

# AT&T BIRMINGHAM REGIONAL DATA CENTER

#### COST PROPOSAL #3

#### **REMEDIATION PLAN**

AT&T BIRMINGHAM REGIONAL DATA CENTER 1876 DATA DRIVE BIRMINGHAM, JEFFERSON COUNTY, ALABAMA FACILITY I.D. 14462-073-012031 AST INCIDENT NO. AST 25-12-01

PREPARED FOR:
BELLSOUTH TELECOMMUNICATIONS, INC. (D/B/A AT&T ALABAMA)
311 SOUTH AKARD STREET, ROOM 1200
DALLAS, TEXAS 75202

PROJECT NO.: US-EI-0041468.2272 DATE: JUNE 26, 2025

PREPARED BY: WSP USA INC. 4000 MEADOW LAKE DRIVE, SUITE 121 BIRMINGHAM, ALABAMA 35242 (205) 980-6402

WSP.COM

#### SIGNATURES

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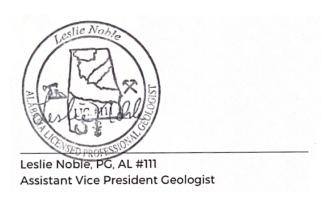
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#### **CERTIFICATION**

I certify under penalty of law that this Remediation Plan and the 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 inquiry 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 knowingly submitting false information.



06-24-2025

Date



# TABLE OF CONTENTS

			SE FACT SHEET AND UST SITE SIFICATION FORM	VII
	UST S	SITE CL	ASSIFICATION SYSTEM CHECKLIST V	/111
	1	INTRO	DUCTION	1
	1.1	Purpos	ie	1
	1.2	Site Lo	cation and Geologic setting	1
	1.3	Backgr	ound	1
	1.4	Prelimi	inary Investigation Findings	2
	1.4.1	Soil samp	oling	2
	1.4.2	Camera i	nspection of storm sewer line	3
	2	PROP	OSED REMEDIATION	4
	2.1	Soil Ex	cavation	4
	2.2	Treatm	ent of ditch and lake banks	5
	3	SUMM	1ARY REPORT	6
4 RE		REFER	RENCES	7
	FIGUF	RES		
	FIGUR	E 1	SITE LOCATION MAP	
	FIGUR	E 2	SITE AERIAL PHOTOGRAPH	
	FIGUR	E 3	SOIL SAMPLE LOCATION MAP - RELEASE AREA	
FIGURE 4		E 4	SOIL SAMPLE LOCATION MAP - DITCH OUTFALL AREA	
	FIGUR	E 5	SOIL SAMPLE LOCATION MAP - LAKE OUTFALL AREA	
FIGURE 6		RE 6	PROPOSED SOIL EXCAVATION AREA	



#### **APPENDICES**

APPENDIX A ADEM CORRESPONDENCE
APPENDIX B MICRO-BAC PRODUCT FACT

SHEET

#### LIST OF ACRONYMS & ABBREVIATIONS

AST Aboveground Storage Tank

ADEM Alabama Department of Environmental

Management

AEPACS Alabama Environmental Permitting and Compliance

System

ARBCA Alabama Risk Based Corrective Action

AT&T American Telephone & Telegraph

BTEX Benzene, Toluene, Ethylbenzene, and Xylenes

CA Corrective Action

COC Chemical of Concern

DTW Depth to Water

DRO Diesel Range Organics

EPA Environmental Protection Agency

GWE Groundwater Elevation

IDW Investigation-Derived Waste

ISL Initial Screening Levels

MTBE Methyl Tert-Butyl Ether

MW Monitoring Well

PPE Personal Protective Equipment

PPM Parts Per Million

SSTL Site Specific Target Limit

UST Underground Storage Tank

# UST RELEASE FACT SHEET AND UST SITE CLASSIFICATION FORM

The Underground Storage Tank (UST) Release Fact Sheet and UST Site Classification Forms for the subject site are presented on the following three pages.

#### **UST RELEASE FACT SHEET**

#### **GENERAL INFORMATION:**

SITE NAME: AT&T Regional Data Center

ADDRESS: 1876 Data Drive, Jefferson County, Alabama

FACILITY I.D. NO.: <u>14462-073-012031</u> AST INCIDENT NO.: <u>AST 25-12-01</u>

#### RESULTS OF EXPOSURE ASSESSMENT:

How many private drinking water wells are located within 1,000 ft. of site?

How many public water supply wells are located within 1 mile of the site?

Have any drinking water supply wells been impacted by contamination from this release?

Is there an imminent threat of contamination to any drinking water wells?

Have vapors or contaminated groundwater posed a threat to the public? Are any underground utilities impacted or imminently threatened by the release?

Have surface waters been impacted by the release?

Is there an imminent threat of contamination to surface waters?

What is the type of surrounding population?

0	
0	
No	
{ } Yes {X} No	
{ } Yes {X} No	
{}Yes {X}No	
{X} Yes {} No	
{}Yes {X}No	
Commercial	

#### CONTAMINATION DESCRIPTION:

Type of contamination at site: {} Gasoline, {X} Diesel, {} Waste Oil {} Kerosene, {} Other

Free product present in wells? { } Yes {X} No Maximum thickness measured: Not Applicable

Maximum Total TPH concentrations measured in soil: 519 ppm during Preliminary Investigation (Sample location O; 03/07/2025)

Maximum BTEX concentrations measured in groundwater: No groundwater samples collected due to shallow bedrock

ADEM Form #479 (8/02)

# UST SITE CLASSIFICATION SYSTEM CHECKLIST

#### ADEM GROUNDWATER BRANCH

SITE NAME:

SITE ADDRESS:

Please read all of the following statements and mark either yes or no if the statement applies to your site. If you have conducted a Preliminary or Secondary Investigation, all questions should be answered. Closure site assessment reports may not provide you with all the necessary information but will answer the statements with the knowledge obtained during the closure site assessment.

1876 Data Drive

AT&T Regional Data Center

	_					
		Birmingham, Jefferson County, Alabama				
FACILITY I.D. NO.:		14462-073-012031				
UST INCIDENT NO	.i.	AST 25-12-01				
	•					
OWNER NAME:		Bellsouth Telecommunications, Inc. (d/b/a AT&T Alabama)				
OWNER ADDRESS	<b>S</b> :	311 South Akard Street, Room 1200, Dallas TX 75202				
NAME & ADDRESS	S OF PERSON					
COMPLETING THIS		Leslie Noble, PG				
		WSP USA Environment & Infrastructure Inc.				
		4000 Meadow Lake Drive, Suite 121, Birmingham, AL 35242				
CLASSIFICATION	DESCRIPTION		YES	NO		
		REAT TO HUMAN HEALTH, HUMAN ISITIVE ENVIRONMENTAL RECEPTOR				
		rations at or approaching explosive levels se health effects, are present in a silding.		$\boxtimes$		
A.2 are present in su		rations at or approaching explosive levels ubsurface utility system(s), but no idences are impacted.				

