UST Closure Report Guidance Document

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A. INTRODUCTION

I. PRIOR TO CLOSING A UST

Prior to closing a UST system, complete and submit a **Closure Activity Form (GUST 29)** to the Underground Storage Tank Management Program (USTMP). This form can be located at:

https://epd.georgia.gov/sites/epd.georgia.gov/files/related_files/site_page/gust_29.pdf

A response from the USTMP is not needed in order to begin closure activities.

Contact the local fire marshal and the Utilities Protection Center before beginning a UST system closure. The fire marshal, and sometimes other local governmental agencies, have jurisdiction over UST's and may require their oversight during removal. State law requires contractors or owners to notify the Utilities Protection Center at 1-(800)-282-7411 at least 72 hours before digging. Contact your local government agency about construction permit requirements.

II. CLOSURE PROCEDURES & QUALIFIED PERSONNEL

UST's may be permanently closed by removing them from the ground or by filling the empty tanks with an inert solid material, such as sand, a mixture of sand and soil, foam, or grout. The inert material must not react with the UST or its contents or allow leaching of residual petroleum from the UST. Foam is preferred because other materials make the tanks very heavy, making them difficult to remove if they have to be removed at a later date. In most cases, the EPD recommends removal of the entire UST (as an aside, the removal of UST's may facilitate real estate transactions). It is recommended that in-place closure should be reserved for situations in which a structure, such as the foundation of a building or roadway, would be jeopardized by removal of the UST(s). The closure of piping requires that contents be first flushed back into the tanks. If piping is to be closed in place, it should be capped at the ends. For additional guidance on closure of UST's, refer to 40 CFR Part 280.71. **Note: Water is not an inert solid material and cannot be used for in-place closure.**

Because of the inherent dangers in handling tanks (explosive vapors and potentially hazardous petroleum residuals), the EPD recommends that only **qualified** and **experienced** personnel close UST systems. Knowledge of and experience with EPA sampling procedures, industry standards, and OSHA regulations (29 CFR Part 1910 and Part 1926) are essential. Fatalities have resulted from mistakes made during tank closures. In addition, improper

handling of the material in the UST's and piping can result in releases that require costly cleanups.

It is the responsibility of the UST owner and/or operator to ensure that environmental sampling is conducted and that a UST Closure Report is completed & submitted to the EPD. Sampling should be conducted as soon as possible (the EPD recommends within 48 hours), and the UST Closure Report, along with all supporting documentation, should be submitted within 30 days of receiving the laboratory data. CLOSURE ACTIVITIES ARE NOT REIMBURSABLE.

B. THE CLOSURE REPORT FORM

I. FACILITY, OWNER, AND CONTRACTOR INFORMATION

It is imperative that Sections A, B, and C be filled out completely so that the USTMP may adequately review the UST Closure Report. The UST owner is the person(s) who actually owns the UST system at the time of closure. If the facility is in the process of being sold or there is a pending transfer of ownership, the UST owner should provide a mailing address other than the facility address. Original signatures are required. Selling the UST system after a release has been identified does not absolve the owner of his/her responsibility of corrective action.

In some cases, the facility may not be registered with the UST program. If this is the case, leave the Facility ID Number blank. However, complete and submit a tank registration form **(EPA 7530)** along with the completed UST Closure Report. This form is located at:

https://epd.georgia.gov/sites/epd.georgia.gov/files/Form_7530.pdf

In the rare case that an individual other than the owner initiates closure activities, that individual should complete Section B. However, they should identify his/her relationship to the facility next to their printed name (i.e. land owner, broker, etc.)

If a contractor or consultant was used to collect environmental samples and/or complete the UST Closure Report, his/her contact information should be provided in Section C.

II. UST SYSTEM INFORMATION

Complete Sections A, B, and C if any component of the UST system was closed. These sections are not required to be completed if the tank system was

previously removed and no specific information regarding the system is known. If this is the case, simply click the box above Section A and skip to Part III (Sampling and Analytical Requirements).

