

# **SITE INVESTIGATION**

**COLISEUM BOULEVARD AREA  
MONTGOMERY, ALABAMA**

**June 7, 2000**

**TTL, INC.** Practicing in the Geosciences

## INTRODUCTION

This report provides the status and results of field activities conducted from February 16, 2000 to March 7, 2000 to further evaluate a ground-water plume that contains TCE (trichloroethylene) and other VOCs (volatile organic compounds) in the ground water in the Coliseum Boulevard Area. The investigation was performed according to procedures outlined in TTL's February 14, 2000 Proposed Scope of Work that was approved by the ADEM (Alabama Department of Environmental Management) on February 16, 2000. Soil/sediment and ground-water samples were collected west of Fairground Road and along a drainage ditch that extends from the ALDOT (Alabama Department of Transportation) Central Complex generally north to Coliseum Parkway in Montgomery, Alabama. The soil/sediment and ground-water samples were analyzed for VOCs.

## FIELD ACTIVITIES

Plains Environmental Services (PES) was subcontracted to provide direct push technology sampling for this investigation. A Geoprobe™ 5400 was used to collect soil/sediment and ground-water samples from 16 probeholes (PH1 through PH16; see Appendix A and Figure 1). The soil/sediment samples were collected with the Geoprobe™ dual-tube and macro-core sampling systems. Generally, the dual-tube sampling system was effective in collecting continuous soil/sediment samples from land surface to 30 feet BLS (below land surface). The macro-core sampling system was used to collect soil/sediment samples from discrete intervals at deeper depths when heaving sands prevented use of the dual-tube system.

A total of 45 soil/sediment samples were collected from the 16 probeholes for analysis. The criteria for determining where to collect soil/sediment samples for analysis was based on the following: (1) shallow soils about 1 foot BLS; (2) discolored or stained soil/sediments; (3) soil/sediments at depths equivalent to about 1 foot below nearby storm and sanitary sewer pipes; (4) soils/sediments at depths equivalent to

about 1 foot below the base of the ditch that extends from the ALDOT Complex generally north to Coliseum Parkway; (5) soil/sediments 1 to 2 feet above the zone of saturation; or (6) clays above water-bearing sands. Generally, about 3 soil samples were collected from each probehole for analysis.

A hand auger was used to collect one soil sample from the surface to about 6 inches below the surface of the base of the earthen part of the ditch that is on the ALDOT Complex. This sample location was about 100 feet southeast of ALDOT monitoring well MW3. A hand auger also was used to collect two soil samples from the surface to about 6 inches below the surface of the base of the earthen ditch that extends from the north part of Eastern Meadows Subdivision generally north to Coliseum Parkway. These samples were collected about 480 feet and 70 feet southwest, respectively, of Coliseum Parkway.

Continuous soil/sediment samples initially were collected from land surface to a clay beneath the water table. However, continuous sampling below the water table was abandoned because of heaving sands and gravels. To expedite field work, soil-conductivity logging was used to determine the depths to clays beneath the water-bearing sands. Soil conductivity logs are provided in Appendix B.

Except for probeholes PH7 and PH16, shallow and deeper ground-water samples were collected from each probehole. Shallow ground-water samples were collected 1 to 2 feet below the water table. The deeper ground-water samples were collected 1 to 2 feet above the first clays below the water table. Ground-water samples were not collected from probehole PH7 because it was only about 6 feet deep and did not penetrate the water-bearing zone. Deeper ground-water samples were not collected from probehole PH16 because the threads of a probe rod parted during collection of a soil sample.

Shallow ground-water samples were generally collected with a Geoprobe™ Ground-Water Profiler. Deeper ground-water samples were collected with either a 2-foot-long or a 4-foot-long, 1-inch diameter "drop out" screen that is made by Geoprobe™. About five well-bore volumes of ground water were purged from each probehole prior to collecting each shallow and deep ground-water sample. The ground-

water samples were collected using tygon tubing with a check valve assembly. A vacuum was used to draw the water up into the tubing prior to sample collection.

Forty-eight (48) soil/sediment samples and thirty-one (31) ground-water samples were collected and screened, in the field, using a mobile lab equipped with a gas chromatograph/mass spectrometer. A heated headspace method was used for field analyses. The field analyses were performed by personnel of PES. The soil/sediment and ground-water samples were screened in the field only for tetrachloroethylene; trichloroethylene; carbon tetrachloride; cis-1,2-dichloroethene; 1,1 dichloroethene; and vinyl chloride. Eighteen (18) soil/sediment samples and twenty (20) ground-water samples were analyzed for VOCs in TTL's laboratory for verification of field screening results. The Alabama Department of Environmental Management collected and analyzed split samples of about 10 percent of the soil/sediment and ground-water samples screened in the field.

The Geoprobe™ 5400 was used to construct four piezometers (see Table 1, Appendix A, and Figure 1) west of Fairground Road. Piezometers PZ1 and PZ2 were constructed at probehole locations PH11 (Broadway Street) and PH4 (southeast corner of the Montgomery Zoo), respectively. Piezometers PZ3 and PZ4 were constructed at probehole locations PH3 (Fairground Road) and PH15 (Broadview Street), respectively. These piezometers will be used to determine the direction of ground-water flow.

## RESULTS

Three soil/sediment samples contained detectable concentrations of TCE and/or associated breakdown compounds. A soil/sediment sample from 20 feet BLS from probehole PH2 contained 1.2  $\mu\text{g}/\text{kg}$  (micrograms per kilogram) TCE. Probehole PH2 was about 15 feet east of the earthen drainage ditch north of Eastern Meadows Subdivision. A soil/sediment sample from 17.5 feet BLS from probehole PH10 contained 5.2  $\mu\text{g}/\text{kg}$  TCE. Probehole PH10 was in Chisholm Street between ALDOT monitoring wells MW2 and MW3. A soil/sediment sample from 5.5 feet BLS from probehole PH7 contained 5.9  $\mu\text{g}/\text{kg}$  1,1-dichloroethene. Probehole PH7 was about 70 feet southeast

intersection of Park Avenue and Fairground Road. Trichloroethylene was not detected in the soil samples collected in the base of the earthen ditch on the ALDOT Complex nor in the soil samples collected in the base of the earthen ditch that extends from Eastern Meadows Subdivision generally north to Coliseum Parkway.

Concentrations of VOCs in ground-water samples from the probeholes are shown on Figure 1 and in Table 3. Ground-water samples from 9 probeholes contained detectable levels of VOCs. Concentrations of TCE in ground-water samples collected from probeholes along Broadway Street, Chisholm Street, and Gardendale Drive were significantly greater than concentrations detected in other ground-water samples collected during this investigation.

On March 7, 2000, depths to water in the ALDOT and Alfa monitoring wells and piezometers PZ1 through PZ4 ranged from about 12 to 27 feet BLS (see Table 4). The general direction of ground-water flow at the site was northeast (see Table 4).

## **RECOMMENDATIONS**

Additional investigation is required to determine the extent of TCE or other VOCs and associated breakdown constituents in the ground water.

**TABLES**

TABLE 1. Well- and piezometer-construction characteristics; Site Investigation; Coliseum Blvd. Area; Montgomery, Alabama. [Locations of monitoring wells and piezometers are shown on Figure 1.]