CLASSIFICATION	DESCRIPTION	YES	NO
CLASS B	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
B.1	An active public water supply well, public water supply line, or public surface water intake is impacted or immediately threatened.		
B.2	An active domestic water supply well, domestic water supply line or domestic surface water intake is impacted or immediately threatened.		$\boxtimes$
B.3	The release is located within a designated Wellhead Protection Area I.		$\boxtimes$
CLASS C	IMMEDIATE THREAT TO HUMAN HEALTH, HUMAN SAFETY OR SENSITIVE ENVIRONMENTAL RECEPTOR		
C.1	Ambient vapor/particulate concentrations exceed concentrations of concern from an acute exposure, or safety viewpoint.		
C.2	Free product is present on the groundwater, at ground surface, on surface water bodies, in utilities other than water supply lines, or in surface water runoff.		$\boxtimes$
CLASS D	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
D.1	There is a potential for explosive levels, or concentrations of vapors that could cause acute effects, to accumulate in a residence or other building.		
D.2	A non-potable water supply well is impacted or immediately threatened.		$\boxtimes$
D.3	Shallow contaminated surface soils are open to public access, and dwellings, parks, playgrounds, day care centers, schools or similar use facilities are within 500 feet of those soils.		$\boxtimes$
CLASS E	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
E.1	A sensitive habitat or sensitive resources (sport fish, economically important species, threatened and endangered species, etc.) are impacted and affected.		
CLASS F	SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS		
F.1	Groundwater is impacted and a public well is located within 1 mile of the site.		$\boxtimes$

CLASSIFICATION	SSIFICATION DESCRIPTION					
F.2	Groundwater is impacted and a domestic well is located within 1,000 feet of the site.					
F.3	F.3 Contaminated soils and/or groundwater are located within designated Wellhead Protection Areas (Areas II or III).					
CLASS G	CLASS G SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS					
G.1	Contaminated soils and/or groundwater are located within areas vulnerable to contamination from surface sources.					
CLASS H	CLASS H SHORT TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS					
H.1						
CLASS I LONG TERM THREAT TO HUMAN HEALTH, SAFETY, OR SENSITIVE ENVIRONMENTAL RECEPTORS						
1.1.	Site has contaminated soils and/or groundwater but does not meet any of the above-mentioned criteria.					
ADDITIONAL COMMENTS:						
Impacted soils are located within a fenced area on the site. Surface water impacts extending to offsite areas including Chace Lake during the initial release have been abated.						
Complete the classification evaluation questions listed above. Upon completion, determine the highest rank of the site (A.1 is the highest rank) based on the statements answered with a yes.						
Enter the determined classification I.1						

ADEM GROUNDWATER BRANCH SITE CLASSIFICATION CHECKLIST (5/8/95)

ADEM Form #481 (8/02)

ranking:

#### 1 INTRODUCTION

#### 1.1 PURPOSE

WSP USA Inc. (WSP) has prepared this Remediation Plan for the AT&T Birmingham Regional Data Center on behalf of Bellsouth Telecommunications, Inc. (d/b/a AT&T Alabama). The site is located at 1876 Data Drive in Hoover, Alabama, and is herein referred to as AT&T Hoover. The purpose of this document is to propose a remediation approach based on site observations as well as soil and sediment analytical results from Preliminary Investigation activities at the subject site. Impacts are associated with AST Incident Number AST 25-12-01. This document accompanies ADEM Cost Proposal Number 3 (CP-3), submitted separately.

#### 1.2 SITE LOCATION AND GEOLOGIC SETTING

AT&T Birmingham Regional Data Center is located at 1876 Data Drive in Hoover, Jefferson County, Alabama, (the Site) as shown on Figure 1. The Site is an active data center for AT&T that contains a total of seven Aboveground Storage Tanks (ASTs) on site. Three of these ASTs are 20,000-gallon diesel fuel tanks for emergency generators, whose fuel filter system was the apparent source of the release. The surrounding area consists primarily of office and commercial properties, with multi-family residential properties located approximately 1,500 – 2,000 feet to the west of the site, across Highway 31 and across Chace Lake from the point of the release. The site setting and surrounding land use are shown on Figure 2. No refueling or service stations are located adjacent to the Site.

According to the Geological Survey of Alabama Atlas 14, Engineering Geology of Jefferson County, Alabama, the site is underlain by the Pottsville Formation of Pennsylvanian age. In the area of the site, considered part of the Cahaba Ridges physiographic district, the Pottsville Formation consists of thick-bedded, coarse-grained, locally conglomeritic sandstone, overlain by a sequence of thin bedded shale and thin to medium bedded sandstone. The Pottsville Formation in the Cahaba Ridges may yield sufficient water for household needs, approximately 5 gallons per minute. However, potable water usage in the area is supplied by the Birmingham Water Works Board and sourced from surface supplies approximately 6 miles from the site at the Cahaba River.

#### 1.3 BACKGROUND

The three 20,000-gallon diesel fuel ASTs are located inside the West Tank Building. In order to supply fuel to the generators, the diesel fuel is piped underground to a fuel polisher in a cabinet located on the eastern exterior of the building. The piping surfaces at the fuel polisher which contains filters that remove contaminants such as water and solids from the fuel. After flowing through these filters, it is piped underground to the generators. In mid-December

2024, during routine maintenance to change the fuel filter for the West Tank Building AST system, a release of diesel fuel was apparently triggered by a faulty fitting. The issue was not immediately noticed by service technicians or site personnel. The release was identified by Hoover Fire Department on December 16, 2024 when it received a citizen report of fuel on the surface of the pond associated with Chace Lake office building (Chace Lake), across Highway 31 from the Site. Emergency response actions were undertaken on behalf of AT&T by ATC and Hepaco, including removal of floating fuel with a vacuum truck, placement and maintenance of petroleum-absorbent booms and pads, and potable water flushing and vacuuming of storm drains from the area of the spill to Chace Lake. The volume of the release on the AT&T property was estimated at 600 gallons.

The Alabama Department of Environmental Management (ADEM) issued AST incident number AST 25-12-01, with preapproval of funds for Preliminary Investigation Activities and Secondary Plan.

A report titled *Initial Abatement Measures Report* was submitted to ADEM via the Alabama Environmental Permitting and Compliance System (AEPACS) on February 27, 2025. The report outlined the measures taken by the owner and their consultant ATC and its subcontractor Hepaco in the initial hours and days following discovery of the release.

A modified Preliminary Investigation scope of work was pursued and reported to ADEM in a report dated April 21, 2025. ADEM responded in a letter dated May 1, 2025 accepting the report and requesting a cost proposal and plan for excavation of diesel impacted soil by June 30, 2025. This document is the plan to accompany ADEM Cost Proposal Forms, CP-3 for the requested abatement.

#### 1.4 PRELIMINARY INVESTIGATION FINDINGS

#### 1.4.1 SOIL SAMPLING

At the point of the release around the fuel polishing cabinet, surficial soils exhibit visible staining over an approximately area of 20 feet by 20 feet, for a surface impact of approximately 400 square feet. Soil borings advanced with a hydroexcavator revealed refusal depths of approximately 2 feet below grade where bedrock was encountered in each of the borings. Therefore, the volume of visually impacted soil is estimated at 30 cubic yards (20' x 20' x 2 feet deep). Soil samples were collected from the fuel polisher area and screened with a photoionization detector (PID), and selected samples were analyzed for total petroleum hydrocarbons (DRO, Method 8015C). Of the samples analyzed for TPH, the samples with the highest results were then analyzed for benzene, toluene, ethylbenzene, xylenes (BETX) and naphthalene (Method 8260B).

Soil/sediment samples collected along a ditch at the outfall of the storm drain line, and along the edges of the inlet of Chace Lake where it was originally impacted by the release were also field screened, and analyzed for TPH DRO, with selected samples further analyzed for BETX and naphthalene.

