

Champions Drive Substation 69kV Transformer Foundations

ADDENDUM #1

TO CONTRACT DOCUMENTS FOR: Project #CP231546 – Champions Drive Substation
69kV Transformer Foundations

ADVERTISEMENT DATE: September 25, 2025

PREPARED FOR: The Curators of the University of Missouri

CONSULTANT: Planning, Design & Construction
University of Missouri
130 General Services Building
(573) 882-6800

The contract documents for the above noted project and the work covered thereby and herein modified.

GENERAL INFORMATION:

- 1)
- 2)

PROJECT MANUAL:

- 1) Added IPES Soil Analysis as Appendix C,

DRAWINGS:

- 1) Updated drawing S-002 General Arrangement
- 2) Updated drawing S-310 Foundation section and details

END OF ADDENDUM #1

APPENDICES

APPENDIX A Geotechnical Report APP A

APPENDIX B HICO 69kV Transformer Shop Drawings APP B

APPENDIX C IPES GeoProbe MU Sampling Report APP C

DIVISION 2 EXISTING CONDITIONS (NOT USED)

DIVISION 3 CONCRETE

031000 CONCRETE FORMING AND ACCESSORIES

032000 CONCRETE REINFORCING

033000 CAST-IN-PLACE CONCRETE

DIVISION 4 MASONRY (NOT USED)

DIVISION 5 METALS

051200 STRUCTURAL STEEL FRAMING

DIVISION 6 WOOD AND PLASTICS, AND COMPOSITES (NOT USED)

DIVISION 7 THERMAL AND MOISTURE PROTECTION (NOT USED)

DIVISION 8 OPENINGS (NOT USED)

DIVISION 9 FINISHES (NOT USED)

DIVISION 10 SPECIALITIES (NOT USED)

DIVISION 11 EQUIPMENT (NOT USED)

DIVISION 12 FURNISHINGS (NOT USED)

DIVISION 13 SPECIAL CONSTRUCTION (NOT USED)

DIVISION 14 CONVEYING SYSTEMS (NOT USED)

DIVISION 21 FIRE SUPPRESSION (NOT USED)

DIVISION 22 PLUMBING (NOT USED)

DIVISION 23 MECHANICAL (NOT USED)

DIVISION 25 INTEGRATED AUTOMATION (NOT USED)

<u>DIVISION 26</u>	<u>ELECTRICAL</u>
260500	COMMON WORK RESULTS FOR ELECTRICAL
260519	LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
260526	GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
260529	HANGARS AND SUPPORTS FOR ELECTRICAL SYSTEMS
260533	RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS
260536	CABLE TRAYS FOR ELECTRICAL SYSTEMS
260543	UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS
262416	PANELBOARDS
<u>DIVISION 27</u>	<u>COMMUNICATIONS (NOT USED)</u>
<u>DIVISION 28</u>	<u>ELECTRONIC SAFETY AND SECURITY (NOT USED)</u>
<u>DIVISION 31</u>	<u>EARTHWORK (INCLUDE GEOTECH REPORT)</u>
311000	SITE CLEARING
312000	EARTH MOVING
316329	DRILLED CONCRETE PIERS AND SHAFTS
<u>DIVISION 32</u>	<u>EXTERIOR IMPROVEMENTS (NOT USED)</u>
<u>DIVISION 33</u>	<u>UTILITIES (NOT USED)</u>
<u>DIVISION 34</u>	<u>TRANSPORTATION (NOT USED)</u>
<u>DIVISION 37</u>	<u>TRANSMISSION (NOT USED)</u>

END OF SECTION

APPENDIX C

IPES SOIL ANALYSIS



INDUSTRIAL & PETROLEUM ENVIRONMENTAL SERVICES, INC.

University of Missouri
Champions Drive Transformers
Columbia, Missouri
October 1, 2025

EXECUTIVE SUMMARY

Petroleum odors were reported in geotechnical soil borings completed on July 17, 2025. The geotechnical work was being completed for an electrical interconnection and substation at the University of Missouri. A future soil excavation at the site is planned for the installation of two (2) 69kV transformer pads and piers. Industrial and Petroleum Environmental Services, Inc. (IPES) was contacted by the University of Missouri to provide further assessment of the reported petroleum impacted soils.

PROJECT DESCRIPTION

The University of Missouri is planning on constructing an electrical interconnection and substation approximately 650 feet southeast of the intersection of Champions Drive and East Stadium Boulevard in Columbia, Missouri. A site location map is included as **Attachment 1, Figure 1**.

A geotechnical assessment was completed at the site in July 2025, to determine the suitability of the subsurface soils for the planned construction activities at the site. During completion of the geotechnical soil investigation, petroleum vapors were reported in multiple geotechnical soil borings.

As part of the electrical interconnection and substation project, a soil excavation is planned at the site for the construction of two (2) 69kV transformers, specifically, for the transformer pads and pier foundations. As noted, IPES was contacted by the University to provide further assessment of the reported petroleum impacted soils. Due to the presence of petroleum vapors in multiple geotechnical soil borings, additional soil assessment was necessary to determine proper disposal and handling of potentially contaminated soils.

The University of Missouri estimated that approximately 350 cubic yards of soil will be excavated during the construction of the two (2) 69kV transformer pads and pier foundations. In accordance with the Missouri Risk Based Corrective Action (MRBCA) guidance document, for petroleum impacted sites, one (1) soil sample is required for every 100 cubic yards of petroleum impacted soil excavated. Based on the estimated volume of soil to be excavated (350 cubic yards), IPES determined that four (4) total soil samples were needed from the excavated soils. The University of Missouri provided detailed engineering drawings showing the locations of the two (2) 69kV transformers. IPES completed two (2) soil borings to refusal for each electrical transformer. One (1) soil sample was collected from each soil boring. Soil boring locations are included on **Attachment 1, Figures 2 and 3**.

UNDERGROUND UTILITY LOCATION

Prior to conducting the soil investigation, staff from IPES contacted the Missouri One Call System at 1-800-DIGRITE to request a locate of the underground utilities at the subject site. IPES informed Missouri One Call of the location and nature of the work to be conducted.