Well/ Piezometer I.D.	Date Augered/ Constructed	Total Depth (ft. BLS) <sup>1</sup>	Diameter of Borehole (Inches)	Diameter of PVC Casing (Inches)	Screened Interval (ft. BLS)	Slot Size of Screen (Inches)	Sand Pack (ft. BLS)	Bentonite Pellet Seal (ft. BLS)	Cement/ Bentonite Seal (ft. BLS)
<b>Monitoring Wells (ALDOT Central Complex)</b>									
ALDOT MW1	10/6/99	64	8.25	2	14-63	0.010	11-64	9-11	0-9
ALDOT MW2	10/6-7/99	71	8.25	2	16-70	0.010	13-71	11-13	0.5-11
ALDOT MW3	10/7/99	52.5	8.25	2	15-51.5	0.010	13-52.5	11-13	0.5-11
ALDOT MW4	10/8/99	62.5	8.25	2	13-62	0.010	11-62.5	9-11	0.5-9
ALDOT MW5	10/11/99	54.5	8.25	2	14.5-53.5	0.010	12.5-54.5	10.5-12.5	0.5-10.5
ALDOT MW6	10/11-12/99	60.5	8.25	2	15.5-59.5	0.010	13-60.5	11-13	0.5-11
ALDOT MW7	10/12/99	65	8.25	2	20-64	0.010	17-65	15-17	0.5-15
ALDOT MW8	10/13/99	62	8.25	2	17-61	0.010	15-62	13-15	0.5-13
ALDOT MW9	10/13/99	57	8.25	2	17-56	0.010	15-57	13-15	0.5-13
<b>Piezometers</b>									
PZ1	3/1/00	31	2	1	21.5-30.5	0.010	11-31	8.5-11	0-8.5
PZ2	3/2/00	25	2	1	15.5-24.5	0.010	8-25	6-8	0-6
PZ3	3/2/00	34.5	2	1	25-34	0.010	21-34.5	18.5-21	0-18.5
PZ4	3/2/00	36	2	1	26.5-35.5	0.010	24-36	22-24	0-22

<sup>1</sup> Feet below land surface.

TABLE 2. Results of analyses for volatile organic compounds in soil/sediment samples; Site Investigation; Coliseum Blvd. Area; Montgomery, Alabama.

Sample Identifier	Depth of Sample (ft. BLS)	Sample Date	(Concentrations are in µg/kg [micrograms per kilogram])															
			Tetrachloroethylene		Trichloroethylene		Carbon Tetrachloride		cis-1,2-Dichloroethene		1,1-Dichloroethene		Vinyl Chloride		M,P. Xylenes <sup>3</sup>		Toluene <sup>3</sup>	
			Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>
PH-1	1	2/16/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	8	2/16/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
PH-2	1	2/16/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	9	2/16/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	11.5	2/16/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	17	2/16/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	20	2/16/00	ND	NS	1.2	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
PH-3	1	2/17/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
	24	2/17/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
Dup <sup>4</sup>	24	2/17/00	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-
PH-4	1	2/18/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	5	2/18/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	12	2/18/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
PH-5	1	2/22/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	8	2/22/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	18	2/22/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
PH-6	1	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	7.5	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	12	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
PH-7	5.5	2/22/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
PH-8	1	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	7	2/23/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
	17	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
PH-9	1	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
Dup <sup>4</sup>	1	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	7	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	15	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
PH-10	1	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	6.5	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	17.5	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS

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(Concentrations are in µg/kg [micrograms per kilogram])

Sample Identifier	Depth of Sample (ft. BLS)	Sample Date	Tetrachloroethylene		Trichloroethylene		Carbon Tetrachloride		cis-1,2-Dichloroethene		1,1-Dichloroethene		Vinyl Chloride		M,P Xylenes <sup>3</sup>		Toluene <sup>3</sup>			
			Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>	Field <sup>1</sup>	Lab <sup>2</sup>
PH-11	1	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	7	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	22.5	2/23/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
PH-12	1	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	7.5	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	12.5	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
PH-13	1	3/1/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
	10	3/1/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
Dup <sup>4</sup>	10	3/1/00	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-
PH-14	1	2/28/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
	8	2/28/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
	14.5	2/28/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
PH-15	1	2/28/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
	10	2/28/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
	20	2/28/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
Dup <sup>4</sup>	20	2/28/00	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-	ND	-
PH-16	1	2/28/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
	7	2/28/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
	16	2/28/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
HA-1	0.5	2/29/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
HA-2	0.5	3/1/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0
HA-3	0.5	3/1/00	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0	ND	<3.0

<sup>1</sup> Analyzed by field Gas Chromatography.

<sup>2</sup> Testing of the samples was in accordance with Method 8260 outlined in Test Methods for Evaluating Solid Waste, EPA, SW-846, Third Edition, November, 1986.

<sup>3</sup> Detected when sample analyzed for VOCs in TTL laboratory.

<sup>4</sup> Duplicate sample for Quality Assurance/Quality Control for field analysis.

\* Detection concentration for the field analyses.

\*\* MDL = Method Detection Limit for the laboratory analyses.

ND = Compound not detected.

NS = Not sampled for laboratory analysis.

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TABLE 3. Results of analyses for volatile organic compounds in ground-water samples; Site Investigation, Coliseum Blvd. Area, Montgomery, Alabama.

Sample Identifier	Depth of Sample (ft. BLS)	Sample Date	(Concentrations are in µg/L [micrograms per Liter])															
			Tetrachloroethylene		Trichloroethylene		Carbon Tetrachloride		cis-1,2-Dichloroethene		1,1-Dichloroethene		1,1,1-Trichloroethane		Vinyl Chloride		Chloroform <sup>3</sup>	
			0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>
PH-1	9-10	2/16/00	ND	NS	22.6	NS	ND	NS										
	22-23	2/16/00	ND	NS	47.3	NS	ND	NS										
PH-2	13-14	2/16/00	ND	<1.0	4.5	14.7	ND	<1.0										
	28-29	2/16/00	ND	<1.0	331	1100	ND	<1.0										
PH-3	27-28	2/17/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	27-28	3/2/00	NS	<1.0	NS	<1.0	NS	<1.0	NS	<1.0	NS	<1.0	NS	<1.0	NS	<1.0	NS	<1.0
	38-39	2/17/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	65-66	2/17/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
PH-4	15-16	2/18/00	ND	NS	0.2	NS	ND	NS										
	33-34	2/18/00	ND	NS	690	NS	6.5	NS	0.4	NS	38.5	NS	ND	NS	ND	NS	ND	NS
Dup <sup>4</sup>	33-34	2/18/00	ND	--	480	--	7.9	--	ND	--	28.3	--	ND	--	ND	--	ND	--
PH-5	20-21	2/22/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	41-42	2/22/00	ND	NS	120	NS	8.2	NS	ND	NS	152	NS	ND	NS	ND	NS	ND	NS
PH-6	26-27	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	23-27	2/29/00	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0
	57-60	2/29/00	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0
Dup <sup>4</sup>	57-60	2/29/00	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--
PH-8	22-23	2/23/00	ND	<1.0	0.9	2.9	ND	<1.0										
	55-58	3/1/00	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0
Dup <sup>4</sup>	55-58	3/1/00	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--	ND	--
PH-9	19-20	2/23/00	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS	ND	NS
	52-55	2/29/00	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0
PH-10	19-20	2/23/00	ND	NS	113	NS	ND	NS	32.5	NS	ND	NS	ND	NS	ND	NS	ND	NS
	45-48	2/29/00	ND	<1.0	1.1	2.5	ND	<1.0	ND	<1.0	0.1	<1.0	ND	<1.0	ND	<1.0	ND	<1.0
PH-11	27-28	2/23/00	3.0	<5.0 <sup>5</sup>	5000 J <sup>7</sup>	8640	16.4	17.8	3.7	<5.0 <sup>5</sup>	51.5	40.0	ND	<5.0 <sup>5</sup>	ND	<5.0 <sup>5</sup>	ND	<5.0 <sup>5</sup>
	57-60	2/29/00	ND	<1.0	0.1	1.1	ND	<1.0										

