALOOSA COUNTY, ALABAMA
 FACILITY ID NO. 17050-125-014907
 UST INCIDENT NO. 24-01-05



WELL/ SAMPLE NO.	DATE	BENZENE	TOLUENE	ETHYL- BENZENE	XYLENES	TOTAL BTEX	MTBE	NAPHTHA LENE
MW-1t	04/05/24	0.011	0.030	0.0073	0.020	0.068	<0.0010	<0.0050
	01/31/25	0.091	0.020	0.057	0.036	0.204	<0.0010	<0.0050
	07/22/25	0.055	0.0071	0.026	<0.010	0.088	0.0012	<0.0050
	10/22/25	0.19	0.27	0.089	0.092	0.641	<0.0010	<0.0050
	01/28/26	0.362	0.469	0.194	0.208	1.233	<0.010	<0.050
	04/16/26	0.119	0.0170	0.0230	0.00511	0.164	<0.0010	<0.0050
MW-2t	04/05/24	0.055	0.094	0.013	0.023	0.185	<0.0010	<0.0050
	01/31/25	0.19	0.041	0.055	0.031	0.317	<0.0010	<0.0050
	07/22/25	0.38	0.095	0.045	0.062	0.582	0.0037	<0.0050
	01/28/26	0.388	0.421	0.186	0.231	1.226	<0.010	<0.050
	04/16/26	0.354	0.207	0.0945	0.0113	0.667	<0.010	<0.050
MW-3t	04/05/24	0.77	2.3	0.27	0.76	4.10	<0.020	<0.100
	01/31/25	1.0	2.6	0.46	1.2	5.26	0.027	<0.10
	07/22/25	3.6	14	1.9	5.2	24.7	0.12	<0.25
	10/22/25	1.3	5.8	0.89	2.3	10.3	<0.10	<0.50
	01/28/26	1.15	3.98	0.974	2.64	8.744	<0.020	<0.100
	04/16/26	2.05	5.51	0.910	2.21	10.68	<0.250	<0.0500
MW-4t	04/05/24	8.0	33	2.9	5.6	49.5	<0.250	<1.300
	01/31/25	10	53	7.6	15	85.6	<0.50	<2.5
	07/22/25	2.6	12	1.7	3.4	19.7	<0.50	<0.25
	10/22/25	1.9	18	3.4	6.6	29.9	<0.10	<0.50
	01/28/26	1.32	15.6	3.77	7.57	28.3	<0.050	<0.250
	04/16/26	3.37	21.5	3.25	4.96	33.1	<0.200	<1.00
MW-5t	01/31/25	<0.0010	<0.0010	<0.0010	<0.010	<0.0130	<0.0010	<0.0050
	07/22/25	<0.0010	<0.0010	<0.0010	<0.010	<0.0130	<0.0010	<0.0050
MW-6t	01/31/25	<0.0010	<0.0010	<0.0010	<0.010	<0.0130	<0.0010	<0.0050
	07/22/25	<0.0010	<0.0010	<0.0010	<0.010	<0.0130	<0.0010	<0.0050
MW-7t	01/31/25	<0.0010	<0.0010	<0.0010	<0.010	<0.0130	<0.0010	<0.0050
	07/22/25	<0.0010	<0.0010	<0.0010	<0.010	<0.0130	<0.0010	<0.0050
MW-8t	01/31/25	0.077	0.19	0.063	0.17	0.500	<0.0010	<0.0050
	07/22/25	0.036	0.046	0.027	0.041	0.150	<0.0010	<0.0050
	10/22/25	0.076	0.24	0.043	0.076	0.435	<0.0010	<0.0050
	01/28/26	0.265	0.260	0.150	0.0849	0.760	<0.010	<0.050
	04/16/26	0.102	0.0546	0.0221	0.0171	0.196	<0.0010	<0.0050
MW-9t	01/31/25	0.15	0.10	0.029	0.049	0.328	<0.0010	<0.0050
	07/22/25	0.13	0.037	0.042	0.029	0.238	0.0055	<0.0050
	10/22/25	0.059	0.036	0.028	0.029	0.152	0.0092	0.0051
	01/28/26	1.940	0.844	0.878	0.448	4.110	0.0344	<0.050
	04/16/26	0.948	0.119	0.158	<0.0100	1.225	0.0293	<0.0500