The April 21, 2025 Preliminary Investigation Report included a summary of sample screening PID results, laboratory analytical results, laboratory reports and chain of custody documents, and a series of site drawings depicting the identified soil contaminant distribution at the release area, ditch, and lake (Figures 3, 4, and 5). Results were notable for relatively low levels of identified contaminants in the samples screened and analyzed (maximum TPH of 519 ppm at the outfall at Chace Lake; most samples analyzed had results less than 100 ppm). This finding may be attributable to:

- the apparently limited volume of the release
- the robust efforts at removal and flushing immediately following the release, and
- natural degradation of the diesel fuel by native bacteria in the soil, ditch, and lake.

#### 1.4.2 CAMERA INSPECTION OF STORM SEWER LINE

As part of the Preliminary Investigation, a video camera inspection of the storm sewer line was performed. The storm sewer line passes through the immediate vicinity of the fuel polishing cabinet and is thought to be the primary conduit for release to an off-site area. The purpose of the camera inspection was to determine if visible breaks in the storm sewer line were present that might account for the migration of the released diesel fuel. Shook and Fletcher technicians carried out the inspection on February 25, 2025, with WSP observation. A report of findings is included in the Preliminary Investigation Report of April 21, 2025. In summary, an obstruction of large pieces of rock was encountered within the storm sewer line, before the immediate area of the polishing cabinet (release area) could be reached. Although the video inspection was not conclusive, the presence of a rock obstruction indicates damage to the storm line which may have allowed for entry of diesel fuel into the storm line and subsequent transport of the released diesel fuel to the downgradient storm sewer outfall. During the proposed remediation effort, WSP will observe the excavation contractor who will expose the top of the storm sewer line, if feasible, to inspect for damage and repair the storm sewer line, if appropriate.

#### 2 PROPOSED REMEDIATION

The following sections present a summary of the proposed remediation activities for the Site. ADEM Cost Proposal Forms for this effort, CP-3, are submitted separately.

#### 2.1 SOIL EXCAVATION

The fuel polishing cabinet will be disconnected and temporarily removed by a qualified petroleum equipment contractor. Care will be exercised to not release additional fuel during this procedure. Following removal of the polishing cabinet, WSP will contract with Action Environmental to perform impacted soils removal. Using either a mini-excavator, a hydroexcavator, and/or hand tools, the visually impacted soils and gravel around the original release location will be excavated and loaded into dump trucks for disposal at a subtitle D landfill as petroleum impacted soils waste. Care will be taken to minimize impacts to buried utilities in the excavation area. Although it is likely that some soil/gravel diesel fuel impacts extend beneath the concrete apron near the fuel polishing cabinet, this plan does not anticipate removal of the concrete except the pad that supports the polishing cabinet.

Based on findings of the Preliminary Investigation, soils near the fuel polishing cabinet include a thin topsoil layer, underlain by a geotextile fabric and then a mix of fill soil and gravel, with refusal on shaley sandstone bedrock encountered at approximately two feet below grade. Although groundwater was not observed entering the borings during the Preliminary Investigation, we anticipate that water percolating from higher elevation portions of the site, east of the release area, may be observed during excavation. A vacuum truck will be available to remove such water, if encountered.

If feasible, the excavation contractor will expose the top of the storm sewer line near the release area. The condition of the storm sewer line will be assessed. If repairs appear warranted, a separate mobilization may be needed to place trench boxes to allow for removal and replacement of damaged segments of piping,

Upon completion of excavation activities as depicted in Figure 6 (anticipated at approximately 30 cubic yards of soil and gravel), WSP proposes to spray the sidewalls and base of the excavation with Micro-Bac M-1000H (Appendix B), a bioremediation product which has been used successfully at many fuel remediation projects, including in Alabama, to enhance degradation of diesel in soil that cannot readily be removed by physical means. Appendix B includes a detailed description of the proposed treatment approach for this site.

The excavated area will be backfilled with compacted clayey soil fill, and a layer of geotextile will be placed over the area to restore the surface. The petroleum equipment contractor will then replace the fuel polishing cabinet. WSP recommends that leak absorbent material be placed in the base of the cabinet and inspected on a regular basis to more promptly identify a future release at these fittings.

WSP June 2025

#### 2.2 TREATMENT OF DITCH AND LAKE BANKS

Upon completion of treatment of the excavated area at the original release site, WSP will work with the contractor to spray apply the Micro-Bac bioremediation product to the banks of the ditch and the lake inlet, where residual diesel has been detected at low concentrations. Upon completion of treatment application, petroleum absorbent booms are not anticipated to be needed on these water bodies.

Successful treatment will be verified by collecting soil and/or sediment samples along the edges of the ditch and lake inlet, consistent with the sampling performed during the Preliminary Investigation. Samples will be collected 30 days, 60 days, and 90 days following treatment. Samples will be field screened with a PID, and up to 4 of the highest reading samples from each segment (ditch and lake inlet) will be submitted for laboratory analysis of TPH DRO and BETX+ naphthalene. Although not planned, subsequent applications of Microbac 1000H may be warranted in areas where COC reduction is not observed.

#### 3 SUMMARY REPORT

Upon completion of the following activities, a summary report will be prepared.

- Excavation
- Soil disposal
- Sewer line repair (if needed)
- Spray application of bioremediation product to the excavation
- Backfilling of the excavation
- Restoration of the fuel polishing cabinet, and
- Spray application of bioremediation product to the ditch and lake inlet banks.

A follow-up letter summarizing sampling results will be prepared and provided upon completion of the three follow-up sampling events under a separate cost proposal (CP-4).

The Summary Report will include scaled drawings and a photolog to document the remediation plan implementation. The follow-up letter report will contain laboratory analysis results and chain of custody records.

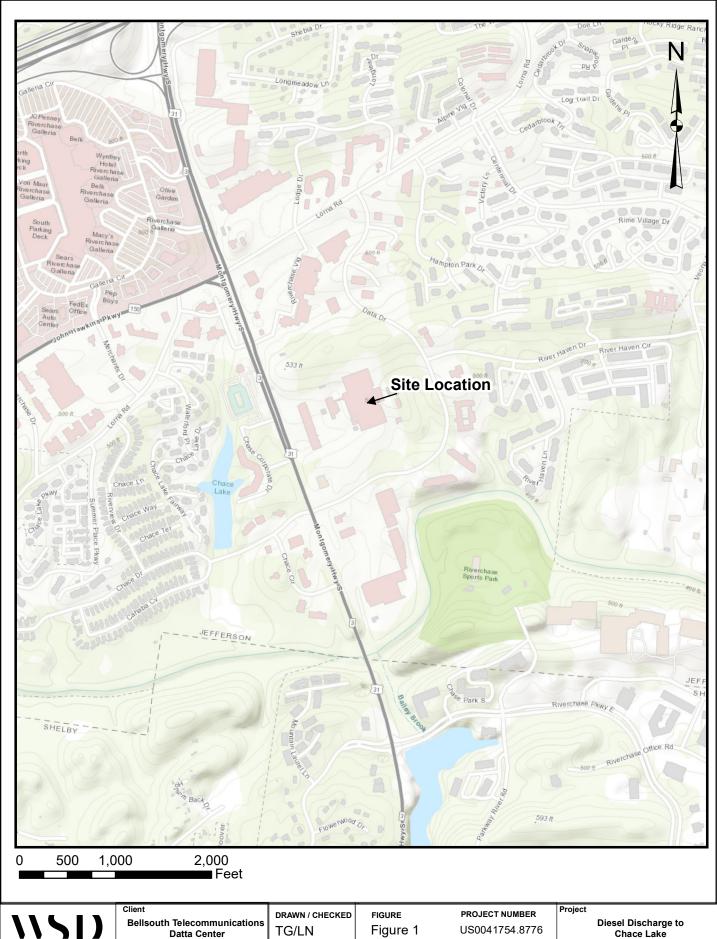
## 4 REFERENCES

Pearson, Joe. "Review of Preliminary Investigation Report (CP#1), AT&T Birmingham Regional Data Center." Alabama Department of Environmental Management (ADEM), May 1, 2025.