List all tanks recently closed and currently in use in Section A. It is not necessary to list tanks that were previously closed and have already received no further action (NFA) status. If any of the closed tanks contained more than one substance, it is necessary to list all substances that were stored in that tank. Sections B and C require information about both fuel lines and dispensers. If these components were not closed, answer only those questions that apply.

III. SAMPLING & ANALYTICAL REQUIREMENTS

A. Tank Sampling

Sample Location

For all tanks removed from the ground, soil samples should be collected from native soil approximately two feet beneath the tank bottom, and at least one of the samples should be collected beneath the fill port end. For tanks closed in place, samples are to be collected as close to the tank as possible (at each end).

If bedrock is encountered during excavation activities, collect the appropriate number of samples just above bedrock (at the soil/bedrock interface).

Required Number of Samples (See Table 1)

For tanks closed in place, a minimum of two soil samples are required (one at each end). For tanks closed in-place that are greater than 12,500 gallons, one additional sample (collected adjacent to and beneath the middle of the tank) is required for every 10,000 gallons greater than 12,500 gallons. For tanks that are removed, one soil sample is required for tanks less than 1050 gallons, and two samples are required for tanks ranging from 1050 to 12,500 gallons. For tanks greater than 12,500 gallons, one additional soil sample (collected beneath the middle of the tank) is required for every 10,000 gallons greater than 12,500 gallons.

If groundwater is encountered in the excavation while removing the tanks or if groundwater samples are voluntarily collected, the number of required soil samples is reduced. **If groundwater is encountered in the excavation, a groundwater sample MUST be collected.** Groundwater sample(s) can be collected voluntarily by installing monitoring wells or using direct push technology. If groundwater is present, then only one soil

sample is required beneath each tank. In general, one groundwater sample can be collected from beneath a single tankpit. However, if the tankpit is very large and one groundwater sample will not adequately characterize the groundwater conditions beneath the tankpit, then two groundwater samples may be necessary. Groundwater samples should be collected beneath the most contaminated soils.

Target Constituents & Analytical Methods (See Table 2)

For tanks that only stored gasoline, soil samples should be analyzed for BTEX (using EPA Method 5035-8021B or 5035-8260B) and TPH-GRO (using EPA Method 8015B-GRO). Groundwater samples should only be analyzed for BTEX (using EPA Method 5030-8021B or 5030-8260B).

For tanks that stored substances other than gasoline or if there is uncertainty as to what the tanks historically stored, soil samples should be analyzed for BTEX, PAH's (using EPA Method 8270C or 8310), TPH-GRO, and TPH-DRO (using EPA Method 8015B-DRO). Groundwater samples must be analyzed for BTEX and PAH's (using EPA Method 8270C).

In the rare case that a tank contained a substance other than a type of petroleum, the owner must define those target constituents and detection limits that would best determine if a release from the tank impacted the soil and/or groundwater.

Please note that method 8260B is preferred over method 8021B when analyzing samples for BTEX, and method 8270C is preferred over method 8310 when analyzing samples for PAH's. Using method 8021B and/or 8310 may result in the misidentification of compounds or matrix interference.

Vertical Delineation

If any of the initial soil samples collected beneath a tank have detectable concentrations of BTEX, PAH's, or TPH-GRO/DRO, then sampling must continue vertically (at depth) until BTEX and PAH's are below detection limit and TPH-GRO/DRO is less than 10 mg/kg. When collecting delineation samples, it is not necessary to analyze for a constituent that was below detection limit in the initial soil sample(s). If PAH's were detected in the initial soil samples, but there is no applicable soil threshold for the PAH's detected, then delineation samples do not have to be analyzed for PAH's.