TABLE 2 GROUNDWATER ANALYTICAL SUMMARY

TRAVEL CENTERS OF AMERICA #116
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA
FACILITY ID NO. 17050-125-014907
UST INCIDENT NO. 24-01-05



WELL/ SAMPLE NO.	DATE	BENZENE	TOLUENE	ETHYL- BENZENE	XYLENES	TOTAL BTEX	MTBE	NAPHTHA LENE
MW-10t	01/31/25	0.088	0.0020	0.15	0.012	0.252	0.082	0.29
	07/22/25	0.51	0.027	0.21	0.16	0.907	0.10	0.15
	10/22/25	0.78	0.042	0.24	0.094	1.156	0.082	0.26
	01/28/26	0.969	<0.020	0.353	0.107	1.429	0.0339	0.129
	04/16/26	1.080	<0.0200	0.207	<0.0100	1.287	0.0258	0.0713
RW-12t	02/11/26	0.378	1.540	0.282	0.758	2.958	<0.00100	<0.00500
	04/16/26	1.160	2.390	0.601	1.480	5.631	<0.0200	<0.100
Duplicate of RW-12t (MW-11t)	04/16/26	1.090	2.300	0.567	1.390	5.3	<0.0200	<0.100
ARBCA ISLs		0.005	1	0.7	10	NA	0.02	0.02

Results in milligrams per liter (ppm)

NA- Not Analyzed

BDL - Below Detection Limit

ARBCA ISLs-Alabama Risk Based Corrective Action Initial Screening Levels

Values in bold above ARBCA ISL, values shaded above SSTL

SSTLs not established

TABLE 3 SUMMARY OF WATER QUALITY RESULTS

TRAVEL CENTERS OF AMERICA #116
 COTTONDALE, TUSCALOOSA COUNTY, ALABAMA
 FACILITY ID NO. 17050-125-014907
 UST INCIDENT NO. 24-01-05



WELL/ SAMPLE NO.	DATE	DO (mg/l)	TEMP (C)	pH (s.u.)	CONDUCTIVITY (uS/cm)	ORP (mV)
MW-1t	4/5/2024	2.81	20.5	5.98	200.0	207.7
	1/31/2025	3.30	22.2	5.50	129.0	68.3
	7/22/2025	4.25	26.9	5.33	148.5	95.3
	10/22/2025	3.95	23.5	5.81	127.5	24.8
	1/28/2026	2.66	20.7	5.68	145.3	-16.7
	4/16/2026	2.47	24.9	5.44	142.7	15.1
MW-2t	4/5/2024	3.72	20.7	6.09	168.0	195.2
	1/31/2025	3.18	22.2	5.66	130.0	44.5
	7/22/2025	3.84	25.5	5.84	197.5	-5.8
	10/22/2025	6.15	22.5	6.17	144.2	-65.0
	1/28/2026	3.03	20.3	5.75	152.6	-34.4
	4/16/2026	2.74	24.2	5.64	161.1	-33.9
MW-3t	4/5/2024	3.05	22.5	6.24	318.9	0.2
	1/31/2025	2.31	21.7	5.90	222.0	47.8
	7/22/2025	2.23	26.0	5.97	912	-58.1
	10/22/2025	3.47	24.0	5.72	431	17.3
	1/28/2026	2.89	21.1	5.45	308.9	-26.5
	4/16/2026	1.70	24.2	5.49	584.0	-31.9
MW-4t	4/5/2024	3.42	22.0	5.75	205.1	41.9
	1/31/2025	3.41	22.0	5.47	124.0	146.8
	7/22/2025	3.32	27.2	5.33	112.7	78.9
	10/22/2025	4.33	24.1	5.98	139.5	63.1
	1/28/2026	2.66	19.9	5.30	118.7	9.1
	4/16/2026	2.11	24.0	5.34	132.4	2.1