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Sample Identifier	Depth of Sample (ft. BLS)	Sample Date	(Concentrations are in µg/L [micrograms per Liter])															
			Tetrachloroethylene		Trichloroethylene		Carbon Tetrachloride		cis-1,2-Dichloroethene		1,1-Dichloroethene		Vinyl Chloride		1,1,1-Trichloroethane <sup>3</sup>		Chloroform <sup>3</sup>	
			0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>	0.1 µg/L* Field <sup>1</sup>	1.00 µg/L** Lab <sup>2</sup>
PH-12	24-25	2/23/00	ND	<1.0	75.3	41.1	ND	<1.0	ND	<1.0	0.3	<1.0	ND	<1.0	ND	<1.0	ND	<1.0
Dup <sup>4</sup>	24-25	2/23/00	ND	-	92.1	-	ND	-	ND	-	0.4	-	ND	-	ND	-	ND	-
Dup <sup>4</sup>	48-51	2/29/00	0.2	<10.0 <sup>6</sup>	11000 J <sup>7</sup>	12600	135	228	0.8	<10.0 <sup>6</sup>	793	535	ND	<10.0 <sup>6</sup>	ND	<10.0 <sup>6</sup>	ND	<10.0 <sup>6</sup>
Dup <sup>4</sup>	48-51	2/29/00	0.3	-	9500 J <sup>7</sup>	-	213	-	1.0	-	762	-	ND	-	ND	-	ND	-
PH-13	22-23	3/1/00	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0
PH-14	31-32	2/28/00	0.1	<1.0	1440 J <sup>7</sup>	1220	1.7	<1.0	1.9	1.7	11.3	6.0	ND	<1.0	ND	<1.0	ND	<1.0
Dup <sup>4</sup>	31-32	2/28/00	0.2	-	1690 J <sup>7</sup>	-	2.2	-	2.4	-	15.1	-	ND	-	ND	-	ND	-
PH-15	50-53	2/28/00	ND	<5.0 <sup>5</sup>	3860 J <sup>7</sup>	4890	62.2	87.0	0.5	<5.0 <sup>5</sup>	445	310	ND	<5.0 <sup>5</sup>	ND	<5.0 <sup>5</sup>	ND	<5.0 <sup>5</sup>
PH-15	30-31	2/28/00	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0
PH-15	59-62	2/28/00	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0
PH-16	17-18	2/28/00	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0	ND	<1.0

<sup>1</sup> Analyzed by field Gas Chromatography.

<sup>2</sup> Testing of the samples was in accordance with Method 8260 outlined in Test Methods for Evaluating Solid Waste, EPA, SW-846, Third Edition, November, 1986.

<sup>3</sup> Detected when sample analyzed for VOCs in TTL laboratory.

<sup>4</sup> Duplicate sample for Quality Assurance/Quality Control for field analysis.

<sup>5</sup> Detection concentration elevated to <5.0 due to 1/5 dilution of sample.

<sup>6</sup> Detection concentration elevated to <10.0 due to .5/5 dilution of sample.

<sup>7</sup> J=Estimated concentration.

\* Detection concentration for the field analyses.

\*\* MDL = Method Detection Limit for the laboratory analyses.

ND = Compound not detected.

NS = Not sampled for laboratory analysis.

TABLE 4. Ground-water elevations; Site Investigation; Coliseum Blvd. Area; Montgomery, Alabama. [Locations of monitoring wells, piezometers, and selected corresponding ground-water elevations are shown on Figure 1.]

Well Identifier	Elevation of Land Surface <sup>1</sup> (feet)	Elevation of Measuring Point <sup>2</sup> (feet)	Screened Interval (ft. BLS) <sup>3</sup>	Date of Measurement	Depth to Water (ft. BMP) <sup>4</sup>	Ground-Water Elevation (ft. AMSL) <sup>5</sup>
<b>Monitoring Wells (ALDOT Central Complex)</b>						
ALDOT MW1	215.16	218.42	14-63	10/20/99	22.04	196.38
				11/16/99	22.36	196.06
				3/7/00	23.04	195.38
ALDOT MW2	218.84	218.76	16-70	10/20/99	22.43	196.33
				11/16/99	22.76	196.00
				3/7/00	23.43	195.33
ALDOT MW3	211.23	211.01	15-51.5	10/19/99	14.94	196.07
				11/16/99	15.26	195.75
				3/7/00	15.73	195.28
ALDOT MW4	214.14	213.79	13-62	10/20/99	17.93	195.86
				11/16/99	18.20	195.59
				3/7/00	18.69	195.10
ALDOT MW5	218.18	218.06	14.5-53.5	10/19/99	22.31	195.75
				11/16/99	22.59	195.47
				3/7/00	23.25	194.81
ALDOT MW6	218.82	218.76	15.5-59.5	10/19/99	22.88	195.88
				11/16/99	23.19	195.57
				3/7/00	24.04	194.72
ALDOT MW7	218.05	217.97	20-64	10/20/99	22.34	195.63
				11/16/99	22.60	195.37
				3/7/00	23.10	194.87
ALDOT MW8	218.72	218.62	17-61	10/19/99	22.00	196.62
				11/16/99	22.29	196.33
				3/7/00	23.11	195.51
ALDOT MW9	217.20	216.97	17-56	10/19/99	20.43	196.54
				11/16/99	20.78	196.19
				3/7/00	21.69	195.28
<b>Piezometers</b>						
PZ1	221.26	220.93	21.5-30.5	3/7/00	25.81	195.12
PZ2	207.30	207.20	15.5-24.5	3/7/00	11.93	195.27
PZ3	220.67	220.50	24-34	3/7/00	25.18	195.32
PZ4	216.66	216.19	26.5-35.5	3/7/00	27.13	189.06
<b>Monitoring Wells (Vista View Development)</b>						
Alfa MW-1	213.99	213.53	32.8-42.8	11/16/99	18.65	194.88
				3/7/00	18.87	194.66
Alfa MW-2	206.24	206.01	34.5-44.5	11/16/99	12.60	193.41
				3/7/00	11.57	194.44

Continued on next page

Well Identifier	Elevation of Land Surface <sup>1</sup> (feet)	Elevation of Measuring Point <sup>2</sup> (feet)	Screened Interval (ft. BLS) <sup>3</sup>	Date of Measurement	Depth to Water (ft. BMP) <sup>4</sup>	Ground-Water Elevation (ft. AMSL) <sup>5</sup>
Alfa MW-3	209.85	209.67	30.5-40.5	11/16/99	14.21	195.46
				3/7/00	14.40	195.27
Alfa MW-4	213.27	213.18	38.5-48.5	11/16/99	18.19	194.99
				3/7/00	18.78	194.40
Alfa MW-5	200.26	203.42	14.2-24.2	11/16/99	16.50	186.92
				3/7/00	16.10	187.32

<sup>1</sup> Elevations of land surface and measuring points of monitoring wells at ALDOT Complex surveyed by Larry E. Speaks & Associates. Elevations of land surface and measuring points of Alfa monitoring wells and piezometers surveyed by Goodwyn, Mills & Cawood.

<sup>2</sup> Top of casing.

<sup>3</sup> Feet below land surface.

<sup>4</sup> Feet below measuring point.

<sup>5</sup> Feet above mean sea level.

NOTE: Land surface elevations of piezometers subject to change based on final benchmark elevations.