If groundwater is encountered before soil contamination can be delineated to below detection limits, then a groundwater sample must be collected. In lieu of collecting multiple soil samples for vertical delineation, a groundwater sample may be collected. In most cases, the collection of one groundwater sample beneath the tankpit eliminates the need for vertical delineation of soil contamination at all sampling locations within the tankpit. For example, if vertical delineation is required at three soil sampling locations within the tankpit, then only one groundwater sample would need to be collected (instead of 3 or more soil samples) in order to satisfy the requirements for vertical delineation of soil contamination. However, for a very large tankpit, two groundwater samples may be needed to adequately characterize groundwater conditions beneath the tankpit.

If bedrock is encountered when removing the tanks and the initial soil samples collected at the bedrock/soil interface have contamination above appropriate detection limits, a boring/monitoring well will need to be installed into bedrock. If groundwater is not encountered within 24 hours after drilling twenty (20) feet into bedrock, drilling may be stopped and the boring may be abandoned. The soil contamination is considered vertically delineated and no additional sampling is required. However, if groundwater is encountered within the first twenty (20) feet, it will be necessary to install a monitoring well and collect a groundwater sample.

Required Tank Sampling When UST Information is Not Available (System Previously Closed)

If the tankpit locations can be identified, then collect one soil sample and one groundwater sample from beneath each tankpit. If it is unclear where the tankpit(s) were located, then use all available resources to best determine where the tanks may have been located and collect the samples at the downgradient edge of each suspected tankpit. Soil samples should be collected above the water table and at the depth where PID/FID readings were the highest.

B/C. Piping & Dispenser Sampling

Sample Location & Number of Samples (Table 1)

**For the discussion below, please note that a dispenser island can consist of a single dispenser or multiple dispensers connected in a series.

For UST systems in which the dispenser(s) are located over the tank(s), soil samples are usually not required beneath the piping or dispensers because the soil directly beneath the dispenser/piping will be removed

during excavation of the tanks. However, in the rare case that piping and/or a dispenser island are the only components closed above an active tank, it will be necessary to collect soil samples as close to dispenser/piping as possible. One or two soil samples will usually be sufficient.

If the dispensers are not located over the tanks, then piping and dispenser samples will be necessary. One soil sample is required for every 25 feet of closed piping, and one soil sample is required 25 feet of contiguous dispenser island. Samples should be collected from **native soil** and at worst-case locations (joints, elbows, fittings, visible contamination, etc.).

Target Constituents & Analytical Methods (Table 2)

If the piping and/or dispenser island was associated with gasoline only tank(s), soil samples should be analyzed for BTEX (using EPA Method 5035-8021B or 5035-8260B) and TPH-GRO (using EPA Method 8015B-GRO). Groundwater samples should only be analyzed for BTEX (using EPA Method 5030-8021B or 5030-8260B).

If the piping and/or dispenser island was associated with tanks containing substances other than gasoline, soil samples should be analyzed for BTEX, PAH's (using EPA Method 8270C or 8310), TPH-GRO, and TPH-DRO (using EPA Method 8015B-DRO). Groundwater samples must be analyzed for BTEX and PAH's (using EPA Method 8270C).

In the rare case that the piping/dispensers contained a substance other than a type of petroleum, the owner must define those target constituents and detection limits that would best determine if a release from the piping/dispensers impacted the soil and/or groundwater.

Vertical Delineation

If any of the initial soil samples collected beneath the piping and/or dispensers have detectable concentrations of BTEX, PAH's, or TPH-GRO/DRO, then sampling must continue vertically (at depth) until BTEX and PAH's are below detection limit and TPH-GRO/DRO is less than 10 mg/kg. When collecting delineation samples, it is not necessary to analyze for a constituent that was below detection limit in the initial soil sample(s). If PAH's were detected in the initial soil samples, but there is no applicable soil threshold for the PAH's detected, then delineation samples do not have to be analyzed for PAH's.

In lieu of collecting multiple soil samples for vertical delineation, a groundwater sample may be collected at each location requiring vertical delineation. If any two sampling locations requiring vertical delineation are less than 25 feet apart, then the collection of one groundwater sample will suffice for the vertical delineation of soil contamination at both locations.

