GROUND-WATER INVESTIGATION

ALABAMA DEPARTMENT OF TRANSPORTATION

CENTRAL COMPLEX MONTGOMERY, ALABAMA

December 20, 1999

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INTRODUCTION

In September 1999, TTL, Inc. was retained by the ALDOT (Alabama Department of Transportation) to perform a Ground-Water Investigation at the ALDOT Central Complex in Montgomery, Alabama. The Ground-Water Investigation was initiated because ground-water samples, collected during a Phase II ESA (Environmental Site Assessment) of the nearby "Vista View Development," contained TCE (trichloroethylene). The Phase II ESA was performed by GM&CE (Goodwyn, Mills and Cawood Environmental Consultants, Inc.) for Alfa (Alfa Mutual Fire Insurance Company).

The ground-water investigation began on October 4, 1999. Nine monitoring wells were constructed around the perimeter of the ALDOT Complex. Soil samples were collected during augering of the borings for the monitoring wells. Ground-water samples were collected from the 9 monitoring wells at the ALDOT Complex and from 5 monitoring wells that had been constructed at the Vista View Development property during the Phase II ESA by GM&CE. The soil and ground-water samples were analyzed for VOCs (volatile organic compounds). Ground-water samples collected from some of the monitoring wells at the ALDOT Complex and from some of the monitoring wells at the Vista View Development contained TCE.

A summary of the Phase II ESA by GM&CE and results of the ground-water investigation by TTL are included in this report.

SUMMARY OF PHASE II ENVIRONMENTAL SITE ASSESSMENT

In July, August, and September 1999, a Phase II ESA was conducted by GM&CE at Vista View Development. An affiliated company of Alfa had purchased the 538-acre tract for the Development from the State of Alabama in 1972. GM&CE reported that the tract had been part of the former Kilby Prison property and that agricultural crops had been grown on most of the land that Alfa purchased. Alfa subsequently developed

"Eastern Meadows" and "Vista View" subdivisions, "Vista View Shopping Center," and various commercial lots on the property.

A Geoprobe was used by GM&CE to collect 36 soil samples and 42 ground-water samples at the Vista View Development property. The soil and ground-water samples were analyzed, in the field, using a gas chromatograph/photoionization detector (GC/PID). Seven (7) of the 36 soil samples contained TCE. Two soil samples collected from 8 to 10 feet BLS (below land surface) contained 10 and 13 μg/kg (micrograms per kilogram), respectively, of TCE. Five soil samples collected from 14 to 16 feet BLS contained from 15 to 53 μg/kg of TCE. Thirty-five (35) of the 42 ground-water samples contained TCE. The concentrations of TCE in the 35 ground-water samples ranged from 16 to 3,100 μg/l (micrograms per liter).

GM&CE constructed five monitoring wells (referred to in this TTL report as Alfa wells MW-1 through MW-5) at Vista View Development. The depths of the monitoring wells ranged from 25 to 50 feet and comprise flush-threaded, 2-inch diameter, PVC screens and risers. The PVC screen in each monitoring well is 10 feet long and has number 10 machine slots.

GM&CE collected ground-water samples from the monitoring wells on September 2, 1999. Four of the samples contained TCE. The ground-water samples from wells MW-1 and MW-3 contained the greatest concentrations of TCE (297 and 312 μg/l, respectively). Well MW-1 is about 1,200 feet north of the intersection of Coliseum Boulevard and Chisholm Street. Well MW-3 is in the northwest corner of the Eastern Meadows subdivision, which is in the southwest corner of the Vista View Development.

GM&CE concluded that the TCE contamination may have traveled in a ditch that crosses onto the Alfa property near the southwest property corner. GM&CE concluded that this ditch crosses northeasterly through the Alfa areas where there were the greatest TCE concentrations.

Based on the history of land usage, the northeasterly flow of ground water, and the distribution of TCE concentrations in the ground water on the Vista View Development property, GM&CE reported that the TCE plume had migrated from the southwest. The ALDOT Complex is generally southwest of the Vista View Development.

Therefore, ALDOT conducted a ground-water investigation to determine if there is TCE in soil/sediment and/or ground water at the ALDOT Complex.

SITE DESCRIPTION

Geographic Location and Setting

The ALDOT Complex is in the SW¼ SE¼ of the NW¼ and the NW¼ NE¼ of the SW¼ of sec. 33, T. 17 N., R. 18 E., of the Montgomery North 7½-minute USGS topographic map (see Figure 1). The Complex is bounded on the north, east, south, and west by Chisholm Street, Coliseum Boulevard, Traffic Operations Drive, and Fairground Road, respectively. General land uses near the ALDOT Complex are shown on Figure 2. As shown on Figure 2, the Department of Finance Printing and Publications Facility is within the north central part of the ALDOT Complex. In this report, the ALDOT Complex includes the Department of Finance, Printing, and Publications Facility.

Surface Water and Storm Sewers

Surface-water runoff at the ALDOT Complex is affected primarily by paved parking areas, which divert runoff into various stormwater inlets. The locations of stormwater inlets, pipes, and associated flow patterns on the ALDOT Complex were not determined during this investigation.

Based on review of a topographic map of the ALDOT Complex, most of the surface runoff from unpaved areas at the Complex flows into a north-south ditch in the west part of the Complex. Based on review of aerial photos and a 1981 topographic map, the ditch extends northward from the ALDOT Complex, through Eastern Meadows subdivision, and then northeast to a former pond in the northeast part of the Vista View Development property. Further review of the topographic map indicated that a second drainage ditch east of Coliseum Boulevard crossed the Vista View Development

Property. The approximate locations of these drainage ditches (as shown on the 1981 Montgomery North USGS 7½-minute topopgraphic map) are shown on Figure 2.

The drainage ditches on Vista View Development have been altered by development on the Vista View property. Parts of the ditches have been covered. Parts of the ditches are concrete lined and parts are open and unlined.

During the Ground-Water Investigation, three monitoring wells (identified as ALDOT monitoring wells MW1, MW3, and MW8) were constructed within about 40 feet of the drainage ditch to determine if the ditch that crosses the ALDOT Complex was a pathway for migration of TCE.

The open drainage ditch along the ALDOT Complex is unlined. The bottom of the unlined ditch is about 4 feet BLS near ALDOT monitoring well MW3 and about 8 feet BLS near ALDOT monitoring well MW1. These depths correspond to elevations of about 207 and 209 feet AMSL (above mean sea level), respectively. The bottom of the ditch on the ALDOT Complex is within clay (see Figure 3).

Sanitary Sewers

The locations of sanitary-sewer pipes (provided by the Montgomery Water Works and Sanitary Sewer Board) are shown on Figure 2. The "main" sanitary-sewer pipe within the ALDOT Complex is 8-inch diameter VCP (vitrified clay pipe). Water flows generally north in this main sewer pipe within the ALDOT Complex. This main pipe connects to an 8-inch diameter VCP that extends along the central part of Chisholm Street. The invert elevations of sanitary-sewer manholes along Chisholm Street range from about 204 to 214 feet AMSL. The depth of the sanitary-sewer pipe that is along Chisholm Street is on west-east geologic cross-section B-B' (see Figure 4). As shown on Figure 4, sections of this sewer pipe are immediately above or within clayey sands. On November 16, 1999, the water table was at least 10 feet below the sewer pipe.

Water from the westernmost sanitary-sewer manhole on Chisholm Street flows east. Water from the easternmost sanitary sewer manhole on Chisholm Street flows west. The water in the sanitary-sewer pipe then diverges to a manhole in the east part

of Chisholm Street and turns north into Woodbury Court. From Woodbury Court, water flows east then north through sanitary-sewer pipes and crosses Coliseum Boulevard about 1,100 feet north of the intersection of Chisholm Street and Coliseum Boulevard.

Geology and Hydrogeology

The ALDOT Complex is in the north-central part of Montgomery County. The site is in an area where there are about 50 feet of terrace deposits of the Alabama River, which meanders within about 2 miles generally west-northwest of the Complex. These terrace deposits are primarily sand and gravel and are underlain by the Eutaw Formation, which is about 50 feet thick at the site and comprises fine- to medium-grained micaceous and glauconitic sand and sandy clay (Knowles, Reade, Jr., and Scott, 1963). The Gordo Formation, which immediately underlies the Eutaw Formation, is at least 300 feet thick at the site and primarily comprises medium- to coarse-grained, ferruginous, quartzose, sand that is interbedded with sandy clay. The top of the Gordo Formation is about 115 feet BLS at the site. Additional information on the shallow lithologies at the site are provided in the "Results" section of this report.

According to personnel of the Montgomery Water Works and Sanitary Sewer Board, water for residents of the City of Montgomery is obtained from the Tallapoosa River and from a "north" and a "west" well field. There are 15 public-supply wells in the north field and 29 public-supply wells in the west field. The public-supply wells are screened within the Eutaw and Gordo Formations. The depths of these wells range from about 70 to about 300 feet BLS. The nearest public-supply wells (wells no. 14 and 15) are about 1.5 miles southwest of the ALDOT Complex. Well no. 14 is about 73 feet deep and is screened in the Eutaw Formation. Well no. 14 is to be abandoned in the near future. Well no. 15 is 644 feet deep and is screened in the Gordo Formation. No privately owned wells were observed within 1,000 feet of the site during a vehicular reconnaissance on November 10, 1999.

GROUND-WATER INVESTIGATION

Field Activities

Field operations for the Ground-Water Investigation began on October 4, 1999. First, a decontamination pad was constructed to collect water during cleaning of field equipment. The decontamination pad (about 20 feet long and 12 feet wide) was constructed by laying 8-mil polyethylene sheeting within a sand berm. A sump pump was used to pump water that accumulated within the decontamination pad into 55-gallon DOT-approved drums.

A CME-75 truck-mounted drill rig, equipped with 4¼-inch ID (inside diameter) hollow-stem augers, was used to auger borings for 9 monitoring wells (identified as ALDOT monitoring wells MW1 through MW9). The locations of these borings/monitoring wells are shown on Figures 2 and 6. The locations of the monitoring wells were based on the direction of the flow of ground water reported in the Phase II ESA Report by GM&CE.

During augering of the borings for the monitoring wells, sands at depths greater than about 25 feet would flow up into the augers. Water was used to flush the sands from the augers so further sampling could be achieved. The water used to flush these sands was obtained from a fire hydrant at the ALDOT Complex. Mud-rotary drilling methods were used to advance the boring for ALDOT monitoring well MW1 because the sands could no longer be flushed from the augers when the augers reached about 62 feet BLS. The boring then was advanced to 67 feet BLS by pumping a bentonite slurry through coring rods and into the boring. The boring was used only as a pilot hole and not for well construction because the bentonite slurry had been used to complete the boring. The pilot hole was backfilled to land surface with a cement/bentonite grout.

The alternate site for well MW-1 is about 35 feet southwest of the pilot hole. Hollow-stem augers were used to auger the boring for ALDOT monitoring well MW1. A wooden plug was placed in the bottom of the auger bit to prevent sands from heaving into the augers. The augers then were advanced to 64 feet BLS and the well constructed.

Split-spoon and split-tube samplers were used to retrieve continuous samples of the soils/sediments from the pilot hole for ALDOT monitoring well MW1 and the boring for ALDOT monitoring well MW2. Based on examination of these samples, these borings were terminated in a stiff, dark gray clay that contained laminae of fine sand. The dark gray clay was at least 4 feet thick in the pilot hole. The top of this clay was about 64 and 70 feet BLS, respectively, at the pilot hole and the boring for monitoring well MW2. These depths correspond to elevations of about 151 and 149 feet AMSL, respectively. Immediately overlying the dark gray clay in the pilot hole was about 6 inches of olive sandy clay. A sandy clay was not present above the dark gray clay in the boring for monitoring well MW2. Continuous samples also were retrieved from the borings for ALDOT wells MW3 and MW4. However, these borings were terminated at about 52 feet BLS in a pale yellow sandy clay and about 62 feet BLS in an olive and olive yellow sandy clay, respectively. These depths correspond to elevations of about 159 and 152 feet AMSL, respectively.

Immediately overlying the olive sandy clay in the pilot hole, the dark gray clay in the boring for monitoring well MW2, and the pale yellow, olive, and olive yellow sandy clay in the borings for monitoring wells MW3 and MW4 were 34 to 57 feet of sand. The top of this sand was as shallow as about 9 feet BLS and the bottom as deep as about 70 feet BLS. TTL evaluated the lithologies above and the depths to the top and bottom of the sand and determined that continuous sampling was not necessary within the bulk of the thick sand. Therefore, TTL used the continuous samplers to retrieve soils/sediments from the land surface down to the water table in the borings for ALDOT wells MW5 through MW9. A wooden plug then was inserted into the auger bit and the augers advanced to depths that ranged from about 42 to 47 feet BLS at wells MW5 through MW9. Continuous sampling then was resumed and continued until a clay was encountered.

The soil/sediment samples retrieved from samplers during the augering were described by an on-site geologist. The samples were scanned for volatile vapors with a photoionization detector. During augering of the boring for monitoring well MW1, only the drill cuttings were scanned for volatile vapors because the split-spoon and split-tube samplers were not used.

The truck-mounted drill, augers, and samplers were steam cleaned (on the decontamination pad) between each boring. Alconox and deionized water were used to clean the split-spoon samplers between sampling intervals.

Each of the 9 ALDOT monitoring wells was constructed by inserting 36.5 to 54 feet of 2-inch diameter, 0.010-inch, slotted, PVC screen with PVC riser inside the 4¼-inch ID hollow-stem augers. (Each well was screened from near the top of the clay in which the boring was terminated to a few feet above the water table to allow for collection of ground-water samples at varying intervals within the water-bearing zone.) The augers then were removed from the borehole. A sand pack, consisting of graded filter sand, was placed around each well screen and a bentonite plug was placed on top of the sand pack. A cement/bentonite seal was placed on top of the bentonite plug. A flush-mounted road box was placed at the top of monitoring wells MW2 through MW9. A protective stand-up cover was used for monitoring well MW1.

The 9 ALDOT monitoring wells were developed on October 12, 13, 14, and 18, 1999. A Westinghouse pneumatic pump was used to pump water from each well until the ground water being recovered from each well was relatively clear and indicator parameters (pH, conductivity, dissolved oxygen) had stabilized. Fifty (50) to seventy (70) gallons of water were pumped from each monitoring well during the development.

On October 19 and 20, 1999, the elevations of the measuring point on the top of each well and the land surface at each well were surveyed by Larry E. Speaks and Associates.

Investigation Derived Waste

Based on results of field screening for volatile vapors, drill cuttings from the boring for monitoring well MW1 were placed in a 55-gallon drum. Dry drill cuttings (from augering above the water table) and saturated drill cuttings (from augering below the water table) from the borings for the pilot hole (near MW1) and for monitoring wells MW2 through MW9 were placed on polyethylene sheeting and in a roll-off box, respectively, at the site.

About 13,300 gallons of decontamination, development, and purge water were treated with activated carbon filters and discharged into a clean-out sanitary-sewer pipe at the ALDOT Complex. Approval was obtained from the ADEM (Alabama Department of Environmental Management) to discharge the treated water (see Appendix C).

Sample Collection and Analytical Methods

Volatile vapors were not detected in soil/sediment samples from the vadose zone at the pilot hole for monitoring well MW1 and from the borings for ALDOT monitoring wells MW2 through MW9. Therefore, samples were collected within about 12 inches of the saturated materials retrieved in the shelby tubes from the borings. Nine samples were collected from the pilot hole/borings at depths that ranged from 17.5 to 23 feet BLS. Soil/sediment samples also were collected from the drill cuttings. The samples were collected using Encore™ Samplers. Upon sample collection, each sample was placed, on ice, in a cooler. Within 24 hours of sample collection, the samples were shipped, by bus, to TTL's laboratory. The samples were analyzed for VOCs.

Shelby tubes were used to collect soil/sediment samples from the borings for monitoring wells MW3, MW4, MW5, MW7, and MW9. The samples were collected from 4 to 6, 9 to 11, 16 to 18 and 19 to 21 feet BLS. The soil samples were analyzed for moisture content, porosity, dry bulk density, and FOC (fractional organic carbon) at TTL's geotechnical laboratory in Tuscaloosa, Alabama. The results of these analyses (see Appendix B) can be used to determine the transport characteristics of soils on the ALDOT Complex. Specifically, to determine how chemicals of concern might migrate through the soils to ground water. Results of these analyses were not used during this investigation because areas of soil investigated on the ALDOT Complex did not contain TCE.

Ground-water samples were collected from ALDOT monitoring wells MW1 through MW9 on October 19 and 20, 1999. A bladder pump was used to purge at least three well-bore volumes of water from each well prior to sample collection. Specific conductance, pH, and temperature were monitored during the purging. Chlorine content

was measured (with Hach Field Test kits) to test for remnant public-supply water from flushing of the heaving sands during the augering of the borings for the monitoring wells. The depths to water in the monitoring wells were measured prior to purging. The pump was within about a foot of the bottom of the well screen of each monitoring well when each sample was collected.

Additional ground-water samples were collected on November 16, 17, and 18, 1999. The ground-water samples were collected from ALDOT monitoring wells MW1 through MW9 and from Alfa monitoring wells MW-1 through MW-5.

At least three well-bore volumes of water were purged from Alfa monitoring wells MW-1 through MW-5 prior to sample collection. Greater volumes of water were purged from the ALDOT monitoring wells because the ground-water samples collected from the ALDOT monitoring wells on October 19 and 20, 1999 had contained chloroform and bromodichloromethane. The chloroform and bromodichloromethane in the ground-water samples probably resulted from use of the chlorinated water to flush the heaving sands during augering of the borings for the ALDOT monitoring wells. At least twice the volume of water used to flush the sands during augering of the borings was purged from each of the wells prior to the re-sampling. During purging, water levels did not drop significantly. Indicator parameters were measured during purging.

On November 16, 1999, depths to water were measured in the ALDOT monitoring wells and in the Alfa monitoring wells. Personnel of TTL, Inc., ADEM, and GM&CE were present during the measuring of the depths to ground water in the monitoring wells on November 16, 1999. TTL measured the depths to ground water in ALDOT monitoring wells MW1 through MW9 and Mr. Bill Smith of GM&CE measured the depths to water in Alfa monitoring wells MW-1 through MW-5 on November 16, 1999. These depths to water were measured prior to collecting the ground-water samples.

A bladder pump was used to collect the ground-water samples collected on November 16, 17, and 18, 1999. The pump was within about a foot of the bottom of the well screen of each monitoring well when each sample was collected. At the request of ADEM, ground-water samples also were collected at about 35 and about 30 feet BLS in ALDOT monitoring wells MW2 and MW3, respectively. The ground-water samples were sent to three laboratories for analyses for VOCs. The ground-water samples were

collected by: (1) Mr. Joe Gibson of ADEM; (2) Mr. Bill Smith of GM&CE, and (3) TTL, Inc.

Field trip blanks and equipment rinse blanks (collected during field cleaning of equipment) were collected and analyzed for VOCs. Each batch of water that was treated with the activated carbon filters on TTL's treatment trailer was sampled prior to discharging the treated water into the sewer. None of the samples of this treated water contained detectable concentrations of VOCs.

Water samples were placed into glass vials, preserved with hydrochloric acid, and the vials sealed with Teflon-lined lids. The water samples were placed, on ice, in a cooler. The samples were shipped, by bus, and/or transported to TTL's laboratory and analyzed for VOCs. The soil and ground-water samples collected by TTL were transported and analyzed for VOCs using Method 8260 outlined in Test Methods for Evaluating Solid Waste Physical/Chemical Methods, EPA, SW-846, Third Edition, November, 1986.

Results

Logs of borings and well-completion diagrams for ALDOT monitoring wells MW1 through MW9 are provided in Appendix A. Construction characteristics of the ALDOT monitoring wells are compiled in Table 1. The locations of ALDOT and Alfa monitoring wells are shown on Figures 2 and 6. Monitoring well MW1 is near the south end of the ditch that crosses the north-central part of the ALDOT Complex. Monitoring wells MW2 through MW9 are around the perimeter of the ALDOT Complex.

Northwest-southwest (A-A') and (C-C') and west-east (B-B') geologic cross-sections were prepared by reviewing the lithologies of the borings for ALDOT monitoring wells MW1 through MW4 and MW7 through MW9 and the boring for Alfa monitoring well MW3 (see Figures 3, 4, and 5). The locations of these cross-sections are shown on Figure 2. There is a 10- to 20-foot-thick, relatively stiff, sandy, and silty clay at or within about 4 feet of the land surface. Beneath this clay is a fine-to coarse-grained sand that often contains gravel. The bottom of this sand at the ALDOT Complex ranged from

about 50 to 70 feet BLS. The borings for the ALDOT monitoring wells were terminated in a sandy clay and a clay with fine-sand laminae beneath the sand.

Volatile vapors were not detected in soil/sediment samples recovered during augering of the pilot hole near monitoring well MW1 nor in soil/sediment samples recovered during augering of the borings for monitoring wells MW2 through MW9. There were 6 to 70 parts per million of volatile vapors in the drill cuttings from the boring for ALDOT monitoring well MW1. Based on these results, the drill cuttings were placed in a 55-gallon drum.

Results of the analyses for VOCs in soil/sediment samples collected from the borings for ALDOT monitoring wells MW1 through MW9 are provided in Table 2. Laboratory reports of the results of the analyses for VOCs in the soil/sediment samples are presented in Appendix B. The soil/sediment samples from the borings were collected about a foot above the water table. Trichloroethylene was not detected in any of these soil/sediment samples. The only compound detected in the soil/sediment samples was M,P-Xylenes. A soil/sediment sample from 20 to 21 feet BLS from the boring for monitoring well MW2 and a soil/sediment sample from 22 to 23 feet BLS from the boring for monitoring well MW7 contained 0.024 and 0.012 milligram per kilogram (mg/kg), respectively, of M,P-Xylenes. Based on depths to water in monitoring wells MW2 and MW7 on October 20, 1999, the soil/sediment sample from 20 to 21 feet BLS from the boring for monitoring well MW2 was collected from about 1.5 to 2.5 feet above the water table. The soil/sediment sample from 22 to 23 feet BLS from the boring for monitoring well MW7 was collected from about 0.5 foot above the water table to about 0.5 foot below the water table. The concentrations of M,P-Xylenes in the soil samples are below the ISL (initial screening level) of 141 mg/kg for total xylenes in soil on commercial property (Alabama Risk-Based Corrective Action for Underground Storage Tanks Guidance Manual, April 1998). Because VOCs were not detected in soil/sediment samples from the drill cuttings, the cuttings (about 30 cubic yards) were used as fill on the ALDOT Central Complex property.

Water-level measurements by TTL personnel and survey data for the monitoring wells are presented in Table 3. On October 19 and 20, 1999 and on November 16, 1999, depths to water in the ALDOT monitoring wells ranged from about 15 to 23 feet BLS. On

November 16, 1999, depths to water in the Alfa monitoring wells ranged from about 13 to 19 feet BLS. Figure 6 shows the elevations of ground water on November 16, 1999. On November 16, 1999, the general direction of ground-water flow at the site was northeast. As shown on Figure 6, the water table at the ALDOT Complex is relatively flat.

Results of the analyses for VOCs in the ground-water samples that were collected from the ALDOT monitoring wells on October 19 and 20, 1999 and on November 16, 17, and 18, 1999 are provided in Table 4. Laboratory reports of the results of the analyses for VOCs in the ground-water samples and in other water samples (equipment rinse blanks, trip blanks, and treated wastewater) are presented in Appendix B. Review of Table 4 indicates that TCE; 1,1 dichloroethene; cis-1,2 dichloroethene; 0-xylene; chloroform; and bromodichloromethane were detected in the ground-water samples. Concentrations of TCE; 1,1 dichloroethene; cis-1,2 dichloroethene; and 0-xylene in the ground-water samples are provided in Table 5. Ground-water samples from four monitoring wells (MW2, MW3, MW7, and MW9) at the ALDOT Complex contained TCE. Three of these monitoring wells (MW2, MW3, and MW7) are in the north part of the ALDOT Complex. The greatest concentrations of TCE (for ground-water samples from monitoring wells at the ALDOT Complex) have been in ground-water samples from ALDOT monitoring well MW3.

Ground-water samples collected from ALDOT monitoring wells MW3 and MW7 during the October 1999 sampling event contained 0.029 and 0.008 mg/L trichloroethylene, respectively. During the November 1999 sampling event, ground-water samples from ALDOT monitoring wells MW3 and MW7 contained 0.030 and 0.014 mg/L trichloroethylene, respectively. The November 1999 ground-water samples from ALDOT monitoring wells MW2 and MW9 each contained a concentration of 0.006 mg/l of TCE.

Results of the analyses for VOCs in the ground-water samples that were collected from Alfa monitoring wells on November 16, 17, and 18, 1999 are provided in Table 4. The November 1999 ground-water samples from Alfa monitoring wells MW-1, MW-2, MW-3, and MW-5 contained TCE. The greatest concentrations of TCE were in ground-water samples from Alfa monitoring well MW-1 (0.952 mg/l) and Alfa monitoring well

MW-3 (0.297 mg/l). Alfa monitoring well MW-1 is about 1,200 feet north of the intersection of Coliseum Boulevard and Chisholm Street. Alfa monitoring well MW-3 is in the west part of the Eastern Meadows subdivision.