WSP. Preliminary Investigation Report, AT&T Birmingham Regional Data Center, April 21, 2025.

Micro-Bac International. "M-1000 Products for Bioremediation." www.micro-bac.com/<u>Hazardous and Contaminated Waste | Micro Bac</u>

# FIGURES



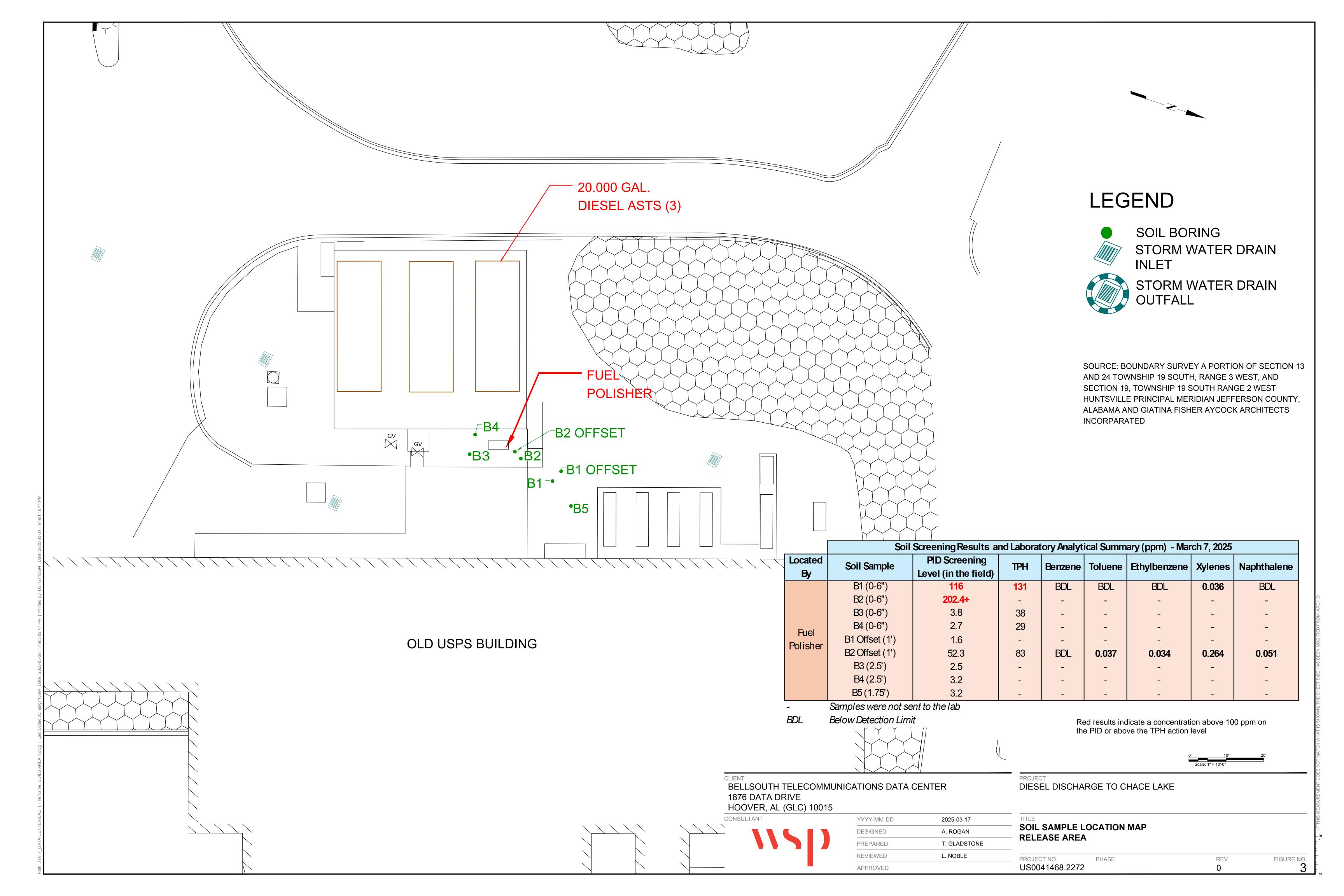
Bellsouth Telecommunications Datta Center 1876 Data Drive Hoover, AL (GLC) 10015