Required Dispenser Sampling When UST Information is Not Available (System Previously Closed)

If the UST system was previously removed but locations of the former dispenser islands can be determined, then collect one soil sample and one groundwater sample beneath each former dispenser island. If it is unclear where the former dispenser islands were located, then use all available resources to determine where they may have been located and collect one soil sample and one groundwater sample at the downgradient side of each suspected island. Soil samples should be collected above the water table and at the depth where PID/FID readings were the highest.

D. Stockpile Sampling & Over-excavation

Stockpile Sampling

One soil sample is required for every 200 cubic yards of stockpiled soil generated during closure activities. Samples should be analyzed for the same constituents as the tank, piping, and dispenser samples. The EPD does not recommend stockpiling soils on site for more than 90 days, and stockpiled soil should be placed in drums or wrapped in plastic sheeting.

Stockpiled soil can only be placed back into the excavation if one of the following criteria is met:

a. the analytical results of samples from the stockpiled soil are less than the applicable Soil Threshold Levels, TPH-GRO or DRO is less than 10,000 mg/kg, and no visible free product is present in the soil. Please note that a water resource survey may be required (**see Appendix B**) in order to determine applicable Threshold Levels.

b. the analytical results of samples from the stockpiled soil exceed applicable Threshold Levels, but a CAP-Part A/CAP-Part B will address in-situ remediation of the contaminated soil.*

c. Groundwater contamination has been identified above regulatory standards, and the CAP-Part A/CAP-Part B will address the in-situ remediation of the contaminated soil and groundwater.

*In almost all cases, it is more advantageous (and usually cheaper) to properly dispose stockpiled soil exceeding applicable Threshold Levels at an EPD approved facility instead of completing and implementing a CAP-Part A/CAP-Part B addressing only soil remediation. If soil is disposed of at an EPD approved facility, then please attach disposal manifests to the UST Closure Report.

Over-excavation

Over-excavation is defined as any soil excavation beyond three (3) feet from the outermost sides and ends of any UST, beyond one (1) foot from the bottom of the deepest UST, or beyond one (1) foot from the piping or dispensers. If more than one UST is present in the pit, and the UST's are laid side-by-side, measurement will extend from the sides of the outermost UST's and the ends of the UST's. If the UST's are laid end-to-end, measurement will extend from the ends of the outermost UST's and the sides of the UST's.

If over-excavation is performed in order to remove contaminated soil, then the following confirmatory samples must be collected in addition to the required tank, piping, and dispenser sampling:

a. one soil sample every 30 linear feet along the base of the sides (within 1 foot of the bottom of the excavation)

b. one soil sample per 200 square feet along the bottom of the excavation

c. one soil sample per 200 cubic yards of stockpiled soil (see "Stockpile Sampling" above)

Reimbursement for over-excavation will only be considered when it has been first proposed in a CAP-Part A/CAP-Part B and subsequently approved by the EPD. Otherwise, over-excavation will be considered part of the closure activities and WILL NOT BE REIMBURSED.

E. Summary of Analytical Methods Used & Field Data

For this section, simply check all analytical methods used on the closure samples collected. If Method 5035 was utilized, please indicate if the samples were collected using an Encore sampling device or if the samples were placed in 40mL preserved vials. Other sampling devices/containers (i.e. 4 oz jars, mason jars, or baggies) are not acceptable.

Follow both the laboratory's sampling directions and EPA's Region IV "Environmental Investigations Standard Operating Procedures & Quality Assurance Manual" when collecting environmental samples. If you are unfamiliar with environmental sampling or completing the UST Closure Report, the EPD highly recommends hiring a qualified environmental consultant to collect the closure samples and complete the UST Closure Report. If groundwater samples are collecting from a boring, a Professional Geologist or Professional Engineer must oversee the sampling and sign/seal the UST Closure Report.