Conclusions

- The ALDOT Central Complex is on about 50 feet of terrace deposits. Immediately beneath these terrace deposits are about 50 feet of the Eutaw Formation. The water table at the ALDOT Complex is generally 15 to 23 feet BLS within terrace deposits. A 10- to 20-foot relatively stiff sandy and silty clay is above the water table.

- In general, the greatest concentration of TCE (0.030 mg/l) in ground-water samples collected from monitoring wells on the ALDOT Complex is significantly less than the concentration of 0.952 mg/l and 0.297 mg/l of TCE in ground-water samples from Alfa monitoring wells MW-1 and MW-3, respectively. Alfa monitoring well MW-1 is about 1,200 feet north of the intersection of Coliseum Boulevard and Chisholm Street. Alfa monitoring well MW-3 is in the west part of the Eastern Meadows subdivision. Review of the concentrations of TCE in the ground-water samples collected on October 19 and 20, 1999 and on November 16, 17, and 18, 1999 indicates that ground water at the ALDOT Complex is not the source of the TCE in ground water at the Vista View Development.

Recommendations

Based on results of the Ground-water Investigation, **TTL** recommends the following:

- Investigation of ground water west of Fairground Road.
- Additional investigation of the ditch and storm sewers on and in the vicinity of the ALDOT Complex.
- Evaluation of the sanitary sewer systems.

REFERENCES

Knowles, D. B., Reade, H. L., and Scott, J. C., 1963, Geology and ground-water resources of Montgomery County, Alabama; Alabama Geological Survey, Bulletin 68, Part A.

TABLES

TABLE 1. Well-construction characteristics; Ground-Water Investigation; Alabama Department of Transportation Central Complex; Montgomery, Alabama. [Locations of monitoring wells are shown on Figures 2 and 6.]

Well I.D.	Date Augered/ Constructed	Total Depth (ft. BLS)[1]	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)
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

[1] Feet below land surface.

TABLE 2. Results of analyses[1] for volatile organic compounds in soil/sediment samples collected from borings for ALDOT monitoring wells; Ground-Water Investigation; Alabama Department of Transportation Central Complex; Montgomery, Alabama.

[Concentrations are in milligram per kilogram]

Boring/ Well Identifier	Depth of Sample (ft. BLS)[2]	PQL[3], mg/kg	Chloromethane	Vinyl Chloride	Bromomethane	Chloroethane	Trichlorofluoromethane	1,1-Dichloroethene	Methylene Chloride	trans-1,2-Dichloroethene	1,1-Dichloroethane	cis-1,2-Dichloroethene	Chloroform	1,1,1-Trichloroethane	Carbon Tetrachloride	Benzene	1,2-Dichloroethane	Trichloroethylene	1,2-Dichloropropane
			0.010	0.010	0.020	0.010	0.005	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
MW1	17.5-18		<0.010	<0.010	<0.020	<0.010	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
MW2	20-21		<0.010	<0.010	<0.020	<0.010	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
MW3	15-16		<0.010	<0.010	<0.020	<0.010	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
MW4	17-18		<0.010	<0.010	<0.020	<0.010	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
MW5	18-19		<0.010	<0.010	<0.020	<0.010	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
MW6	16-17		<0.010	<0.010	<0.020	<0.010	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
MW7	22-23		<0.010	<0.010	<0.020	<0.010	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
MW8	18-19		<0.010	<0.010	<0.020	<0.010	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
MW9	18-19		<0.010	<0.010	<0.020	<0.010	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

Continued on next page

Table 2–Continued

(Concentrations are in milligram per kilogram)

Boring/ Well Identifier	Depth of Sample (ft. BLS)[2]	PQL[3], mg/kg	Bromodichloromethane	cis-1,3-Dichloropropene	Toluene	trans-1,3-Dichloropropene	1,1,2-Trichloroethane	Tetrachloroethene	Dibromochloromethane	Chlorobenzene	1,1,1,2-Tetrachloroethane	Ethyl Benzene	M,P-Xylenes	O-Xylene	Bromoform	1,1,2,2-Tetrachloroethane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichlorobenzene
			0.010	0.010	0.010	0.005	0.010	0.005	0.005	0.010	0.010	0.010	0.010	0.010	0.010	0.005	0.005	0.010	0.010
MW1	17.5-18		<0.010	<0.010	<0.010	<0.005	<0.010	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.005	<0.005	<0.010	<0.010
MW2	20-21		<0.010	<0.010	<0.010	<0.005	<0.010	<0.005	<0.005	<0.010	<0.010	<0.010	0.024	<0.010	<0.010	<0.005	<0.005	<0.010	<0.010
MW3	15-16		<0.010	<0.010	<0.010	<0.005	<0.010	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.005	<0.005	<0.010	<0.010
MW4	17-18		<0.010	<0.010	<0.010	<0.005	<0.010	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.005	<0.005	<0.010	<0.010
MW5	18-19		<0.010	<0.010	<0.010	<0.005	<0.010	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.005	<0.005	<0.010	<0.010
MW6	16-17		<0.010	<0.010	<0.010	<0.005	<0.010	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.005	<0.005	<0.010	<0.010
MW7	22-23		<0.010	<0.010	<0.010	<0.005	<0.010	<0.005	<0.005	<0.010	<0.010	<0.010	0.012	<0.010	<0.010	<0.005	<0.005	<0.010	<0.010
MW8	18-19		<0.010	<0.010	<0.010	<0.005	<0.010	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.005	<0.005	<0.010	<0.010
MW9	18-19		<0.010	<0.010	<0.010	<0.005	<0.010	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.005	<0.005	<0.010	<0.010

[1] Testing of the samples was in accordance with Method 8260 outlined in Test Methods of Evaluating Solid Waste Physical/Chemical Methods, EPA, SW-846, Third Edition, November, 1986.

[2] Feet below land surface.

[3] PQL = Practical Quantitation Limit

TABLE 3. Ground-water elevations; Ground-Water Investigation; Alabama Department of Transportation Central Complex; Montgomery, Alabama. [Locations of monitoring wells and selected corresponding ground-water elevations are shown on Figure 6.]

Well Identifier	Elevation of Land Surface[1] (feet)	Elevation of Measuring Point[2] (feet)	Screened Interval (ft. BLS)[3]	Date of Measurement	Depth to Water (ft. BMP)[4]	Ground-Water Elevation (ft. AMSL)[5]
ALDOT MW1	215.16	218.42	14-63	10/20/99	22.04	196.38
				11/16/99	22.36	196.06
ALDOT MW2	218.84	218.76	16-70	10/20/99	22.43	196.33
				11/16/99	22.76	196.00
ALDOT MW3	211.23	211.01	15-51.5	10/19/99	14.94	196.07
				11/16/99	15.26*	195.75
ALDOT MW4	214.14	213.79	13-62	10/20/99	17.93	195.86
				11/16/99	18.20	195.59
ALDOT MW5	218.18	218.06	14.5-53.5	10/19/99	22.31	195.75
				11/16/99	22.59	195.47
ALDOT MW6	218.82	218.76	15.5-59.5	10/19/99	22.88	195.88
				11/16/99	23.19	195.57
ALDOT MW7	218.05	217.97	20-64	10/20/99	22.34	195.63
				11/16/99	22.60	195.37
ALDOT MW8	218.72	218.62	17-61	10/19/99	22.00	196.62
				11/16/99	22.29	196.33
ALDOT MW9	217.20	216.97	17-56	10/19/99	20.43	196.54
				11/16/99	20.78	196.19
		Monitoring Wells (Vista View Development)				
MW-1	213.99	213.53	32.8-42.8	11/16/99	18.65*	194.88
MW-2	206.24	206.01	34.5-44.5	11/16/99	12.60	193.41
MW-3	209.85	209.67	30.5-40.5	11/16/99	14.21	195.46
MW-4	213.27	213.18	38.5-48.5	11/16/99	18.19	194.99
MW-5	200.26	203.42	14.2-24.2	11/16/99	16.50	186.92

[1] Elevations of land surface and measuring points of monitoring wells at ALDOT Complex surveyed by Larry E. Speaks & Associates.

[2] Top of casing.

[3] Feet below land surface.

[4] Feet below measuring point.

[5] Feet above mean sea level.

* Depths to water in ALDOT monitoring well MW3 & ALFA monitoring well MW-1 were reported (November 22, 1999 Status Report) incorrectly as 16.26 and 18.05 feet BMP, respectively, due to transcription errors from a telefaxed copy of field notes.

TABLE 4. Results of analyses[1] for volatile organic compounds in ground-water samples; Ground-Water Investigation; Alabama Department of Transportation Central Complex; Montgomery, Alabama.

[Concentrations are in milligram per Liter]

Well Identifier	Sample Date	Chloromethane	Vinyl Chloride	Bromomethane	Chloroethane	Trichlorofluoromethane	1,1-Dichloroethene	Methylene Chloride	trans-1,2-Dichloroethene	1,1-Dichloroethane	cis-1,2-Dichloroethene	Chloroform	1,1,1-Trichloroethane	Carbon Tetrachloride	Benzene	1,2-Dichloroethane	Trichloroethylene	1,2-Dichloropropane
	PQL[2], mg/L	0.010	0.002	0.010	0.010	0.010	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
ALDOT MW1	10/20/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/18/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ALDOT MW2	10/20/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005*	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005
	11/17/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005*	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005	<0.005	<0.005	<0.005	0.005	<0.005
	11/18/99[3]	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005	<0.005	<0.005	<0.005	0.006	<0.005
ALDOT MW3	10/19/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005	<0.005	<0.005	<0.005	0.029	<0.005
	11/16/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.030	<0.005
	11/18/99[4]	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005	<0.005	<0.005	<0.005	0.033	<0.005
ALDOT MW4	10/20/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005
	11/18/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005
ALDOT MW5	10/19/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/16/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ALDOT MW6	10/19/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/16/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ALDOT MW7	10/20/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005	<0.005	<0.005	<0.005	0.008	<0.005
	11/17/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.014	<0.005
ALDOT MW8	10/19/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/17/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ALDOT MW9	10/19/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	0.012	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005
	11/17/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005
Monitoring Wells (Vise View Development)																		
Alfa MW-1	11/18/99	<0.010	<0.002	<0.010	<0.010	<0.010	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.952	<0.005
Alfa MW-2	11/18/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005	<0.005	<0.005	<0.005	0.012	<0.005
Alfa MW-3	11/18/99	<0.010	<0.002	<0.010	<0.010	<0.010	0.018	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005	<0.005	<0.005	<0.005	0.297	<0.005
Alfa MW-4	11/17/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Alfa MW-5	11/18/99	<0.010	<0.002	<0.010	<0.010	<0.010	<0.005	<0.005	<0.005	<0.005	0.018	<0.005	<0.005	<0.005	<0.005	<0.005	0.030	<0.005

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TABLE 4--Continued

[Concentrations are in milligram per Liter]

Well Identifier	Sample Date	PQL[2], mg/L	Bromodichloromethane	cis-1,2-Dichloropropene	Toluene	trans-1,3-Dichloropropene	1,1,2-Trichloroethane	Tetrachloroethene	Dibromochloromethane	Chlorobenzene	1,1,1,2-Tetrachloroethane	Ethyl Benzene	M,P-Xylenes	O-Xylene	Bromoform	1,1,2,2-Tetrachloroethane	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichlorobenzene
			0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
ALDOT MW1	10/20/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005*	<0.005	<0.005	<0.005	<0.005	<0.005
	11/18/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ALDOT MW2	10/20/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/17/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/18/99[3]		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ALDOT MW3	10/19/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/18/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/18/99[4]		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ALDOT MW4	10/20/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/18/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ALDOT MW5	10/19/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/18/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ALDOT MW6	10/19/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/18/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ALDOT MW7	10/20/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/17/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ALDOT MW8	10/19/99		<0.005*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/17/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ALDOT MW9	10/19/99		<0.005*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	11/17/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Monitoring Wells (Vise View Development)																			
Alfa MW-1	11/18/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Alfa MW-2	11/18/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Alfa MW-3	11/18/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Alfa MW-4	11/17/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Alfa MW-5	11/18/99		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

[1] Testing of the samples was in accordance with Method 8260 outlined in Test Methods of Evaluating Solid Waste Physical/Chemical Methods, EPA, SW-846, Third Edition, November, 1986.

[2] PQL = Practical Quantitation Limit

[3] Ground-water sample collected about 35 feet below land surface.

[4] Ground-water sample collected about 30 feet below land surface.

* Indicates that compound was detected but concentration was below the PQL.

TABLE 5 Volatile organic compounds[1] in ground-water samples; Ground-Water Investigation; Alabama Department of Transportation Central Complex; Montgomery, Alabama.

[Concentrations are in milligram per Liter]

Well Identifier	Sample Date	PQL[2], mg/L	Trichloroethylene	1,1-Dichloroethene	cis-1,2-Dichloroethene	O-Xylene
			0.005	0.005	0.005	0.005
ALDOT MW1	10/20/99					*
ALDOT MW2	10/20/99		*	*		
	11/17/99		0.005	*		
	11/18/99[3]		0.006			
ALDOT MW3	10/19/99		0.029			
	11/18/99		0.030			
	11/18/99[4]		0.033			
ALDOT MW4	10/20/99		*			
	11/18/99		*			
ALDOT MW7	10/20/99		0.008			
	11/17/99		0.014			
ALDOT MW9	10/19/99		*			
	11/17/99		0.006			
Monitoring Wells (Vista View Development)						
Alfa MW-1	11/18/99		0.052	0.005		
Alfa MW-2	11/18/99		0.012			
Alfa MW-3	11/18/99		0.297	0.018		
Alfa MW-5	11/18/99		0.030		0.018	

[1] Testing of the samples was in accordance with Method 8260 outlined in Test Methods of Evaluating Solid Waste Physical/Chemical Methods, EPA, SW-846, Third Edition, November, 1986.

[2] PQL = Practical Quantitation Limit

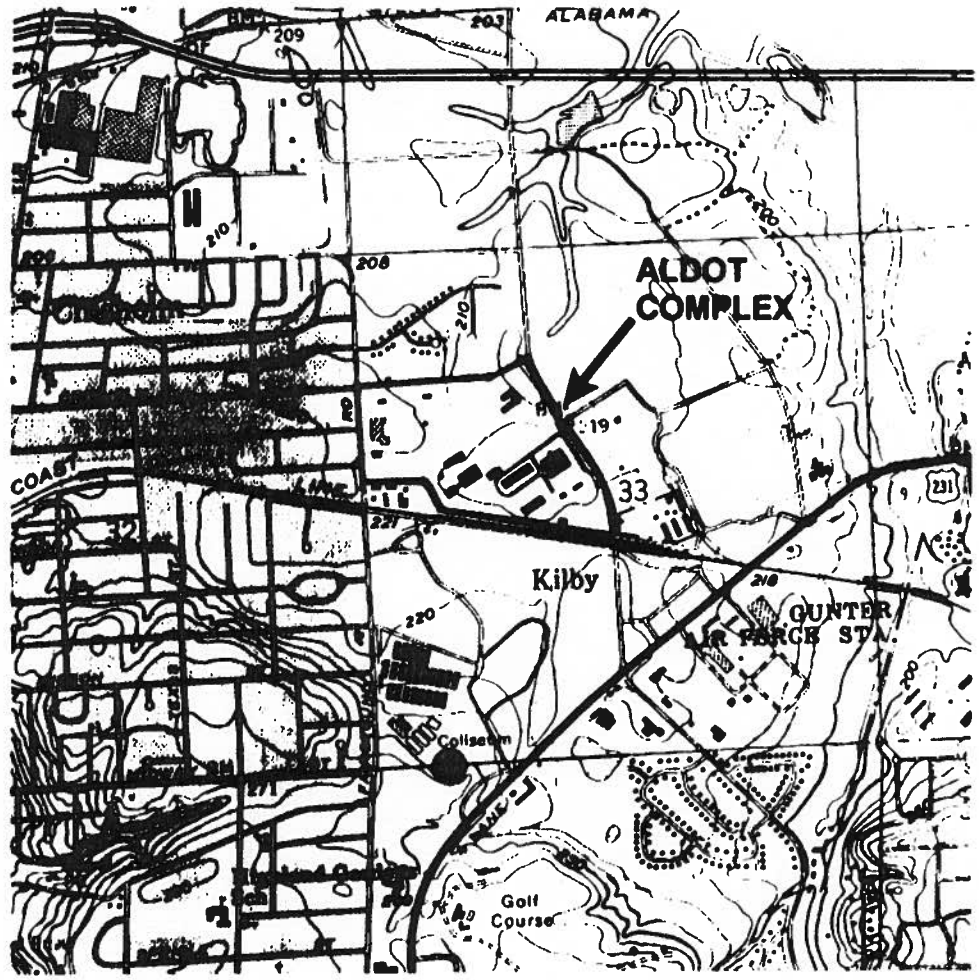
[3] Ground-water sample collected 35 feet below land surface.

[4] Ground-water sample collected 30 feet below land surface.

* Indicates that compound was detected but concentration was below the PQL.

Note: Table excludes occurrences of chloroform and bromodichloromethane that were above or below the PQL.

FIGURES



Scale (feet)
1000 0 1000

TTL, Inc.

PRACTICING IN THE GEOSCIENCES

Figure 1. Location of The Alabama Department of Transportation Central Complex; Montgomery, Alabama.

REFERENCE 5

PHASE II ENVIRONMENTAL SITE ASSESSMENT
VISTA VIEW DEVELOPMENT
COLISEUM BOULEVARD
MONTGOMERY, ALABAMA

Prepared For:
Alfa Mutual Fire Insurance Company
2108 East South Boulevard
Montgomery, Alabama 36116

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September 23, 1999

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EXECUTIVE SUMMARY

In 1972, an affiliate company of Alfa Mutual Fire Insurance Company (Alfa) purchased a 538± acre tract from the State of Alabama. The property is generally located in the south half of Section 28 and the north half of Section 33, Township 17 North, Range 18 East. This tract was part of a larger tract consisting of approximately 2,100 acres owned by the State prior to 1972, and used by the State for the former Kilby Prison. Within the 538± acre tract, Alfa has developed the Eastern Meadows and Vista View residential subdivisions, Vista View Shopping Center, and various commercial lots. These properties are located along Coliseum Boulevard, south of the Northern Bypass and north of Congressman W.L. Dickinson Drive in Montgomery, Montgomery County, Alabama.

Alfa recently entered into a contract to sell a commercial lot contingent upon the findings of a Phase I Environmental Site Assessment (ESA) conducted by the buyer. The Phase I ESA did not reveal any suspected areas of contamination and did not recommend any additional investigation. However, the potential buyer then initiated a geotechnical investigation for the purpose of designing the building foundation. The buyer required that the soil samples collected during the geotechnical investigation be field screened with an organic volatile analyzer (OVA) flame ionization detector (FID). Field screening with the OVA indicated the presence of volatile organic compounds (VOC's) in some of the soil samples. Due to the results of the OVA field screening, the buyer initiated a limited Phase II ESA that included the collection of both soil and groundwater samples from the site.

Soil samples collected during the potential buyer's limited Phase II ESA were analyzed for VOC's, lead and total petroleum hydrocarbons (TPH). During this investigation relatively low levels of acetone, methylene chloride and TPH were detected in soils on the parcel. In addition to the soil samples, two groundwater samples were collected. Both of the groundwater samples contained relatively low levels of trichloroethene (TCE); however, the levels exceeded the drinking water standard of five micrograms per liter (ug/l).

After learning of these findings, Alfa immediately began to investigate the site and surrounding property to evaluate this potential contamination. Alfa retained GM&CE to conduct an environmental investigation of the prospective commercial parcel and Alfa's adjoining undeveloped property. A limited review of the past uses of the property was conducted. The property, which was previously owned by the State, was part of the Kilby Prison property. Aerial photographs indicated that the property currently owned by Alfa was largely undeveloped. The parcel was, however, located near an old open

channel that has since been re-routed. Investigation activities were initially centered along the former open channel.

A Geoprobe® unit and mobile laboratory were mobilized to the site. Both soil and groundwater samples were collected with the aid of the Geoprobe®, and analyzed in the field with a mobile laboratory. Each sample collected was split, one split was spent in the mobile laboratory, and one was retained for possible analysis in a fixed location laboratory. The mobile laboratory contained a gas chromatograph (GC)/photo-ionization detector (PID). Field results with the GC indicated the presence of organic compounds in both soil and groundwater samples. The presence of trichloroethene (TCE) was detected in the groundwater in three separate locations during the initial day of testing at levels above the drinking water standard. Due to the geology of the site and physical properties of the chemicals of concern, groundwater samples were collected from multiple depths at several locations. During the second day of testing, significant levels of TCE were detected in the groundwater over a relatively large area. In an effort to determine the extent of the contamination, testing was extended to a third day.

During the initial three days of testing, a total of 17 locations were sampled. Following the third day of testing, selected samples were forwarded to a laboratory for confirmation analysis. The laboratory confirmed the presence of TCE in the groundwater. In addition, field screening indicated that other VOC's may be present. The field laboratory reported these compounds as total volatile organics (TVO's), of which the laboratory identified some of these compounds as methylene chloride, 1.1-dichloroethene, and chloroform.

After review of the preliminary data, additional testing was initiated. The purpose was to further establish the extent of the TCE plume if possible and to perform soil conductivity tests. The soil conductivity tests were performed to aid in the installation of permanent type II monitoring wells, and to better understand the subsurface environment. A total of five locations were selected to perform the soil conductivity tests, and an additional 12 locations were selected for limited soil and groundwater sampling. The locations selected for the soil conductivity tests were the same locations selected to install permanent monitoring wells.

After installation of the five monitoring wells, they were surveyed to determine their exact locations and elevations. Depths to groundwater readings were conducted to determine the elevation of the groundwater at each well. The elevations of the groundwater indicated that the general groundwater flow in the upper most aquifer is to the northeast. The groundwater flow in the upper most aquifer appears to mimic surface topography, and to be highly influenced by surface water channels. In addition each monitoring well was sampled and the samples were forwarded to a laboratory for VOC's analyses.

All of the analytical data was compiled and is displayed on Figure 4. Based upon the concentrations and the direction of groundwater flow, the plume appears to be migrating in a generally northeasterly direction. The highest concentration of TCE detected on the Alfa property was from a sample collected just north of the Eastern Meadows subdivision and south of Chisholm Church of Christ. The TCE appears to have migrated onto the Alfa property from adjacent lands to the south in this region. The analytical data suggest the TCE has moved northeasterly in the area of the vacant land south of Vista View Shopping Center. East of Coliseum Boulevard, the plume appears to lie north of the Alabama Department of Environmental Management office building and extends underneath a portion of the Vista View subdivision Plat No. 1. This includes all of the undeveloped Alfa property north of East Gardendale Drive but does not appear to extend onto the Rights-of-Way of the Northern Boulevard. East of the Alfa property, the plume appears to extend onto the Russell Mills Distribution Facility.

This investigation appears to have defined the extent of the TCE plume to the north, east, northwest and south in the area of the ADEM. The source of the TCE plume however, was not discovered. Based upon all data collected the source appears to lie south of the Alfa property that lies along the northern edge of the Eastern Meadows subdivision. TCE is a common industrial organic solvent, and is used in many commercial industrial processes such as dry cleaning and degreasing.

SECTION 1
INTRODUCTION

SECTION I
INTRODUCTION

1.1 Site Location

The Alfa property where this investigation was conducted lies along Coliseum Boulevard between Congressman W.L. Dickinson Drive and the Northern Boulevard in Montgomery, Montgomery County, Alabama. Figure 1 shows the general site location. Currently, Alfa owns a narrow strip of land that lies between Coliseum Boulevard and Fairground Road, north of the Eastern Meadows subdivision. Also, on the west side of Coliseum Boulevard, the assessed area includes Alfa property situated between the Montgomery Zoo, Vista View Shopping Center, and Vista Terrace Apartments. The assessed area includes property that lies east of the Coliseum Boulevard, north of the ADEM, west of Russell Mills Distribution Facility, south of the Northern Boulevard, and excludes properties owned by Russell Oil Company and W.S. Newell, Inc.

The area can also be described as being located in the south half of Section 28 and the north half of Section 33 in Township 17 North, Range 8 East. The land surface in this area according to the United States Geological Survey (USGS) 7.5 minute topographic map varies from approximately 190 feet to 220 feet above mean sea level. Figure 2 shows a portion of the USGS 7.5-minute Topographic map where the Alfa property is located.

1.2 Site History

Alfa purchased a tract of 538± acres, which was part of a 2,100-acre tract sold by the State of Alabama. Prior to the sale, the land was part of the Kilby Prison property. The prison was self-supporting, and agricultural crops were grown on the majority of the land Alfa purchased. Since Alfa purchased this tract of land, it has developed the Eastern Meadows and Vista View residential subdivisions, Vista View Shopping Center, and has sold various other tracts of land and commercial lots. Historically, two natural drainage ditches bisected Alfa's property. These ditches have been rerouted except for a short segment of one ditch that lies north of the Eastern Meadows subdivision. One of the drainage ditches lies east of Coliseum Boulevard and bisects the undeveloped commercial lots just west of the Vista View subdivision. The second drainage ditch begins in the area where the Alabama Department of Transportation (ALDOT) district office and headquarters are located. Once the drainage exits the ALDOT facility, it is channeled through the Eastern Meadows subdivision until it enters the Alfa property and flows in a natural channel for approximately 500 feet. The channel passes under Coliseum Boulevard and trends northeast in a concrete lined ditch until it converges with

the north trending ditch. The primary activities that Alfa has conducted on the undeveloped property since 1972 consist of site preparation for development, including relocation of the drainage ditches, paving of the entrance road, and construction of utilities on the property.