SUBSURFACE SOIL SAMPLING

IPES mobilized a GeoProbe™ model 7822 DT hydraulic soil probe to the site for the completion of four (4) soil borings. As noted, two (2) soil borings were completed within the proposed foundation area of each of the two (2) 69Kv transformers.

The soil borings were completed and sampled as follows: A five-foot macro-core sampling tube containing a disposable acetate liner was advanced. A soil core was retrieved from the liner and screened for the presence of petroleum impacts utilizing a photo-ionization detector (PID). All four (4) soil borings were terminated at refusal, which was encountered at depths ranging from 16 feet below ground surface (bgs) to 22 feet bgs.

Field screening utilizing the PID meter indicated minor amounts of potential petroleum impacts. Petroleum impacts were not physically observed in any of the soil borings based on visual or olfactory observations. One (1) soil sample was collected from each soil boring for laboratory analysis at the location within each boring with the highest PID reading.

Following completion of site activities, all soil borings were abandoned in accordance with the provisions of 10 CSR 23 as established by the Missouri Department of Natural Resources (MDNR) Geologic Survey and Resource Assessment Division (GSRAD). A soil boring registration form is included in **Attachment 3**. Soil boring logs are also included in **Attachment 3**. Photographs are included in **Attachment 4**.

Sampling personnel wore clean disposable nitrile gloves during the screening and collection of soil samples. Samples were collected into certified clean containers appropriate for the required analyses. Containers were pre-preserved where appropriate. All sample containers received a sample label identifying the project name, location and interval of collection, date, and time of collection. Following collection, each sample was entered onto a chain-of-custody form indicating the pertinent site information, the sample collector, location, date, and time of collection. Additional notations regarding the number of containers per sample and analysis requested were also made.

Soil samples were placed on ice following collection. Custody of the samples was maintained prior to sealing and delivering to the analytical laboratory. The soil samples were analyzed for constituents associated with leaded gasoline and diesel fuel, including: benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN), total petroleum hydrocarbons (TPH) as gasoline range organics (TPH-GRO), TPH as Diesel Range Organics (TPH-DRO) and TPH as Oil Range Organics (TPH-ORO). Please see the attached analytical results, chain-of-custody forms and documentation of analytical QA/QC. Soil data are summarized on **Attachment 2, Tables 1 and 2**.

ANALYTICAL METHODS

Soil samples were submitted for analysis appropriate to the scope of the investigation. Laboratory analysis conformed to the protocol set forth by USEPA SW846 and approved by the MDNR for use at petroleum storage tanks site. Where applicable, samples were submitted for the analysis of BTEXN, TPH-GRO, EDB, EDC, and oxygenates via Method 8260B; TPH-DRO and TPH-ORO via Method 8270C, and for total lead utilizing EPA method 200.8. Laboratory analytical data sheets are included as **Attachment 6**.

INVESTIGATION DERIVED WASTES (IDW)

IPES staff disposed of personal protective equipment and disposable sample tubes as solid waste. Due to the usage of the geoprobe, soil cuttings were of a *de minimis* quantity.

SITE SAFETY

IPES developed a generic site safety plan for use by personnel during the field investigation. The safety plan required the use of modified USEPA Level D personnel protective equipment consisting of hard hats, steel toed boots, safety glasses, and rubber/nitrile gloves.

ANALYTICAL RESULT ASSESSMENT

Field screening readings utilizing a PID indicated the possible presence of minor petroleum impacts. However, the minor impacts noted could have been a result of temperature and/or humidity (which can affect the PID meter). The physical assessment of the soil samples indicated no detectable impacts in any of the soil cores.

The analytical results obtained for soil samples collected from the subject site were evaluated with respect to the presence or absence of petroleum constituents and total lead. Current MDNR guidelines for assessing contamination at petroleum storage tanks sites are found within the framework of risk assessment as provided in the Missouri Risk Based Corrective Action (MRBCA) guidance document. The guidance document contains tabulated values for individual contaminants used to assess a site's impact to different receptors. The soil samples were compared to the MRBCA Default Target Levels (DTLs), which are the most conservative target levels, and are protective of drinking water.

The soil analytical results indicated the following:

- Except for total lead, all four (4) soil samples yielded concentrations of constituents of concern (COCs) that were less than the MRBCA DTLs.
- Concentrations of total lead were reported in all soil samples at concentrations which exceed MDNR DTLs. However, total lead is a naturally occurring metal in Missouri soils. Concentrations of total Lead are less than background lead levels naturally occurring in Boone County, Missouri. Levels for metals for Boone County, reported by the United States Geological Survey (USGS), are included in **Attachment 5**.

CONCLUSIONS

IPES completed four (4) soil borings to evaluate potential petroleum impacts for soil that will be excavated for construction of two (2) 69kV transformer pads and transformers. Four (4) soil samples were collected and analyzed by a laboratory for leaded gasoline fuel and diesel fuel. With the exception of lead, which is a natural occurring metal in Missouri soils, concentrations of COCs in all four (4) soil samples were less than the MRBCA DTLs, which are protective of drinking water. Therefore, no special disposal or handling requirements are necessary for excavated soils for the two (2) 69kV transformer pads or piers.

General Comments

This report includes analysis of the available information and does not reflect any variations of subsurface stratigraphy or contaminant levels which may occur between sampling locations. Actual subsurface conditions may vary, and the extent of such variations may not become evident without further investigation. If variations appear evident, it will be necessary to reevaluate the conclusions of this report.

Missouri Law requires the notification to the appropriate state agency of reportable releases of hazardous substance pursuant to Chapters 260.500 through 260.552 of the Revised Statutes of Missouri and in 10CSR24-1.010 through 21-3.00 of the Code of State Regulations adopted thereunder. According to statutory requirements, found in Chapter 260.5.5(4) RSMo, release of petroleum product in excess of 50 gallons must be reported to the MDNR by the responsible party.

Conclusions drawn by others from the results of the work should recognize the limitations of the methods used. Please note that IPES does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering practices, within the constraints of the client's directives. It is intended for the exclusive use of the client for specific application to the assessed property.