TABLE 3 SUMMARY OF WATER QUALITY RESULTS

TRAVEL CENTERS OF AMERICA #116
 COTTONDALE, TUSCALOOSA COUNTY, ALABAMA
 FACILITY ID NO. 17050-125-014907
 UST INCIDENT NO. 24-01-05



WELL/ SAMPLE NO.	DATE	DO (mg/l)	TEMP (C)	pH (s.u.)	CONDUCTIVITY (uS/cm)	ORP (mV)
MW-5t	1/31/2025	4.43	21.6	6.32	159.0	-151.8
	7/22/2025	2.64	25.6	6.53	183.2	-55.1
MW-6t	1/31/2025	3.29	22.6	5.64	140.0	88.5
	7/22/2025	3.26	25.7	5.48	120.9	98.2
MW-7t	1/31/2025	5.39	22.1	5.76	141.0	126.2
	7/22/2025	4.02	25.8	5.67	175.3	189.1
MW-8t	1/31/2025	2.84	22.1	5.67	153.0	-21.5
	7/22/2025	2.92	25.0	5.07	94.2	116.1
	10/22/2025	4.06	23.2	5.29	115.1	119.2
	1/28/2026	2.75	18.0	5.29	120.6	20.4
	4/16/2026	3.27	23.5	4.93	115.4	57.3
MW-9t	1/31/2025	4.26	22.4	6.03	131.0	9.3
	7/22/2025	3.75	26.3	6.09	244.9	-26.4
	10/22/2025	4.97	22.8	6.35	284.3	-68.4
	1/28/2026	2.27	18.9	5.78	224.9	-39.1
	4/16/2026	2.28	24.1	5.71	243.2	-43.3
MW-10t	1/31/2025	2.69	21.7	3.27	231.0	-51.1
	7/22/2025	2.59	27.9	6.25	368.9	-56.4
	10/22/2025	4.28	22.3	6.51	258.9	-103.5
	1/28/2026	2.14	20.1	6.14	295.1	-92.1
	4/16/2026	1.97	23.7	6.06	248.0	-78.8
RW-12t	2/11/2026	3.69	21.8	5.90	254.2	16.3
	4/16/2026	3.35	24.5	5.49	177.9	11.5

mg/l - Milligrams per liter (ppm)

DO - Dissolved Oxygen

mV - Millivolts

TEMP - Temperature

NS - Not Sampled

C - Degrees Celsius

ORP - Oxygen Reduction Potential

s.u. - Standard Units

uS - MicroSiemens

QUOTE

Friday, May 15, 2026

Nathan Wade
S&ME
360D Quality Circle NW, Suite 450
Huntsville, AL 35806

Subject: TCA #116 DPE

Nathan,

We are pleased to provide the following proposal for (1) turnkey DPE system based upon your specifications provided and an assumed site voltage of 230 volt, 60Hz, 3-phase 4-wire, designed for Class I Div. 2 Hazardous location. We will supply the following equipment completely pre-piped, pre-wired, and pre-tested (unless stated otherwise). Major equipment is described below for your review and consideration:

VAPOR LIQUID SEPARATOR

Includes: **220 G vapor liquid separator** with:

- Aluminum construction with 6" tangential Inlet and 6" discharge
- Demister plate
- 8" clean out
- 2" Drain Valve
- Inlet vacuum gauge 0-30" wc
- 3" dirtuion filter with 3" adjustable brass ball valve
- 2" clear PVC sight tube with true union ball valve ends
- Stainless steel level switch
 - High High level alarm
 - High level
 - Low Level
- AMT 3 HP self priming pump with 230 V 3P TEFC motor 50 GPM @ 40 TDH
- 2" Suction side brass ball valve
- 2" Suction side brass wye strainer
- 2" brass discharge gate valve
- 2" brass discharge swing check valve
- 0-100 PSI pressure guage
- 1/4" brass sample port
- Momentary push button pump control

MID-ATLANTIC ENVIRONMENTAL EQUIPMENT, INC.