1.3 Structures

Several areas of the original tract purchased by Alfa have been developed. The area south of the Alfa Property, west of Coliseum Boulevard, and north of Chisholm Street contains single family dwellings and townhouses facing Coliseum Boulevard. The Vista View Shopping Center contains businesses such as a Winn Dixie, Subway, a Chinese restaurant, Movie Gallery, a check cashing business, and a dry cleaners. The Vista View Terrace Apartments are located adjacent to and west of the shopping center. The area north of ADEM and east of Coliseum Boulevard is primarily undeveloped or vacant commercial property. East of this commercial area and west of Russell Mills Distribution Facility is the Vista View subdivision, which consists of single family dwellings. Within the commercial property, general grading has been conducted, access roads have been constructed, the drainage ditches have been straightened and lined with concrete and utilities such as sanitary sewer, gas and water have been installed.

SECTION 1
SOIL ASSESSMENT

SECTION II
SOIL ASSESSMENT

2.1 Introduction

A geotechnical investigation was conducted by a potential buyer for a proposed building to be located on one of Alfa's undeveloped commercial lots. During the drilling and collection of soil samples for the geo-technical investigation, samples were scanned in the field with an instrument that detects VOC's. The instrument indicated that VOC's may be present in the soil, which triggered a limited Phase II ESA. The buyer's subsequent investigation identified relatively low levels of VOC's in the soil and groundwater. This data was presented to Alfa, who immediately retained GM&CE to conduct additional investigations. The initial scope of work was to determine if any additional contamination existed on the Alfa property adjacent to the lot in question. As data were collected, the investigation was expanded to eventually include all of the remaining Alfa property.

2.2 Geology

The site is located in the alluvial district within the East Gulf Coastal Plain physiographic section. Broad, flat flood plains and terraces characterize this district. In general, the Black Prairie district lies to the south and the Fall Lines Hills district lies to the north of the alluvial district in the Montgomery area. However, just south of the subject area a narrow band of the Fall Lines Hills district lies between the alluvial district and the Black Prairie district.

The subject area is located fully within an area where alluvial deposits of Quaternary age crop out. These alluvial deposits consist of gravel, sand, silt and clay and unconformably overlie the Eutaw Formation of Upper Cretaceous age. The alluvial deposits in this area typically range in thickness from 30 to 50 feet. The Eutaw Formation in the Montgomery area is up to 400 feet thick, and is generally described as consisting of three units (upper, middle and lower). Generally, the Eutaw Formation is comprised of facies of either barrier-island and associated tidal-passes, or lagoonal and shallow shelfal deposits. East of Montgomery, the upper unit pinches out and only the middle and lower units are present.

In the Montgomery area, the alluvial deposits can be difficult to differentiate from the upper unit of the Eutaw Formation. For the purpose of this report, a contact between the Eutaw Formation and alluvial deposits was not estimated. The clay confining units appear to be discontinuous across the site, and hydraulically the units are connected. However, an apparent aquitard was encountered at depths varying from

approximately 25 to 50 feet below the surface. The aquitard appears to consist of fine sand to clay that varies in color from a yellowish tan to dark reddish brown. The unit, where it was drilled, was approximately four feet thick. Below this unit was a fine sand (unsaturated). Saturation of the sediments increased with depth until dark gray clay was encountered at approximately 74 feet below the surface. This unit is believed to be the top of the middle unit of the Eutaw Formation. Five soil boring logs have been attached as Appendix A for reference. The presence of these clay units is also indicated by soil conductivity tests. The results of these tests are attached as Appendix B.

2.3 Soil Assessment Methodology

All of the soil samples GM&CE personnel collected were obtained with the aid of a Geoprobe®. The samples collected for analysis were generally collected above the groundwater phreatic surface. The drive rods were decontaminated at the completion of each probe location, and the drive points and rods were decontaminated after the collection of each sample. The soil sampler consisted of a two-foot sampler tube, a drive point and a disposal plastic sleeve placed inside the sampler tube. The point of the drive rod would be driven to the desired depth, the sampler opened, then the rod would be pushed an additional two feet to force a two foot column of soil into the plastic sleeve. The drive rods and sampler would then be removed from the ground and the plastic sleeve removed from the sampler. A clean sampler would then be connected to the drive rods and continued downward until the next desired sampling depth. Once the sleeve was removed from the sampler, the on-site chemist would collect a soil sample for on-site analysis. The on-site geologist would then log the sample, and place a portion in the appropriate sample container for possible analysis in a fixed based laboratory.

The on-site lab work was completed by Plains Environmental Services. Analyses were completed with a gas chromatograph/photo-ionization detector (GC/PID). The instrument was calibrated each day prior to conducting any analysis. The instrument was calibrated using gases of known concentration for each compound that analysis were performed in the field. The analytical data sheets and chromatographs are attached as Appendix C and include a brief description of the analytical procedures.

Each soil sample collected was assigned a sample number and logged in the field. The log includes the sample number, date, time of sampling, depth of sample, location, and a description of the soil type. The sample was then placed in either a clean four or eight-ounce glass jar with a Teflon® lined lid. The samples that were selected for additional Quality Assurance/Quality Control (QA/QC) analyses were shipped overnight via Federal Express to Specialized Assays, Inc., a laboratory located in Nashville, Tennessee. The samples were analyzed by standard EPA methods, which included EPA Methods 8260, 8310, and 8015M/5030. Method 8260 is used to detect certain VOC's, 8310

detects certain polynuclear aromatic hydrocarbons (PAH's). Methods 8015M/5030 are for total petroleum hydrocarbons (TPH).

2.4 Soil Assessment

The initial environmental investigation was conducted by the prospective buyer on an undeveloped lot. The lot is located on the east side of Coliseum Boulevard just south of the Amoco Service Station. The assessment included three soil borings. One soil sample was collected from each of the three borings and forwarded to a laboratory for analyses. The sample depths ranged from four to eleven feet below ground surface (BGS). The samples were analyzed for total petroleum hydrocarbons (TPH), total lead, and volatile organic compounds (VOC's). Relatively low levels of TPH (15.6 to 33.6 ppm) were detected, total lead and VOC's were also detected. The total lead concentrations are typical of alluvial deposits and are considered to be natural background levels. The VOC's that were detected included trichloroethene, methylene chloride, and acetone. The concentrations of VOC's were all in the parts per billion (ppb) range.

GM&CE used a Geoprobe® to collect a total of 36 soil samples. Soil samples were collected at 23 of the Geoprobe® locations for field laboratory analyses and possible QA/QC laboratory analyses. Soil conductivity tests were also performed at five locations (reference Appendix B). Five of the 36 soil samples analyzed in the field were forwarded to a laboratory for additional analysis. The laboratory analyses were performed for VOC's and TPH.

The field laboratory detected TCE in seven of the 36 soil samples that were analyzed. The concentrations of TCE in the seven soil samples ranged from 10-ppb to 53-ppb. Field screening indicated that nine other soil samples possibly contained other volatile organic compounds. The results of the field screening is included on the laboratory data sheets attached as Appendix C. The screening results list Total Volatile Organics (TVO). The TVO readings ranged from non-detect to a high of 2,000 ug/kg. These numbers do not differentiate between compounds; therefore, they cannot be used as a reliable method of determining the presence of a particular compound. The numbers are only an indication as to where additional analyses may be desired. Three of the 36 soil samples were selected for QA/QC analyses. These samples were forwarded to Specialized Assays, Inc. laboratory in Nashville, Tennessee for analyses, in accordance with EPA Method 8260. The laboratory detected low levels of methyl chloride and chloroform in some of the soil samples. Two other soil samples were selected and forwarded to the laboratory for TPH analysis in accordance with EPA Method 8015M/5030. These samples were selected for TPH analysis from GP-1 at a depth of 8 to 10 feet and from GP-11, at a depth of 5 to 7 feet, since the chromatograph and TVO screening indicated the possible presence of petroleum range organic compounds. TPH concentrations were

TABLE 2.1
SOIL ANALYTICAL SUMMARY
VISTA VIEW DEVELOPMENT

Sample Location	Sample Interval (BGS)	Sample Date	Field	Laboratory		
			TCE ug/kg	TCE ug/kg	MC ug/kg	Chloroform ug/kg
GP-1	3-5	7/26/99	ND	–	–	–
	8-10	7/26/99	ND	–	–	–
	14-16	7/26/99	ND	–	–	–
GP-2	8-10	7/26/99	ND	–	–	–
	14 -16	7/26/99	ND	–	–	–
GP-3	8-10	7/26/99	ND	ND	30.7	ND
	14-16	7/26/99	ND	–	–	–
GP-4	5-7	7/26/99	ND	–	–	–
	8-10	7/26/99	ND	–	–	–
	14-16	7/26/99	ND	–	–	–
GP-5	5-7	7/26/99	ND	–	–	–
	8-10	7/26/99	ND	–	–	–
	*8-10	7/26/99	ND	–	–	–
	14-16	7/26/99	ND	–	–	–
GP-6	8-10	7/27/99	ND	–	–	–
	14-16	7/27/99	ND	–	–	–
GP-7	8-10	7/27/99	ND	–	–	–
	14-16	7/27/99	ND	–	–	–
GP-8	8-10	7/27/99	47	–	–	–
	14-16	7/27/99	10	–	–	–
GP-9	8-10	7/27/99	37	–	–	–
	14-16	7/27/99	13	–	–	–
GP-10	14 -16	7/27/99	15	–	–	–
GP-11	5-7	7/27/99	53	ND	21.7	2.7
	14-16	7/27/99	ND	–	–	–
GP-19	12-14	8/26/99	27	–	–	–
GP-20	12-14	8/26/99	ND	–	–	–
GP-21	12-14	8/26/99	ND	–	–	–
GP-22	12-14	8/26/99	ND	–	–	–
GP-23	12-14	8/26/99	ND	–	–	–
GP-24	12-14	8/27/99	ND	–	–	–
GP-25	12-14	8/27/99	ND	ND	ND	11.9
GP-26	12-14	8/27/99	ND	–	–	–
GP-27	12-14	8/27/99	ND	–	–	–
GP-28	12-14	8/27/99	ND	–	–	–
GP-29	12-14	8/27/99	ND	–	–	–
GP-30	12-14	8/27/99	ND	–	–	–

TCE=Trichloroethene
MC=Methylene Chloride
ND=Not Detected
—=Not Analyzed

BGS=Below Ground Surface
ug/kg=micrograms per kilogram
*=Field Duplicate
J=Outside Calibration Curve

SECTION II
GROUNDWATER
ASSESSMENT

SECTION III
GROUNDWATER ASSESSMENT

3.1 Introduction

During a limited Phase II ESA conducted by a potential buyer, TCE was detected in two of three groundwater samples collected. The concentrations were relatively low at 21.1 and 22.8 micrograms per liter (ug/l); however, the concentrations are above the drinking water standard of 5 ug/l. During this investigation, the groundwater phreatic surface was noted at approximately 14 to 16 feet below ground surface (BGS).

GM&CE's initial sampling was conducted near the phreatic surface; however, since TCE is heavier than water, sampling was extended deeper in later testing. Sampling depths ranged from approximately 16 feet to approximately 55 feet BGS in the deepest samples. The primary constituent detected in the groundwater was TCE. A total of 47 groundwater samples were collected and analyzed for TCE. In addition, 13 samples were forwarded to the laboratory for additional analyses. All except for five of the samples were collected with a Geoprobe®. The other five samples were collected from type II groundwater monitoring wells.

3.2 Methodology

The majority of groundwater samples collected in the area were collected with the aid of a Geoprobe®. The unit contained a two-foot stainless steel screen. The probe was driven to the desired sampling depth and then the screen was exposed. A small, decontaminated check valve was placed on the end of clean, unused tygon tubing and inserted through the hollow stem drive rods to a depth equal to the depth of the screen section. Groundwater was then purged prior to collecting samples. Samples were collected for field laboratory analysis and possible QA/QC analyses. The field analysis was conducted with a GC/PID. A standard volume of groundwater was placed in a 40-ml VOA vial and heated for a specific length of time. A predetermined volume of gas was then drawn from the headspace in the vial and injected into the GC. The concentrations from the GC were then converted to mass per volume ratio in water. A brief description of the methodology is included in the analytical data sheets attached as Appendix C.

Prior to performing analyses, the field GC was calibrated each day. Additionally, duplicate sample analyses were performed periodically for QA/QC purposes. A goal of a minimum of one sample per 20 samples analyzed was set for duplicate analysis. These samples were forwarded to Specialized Assays, Inc. laboratory for QA/QC verification and additional analysis.

3.3 Groundwater Assessment

A total of 35 locations were drilled/probed by GM&CE for the purpose of collecting groundwater samples. Of the 35 locations, 30 were Geoprobe® locations, and five were type II monitoring well locations. The Geoprobe® locations and monitoring well locations are shown on Figure 4.

A total of 42 groundwater samples were collected from the 30 Geoprobe® locations. GM&CE collected an additional five samples from the five type II monitoring wells that were installed as part of this investigation (one sample from of each well). This investigation did not reveal the source of the TCE plume. In the samples collected, the concentrations of the TCE ranged from below the detection limit of 2 ug/l to a high of 3,100 ug/l at sample location GP-22. The highest concentration detected was in the area just north of the Eastern Meadows subdivision and the ALDOT complex. The laboratory results are summarized in Table 3.1.

Table 3.1
Groundwater Analytical Summary
Vista View Development

Sample Location	Screen Interval(BGS)	Sample Date	Field	Laboratory			
			TCE ug/l	TCE ug/l	MC ug/l	1.1 DCE ug/l	Chlorofo ug/l
GP-1	16-18	7/26/99	79	–	–	–	–
GP-2	14-16	7/26/99	ND	ND	ND	ND	ND
GP-3	14-16	7/26/99	31	–	–	–	–
GP-4	14-16	7/26/99	ND	–	–	–	–
GP-5	14-16	7/26/99	55	–	–	–	–
	*14-16	7/26/99	55	–	–	–	–
GP-6	14-16	7/27/99	38	–	–	–	–
GP-7	14-16	7/27/99	1100J	–	–	–	–
	19-21	7/27/99	880J	–	–	–	–
GP-8	16-18	7/27/99	500J	–	–	–	–
GP-9	16-18	7/27/99	260J	–	–	–	–
GP-10	19-21	7/27/99	570J	–	–	–	–
	31-33	7/27/99	1600	1370	ND	8.1	ND
GP-11	17-19	7/27/99	250J	–	–	–	–
GP-12	18-20	7/27/99	330J	–	–	–	–
	29-31	7/27/99	59	–	–	–	–
GP-13	24-26	7/27/99	180J	–	–	–	–
	48-50	7/27/99	400J	–	–	–	–
	*48-50	7/27/99	610J	–	–	–	–
GP-14	23-25	7/27/99	90	–	–	–	–
	46-48	7/27/99	200J	–	–	–	–
GP-15	23-25	7/27/99	ND	ND	ND	ND	ND
	48-50	7/27/99	ND	–	–	–	–
GP-16	16-18	7/27/99	62	–	–	–	–
GP-17	16-18	7/27/99	72	–	–	–	–
	35-37	7/27/99	140J	–	–	–	–
GP-18	18-20	8/26/99	ND	–	–	–	–
	43-45	8/26/99	34	26	–	–	–
**GP-19	26-28	8/26/99	930J	539	ND	ND	ND
GP-20	23-25	8/26/99	300J	–	–	–	–
GP-21	23-25	8/26/99	ND	–	–	–	–
GP-22	31-33	8/26/99	1100J	–	–	–	–
GP-23	18-20	8/27/99	190J	–	–	–	–
	32-34	8/27/99	390J	–	–	–	–
	*32-34	8/27/99	330J	–	–	–	–
GP-24	33-35	8/27/99	3100J	2950	ND	ND	ND
GP-25	18-20	8/27/99	ND	–	–	–	–
	32-34	8/27/99	ND	–	–	–	–
GP-26	38-40	8/27/99	120J	–	–	–	–

Table 3.1 Continued
Groundwater Analytical Summary
Vista View Development

Sample Location	Sample Interval (BGS)	Sample Date	Field	Laboratory			
			TCE ug/l	TCE ug/l	MC ug/l	1.1 DCE ug/l	Chlorofo ug/l
GP-27	18-20	8/27/99	20	–	–	–	–
	35-37	8/27/99	16	–	–	–	–
GP-28	32-34	8/27/99	30	22.2	ND	ND	ND
GP-29	26-28	8/27/99	55	–	–	–	–
GP-30	18-20	8/27/99	ND	–	–	–	–
	32-34	8/27/99	ND	–	–	–	–
MW-1	32-42	9/2/99	–	297	ND	ND	ND
MW-2	34-44	9/2/99	–	6.4	ND	ND	ND
MW-3	30-40	9/2/99	–	312	ND	15.6	ND
MW-4	38-48	9/2/99	–	ND	ND	ND	ND
***MW-5	14-24	9/2/99	–	22.2	ND	ND	ND

TCE=Trichloroethene
MC=Methylene Chloride
1.1-DCE=1.1-Dichloroethene
*=Field Duplicatae
**=Sample contained 24.4 ug/l of 2-chloroethylvinylether
***=Sample contained 25.2 ug/l of cis-1,2-Dichloroethene

BGS=Below Ground Surface
ug/l=Micrograms per Liter
– =Not Analyzed
J=Outside Calibration Curve
ND=Not Detected

3.4 Groundwater Elevation

Five type II environmental monitoring wells were installed by GM&CE. The wells were installed to determine the potentiometric surface of the groundwater, and to provide additional sampling locations. The monitoring wells were installed at total depths that ranged from approximately 25 to 50 feet BGS. The wells are constructed of flush threaded 2-inch diameter PVC screens and risers. The screened section in each monitoring well consists of a ten-foot section of number 10 machine slot screen. A bottom plug was placed on the bottom of the screen section, attached to the solid riser pipe and set in the base of the bore hole. The locations of the monitoring wells were selected based upon the TCE concentrations detected in the groundwater samples collected with the Geoprobe®, and selected to yield data that could be used to prepare a groundwater potentiometric map. In order to determine the depth at which to install the monitoring wells, geophysical testing was conducted at each of the predetermined locations. The geophysical testing consisted of driving a soil conductivity probe with the Geoprobe® unit to practical refusal. The probe was then retrieved from the hole and an on-site computer stored a continuous log of the conductivity readings. In each probe

location, except for one, the conductivity readings indicated that a significant clay unit exists at the base of the hole providing either an aquitard or aquiclude. In the borehole location where the aquitard was not identifiable, continuous split spoon samples were collected to a total depth of 74 feet below the surface. Based upon the split spoon samples and conductivity readings, an approximately four foot thick sandy clay layer was located 50 feet below the surface forming a sufficient aquitard that limited vertical flow (soils beneath this zone were "dry"). The construction details of each of the monitoring wells are listed in Table 3.2. The soil conductivity test data is attached as Appendix C for reference.

Table 3.2
Monitoring Well Data
Vista View Development

ID Well	Screened Interval (feet BGS)	Total Depth (feet BGS)	Well Diameter (inches)	Placement Rationale	Sand Filter Pack (feet BGS)	Bentonit Seal (feet BG
MW-1	32.8-42.8	43.3	2	Upper Aquifer	30.8	28.8-30.8
MW-2	34.5-44.5	45	2	Upper Aquifer	18	16-18
MW-3	30.5-40.5	41	2	Upper Aquifer	28.5	26.5-28.5
MW-4	38.5-48.5	49	2	Upper Aquifer	36.5	34.5-36.5
MW-5	14.2-24.2	24.7	2	Upper Aquifer	13	11-13

BGS: Below Ground Surface

3.5 Groundwater Flow

After the five monitoring wells were constructed, each well was surveyed to determine its exact location and elevation. A benchmark was set at each monitoring well so that the groundwater elevations could be established. The groundwater elevations at each of the monitoring well locations were determined on two separate dates. Prior to determining the depth of groundwater readings, all of the well caps were removed from the wells, and the water level was allowed to equilibrate to atmospheric conditions. The depths to groundwater readings were conducted on September 7, 1999 and September 16, 1999. The elevation of the potentiometric surface ranged from approximately 187 feet to 195.5 feet above mean sea level. The resulting gradient of the groundwater table is approximately 0.0034 ft/ft northeast. The northeasterly groundwater flow direction is typical of the area and is chiefly influenced by the presence of the Alabama River.

Slug tests were performed on three of the monitoring wells (MW-1, MW-2 and MW-3). The purpose of the tests was to estimate the hydraulic conductivity. The slug tests indicated a hydraulic conductivity ranging between 10 to 35 feet per day. The porosity of the soil was assumed to be 0.35 and the resulting actual velocity is 0.34 feet per day. The retardation factor for TCE, which is the primary chemical of concern, was estimated to be approximately 6. This is based on an assumed dry bulk density of 1.8 grams per cubic centimeter, and a fractional organic content of the soil of 0.01. The retardation factor indicates the fractional rate at which groundwater will flow versus the dissolved chemical. Therefore, the estimated contaminant transport rate down gradient is approximately 0.06 feet per day. For reference, the slug test data has been attached in Appendix E. In summary, the following data was estimated:

- Gradient = 0.0034 ft/ft northeast
- Flow direction = NE
- Hydraulic Conductivity = 10 to 35 ft/day
- Assumed Porosity = 0.35
- Estimated actual groundwater flow rate = 0.34 ft/day
- Estimated TCE retardation factor = 6
- Estimated TCE migration rate = 0.06 ft/day

The groundwater elevation data is summarized in Table 3.3.

During the installation of the groundwater monitoring wells, seams of course sand and gravel were encountered. It is anticipated that groundwater may be moving in these high permeability seams at rates of 20 to 30 times the rate estimated by these calculations. It is also believed that this contamination may have traveled in the open ditch, which flows onto Alfa property near the southwest property corner. After entering the property, the ditch travels northeasterly through the areas exhibiting the highest contamination levels.

Table 3.3
Groundwater Elevation Data
Vista View Development

Measurement Location	Date	Benchmark Elevation	TOC Elevation (feet MSL)	Depth to H_2O (feet TOC)	Elevation of Groundwater (feet MSL)
MW-1	09/07/99 09/16/99	213.99	213.53	17.91 18.05	195.62 195.48
MW-2	09/07/99 09/16/99	206.24	206.01	11.78 12.23	194.23 193.78
MW-3	09/07/99 09/16/99	209.85	209.67	13.27 13.45	196.40 196.22
MW-4	09/07/99 09/16/99	213.27	213.18	17.46 17.56	195.72 195.62
MW-5	09/07/99 09/16/99	200.26	203.42	16.32 16.42	187.10 187.00

TOC: Top of Casing
MSL: Mean Sea Level [Approximate]
H_2O: Water

SECTION [illegible]

CONCLUSIONS

SECTION IV
CONCLUSION

4.1 Conclusion

In conclusion, Alfa entered into a contract to sell a commercial parcel to another party (the buyer). The contract was contingent upon the findings of a Phase I ESA. Although the findings of the ESA did not reveal any suspect areas of contamination, or make any recommendations for further investigation, the prospective buyer conducted environmental screenings during a technical investigation of the property.

The field screening was conducted on soil samples collected during a geotechnical investigation. The screenings indicated the possible presence of volatile organic compounds; thereby, prompting the buyer to initiate a limited Phase II Environmental Site Assessment. The limited Phase II Assessment included the collection of soil and groundwater samples.

Results of the sampling conducted during the limited Phase II Environmental Site Assessment revealed the presence of relatively low levels of acetone, methylene chloride, and TPH in the soil and TCE in the groundwater.

Alfa immediately retained GM&CE to conduct an environmental investigation of the subject site and Alfa's adjoining undeveloped commercial and residential property. GM&CE's investigation included a limited historical review of the property, and on-site testing. Samples were collected and analyzed in the field with a mobile laboratory. The presence of TCE was detected in the groundwater at levels exceeding the drinking water standard.

In order to provide Quality Control/Quality Assurance, a number of the samples were split and shipped overnight via Federal Express to Specialized Assays Laboratory for confirmation testing. The results of the laboratory analyses confirmed the presence of TCE and identified three additional volatile organic compounds.

Subsequently, five soil conductivity tests and five type II monitoring wells were installed. A groundwater potentiometric surface map was developed that illustrates that groundwater flow is to the northeast. The investigation appears to identify the extent of the TCE plume to the north, east, northwest and south; however, no source of the TCE was discovered. The highest TCE concentration in the groundwater was detected in samples north and northeast of the Eastern Meadows subdivision and the ALDOT complex. This data indicates the TCE plume has migrated on to Alfa property from the southwest.

SECTION V
LIMITATIONS

SECTION V
LIMITATIONS

5.1 Limitations

Goodwyn, Mills & Cawood Environmental Consultants, Inc. (GM&CE) has performed this investigation for the exclusive use of the client and their legal counsel specifically for the subject site. GM&CE prohibits republication or reuse of any report without GM&CE's prior written consent.

The conclusions contained in this report are based upon the conditions at the site during the time of the investigation.

Environmental problems at this site not included in the scope of work, if any, are not the responsibility of GM&CE. Examples of such problems are unreported releases, unreported sites, and sites not listed by the Alabama Department of Environmental Management (ADEM) or by the Environmental Protection Agency (EPA).

The only warranty made by GM&CE in connection with the services provided is that we have used the degree of skill and care ordinarily exercised by similarly situated professionals in our locality. No other warranty, expressed or implied, is made or intended.