ATTACH ALL ORIGINAL LABORATORY DATA, INCLUDING THE QUALITY CONTROL (QC) INFORMATION AND CHAIN OF CUSTODY, TO THE UST CLOSURE REPORT. ONLY AN ACCREDITED LABORATORY SHOULD ANALYZYE ENVIRONMENTAL SAMPLES. THE LABORATORY SHOULD USE EPA SW-846 SPECIFIED METHODS.

IV. HYDROGEOLOGY

This section of the Closure Report Form documents groundwater conditions at the site. If groundwater was not encountered during closure activities, then answer the first question and leave the remaining questions blank. If groundwater was encountered, please specify the number of samples collected, how it was sampled (from an open pit or boring/monitoring well), and the approximate depth at which groundwater is present.

V. SITE MAP

In order for the EPD to properly review the UST Closure Report, a site map must be attached to the UST Closure Report form. The site map should include the following items: the tankpit(s) showing the tanks that were closed, tank ID's piping, dispensers, sample locations, sample ID's, sample depths, a north arrow, and nearby utilities, buildings, and roads. Tank ID's should correspond to the tank registration form **(EPA 7530)** and sample ID's should correspond to the laboratory data and chain of custody. The EPD prefers a scaled site map; however, it is not required. If a scaled map is not provided, the map should include accurate distances between all items required on the map.

Please ensure that enough information is provided on the site map so that the facility, primarily the UST system, could be located if an EPD representative needed to visit the site.

VI. CONCLUSIONS

This section documents conclusions based on your assessment of the closure activities. The information provided in the UST Closure Report (completed UST Closure Report form, site map, and analytical data) must support your conclusions.

The EPD will consider your conclusion for no further action (NFA) status if one of the following criteria is met:

1. Soil samples were collected from beneath the UST system and stockpile(s), and samples were below detection limit for BTEX and PAH's and TPH-GRO and/or DRO was less than 10 mg/kg.

2. Soil samples were collected from beneath the UST system and stockpile(s), and contamination was identified in some, or all of the samples collected. Soil contamination is below applicable Soil Threshold Levels, and those samples requiring vertical delineation were properly delineated to below detection limit for BTEX and PAH's and below 10 mg/kg for TPH-GRO and/or DRO.

3. Soil samples were collected, and contamination was identified in some, or all of the samples collected. Soil contamination is below Soil Threshold Levels. However, soil samples requiring vertical delineation were not delineated because groundwater was either voluntarily collected or encountered before vertical delineation could be achieved. BTEX and PAH's in groundwater were below applicable drinking water standards (MCL's) or In-Stream Water Quality Standards.

In some rare cases, the site may not meet the conditions for no further action listed above but may still be eligible. The most common examples are sites in which contamination is the result of a previous release or sites in which groundwater contamination slightly exceeds drinking water standards or In-Stream Water Quality Standards but no receptors are in close proximity (as verified by a water resource survey). If this is the case, select the appropriate option and **provide justification for the NFA request.** If the site is not eligible for NFA status, the option requesting a CAP-Part A must be selected.

Please note that it is at the sole discretion of the EPD if no further action (NFA) status is granted or if a CAP-Part A is requested. The EPD will review all available information and data presented in the UST Closure Report to make a decision. Under no circumstances should the above conditions be modified in order to receive NFA status.

If the data collected indicates that a release from the UST system has occurred, notify the EPD of the release within 24 hours by calling (404) 362-

2687. Georgia UST Rules define a release as any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an UST system into groundwater, surface water or subsurface soils. Therefore, a release has occurred if free product is identified or if laboratory data identifies BTEX and/or PAH contamination above appropriate detection limits.