Main Phone:
877-MAE2inc
(877-623-2462)
mae2.com

Corporate Headquarters

15 Carroll Drive
Bluffton, SC 29910
843-836-1804
Fax: 843-836-1805

Email: sevans@mae2.com

Assembly Plant

Hardeeville, SC
843-296-4580

Regional Sales Office

182 Spring Oaks Lane
Ruckersville, VA 22968
434-531-3472
Fax: 434-985-1214

Email: jfrydl@mae2.com

VACUUM BLOWER

Includes: Oil Sealed Liquid Ring Pump Model VMX1003KA1-00 with 60 HP 208/230V/3P TEFC motor:

- Performance at inlet of blowers: 850 ACFM at 16" Hg
- Vacuum Gauge 0-30" Hg
- Vacuum Transmitter 0-30" Hg with adjustable alarm setpoint
- Temperature Gauge 50-500 F
- 6" inline air filter
- 2" Vacuum Relief Valve
- Low & High Oil Switches
- High Temperature Switch
- Cooling air ducting with rain hood
- 6" aluminized exhaust tubing with flapper cap & 1/4" brass sample port

INLET MANIFOLD

Includes: 6" aluminum manifold header with 8 2" legs, each leg to contain;

- 2" brass gate valve
- Vacuum Gauge 0-30" Hg
- 1/4" brass sample port
- Legs terminated through enclosure wall with FMPT process connections

COMBO OWS/AIR STRIPPER

Includes: **Aluminum OWS/AS 50**

- Operating flow rate: 35 GPM
- Max water flow rate: 50 GPM
- 2" inlet/Outlet
- 2" product drain port
- Parallel-corrugated plate coalescer designed to remove oil droplets greater than 20 microns with a Reynolds Number of less than 500
- Hinged Gasketed lid
- 90 Gallon Effluent pump out chamber
- 2" product skimmer with drain line
- 1" drain valve
- 1" OWS vent piping through roof with rain tee
- OWS Gravity drain to 4 Tray Stripper (Trays are removable for cleaning)
- 5.5 HP 208/230 volt 3 phase TEFC blower rated for 320 CFM @ 24" wc
- 4" Discharge Butterfly valve for setting air stripper flow and pressure
- Blower discharge Pressure gauge 0-100" WC
- Stripper Sump low pressure transmitter with adjustable alarm set point
- 4" PVC Inlet piping

Air discharge piping from air stripper to contain:

- 4" PVC piping through roof with PVC Tee rain cap

Liquid Pump out from air stripper to container:

- 2" clear PVC sight tube with true union ball valve ends
- Stainless steel float switch assembly w/
 - High High level alarm

- High level
- Low level
- Centrifugal transfer pump
 - 3 HP 230 V 3 phase TEFC motor 50 GPM @ 90 TDH
 - Suction side 2" brass ball valve
 - Suction side 2" brass wye strainer
 - 2" discharge brass swing check valve
 - 2" discharge brass gate valve
 - 1/4" brass sample port
 - 0-100 PSI pressure gauge
 - 1/2" Watts anti siphon valve
 - Local push button switch for manual pump control

BAG FILTERS

Includes: #2 Stainless Steel Bag Filter Housing each to contain;

- (2) # 2 Size Stainless Steel Bag Filter housing
- Inlet/Outlet 2" brass Ball valves
- Inlet/Outlet Pressure Gauge 0-100 psi
- 1/4" brass sample port
- 1/2" drain valve
- Piped in series with 2" schedule 80 PVC

CARBON FILTERS

Includes: 1000 Lb. Carbon Steel Carbon Filters each to contain;

- 1000 # Reactivated Liquid Phase carbon in each
- Inlet/Outlet 2" brass Ball valves
- Inlet/Outlet Pressure Gauge 0-100 psi
- 1/4" brass sample port
- 1" drain valve
- Signet Paddle Wheel Water flow transmitter with local display and 4-20 ma output
- Piped in series with 2" Petroleum Hose and cam and groove fittings
- 1/2" discharge anti-siphon valve

REMEDIATION ENCLOSURE

Built to NEC Class 1 Div 2 standards, all wiring intrinsically safe and all equipment pre-piped factory tested and mounted in enclosure.