GM&CE will not be required to sign any documents, no matter by whom requested, that would result in GM&CE having to certify, guarantee or warrant the existence of conditions whose existence GM&CE cannot ascertain. The client also agrees not to make resolution of any dispute with GM&CE or payment of any amount due to GM&CE in any way contingent upon GM&CE signing any such certification.

SECTION VI
QUALIFICATIONS AND SIGNATURES

SECTION VI
QUALIFICATIONS AND SIGNATURES

6.1 Statement of Qualifications

GM&CE has conducted numerous environmental site assessments within Alabama and surrounding states. GM&CE's staff is well trained and has a registered environmental property assessor conducting or overseeing the assessment of each project.

6.2 Certification

"I certify that this site assessment has been conducted in accordance with standard engineering and geologic practices. All information collected was reviewed and the collecting of information was overseen by a person registered to conduct environmental site assessments. The information submitted herein, to the best of my knowledge and belief, is true, accurate, and complete."

Ben Reeves, P.E., P.G.
Vice President

9-22-99
Date

Galen J. Thackston, P.E., R.E.P.A.
President

9/22/99
Date

GALEN J. THACKSTON

EDUCATION:

B.S. Civil Engineering
Auburn University

REGISTRATION:

Registered Professional Engineer #21637
Registered Environmental Property Assessor #5520

PROFESSIONAL:

American Society of Civil Engineers
American Society of Professional Engineers

EXPERIENCE:

Project Engineer dealing with environmental issues such as Phase II, II & III Environmental Site Assessments, storm water permitting, underground storage tank closures and underground storage tank specification writing, surface and subsurface investigations, contamination assessments and corrective action services, flood studies, detention basin design and asbestos surveys, wetland determinations and delineations

ADDITIONAL TRAINING:

"The Role of Environmental Audits and Site Assessments"
Georgia Institute of Technology, 1991
40-hour seminar
Passed 150 point, 3-hour examination

"Inspecting Buildings for Asbestos Containing Materials"
Georgia Institute of Technology, 1991
24-hour seminar
Passed written examination

"Waste Materials Management"
Auburn University, 1991
16-hour seminar

"Avoiding Environmental Liability in Alabama"
National Business Institute, Inc., 1991
8-hour seminar

Subtitle "D" Conference
Alabama Department of Environmental Management, 1991

THOMAS B. REEVES

EDUCATION:

B.S. Geological Engineering
Auburn University

REGISTRATION:

Registered Professional Engineer, Alabama # 22768
Registered Professional Geologist, Alabama # 368
Registered Geologist, Tennessee

EXPERIENCE:

Project Engineer\Geologist dealing with all aspects of underground storage tank closures, closure assessments, preliminary investigations, and secondary investigations. Development of corrective action plans for the remediation of sites contaminated with petroleum products. The corrective action plans included soil vapor extraction systems; combination soil vapor extraction and groundwater pump and treat systems, and bio-remediation systems.

Project Engineer\Geologist - Conducted proton magnetometer surveys. Scope of work included collection of data, data analysis, and data presentation.

Project Engineer - Hazardous and non- hazardous waste sampling, and disposal.

Project Engineer - Developed Closure\Post Closure Plans for Municipal Solid Waste Landfills, and Inert Landfills.

Project Engineer\Geologist - Conducted various Phase I and Phase II Environmental Site Assessments.

Project Manager - Prepared various air permit applications and conducted potential emission inventories for industrial facilities.

ADDITIONAL TRAINING:

Hazardous Waste Operations & Emergency Response - 8-Hour refresher course

Clean Air Act - Title V: 16 - hr Technical Workshop

Risk Based Corrective Action: 16-hour Workshop

REFERENCE 6

Hot Topics

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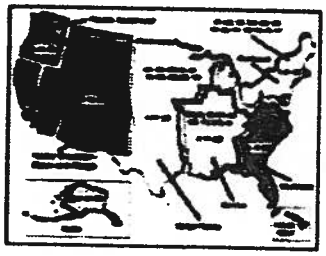
September 20, 2000



New FEMA study finds the risk of earthquake damage is not only in California but throughout much of the United States, especially the western U.S., the central U.S. states within the New Madrid Seismic Zone and the Charleston, S.C. area. The study estimates the nation's future earthquake losses at $4.4 billion per year, with California accounting for $3.3 billion of that amount.

- FEMA Authorizes Funding for Another Texas Wildfire New
- Federal Funds Authorized to Help Fight Oklahoma Wildfires New
- Hurricane Floyd - A Night To Remember, A Day Of Evacuation Frustration To Forget New
- FEMA Authorizes Funding For Colorado Wildfire New
- Federal Funds Authorized To Help Fight Alabama Wildfire New
- Federal Relief For Floyd Victims Nears $79 Million in Region III
- FEMA and North Carolina Announce Historic Agreement to Reduce Damage from Future Floods
- President Declares Major Disaster For California; Napa County Designated For Earthquake Recovery Aid
- More Than $3 Million Approved in Just Three Weeks for Ohio Disaster Victims
- First Checks Issued Under Cerro Grande Fire Assistance Act
- Federal Fire Suppression Funds Authorized For Louisiana
- FEMA Adds Milam Street Fire to Texas Assistance List
- Cerro Grande Fire Assistance Update
- Federal Funds Authorized to Help Fight Wildfires In:

Select a state

- Latest Information on Western Wildfires

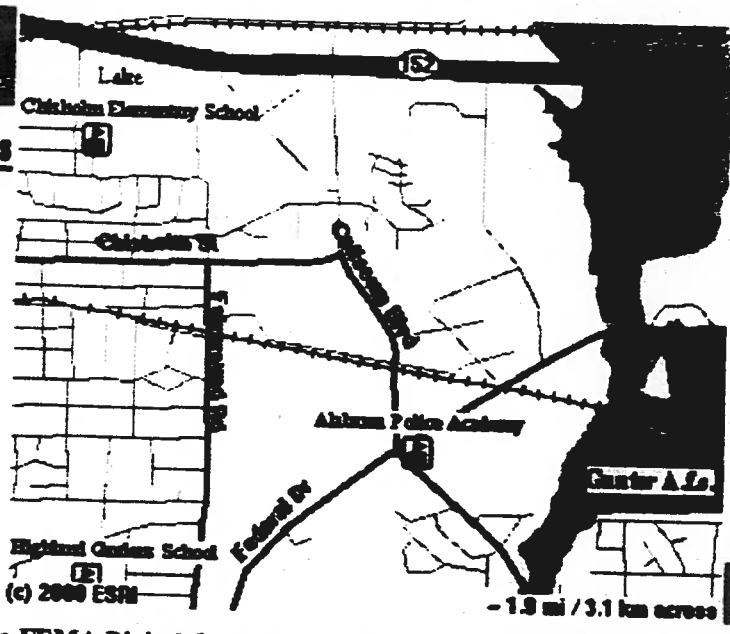
IMPACT
ESRI and FEMA

PROJECT IMPACT
Hazard Information and Awareness

US FLOOD HAZARD AREAS

Flood Data

- 100 - Yr Flood
- 500 - Yr Flood
- Water Bodies
- No Data



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Map Notes: The FEMA Digital Q3 Flood Data displayed on this Web site is developed by scanning the existing Flood Insurance Rate Map (FIRM) hardcopy and capturing a thematic overlay of flood risks. Digital Q3 Flood Data files contain only certain features from the FIRM hardcopy in effect at the time of scanning and do not replace the existing FIRM hardcopy maps. The Q3 Flood Data is being displayed here with basemap data from the GDT Dynamap/2000 data set. The Q3 Flood Data is currently available for approximately 1,200 counties across the United States.

Current Map View:

Flood Hazard Areas

Change View

The maps displayed on this site should be considered an advisory tool for general hazard awareness, education, and flood plain management. The flood hazard maps displayed on this site are not the legal document to be used when making a single site flood hazard determination. For more information on these maps, please refer to the Frequently Asked Questions page.

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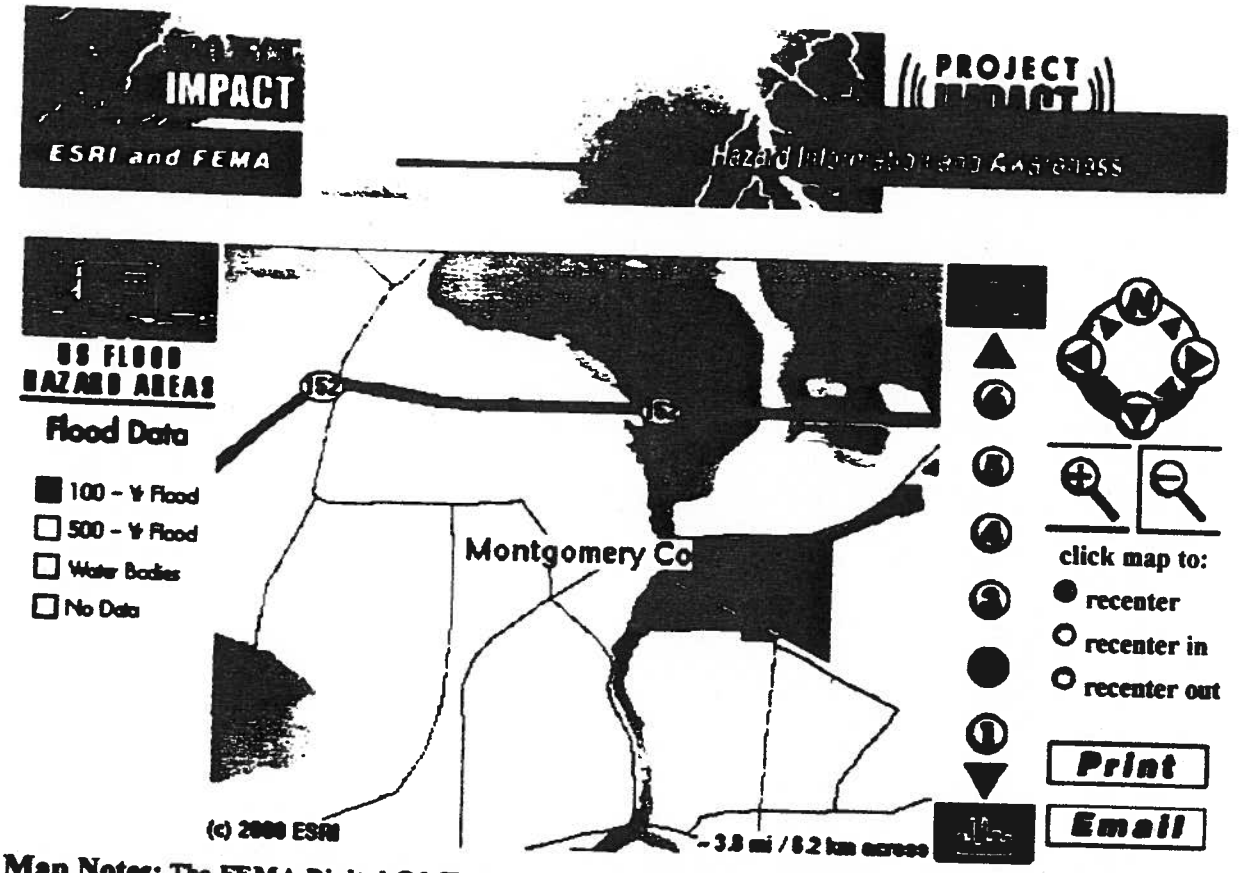

Map Notes: The **FEMA Digital Q3 Flood Data** displayed on this Web site is developed by scanning the existing Flood Insurance Rate Map (FIRM) hardcopy and capturing a thematic overlay of flood risks. Digital Q3 Flood Data files contain only certain features from the FIRM hardcopy in effect at the time of scanning and do not replace the existing FIRM hardcopy maps. The Q3 Flood Data is being displayed here with basemap data from the GDT Dynamap/2000 data set. The Q3 Flood Data is currently available for approximately **1,200 counties** across the United States.

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REFERENCE 7

ALABAMA

FEDERALLY LISTED ENDANGERED / THREATENED SPECIES

current as of 15 June 1999

TAXA	STATUS	COMMON / SCIENTIFIC NAMES	DISTRIBUTION
Mammals (7)		(See note on bottom of page 7)	
	E	Red wolf* *Canis rufus*	Extirpated
	E	Florida panther* *Felis concolor coryi*	Extirpated
	E	Gray bat *Myotis grisescens*	Tennessee Valley, Shelby and Conecuh Counties
	E CH	Indiana bat *Myotis sodalis*	Tennessee Valley, Jackson Count
	E CH	Alabama beach mouse *Peromyscus polionotus ammobates*	Coastal, Baldwin county
	E CH	Perdido Key beach mouse *Peromyscus polionotus trissyllepsis*	Coastal, Baldwin county
	E CH	West Indian (Florida) manatee *Trichechus manatus*	Coastal waters
Birds (8)			
	E	Ivory-billed woodpecker* *Campephilus principalis*	Extirpated
	T	Piping Plover *Charadrius melodus*	Coastal beaches and islands
	E CH	American peregrine falcon *Falco peregrinus anatum*	Statewide
	T	Bald Eagle *Haliaeetus leucocephalus*	Statewide
	E	Wood stork *Mycteria americana*	Statewide

TAXA	STATUS	COMMON / SCIENTIFIC NAMES	DISTRIBUTION
	E	Eskimo curlew *Numenius borealis*	Possible migrant
	E	Red-cockaded woodpecker *Picoides borealis*	Statewide
	E	Bachman's warbler* *Vermivora bachmanii*	Probably extirpated
Reptiles (10)	T (SA)	American Alligator *Alligator mississippiensis*	Southern half of the state
	T	Loggerhead sea turtle *Caretta caretta*	Coastal waters, nests on Alabam beaches
	T	Green sea turtle *Chelonia mydas*	Coastal waters, nests on Alabam beaches
	E CH	Leatherback sea turtle *Dermochelys coriacea*	Coastal waters
	T	Eastern indigo snake *Drymarchon corais couperi*	Extreme southern counties
	E CH	Hawksbill sea turtle *Eretmochelys imbricata*	Coastal waters
	T	Gopher tortoise *Gopherus polyphemus*	Choctaw, Mobile, and Washington Counties (western population only is listed)
	E	Kemp's (Atlantic) Ridley sea turtle *Lepidochelys kempii*	Coastal waters
	E	Alabama red-bellied turtle *Pseudemys alabamensis*	Mobile, Baldwin, and Monroe Counties
	T	Flattened musk turtle *Sternotherus depressus*	Upper Black Warrior River system
Amphibians (2)	T	Flatwoods salamander* *Ambystoma cingulatum*	Probably extirpated

TAXA	STATUS	COMMON / SCIENTIFIC NAMES	DISTRIBUTION
	T	Red Hills salamander *Phaeognathus hubrichti*	Butler, Crenshaw, Conecuh, Covington and Monroe Countie:
Fish (12)	T	Gulf sturgeon *Acipenser oxyrhynchus desotoi*	Alabama, Mobile, Conecuh and Choctawhatchee Rivers
	T	Pygmy sculpin *Cottus pygmaeus*	Calhoun County
	T	Blue shiner *Cyprinella caerulea*	Coosa River: Cherokee, Calhoun Talladega, Coosa Counties
	T CH	Spotfin chub *Cyprinella monacha*	Tennessee River: Lauderdale an Colbert Counties
	T CH	Slackwater darter *Etheostoma boschungi*	Tennessee River: Madison, Lauderdale, and Limestone Counties
	E	Watercress darter *Etheostoma nuchale*	Jefferson County
	E	Boulder darter *Etheostoma wapiti*	Elk River: Limestone County
	E	Cahaba shiner *Notropis cahabae*	Cahaba River: Bibb County
	E	Palezone shiner *Notropis albizonatus*	Paint Rock River: Jackson Count
	T	Goldline darter *Percina aurolineata*	Cahaba River system: Bibb and Shelby Counties
	T	Snail darter *Percina tanasi*	Paint Rock River: Jackson Count
	E CH	Alabama cavefish *Speoplatyrhinus poulsoni*	Lauderdale County
Mussels (39)	E	Fanshell mussel *Cyprogenia stegaria*	Tennessee River

TAXA	STATUS	COMMON / SCIENTIFIC NAMES	DISTRIBUTION
	E	Dromedary pearly mussel *Dromus dromas*	Tennessee River
	E	Cumberlandian combshell *Epioblasma brevidens*	Tennessee River
	E	Oyster mussel *Epioblasma capsaeformis*	Tennessee River
	E	Yellow-blossom pearly mussel *Epioblasma florentina florentina*	Tennessee River
	E	Upland combshell mussel *Epioblasma metastriata*	Black Warrior, Cahaba and Coo River drainages
	E	Purple cat's paw pearly mussel *Epioblasma obliquata obliquata*	Tennessee River
	E	Southern acornshell mussel *Epioblasma othcaloogenesis*	Upper Coosa and Cahaba River drainages
	E	Southern combshell mussel *Epioblasma penita*	Tombigbee River, Buttahatchie River
	E	Tubercled-blossom pearly mussel* *Epioblasma torulosa torulosa*	Tennessee River
	E	Turgid-blossom pearly mussel *Epioblasma turgidula*	Tennessee River
	E	Fine-rayed pigtoe mussel *Fusconaia cuneolus*	Paint Rock River
	E	Shiny pigtoe mussel *Fusconaia cor* (=*edgariana*)	Paint Rock River
	E	Cracking pearly mussel *Hemistena lata*	Tennessee River
	T	Fine-lined pocketbook mussel *Lampsilis altilis*	Coosa, Tallapoosa, and Cahaba drainages
	E	Pink mucket pearly mussel *Lampsilis abrupta*	Tennessee River, Paint Rock Rive

TAXA	STATUS	COMMON / SCIENTIFIC NAMES	DISTRIBUTION
	T	Orange-nacre mucket *Lampsilis perovalis*	Tombigbee, Black Warrior, Alabama, and Cahaba drainages
	E	Shinyrayed pocketbook *Lampsilis subangulata*	Uchee Creek, Russell County
	E	Alabama lamp pearly mussel *Lampsilis virescens*	Paint Rock River, Hurricane Creek
	T	Alabama moccasinshell mussel *Medionidus acutissimus*	Alabama, Tombigbee, Cahaba, Coosa, Black Warrior drainages
	E	Coosa moccasinshell mussel *Medionidus parvulus*	Coosa, Cahaba, and Black Warrio drainages
	E	Ring pink mussel *Obovaria retusa*	Tennessee River
	E	Little-wing pearly mussel *Pegias fabula*	Tennessee River
	E	White wartyback pearly mussel *Plethobasus cicatricosus*	Tennessee River
	E	Orange-footed pearly mussel *Plethobasus cooperianus*	Tennessee River
	E	Clubshell* *Pleurobema clava*	Tennessee River drainage
	E	Black clubshell mussel* *Pleurobema curtum*	Extirpated
	E	Southern clubshell mussel *Pleurobema decisum*	Tombigbee, Black Warrior, Alabama, Tallapoosa and Coosa drainages
	E	Dark pigtoe mussel *Pleurobema furvum*	Sipsey Fork and North River drainages of Black Warrior River drainage
	E	Southern pigtoe mussel *Pleurobema georgianum*	Coosa River drainage
	E	Flat pigtoe mussel *Pleurobema marshalli*	Tombigbee River

TAXA	STATUS	COMMON / SCIENTIFIC NAMES	DISTRIBUTION
	E	Ovate clubshell mussel *Pleurobema perovatum*	Tombigbee, Black Warrior, Alabama, Tallapoosa and Coosa drainages
	E	Rough pigtoe mussel *Pleurobema plenum*	Tennessee River
	E	Heavy pigtoe mussel *Pleurobema taitianum*	Tombigbee and Sipsey Rivers
	T	Inflated heelsplitter mussel *Potamilus inflatus*	Black Warrior and Tombigbee Rivers
	E	Triangular kidneyshell mussel *Ptychobranchus greeni*	Black Warrior, Cahaba, and Coo River drainages
	E	Cumberland monkeyface pearly mussel *Quadrula intermedia*	Tennessee River
	E	Stirrup shell mussel *Quadrula stapes*	Tombigbee River, Sipsey River
	E	Pale lilliput pearly mussel *Toxolasma cylindrellus*	Paint Rock River, Hurricane Creek
Snails (8)	E	Anthony's riversnail *Anthearnia anthonyi*	Limestone Creek and Tennessee River: Limestone County
	T	Lacy elimia *Elimia crenatella*	Coosa River drainage: Talladega, Chilton and Calhoun Counties
	T	Round rocksnail *Leptoxis ampla*	Cahaba River drainage: Bibb and Shelby Counties
	E	Plicate rocksnail *Leptoxis plicata*	Locust Fork River: Jefferson County
	T	Painted rocksnail *Leptoxis taeniata*	Coosa River drainage: Talladega, Chilton and Calhoun Counties
	E	Flat pebblesnail *Lepyrium showalteri*	Cahaba River drainage: Bibb and Shelby Counties

TAXA	STATUS	COMMON / SCIENTIFIC NAMES	DISTRIBUTION
	E	Cylindrical lioplax *Lioplax cyclostomaformis*	Cahaba River drainage: Bibb and Shelby Counties
	E	Tulotoma snail *Tulotoma magnifica*	several tributaries of the Coosa River system
Crustacea (1)	E	Alabama cave shrimp *Palaemonias alabamae*	Madison County
Insecta (1)	E	American burying beetle* *Nicrophorus americanus*	Statewide
Plants (20)	T	Little amphianthus *Amphianthus pusillus*	Chambers and Randolph Counties
	T	Price's potato-bean *Apios priceana*	Autauga, Madison and Marshall Counties
	E	Rock cress *Arabis perstellata* var. *perstellata*	Bibb County
	E	Morefield's leather flower *Clematis morefieldii*	Madison County
	E	Alabama leather flower *Clematis socialis*	St. Clair and Cherokee Counties
	E	Leafy prairie-clover *Dalea foliosa*	Colbert, Franklin, Morgan, Lawrence, Jefferson Counties
	T	Eggert's sunflower *Helianthus eggertii*	Blount County
	E	Gentian pinkroot *Spigelia gentianoides*	Bibb County
	T	Lyrate bladder-pod *Lesquerella lyrata*	Colbert, Franklin and Lawrence Counties
	E	Pondberry *Lindera melissifolia*	Wilcox County

TAXA	STATUS	COMMON / SCIENTIFIC NAMES	DISTRIBUTION
	T	Mohr's Barbara's buttons *Marshallia mohrii*	Bibb, Calhoun, Cherokee, Cullman, Walker, Etowah Counties
	T	American hart's-tongue fern *Asplenium scolopendrium* var. *americanum*	Morgan and Jackson Counties
	E	Harperella *Ptilimnium nodosum*	Cherokee, DeKalb and Tuscaloos Counties
	T	Kral's water-plantain *Sagittaria secundifolia*	Cherokee, DeKalb and Winston Counties
	E	Green pitcher plant *Sarracenia oreophila*	Cherokee, DeKalb, Etowah, Jackson, and Marshall Counties
	E	Alabama canebrake pitcher-plant *Sarracenia rubra alabamensis*	Autauga, Chilton, Elmore Counties
	E	American chaffseed*? *Schwalbea americana*	Mobile, Baldwin, Geneva Countie
	T	Alabama streak-sorus fern *Thelypteris pilosa* var. *alabamensis*	Winston County
	E	Relict trillium *Trillium reliquum*	Henry, Lee, Bullock Counties
	E	Tennessee yellow-eyed grass *Xyris tennesseensis*	Bibb, Calhoun and Franklin Counties

Total Animal Species: 88, not including 5 species of whales
Total Plant Species: 20

Status:
- * = Not believed to occur in Alabama
- E = Endangered
- T = Threatened
- T(SA) = Threatened because of Similarity of Appearance
- CH = Critical Habitat has been designated

NOTE: There are 5 endangered species of whales found in coastal waters of the southeastern states. These include the finback whale *Balaenoptera physalus*, the humpback whale *Megaptera novaeangliae*, the right whale *Balaena glacialis*, the sei whale *Balaenoptera borealis*, and the sperm whale *Physeter catodon*. It is possible, though unlikely, that they could appear in Alabama coastal waters.

REFERENCE 8

ALABAMA'S FEDERALLY LISTED SPECIES (BY COUNTY)

Date of List: June 1999

This office (Daphne Field Office - USFWS) is currently updating this list and, therefore, it may be incomplete and is provided strictly for informational purposes, at this time, and does not constitute any form of Section 7 consultation. We recommend that this office is contacted for updated, site specific information prior to project activities. To be certain of occurrence, surveys should be conducted by qualified biologists to determine if a federally protected species occurs within a project area.