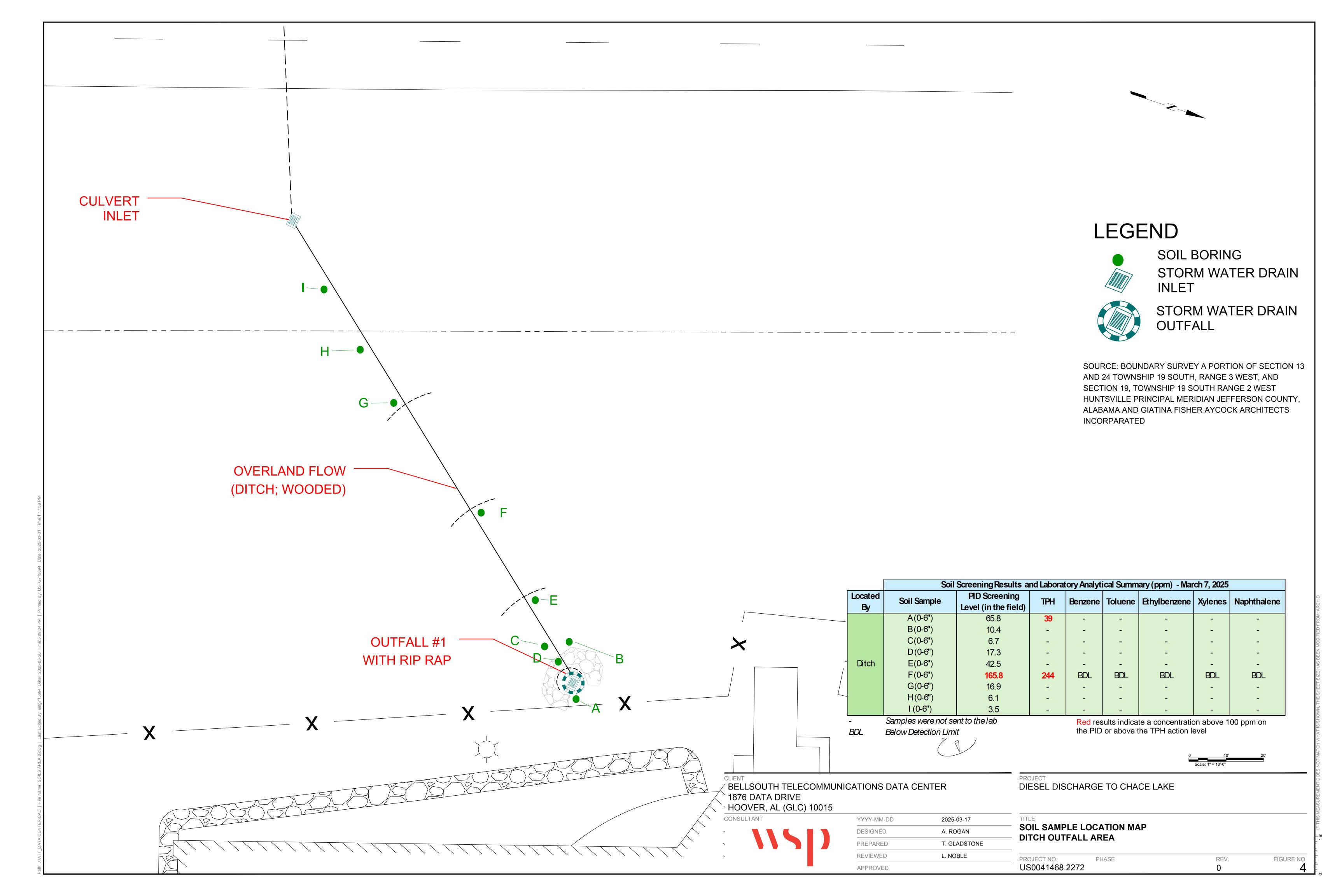
TG/LN REVISED 3/31/2025

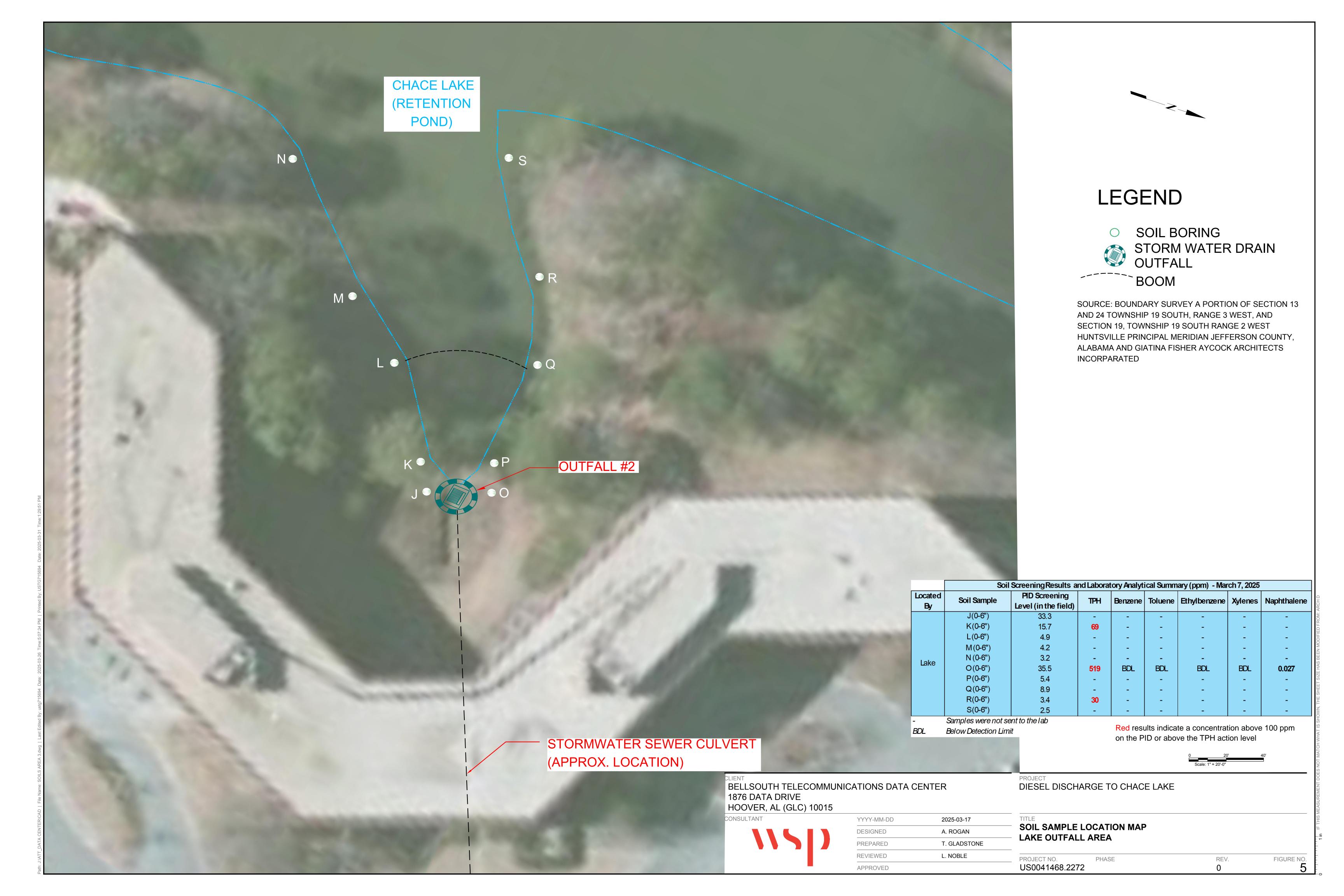
Figure 1 Title

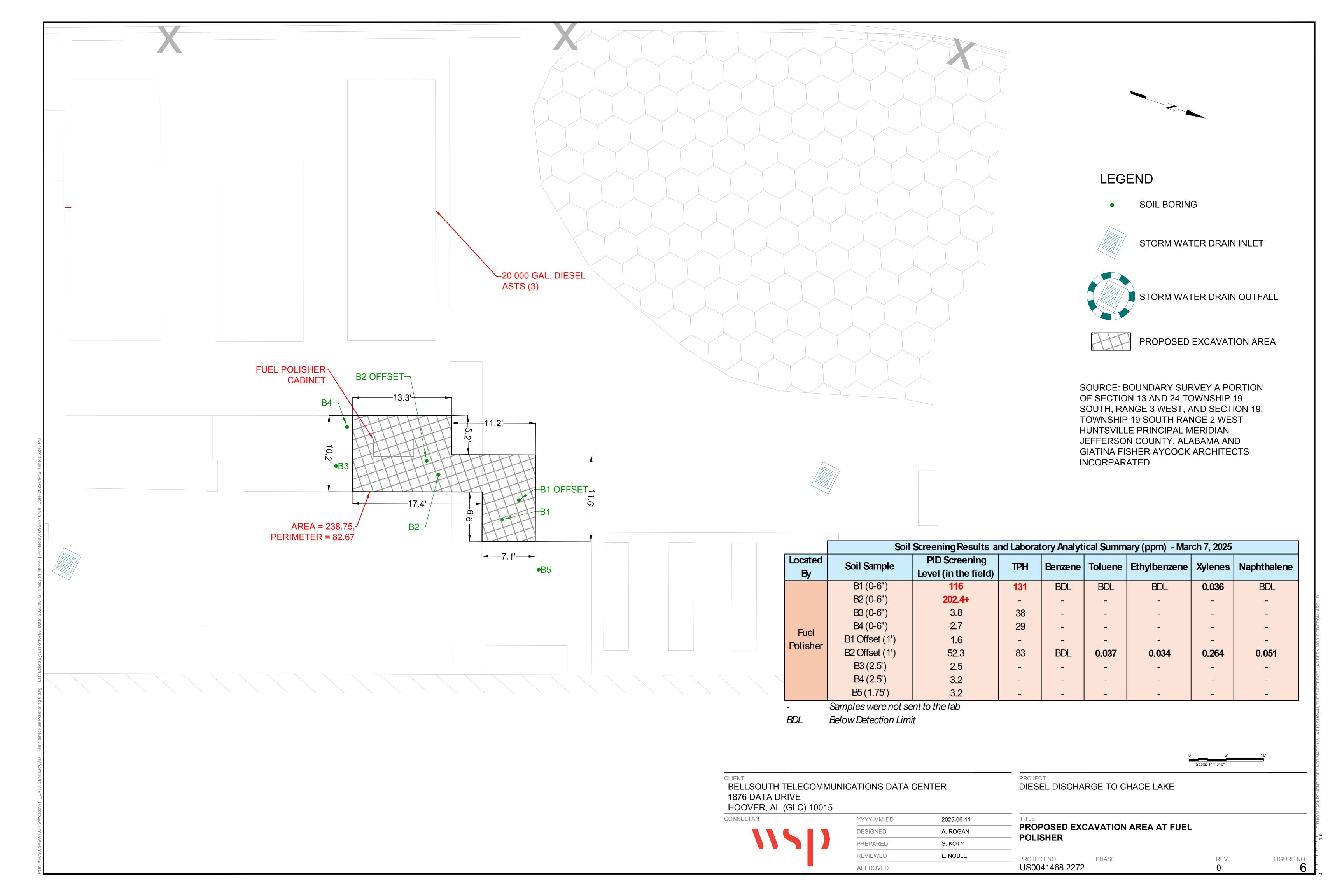
Topographic Map











# **APPENDICES**

# A ADEM CORRESPONDENCE



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

May 1, 2025

Mr. Ryan Barschdorf AT&T Services, Inc. 311 South Akard Street, Room 1200 Dallas, Texas 75202

Dear Mr. Barschdorf:

RE: REVIEW OF PRELIMINARY INVESTIGATION REPORT (CP#1)

AT&T Birmingham Regional Data Center

1876 Data Drive

Birmingham, Jefferson County, Alabama Facility I.D. Number: 14462-073-012031 UST Incident No.: AST25-12-01

ADEM File Code: AST251201/CORR07704

The Department has received and reviewed the Preliminary Investigation Report dated April 21, 2025, for the above referenced facility. Based on this review, the Department has determined that the report is satisfactory.

A cost proposal and plan for excavation of diesel impacted soil should be submitted in AEPACS by **June 30, 2025**.

Should there be any questions regarding this matter, please contact me via email at joe.pearson@adem.alabama.gov or by phone at (334) 271-7960.

Sincerely,

Joe Pearson Hydrogeologist

UST Corrective Action State Fund Section

Groundwater Branch

gol Pearson

Land Division

SJP/nl

Cc: WSP, 4000 Meadow Lake Drive, Suite 121, Birmingham, Alabama 35242

# **APPENDICES**

# B MICRO-BAC PRODUCT FACT SHEET



# Micro-Bac International

1884 Data Dr, Hoover, AL 35244

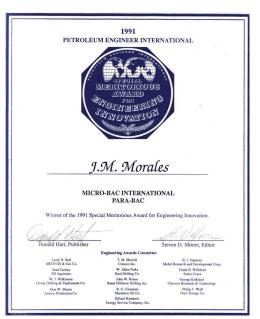




## Micro-Bac International, Inc.

Micro-Bac is a 40-year-old bacteria manufacturer, with a long history of success. We connect with clients in numerous different industries and work to create solutions that incorporate the use of bacteria.

We utilize artificial selection that rewards organisms that have natural positive mutations, these mutation enable them to not only survive but also accomplish the target objective.









# **Economics Drives Our Industrial Applications**

#### Responsible Hydrocarbon Production

» Responsible and Environmentally conscious production of hydrocarbons becomes an economic possibility with Para-Bac



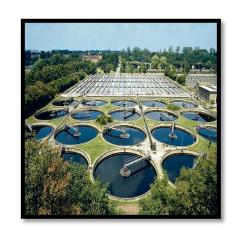