ATTACHMENT 1

FIGURES

FIGURE 1



FIGURE 2

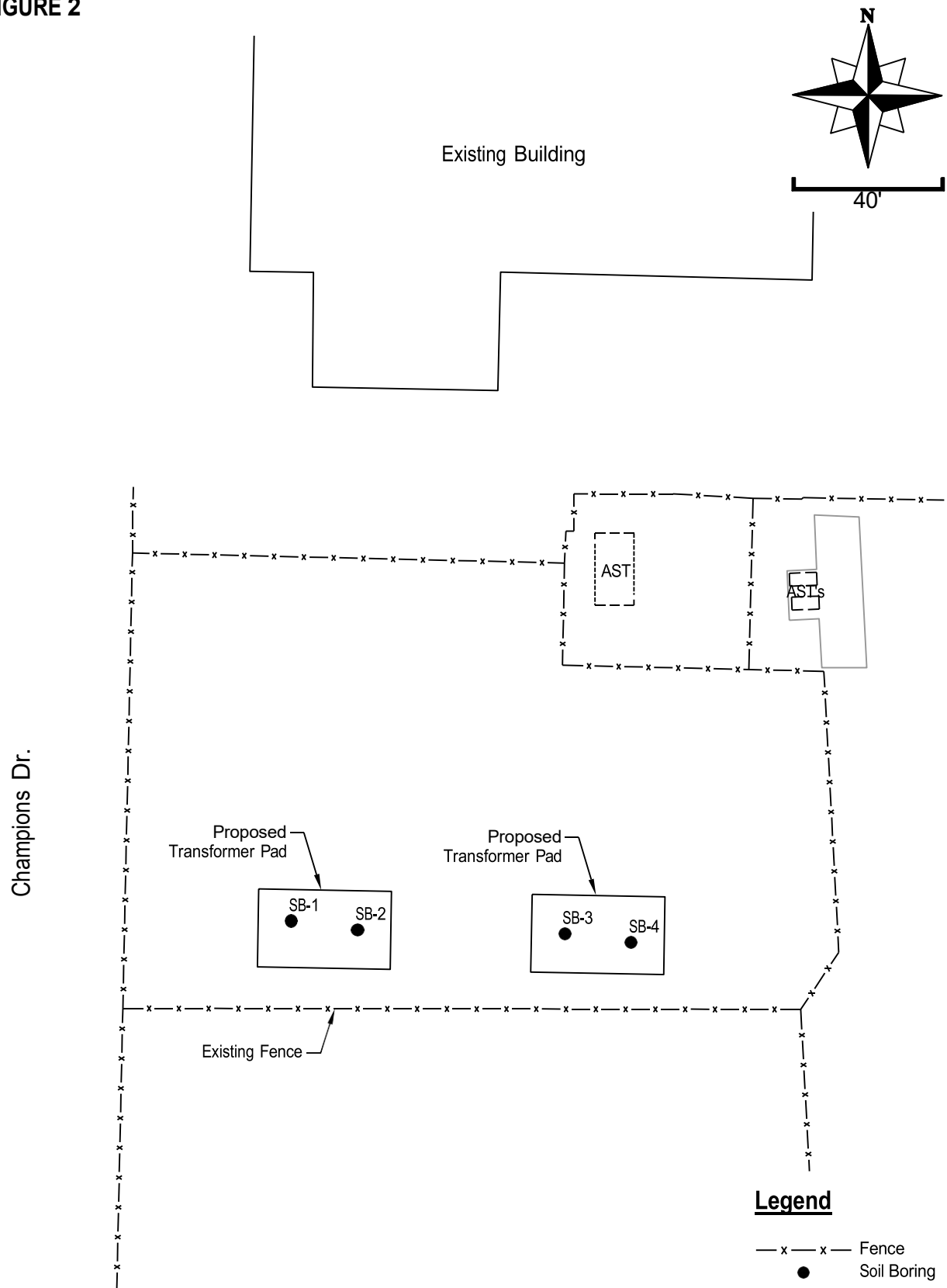


FIGURE 3



ATTACHMENT 2

TABLES

TABLE 1
University of Missouri
Champion Drive Transformers

Soil Analytical Data

Sample ID No.	Sample Date	Sample Depth (ft)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	MtBE (mg/kg)	EDB (mg/kg)	EDC (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)
SB-1	09/26/25	3-4	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<1	<20	<20
SB-2	09/26/25	10-11	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<1	<20	<20
SB-3	09/26/25	4-5	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<1	<20	<20
SB-4	09/26/25	7-8	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<1	<20	46
Target Levels													
Default Target Levels (DTLs) (mg/kg)			0.0561	29.8	39.9	24.7	0.325	0.398	0.000473	0.0206	385	4150	124000
Non-Residential - Soil Vapor to Indoor Air Inhalation (mg/kg)			1.98	4010	1550	199	136	113	0.452	0.691	3100	33400	NA

Sample COC Concentrations indicated in bold are above laboratory detection limits

Unless otherwise noted, all samples run by EPA Method 8260/8270

Sample COC Concentrations indicated in **BLUE** are above DTLs

Sample COC Concentrations indicated in **GREEN** are above non-residential use RBTs for soil vapor to indoor air inhalation

mg/kg = milligrams per kilogram (parts per million)

MtBE = Methyl Tertiary Butyl Ether

TPH-GRO = Total Petroleum Hydrocarbons as Gasoline Range Organics

TPH-DRO/ORO = Total Petroleum Hydrocarbons as Diesel/Oil Range Organics

EDB = 1,2-Dibromoethane

EDC = 1,2-Dichloroethane

TABLE 2
University of Missouri
Champion Drive Transformers

Soil Data - Oxygenates and Lead

Sample ID No.	Sample Date	Sample Depth (ft)	TAME (mg/kg)	TBA (mg/kg)	ETBE (mg/kg)	DIPE (mg/kg)	Total Lead (mg/kg)
SB-1	09/26/25	3-4	<0.005	<0.05	<0.005	<0.005	8.1
SB-2	09/26/25	10-11	<0.005	<0.05	<0.005	<0.005	7.28
SB-3	09/26/25	4-5	<0.005	<0.05	<0.005	<0.005	9.62
SB-4	09/26/25	7-8	<0.005	<0.05	<0.005	<0.005	13.6
Target Levels							
Default Target Levels (DTLs) (mg/kg)			0.677	0.558	0.106	4.12	3.74
Non-Residential - Soil Vapor to Indoor Air Inhalation (mg/kg)			47.1	8260	207	265	660