Key to codes on list:
E - Endangered
T - Threatened
CH - Critical Habitat Designated
C - Candidate Species
PT - Proposed Threatened
PE - Proposed Endangered
(P) - Possible Occurrence

Autauga	E -	Wood stork *Mycteria americana*
	E -	Alabama canebrake pitcher plant *Sarracenia rubra alabamensis*
	T -	Price's potato bean *Apios priceana*
Baldwin	ECH -	Alabama beach mouse *Peromyscus polionotus ammobates*
	ECH -	Perdido Key beach mouse *Peromyscus polionotus trissylepsis*
	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Piping plover *Charadrius melodus*
	T -	Bald eagle *Haliaeetus leucocephalus*
	E -	Alabama red-bellied turtle *Pseudemys alabamensis*
	T -	Loggerhead sea turtle *Caretta caretta*
	T -	Gulf sturgeon *Acipenser oxyrinchus desotoi*
	PE -	Alabama sturgeon *Scaphirhynchus suttkusi*
	E -	Heavy pigtoe mussel *Pleurobema taitianum*
	T -	Inflated heelsplitter mussel *Potamilus inflatus*
	T -	Flatwoods salamander *Ambystoma cingulatum* (P)
	T -	Green sea turtle *Chelonia mydas* (P)
	E -	Kemp's ridley *Lepidochelys kempii* (P)
	T -	Eastern indigo snake *Drymarchon corais couperi* (P)
Barbour	E -	Wood stork *Mycteria americana*
Bibb	E -	Red-cockaded woodpecker *Picoides borealis*
	E -	Cahaba shiner *Notropis cahabae*
	T -	Goldline darter *Percina aurolineata*
	T -	Orange-nacre mucket mussel *Lampsilis perovalis*
	T -	Inflated heelsplitter mussel *Potamilus inflatus*

Bibb (cont)	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	E -	Cylindrical lioplax snail *Lioplax cyclostomaformis*
	E -	Flat pebblesnail *Lepyrium showalteri*
	T -	Round rocksnail *Leptoxis ampla*
	T -	Mohr's barbara's buttons *Marshallia mohrii*
	E -	Tennessee yellow-eyed grass *Xyris tennessensis*
Blount	T -	Flattened musk turtle *Sternotherus depressus*
	E -	Triangular kidneyshell mussel *Ptychobranchus greeni*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	E -	Ovate clubshell mussel *Pleurobema perovatum*
	E -	Plicate rocksnail *Leptoxis plicata*
	T -	Eggert's sunflower *Helianthus eggertii*
	E -	Cahaba shiner *Notropis cahabae*
Bullock	E -	Relict trillium *Trillium reliquum*
	T -	Eastern indigo snake *Drymarchon corais couperi* (P)
Butler	T -	Red hills salamander *Phaeognathus hubrichti*
Calhoun	E -	Gray bat *Myotis grisescens*
	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Pygmy sculpin *Cottus pygmaeus*
	T -	Blue shiner *Cyprinella caerulea*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	E -	Tulotoma snail *Tulotoma magnifica*
	T -	Painted rocksnail *Leptoxis taeniata*
	E -	Southern pigtoe mussel *Pleurobema georgianum*
	E -	Tennessee yellow-eyed grass *Xyris tennessensis*
	T -	Mohr's Barbara's buttons *Marshallia mohrii*
Chambers	T -	Little amphianthus *Amphianthus pusillus*
Cherokee	T -	Bald eagle *Haliaeetus leucocephalus*
	T -	Blue shiner *Cyprinella caerulea*
	E -	Coosa moccasinshell mussel *Medionidus parvulus*
	E -	Triangular kidneyshell mussel *Ptychobranchus greeni*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	E -	Southern acornshell mussel *Epioblasma othcaloogensis*
	E -	Southern clubshell mussel *Pleurobema decisum*
	E -	Southern pigtoe mussel *Pleurobema georgianum*
	E -	Upland combshell mussel *Epioblasma metastriata*
	T -	Alabama moccasinshell mussel *Medionidus acutissimus*
	E -	Green pitcher plant *Sarracenia oreophila*
	E -	Harperella *Ptilimnium nodosum*
Cherokee(cont)	T -	Mohr's Barbara's buttons *Marshallia mohrii*

	E -	Alabama leather flower *Clematis socialis*
Chilton	T -	Bald eagle *Haliaeetus leucocephalus*
	E -	Alabama canebrake pitcher plant *Sarracenia rubra alabamensis*
	T -	Painted rocksnail *Leptoxis taeniata*
Choctaw	T -	Bald eagle *Haliaeetus leucocephalus*
	E -	Wood stork *Mycteria americana*
	T -	Gopher tortoise *Gopherus polyphemus*
	T -	Gulf sturgeon *Acipenser oxyrinchus desotoi*
	PE -	Alabama sturgeon *Scaphirhynchus suttkusi*
	T -	Inflated heelsplitter mussel *Potamilus inflatus*
Clarke	E -	Wood stork *Mycteria americana*
	T -	Gulf sturgeon *Acipenser oxyrinchus desotoi*
	PE -	Alabama sturgeon *Scaphirhynchus suttkusi*
	T -	Inflated heelsplitter mussel *Potamilus inflatus*
	E -	Heavy pigtoe mussel *Pleurobema taitianum*
Clay	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
Cleburne	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Fine-lined pocketbook *Lampsilis altilis*
	E -	Southern pigtoe mussel *Pleurobema georgianum*
Coffee	T -	Gulf sturgeon *Acipenser oxyrinchus desotoi*
Colbert	E -	Gray bat *Myotis grisescens*
	E -	"bats" *Myotis* sp.
	E -	Pink mucket pearly mussel *Lampsilis orbiculata*
	E -	White warty-back pearly mussel *Plethobasus cicatricosus*
	E -	Rough pigtoe pearly mussel *Pleurobema plenum*
	E -	Cumberlandian combshell mussel *Epioblasma brevidens*
	E -	Ring pink mussel *Obovaria retusa*
	T -	Lyrate bladder-pod *Lesquerella lyrata*
	E -	Spotfin chub *Cyprinella* (=*Hybopsis*) *monacha*
Conecuh	E -	Gray bat *Myotis grisescens*
	T -	Red hills salamander *Phaeognathus hubrichti*
	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Eastern indigo snake *Drymarchon corais couperi* (P)
Coosa	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Bald eagle *Haliaeetus leucocephalus*
Coosa (cont)	T -	Blue shiner *Cyprinella caerulea*
	T -	Tulotoma snail *Tulotoma magnifica*

Covington	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Eastern indigo snake *Drymarchon corais couperi*
	T -	Red hills salamander *Phaeognathus hubrichti*
	T -	Flatwoods salamander *Ambystoma cingulatum* (P)
	T -	Gulf sturgeon *Acipenser oxyrinchus desotoi*
Crenshaw	T -	Red hills salamander *Phaeognathus hubrichti*
Cullman	T -	Flattened musk turtle *Sternotherus depressus*
	E -	Ovate clubshell mussel *Pleurobema perovatum*
	E -	Triangular kidneyshell mussel *Ptychobranchus greeni*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
Dale		
Dallas	T -	Bald eagle *Haliaeetus leucocephalus*
	E -	Wood stork *Mycteria americana*
	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	E -	Southern clubshell mussel *Pleurobema decisum*
	E -	Heavy pigtoe mussel *Pleurobema taitianum*
DeKalb	E -	Gray bat *Myotis grisescens*
	E -	"bats" *Myotis* sp.
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	T -	Kral's water-plantain *Sagittaria secundifolia*
	E -	Green pitcher plant *Sarracenia oreophila*
	E -	Harperella *Ptilimnium nodosum*
	T -	Blue shiner *Cyprinella caerulea*
Elmore	E -	Tulotoma snail *Tulotoma magnifica*
	E -	Fine-lined pocketbook mussel *Lampsilis altilis*
	E -	Alabama canebrake pitcher plant *Sarracenia rubra alabamensis*
Escambia	E -	Wood stork *Mycteria americana*
	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Gulf sturgeon *Acipenser oxyrinchus desotoi*
	T -	Eastern indigo snake *Drymarchon corais couperi* (P)
Etowah	T -	Flattened musk turtle *Sternotherus depressus*
	T -	Mohr's Barbara's buttons *Marshallia mohrii*
	E -	Green pitcher plant *Sarracenia oreophila*
	E -	Alabama leather flower *Clematis socialis*
	T -	Alabama moccasinshell mussel *Medionidus acutissimus*
Etowah (cont)	E -	Southern clubshell mussel *Pleurobema decisum*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*

	E -	Triangular kidneyshell mussel *Ptychobranchus greeni*
	E -	Southern combshell mussel *Epioblasma penita*
	E -	Southern pigtoe mussel *Pleurobema georgianum*
Fayette	T -	Orange-nacre mucket mussel *Lampsilis perovalis*
	E -	Dark pigtoe mussel *Pleurobema furvum*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	E -	Southern clubshell mussel *Pleurobema decisum*
	E -	Ovate clubshell mussel *Pleurobema perovatum*
Franklin	T -	Bald eagle *Haliaeetus leucocephalus*
	E -	Turgid blossom pearlymussel *Epioblasma turgidula*
	T -	Lyrate bladder-pod *Lesquerella lyrata*
	E -	Leafy prairie clover *Dalea foliosa*
	E -	Tennessee yellow-eyed grass *Xyris tennessensis*
Geneva	T -	Gulf sturgeon *Acipenser oxyrinchus desotoi*
	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Eastern indigo snake *Drymarchon corais couperi* (P)
Greene	T -	Orange-nacre mucket mussel *Lampsilis perovalis*
	T -	Alabama moccasinshell mussel *Medionidus acutissimus*
	E -	Southern clubshell mussel *Pleurobema decisum*
	E -	Ovate clubshell mussel *Pleurobema perovatum*
	E -	Heavy pigtoe mussel *Pleurobema taitianum*
	T -	Inflated heelsplitter mussel *Potamilus inflatus*
	E -	Stirrup shell mussel *Quadrula stapes*
Hale	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Inflated heelsplitter mussel *Potamilus inflatus*
Henry	T -	Bald eagle *Haliaeetus leucocephalus*
	E -	Relict trillium *Trillium reliquum*
Houston	T -	Flatwoods salamander *Ambystoma cingulatum* (P)
Jackson	E -	Gray bat *Myotis grisescens*
	E -	Indiana bat *Myotis sodalis*
	E -	"bats" *Myotis* sp.
	T -	Bald eagle *Haliaeetus leucocephalus*
	E -	Palezone shiner *Notropis* sp. cf. *procne*
	E -	Anthony's riversnail *Athearnia anthonyi*
	E -	Shiny pigtoe pearly mussel *Fusconaia cor (edgariana)*
	E -	Pink mucket pearly mussel *Lampsilis orbiculata*
	E -	Alabama lamp pearly mussel *Lampsilis virescens*
Jackson(cont)	E -	Pale lilliput pearly mussel *Toxolasma cylindrellus*
	E -	Fine-rayed pigtoe mussel *Fusconaia cuneolus*

	E -	Green pitcher plant *Sarracenia oreophila*
	T -	American hart's-tongue fern *Phyllitis scolopendrium* var.*americanum*
Jefferson	T -	Flattened musk turtle *Sternotherus depressus*
	E -	Watercress darter *Etheostoma nuchale*
	E -	Cahaba shiner *Notropis cahabae*
	E -	Upland combshell mussel *Epioblasma metastriata*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	E -	Triangular kidneyshell mussel *Ptychobranchus greeni*
	T -	Orange-nacre mucket mussel *Lampsilis perovalis*
	E -	Plicate rocksnail *Leptoxis plicata*
	E -	Leafy prairie clover *Dalea foliosa*
Lamar	E -	Southern combshell mussel *Epioblasma penita*
	E -	Southern clubshell mussel *Pleurobema decisum*
	E -	Ovate clubshell mussel *Pleurobema perovatum*
	T -	Orange-nacre mucket mussel *Lampsilis perovalis*
	T -	Alabama moccasinshell mussel *Medionidus acutissimus*
Lauderdale	E -	Gray bat *Myotis grisescens*
	T -	Bald eagle *Haliaeetus leucocephalus*
	TCH -	Slackwater darter *Etheostoma boschungi*
	ECH -	Alabama cavefish *Speoplatyrhinus poulsoni*
	E -	Spotfin chub *Cyprinella* (=*Hybopsis*) *monacha*
	E -	Ring pink mussel *Obovaria retusa*
	E -	Turgid blossom pearlymussel *Epioblasma turgidula*
	E -	Cracking pearlymussel *Hemistena lata*
	E -	Pink mucket pearly mussel *Lampsilis orbiculata*
	E -	White warty-back pearly mussel *Plethobasus cicatricosus*
	E -	Rough pigtoe pearly mussel *Pleurobema plenum*
Lawrence	E -	Gray bat *Myotis grisescens*
	E -	Indiana bat *Myotis sodalis*
	E -	Red-cockaded woodpecker *Picoides borealis*
	E -	Pink mucket pearly mussel *Lampsilis orbiculata*
	T -	Alabama moccasinshell mussel *Medionidus acutissimus*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	T -	Orange-nacre mucket mussel *Lampsilis perovalis*
	E -	Dark pigtoe mussel *Pleurobema furvum*
	E -	Triangular kidneyshell mussel *Ptychobranchus greeni*
	E -	Rough pigtoe mussel *Pleurobema plenum*
	E -	Leafy prairie clover *Dalea foliosa*
	E -	Lyrate bladder-pod *Lesquerella lyrata*
Lee	E -	Relict trillium *Trillium reliquum*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	E -	Ovate clubshell mussel *Pleurobema perovatum*

Limestone	E -	Gray bat *Myotis grisescens*
	E -	"bats" *Myotis* sp.
	E -	Anthony's riversnail *Athearnia anthonyi*
	T -	Slackwater darter *Etheostoma boschungi*
	E -	Boulder darter *Etheostoma wapiti*
	E -	Pink mucket pearly mussel *Lampsilis orbiculata*
	E -	Rough pigtoe mussel *Pleurobema plenum*
	E -	Cumberland monkeyface mussel *Quadrula intermedia*
	PE -	Slender campeloma snail *Campeloma decampi*
	PE -	Armored snail *Pyrgulopsis pachyta*
Lowndes	E -	Wood stork *Mycteria americana*
Macon	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	E -	Southern clubshell mussel *Pleurobema decisum*
	E -	Ovate clubshell mussel *Pleurobema perovatum*
Madison	E -	Gray bat *Myotis grisescens*
	T -	Bald eagle *Haliaeetus leucocephalus*
	T -	Slackwater darter *Etheostoma boschungi*
	E -	Snail darter *Percina tanasi*
	E -	Alabama cave shrimp *Palaemonias alabamae*
	E -	Pink mucket pearly mussel *Lampsilis orbiculata*
	E -	Shiny pigtoe pearly mussel *Fusconaia cor (edgariana)*
	E -	Fine-rayed pigtoe mussel *Fusconaia cuneolus*
	E -	Rough pigtoe mussel *Pleurobema plenum*
	E -	Orange-footed pearly mussel *Plethobasus cooperianus*
	T -	Price's potato bean *Apios priceana*
	E -	Morefield's leather flower *Clematis morefieldii*
Marengo	T -	Inflated heelsplitter mussel *Potamilus inflatus*
Marion	E -	Southern combshell mussel *Epioblasma penita*
Marshall	E -	Red-cockaded woodpecker *Picoides borealis*
	E -	Gray bat *Myotis grisescens*
	E -	Indiana bat *Myotis sodalis*
	E -	"bats" *Myotis* sp.
	T -	Bald eagle *Haliaeetus leucocephalus*
	T -	Flattened musk turtle *Sternotherus depressus*
	E -	Snail darter *Percina tanasi*
	E -	Pink mucket pearly mussel *Lampsilis orbiculata*
	E -	Shiny pigtoe pearly mussel *Fusconaia cor (edgariana)*
Marshall(cont)	E -	Fine-rayed pigtoe mussel *Fusconaia cuneolus*
	E -	Orange-footed pimpleback mussel *Plethobasus cooperianus*
	E -	Rough pigtoe *mussel Pleurobema plenum*
	T -	Price's potato bean *Apios priceana*

	E -	Green pitcher plant *Sarracenia oreophila*
Mobile	T -	Piping plover *Charadrius melodus*
	T -	Eastern indigo snake *Drymarchon corais couperi*
	T -	Gopher tortoise *Gopherus polyphemus*
	E -	Alabama red-bellied turtle *Pseudemys alabamensis*
	T -	Loggerhead sea turtle *Caretta caretta*
	E -	Leatherback sea turtle *Dermochelys coriacea*
	T -	Gulf sturgeon *Acipenser oxyrinchus desotoi*
	PE -	Alabama sturgeon *Scaphirhynchus suttkusi*
	E -	Kemp's ridley *Lepidochelys kempii* (P)
	T -	Green sea turtle *Chelonia mydas* (P)
	T -	Flatwoods salamander *Ambystoma cingulatum* (P)
	E -	Louisiana quillwort *Isoetes louisianensis* (P)
Monroe	T -	Red hills salamander *Phaeognathus hubrichti*
	E -	Heavy pigtoe mussel *Pleurobema taitianum*
	T -	Gulf sturgeon *Acipenser oxyrinchus desotoi*
	PE -	Alabama sturgeon *Scaphirhynchus suttkusi*
Montgomery	E -	Wood stork *Mycteria americana*
Morgan	E -	Gray bat *Myotis grisescens*
	E -	Indiana bat *Myotis sodalis*
	E -	"bats" *Myotis* sp.
	E -	Pink mucket pearly mussel *Lampsilis orbiculata*
	E -	Rough pigtoe *mussel Pleurobema plenum*
	E -	Leafy prairie clover *Dalea foliosa*
	T -	American hart's-tongue fern *Phyllitis scolopendrium* var. *americanum*
Perry	T -	Bald eagle *Haliaeetus leucocephalus*
	E -	Red-cockaded woodpecker *Picoides borealis*
	E -	Cahaba shiner *Notropis cahabae*
Pickens	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Orange-nacre mucket mussel *Lampsilis perovalis*
	T -	Alabama moccasinshell mussel *Medionidus acutissimus*
	E -	Southern clubshell mussel *Pleurobema decisum*
	E -	Ovate clubshell mussel *Pleurobema perovatum*
	E -	Heavy pigtoe mussel *Pleurobema taitianum*
	E -	Stirrup shell mussel *Quadrula stapes*
Pike		
Randolph	T -	Little amphianthus *Amphianthus pusillus*
Russell	E -	Shiny-rayed pocketbook mussel *Lampsilis subangulata*
	E -	Red-cockaded woodpecker *Picoides borealis*

Shelby	E -	Gray bat *Myotis grisescens*
	E -	Indiana bat *Myotis sodalis*
	E -	Cahaba shiner *Notropis cahabae*
	T -	Goldline darter *Percina aurolineata*
	T -	Painted rocksnail *Leptoxis taeniata*
	E -	Tulotoma snail *Tulotoma magnifica*
	E -	Southern acornshell mussel *Epioblasma othcaloogensis*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	T -	Orange-nacre mucket mussel *Lampsilis perovalis*
	T -	Alabama moccasinshell mussel *Medionidus acutissimus*
	E -	Cylindrical lioplax (snail) *Lioplax cyclostomaformis*
	E -	Flat pebblesnail *Lepyrium showalteri*
	T -	Round rocksnail *Leptoxis ampla*
St. Clair	E -	Tulotoma snail *Tulotoma magnifica*
	E -	Southern acornshell mussel *Epioblasma othcaloogensis*
	E -	Triangular kidneyshell mussel *Ptychobranchus greeni*
	E -	Ovate clubshell mussel *Pleurobema perovatum*
	E -	Southern pigtoe mussel *Pleurobema georgianum*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	E -	Upland combshell mussel *Epioblasma metastriata*
	E -	Alabama leather flower *Clematis socialis*
Sumter	E -	Ovate clubshell mussel *Pleurobema perovatum*
	T -	Inflated heelsplitter mussel *Potamilus inflatus*
	E -	Stirrup shell mussel *Quadrula stapes*
	T -	Gopher tortoise *Gopherus polyphemus*
Talladega	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	E -	Coosa moccasinshell mussel *Medionidus parvulus*
	E -	Tulotoma snail *Tulotoma magnifica*
	T -	Painted rocksnail *Leptoxis taeniata*
	T -	Lacy elimia (snail) *Elimia crenatella*
Tallapoosa	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
Tuscaloosa	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Flattened musk turtle *Sternotherus depressus*
	E -	Southern clubshell mussel *Pleurobema decisum*
	E -	Dark pigtoe mussel *Pleurobema furvum*
	E -	Ovate clubshell mussel *Pleurobema perovatum*
Tuscaloosa (cont)	T -	Inflated heelsplitter mussel *Potamilus inflatus*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
Walker	T -	Flattened musk turtle *Sternotherus depressus*

	E -	Ovate clubshell mussel *Pleurobema perovatum*
	E -	Triangular kidneyshell mussel *Ptychobranchus greeni*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
Washington	E -	Wood stork *Mycteria americana*
	T -	Eastern indigo snake *Drymarchon corais couperi*
	T -	Gopher tortoise *Gopherus polyphemus*
	T -	Gulf sturgeon *Acipenser oxyrinchus desotoi*
	PE -	Alabama sturgeon *Scaphirhynchus suttkusi*
	T -	Inflated heelsplitter mussel *Potamilus inflatus*
	E -	Louisiana quillwort *Isoetes louisianensis* (P)
Wilcox	T -	Bald eagle *Haliaeetus leucocephalus*
	E -	Wood stork *Mycteria americana* (P)
	T -	Gulf sturgeon *Acipenser oxyrinchus desotoi*
	PE -	Alabama sturgeon *Scaphirhynchus suttkusi*
Winston	T -	Flattened musk turtle *Sternotherus depressus*
	E -	Red-cockaded woodpecker *Picoides borealis*
	T -	Orange-nacre mucket mussel *Lampsilis perovalis*
	T -	Alabama moccasinshell mussel *Medionidus acutissimus*
	E -	Coosa moccasinshell mussel *Medionidus parvulus*
	E -	Dark pigtoe mussel *Pleurobema furvum*
	E -	Triangular kidneyshell mussel *Ptychobranchus greeni*
	T -	Fine-lined pocketbook mussel *Lampsilis altilis*
	T -	Kral's water-plantain *Sagittaria secundifolia*
	T -	Alabama streak-sorus fern *Thelypteris pilosa* var. *alabamensis*

Notes:

- Bald eagle *Haliaeetus leucocephalus*, red-cockaded woodpecker *Picoides borealis* and the American peregrine falcon *Falco peregrinus anatum* may occur in any county, if habitat exists.
- Wood stork / July - October
- Bald eagle / Wintering birds possible in areas with reservoirs or rivers.

REFERENCE 9

USDA United States Department of Agriculture

AERIAL PHOTOGRAPHY FIELD OFFICE

ORDERING IMAGERY
VISITING APFO
ABOUT APFO
CONTRACT SERVICES
COMMENTS
SPOTLIGHT

SERVICE CENTERS
FSA
NRCS
RD
USDA

The Aerial Photography Field Office, Farm Service Agency is the primary source of a imagery for the U.S. Department of Agriculture. Over 10,000,000 images are libraried APFO, dating from 1955 through the present.

Browse this site for information on the availability of imagery for your area of interest.

Visit the SPOTLIGHT, to read about Osage County, Kansas using digital imagery as p their Geographical Information System (GIS).

| Comments | USDA Service Centers Internet | FSA Internet | USDA Internet |
| NRCS Internet | RD Internet | NCGC Internet | GSTC Internet | NASS Internet |

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REFERENCE 10

Pathfi. der Office v1.10

Release Notes

Version: 1.10

Part Number: 31298-00 Rev. B

October 1996

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Pathfinder Office™
Software

GPS Mapping &
GIS Processing Tools
for GPS Pathfinder™
Systems

Trimble

Revision Notice

This is the October 1996 release of the Pathfinder Office™ Release Notes, part number 31298-00. This document describe version 1.10 of the Pathfinder Office software.