TTL-001070

Figure

\*Hard Copy available at the Coliseum Boulevard Branch of the Montgomery Public Library

CPB Repository

**APPENDIX A**

**Logs of Proboholes and Completion  
Diagrams of Piezometers**

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PROBE HOLE PH-1

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	2/16/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	201.98 Ft. AMSL
<b>DRILLER</b>	D. Mick	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	

**REMARKS** \* About 15 ft. east of drainage ditch/about 50 ft. generally south of Coliseum Pkwy.

Site Investigation--Coliseum Blvd. Area  
 Report: TTL ENV. PROBE HOLE Template: TLENV.G...  
 3/14/00 Report: TTL ENV. PROBE HOLE Template: TLENV.G...  
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DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0 - 1		SM				Sand, olive brown (2.5Y 4/4), silty		Probehole backfilled to land surface with bentonite chips on 2/16/00.
1 - 3		SC				Sand, olive yellow (2.5Y 6/8), clayey, fine grained		
3 - 5		CL				Clay, yellowish brown (10YR 5/6) & gray (5Y 6/1), sandy		
5 - 7						Sand, gray (5Y 6/1), fine to medium grained, clayey		
7 - 10		SC				Sand, olive yellow (2.5Y 6/8) & pale yellow (5Y 7/3), moist saturated, clayey		
10 - 12						Sand, fine to coarse grained, brownish yellow (10YR 6/8), with occasional glauconite and gravel (quartz; diameter up to 2cm)		
12 - 15		SW				Sand, fine to very coarse grained, brownish yellow (10YR 6/8), with occasional gravel (quartz), glauconitic		
15 - 17						Gravel (diameter up to 3 cm)		
17 - 20		GM				Sand, yellowish brown (10YR 5/6) & pale yellow (5Y 7/3), clayey fine grained, with mica & glauconite		
20 - 25		CL				Clay, light yellowish brown (10YR 6/4) & olive yellow (2.5Y 6/6), micaceous with very fine sand laminae With red (2.5YR 4/6) streaks		
25 - 28						BORING TERMINATED AT 28 FEET.		

TTL-001075

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PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PROBE HOLE PH-2

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	2/16/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	206.18 Ft. AMSL
<b>DRILLER</b>	D. Mick	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	

**REMARKS** \* About 15 ft. east of drainage ditch/about 500 ft. generally south of Coliseum Pkwy.

Site Investigation--Coliseum Blvd. Area  
Report: TTL ENV PROBE HOLE Template: TLENV.G  
3/14/00  
/99/091\ALDOT\_PH.GPJ  
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DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0-2	[Dotted pattern]	SM				Sand, fine grained, very dark brown (10YR 2/2), silty with organics		Probehole backfilled to land surface with bentonite chips on 2/16/00.
2-5	[Diagonal lines]	CL				Clay, yellowish brown (10YR 5/6), sandy With dark red (2.5YR 3/6) streaks, relatively stiff		
5-8	[Diagonal lines]	SC				Yellowish brown (10YR 5/8) and light gray (5Y 7/1), sandy, stiff		
8-12	[Diagonal lines]	SC				Sand, yellowish brown and light gray, fine to coarse grained, clayey Moist Saturated		
12-15	[Dotted pattern]	SP				Sand, brownish yellow (10YR 6/8), medium to very coarse grained With occasional gravel (pea size)		
15-18	[Diagonal lines]	SC				Dark olive brown (appears stained) Sand, olive yellow (2.5Y 6/6) and light yellowish brown (2.5Y 6/3), fine grained, clayey with mica, glauconitic		
18-22	[Dotted pattern]	SW				Sand, olive yellow (2.5Y 6/6) and pale yellow (2.5Y 7/4), fine to medium grained, with mica, glauconitic With dark olive brown bands		
22-24	[Dotted pattern]	SW				Pale yellow (5Y 8/2) with yellowish brown streaks, fine to medium grained, glauconitic with mica		
24-25	[Dotted pattern]	SC				Fine to coarse grained with mica, glauconitic		
25-26	[Dotted pattern]	SW				Pale yellow (5Y 8/3), fine to coarse grained, with mica, glauconitic		
26-28	[Diagonal lines]	SC				Sand, pale yellow, fine to coarse grained, clayey		
28-30	[Diagonal lines]	SC				Pale yellow and yellowish brown, fine to coarse grained, with mica, glauconitic		
30-32	[Diagonal lines]	CL				Sand, pale yellow and yellowish brown, fine to coarse grained, clayey with mica, glauconitic		
32-34	[Diagonal lines]	CL				Clay, light olive brown (2.5Y 5/6) and light yellowish brown (2.5Y 6/3), sandy, stiff		
BORING TERMINATED AT 34 FEET.								

TTL-001076

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PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

ALABAMA DEPT. OF TRANSPORTATION  
SITE INVESTIGATION--COLISEUM  
BLVD. AREA

LOG OF PROBE HOLE  
PH-3

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	2/17/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	220.67 Ft. AMSL
<b>DRILLER</b>	L. Newcomer	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	

**REMARKS** \* About 20 ft. west of Fairground Rd./20 ft. north of CSX RR ROW

Site Investigation--Coliseum Blvd. Area  
Report: TTL ENV PROBE HOLE Template: TLENV.C...  
3/14/00 Report: TTL ENV PROBE HOLE Template: TLENV.C...  
991081ALDOT\_PH.GPJ

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0 - 1.5	[Hatched pattern]	SC				Sand, yellowish red (5YR 4/6), fine to medium grained, clayey		Probehole backfilled to land surface with bentonite chips on 2/17/00.
1.5 - 5	[Hatched pattern]					Clay, dark yellowish brown (10YR 4/6), sandy, soft		
5 - 15	[Hatched pattern]	CL				Yellowish red (5YR 4/6) and strong brown (7.5YR 5/8), sandy, stiff		
15 - 16.5	[Hatched pattern]	SC				Very sandy, less stiff		
16.5 - 18	[Dotted pattern]	SM				Sand, strong brown (7.5YR 5/3) and brownish yellow (10YR 6/3), fine grained, with mica, clayey		
18 - 20	[Dotted pattern]					Sand, brownish yellow (7.5YR 6/8), fine grained with mica		
20 - 25	[Dotted pattern]					Fine to coarse grained with occasional pea gravel		
25 - 30	[Dotted pattern]					Sand, fine to very coarse grained, with occasional pea gravel Very moist to wet		
30 - 35	[Dotted pattern]	SW				Sand, brownish yellow, fine to very coarse grained, saturated Thin (approximately 1/8" siltstone lense, brownish yellow), approximately 2 cm quartz gravel above clay Approximately 1 1/2" thick clay lense, pale yellow, sandy Sand, strong brown (7.5YR 5/8) and brownish yellow, fine to very coarse grained		

TTL-001077

Continued Next Page

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PROBE HOLE PH-3

PROJECT NUMBER 0799-091 GEOLOGIST S. Grammas  
LOCATION Montgomery, Alabama\* DATE(S) DRILLED 2/17/2000

Continued from Previous Page

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
40						Sand, dark yellowish brown (10YR 4/6), coarse grained with pea gravel (~25%)		
40						4" lense of pale olive (5Y 6/3) siltstone		
40						Sand, light gray (5Y 7/2) and olive yellow (5Y 6/6), fine to coarse grained, glauconitic with mica		
45		SM				Medium to coarse grained, pale yellow (5Y 7/3), with mica With ferruginous staining		
45						Thin (~1") clay pale olive (5Y 6/6), sandy		
50						Sand, pale yellow (5Y 7/3), fine to medium grained, with mica, glauconitic		
50		SC				Sand, pale yellow, fine to medium grained with mica, glauconitic, clayey		
50						Sand, pale yellow (5Y 7/3), fine to medium grained, with mica, glauconitic		
55						With approximately 1" thick lense of pale olive (5Y 6/3) sandy clay with ferruginous staining		
55		SM				With intermittent pale olive clay lense		
55						Pale yellow, medium to very coarse grained with mica, glauconitic		
60								
60								62- to 63-foot interval not collected (heaving sands).
65		SC				Sand, pale olive (5Y 6/3), medium to coarse grained, slightly clayey with mica, glauconitic		
65								65- to 66-foot interval not collected (heaving sands).
65		CL				Clay, pale yellow and yellowish brown (10YR 5/8) with very fine sand laminae, micaceous		
68						BORING TERMINATED AT 68 FEET.		