COC Concentrations indicated in bold are above laboratory detection limits

Unless otherwise noted, all samples run by EPA Method 8270

Sample COC Concentrations indicated in **BLUE** are above DTLs

Sample COC Concentrations indicated in **GREEN** are above non-residential use RBTLs for soil vapor to indoor air inhalation

mg/kg = milligrams per kilogram (parts per million)

TAME - Tertiary-amyl-methyl-ether

TBA - Tertiary-butyl-alcohol

ETBE - Ethyl-tert-butyl-ether

DIPE - Diisopropyl ether

ATTACHMENT 3

BORING LOGS



INDUSTRIAL &
PETROLEUM
ENVIRONMENTAL
SERVICES, INC.

LOG OF BORING SB-1

(Page 1 of 1)

University of Missouri
Champions Drive Transformers
Columbia, Missouri

IPES Project # 70802

Date Started : September 26, 2025
Date Completed : September 26, 2025
Hole Diameter : 2-inch
Drilling Method : Dual Tube
Sampling Method : Continuous Sampling

Drilling Company : IPES
Northing Coord. :
Easting Coord. :
Survey By : DLE
Logged By : David Epema Jr

Depth in Feet	Surf. Elev. 0	USCS	GRAPHIC	DESCRIPTION	Samples	Water Level	PID Reading - ppm	Other	Boring: SB-1
0	0	GW		GRAVEL					
		CL		CLAY, brown and grey, mottled, stiff, damp, some gravel, fill	1		0.1		
					2		24.3		
					3		25.7	Lab Sample	
					4		10.3		
5	-5	CL		CONCRETE, probe refusal. Moved north 2 feet. Concrete again at 4.75 feet. However, were able to probe through it.	5		7.1		
				CLAY, brown and grey, mottled, some gravel, stiff, damp	6		1.1		
		CL		CLAY, dark grey, some sand, moist, stiff	7		0.0		
					8		0.0		
					9		0.0		
10	-10	CL		CLAY, brown, stiff, moist	10		0.0		Bentonite Seal
				SHALEY CLAY, grey, dry, stiff	11		0.7		
		CL			12		1.0		
					13		0.0		
					14		0.0		
15	-15			SHALEY CLAY, brown, dry, stiff	15		0.0		
		CL			16		0.0		
					17		0.0		
					18		0.0		
					19		0.0		
20	-20				20		0.0		
				Bottom of Boring - Probe Refusal					
25									



INDUSTRIAL &
PETROLEUM
ENVIRONMENTAL
SERVICES, INC.

LOG OF BORING SB-2

(Page 1 of 1)

University of Missouri
Champions Drive Transformers
Columbia, Missouri

IPES Project # 70802

Date Started : September 26, 2025
Date Completed : September 26, 2025
Hole Diameter : 2-inch
Drilling Method : Dual Tube
Sampling Method : Continuous Sampling

Drilling Company : IPES
Survey By : DLE
Logged By : David Epema Jr

Depth in Feet	Surf. Elev. 0	USCS	GRAPHIC	DESCRIPTION	Samples	Water Level	PID Reading - ppm	Other	Boring: SB-2
0	0	GW		GRAVEL					
		CL		CLAY, brown, mottled, some gravel, moist, stiff	1		2.3		
					2		2.2		
		CL		SILTY CLAY, grey, mottled, some gravel, moist, stiff	3		1.6		
					4		0.6		
5	-5	CL		CLAY, brown, mottled, some gravel, firm, moist	5		0.7		
					6		0.6		
					7		0.6		
		CL		CLAY, grey, mottled, firm, moist, some gravel	8		1.4		
					9		1.0		
10	-10	CL		CLAY, brown, some gravel, very stiff, damp	10		4.1	Lab Sample	
				SHALEY CLAY, brown, dry, very stiff	11		2.2		
					12		0.3		
		CL			13		0.1		
					14		0.6		
15	-15				15		0.0		
		CL		CLAY, brown, firm, very moist, some gravel	16		0.0		
				Bottom of Boring - Probe Refusal					
20	-20								
25									

Bentonite Seal



LOG OF BORING SB-3

(Page 1 of 1)

University of Missouri
Champions Drive Transformers
Columbia, Missouri

IPES Project # 70802

Date Started : September 26, 2025
Date Completed : September 26, 2025
Hole Diameter : 2-inch
Drilling Method : Dual Tube
Sampling Method : Continuous Sampling

Drilling Company : IPES
Survey By : DLE
Logged By : David Epema Jr

Depth in Feet	Surf. Elev. 0	USCS	GRAPHIC	DESCRIPTION	Samples	Water Level	PID Reading - ppm	Other	Boring: SB-3
0	0	GW		GRAVEL					
				CLAY, brown, mottled, some gravel, moist, stiff	1		4.6		
					2		7.0		
					3		11.7		
					4		13.1	Lab Sample	
5	-5	CL			5		2.3		
					6		3.2		
					7		5.2		
					8		2.7		
				CHERT	9		1.6		
10	-10	CL		CLAY, dark grey, some sand and gravel, firm, very moist	10		1.8		
					11		0.0		
				CLAY, brown and grey, damp, very stiff	12		0.1		
					13		3.7		
					14		1.7		
15	-15			CLAY, brown, very stiff, moist	15		0.5		
					16		0.0		
					17		1.4		
					18		0.3		
					19		0.0		
20	-20				20		2.4		
					21		1.2		
		LS		WEATHERED LIMESTONE, light grey					
				Bottom of Boring - Probe Refusal					
25									

Bentonite Seal



LOG OF BORING SB-4

(Page 1 of 1)