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GeoExplorer II

Operation Manual

Part Number: 28801-00

Revision: A

Date: April 1996

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REFERENCE 11

Using ArcView GIS

ArcView® GIS

The Geographic Information System for Everyone™

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REFERENCE 12

WORKSTATION 74-09893:glj

2:37:01 pm Friday August 25, 2000

```
*****************************************************************************************
****          1         2         3         4         5         6         7         8 ***
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 ***
*****************************************************************************************
*  *                                                                                    *
* 1*  Display PWS SUMMARY                                                               *
* 2*                                                                                    * 1
* 3*  PWS ID: AL 0000547 PWS TYPE: C (C,N,P) SAMPLING PLAN: Y (Y,N)                     * 2
* 4*  ACTIVITY FLAG:  A (A or I)    SYSTEM BEGIN-YY:  88     SYSTEM BEGIN-MM:  08       * 3
* 5*  DEACT-YY:     00        DEACT-MM:   00        POPULATION SERVED:  24,300          * 4
* 6*  PCT SURFACE: 075  PCT GROUND:  005  PCT PUR SURFACE: 020  PCT PUR GROUND: 000     * 5
* 7*  SYSTEM NAME:          CENTRAL ELMORE WATER AUTHORITY                               * 6
* 8*  RESPONSIBLE PERSON:  MR. DANNY INGRAM, GENERAL MANAGER                              * 7
* 9*  ADDRESS (ST/BOX):    PO BOX 816                                                   * 8
*10*  CITY: WETUMPKA                                                                     * 9
* 1*  PRIMARY PHONE:   334 567 6814     EMERGENCY PHONE:    334 541 4956                *10
* 2*  SERVICE CONNECTIONS:  8,100            OWNER TYPE:    4    AC PIPE:               * 1
* 3*  REGULATING ENTITY: S (F=Federal S=State B=Both N=Neither)  CROSS CONNECT: Y        * 2
* 4*  SEASON BEGIN-MM: 00 SEASON BEGIN-DD: 00 SEASON END-MM: 00  SEASON END-DD: 00       * 3
* 5*  REQUIRED COMPLIANCE SAMPLES: 0025   REQUIRED RAW SAMPLES: 0001                    * 4
* 6*  LAB ID:    10070    LAB NAME: Montgomery Branch Laboratory                        * 5
* 7*  TURBIDITY MONITORING REQUIRED: Y (Y OR N)   USER: TSD  DATE: 02/07/00              * 6
* 8*  FLOURIDE MONITORING REQUIRED:  N (Y OR N)   TIME:  14:52:16.90                     * 7
* 9*                                                                                    * 8
*20*                                                                                    * 9
* 1*                        10) ADDRESS DATA    / ON SITE VISIT    15) Output          *20
* 2*  3) Down      6) Add   11) STATE DISCRETIO / VIOLATION DATA       / Send          * 1
* 3*                        12) SOURCE ENTITY I / ENFORCEMENT DAT  16) Return          * 2
* 4*  5) Next / Last  9) Modify  13) GEOGRAPHIC AREA / PROJECTS                         * 3
*  *                        14) SERVICE AREAS   / TOTALS                                * 4
*                                                                                       *  *
*****************************************************************************************
****          1         2         3         4         5         6         7         8 ****
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 ****
*****************************************************************************************
```

WORKSTATION 74-09893:glj

2:38:50 pm Friday August 25, 2000

```
*****************************************************************************************
****          1         2         3         4         5         6         7         8 ***
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 ***
*****************************************************************************************
*  *                                                                                    *
* 1*  Display PWS SUMMARY                                                               *
* 2*                                                                                    *
* 3*  PWS ID: AL 0001064 PWS TYPE: C (C,N,P) SAMPLING PLAN: Y (Y,N)                     *
* 4*  ACTIVITY FLAG:  A (A or I)     SYSTEM BEGIN-YY:  79     SYSTEM BEGIN-MM:  10      *
* 5*  DEACT-YY:      00        DEACT-MM:   00        POPULATION SERVED:  7,020          *
* 6*  PCT SURFACE: 000  PCT GROUND:  050  PCT PUR SURFACE: 050  PCT PUR GROUND: 000     *
* 7*  SYSTEM NAME:          EAST MONTGOMERY WATER, SEWER, & F.P.A.                     *
* 8*  RESPONSIBLE PERSON:  MR. PATRICK A. LITTLE, CHAIRMAN                              *
* 9*  ADDRESS (ST/BOX):    PO BOX 640219                                                *
*10*  CITY: PIKE ROAD                                   STATE: AL  ZIP: 36064            *
* 1*  PRIMARY PHONE:   334 396 1110     EMERGENCY PHONE:    334 271 3868                *
* 2*  SERVICE CONNECTIONS:  2,340            OWNER TYPE:    4    AC PIPE:    Y          *
* 3*  REGULATING ENTITY: S (F=Federal S=State B=Both N=Neither)  CROSS CONNECT: Y        *
* 4*  SEASON BEGIN-MM: 00 SEASON BEGIN-DD: 00 SEASON END-MM: 00  SEASON END-DD: 00       *
* 5*  REQUIRED COMPLIANCE SAMPLES: 0007   REQUIRED RAW SAMPLES: 0000                    *
* 6*  LAB ID:    10070    LAB NAME: Montgomery Branch Laboratory                       *
* 7*  TURBIDITY MONITORING REQUIRED: N (Y OR N)   USER: TSD  DATE: 02/05/99              *
* 8*  FLOURIDE MONITORING REQUIRED:  N (Y OR N)   TIME:  08:26:37.56                     *
* 9*                                                                                    *
*20*                                 10) ADDRESS DATA    / ON SITE VISIT    15) Output *20*
* 1*                    6) Add       11) STATE DISCRETIO / VIOLATION DATA       / Send *1*
* 2*  3) Down                        12) SOURCE ENTITY I / ENFORCEMENT DAT  16) Return *2*
* 3*  4) Prev / First                13) GEOGRAPHIC AREA / PROJECTS                    *3*
* 4*  5) Next / Last    9) Modify    14) SERVICE AREAS   / TOTALS                      *4*
*  *                                                                                    *  *
*****************************************************************************************
****          1         2         3         4         5         6         7         8 ****
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 ****
*****************************************************************************************
```

WORKSTATION 74-09893:gl5

10:08:21 am Monday August 28, 2000

```
*****************************************************************************************
****          1         2         3         4         5         6         7         8 **
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 **
*****************************************************************************************
*  *
* 1*  Display PWS SUMMARY                                                              *
* 2*                                                                                   *
* 3*  PWS ID: AL 0000535 PWS TYPE: C (C,N,P) SAMPLING PLAN: Y (Y,N)                    *
* 4*  ACTIVITY FLAG:  A (A or I)    SYSTEM BEGIN-YY:  73     SYSTEM BEGIN-MM:  05      *
* 5*  DEACT-YY:     00        DEACT-MM:   00       POPULATION SERVED:  8,940           *
* 6*  PCT SURFACE: 000  PCT GROUND:  100  PCT PUR SURFACE: 000  PCT PUR GROUND: 000    *
* 7*  SYSTEM NAME:          ELMORE WATER AUTHORITY                                     *
* 8*  RESPONSIBLE PERSON:  MR. WILLIAM J EDDINGS JR, GENERAL MANAG                     *
* 9*  ADDRESS (ST/BOX):    P O BOX 220                                                 *
*10*  CITY: ELMORE                                        STATE: AL  ZIP: 36025        *
* 1*  PRIMARY PHONE:   334 285 6109     EMERGENCY PHONE:    334 285 6918               *
* 2*  SERVICE CONNECTIONS:  2,980            OWNER TYPE:    4    AC PIPE:    Y         *
* 3*  REGULATING ENTITY: S (F=Federal S=State B=Both N=Neither)  CROSS CONNECT: Y       *
* 4*  SEASON BEGIN-MM: 00 SEASON BEGIN-DD: 00 SEASON END-MM: 00  SEASON END-DD: 00      *
* 5*  REQUIRED COMPLIANCE SAMPLES: 0010   REQUIRED RAW SAMPLES: 0001                   *
* 6*  LAB ID:    10070    LAB NAME: Montgomery Branch Laboratory                      *
* 7*  TURBIDITY MONITORING REQUIRED: N (Y OR N)   USER: BAL  DATE: 08/03/99             *
* 8*  FLOURIDE MONITORING REQUIRED:  N (Y OR N)   TIME:  07:58:13.47                    *
* 9*                                                                                   *
*20*                                 10) ADDRESS DATA    / ON SITE VISIT    15) Output *
* 1*                   6) Add        11) STATE DISCRETIO / VIOLATION DATA       / Send *
* 2*  3) Down                        12) SOURCE ENTITY I / ENFORCEMENT DAT  16) Return *
* 3*                                 13) GEOGRAPHIC AREA / PROJECTS                    *
* 4*  5) Next / Last    9) Modify    14) SERVICE AREAS   / TOTALS                      *
*  *                                                                                   *
*****************************************************************************************
****          1         2         3         4         5         6         7         8 ***
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 ***
*****************************************************************************************
```

WORKSTATION 74-09893:glj

9:41:51 am Thursday August 24, 2000

```
Display PWS SUMMARY

PWS ID: AL 0001756 PWS TYPE: C (C,N,P) SAMPLING PLAN: Y (Y,N)
ACTIVITY FLAG:  A (A or I)    SYSTEM BEGIN-YY:  94     SYSTEM BEGIN-MM:  01
DEACT-YY:     00        DEACT-MM:   00        POPULATION SERVED:  663
PCT SURFACE: 000  PCT GROUND:  000  PCT PUR SURFACE: 025  PCT PUR GROUND: 075
SYSTEM NAME:          HUNTER'S WALK MFG HOME COMMUNITY
RESPONSIBLE PERSON:   MR. DAVID P. SMITH, GEN. MGR.
ADDRESS (ST/BOX):     1200 WEST BLVD
CITY: MONTGOMERY                                  STATE: AL  ZIP: 36108
PRIMARY PHONE:   334 834 8300     EMERGENCY PHONE:    334 240 1657
SERVICE CONNECTIONS:  221              OWNER TYPE:    6    AC PIPE:    N
REGULATING ENTITY: S (F=Federal S=State B=Both N=Neither)  CROSS CONNECT: N
SEASON BEGIN-MM: 00 SEASON BEGIN-DD: 00 SEASON END-MM: 00  SEASON END-DD: 00
REQUIRED COMPLIANCE SAMPLES: 0002   REQUIRED RAW SAMPLES: 0000
LAB ID:    30050    LAB NAME: Montgomery Water Works Laboratory
TURBIDITY MONITORING REQUIRED: N (Y OR N)   USER: BAL  DATE: 02/05/99
FLOURIDE MONITORING REQUIRED:  N (Y OR N)   TIME:  08:21:11.09

                          10) ADDRESS DATA    / ON SITE VISIT    15) Output
                 6) Add   11) STATE DISCRETIO / VIOLATION DATA       / Send
3) Down                   12) SOURCE ENTITY I / ENFORCEMENT DAT  16) Return
                          13) GEOGRAPHIC AREA / PROJECTS
                 9) Modify 14) SERVICE AREAS  / TOTALS
```

WORKSTATION 74-09893:glj

2:40:06 pm Friday August 25, 2000

```
Display PWS SUMMARY

PWS ID: AL 0001435 PWS TYPE: C (C,N,P) SAMPLING PLAN: N (Y,N)
ACTIVITY FLAG:  A (A or I)    SYSTEM BEGIN-YY:  77     SYSTEM BEGIN-MM:  06
DEACT-YY:     00        DEACT-MM:   00        POPULATION SERVED:  1,860
PCT SURFACE: 000  PCT GROUND:  000  PCT PUR SURFACE: 100  PCT PUR GROUND: 000
SYSTEM NAME:          MONTGOMERY NORTH WATER & FIRE AUTHORITY
RESPONSIBLE PERSON:   MR RICHARD BROOKS, OPERATOR
ADDRESS (ST/BOX):     PO BOX 614
CITY: WETUMPKA
PRIMARY PHONE:   334 264 5746     STATE: AL  ZIP: 36092
SERVICE CONNECTIONS:  620         EMERGENCY PHONE:    334 263 2672
REGULATING ENTITY: S (F=Federal S=State B=Both N=Neither)  OWNER TYPE:    4    AC PIPE:
SEASON BEGIN-MM: 00 SEASON BEGIN-DD: 00 SEASON END-MM: 00  SEASON END-DD: 00  CROSS CONNECT: Y
REQUIRED COMPLIANCE SAMPLES: 0002   REQUIRED RAW SAMPLES: 0000
LAB ID:    10070    LAB NAME: Montgomery Branch Laboratory
TURBIDITY MONITORING REQUIRED: N (Y OR N)   USER: BAL  DATE: 09/03/99
FLOURIDE MONITORING REQUIRED:  N (Y OR N)   TIME:  10:10:35.29

                                10) ADDRESS DATA    / ON SITE VISIT
                                11) STATE DISCRETIO / VIOLATION DATA
                                12) SOURCE ENTITY I / ENFORCEMENT DAT
                                13) GEOGRAPHIC AREA / PROJECTS
                                14) SERVICE AREAS   / TOTALS

3) Down          6) Add                                  15) Output
4) Prev / First                                              / Send
                                                         16) Return
                 9) Modify
```

WORKSTATION 74-09893:glj

9:42:56 am Thursday August 24, 2000

```
*****************************************************************************************
****          1         2         3         4         5         6         7         8 ***
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 ***
*****************************************************************************************
*  *                                                                                    *
* 1*  Display PWS SUMMARY                                                               *
* 2*                                                                                    *
* 3*  PWS ID: AL 0001070 PWS TYPE: C (C,N,P) SAMPLING PLAN: Y (Y,N)                     *
* 4*  ACTIVITY FLAG:  A (A or I)    SYSTEM BEGIN-YY:  75     SYSTEM BEGIN-MM:  06      *
* 5*  DEACT-YY:     00        DEACT-MM:   00       POPULATION SERVED:  216,000          *
* 6*  PCT SURFACE: 066  PCT GROUND:  034  PCT PUR SURFACE: 000  PCT PUR GROUND: 000     *
* 7*  SYSTEM NAME:          MONTGOMERY WATER WORKS                                     *
* 8*  RESPONSIBLE PERSON:  MR. KEITH YARBROUGH, SUPT. OF SUPPLY                         *
* 9*  ADDRESS (ST/BOX):    P O BOX 1631                                                 *
*10*  CITY: MONTGOMERY                                  STATE: AL  ZIP: 36192            *
* 1*  PRIMARY PHONE:   334 240 1657     EMERGENCY PHONE:    334 206 1600               *
* 2*  SERVICE CONNECTIONS:  72,000          OWNER TYPE:    4    AC PIPE:               *
* 3*  REGULATING ENTITY: S (F=Federal S=State B=Both N=Neither)  CROSS CONNECT: Y       *
* 4*  SEASON BEGIN-MM: 00 SEASON BEGIN-DD: 00 SEASON END-MM: 00  SEASON END-DD: 00      *
* 5*  REQUIRED COMPLIANCE SAMPLES: 0120   REQUIRED RAW SAMPLES: 0001                   *
* 6*  LAB ID:    30050    LAB NAME: Montgomery Water Works Laboratory                  *
* 7*  TURBIDITY MONITORING REQUIRED: Y (Y OR N)   USER: BAL  DATE: 10/12/99             *
* 8*  FLOURIDE MONITORING REQUIRED:  Y (Y OR N)   TIME:  14:00:58.65                    *
* 9*                                                                                    *
*20*                                                                                    *
* 1*                          10) ADDRESS DATA    / ON SITE VISIT    15) Output        *20*
* 2*  3) Down        6) Add   11) STATE DISCRETIO / VIOLATION DATA       / Send        * 1*
* 3*  4) Prev / First         12) SOURCE ENTITY I / ENFORCEMENT DAT  16) Return        * 2*
* 4*  5) Next / Last  9) Modify 13) GEOGRAPHIC AREA / PROJECTS                          * 3*
*  *                          14) SERVICE AREAS   / TOTALS                              * 4*
*                                                                                       *  *
*****************************************************************************************
****          1         2         3         4         5         6         7         8 ****
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 ****
*****************************************************************************************
```

WORKSTATION 74-09893:glj

2:40:59 pm Friday August 25, 2000

```
*****************************************************************************************
****          1         2         3         4         5         6         7         8 **
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 **
*****************************************************************************************
*  *                                                                                    *
* 1*  Display PWS SUMMARY                                                               *
* 2*                                                                                    *
* 3*  PWS ID: AL 0001073 PWS TYPE: C (C,N,P) SAMPLING PLAN: Y (Y,N)                     *
* 4*  ACTIVITY FLAG:  A (A or I)    SYSTEM BEGIN-YY:  75     SYSTEM BEGIN-MM:  06       *
* 5*  DEACT-YY:     00       DEACT-MM:   00       POPULATION SERVED:  1,800             *
* 6*  PCT SURFACE: 000  PCT GROUND:  020  PCT PUR SURFACE: 040  PCT PUR GROUND: 040     *
* 7*  SYSTEM NAME:          PINTLALA WATER & FIRE PRO AUTHORITY                         *
* 8*  RESPONSIBLE PERSON:  MR. WAYNE HATCHER, PRESIDENT                                 *
* 9*  ADDRESS (ST/BOX):    P O BOX 95                                                   *
*10*  CITY: HOPE HULL                                  STATE: AL  ZIP: 36043            *
* 1*  PRIMARY PHONE:   334 288 5054     EMERGENCY PHONE:    334 288 2966                *
* 2*  SERVICE CONNECTIONS:  600                OWNER TYPE:    4    AC PIPE:             *
* 3*  REGULATING ENTITY: S (F=Federal S=State B=Both N=Neither)  CROSS CONNECT: Y        *
* 4*  SEASON BEGIN-MM: 00 SEASON BEGIN-DD: 00 SEASON END-MM: 00  SEASON END-DD: 00       *
* 5*  REQUIRED COMPLIANCE SAMPLES: 0002   REQUIRED RAW SAMPLES: 0001                    *
* 6*  LAB ID:    10070    LAB NAME: Montgomery Branch Laboratory                       *
* 7*  TURBIDITY MONITORING REQUIRED: N (Y OR N)   USER: BAL  DATE: 02/22/99             *
* 8*  FLOURIDE MONITORING REQUIRED:  N (Y OR N)   TIME:  10:14:51.05                    *
* 9*                                                                                    *
*20*                                 10) ADDRESS DATA    / ON SITE VISIT    15) Output *20
* 1*                   6) Add        11) STATE DISCRETIO / VIOLATION DATA       / Send *
* 2*  3) Down                        12) SOURCE ENTITY I / ENFORCEMENT DAT  16) Return *
* 3*                                 13) GEOGRAPHIC AREA / PROJECTS                     *
* 4*                   9) Modify     14) SERVICE AREAS   / TOTALS                       *
*  *                                                                                    *
*****************************************************************************************
****          1         2         3         4         5         6         7         8 ***
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 ***
*****************************************************************************************
```

WORKSTATION 74-09893:glj

9:38:41 am Thursday August 24, 2000

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*****************************************************************************************
****          1         2         3         4         5         6         7         8 ***
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 ***
*****************************************************************************************
*  *                                                                                    *
* 1*  Display PWS SUMMARY                                                               *
* 2*                                                                                    *
* 3*  PWS ID: AL 0000549 PWS TYPE: C (C,N,P) SAMPLING PLAN: Y (Y,N)                     *
* 4*  ACTIVITY FLAG:  A (A or I)     SYSTEM BEGIN-YY:  64      SYSTEM BEGIN-MM:  01     *
* 5*  DEACT-YY:      00        DEACT-MM:   00        POPULATION SERVED:  8,640          *
* 6*  PCT SURFACE: 000  PCT GROUND:  080  PCT PUR SURFACE: 000  PCT PUR GROUND: 020     *
* 7*  SYSTEM NAME:          TRI COMMUNITY WATER SYSTEM                                 *
* 8*  RESPONSIBLE PERSON:   MR. KENNETH JONES, SUPT.                                    *
* 9*  ADDRESS (ST/BOX):     P O BOX 398                                                 *
*10*  CITY: MILLBROOK                                  STATE: AL  ZIP: 36054            *
* 1*  PRIMARY PHONE:   334 285 4267      EMERGENCY PHONE:    334 285 4622               *
* 2*  SERVICE CONNECTIONS:  2,880              OWNER TYPE:    4     AC PIPE:            *
* 3*  REGULATING ENTITY: S (F=Federal S=State B=Both N=Neither)  CROSS CONNECT: Y        *
* 4*  SEASON BEGIN-MM: 00 SEASON BEGIN-DD: 00 SEASON END-MM: 00  SEASON END-DD: 00       *
* 5*  REQUIRED COMPLIANCE SAMPLES: 0009   REQUIRED RAW SAMPLES: 0001                    *
* 6*  LAB ID:    10070    LAB NAME: Montgomery Branch Laboratory                       *
* 7*  TURBIDITY MONITORING REQUIRED: N (Y OR N)   USER: BAL  DATE: 08/20/99              *
* 8*  FLOURIDE MONITORING REQUIRED:  Y (Y OR N)   TIME:  09:42:07.32                     *
* 9*                                                                                    *
*20*                                                                                    *
* 1*                          10) ADDRESS DATA    / ON SITE VISIT    15) Output        *
* 2*  3) Down        6) Add    11) STATE DISCRETIO / VIOLATION DATA       / Send        *
* 3*                           12) SOURCE ENTITY I / ENFORCEMENT DAT  16) Return        *
* 4*                           13) GEOGRAPHIC AREA / PROJECTS                           *
*  *                 9) Modify 14) SERVICE AREAS   / TOTALS                             *
*****************************************************************************************
****          1         2         3         4         5         6         7         8 ***
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 ***
*****************************************************************************************
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WORKSTATION 74-09893:glj

9:40:29 am Thursday August 24, 2000

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*****************************************************************************************
****          1         2         3         4         5         6         7         8 **
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 **
*****************************************************************************************
*  *                                                                                    *
* 1*  Display SOURCE ENTITY INFO                                                        *
* 2*                                                                                    *
* 3*                                                                                    *
* 4*  SYSTEM NAME: TRI COMMUNITY WATER SYSTEM                USERID: NL    DATE: 06/27/00 *
* 5*  PWS ID: AL 0000549   SE ID: 005   PWS TYPE: C     TIME: 09:49:20.00               *
* 6*  AVAILABILITY: P  (P=Permanent E=Emergency S=Seasonal I=Interium O=Other)  ACTIVITY CODE: A *
* 7*  SE CODE: SG       SOURCE NAME:  WELL 5                                            *
* 8*  SELLER PWSID: AL          LATITUDE:  322618     LONGITUDE: 0862123                *
* 9*  MERIDIAN NAME:                                                  CT:   0           *
*10*  DATA ORIGIN: S    TOWNSHIP:  000    (N or S)   RANGE:  000    (E or W)           *
* 1*  SECTION: 00  QTR SECTION:    (NW,NE,SW,SE) QTR QTR SECTION:    (NW,NE,SW,SE)     *
* 2*  RIVER REACHNUM:  00000000      ON REACH:    (Y or N)   REACH MILES: 0.00          *
* 3*  WELL TYPE:  D     WELL DEPTH:  235          AQUIFER:    GORDO,COKER              *
* 4*  CASING DIAMETER:  0     CASING TYPE:  S          WELL DRAW DOWN:  0               *
* 5*  WELL STATIC LEVEL:   54                 SOURCE AVERAGE PRODUCTION:  153,200       *
* 6*  PUMP RATED CAPACITY: 300                RAW STORAGE:    0                         *
* 7*  MAXIMUM PRODUCTION:  161,000      SOURCE DATE-MM: 10    SOURCE DATE-YY:  93     *
* 8*  RECEIVING PLANT:                                 VULNERABILITY:                   *
* 9*                                                                                    *
*20*                                                                                    *
* 1*                          10) PWS SUMMARY                                15) Output *
* 2*                  6) Add  11) TREATMENT DATA                                 / Send *
* 3*  3) Down                                                                16) Return *
* 4*  4) Prev / First                                                                   *
*  *  5) Next / Last   9) Modify                                                        *
*****************************************************************************************
****          1         2         3         4         5         6         7         8 ***
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 ***
*****************************************************************************************
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WORKSTATION 74-09893:glj

2:42:24 pm Friday August 25, 2000

```
List SOURCE ENTITY INFO                                   Choose by cursor position or X's

                    ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
                       Federal Reporting Data System  (FRDS-II)
                     SE
      PWS ID2        ID                                                    SE
  ¤   AL 0000549     001      WELL 1                                      CODE
  ¤   AL 0000549     002      WELL 2 MANGANESE PROBLEM                     SG
  ¤   AL 0000549     003      WELL 3                                       SG
  ¤   AL 0000549     004      WELL 4                                       SG
  ¤   AL 0000549     005      WELL 5                                       SG
  ¤   AL 0000549     006      MILLBROOK UTIL.                              SG
                                                                           SW

Enter) Display                  10) PWS SUMMARY                      15) Output
2) Mark / Clear   6) Add        11) TREATMENT DATA                       / Send
                  7) Query      12) TOTALS                           16) Return
                                13) SOURCE CHEMICAL MONITORING      / Exit Menu
                  9) Modify
```