Includes 8'W x 20'L x 7.5' T Once Through Cargo Container with the following standard features:

- 3/8" Plywood Framed Interior Roof and walls
- 1.5" R10 foam board on interior walls & ceiling
- Barn-style rear double doors with locking hasp on both ends
- Tie down D rings welded to the frame on 4 corners
- (tie downs and anchors by others)
- Control panel, light switch, Disconnects and GFI mounted to exterior

Interior of system enclosure to contain

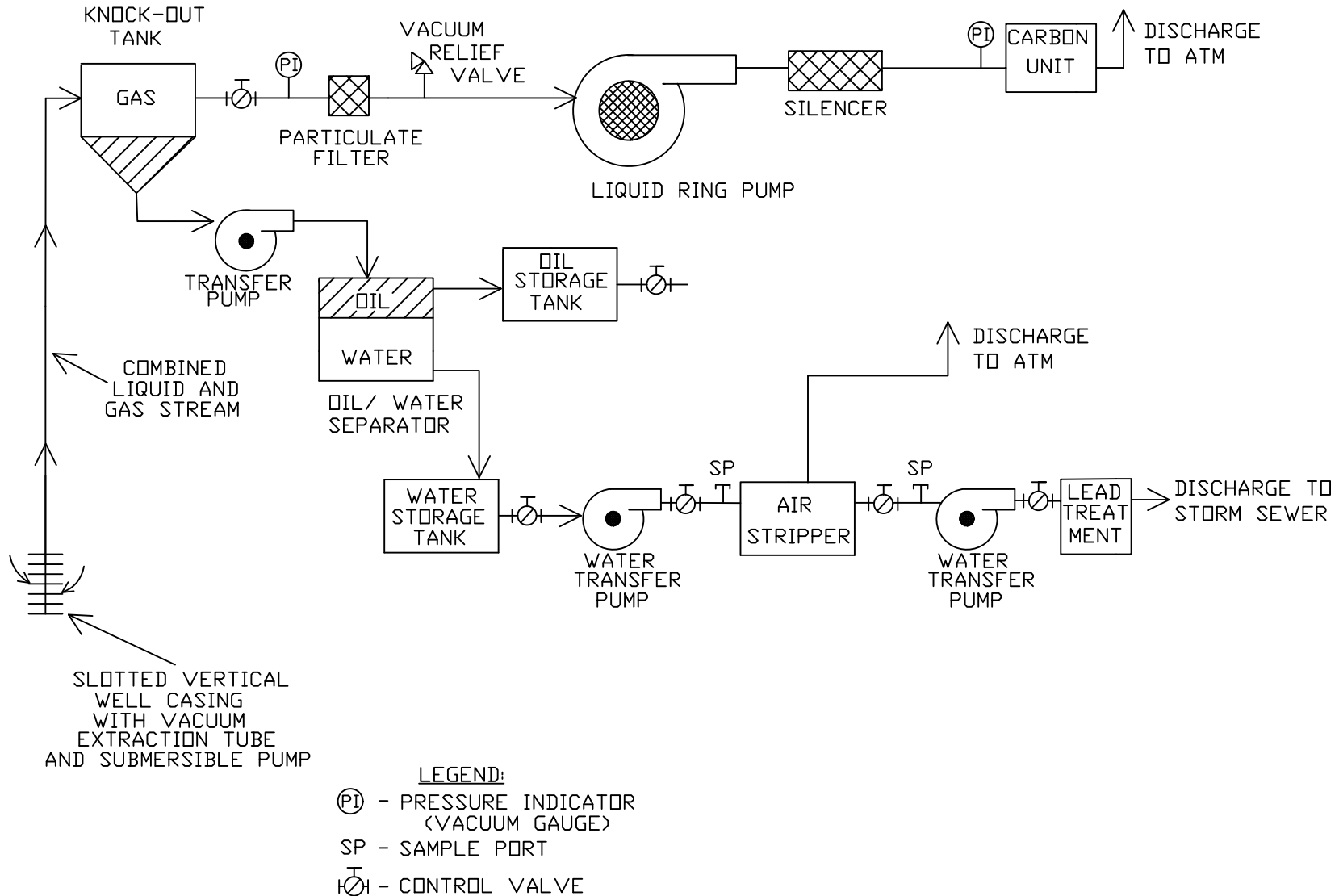
- DPE Blower
- Knockout tank and transfer pump
- OWS/AS and transfer pump
- AS Blower
- Estop Push Button
- (2) Transfer Pump Push button
- Bag Filters
- Carbon Vessels
- Two (3) 100 W EXP LED light fixtures with remote on/off switch
- Two (2) 16" intake louvers with rain hood