C. UST CLEANING & DISPOSAL

I. UST CLEANING

Petroleum residuals may accumulate in the bottom of the tank, particularly if it has been in use for a long period of time. The residuals may be hazardous because they may contain lead and volatile organic components. Any substances used to clean the tanks, if mixed with the sludge, may be classified as a hazardous waste. These sludges and hazardous wastes should only be handled by qualified personnel, trained and authorized to do this work. Any hazardous wastes must also be handled and disposed of in accordance with the Georgia Rules for Hazardous Waste Management, which can be obtained by calling (404) 656-7802. Additional guidance for tank cleaning can be found in publications available from:

National Fire Protection Association (NFPA)
Batterymarch Park
Quincy, Massachusetts 02269
617/770-3500

American Petroleum Institute (API)
1220 L Street, N.W.
Washington, D.C. 20005
202/682-8372.

II. UST DISPOSAL

Before the tank is transported for reduction to scrap, it must be made vapor-safe (by inserting or purging) and prepared in accordance with recommended practices of API 1604. If it is transported off site prior to being reduced to scrap, it must be transported in accordance with Part 393.1 of the Federal Motor Carrier Safety Regulations. Because of the extreme danger involved in handling used petroleum tanks, EPD recommends that only qualified and experienced personnel perform this procedure. Every precaution should be taken to prevent a fire or explosion when the tank is handled and/or destroyed. When reducing the tank to scrap, it is recommended that methods

be used which reduce the possibility of fire or explosion hazard as much as possible.

III. RE-USE OF UNDERGROUND STORAGE TANKS

Although the GUST Act and Rules do not disallow re-use of UST's, EPD discourages this practice. All tanks to be installed, or reinstalled, are subject to state and federal requirements for new UST systems. All used tanks must be recertified by the manufacturer, a manufacturer's representative, or Georgia registered Professional Engineer. The new tank must meet all new requirements before the tank can be re-used, in accordance with USTMP Rule 391-3-15-.05. API Publication 1604, Section 6.1, as referenced in 40 CFR Part 280, states that tanks which previously contained petroleum must not be used for storage of food or liquids intended for animal or human consumption.

TABLES

TABLE 1: Sampling Requirements

Tanks		Piping	Dispensers
Capacity (gallons)	**Minimum Number of Soil Samples Required***	If piping is not located directly above the tanks, then 1 soil sample is required for every 25 feet of piping**	If the dispenser islands are not located directly above tanks, then 1 sample is required for every 25 feet of contiguous dispenser island**
<1,050	1 (2 if tank was closed in place)		
1,050-12,500	2		
>12,501	2 +1 additional sample for every 10,000 gallons greater than 12,501		

*If groundwater is encountered (via boring, monitoring well, or open pit), then only one soil sample is required beneath each tank. Additional soil sampling is required if initial soil samples contain detectable concentrations of BTEX, PAH's, and/or TPH-GRO/DRO. Sampling must continue at depth (referred to as vertical delineation) until BTEX and PAH's are below detection limit and TPH-GRO/DRO is below 10 mg/kg.

**This may not apply if only closing piping and/or dispensers above an active tank system. Refer to Piping and Dispenser Sampling section for more details.

TABLE 2: Analytical Requirements & Detection Limits

ANAYLTICAL METHODS

Product Stored	Target Constituents	Analytical Methods (Soil)	Analytical Methods (Groundwater)
Gasoline or Aviation Gas Only (Affidavit Required)	BTEX and TPH-GRO	BTEX: 8260B/8021B (5035) TPH-GRO (8015B)	BTEX: 8260B/8021B (5030)
Unknown Petroleum Contents, Jet Fuel A, Jet Fuel B, Mineral Spirits or Kerosene, Used Oil, Diesel Fuel Oil (#2, #4, #5, #6), Motor Oil, or Hydraulic Oil	BTEX, PAH's, and TPH-GRO & DRO	BTEX: 8260B/8021 (5035) PAH's: 8270C, 8310 TPH-GRO & DRO (8015B)	BTEX: 8260B/8021B (5030) PAH's: 8270C, 8310

DETECTION LIMITS

Method	5035-8021B (BTEX-Soil)	5035-8260B (BTEX-Soil)	5030-8021B (BTEX-Groundwater)	5030-8260B (BTEX-Groundwater)	8270C/8310 (PAH's-Soil)	8270C (PAH's-Groundwater)	8015B (TPH-GRO/DRO-Soil)
Minimum Quantitation & Reporting Limit	0.001-0.005 mg/kg	0.005 mg/kg	1-5 μg/l	5 μg/l	0.660 mg/kg for each constituent	10 μg/l for each constituent	10 mg/kg or less

In the rare case that a tank contained a substance other than a type of petroleum, the owner must define those target constituents and detection limits that would best determine if a release from the tank impacted the soil and/or groundwater.