WORKSTATION 74-09893:glj

2:41:23 pm Friday August 25, 2000

```
*****************************************************************************************
****          1         2         3         4         5         6         7         8 ***
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 ***
*****************************************************************************************
*  *                                                                                    *
* 1*  Display PWS SUMMARY                                                               *
* 2*                                                                                    *
* 3*  PWS ID: AL 0000551 PWS TYPE: C (C,N,P) SAMPLING PLAN: Y (Y,N)                     *
* 4*  ACTIVITY FLAG:  A (A or I)    SYSTEM BEGIN-YY:  75     SYSTEM BEGIN-MM:  06      *
* 5*  DEACT-YY:      00        DEACT-MM:   00        POPULATION SERVED:  7,131          *
* 6*  PCT SURFACE: 000  PCT GROUND:  000  PCT PUR SURFACE: 100  PCT PUR GROUND: 000     *
* 7*  SYSTEM NAME:          WETUMPKA WATER WORKS & SEWER BOARD                          *
* 8*  RESPONSIBLE PERSON:  MR. BILL ALLEN, SUPT.                                        *
* 9*  ADDRESS (ST/BOX):    P O BOX 69                                                   *
*10*  CITY: WETUMPKA                                                                    *
* 1*  PRIMARY PHONE:   334 567 8404     STATE: AL  ZIP: 36092                           *
* 2*  SERVICE CONNECTIONS:  2,377     EMERGENCY PHONE:    334 567 6641                  *
* 3*  REGULATING ENTITY: S (F=Federal S=State B=Both N=Neither)  OWNER TYPE:    4    AC PIPE:
* 4*  SEASON BEGIN-MM: 00 SEASON BEGIN-DD: 00 SEASON END-MM: 00  SEASON END-DD: 00  CROSS CONNECT: Y
* 5*  REQUIRED COMPLIANCE SAMPLES: 0008   REQUIRED RAW SAMPLES: 0000                   *
* 6*  LAB ID:    10070    LAB NAME: Montgomery Branch Laboratory                       *
* 7*  TURBIDITY MONITORING REQUIRED: N (Y OR N)   USER: BAL  DATE: 11/06/98             *
* 8*  FLOURIDE MONITORING REQUIRED:  N (Y OR N)   TIME:  15:09:50.28                    *
* 9*                                                                                    *
*20*                                                                                    *
* 1*                          10) ADDRESS DATA    / ON SITE VISIT    15) Output        *
* 2*  3) Down        6) Add   11) STATE DISCRETIO / VIOLATION DATA       / Send        *
* 3*                          12) SOURCE ENTITY I / ENFORCEMENT DAT  16) Return        *
* 4*                          13) GEOGRAPHIC AREA / PROJECTS                            *
*  *                 9) Modify 14) SERVICE AREAS   / TOTALS                             *
*****************************************************************************************
****          1         2         3         4         5         6         7         8 ***
**** 12345678901234567890123456789012345678901234567890123456789012345678901234567890 ***
*****************************************************************************************
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REFERENCE 13

PURCHASED WATER SYSTEM - MONTHLY OPERATING REPORT

FOR THE MONTH OF January 19 98

SYSTEM NAME: Central Elmore Water Authority PWS-ID NO: 0000547

PURCHASED FROM: Montgomery, Alex City, Wetumpka and Blue Ridge Well and CEWA Filter Plant NO. OF CUST. _____

DATE	MASTER METER READING	GALLONS PUMPED	CL 2 RESID
1			2.0
2			1.9
3			1.9
4			2.0
5			1.8
6			1.7
7			1.9
8			1.6
9			1.6
10			1.8
11			1.9
12			1.7
13			2.0
14			2.1
15			2.1
16			2.0

CEWA Filter Plant	38,167,000
PRESENT MONTGOMERY READING	534,721,000
PREVIOUS MONTGOMERY READING	571,585,000
(1) DIFFERENCE	13,136,000
PRESENT ALEX CITY READING	No Usage
PREVIOUS ALEX CITY READING	No Usage
(2) DIFFERENCE	No Usage
PRESENT BLUE RIDGE READING	N/A
PREVIOUS BLUE RIDGE READING	N/A
(3) DIFFERENCE Calculation Reports	2,528,900
PRESENT WETUMPKA READING	No Usage
PREVIOUS WETUMPKA READING	No Usage
(4) DIFFERENCE	No Usage
(5) TOTAL LINES 1, 2, 3 & 4 + CEWA Filter Plant	53,831,900
(6) GALLONS SOLD TO CUSTOMERS	45,276,500
(7) MISCELLANEOUS USAGE	4,684,300
(8) TOTAL OF LINES 6 & 7	49,960,800
(9) LINE 5 MINUS LINE 8	3,871,100

70 A

Purchase System Operation Data Report

System Name: East Montgomery County: Montgomery PSWD# 1064 Meters/ Customers: 2428
Month of July 2000

Date	Source Hwy 80. Master Meter Reading	Gallons Pumped	Chlorine Residual	Source Smothers Rd. Master Meter Reading	Gallons Pumped	Chlorine Residual	Source Hwy 231 Master Meter Reading	Gallons Pumped	Chlorine Residual
1	1,345	1,000	X	7,558	3,000	X	26	0	X
2	1,345	0	X	7,560	1,000	X	26	0	X
3	1,346	1,000	X	7,563	3,000	X	26	0	X
4	1,347	1,000	X	7,564	3,000	X	26	0	X
5	1,347	1,000	X	7,566	3,000	X	26	0	X
6	1,348	1,000	X	7,566	3,000	X	26	0	X
7	1,348	1,000	X	7,570	2,000	X	26	0	X
8	1,348	1,000	X	7,571	2,000	X	26	0	X
9	1,349	1,000	X	7,573	2,000	X	26	0	X
10	1,349	2,000	X	7,575	3,000	X	26	0	X
11	1,351	3,000	X	7,579	3,000	X	26	0	X
12	1,352	2,000	x	7,581	2,000	X	26	0	X
13	1,352	1,000	X	7,582	3,000	X	26	0	X
14	1,353	0	X	7,584	3,000	X	26	0	X
15	1,354	1,000	X	7,586	3,000	X	26	0	X
16	1,354	1,000	X	7,587	3,000	X	26	0	X
17	1,355	0	X	7,589	3,000	X	26	0	X
18	1,355	1,000	X	7,590	3,000	X	26	0	X
19	1,356	1,000	X	7,592	3,000	X	26	0	X
20	1,357	0	X	7,594	3,000	X	26	0	X
21	1,357	1,000	X	7,596	3,000	X	26	0	X
22	1,358	0	X	7,600	3,000	X	26	0	X
23	1,359	1,000	X	7,602	3,000	X	26	0	X
24	1,360	0	X	7,604	3,000	X	26	0	X
25	1,361	1,000	X	7,606	3,000	X	26	0	X
26	1,362	1,000	X	7,608	2,000	X	26	0	X
27	1,363	1,000	X	7,610	2,000	X	26	0	X
28	1,364	2,000	X	7,612	3,000	X	26	0	X
29	1,364	1,000	X	7,613	3,000	X	26	0	X
30	1,364	1,000	X	7,613	3,000	X	26	0	X
31	1,364	1,000	X	7,613	3,000	X	26	0	X
	Total	30,000	X	Total	68,000	X	Total	0	X
	Average	968	X	Average	2,742	X	Average	0	X

(a)	This months meter reading(*)	
(b)	Last months meter reading(*)	
(c)	Gallons purchased((a)-(b))	
(d)	Gallons sold	
(e)	Unaccounted losses((c)-(d))	
%	Unaccounted for((e)/(c)x 100	%
*	All meters	

Comments

Mail To:
ADEM
Water Supply Branch
P.O. Box 301463
Montgomery, AL 36130-1463

Signature:

(Certified Operator)

8/7/00

WELL SOURCE DATA REPORT

SYSTEM NAME: EAST MONTGOMERY COUNTY Montgomery PWSID 1084 NO. CUSTOMERS SERVED 2426

Source Name	Horse Farm Well				Youth Services				Kilby Well				Walshatchie Well			
Capacity (GPM)	800				166				310				650			
	STATIC / PUMPING				STATIC / PUMPING				STATIC / PUMPING				STATIC / PUMPING			
	190 / 90				160 / 12				160 / 6				160 /			
DATE	Gallons Pumped	CL2	F-	pH	Gallons Pumped	CL2	F-	pH	Gallons	CL2	F-	pH	Gallons Pumped	CL2	F-	pH
1	669,000	1.70	X	X	93,000	1.60	X	X	228,000	1.40	X	X	224,700	1.40	X	X
2	794,000	1.50	X	X	110,000	1.40	X	X	277,000	1.60	X	X	279,900	1.50	X	X
3	821,000	1.60	X	X	137,000	1.40	X	X	333,000	1.60	X	X	356,400	1.60	X	X
4	704,000	1.40	X	X	109,000	1.40	X	X	273,000	1.40	X	X	286,600	1.40	X	X
5	799,000	1.60	X	X	161,000	1.40	X	X	408,000	1.40	X	X	331,600	1.40	X	X
6	627,000	1.60	X	X	174,000	1.40	X	X	447,000	1.60	X	X	379,100	1.40	X	X
7	750,000	1.50	X	X	161,000	1.40	X	X	420,000	1.50	X	X	380,200	1.60	X	X
8	804,000	1.60	X	X	167,000	1.40	X	X	438,000	1.40	X	X	369,600	1.50	X	X
9	756,000	1.50	X	X	140,000	1.40	X	X	391,000	1.40	X	X	383,600	1.60	X	X
10	736,000	1.60	X	X	102,000	1.60	X	X	280,000	1.30	X	X	343,000	1.40	X	X
11	392,000	1.60	X	X	177,000	1.60	X	X	449,000	1.60	X	X	340,600	1.40	X	X
12	737,000	1.60	X	X	166,000	1.40	X	X	436,000	1.60	X	X	283,600	1.40	X	X
13	779,000	1.60	X	X	130,000	1.40	X	X	331,000	1.40	X	X	289,700	1.60	X	X
14	297,000	1.60	X	X	163,000	1.60	X	X	460,000	1.30	X	X	329,600	1.60	X	X
15	738,000	1.40	X	X	156,000	1.50	X	X	418,000	1.30	X	X	291,600	1.60	X	X
16	790,000	1.40	X	X	126,000	1.60	X	X	319,000	1.60	X	X	361,600	1.60	X	X
17	727,000	1.40	X	X	123,000	1.40	X	X	309,000	1.40	X	X	365,600	1.60	X	X
18	497,000	1.60	X	X	169,000	1.40	X	X	424,000	1.40	X	X	386,000	1.40	X	X
19	733,000	1.50	X	X	174,000	1.30	X	X	437,000	1.60	X	X	363,100	1.40	X	X
20	692,000	1.60	X	X	172,000	1.30	X	X	442,000	1.40	X	X	413,300	1.40	X	X
21	759,000	1.60	X	X	146,000	1.40	X	X	378,000	1.40	X	X	383,200	1.40	X	X
22	729,000	1.60	X	X	127,000	1.40	X	X	327,000	1.60	X	X	361,000	1.60	X	X
23	845,000	1.40	X	X	179,000	1.40	X	X	476,000	1.30	X	X	461,000	1.30	X	X
24	746,000	1.40	X	X	163,000	1.40	X	X	379,000	1.60	X	X	367,300	1.40	X	X
25	847,000	1.70	X	X	41,000	1.60	X	X	418,000	1.60	X	X	339,600	1.40	X	X
26	690,000	1.60	X	X	0	1.40	X	X	469,000	1.40	X	X	282,200	1.60	X	X
27	710,000	1.60	X	X	0	1.40	X	X	417,000	1.40	X	X	232,600	1.40	X	X
28	704,000	1.60	X	X	0	1.40	X	X	487,000	1.60	X	X	268,600	1.40	X	X
29	685,000	1.60	X	X	28,000	1.60	X	X	362,000	1.40	X	X	283,000	1.60	X	X
30	791,000	1.60	X	X	0	1.60	X	X	484,000	1.40	X	X	312,600	1.60	X	X
31	684,000	1.60	X	X	0	1.60	X	X	342,000	1.40	X	X	287,200	1.60	X	X
TOTAL	21,916,000				3,602,000				11,[illegible]				10,168,600			
AVERAGE	706,969	1.77			233,305	1.43			368,677	1.64			327,610	1.43		

July 2002

Total Gallons Purchased (If Applicable)	115,000
Total Gallons Pumped (all wells)	47,639,500
Grand Total	47,754,500
Water Sold	38,888,010
Difference	8,866,490
% Loss	18.3969173
Comments	
Flushing & Line Breaks	1,600,000
Net Total	1,600,000
	0
Corrected Loss (%)	15

Signed
Title

ADEM
Water Supply Branch
P.O. Box 301130
Montgomery, AL 36130-1400
Phone 334-271-7773

Purchase System Operation Data Report

System Name: East Montgomery County: Montgomery PSWID# 1084 Meters/Customers: 2428

Date	Source Wares Ferry Rd. Master Meter Reading	Gallons Pumped	Chlorine Residual	Source Old Pike Rd. Master Meter Reading	Gallons Pumped	Chlorine Residual	Source Master Meter Reading	Gallons Pumped	Chlorine Residual
1	4,007	0	X	29,920	0	X			
2	4,007	0	X	29,920	0	X			
3	4,007	0	X	29,920	0	X			
4	4,007	0	X	29,920	0	X			
5	4,007	0	X	29,920	0	X			
6	4,007	0	X	29,920	0	X			
7	4,007	0	X	29,920	0	X			
8	4,007	0	X	29,920	0	X			
9	4,007	0	X	29,920	0	X			
10	4,007	0	X	29,920	0	X			
11	4,007	0	X	29,920	0	X			
12	4,007	0	X	29,920	0	X			
13	4,007	0	X	29,920	0	X			
14	4,007	0	X	29,920	0	X			
15	4,007	0	X	29,920	0	X			
16	4,007	0	X	29,920	0	X			
17	4,007	0	X	29,920	0	X			
18	4,007	0	X	29,920	0	X			
19	4,007	0	X	29,920	0	X			
20	4,007	0	X	29,920	0	X			
21	4,007	0	X	29,920	0	X			
22	4,007	0	X	29,920	0	X			
23	4,007	0	X	29,920	0	X			
24	4,007	0	X	29,920	0	X			
25	4,007	0	X	29,920	0	X			
26	4,007	0	X	29,920	0	X			
27	4,007	0	X	29,920	0	X			
28	4,007	0	X	29,920	0	X			
29	4,007	0	X	29,920	0	X			
30	4,007	0	X	29,920	0	X			
31	4,007	0	X	29,920	0	X			
	Total	0	X	Total	0	0	Total		
	Average	0	X	Average	0	0	Average		

(a) This months meter reading(*)
(b) Last months meter reading(*)
(c) Gallons purchased((a)-(b))
(d) Gallons sold
(e) Unaccounted losses((c)-(d))
% Unaccounted for((e)/(c)x 100
* All meters

Comments _____

Mail To:
ADEM
Water Supply Branch
P.O. Box 301463
Montgomery, AL 36130-1463

Signature: _____

(Certified Operator)

WELL SOURCE DATA REPORT

SYSTEM N Elmore Water Authority **COUNTY** ELMORE **PWS** **535 NO. CUSTOMERS SERVED** July 2000

Source	Airport				Blackmon				Estes				Dismukes			
Cap(GPM)	200				150				200				[illegible]			
	STATIC / /			PUMPIN	STATIC / /			PUMPING	STATIC / /			PUMPING	STATIC / /			PUMPI
DATE	Gallons Pumped	CL2	F-	pH	Gallons Pumped	CL2	F-	pH	Gallons Pumped	CL2	F-	pH	Gallons Pumped	CL2	F-	pH
1	179,000	0.65	X	7.50	60,000	0.88	X	8.00	200,000	1.50	X	6.53	291,000	1.02	X	9.84
2	234,000	0.68	X	7.50	14,000	0.95	X	7.85	200,000	1.50	X	7.70	294,000	1.01	X	[illegible]
3	247,000	0.76	X	7.50	45,000	1.66	X	7.76	200,000	1.50	X	7.61	271,000	0.95	X	[illegible]
4	207,000	0.71	X	7.50	31,000	0.87	X	8.10	200,000	1.50	X	7.90	293,000	0.96	X	9.19
5	188,000	0.73	X	7.50	0	0.91	X	8.20	200,000	1.50	X	7.71	334,000	0.93	X	9.19
6	234,000	0.67	X	7.50	40,000	1.64	X	7.82	200,000	1.50	X	7.72	316,000	0.91	X	8.69
7	217,000	0.68	X	7.50	51,000	1.65	X	7.79	200,000	1.50	X	7.01	167,000	1.18	X	8.96
8	232,000	0.71	X	7.50	46,000	1.65	X	7.78	200,000	1.50	X	8.11	218,000	1.03	X	8.59
9	236,000	0.66	X	7.50	103,000	1.64	X	7.76	200,000	1.50	X	8.43	309,000	0.96	X	8.79
10	250,000	0.72	X	7.50	50,000	1.71	X	7.76	200,000	1.50	X	8.43	332,000	1.23	X	8.52
11	235,000	0.67	X	7.50	39,000	1.72	X	8.01	186,100	1.50	X	8.20	314,000	1.16	X	8.13
12	203,000	0.48	X	7.50	51,000	1.64	X	7.45	236,000	1.50	X	7.38	280,000	1.22	X	8.49
13	279,000	1.20	X	7.50	45,000	1.65	X	7.45	0	1.50	X	7.66	292,000	1.59	X	8.33
14	196,000	1.19	X	7.50	110,000	1.50	X	7.49	50,800	1.50	X	7.68	286,000	1.32	X	8.94
15	215,000	1.19	X	7.50	1,000	1.50	X	8.07	18,300	1.50	X	7.70	280,000	1.10	X	8.50
16	259,000	1.20	X	7.50	94,000	1.50	X	8.10	278,000	1.50	X	6.35	326,000	1.97	X	8.26
17	230,000	1.23	X	7.50	73,000	1.50	X	8.13	254,600	1.50	X	7.51	316,000	1.17	X	8.42
18	248,000	1.21	X	7.50	54,000	1.50	X	8.08	241,900	1.50	X	7.50	288,000	1.40	X	8.42
19	242,000	1.17	X	7.50	112,000	1.50	X	8.09	236,700	1.50	X	7.49	313,000	1.15	X	8.39
20	208,000	1.19	X	7.50	98,000	1.50	X	7.73	206,500	1.40	X	7.92	265,000	0.85	X	8.11
21	200,000	1.15	X	7.50	11,000	1.50	X	8.09	211,800	1.50	X	7.86	268,000	1.08	X	8.04
22	223,000	1.50	X	7.50	0	1.50	X	7.75	222,500	1.50	X	7.74	179,000	1.01	X	8.09
23	219,000	1.50	X	7.50	0	1.50	X	8.13	210,000	1.50	X	7.87	237,000	0.91	X	7.50
24	234,000	1.50	X	7.50	5,000	1.50	X	8.10	245,300	1.50	X	8.21	268,000	0.56	X	7.50
25	205,000	0.99	X	7.50	22,000	1.50	X	8.08	202,400	1.50	X	7.91	243,000	0.59	X	7.50
26	249,000	1.50	X	7.09	32,000	1.50	X	8.05	256,800	1.50	X	8.17	248,000	1.01	X	7.50
27	231,000	1.37	X	7.91	0	1.50	X	8.69	228,800	1.50	X	7.84	242,000	1.02	X	7.50
28	196,000	1.27	X	7.98	0	0.65	X	8.13	202,100	1.50	X	7.75	267,000	0.96	X	7.50
29	239,000	1.23	X	7.98	0	.68	X	8.14	239,900	1.50	X	7.63	407,000	0.87	X	9.87
30	237,000	0.81	X	7.93	0	0.68	X	8.17	224,800	1.50	X	7.69	72,000	0.91	X	9.67
31	201,000	1.22	X	7.89	23,000	0.61		7.94	218,200	1.50	X	7.84	40,000	0.68	X	9.54
TOTAL	6,973,000				1,210,000				5,633,900				8,205,000			
AVERAGE	224,935	1.02		7.56	39,032	1.38		7.96	199,081	1.50		7.70	264,677	1.05		8.57

Total Gallons Purchased (If Applicable)	18,115,000
Total Gallons Pumped (all wells)	28,361,800
Grand Total	46,476,800
Water Sold	44,495,000
Difference	1,981,800
% Loss	4.264

Comments:

#9
8/7/00

Signed [illegible]
Title Operator - Manager

ADEM
Water Supply Branch
P.O. Box 301130
Montgomery, AL 36130-1463
Phone 334-271-7773

P.O. Box 301130
Montgomery, AL 36130-1463
Phone 334-271-7773

WELL SOURCE DATA REPORT

'STEM N. Elmore Water Authority COUNTY ELMORE PWSID# 535 NO. CUSTOMERS SERVED 3094

Source	Kenner															
p(GPM)	150															
	STATIC 190 / / 90 PUMPIN				STATIC / / PUMPING				STATIC / / PUMPING				STATIC / / PUMPING			
DATE	Gallons Pumped	CL2	F-	pH	Gallons Pumped	CL2	F-	pH	Gallons Pumped	CL2	F-	pH	Gallons Pumped	CL2	F-	pH
1	248,900	1.78	X	7.89												
2	248,300	1.73	X	7.89												
3	262,000	1.72	X	7.89												
4	258,500	1.74	X	7.89												
5	284,100	1.75	X	7.89												
6	272,300	1.73	X	7.88												
7	261,500	1.72	X	7.88												
8	270,700	1.74	X	7.87												
9	270,200	1.53	X	7.92												
10	284,200	1.86	X	7.38												
11	265,800	1.74	X	7.00												
12	268,500	1.79	X	7.30												
13	258,400	1.99	X	7.50												
14	243,400	1.95	X	7.02												
15	233,400	1.84	X	7.02												
16	283,100	1.83	X	7.18												
17	271,000	1.74	X	7.52												
18	254,300	1.82	X	7.44												
19	274,500	1.98	X	7.40												
20	233,300	1.59	X	7.40												
21	241,500	1.77	X	7.91												
22	183,900	1.76	X	7.92												
23	199,400	1.78	X	7.85												
24	187,100	1.30	X	7.84												
25	173,600	1.30	X	7.85												
26	220,300	1.77	X	7.87												
27	207,500	1.74	X	7.88												
28	138,200	1.77	X	7.87												
29	158,700	1.74	X	7.87												
30	195,300	1.74	X	7.88												
31	131,700	1.21	X	7.87												
TAL	6,139,900															
RAGE	236,245	1.72		7.67												

July 2000

Total Gallons Purchased (If Applicable) 18,115,00

Total Gallons Pumped (all wells) 28,361,80

Grand Total 46,476,80

Water Sold 44,495,000

Difference 1,9 100

% Loss 4,2640629

Comments: Loss

Net Total 0

Corrected Loss (%) 4

Signed [illegible]

Title Operator - Manager

ADEM
Water Supply Branch
P.O. Box 301130
Montgomery, AL 36130-1463
Phone 334-271-7773
P.O. Box 301130
Montgomery, AL 36130-1463
Phone 334-271-7773

Purchase System Operation Data Report

System Name: Elmore Water Authority ELMORE PSWID# 535 Meters/ Customers: 3094
Month of July 2000

Date	Millbrook Master Meter Reading	Millbrook Gallons Pumped	Millbrook Chlorine Residual	Highway 14 Master Meter Reading	Highway 14 Gallons Pumped	Highway 14 Chlorine Residual	Montgomery Master Meter Reading	Montgomery Gallons Pumped	Montgomery Chlorine Residual
1	34,600	0	X	310,000	0	X	########	########	X
2	0	0	X	0	0	X	0	0	X
3	0	0	X	0	0	X	0	0	X
4	0	0	X	0	0	X	0	0	X
5	0	0	X	0	0	X	0	0	X
6	0	0	X	0	0	X	0	0	X
7	0	0	X	0	0	X	0	0	X
8	0	0	X	0	0	X	0	0	X
9	0	0	X	0	0	X	0	0	X
10	0	0	X	0	0	X	0	0	X
11	0	0	X	0	0	X	0	0	X
12	0	0	x	0	0	X	0	0	X
13	0	0	X	0	0	X	0	0	X
14	0	0	X	0	0	X	0	0	X
15	0	0	X	0	0	X	0	0	X
16	0	0	X	0	0	X	0	0	X
17	0	0	X	0	0	X	0	0	X
18	0	0	X	0	0	X	0	0	X
19	0	0	X	0	0	X	0	0	X
20	0	0	X	0	0	X	0	0	X
21	0	0	X	0	0	X	0	0	X
22	0	0	X	0	0	X	0	0	X
23	0	0	X	0	0	X	0	0	X
24	0	0	X	0	0	X	0	0	X
25	0	0	X	0	0	X	0	0	X
26	0	0	X	0	0	X	0	0	X
27	0	0	X	0	0	X	0	0	X
28	0	0	X	0	0	X	0	0	X
29	0	0	X	0	0	X	0	0	X
30	0	0	X	0	0	X	0	0	X
31	0	0	X	0	0	X	0	0	X
Total		0	X		0	X		18,115,000	X
Average		0	X		0	X		603,833	X

(a)	This months meter reading(*)	
(b)	Last months meter reading(*)	
(c)	Gallons purchased((a)-(b))	
(d)	Gallons sold	
(e)	Unaccounted losses((c)-(d))	
%	Unaccounted for((e)/(c)x 100	%
*	All meters	

Comments

Mail To:
ADEM
Water Supply Branch
P.O. Box 301463
Montgomery, AL 36130-1463

Signature: William J. Pellinger
(Certified Operator)

System Name PINTLALA 1W County MONTG PWS-ID 1013 No. Customers Served 866 MONTH OF JULY 2000

DATE	Source Name: FEDERAL ROAD							Source Name: KATIE LANE							Source Name:						
	Capacity (GPM) 190	Static 160			Pumping 142			Capacity (GPM) 192	Static 170			Pumping 130			Capacity (GPM)	Static			Pumping		
	Gallons Pumped	CL_2	F	Fe	Mn	Turb	pH	Gallons Pumped	CL_2	F	Fe	Mn	Turb	pH	Gallons Pumped	CL_2	F	Fe	Mn	Turb	pH
1	166,000	2.5						177,000	3.0												
2	162,000	2.5						152,000	3.0												
3	169,000	2.5						165,000	3.0												
4	182,000	2.5						199,000	3.0												
5	190,000	2.5						162,000	3.0												
6	200,000	2.5						180,000	3.0												
7	182,000	2.5						189,000	3.0												
8	140,000	2.5						209,000	3.0												
9	188,000	2.5						183,000	3.0												
10	164,000	2.5						161,000	3.0												
11	172,000	2.5						172,000	3.0												
12	184,000	2.5						169,000	3.0												
13	163,000	2.5						166,000	3.0												
14	164,000	2.5						140,000	3.0												
15	152,000	2.5						159,000	3.0												
16	198,000	2.5						192,000	3.0												
17	198,000	2.5						196,000	3.0												
18	200,000	2.5						202,000	3.0												
19	210,000	2.5						207,000	3.0												
20	217,000	2.5						199,000	3.0												
21	172,000	2.5						175,000	3.0												
22	191,000	2.5						188,000	3.0												
23	223,000	2.5						214,000	3.0												
24	190,000	2.5						179,000	3.0												
25	204,000	2.5						185,000	3.0												
26	174,000	2.5						176,000	3.0												
27	154,000	2.5						151,000	3.0												
28	141,000	2.5						139,000	3.0												
29	140,000	2.5						153,000	3.0												
30	156,000	2.5						143,000	3.0												
31	120,000	2.5						121,000	3.0												
Total	5,462,000							5,403,000													
Avg.	176,193	2.5						174,290	3.0												
Min.	120,000	2.5						121,000	3.0												
Max.	223,000	2.5						214,000	3.0												

Total Gallons Purchased (If Applicable) 14,043,000

Total Gallons Pumped (all wells) 10,865,000

Grand Total 24,908,000

Water Sold 22,850,000

Difference 2,058,000

% Loss 8%

Comments:

8/7/00

Signed

Title OPERATOR

PLEASE MAIL TO
ADEM
Water Supply Branch
P.O. Box 301463
Montgomery, AL 36130-1463
(Phone 334-271-7773)

ADEM FORM 8 12/96

Purchase System Operation Data Report

System Name: Wetumpka Water Works & Sewer Board County: Elmore PWSID#: 000551

Month of May

Meters / Customers: 2496

Month	Date	551.98 Source Montgomery Master Meter Reading	Gallons Pumped	Chlorine Residual	552.98 Source Central Elmore Water Master Meter Reading	Gallons Pumped	Chlorine Residual	553.98 Source Central Elmore Water Master Meter Reading	Gallons Pumped	Chlorine Residual
May	25	557270	1,328,000		802123	2,523,000		222470	21,200	1.77
	26	558657	1,387,000		804717	2,594,000		222660	19,000	1.74
	27									1.8
	28									1.77
	29									1.68
	30	561883	3,226,000		813908	9,191,000		223344	68,400	1.52
Month	31	563270	1,387,000		816294	2,386,000		223495	15,100	1.71
June	1	564658	1,388,000		818708	2,414,000		223675	18,000	1.74
	2	566192	1,534,000		821270	2,562,000		223857	18,200	1.65
	3									1.46
	4									1.5
	5	570243	4,051,000		828715	7,445,000		224634	77,700	1.33
	6	571266	1,023,000		831235	2,520,000		224730	9,600	1.43
	7	572182	916,000		833747	2,512,000		224861	13,100	1.42
	8	573388	1,206,000		836202	2,455,000		225018	15,700	1.46
	9	574935	1,547,000		838714	2,512,000		225224	20,600	1.22
	10									1.6
	11									1.54
	12	579895	4,960,000		846081	7,367,000		226146	92,200	1.33
	13	581471	1,575,000		848238	2,157,000		226417	27,100	1.52
	14	583428	1,957,000		850776	2,538,000		226651	23,400	1.52
	15									1.72
	16	586292	2,864,000		855186	4,410,000		227054	40,300	1.11
	17									1.23
	18									1.01
	19	590690	4,398,000		861979	6,793,000		227327	27,300	1.52
	20									1.56
	21	593442	2,750,000		866427	4,448,000		227510	18,300	1.79
	22									1.7
	23	596318	2,876,000		871044	4,617,000		227764	25,400	1.61
	24									1.45
	Total		40,376,000		Total	71,444,000		Total	550,600	
	Average		1,345,866		Average	2,381,466		Average	18,353	