CONTROL SYSTEM

Includes: PLC based control panel with the following features:

- 120/230VAC 3Ø 4 wire 300A Input Power
- UL Type 4 UL698A listed and labelled wall mount door-in-door panel enclosure for exterior mount
- Filter Fan and Exhaust with Hoods maintaining Type 4 Environment Rating
- Surge and lightning protection via Main Line TVSS with notification of failure to Telemetry
- Phase/Voltage Monitor with reporting contacts to PLC.
- 24VDC power - Class 2
- Primary circuit protection with through door disconnect.
- Branch Circuit Protection for 60HP Liquid Ring Pump, 5HP LRP Circulation Pump, 5HP LRP Heat Exchanger, 3HP VLS Transfer Pump, 5.5HP Stripperator Blower, 3HP Stripperator Discharge Pump, 1.8kW 230/1/60 XP room heater, 1/3HP 230/1/60 XP Vent Fan, 115VAC Lights (All), 115VAC Convenience Circuit, and 115VAC Control Power Circuit
- (1) 60HP Soft Starter with fan and terminal covers for LRP
- (5) Motor Starters with Thermal Overloads for remaining motors
- Connected and Configured Automation Direct PLC, 10" Automation Direct C-more Color OIT, Hardware VPN with Verizon Wireless 4G LTE Cellular Modem
- HOA's, Hour Meters, Reset Button and Alarm & Pilot Lamps are integral to the OIT.
- (4) HOA switches, Door mounted, for motor bypass of PLC/OIT function (Circ Pump and Heat Exchanger are latched to LRP operation)
- Door Mounted E-Stop Button (swing panel)
- Alarms with interlocks for proper system operation
- I/O includes (32) Discrete Inputs, (4) Analog Inputs, and (16) Relay Outputs total – these numbers include spares.
- Automatic restart after power failure
- Intrinsically safe barriers for circuit extensions into Class 1 Div 2 area include (14) Discrete and (3) Analog devices.
- DC UPS via Capacitor Buffer providing time for notification and orderly shutdown on power loss

DUAL PHASE EXTRACTION SYSTEM (WITH WATER TREATMENT)



PROCESS DIAGRAM

TRAVEL CENTERS OF AMERICA #116
3501 BUTTERMILK ROAD
COTTONDALE, TUSCALOOSA COUNTY, ALABAMA

SCALE:

NTS

DATE:

5/18/2026

PROJECT NUMBER

24820047

FIGURE NO.

12

Appendix VI – NPDES Permit Application

Notice of Intent - NPDES General Permit - Petroleum Products and Treated Groundwater (ALG340000) (Form 394)

version 2.9

(Submission #: HQN-R5VY-ZYF25, version 1)

Details

Submission ID HQN-R5VY-ZYF25

Status Draft

Fees

Default Fee \$1,385.00

Payments/Adjustments \$0.00

Balance Due \$1,385.00 (None)

Form Input

General Instructions

Processing Information

Form Submission Reason

New

Are you applying for a modification or reissuance of an EXISTING permit coverage under General Permit Number ALG340000?