University of Missouri
Champions Drive Transformers
Columbia, Missouri

IPES Project # 70802

Date Started : September 26, 2025
Date Completed : September 26, 2025
Hole Diameter : 2-inch
Drilling Method : Dual Tube
Sampling Method : Continuous Sampling

Drilling Company : IPES
Survey By : DLE
Logged By : David Epema Jr

Depth in Feet	Surf. Elev. 0	USCS	GRAPHIC	DESCRIPTION	Samples	Water Level	PID Reading - ppm	Other	Boring: SB-4
0	0	GW		GRAVEL					
				CLAY, brown, mottled, some gravel, moist, stiff	1		2.1		
					2		2.2		
		CL		Probed to 5 feet bgs. Refusal. Concrete. Moved 2 feet north, probed to 6.5 feet to refusal on concrete. Moved 2 feet south of original location. Probed to 6.5 feet. Concrete. Were able to probe through it.	3		4.6		
5	-5				4		0.0		
					5		0.5		
				CONCRETE					
				CLAY, brown, moist, stiff, some gravel	6		15.4	Lab Sample	
					7		12.4		
10	-10	CL			8		2.6		
					9		3.6		
					10		4.3		
					11		0.0		
		CL		SILTY CLAY, dark grey, wet, firm	12		0.5		
				BRICK	13		2.5		
15	-15			CLAY, brown, mottled, moist, stiff, some chert	14		0.0		
		CL			15		0.5		
					16		0.0		
					17		0.2		
20	-20	LS		WEATHERED LIMESTONE, light grey	18		0.5		
				Bottom of Boring - Probe Refusal					
25									



Bentonite Seal

 MISSOURI DEPARTMENT OF NATURAL RESOURCES MISSOURI GEOLOGICAL SURVEY Well Plugging Registration Report: Domestic, Public, Multi-Family, High Yield, Open Loop Heat Pump, Monitoring, Nested Monitoring, Closed Loop Heat Pump					FOR OFFICE USE ONLY					
					REFERENCE NUMBER 00512501			REVENUE NUMBER 121715		
					REGISTRATION NUMBER B042635			CHECK NO. 3745		
					DATE RECEIVED		APPROVED BY DNR USERID		APPROVAL DATE 12/23/2015	
TYPE Monitoring		DATE WELL PLUGGED 12/14/2015		DRILL AREA Area 1		COST SHARE?		VARIANCE #		
WELL INFORMATION										
REFERENCE NUMBER OF PLUGGED WELL IF KNOWN		(LEAVE REMINDER OF SECTION BLANK IF REFERENCE NUMBER IS KNOWN)					DATE WELL COMPLETED			
DEPTH OF TOP OF CASING		DEPTH OF BOTTOM OF CASING		CASING OUTSIDE DIAMETER		BOREHOLE DIAMETER		CASING MATERIAL		STATIC WATER LEVEL
SITE INFORMATION										
SITE NAME UNIVERSITY GARAGE			ADDRESS (STREET, CITY, STATE, ZIP) COLUMBIA, MO							
DECIMAL DEGREE COORDINATES 38.93349, -92.32622			DEGREES MINUTES SECONDS 38°56'0.57" 92°19'34.4"				COUNTY BOONE			
OWNER INFORMATION										
OWNER NAME				ADDRESS (STREET, CITY, STATE, ZIP)						
UNIVERSITY OF MISSOURI-COLUMBIA				#8 RESEARCH PARK DEVEL BLDG COLUMBIA, MO 65211						
GENERAL INFORMATION										
DATE WELL PLUGGED 12/14/2015		WELL REMOVED BY EXCAVATION		PUMP REMOVED FROM WELL		CASING CUT OFF BELOW SURFACE		DEPTH CUT OFF: IF NO, STATE REASON:		
WELL ABANDONED DUE TO CONNECTION TO MUNICIPALITY OR RURAL WATER DISTRICT N					NAME OF DISTRICT					
REMARKS/COMMENTS, DESCRIBE HOW LOOPS WHERE FILLED:										
PLUGGING INFORMATION					GENERAL INFORMATION					
PLUGGING MATERIAL	TOP DEPTH	BOTTOM DEPTH	AMOUNT	UNIT	INSTALLATION METHOD OF GROUT ☒	EXCAVATION GRAVITY ☐	TREMIE PRESSURE REVERSE TREMIE ☐	TREMIE ☐		
					TONS OF FILL USED		CUBIC YARDS OF FILL USED			
					FINISHED SURFACE MATERIAL Asphalt		SURFACE MATERIAL DEPTH		WELL CHLORINATED BEFORE PLUGGING	
DRILLER INFORMATION										
					DRILLER BUSINESS INDUSTRIAL & PETROLEUM ENVIRONMENTAL SERVICES, INC		PERMIT # 004709		NAME BRADLEY SCHUMAN	
					PRIMARY CONTRACTOR BUSINESS INDUSTRIAL & PETROLEUM ENVIRONMENTAL		PERMIT # 004709		NAME BRADLEY SCHUMAN	

SERVICES, INC		
DRILLER APPRENTICE BUSINESS	PERMIT #	NAME

ATTACHMENT 4

PHOTOGRAPHS



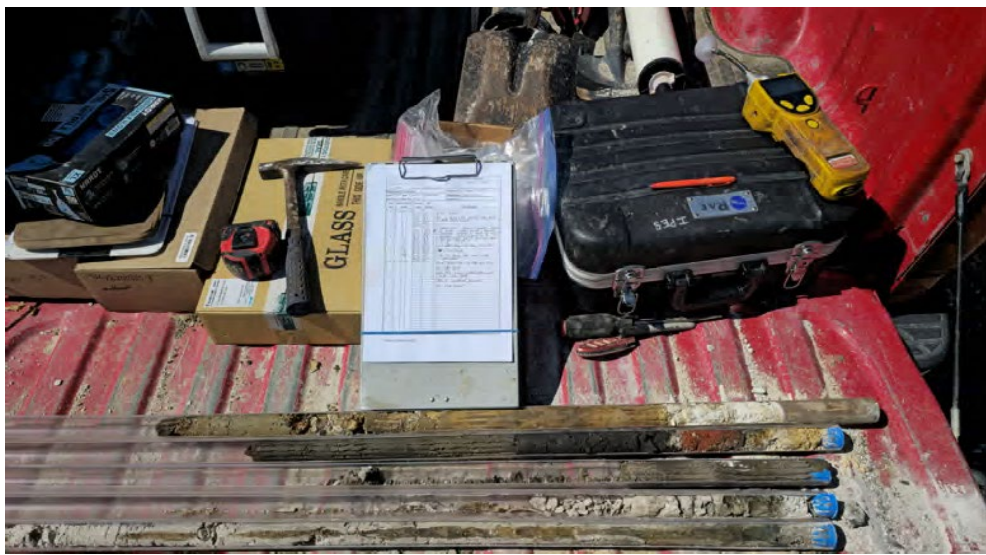
1. Soil Boring SB-1.