TTL-001078

Site Investigation--Coliseum Blvd. Area

Report: TTL ENV PROBE HOLE Template: TTL ENV

3/21/00 991091ALDOT PH.GPJ

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# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PROBE HOLE PH-4

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	2/18/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	207.32 Ft. AMSL
<b>DRILLER</b>	D. Mick	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	

**REMARKS** \* About 20 ft. north of Fairground Rd./Southeast corner of Montgomery Zoo

Site Investigation--Coliseum Blvd. Area  
 Report: TTL ENV PROBE HOLE Template: TTL ENV G.P.J.  
 3/14/00  
 391091ALDOT\_PH.GPJ  
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DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0 - 5	[Diagonal Hatching]	SC				Sand, dark yellowish brown (10YR 3/4), clayey, medium to coarse grained Yellowish red (5YR 4/6) Brown (7.5YR 6/3)		Probehole backfilled to land surface with bentonite chips on 2/18/00.
5 - 10	[Diagonal Hatching]	CL				Clay, light olive brown (2.5Y 5/4), sandy, stiff  Light olive brown, red (2.5YR 4/8) and reddish yellow (7.5YR 6/8), sandy, stiff Light gray (5Y 7/1), red (2.5YR 4/8), and reddish yellow, sandy, stiff		
10 - 15	[Dotted]	SW				More sandy Moist Sand, yellowish brown (10YR 5/6) and light gray (2.5Y 7/1), medium to coarse grained, clayey with occasional pea gravel (<5%) Saturated		
15 - 20	[Large Circles]	GM				Coarse to very coarse grained with occasional gravel (<5%), diameter up to approximately 2 cm, yellowish brown (10YR 5/5) Gravel (diameter up to 2 cm) with very coarse grained pale yellow (5Y 8/2) and light gray sand		
20 - 25	[Large Circles]	GM				Gravel (diameter up to 2 cm) with very coarse grained yellow (10YR 2/8) sand		
25 - 30	[Dotted]	SM				Sand, medium to coarse grained brownish yellow (10YR 6/8) with trace glauconite  Sand, yellowish brown (10YR 5/8), medium to coarse grained, with mica and glauconite		
30 - 35	[Large Circles]	GM				Sand, brownish yellow (10YR 6/8), medium to very coarse grained with pea-size gravel (<5%)		

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PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

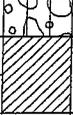
ALABAMA DEPT. OF TRANSPORTATION  
SITE INVESTIGATION--COLISEUM  
BLVD. AREA

LOG OF PROBE HOLE  
PH-4

PROJECT NUMBER 0799-091 GEOLOGIST S. Grammas  
LOCATION Montgomery, Alabama\* DATE(S) DRILLED 2/18/2000

Continued from Previous Page

Site Investigation--Coliseum Blvd. Area

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
		CL				Clay, reddish yellow (7.5YR 6/8) and dark red (2.5YR 3/6) and light gray (7.5YR 7/1), sandy, micaceous		
						BORING TERMINATED AT 38 FEET.		

TTL-001080

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PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PROBE HOLE PH-5

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	2/22/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	214.83 Ft. AMSL
<b>DRILLER</b>	D. Mick	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	

**REMARKS** \* Intersection of Park Ave. & Chelsea St.

Site Investigation--Coliseum Blvd. Area  
 Report: TTL ENV PROBE HOLE Template: TTLENV.L  
 3/14/00  
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DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
5	[Hatched pattern]	CL				Clay, red (2.5YR 4/6), sandy		Probehole backfilled to land surface with bentonite chips on 2/22/00.          28- to 29-foot interval not collected (heaving sands).   TTL-001081
10	[Hatched pattern]	SC				Sand, fine to medium grained, red (2.5YR 4/6), clayey		
15	[Dotted pattern]	SM				Sand, strong brown (7.5YR 5/3), fine to medium grained with mica		
20	[Dotted pattern]	SW				Sand, strong brown, fine grained with approximately 10% gravel (diameter up to 3 cm)		
25	[Hatched pattern]	CL				Moist Clay, strong brown and light gray (2.5Y 7/1), mottled, sandy		
30	[Dotted pattern]	SM				Sand, fine to coarse grained with mica and glauconite (saturated)		
35	[Dotted pattern]	SM				Brownish yellow (10YR 6/8) and light gray (5Y 7/2), medium to very coarse grained with mica, glauconitic		
30	[Hatched pattern]	SC				Sand, pale yellow (5Y 2/3), medium to coarse grained with mica, glauconitic, slightly clayey		
30	[Dotted pattern]					Sand, pale yellow (5Y 8/2), fine to medium grained, with mica, glauconitic		
35	[Dotted pattern]							

Continued Next Page



# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PROBE HOLE PH-6

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	2/23/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	219.30 Ft. AMSL
<b>DRILLER</b>	D. Mick	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	

**REMARKS** \* Houser St./Approximately 70 ft. west of Fairground Rd.

Site Investigation--Coliseum Blvd. Area

3/14/00 Report:TTL ENV PROBE HOLE Template:TTL ENV PH.GPJ

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0 - 3	Asphalt (approximately 3")							Probehole PH6 continuously sampled to 28 ft. BLS then backfilled with bentonite chips on 2/23/00.
3 - 10	Clay, dark yellowish brown (10YR 4/4), sandy	CL						
10 - 13	Yellowish brown (10YR 5/6) and red (2.5YR 4/8) and pale olive (5Y 7/3), sandy							
13 - 14	More sandy							
14 - 15	Sand, reddish yellow (7.5YR 6/8), fine to medium grained with mica	SM						
15 - 16	Clayey Reddish yellow, fine grained with gravel (<5%; diameter up to 2 cm)							
16 - 28	Reddish yellow and light gray (5Y 7/2) with mica and gravel (<5%), medium to coarse grained	SW						
28 - 30	Wet							
30 - 35	Boring terminated at 28 feet.							

TTL-001083

Continued Next Page

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

ALABAMA DEPT. OF TRANSPORTATION  
SITE INVESTIGATION--COLISEUM  
BLVD. AREA

LOG OF PROBE HOLE  
PH-6 (A)

PROJECT NUMBER 0799-091 GEOLOGIST S. Grammas  
LOCATION Montgomery, Alabama\* DATE(S) DRILLED 2/29/00

Continued from Previous Page

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
40								Alternate probehole at probehole location PH-6 to sample clay at 60-to 62-foot interval. The probehole was backfilled to land surface with bentonite chips on 2/29/00.
45								
50								
55								
60		CL				Clay, dark gray (5Y 4/1), with fine sand laminae		
						BORING TERMINATED AT 62 FEET.		

TTL-001084

Site Investigation--Coliseum Blvd. Area

3/14/00 Report:TTL ENV PROBE HOLE Template:TTL ENV

99091VALDOT PH.GPJ

SECRET-1

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

ALABAMA DEPT. OF TRANSPORTATION  
SITE INVESTIGATION--COLISEUM  
BLVD. AREA

LOG OF PROBE HOLE  
PH-7

PROJECT NUMBER	0799-091	GEOLOGIST	S. Grammas
LOCATION	Montgomery, Alabama*	DATE(S) DRILLED	2/22/2000
DRILLING COMPANY	Plains Env. Services	GROUND ELEVATION	212.33 Ft. AMSL
DRILLER	D. Mick	DEPTH TO WATER	N/A
DRILLING METHOD	Geoprobe 5400	WATER ELEVATION	

REMARKS \* About 300 ft. north of Gardendale Drive

Site Investigation--Coliseum Blvd. Area

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
5		CL				Clay, reddish brown (5YR 5/4), sandy		Only 5- to 7-foot interval sampled at Probehole PH7. Probehole PH7 was backfilled to land surface with bentonite chips on 2/22/00.
						BORING TERMINATED AT 7 FEET.		