TABLE 3: TABLE A SOIL THRESHOLD LEVELS

CONSTITUENT	AVERAGE OR HIGHER GROUNDWATER POLLUTION SUSCEPTIBILITY AREA[b] (Where public water supplies exist within 2.0 miles or non-public supplies exist within 0.5 miles)		LOWER GROUNDWATER POLLUTION SUSCEPTIBILITY AREA[c] (Where public water supplies exist within 1.0 mile or non-public supplies exist within 0.25 miles)	
VOLATILE ORGANIC COMPOUNDS	**≤500 feet to withdrawal point**	**>500 feet to withdrawal point**	**≤500 feet to withdrawal point**	**>500 feet to withdrawal point**
Benzene	0.005 mg/kg[d]	0.008 mg/kg	0.005 mg/kg[d]	0.71 mg/kg
Toluene	0.400 mg/kg	6.00 mg/kg	0.400 mg/kg	500.00 mg/kg
Ethylbenzene	0.370 mg/kg	10.00 mg/kg	0.500 mg/kg	140.00 mg/kg
Xylenes	20.00 mg/kg	700.00 mg/kg	27.00 mg/kg	700.00 mg/kg
POLYNUCLEAR AROMATIC HYDROCARBONS				
Acenaphthene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Anthracene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Benz(a)anthracene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Benzo(a)pyrene	0.660 mg/kg[d]	N/A[e]	N/A[e]	N/A[e]
Benzo(b)fluoranthene	0.820 mg/kg[d]	N/A[e]	N/A[e]	N/A[e]
Benzo(g.h.i)perylene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Benzo(k)fluoranthene	1.60 mg/kg	N/A[e]	N/A[e]	N/A[e]
Chrysene	0.660 mg/kg[d]	N/A[e]	N/A[e]	N/A[e]
Dibenz(a,h)anthracene	1.50 mg/kg[d]	N/A[e]	N/A[e]	N/A[e]
Fluoranthene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Fluorene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Indeno(1,2,3-c,d)pyrene	0.660 mg/kg[d]	N/A[e]	0.660 mg/kg[d]	N/A[e]
Naphthalene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Phenanthrene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Pyrene	N/A[e]	N/A[e]	N/A[e]	N/A[e]

a - Based on worst-case assumptions for one-dimensional vadose zone and groundwater contaminant fate and transport models.
b - Based on an assumed distance of 0.5 feet between contaminated soils and the water table
c - Based on an assumed distance of 5.0 feet between contaminated soils and the water table.
d - Estimated Quantitation Limit. The health-based threshold level is less than the laboratory method limit of detection.
e - Not applicable. The health-based threshold level exceeds the expected soil concentration under free product conditions