2. Soil Boring SB-3.



3. Soil Boring SB-4.



4. Soil Boring B-4 Soil Core.

ATTACHMENT 5

BOONE COUNTY LEAD LEVELS



[Mineral Resources](#) [Online Spatial Data](#) [National Geochemical Survey database](#)

Average concentrations of elements in Boone County, Missouri

[Counties page](#) > [Pb in Conterminous US](#) > [Pb in central US](#) > Averages in Boone County {Calculated from cells in the geochemical grid plotting in this area.}

Element	Symbol	Mean	Std. dev.	Minimum	Maximum
Aluminum	Al(wt%)	2.801	0.604	1.244	4.700
Arsenic	As (ppm)	6.554	1.768	2.391	12.237
Calcium	Ca(wt%)	0.681	0.237	0.272	1.363
Copper	Cu (ppm)	9.071	3.162	3.127	20.080
Iron	Fe (wt%)	1.509	0.410	0.518	2.581
Mercury	Hg (ppm)	0.012	0.003	0.010	0.029
Magnesium	Mg (wt%)	0.235	0.138	0.047	0.716
Manganese	Mn (ppm)	743.831	313.097	124.085	1554.940
Sodium	Na(wt%)	0.551	0.091	0.250	0.740
Phosphorus	P (wt%)	0.043	0.013	0.012	0.080
Lead	Pb (ppm)	17.746	4.174	8.184	32.210
Selenium	Se (ppm)	0.209	0.076	0.101	0.516
Titanium	Ti(wt%)	0.231	0.072	0.046	0.491
Zinc	Zn (ppm)	34.933	10.084	13.700	68.371

[Download point data as CSV](#)

ATTACHMENT 6
LABORATORY ANALYTICAL DATA SHEETS



120 East Davis Street
Fayette, MO 65248-1405
(660) 248-1911
www.inovatia.com

9/30/2025

Page Number: 1 of 7

IPES, Inc.
P.O. Box 138
Hallsville, MO 65255
Paul Scheetz

RE: Project Name/Number: MU Transformer/N/A
 Chain of Custody Number: 25-1471

Date Received: September 26, 2025
Time Received: 14:38
Relinquished by: David Epema, Jr.
Sampler: David Epema, Jr.

Enclosed please find analytical results for sample(s) received as described above. The values reported are in conformance with internal and method quality control guidelines, unless otherwise noted. If you have questions or need more information, please contact us.

Thank you for your interest in working with Inovatia Laboratories.

Sincerely,

A handwritten signature in black ink that reads "Jennifer Vandelicht". The script is cursive and elegant.

Jennifer Vandelicht
Quality Assurance

Enclosures: Chain of Custody Record(s)



120 East Davis Street
Fayette, MO 65248-1405
(660) 248-1911
www.inovatia.com

ANALYSIS REPORT

Chain of Custody Number: 25-1471
Project Name / Number: MU Transformer / N/A
Date Collected: 09/26/25
Time Collected: 10:50

Sample Number: SB-1 3-4
Lab Number: 254835
Sample Matrix: Soil
Sample Type: Grab

Analytes	Result	Units	Reporting Limit	Analysis Method	Analyst - Date
Benzene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Toluene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Ethylbenzene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Xylenes (Total)	< 15	µg/kg	15	EPA 8260B	BD - 09/29/25
1,2-Dibromoethane (EDB)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
1,2-Dichloroethane (EDC)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Methyl tert-butyl ether (MTBE)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Naphthalene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
tert-Amyl methyl ether (TAME)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
tert-Butanol (TBA)	< 50	µg/kg	50	EPA 8260B	BD - 09/29/25
tert-Butyl ethyl ether (ETBE)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Diisopropyl ether (DIPE)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Surrogates					
1,2-Dichloroethane-d4	93	%	80% - 120%	EPA 8260B	BD - 09/29/25
4-Bromofluorobenzene	103	%	80% - 120%	EPA 8260B	BD - 09/29/25
Toluene-d8	102	%	80% - 120%	EPA 8260B	BD - 09/29/25
Analytes	Result	Units	Reporting Limit	Analysis Method	Analyst - Date
Moisture Content	22	%	0.01%	ASTM D2216	BD - 09/29/25
TPH-GRO	< 1	mg/kg	1	EPA 8260B	BD - 09/29/25
TPH-DRO	< 20	mg/kg	20	EPA 8270C	BD - 09/29/25
TPH-ORO	< 20	mg/kg	20	EPA 8270C	BD - 09/29/25
Total Lead (Pb)	8110	µg/kg	250	EPA 200.8	BD - 09/30/25

Notes: All results are reported on a dry weight basis.
VOC QC Report: 250929SQV
DRO-ORO QC Report: 250929SQD
Lead (Pb) QC Report: ICP7850-250930A

Report Date: 09/30/25
Page Number: 2 of 7

This report has been produced for the exclusive and confidential use of our clients. Reference to the analyses, the results, or the company in any news releases, advertising, or other public announcement is prohibited without obtaining prior written consent.