3/14/00 Report:TTL ENV PROBE HOLE Template:TLEINV

TTL-001085

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PROBE HOLE PH-8

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	2/23/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	214.86 Ft. AMSL
<b>DRILLER</b>	D. Mick	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	

**REMARKS:** \* Chisholm St. (between ALDOT wells MW4 and MW7)

Site Investigation--Coliseum Blvd. Area

3/14/00 Report:TTL ENV PROBE HOLE Template:TTL ENV PH.GPJ  
99091VALDOT PH.GPJ  
F:\SECRET-1

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0-3	Asphalt (approximately 3")							Probehole PH8 continuously sampled to 23 ft. BLS then backfilled to land surface with bentonite chips on 2/23/00.
3-5	Clay, yellowish red (5YR 5/8), sandy	CL						
5-10	Yellowish red and yellow (10YR 7/6), sandy							
10-11	Sand, yellowish red and yellow, fine grained, clayey	SC						
11-12	Clay, yellowish brown (10YR 5/8), red (2.5YR 4/8) and pale yellow (5Y 8/2), silty, stiff							
12-14	Yellowish red (5YR 5/6) and strong brown (7.5YR 4/6), slightly sandy	CL						
14-15	Strong brown and light gray (2.5Y 7/1), silty and slightly sandy							
15-17	Red (2.5YR 5/8) and light gray, sandy							
17-20	Sand, olive yellow (2.5Y 6/8) and yellowish brown (10YR 5/6), fine grained, slightly clayey, micaceous, glauconitic Very moist	SC						
20-23	With interbedded clay lenses (~ 6" interval) Sand, brownish yellow (10YR 6/8) and pale yellow (2.5Y 7/4) and medium to very coarse grained with occasional pea-size gravel (<5%) Saturated							
23	Boring terminated at 23 feet.							

TTL-001086

Continued Next Page

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

ALABAMA DEPT. OF TRANSPORTATION  
SITE INVESTIGATION--COLISEUM  
BLVD. AREA

LOG OF PROBE HOLE  
PH-8 (A)

PROJECT NUMBER 0799-091 GEOLOGIST S. Grammas  
LOCATION Montgomery, Alabama\* DATE(S) DRILLED 3/1/00

Continued from Previous Page

Site Investigation--Coliseum Blvd. Area

3/14/00 Report:TTL ENV PROBE HOLE Template:TILENV.

F:\SECRET-1\99091\ALDOT PH.GPJ

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
40								Alternate probehole at probehole location PH-8 to sample clay at 62- to 64-foot interval. The probehole was backfilled to land surface with bentonite chips on 3/1/00.
45								
50								
55								
60		CL				Clay, pale olive and yellowish brown, sandy		
						BORING TERMINATED AT 64 FEET.		

TTL-001087

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PROBE HOLE PH-9

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	2/23/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	211.59 Ft. AMSL
<b>DRILLER</b>	D. Mick	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	

**REMARKS** \* Chisholm St. (between ALDOT wells MW3 and MW4)

Site Investigation--Coliseum Blvd. Area

F:\SECRET-1\0799091\ALDOT PH.GPJ 3/14/00 Report:TTL ENV PROBE HOLE Template:TTL\ENV

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0-3	Asphalt (approximately 3")							Probehole PH9 continuously sampled to 20 ft. BLS then backfilled to land surface with bentonite chips on 2/23/00.
3-5	Clay, reddish brown (5YR 4/4) and sandy							
5-7	Dark yellowish brown (10YR 4/6) and yellowish brown (10YR 5/6), sandy							
7-10	Yellowish brown and pale olive (5Y 6/4) with red (10R 5/6) streaks, sandy	CL						
10-11	Sandy clay/clayey sand, yellowish red (5YR 5/6) and pale yellow (5Y 7/3) and light gray (5Y 7/1)	CL SC						
11-13	Sand, brownish yellow (10YR 6/5), fine to medium grained, micaceous, clayey	SC						
13-15	Sand, brownish yellow and light gray, fine to medium grained, micaceous	SM						
15-16	Clay, brownish yellow and light gray, very sandy	CL						
16-20	Sand, yellowish red (5YR 5/6), fine to coarse grained with pea-size gravel (very moist to wet)	SW						
20-20	Brownish yellow (10YR 6/8), fine to very coarse grained with pea-size gravel (~15%) Boring terminated at 20 feet.							

TTL-001088

Continued Next Page

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

ALABAMA DEPT. OF TRANSPORTATION  
SITE INVESTIGATION--COLISEUM  
BLVD. AREA

LOG OF PROBE HOLE  
PH-9 (A)

PROJECT NUMBER 0799-091 GEOLOGIST S. Grammas  
LOCATION Montgomery, Alabama\* DATE(S) DRILLED 2/29/00

Continued from Previous Page

Site Investigation--Coliseum Blvd. Area

Report: TTL ENV PROBE HOLE Template: TTL ENV

3/14/00

TTL-001089

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
40								Alternate probehole at probehole location PH-9 to sample clay at 56-to 58-foot interval. The probehole was backfilled to land surface with bentonite chips on 2/29/00.
45								
50								
55		CL				Clay, dark gray (5Y 4/1) with interbedded sand and fine sand laminae		
						BORING TERMINATED AT 58 FEET.		

TTL-001089

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PROBE HOLE PH-10

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	2/23/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	212.56 Ft. AMSL
<b>DRILLER</b>	D. Mick	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	

**REMARKS** \* Chisolm St. (between ALDOT wells MW2 and MW3)

Site Investigation--Coliseum Blvd. Area

3/14/00 Report:TTL ENV PROBE HOLE Template:TTL ENV

F:\SECRET-1\99091\ALDOT PH.GPJ

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0 - 3						Asphalt (approximately 3")		Probehole PH10 continuously sampled to 20 ft. BLS then backfilled to land surface with bentonite chips on 2/23/00.
3 - 20		CL				Clay, strong brown (7.5YR 5/8), light gray (5Y 7/2), and red (2.5YR 5/8), sandy		
						More sandy		
						Strong brown (7.5YR 5/8) and light gray (2.5Y 7/2), slightly sandy		
						Light gray and reddish yellow (7.5YR 6/6), sandy		
		SC SW				Sand, brownish yellow (10YR 6/8) and light gray, fine grained, clayey, micaceous, glauconitic		
						Yellowish brown (10YR 5/8) and light gray (2.5Y 7/2) with approximately 10% gravel (diameter up to 2 cm)		
20						Wet Boring terminated at 20 feet.		
25								
30								
35								

TTL-001090

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# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

ALABAMA DEPT. OF TRANSPORTATION  
SITE INVESTIGATION--COLISEUM  
BLVD. AREA

LOG OF PROBE HOLE  
PH-10 (A)

PROJECT NUMBER 0799-091 GEOLOGIST S. Grammas  
LOCATION Montgomery, Alabama\* DATE(S) DRILLED 2/29/00

*Continued from Previous Page*

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
40								
45								
50	CL	CL				Clay, pale olive (5Y 6/3) and yellowish brown (10YR 5/6), sandy		
						BORING TERMINATED AT 51 FEET.		

Alternate probehole at probehole location PH-10 to sample clay at 49- to 51-foot interval. The probehole was backfilled to land surface with bentonite chips on 2/29/00.