# Bioremediation of Hazardous contamination

» Environmental remediation that lets nature rebuild itself on an economical time frame with M-1000



#### Wastewater Operation Enhancement

Decreasing the carbon footprint while improving operational capacity and decrease dependence on traditional chemicals is possible with Micro-Bac



#### Improved Agricultural Production

» Increasing yield with reduced fertilizer & pesticidal usage, while decreasing waste rejected food imports with Agri-Bac



#### Animal Waste Management via Recycling Water

Decrease the dependence of fresh water while realizing what used to be impossible economics with the use of Mega-Bac & Lacto-Bac.







## M-1000® Product Line

- » M-1000 is designed to be a broad-spectrum remediation product. Our bacteria blends and nutrients are designed to work on wide range of organic contaminants in an even wider range of conditions.
- » Each of the products has been developed to contain as many as a dozen strains of specific hydrocarbon degrading bacteria.
- » The M-1000® can be applied in several different ways. Added directly to a containment vessel, injected monitoring/treatment well, sprayed on soil, mixed into contaminated soil, and even metered release in water ways.

#### **Benefits**

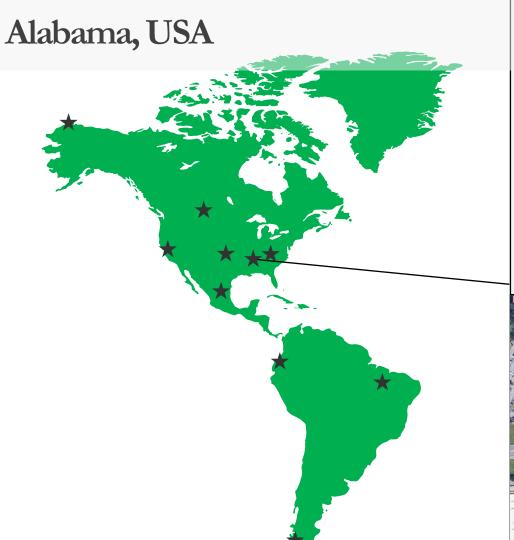
- Cost Effective
- Destroys Contaminate
- Selected, proven, and safe
- No digging & hauling required



#### **BIODEGRADABLE ORGANIC COMPOUNDS**

Acetic Acid, Naphtha Distillate, Alcohol, Oil/Grease Waste Benzene, Paint Thinner, Pentachlorophenol, Chlorinate Hydrocarbons, Perchloroethylene (PCE), Phenol, Cresol, Diesel Polychlorinated Biphenyls (PCBs), Ethyl Alcohol, Solvents Gasoline (BTEX), Jet Fuel, Toluene, Xylene, Kerosene, Ethylbenzene, Methyl Alcohol, Trichloroethylene (TCE), Waste Oil, Fuel, Oil Mineral Spirits, Methylene Chloride, Heating Oil, Crude Oil, Polyaromatic Hydrocarbons, And other





#### **Project Background**

Fuel Polisher Cabinet leaked and released into the local drains flowing under the roadway and out into a pond across the roadway.

#### Scale & Scope

Bacteria treatments are recommended for the impacted areas and post excavation zone prior to backfill.