No

Industrial Activity Information

Check the type of discharge at your facility and complete the applicable sections associated with the type checked:

Storm water and/or groundwater discharges associated with the remediation of groundwater and/or soil contaminated with petroleum or its derivatives (DSN001)

Are any discharges above combined?

No

Does any discharge or runoff from the facility reach an Outstanding Alabama Water or Outstanding Natural Resource Water stream segment as defined by ADEM

Administrative Code r. 335-6-11-.02?

No

Description of industrial activity and land use at the facility:

The facility is an active truck stop. The site is under active remediation with a future remediation system.

Permittee Information

Permittee

Permittee Name (Legal Business Name)

TCA #16

Mailing Address

24601 CENTER RIDGE RD SUITE 300

CLEVELAND, OH 44145-5600

United States

To look up your company's legal business name, please refer to the Secretary of State's website:

[Click here](#)

Responsible Official**Prefix**

Ms.

First Name

Talia

Last Name

Ortega-Trejo

Title

HSE Director Travel Centers of America, Vice President

Organization Name

BP

Phone Type

Business

Number

2055540215

Extension**Email**

talía.ortega-tejo@bp.com

Fax

NONE PROVIDED

Mailing Address

24601 CENTER RIDGE RD SUITE 300

CLEVELAND, OH 44145-5600

United States

Does the Responsible Official intend to delegate signatory authority to an individual (or to a company position) as a duly authorized representative (DAR) for this site?

Yes

Duly Authorized Representative (DAR)**Delegation Document for Duly Authorized Representation (DAR)**

NONE PROVIDED

Comment

NONE PROVIDED

Pursuant to ADEM Admin. Code r. 335-6-6-.09(2), a person may ONLY be delegated signatory authority for reports if that person has responsibility for the overall operation of the regulated facility or activity. Once such delegation is made, that person is considered a duly authorized representative (DAR).

Authorized Rep**Prefix**

Mr.

First Name

Nathanael

Last Name

Wade

Title

Project Manager

Organization Name

S&ME, Inc.

Phone Type

Business

Number

2568378882

Extension**Email**

nwade@smeinc.com

Mailing Address

360D Quality Cir NW

Suite 450

Huntsville, AL 35806

United States

Do you have additional Duly Authorized Representative (DAR) contacts?

Yes

DMR Contact(s) (1 of 1)

DMR Contact**Prefix**

Mr.

First Name

Nathanael

Last Name

Wade

Title

Project Manager

Organization Name

S&ME, Inc.

Phone Type

Business

Number

2568378882

Extension**Email**

nwade@smeinc.com

Address

360D Quality Cir NW

Suite 450

Huntsville, AL 35806

United States

Facility/Site Information**Facility/Site Name**

TRUCK STOPS OF AMERICA

Permittee Organization Type

Corporation

Facility/Site Contact**Prefix**

Ms.

First Name

Sampada

Last Name

Kulkarni

Title

Environmental Coordinator

Organization Name

TravelCenter of America

Phone Type

Business

Number

4408083026

Extension**Email**

skulkarni3@ta-petro.com

Address

24601 CENTER RIDGE RD SUITE 300

Cleveland, OH 44145-5600

Facility/Site Address or Location Description

3501 BUTTERMILK RD

COTTONDALE, AL 35453

Facility/Site County

Tuscaloosa

Detailed Directions to the Facility/Site*NONE PROVIDED***Please refer to the link below for Lat/Long map instruction help:**[Map Instruction Help](#)**Facility/Site Front Gate Latitude and Longitude**

33.17650500000001,-87.44687500000001

3501 BUTTERMILK RD, COTTONDALE, AL

SIC Code(s) [Please select your primary SIC code first]:

5541-Gasoline Service Stations

NAICS Code(s) [Please select your primary NAICS code first]:

457110-Gasoline Stations With Convenience Stores

Has the facility been issued an NPDES INDIVIDUAL permit?

No

Has the facility been issued a State Indirect Discharge (SID) Permit?

No

Has the facility ever been issued coverage under an NPDES GENERAL Permit other than the permit listed on this application?