F:\SECRET-1\7991091\ALDOT PH.GPJ 3/14/00 Report:TTL ENV PROBE HOLE Template:TTL ENV Site Investigation--Coliseum Blvd. Area

TTL-001091

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PROBE HOLE PH-11

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	2/23/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	221.26 Ft. AMSL
<b>DRILLER</b>	D. Mick	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	

**REMARKS** \* Broadway St./Approximately 80 ft. west of Fairground Rd.

Site Investigation--Coliseum Blvd. Area  
Report: TTL ENV PROBE HOLE Template: TTL ENV PH.GPJ 3/14/00

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0-3	Asphalt (approximately 3")					Asphalt (approximately 3") Clay, dark red (2.5YR 3/6), sandy		Probehole PH11 continuously sampled to 28 ft. BLS then backfilled to land surface with bentonite chips on 2/23/00.
3-5	Very sandy	CL				Very sandy		
5-10	Red (2.5YR 4/8) and yellow (2.5Y 7/6), sandy					Red (2.5YR 4/8) and yellow (2.5Y 7/6), sandy		
10-15	Sand, yellowish red (5YR 5/8) and reddish yellow (7.5YR 7/8), medium to coarse grained, clayey with mica	SC				Sand, yellowish red (5YR 5/8) and reddish yellow (7.5YR 7/8), medium to coarse grained, clayey with mica		
15-20	Strong brown (7.5YR 5/6), medium to coarse grained with mica					Strong brown (7.5YR 5/6), medium to coarse grained with mica		
20-25	Yellowish red and brownish yellow (10YR 6/6), fine to medium grained with mica					Yellowish red and brownish yellow (10YR 6/6), fine to medium grained with mica		
25-30	Strong brown (7.5YR 5/8), fine to medium grained with mica with approximately 5% gravel	SW				Strong brown (7.5YR 5/8), fine to medium grained with mica with approximately 5% gravel		
30-35	Medium to very coarse grained with larger gravel (diameter up to 3 cm)					Medium to very coarse grained with larger gravel (diameter up to 3 cm)		
35-40	Stained interval (dark brown to black)					Stained interval (dark brown to black)		
40-45	Reddish yellow (7.5YR 6/3), medium to very coarse grained with occasional gravel (approximately 5%)					Reddish yellow (7.5YR 6/3), medium to very coarse grained with occasional gravel (approximately 5%)		
45-50	Wet					Wet		
50-55	Boring terminated at 28 feet.					Boring terminated at 28 feet.		
55-60	Sand, pale yellow (5Y 7/3) and olive yellow (2.5Y 6/8), fine to medium grained, with mica and glauconite with occasional clay lenses (light yellowish brown [2.5Y 6/4])	SC				Sand, pale yellow (5Y 7/3) and olive yellow (2.5Y 6/8), fine to medium grained, with mica and glauconite with occasional clay lenses (light yellowish brown [2.5Y 6/4])		Alternate probehole at probehole location PH-11 to sample 30- to 40-, 41- to 43-, 46- to 48-foot intervals. Probehole was backfilled to land surface with bentonite chips on 3/1/00.
60-65	Sand, very dense, very fine grained with mica, occasionally clayey					Sand, very dense, very fine grained with mica, occasionally clayey		

Continued Next Page

TTL-001092

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PROBE HOLE PH-11 (A)

PROJECT NUMBER 0799-091 GEOLOGIST S. Grammas  
LOCATION Montgomery, Alabama\* DATE(S) DRILLED 2/29/00

Continued from Previous Page

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
38		SM				Sand, pale yellow (5Y 7/3), fine grained, micaceous, mica		Alternate probehole at probehole location PH-11 to sample clay at 62- to 64-foot interval. The probehole was backfilled to land surface with bentonite chips on 2/29/00.
40						Clay lense (nodule)/clayey sand (~4" interval)		
45						Sand, pale yellow (5Y 7/3), fine to medium grained with mica Clayey		
48						Sand, pale yellow, fine to medium grained, micaceous, glauconitic		
50					Boring terminated at 48 feet.			
62		CL				Clay, dark gray (5Y 4/1) with fine sand laminae		
64						BORING TERMINATED AT 64 FEET.		

Site Investigation--Coliseum Blvd. Area

Report: TTL\_ENV\_PROBE\_HOLE\_Template: TTL\_ENV\_V

3/14/00 Report: TTL\_ENV\_PROBE\_HOLE\_Template: TTL\_ENV\_V

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TTL-001093

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PROBE HOLE PH-12

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	2/23/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	218.88 Ft. AMSL
<b>DRILLER</b>	D. Mick	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	

**REMARKS** \* Gardendale Dr./Approximately 150 ft. west of Fairground Rd.

Site Investigation--Coliseum Blvd. Area

3/14/00 Report:TTL ENV PROBE HOLE Template:TTL ENV

F:\SECRET\99091\ALDOT PH.GPJ

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0 - 3	Asphalt (approximately 3")							Probehole PH12 continuously sampled to 28 ft. BLS then backfilled to land surface with bentonite chips on 2/23/00.
3 - 12	Clay, reddish brown (5YR 5/4), sandy	CL						
12 - 13	Yellowish red (5YR 5/6) and reddish yellow (7.5YR 6/6), sandy, stiff							
13 - 14	Sand, strong brown (7.5YR 5/8) and yellow (2.5Y 7/6), fine to medium grained, clayey with mica	SC						
14 - 16	Sand, yellowish red (5YR 5/6), fine to medium grained with mica	SM						
16 - 28	Yellow (10YR 7/8) and yellowish brown (10YR 5/8), medium to coarse grained with mica with occasional gravel (<5%; diameter up to 2 cm) Medium to very coarse grained with quartz more abundant (~25%)	SW						
28 - 28	Less gravel (<5%), very moist to wet Pale yellow (5Y 8/4), medium to very coarse grained with mica and occasional gravel (pea-size; <5%)							
28 - 28	Boring terminated at 28 feet.							

Continued Next Page

TTL-001094

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

ALABAMA DEPT. OF TRANSPORTATION  
SITE INVESTIGATION--COLISEUM  
BLVD. AREA

LOG OF PROBE HOLE  
PH-12 (A)

PROJECT NUMBER 0799-091 GEOLOGIST S. Grammas  
LOCATION Montgomery, Alabama\* DATE(S) DRILLED 2/29/00

Continued from Previous Page

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
40								Alternate probehole at probehole location PH-12 to sample clay at 54- to 56-foot interval. The probehole was backfilled to land surface with bentonite chips on 2/29/00.
45								
50								
55		CL				Clay, pale olive (5Y 7/3) and brownish yellow (10YR 6/3), sandy Dark gray with fine sand laminae		
						BORING TERMINATED AT 56 FEET.		

Site Investigation--Coliseum Blvd. Area  
 Report: TTL ENV PROBE HOLE Template: TTLENV.L  
 3/14/00 Report: TTL ENV PROBE HOLE Template: TTLENV.L  
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# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

ALABAMA DEPT. OF TRANSPORTATION  
SITE INVESTIGATION--COLISEUM  
BLVD. AREA

LOG OF PROBE HOLE  
PH-13

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	3/1/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	218.02 Ft. AMSL
<b>DRILLER</b>	D. Mick	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	

**REMARKS** \* Traffic Operations Dr.

Site Investigation--Coliseum Blvd. Area  
Report: TTL ENV PROBE HOLE Template: TTL ENV C  
3/14/00  
990081VALDOT PH.GPJ  
TTL-001096

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0 - 5		CL				Clay, reddish brown (5YR 4/4), sandy		Probehole PH13 continuously sampled to 24 ft. BLS. Sampling continued at 61- to 63-foot interval. The probehole was backfilled to land surface with bentonite chips on 3/1/00.
5 - 10		SM				Yellowish brown (10YR 5/6) and pale olive (5Y 6/3), sandy  Light gray (5Y 7/1) and yellowish brown and red (2.5YR 4/6) with ferruginous staining, sandy		
10 - 15		SM				Sand, yellowish red (5YR 5/8), fine to medium grained		
15 - 20		SW				Reddish yellow (7.5 YR 6/6) and pale yellow (2.5Y 7/3), with mica and glauconite, fine to coarse grained		
20 - 25		SW				Dark brown (7.5YR 3/3) and pale yellow, fine to very coarse grained with mica and occasional pea-size gravel (<5%)		
25 - 26		CL				Wet Clay (~7" thick), reddish yellow (7.5YR 6/6) and pale yellow (2.5Y 7/3), micaceous, slightly sandy		
26 - 27		SW				Sand, pale olive (5Y 6/3), coarse to very coarse grained with gravel (up to 2 cm)		
27 - 35								

Continued Next Page

TTL-001096

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

ALABAMA DEPT. OF TRANSPORTATION  
SITE INVESTIGATION--COLISEUM  
BLVD. AREA

LOG OF PROBE HOLE  
PH-13

PROJECT NUMBER 0799-091 GEOLOGIST S. Grammas  
LOCATION Montgomery, Alabama\* DATE(S) DRILLED 3/1/2000

Continued from Previous Page

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
40								
45								
50								
55								
60		SC				Sand, olive (5Y 4/3), fine to medium grained with occasional thin interbedded clay lenses		
						BORING TERMINATED AT 63 FEET.		