TABLE 4: TABLE B SOIL THRESHOLD LEVELS

CONSTITUENT	AVERAGE OR HIGHER GROUNDWATER POLLUTION SUSCEPTIBILITY AREA[b] (Where public water supplies do not exist within 2.0 miles or non-public supplies exist within 0.5 miles)		LOWER GROUNDWATER POLLUTION SUSCEPTIBILITY AREA[c] (Where public water supplies do not exist within 1.0 mile or non-public supplies exist within 0.25 miles)	
VOLATILE ORGANIC COMPOUNDS	**≤500 feet to surface water body**	**>500 feet to surface water body**	**≤ 500 feet to surface water body**	**>500 feet to surface water body**
Benzene	0.017 mg/kg	0.120 mg/kg	0.020 mg/kg	11.30 mg/kg
Toluene	115.00 mg/kg	500.00 mg/kg	135.00 mg/kg	500.00 mg/kg
Ethylbenzene	18.00 mg/kg	140.00 mg/kg	28.00 mg/kg	140.00 mg/kg
Xylenes	700.00 mg/kg	700.00 mg/kg	700.00 mg/kg	700.00 mg/kg
POLYNUCLEAR AROMATIC HYDROCARBONS				
Acenaphthene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Anthracene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Benz(a)anthracene	0.660 mg/kg[d]	N/A[e]	N/A[e]	N/A[e]
Benzo(a)pyrene	0.660 mg/kg[d]	N/A[e]	N/A[e]	N/A[e]
Benzo(b)fluoranthene	0.660 mg/kg[d]	N/A[e]	N/A[e]	N/A[e]
Benzo(g.h.i)perylene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Benzo(k)fluoranthene	0.660 mg/kg[d]	N/A[e]	N/A[e]	N/A[e]
Chrysene	0.660 mg/kg[d]	N/A[e]	N/A[e]	N/A[e]
Dibenz(a,h)anthracene	0.660 mg/kg[d]	N/A[e]	N/A[e]	N/A[e]
Fluoranthene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Fluorene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Indeno(1,2,3-c,d)pyrene	0.660 mg/kg[d]	N/A[e]	0.660 mg/kg[d]	N/A[e]
Naphthalene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Phenanthrene	N/A[e]	N/A[e]	N/A[e]	N/A[e]
Pyrene	N/A[e]	N/A[e]	N/A[e]	N/A[e]

a - Based on worst-case assumptions for one-dimensional vadose zone and groundwater contaminant fate and transport models.
b - Based on an assumed distance of 0.5 feet between contaminated soils and the water table
c - Based on an assumed distance of 5.0 feet between contaminated soils and the water table.
d - Estimated Quantitation Limit. The health-based threshold level is less than the laboratory method limit of detection.
e - Not applicable. The health-based threshold level exceeds the expected soil concentration under free product conditions

APPENDICES

APPENDIX A: WATER RESOURCE SURVEY DOCUMENTATION

This attachment serves to outline the methodology and documentation to be used to identify local water resources. Water resources that must be identified include surface water bodies that may receive groundwater flow and points of withdrawal for public and non-public water supply, such as drinking water wells. The water resources survey is used to determine the appropriate corrective action objectives, in accordance with GUST Rule 391-3-15-.09(4)(a)-(d).

Documentation of the water resources survey must include, but is not limited to, a United States Geological Survey (USGS) database search, EPD database search, communication logs (telephone or personal), and a field survey summary. It should be included as an attachment to the Closure Report. Include a figure constructed from a **USGS 7.5 minute Topographic Quadrangle Map** displaying the location(s) of all water resources within radii of concern. A legend must identify which points of withdrawal for water supply are public and non-public. The map must be to scale, have the scale displayed, include a north arrow, and be in color. Both water supply and surface water surveys should be verified by a field reconnaissance.

A public drinking water system, as defined by the Georgia Rules for Safe Drinking Water (Chapter 391-3-5, as amended), is one that provides piped water for human consumption to at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. The water system survey includes the identification of all water wells (domestic, commercial, industrial and irrigation), surface water withdrawal points and springs. Identify public/non-public drinking water systems by reviewing federal, state, county, and/or city records as well as conducting a field reconnaissance. Examples of public agencies that may have public and private well information include the USGS, Georgia Geologic Survey, local health departments, and local water and sewer authorities. All adjacent property owners should be contacted via telephone, personal visit, or certified mail. A detailed field reconnaissance should be conducted to verify the presence or absence of water wells within ½ mile of the site in a high or average susceptibility area and ¼ mile within a low groundwater pollution susceptibility area.