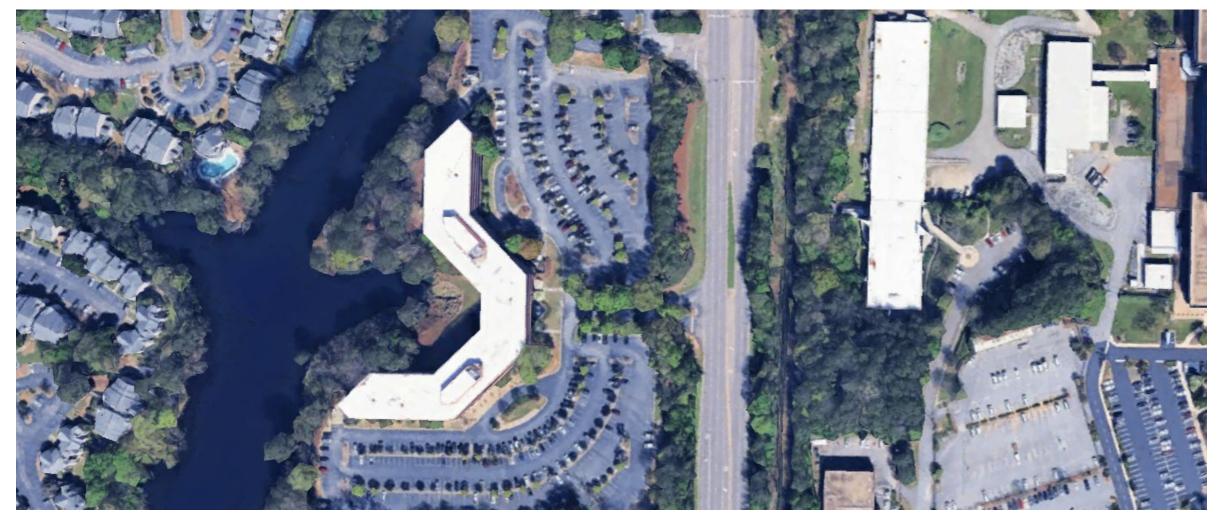


Site Investigation





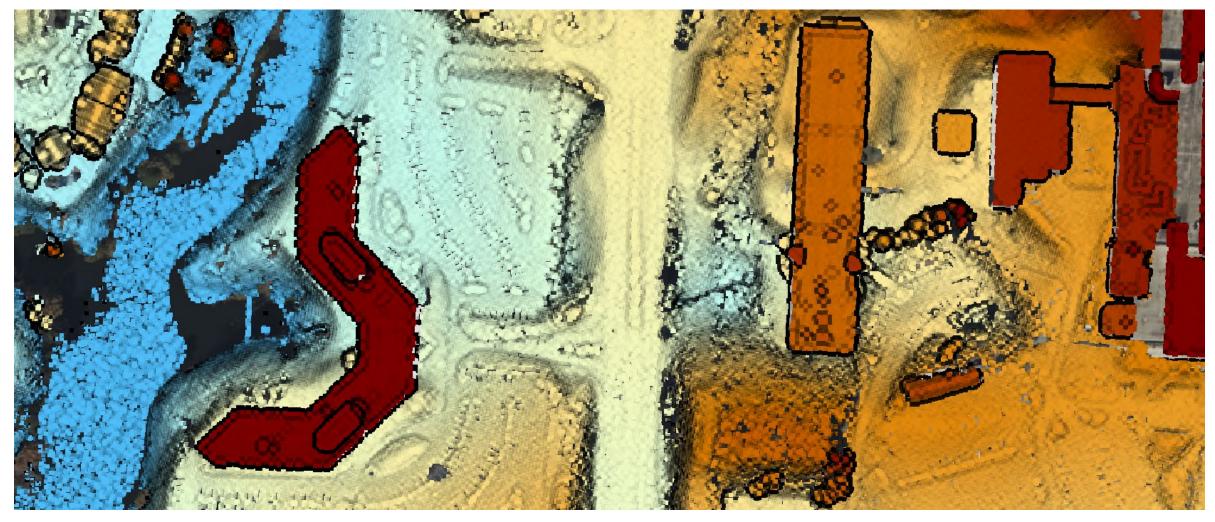
# 2006 Site image







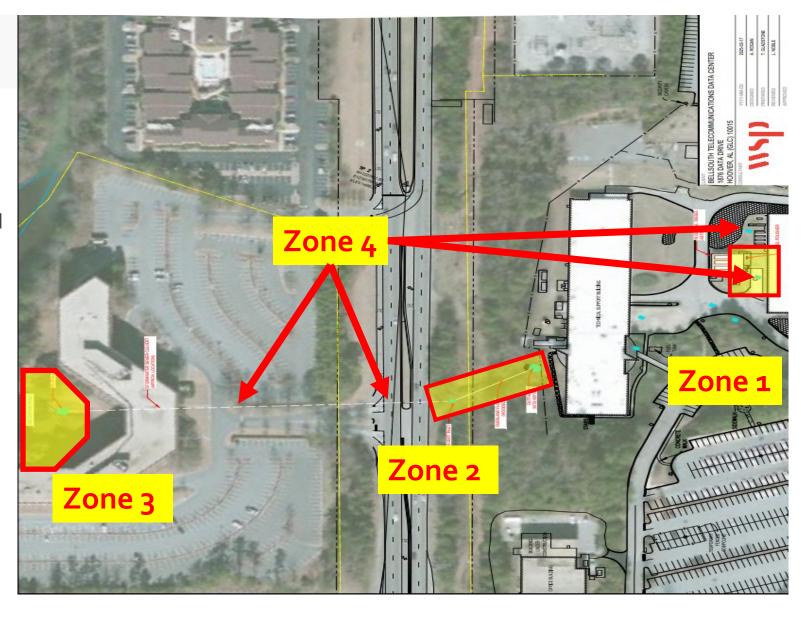
# 2006 Site image





# Zone Breakdown

- » Our treatment recommendation consists of four zones.
- » Zone 1: Fuel Polisher Pad
- » Zone 2: 150' run between TSB & Hwy 31
- » Zone 3: 200'-400' Run along shoreline
- » Zone 4: Flush of drains with Bacteria







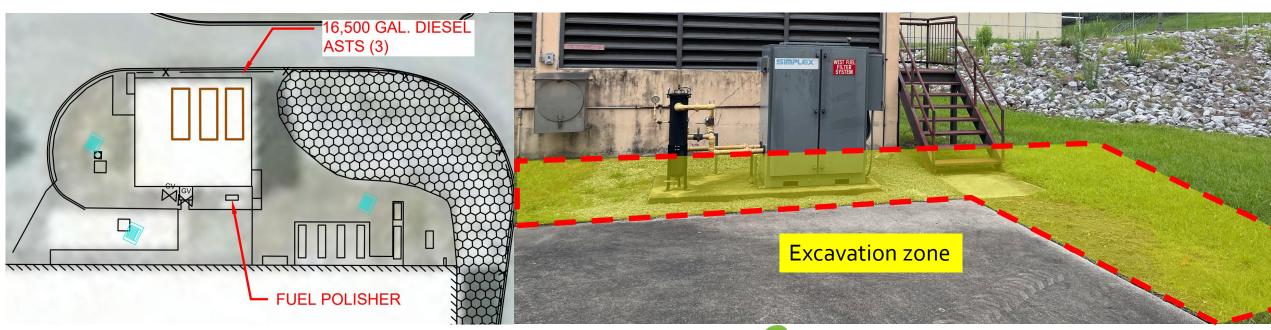
# Zone 1 – Treatment Recommendation

#### Remediation

- Soil will be excavated and then bacteria will be applied to ensure any remaining contamination is treated for.
- Area: 81 yds<sup>3</sup>
- » Application: Spray