Site Investigation--Coliseum Blvd. Area  
 Report: TTL ENV PROBE HOLE\_Template:TILENV.rpt  
 3/14/00  
 99091VALDOT PH.GPJ  
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TTL-001097

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

ALABAMA DEPT. OF TRANSPORTATION  
SITE INVESTIGATION--COLISEUM  
BLVD. AREA

LOG OF PROBE HOLE  
PH-14

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	2/28/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	223.67 Ft. AMSL
<b>DRILLER</b>	D. Mick	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	

**REMARKS** \* Chisholm St./Approximately 90 ft. west of Fairground Rd.

Site Investigation--Coliseum Blvd. Area  
3/14/00 Report:TTL ENV PROBE HOLE Template:TTL ENV / G.P.J  
F:\SECRET-1\0799091\ALDOT PH.GPJ

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0-3	Asphalt (approximately 3")							Probehole PH14 continuously sampled to 32 ft. BLS. Sampling continued at 40- to 42- and 55- to 57-foot intervals. The probehole was backfilled to land surface with bentonite chips on 2/28/00.
3-5	Clay, dark red (2.5YR 3/8), sandy	CL						
5-10	Sand, dark red, fine to medium grained, clayey	SC						
10-12	Clay, dark red, sandy	CL						
12-15	Sand, red (2.5YR 4/8), fine to medium grained, clayey with mica	SC						
15-25	Reddish yellow (7.5YR 7/8), fine to coarse grained with mica	SM						
25-30	Sand, yellow (2.5Y 7/8), fine to very coarse grained with mica							
30-35	Sand, light olive brown (2.5Y 5/4), medium to very coarse grained							

Continued Next Page

TTL-001098

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

ALABAMA DEPT. OF TRANSPORTATION  
SITE INVESTIGATION--COLISEUM  
BLVD. AREA

LOG OF PROBE HOLE  
PH-14

PROJECT NUMBER 0799-091

GEOLOGIST

S. Grammas

LOCATION Montgomery, Alabama\*

DATE(S) DRILLED

2/28/2000

Continued from Previous Page

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
40		SC				Sand, pale yellow (5Y 7/3), medium to coarse grained with interbedded clay lense (~1" thick)		
		SM				Sand, pale yellow (5Y 8/2), fine to medium grained with mica and glauconite		
45								
50								
55		SC				Sand, dark gray (5Y 4/1), fine to coarse grained with interbedded dark gray clay lenses and mica		
		CL				Clay, dark gray (5Y 4/1), with fine sand laminae		
						BORING TERMINATED AT 57 FEET.		

Site Investigation--Coliseum Blvd. Area

F:\SECRET.1\99091\ALDOT PH.GPJ 3/14/00 Report:TTL ENV PROBE HOLE Template:TTL\ENV.L

TTL-001099

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PROBE HOLE PH-16

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	2/28/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>GROUND ELEVATION</b>	Not Surveyed
<b>DRILLER</b>	D. Mick	<b>DEPTH TO WATER</b>	N/A
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>WATER ELEVATION</b>	Dry

**REMARKS** \* About 80 ft. south of ALDOT well MW3

Site Investigation--Coliseum Blvd. Area

3/14/00 Report:TTL ENV PROBE HOLE Template:TTL ENV PH.GPJ

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	REMARKS
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0 - 16		CL				Clay, dark yellowish brown (10YR 4/4), sandy		Probehole PH16 continuously sampled to 20 ft. BLS then backfilled to land surface with bentonite chips on 2/28/00.
5 - 10						Red (2.5YR 4/8), light gray (5Y 7/2), and brownish yellow (10YR 6/8), (mottled), sandy		
10 - 15						Light gray (5Y 7/1) and red (2.5YR 4/8), silty		
15 - 18						Light gray and light olive gray (5Y 6/2), silty, stiff		
18 - 20		SM				Sand, pale yellow (5Y 7/3) and brownish yellow (10YR 6/8), fine to coarse grained with mica and glauconite (saturated)		
20 - 21		SW				Strong brown (7.5YR 5/8) and light yellowish brown (2.5Y 6/4), medium to very coarse grained with gravel ~10% (diameter up to 2 cm)		
BORING TERMINATED AT 20 FEET.								

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

ALABAMA DEPT. OF TRANSPORTATION  
SITE INVESTIGATION--COLISEUM  
BLVD. AREA

LOG OF PIEZOMETER  
PZ-1

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	3/1/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>CASING DIA./TYPE</b>	1" PVC
<b>DRILLER</b>	D. Mick	<b>SCREEN SLOT/TYPE</b>	0.010-in. slotted PVC
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>FILTER PACK TYPE</b>	20-40 Graded Filter Sand
<b>REMARKS</b>	* Broadway St./Approximately 80 ft. west of	<b>TOP OF CASING</b>	221.01 Ft. AMSL
	Fairground Rd.	<b>GROUND ELEVATION</b>	221.26 Ft. MSL
		<b>DEPTH TO WATER</b>	25.81 Ft. BMP
		<b>WATER ELEVATION</b>	195.20 Ft. MSL

Site Investigation--Coliseum Blvd. Area

FA:SECRET-1 / 79909 \ \ALDOT PH.GPJ 3/21/00 Report:TTL WELL LOG Template:TTL\ENV.GDT

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	WELL DIAGRAM
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
5						Refer to log of Probehole PH-11		
10								
15								
20								
25								
30								
TERMINATED AT 31 FEET.								

TTL-001103

# TTL, Inc.

PRACTICING IN THE GEOSCIENCES  
Tuscaloosa - Montgomery - Florence

## ALABAMA DEPT. OF TRANSPORTATION SITE INVESTIGATION--COLISEUM BLVD. AREA

## LOG OF PIEZOMETER PZ-4

<b>PROJECT NUMBER</b>	0799-091	<b>GEOLOGIST</b>	S. Grammas
<b>LOCATION</b>	Montgomery, Alabama*	<b>DATE(S) DRILLED</b>	3/2/2000
<b>DRILLING COMPANY</b>	Plains Env. Services	<b>CASING DIA./TYPE</b>	1" PVC
<b>DRILLER</b>	D. Mick	<b>SCREEN SLOT/TYPE</b>	0.010-in. slotted PVC
<b>DRILLING METHOD</b>	Geoprobe 5400	<b>FILTER PACK TYPE</b>	20-40 Graded Filter Sand
<b>REMARKS</b>	* Broadview St./About 70 ft. north of CSX RR	<b>TOP OF CASING</b>	216.18 Ft. AMSL
		<b>GROUND ELEVATION</b>	216.45 Ft. MSL
		<b>DEPTH TO WATER</b>	27.13 Ft. BMP
		<b>WATER ELEVATION</b>	189.05 Ft. MSL

Site Investigation--Coliseum Blvd. Area

F:\SECRET-1\99\091\ALDOT PH.GPJ 3/21/00 Report:TTL WELL LOG Template:TTL\ENV.GDT

DEPTH (feet)	GRAPHIC LOG	U.S.C.S.	SAMPLE			LITHOLOGIC DESCRIPTION	WATER LEVEL & DATE	WELL DIAGRAM
			INTERVAL (feet)	% RECOVERY	PID (ppm)			
0							Well Cover	
5						Refer to log of Probehole PH-15	Grout	
10							Bentonite seal	
15							1" PVC pipe	
20							Sand filter pack	
25							9 foot slotted screen	
30							Well tip	
35								
36					TERMINATED AT 36 FEET.			
							3/2/00	

TTL-001106