120 East Davis Street
Fayette, MO 65248-1405
(660) 248-1911
www.inovatia.com

ANALYSIS REPORT

Chain of Custody Number: 25-1471
Project Name / Number: MU Transformer / N/A
Date Collected: 09/26/25
Time Collected: 11:30

Sample Number: SB-2 10-11
Lab Number: 254836
Sample Matrix: Soil
Sample Type: Grab

Analytes	Result	Units	Reporting Limit	Analysis Method	Analyst - Date
Benzene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Toluene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Ethylbenzene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Xylenes (Total)	< 15	µg/kg	15	EPA 8260B	BD - 09/29/25
1,2-Dibromoethane (EDB)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
1,2-Dichloroethane (EDC)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Methyl tert-butyl ether (MTBE)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Naphthalene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
tert-Amyl methyl ether (TAME)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
tert-Butanol (TBA)	< 50	µg/kg	50	EPA 8260B	BD - 09/29/25
tert-Butyl ethyl ether (ETBE)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Diisopropyl ether (DIPE)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Surrogates					
1,2-Dichloroethane-d4	92	%	80% - 120%	EPA 8260B	BD - 09/29/25
4-Bromofluorobenzene	103	%	80% - 120%	EPA 8260B	BD - 09/29/25
Toluene-d8	104	%	80% - 120%	EPA 8260B	BD - 09/29/25
Analytes	Result	Units	Reporting Limit	Analysis Method	Analyst - Date
Moisture Content	27	%	0.01%	ASTM D2216	BD - 09/29/25
TPH-GRO	< 1	mg/kg	1	EPA 8260B	BD - 09/29/25
TPH-DRO	< 20	mg/kg	20	EPA 8270C	BD - 09/30/25
TPH-ORO	< 20	mg/kg	20	EPA 8270C	BD - 09/30/25
Total Lead (Pb)	7280	µg/kg	250	EPA 200.8	BD - 09/30/25

Notes: All results are reported on a dry weight basis.
VOC QC Report: 250929SQV
DRO-ORO QC Report: 250929SQD
Lead (Pb) QC Report: ICP7850-250930A

Report Date: 09/30/25
Page Number: 3 of 7

This report has been produced for the exclusive and confidential use of our clients. Reference to the analyses, the results, or the company in any news releases, advertising, or other public announcement is prohibited without obtaining prior written consent.



120 East Davis Street
Fayette, MO 65248-1405
(660) 248-1911
www.inovatia.com

ANALYSIS REPORT

Chain of Custody Number: 25-1471
Project Name / Number: MU Transformer / N/A
Date Collected: 09/26/25
Time Collected: 12:00

Sample Number: SB-3 4-5
Lab Number: 254837
Sample Matrix: Soil
Sample Type: Grab

Analytes	Result	Units	Reporting Limit	Analysis Method	Analyst - Date
Benzene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Toluene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Ethylbenzene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Xylenes (Total)	< 15	µg/kg	15	EPA 8260B	BD - 09/29/25
1,2-Dibromoethane (EDB)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
1,2-Dichloroethane (EDC)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Methyl tert-butyl ether (MTBE)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Naphthalene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
tert-Amyl methyl ether (TAME)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
tert-Butanol (TBA)	< 50	µg/kg	50	EPA 8260B	BD - 09/29/25
tert-Butyl ethyl ether (ETBE)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Diisopropyl ether (DIPE)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Surrogates					
1,2-Dichloroethane-d4	99	%	80% - 120%	EPA 8260B	BD - 09/29/25
4-Bromofluorobenzene	105	%	80% - 120%	EPA 8260B	BD - 09/29/25
Toluene-d8	103	%	80% - 120%	EPA 8260B	BD - 09/29/25
Analytes	Result	Units	Reporting Limit	Analysis Method	Analyst - Date
Moisture Content	27	%	0.01%	ASTM D2216	BD - 09/29/25
TPH-GRO	< 1	mg/kg	1	EPA 8260B	BD - 09/29/25
TPH-DRO	< 20	mg/kg	20	EPA 8270C	BD - 09/30/25
TPH-ORO	< 20	mg/kg	20	EPA 8270C	BD - 09/30/25
Total Lead (Pb)	9620	µg/kg	250	EPA 200.8	BD - 09/30/25

Notes: All results are reported on a dry weight basis.
VOC QC Report: 250929SQV
DRO-ORO QC Report: 250929SQD
Lead (Pb) QC Report: ICP7850-250930A

Report Date: 09/30/25
Page Number: 4 of 7

This report has been produced for the exclusive and confidential use of our clients. Reference to the analyses, the results, or the company in any news releases, advertising, or other public announcement is prohibited without obtaining prior written consent.



120 East Davis Street
Fayette, MO 65248-1405
(660) 248-1911
www.inovatia.com

ANALYSIS REPORT

Chain of Custody Number: 25-1471
Project Name / Number: MU Transformer / N/A
Date Collected: 09/26/25
Time Collected: 12:15

Sample Number: SB-4 7-8
Lab Number: 254838
Sample Matrix: Soil
Sample Type: Grab

Analytes	Result	Units	Reporting Limit	Analysis Method	Analyst - Date
Benzene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Toluene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Ethylbenzene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Xylenes (Total)	< 15	µg/kg	15	EPA 8260B	BD - 09/29/25
1,2-Dibromoethane (EDB)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
1,2-Dichloroethane (EDC)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Methyl tert-butyl ether (MTBE)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Naphthalene	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
tert-Amyl methyl ether (TAME)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
tert-Butanol (TBA)	< 50	µg/kg	50	EPA 8260B	BD - 09/29/25
tert-Butyl ethyl ether (ETBE)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Diisopropyl ether (DIPE)	< 5	µg/kg	5	EPA 8260B	BD - 09/29/25
Surrogates					
1,2-Dichloroethane-d4	94	%	80% - 120%	EPA 8260B	BD - 09/29/25
4-Bromofluorobenzene	103	%	80% - 120%	EPA 8260B	BD - 09/29/25
Toluene-d8	102	%	80% - 120%	EPA 8260B	BD - 09/29/25
Analytes	Result	Units	Reporting Limit	Analysis Method	Analyst - Date
Moisture Content	21	%	0.01%	ASTM D2216	BD - 09/29/25
TPH-GRO	< 1	mg/kg	1	EPA 8260B	BD - 09/29/25
TPH-DRO	< 20	mg/kg	20	EPA 8270C	BD - 09/30/25
TPH-ORO	46	mg/kg	20	EPA 8270C	BD - 09/30/25
Total Lead (Pb)	13600	µg/kg	250	EPA 200.8	BD - 09/30/25

Notes: All results are reported on a dry weight basis.
VOC QC Report: 250929SQV
DRO-ORO QC Report: 250929SQD
Lead (Pb) QC Report: ICP7850-250930A

Report Date: 09/30/25
Page Number: 5 of 7

This report has been produced for the exclusive and confidential use of our clients. Reference to the analyses, the results, or the company in any news releases, advertising, or other public announcement is prohibited without obtaining prior written consent.