#### Dosage

- Bacteria: 20 Gallons
- » Nutrient: 1.7 Gallons
  » Water: 80 Gallons







# Zone 2 – Treatment Recommendation

#### Remediation

- » Soil will be excavated and then bacteria will be applied to ensure any remaining contamination is treated for.
- » Area: 125 yds<sup>3</sup> » Application: Spray

#### Dosage

» Bacteria: 31.25 Gallons » Nutrient: 2.7 Gallons » Water: 123 Gallons





# Zone 3 – Treatment Recommendation

#### Remediation

- » Soil will be excavated and then bacteria will be applied to ensure any remaining contamination is treated for.
- » Area: 166 yds<sup>3</sup> » Application: Spray

#### Dosage

» Bacteria: 41.563 Gallons » Nutrient: 3.6 Gallons



» Water: 163 Gallons







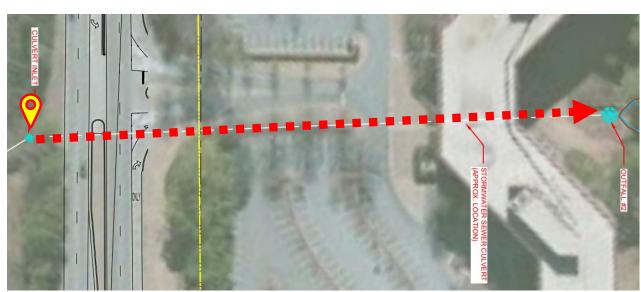
## Zone 4 – Treatment Recommendation

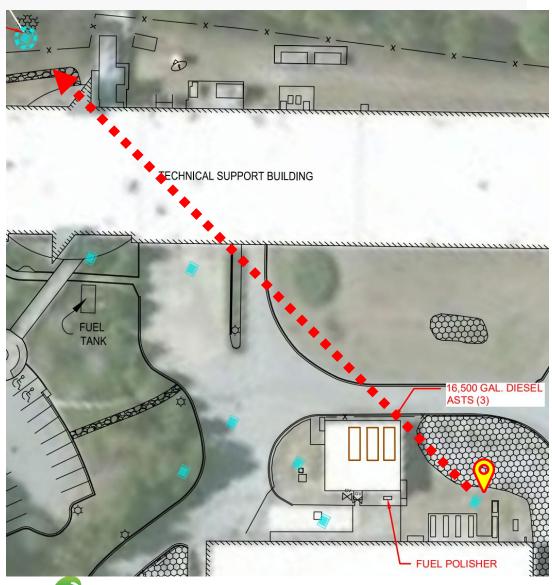
#### Remediation

- » A line flush utilizing a light treatment of bacteria that would allow any localized contaminate to be treated with bacteria
- » Application: flush

#### Dosage

» Bacteria: 17.19 Gallons
» Water: 163 Gallons







### **Cost Estimate**

#### Remediation

- » M-1000H\* = \$47.30/Gal
- » Tri-Phasic 12 = \$266.20/Gal
- » Bacteria + Nutrient Cost = \$7,332.60
- » Shipping & Materials = \$2,500
- » Total: \$9,832.60

Zone	Activity	Bacteria	Cost	Nutrien t	Cost
1	Spray	20	\$946.00	1.7	\$452.54
2	Spray	31.25	\$1,478.13	2.7	\$718.74
3	Spray	41.56	\$1,965.79	3.6	\$958.32
4	Flush	17.19	\$813.09	0	\$0
	Total	110	\$5,203.00	8	\$2,129.60

BioRemedy typically would itemize out everything (PPE, Fuel, Labor hrs., ES&I, equipment, etc.) but \$2,500 should be enough to cover our Expenses (travel, hotel, food, materials, etc.)





# Materials list

	Needed	Details	Who Brings
Bacteria	110 Gallons	2x Drums	BioRemedy
Nutrient	8 Gallons	2x 5-Gallon Jugs	BioRemedy
Water	416 Gallons	Source from pond?	?
275 Tote	1	Used for mixing & Spraying	?
Hose	250'	¾" w/ Spray Nozzle	BioRemedy
Electric/Gas Pump	1	Dura or Honda Diaphragm	BioRemedy
Extension Cord	200'	14 AWG	BioRemedy





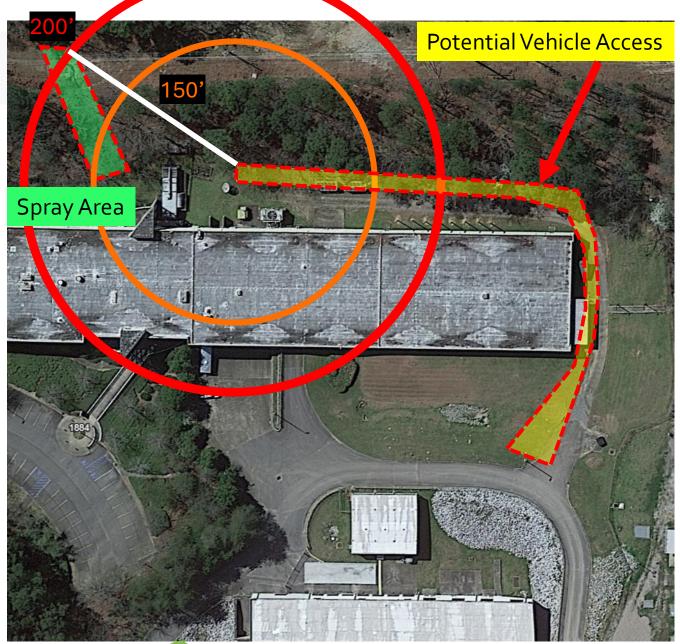
## Zone 2 – Treatment Considerations

#### Plan

- » 200' of hose will be utilized to spray the bacterial product along the banks.
- » Bacteria can be premixed into a 275-gallon tote then sprayed from that onto the site.

#### Limitations

» Access to the back of the building may be limited due to vegetation and new construction.





## Zone 3 – Treatment Considerations

#### Plan

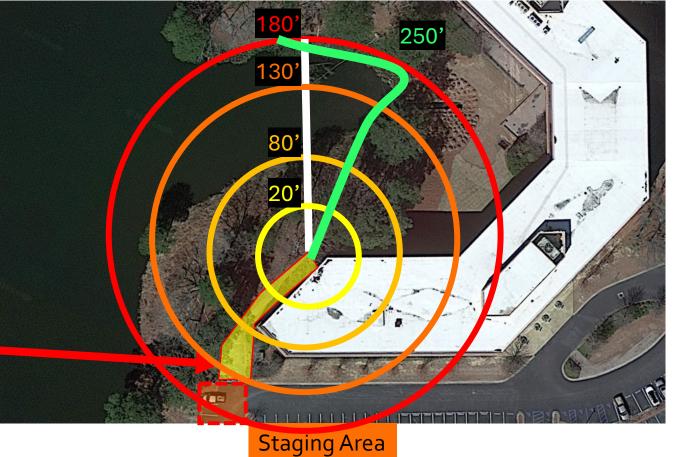
- » 250' of hose will be utilized to spray the bacterial product along the banks.
- » Bacteria can be premixed into a 275-gallon tote then sprayed from that onto the site.

#### Limitations

» Access to the back of the building may be limited due to the location of a temporary dumpster.

Potential Vehicle Access











# Thank You

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