No

Are any discharges that you intend to be covered by this general permit going to municipal storm sewer?

No

Date facility started or will start operations:

11/30/1989

What is the size of the site in acres?

19.3

Do you discharge to any waters of the State that are impaired (303(d) or TMDL)?

Yes

Do your discharges contain pollutants of concern listed for the impaired water(s)?

No

Does any discharge or runoff from the facility reach a public water supply stream segment as defined by ADEM Administrative Code r. 335-6-11-.02?

No

Please indicate which of the following control measures the facility has to prevent pollution. Check all that apply or select "None".

Treatment of groundwater (retention, aeration)

Do you have additional contacts associated with this site?

No

Additional Contacts (1 of 1)

Additional Contacts: Authorized Rep

Contact Type

Authorized Rep

Contact**Prefix**

Ms.

First Name

Sampada

Last Name

Kulkarni

Title

Environmental coordinator

Organization Name

BP-Pune India

Phone Type

Mobile

Number

4408083026

Extension**Email**

skulkarni3@ta-petro.com

Address

24601 CENTER RIDGE RD SUITE 300

Cleveland, OH 44145-5600

United States

Pursuant to ADEM Admin. Code r. 335-6-6-.09(2), a person may ONLY be delegated signatory authority for reports if that person has responsibility for the overall operation of the regulated facility or activity. Once such delegation is made, that person is considered a duly authorized representative (DAR).

Delegation Document for Duly Authorized Representation (DAR)*NONE PROVIDED***Comment***NONE PROVIDED***Best Management Practices (BMP) Plan****Note**

This permit requires the development and implementation of a Best Management Practices (BMP) Plan. The BMP Plan shall be prepared and fully implemented no later than the date coverage is granted. This includes the generation and retention of inspection and training records.

Please confirm the status of the BMP plan:

I confirm that the BMP plan will be prepared and implemented no later than the date the industrial activity requiring coverage commences.

DSN001: Storm water and/or groundwater discharges associated with the remediation of groundwater and/or soil contaminated with petroleum or its derivatives (1 of 1)

Outfall: 0011

Feature Type
DSN001

Outfall Identifier
0011

Receiving Stream
Cottondale Creek

Does the discharge enter the named receiving water via an unnamed tributary and/or a storm sewer system? Please also indicate if the storm sewer system is under an MS4 permit.

Via Storm Sewer

[For help on how to place a point on the map, click here.](#)

Location of the Point Where Each Discharge Exits the Property
33.17656258422519,-87.44722919021558

DSN001: Related Information

Have the groundwater discharges and/or storm water runoff from the facility been analyzed for presence of any known pollutants?

No

Has groundwater from this site been tested for the presence of Lead?

No

Are there any known impacts on the receiving water as a result of any discharges under DSN001?

No

List the outfalls under DSN001 that are treated groundwater:

Outfall 1

Will there be any discharge of groundwater as a result of aquifer testing?

No

Does the facility plan to discharge well purge waters?

Yes

This discharge must meet the requirements of this general permit.

Does the facility plan to discharge storm water accumulated in UST tank pits during closure?

No

Were there any past industrial activities on the site that would contribute to storm water contamination?

No

Did the facility ever handle leaded fuels?

Yes

Did the contamination result from the handling of leaded fuel?

No

Did the facility ever handle aviation fuel, jet fuel, or diesel fuel?

Yes

Did the contamination result from the handling of aviation fuel, jet fuel, or diesel fuel?

No

Will the facility stockpile contaminated material on site?

No

NOI Preparer

NOI Preparer

Prefix

Mr.

First Name

Nathanael

Last Name

Wade

Title

Project Manager

Organization Name

S&ME, Inc.

Phone Type

Business

Number

2568378882

Extension

Email

nwade@smeinc.com

Address

360D Quality Circle, Suite 450

Huntsville, AL 35806

United States

Inspection Status

Was this facility/site inspected and found to be in operation (conducting industrial activities) prior to effective Industrial NPDES Permit coverage?

No