QC REPORT

MRBCA Volatiles by GC-MSD

Analytes	Detection Limit	Calibration Verification	LCS % Recovery	Method Blank Results	Duplicate % Difference	Matrix Spike % Recovery	Notes
tert-Butanol (TBA)	250 µg/kg	111%	114%	n.d.	3%	n.a.	
Methyl tert-butyl ether (MTBE)	25 µg/kg	91%	95%	n.d.	3%	n.a.	
Diisopropyl ether (DIPE)	250 µg/kg	97%	96%	n.d.	n.d.	n.a.	
tert-Butyl ethyl ether (ETBE)	25 µg/kg	95%	94%	n.d.	1%	n.a.	
1,2-Dichloroethane (EDC)	25 µg/kg	92%	95%	n.d.	3%	n.a.	
Benzene	25 µg/kg	103%	98%	n.d.	2%	n.a.	
tert-Amyl methyl ether (TAME)	250 µg/kg	98%	102%	n.d.	n.d.	n.a.	
Toluene	25 µg/kg	110%	105%	n.d.	4%	n.a.	
1,2-Dibromoethane (EDB)	25 µg/kg	87%	93%	n.d.	2%	n.a.	
Ethylbenzene	25 µg/kg	106%	102%	n.d.	3%	n.a.	
m,p-Xylene	50 µg/kg	107%	105%	n.d.	3%	n.a.	
o-Xylene	25 µg/kg	104%	102%	n.d.	3%	n.a.	
Naphthalene	25 µg/kg	95%	103%	n.d.	2%	n.a.	
Spike Quantity		175	175			250	
Surrogates	Acceptable Ranges	85% - 115%	Compound Specific	< Detection Limit	≤ 20%	Compound Specific	
<i>1,2-Dichloroethane-d4</i>	80% - 120%	92%	98%	93%	98%	n.a.	
<i>Toluene-d8</i>	80% - 120%	104%	103%	103%	104%	n.a.	
<i>4-Bromofluorobenzene</i>	80% - 120%	105%	106%	110%	109%	n.a.	
	RF RSD < 20%	80% - 120%	50% - 120%	< Detection Limit	≤ 20%	50% - 110%	
TPH-GRO	6%	95%	95%	n.d.	0%	n.a.	

Notes

Key

n.a. = not applicable

n.d. = not detected

PND = Present, not detected in duplicate

DNP = Not present, detected in duplicate

Date: 2025-09-30

Report issued by: BD

Page Number: 6 of 7

QC REPORT

MRBCA TPH by GC-MSD

Analyte	RSD of Response Factor	LCS % Recovery	Method Blank Results	Duplicate % Difference	Matrix Spike % Recovery	Calibration Verification
TPH-DRO	19%	75%	n.d.	10%	n.a.	New Curve
TPH-ORO	n.a.	n.a.	n.d.	n.d.	n.a.	n.a.
Acceptable Ranges	RSD < 20%	50% - 110 %	< Detection Limit	≤ 20%	50% - 110%	80% - 120%

Key

n.a. = not applicable

n.d. = not detected

PND = Present, not detected in duplicate

DNP = Not present, detected in duplicate

Notes

Report issued by: BD

Date: 9/30/25

Page Number: 7 of 7

1:IOVATIA I{BORATORIES, LLC
120 EAST DAVIS STREET • P.O. BOX 30
FAYETTE, MO 65248-0030

PI!ONE: (660)248-1911
FAX: (660) 248-1921

P67 !/I
HHAIN NUMBER: -'2-14±1

IL CustServ CE NUMBER: :2i'6\C\1

Phone Number: &7 W? . i./!eZ
Fax 1(1/ 'f!o{°

P Due ate: _____; ::::4-11.....1-+1-
Comments: +-----?.....C....-1

OS!OREIWIIO@III'E
[STC«EI♦mM
1 ORETIJAHATCUSTOMERE11EIISE
- □ IIIfoSEOofSaffirn♦OI'ATII
OoIfir
? NOTE!

Address: 209 fJ.....-si,thor,l.....s,W> /A'rojectName/Number. /4/J J/,v, ?
 Ci. Slate,l,p: l/u...b, ma t g17J Quote Number.

E-Mai: d12pe41..jr@.peSt.net

Purchase Order Number: _____

NOTE:

OUIIIRYMIIIOO: .Jc... ..
CUSTOOYSOO: amllr..tK JIHTAK □BROKEII

COOUNT:EE O♦?CKO jIm
PACKAGETm: 
ARlR/AI TEIPEP.EAIV!!Ea:c
MEASURED BY: 0 TEIPEATURE BLA/K MPLE

MethodNumber❓

[illegible]

Relinquished By: /;v{v,1/1,..... Toate:r4,1zr Time: L3/7,7 Received By: J4J,t?n lo? --lejnme: Hs&

Relinquished By: loate: !Time: Received By: loa.e: lnme:

Unlabeled otherwise over mid under; tparJe contr(t, bysi in this ronn, tht dient acctp15 lnov"ia ancbrd terms ind eodirlons forsen-kt, pricing, ind p(1111n1)1 punshed on the ,mrse skit Of rh:llonn.
Prior, wnl ltn norifrrllloo o rbt")ron, pl1nc1 l?qurtmllijjIGll'kGMP) is rnd.uory and nuy r2suin, ddinoaal fit.

When You Want Innovation, Thin/1 Inovatia¹M