(a) This month's meter reading	1,490,[illegible]8,400
(b) Last month's meter reading	1,377,[illegible]57,800
(c) Gallons Purchased ((a) - (b))	1[illegible],670,600
(d) Gallons sold	[illegible],423,400
(e) Unaccounted losses ((c) - (d))	3,947,200
% Unaccounted for ((e)/(c) x 100)	3.51%

RECEIVED JUN 23 2003 WATER SUPPLY

Comments

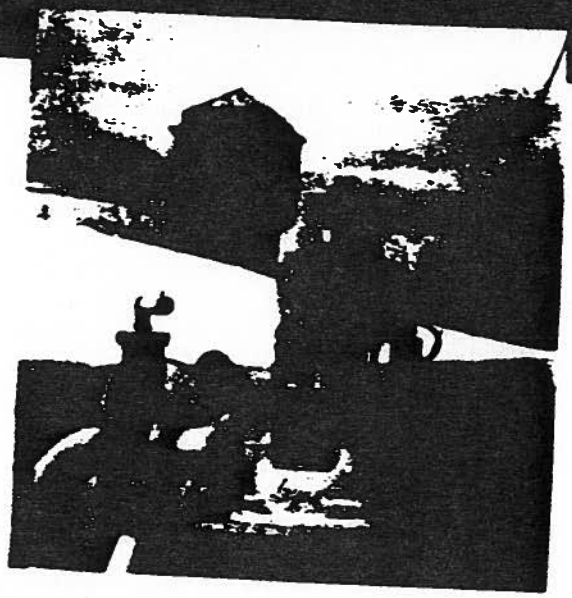
Mail To:
ADEM
Water Supply Branch
P.O. Box 301463
Montgomery, al. 36130-1463

Signature: Bill Allen
(Certified Operator) Bill Allen
Superintendent

REFERENCE 14

WELLHEAD PROTECTION PLAN
CITY OF MONTGOMERY, ALABAM

Volume II:
North Well Field Wellhead Protection Area Delineation and Contaminant Source Inventory



PREPARED FOR

THE WATER WORKS AND SANITARY SEWER BOARD OF THE CITY OF MONTGOMERY

PREPARED BY

CH2MHILL

Wellhead Protection Plan
City of Montgomery, Alabama

Volume II: North Well Field Wellhead Protection Area Delineation and Contaminant Source Inventory

Prepared for

The Water Works and Sanitary Sewer Board of the City of Montgomery

Prepared by

CH2M HILL, Inc.
Montgomery, Alabama

JUL
RECEIVED
GEOLOGICAL SURVEY OF ALABAMA

April 1997
110637.U0.04

REFERENCE 15

INSPECTION REPORT

CESQG

Date of Inspection: November 23, 1999

Time of Inspection: 9:15 - 11:15

EPA Identification Number: AL[redacted] ALD 000 563 916
[335-14-3-.01(3)(a)]

Installation Name: Al. Depart. of Finance Printing Di

Location Address: 660 Chisholm Street
Montgomery, Alabama 36130

Mailing Address:

Telephone Number: (334) 242-2808

Contact Person: Gerald Wilson (Div. Direct

Bob Barr said somebody had said waste was been dumped down a drain! been no complaint??

Inspection Participants:

Bob Barr (ADEM)
Janice Benton (ADEM)
John Glaze (ADEM)
Lynn Poe (facility)
Gerald Wilson (facility)

Date Prepared: November 24, 1999

Prepared By: Janice Benton

Reviewed By: Bob Barr
11-24-99

Revision 9606

DESCRIPTION OF INSTALLATION, INCLUDING WASTE-GENERATING PROCESSES:

- Observed OUTSIDE of the building in a separate contained room was new product storage. Contained here were Alcohol, oil, PRINTERS BLEND 2. The building had a cement floor, NO SMOKING signs, DANGER KEEP OUT, and fire extinguishers in the room. The fire extinguishers observed were serviced in August 1999.
- The UNDERGROUND sump was also observed outside the building. This is the trap for the wash water from the PRE-PRESS room. This concluded the site tour.

Next Bob, John, and Janice observed the MSDS sheets. Areas of concern were:

- Binding compound/Adhesive for Acu Bond Adhesive has trichloroethane 7% by wt.
- ANCHOR LITHKEMKO, Cleaner 909-D2 a numbering machine cleaner. 29.5% methyl Chloride
- DE Glazing Solvent - trichloroethylene > 9 ? (not certain if digit to right/cut off). Hand cleaner.
- 3 WAY SPRAY AEROSOL, solvent cleaner. trichloroethylene 95%
- NUT and BOLT Loosen Penetrant trichloroethylene & dichloromethane. % not listed.
- COPPER PLATING Solution by VARN. dichloromethane 9.94%
- PRINTER BLEND #2 dichloromethane ; 10% methylene chloride
- COPIER TONER REMOVER methylene chloride 70-75%
- DeGlazing Solvent 1-1-1 trichloroethylene 96%
- LOVE MY CARPET LIQUID shampoo perchloroethylene 7.0%

Ed Hughes (Water Division) called Janice Benton 11-24-99 at 7:50 AM to state the referenced facility had nothing of significance to require a SID permit.

Bob Barr is to contact John Chitwood (field ops) to obtain a sample from the sump area.

After the paper review of the MSDS sheets Bob Barr asked Lynn Poe if the facility had any floor drains. Observed in approximately a 4X4 room area was an osmosis pump, eyewash station and one floor drain. About 6" drain goes to sewage.

Lynn Poe is to fax MSDS sheets of concern to Jerica Bertram.

This concluded the inspection.

11-24-99

10:42-10:46 AM

Called Lynn Poe in reference to MOP DRAIN referenced in 1994 inspection report. (ADE Mr. Poe says the drain is in a "janitors closet" right around the corner from the osmosis pump. This closet contains a hot & cold water faucet + 3-4" drain drains to sewage. Used for mop wash water only per Mr. Poe.

Also requested last 3 years inspection reports done at the facility by UAB.

ADEM

ALABAMA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

James W. Warr, Director

Jim Folsom
Governor

Mailing Address:
PO BOX 301463
MONTGOMERY AL
36130-1463

Physical Address:
1751 Cong. W. L.
Dickinson Drive
Montgomery, AL
36109-2608

(205) 271-7700
FAX 270-5612

Field Offices:

110 Vulcan Road
Birmingham, AL
35209-4702
(205) 942-6168
FAX 941-1603

400 Wall Street
P.O. Box 953
Decatur, AL
35602-0953
(205) 353-1713
FAX 340-9359

2204 Perimeter Road
Mobile, AL
36615-1131
(205) 450-3400
FAX 479-2593

June 7, 1994

MEMORANDUM

TO: Steven O. Jenkins, Chief
RCRA Compliance Branch
Land Division

THROUGH: Robert W. Barr, Chief
South Unit
RCRA Compliance Branch
Land Division

FROM: Joe Kelly
South Unit
RCRA Compliance Branch
Land Division

JRK

RE: Alabama Department of Finance
Printing and Publications Division

On April 14, 1994, Mr. Joe Power of the ADEM Water Division referred an inquiry from Mr. Hoby Reed of the ADF Printing and Publications Division to Ms. Alicia Finch of the RCRA Compliance Branch. On April 22, 1994, Ms. Finch discussed with Mr. Reed the proper disposal of four chemicals generated by the Printing and Publications Division. Ms. Finch forwarded this issue via memorandum to Mr. Bob Barr of the RCRA Compliance Branch on May 18, 1994.

On May 19, 1994, Ms. Lynn Battle and I traveled to the ~~ADF Printing and Publications office located at 660 Chisholm Street, Montgomery, Alabama~~. Mr. Reed wanted advice on the proper disposal of wastes generated at the printing operations. Ms. Battle and I requested a site tour to better understand the operations and to help identify possible hazardous wastestreams. We accompanied Mr. Reed to the division's operation at the Alabama Center for Commerce. This operation generates approximately one gallon of waste from a printing machine each week. This waste consists of a mixture of Electrostatic Fountain Solution, Blanket Wash (hazardous due to ignitability), water, and ink. Print shop personnel stated that the waste solution was previously poured down a mop drain. We explained to Mr. Reed that this shop was conditionally exempt from hazardous waste regulation but suggested that shop personnel collect the waste in a labeled drum for proper disposal as a hazardous waste. Next, Ms. Battle and I traveled to the printing operations at the Gordon Persons Building in downtown

Al. Deport. Finance Printing Div.
ALD 000 563 916

Janice Copy

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January 26, 2000

Gerald Wilson
Alabama Department of Finance Printing-Division
660 Chisholm Street
Montgomery, Alabama 36130-2606

Re: Notice of Inspection
US EPA ID NUMBER: ALO 000 563 916

On November 23, 1999, Bob Barr, Janice Benton and John Glaze conducted an inspection of the above-mentioned facility. The purpose of this inspection was to determine the facility's compliance with all applicable standards of the ADEM Administrative Code, Division 14.

No hazardous waste violations were observed at the time of this inspection. Should questions arise please contact Janice Benton at (334) 271-7740.

Sincerely,

Robert Barr, Chief
Southern Compliance Section
Hazardous Waste Branch
Land Division

File: CESQG/Montgomery County/Al. Depart. Of Finance Printing-Division
C/Janice/FY2000/Montgomery County/Al. Depart. Of Finance Printing-Division

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REFERENCE 16

INSPECTION REPORT

Date of Inspection: December 10, 1999

Time of Inspection: 8:20 – 11:50

EPA Identification Number: (optional) ALR 000 012 633

Installation Name: DOT Materials & Test Lab

Location Address: 3704 Fairground Rd.
Montgomery, Al. 36110

Mailing Address: Same

Telephone Number: (334) 206-2400

Contact Person: Robert Lynn Wolfe, Testing Eng (206-2335)

Inspection Participants:
Joe Gibson
Janice Benton
Jerry Shipman
ADEM
Robert Lynn Wolfe, Testing Engineer
206-2262 Jim Bearrentine - Civil Engineer Coordinator

Date Prepared: December 13, 1999

Prepared By: Janice Benton

Reviewed by: Bob Bon
12/21/99

Revision 9606

- PLASTICS LAB - atone was to soak; "water in to see if it will dissolve. Oh here, no waste!

Next we go outside lab area onto a porch with roof + cement floor. Observed: distiller here "LITTLE STILL"; old parts washer not used for years + empty; 6 (55 gallon) drums TCE PRODUCT; (1) 55 gallon mineral spirits PRODUCT; (2) 5 gallon containers - empty + one about ½ full distilled TCE waste and not label

Back inside building observe:
- LIQUID ASPHALT LAB - use about 2 gallons TCE per month + recycled. Used wash tubes + collected gallon container + poured into 5 gallon container. NOT labeled but closed.

- Supply Room: - PRODUCT ONLY.
- Chemical Supply Room - new products only. Locked door.
- Observed fire extinguishers during site tour/serviced 9/99.
- Also observed outside MACHINE Shop area, 2 (55) gallon containers TCE PRODUCT. One had drip pan on floor below it with about ½ quart soil debris which has been wet by TCE drippage. No visible liquid in container. Regulation depend upon generator status.

- Gave Lynn Wolfe a SQG Handbook. We did a post interview with Jim + Lynn. Stated U/O violations +. need to do generator status determination. This inspect can not be concluded until generator status to determine. The facility appears be on borderline SQG/CESQG!!

- To mail Universal Waste + Used Oil Transporter list to Lynn Wolfe with WARNING LETTER for noted violations

ALABAMA DEPARTMENT OF TRANSPORTATION

BUREAU OF MATERIALS AND TESTS

1409 Coliseum Boulevard, Montgomery, Alabama 36130-3050

Telephone: 334/206-2300 - Fax No: 334/264-6263

Don Siegelman
Governor

G. M. Roberts
Transportation Director

January 25, 2000

4 JAN 2000
Received
Land Division

Mr. Bob Barr
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, AL 36130

RE: Alabama Department of Transportation Central Testing Lab
Compliance Evaluation Inspection, December 10, 1999

Dear Mr. Barr:

In response to your December 21, 1999 warning letter that we received on December 28, 1999 regarding your department's Compliance Evaluation Inspection on December 10, 1999, we provide the following responses to the cited violations:

Rule	Violation / Comment
335-14-2-.01(5)(c)	A generator must determine his generator status

Response – We have conducted a thorough inspection of our Central Laboratory facilities and identified materials that are potentially hazardous waste. We have initiated an inventory and tracking program to calculate the volume generated each month. We expect our higher waste generation months to be in April through August during the paving season. We will send to you a quarterly report of the monthly volume of hazardous waste that is generated by the Central Laboratory. Based on our preliminary assessments, we anticipate our status to be defined as a Conditionally Exempt Small Quantity Generator.

Rule	Violation / Comment
335-14-17-.03(3)(a)1	This rule states that a container holding used oil must always be closed during storage, except when it is necessary to add or remove used oil. During the inspection, four 5 gallon containers containing used oil were noted. One of these containers was not closed.

Response – All used oil containers will be kept closed except when adding or removing waste.

Rule	Violation / Comment
335-14-17-.03(c)1	This rule states that containers and aboveground tanks used to store used oil at generator facilities must be labeled or marked clearly with the words "Used Oil" that must be legible from a distance of at least 25 feet. The four 5 gallon containers containing used oil were not labeled "Used Oil".

Response – All used oil containers have been labeled "Used Oil" with a label that is legible from 25 feet.

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Water 279-3051
Groundwater 270-5600
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Laboratory 277-4718
Mining 394-4326
Education/Outreach 394-4380

December 21, 1999

Mr. Robert L. Wolfe, Testing Engineer
Alabama Department of Transportation Materials & Test Lab
3704 Fairground Road
Montgomery, Alabama 36110

Dear Mr. Wolfe:

RE: Warning Letter

On December 10, 1999, Joe Gibson, Terry Shipman and Janice Benton of the Land Division conducted a compliance evaluation inspection of the above referenced business. The following violations were noted during the inspection. Please refer to the specific rule cited for additional information in the violation.

RULE	VIOLATION/COMMENT
335-14-2-.01(5)(c)	A generator must determine his generator status. (c) of the referenced regulations states when making the quantity determinations of this Rule and Chapter 335-14-3, the generator must include all hazardous waste that it generates, except hazardous waste that: is used oil managed under the requirements of 335-14-2-.01(6)(a)4. and Chapter 335-14-17; or is spent lead-acid batteries managed under the requirements of 335-14-7-.07; or is universal waste managed under 335-14-2-.01(9) and Chapter 335-14-11. This inspection can not be concluded until the generator determines his generator status. Generator status is determined by the quantity of hazardous waste you generate in a calendar month. Conditionally Exempt Small Quantity Generator is a generator that generates no more than 100 kilograms (about 220 pounds or 25 gallons) of hazardous waste and no more than 1 kg (about 2 pounds) of acutely hazardous waste in any calendar month. Small Quantity Generator is a generator which generates more than 100 and less than 1000 kg (between 220 and 2200 pounds or about 25 to under 300 gallons) of hazardous waste in any month.

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May 10, 2000

Mr. Robert L. Wolfe, Testing Engineer
Alabama Department of Transportation Materials & Test Lab
3704 Fairground Road
Montgomery, Alabama 36110

Dear Mr. Wolfe:

RE: Corrections Adequate

Reference the letters, dated January 25, 2000 and April 19, 2000, documenting correction of the violations cited in the Warning Letter dated December 21, 1999. This letter was in reference to the inspection on December 10, 1999.

ADEM acknowledges DOT Materials and Test Lab is a CESQG. As a conditionally exempt small quantity generator, provided the facility maintains this status, the hazardous waste generated by DOT Materials & Test Lab is not regulated by the Department except as specified by Rule 335-14-2-.01(5)(e), (f), (g), and (j). In order to retain this exempt status, DOT Materials & Test Lab should:

Never generate 100 kilograms (220 pounds) or more of hazardous waste or one kilogram (2.2 pounds) of acutely hazardous waste in a calendar month. If 100 kilograms or more of hazardous waste is generated in a calendar month or one kilogram or more of acutely hazardous waste is generated in a calendar month, then all of the waste is subject to regulation under Chapter 335-14-3 through 9 and the notification requirements of Section 3010 of RCRA.

Provide the Department with a plan for the disposal of all hazardous waste generated by the facility should the Department request such a plan.

Treat or dispose of the hazardous waste in either an on-site or off-site facility which satisfies the requirements of Rule 335-14-.01(5)(g)3 of the aforementioned Code.

Conditionally exempt small quantity generators are not required to notify. Should you choose to notify of status change you may do so by applying to the Department using the ADEM Form 8700-12.

It has been concluded, after reviewing the information submitted, that the corrections noted are adequate according to the requirements of the Alabama Department of Environmental Management (ADEM) Administrative Code Division 14. A follow-up

TO: Bobby Crocker FROM: Chris Ritter

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TTL Inc. PRACTICING IN THE GEOSCIENCES

4154 Lomac Street • Montgomery, AL 36106-2886 • Telephone 334-244-0766 • Telefax 334-244-6668

Ms. Janice Benton
Alabama Department of Environmental Management
Post Office Box 301463
Montgomery, Alabama 36130-1463

August 16, 2000

AUG 2000
RECEIVED
LAND DIVISION

Dear Ms. Benton:

This letter provides the pounds of hazardous wastes generated by the Alabama Department of Transportation Central Testing Laboratory for the Second quarter of 2000. The Laboratory is at 3704 Fairground Road in Montgomery, Alabama. The Department has contracted TTL, Inc. to evaluate the Laboratory's status as a hazardous-waste generator pursuant to your December 10, 1999 inspection. As a result, the Laboratory personnel began an inventory and tracking program so that the quantity of hazardous wastes can be calculated for each month. This program began in the later part of January, 2000. As part of the program, a TTL representative visits the Laboratory each month and obtains the volumes of hazardous wastes that have been used and recorded by the Laboratory personnel.

The pounds of hazardous wastes that were generated in the Second Quarter, 2000 are as follows:

April 2000	123 pounds
May 2000	160 pounds
June 2000	175 pounds

TTL noticed that there was a substantial difference between the values calculated for the Second Quarter and the values reported for the First Quarter, 2000. (The values for the first quarter were reported in an April 12, 2000 letter to you.) TTL reviewed the calculations for the First Quarter and found an error. The recalculated poundages for the First Quarter are as follows:

January 2000	—
February 2000	130 pounds
March 2000	160 pounds

A poundage is not reported for January, 2000 because the Laboratory did not measure and record the total amount of hazardous wastes generated during that month.

Based on the above monthly totals, the ALDOT Central Testing Laboratory is a Conditionally Exempt Small Quantity Generator. The ALDOT understands that a Form 8700-12 must be submitted and the Small Quantity Generator requirements in ADEM Admin. Code Chapter 335-14-3 will be applicable if the weight exceeds 220 pounds in any given month.

Should you have any questions, please call me at 334-244-0766.

Sincerely,

TTL, Inc.

Ashley C. Cousins

Ashley C. Cousins, P.E., CHMM

cc: Mr. Lynn Wolfe, ALDOT
Mr. Buddy Cox, ALDOT

No letter required from ADEM per phone conversation w/ Ashley Cousins (TTL) 8-30-00 2:56 pm

\\Server3-99\-drive\2000\0700\010\hazmat2 quarter.wpd

TTL, Inc. PRACTICING IN THE GEOSCIENCES

4250 Lomac Street • Montgomery, AL 36106-2886 • Telephone 334-244-0766 • Telefax 334-244-6668

April 19, 2000

Ms. Janice Benton
Alabama Department of Environmental Management
Post Office Box 301463
Montgomery, Alabama 36130-1463

Dear Ms. Benton:

This letter is a follow up to the January 25, 2000 letter from Lynn Wolfe at the Alabama Department of Transportation Central Testing Laboratory regarding the determination of generator status for the laboratory at 3704 Fairground Road in Montgomery, Alabama. The Department has contracted TTL to train employees and evaluate the laboratory's status as a hazardous waste generator. Since January 2000, the laboratory has implemented an inventory and tracking program to calculate the volume of hazardous waste generated each month. Monthly hazardous waste generation totals for the first quarter are summarized below:

January 2000	40.5 pounds
February 2000	32.4 pounds
March 2000	23.7 pounds

Based on these totals, the ALDOT Central Testing Laboratory is a Conditionally Exempt Small Quantity Generator. The ALDOT understands that if any single monthly total exceeds 220 pounds, a Form 8700-12 will be required to be submitted and the Small Quantity Generator requirements in ADEM Admin. Code Chapter 335-14-3 will be applicable.

Should you have any questions, please call Ashley Cousins at 334-244-0766.

Sincerely,

TTL, Inc.

Ashley C. Cousins, P.E., CHMM

cc: Mr. Lynn Wolfe, ALDOT
Mr. Buddy Cox, ALDOT

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REFERENCE 17

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November 29, 1999

MEMORANDUM

TO: Stephen A. Cobb, Chief
Hazardous Waste Branch
Land Division

FROM: Joseph L. Gibson, Hydrogeologist J.L.G
Groundwater Branch
Water division

RE: Groundwater Sampling - 11/16/99 – 11/18/99
Coliseum Boulevard Plume
Montgomery, Montgomery County, Alabama

On November 16-18, 1999 TTL, Inc. personnel collected groundwater samples from five monitoring wells located on ALFA property and nine monitoring wells located on the Alabama Department of Transportation property at the Coliseum Boulevard Plume Site. ADEM and Goodwyn, Mills, and Cawood personnel were present and split samples with TTL.

The groundwater samples collected by ADEM personnel were submitted to the ADEM Central Laboratory for Volatile Organic Compound (VOC) analysis. Trichloroethene was detected in 9 of the 14 monitoring wells and the detected concentrations ranged from 3.94 ug/L to 468.7 ug/L. 1, 1-Dichloroethene was detected in 5 of the 14 monitoring wells and the detected concentrations ranged from 0.543 ug/L to 11.0 ug/L. Chloroform was detected in 7 of the 14 monitoring wells and the detected concentrations ranged from 0.530 ug/L to 3.48 ug/L. Cis-1, 2-Dichloroethene was detected in 1 of the 14 monitoring wells at a concentration of 14.2 ug/L. 1, 2, 4-Trimethylbenezene was detected in 1 of the 14 monitoring wells at a concentration of 0.704 ug/L. All other VOC constituents were below the method detection limits.

Groundwater elevations were measure in each well prior to purging and sampling. The groundwater elevation data indicated that groundwater flow is primarily to the northeast.

cc: Fred Mason, Chief, Hydrogeology Unit
Sonja Massey, Chief, Groundwater Branch
Jymalyn Redmond, Chief, Site Assessment Unit

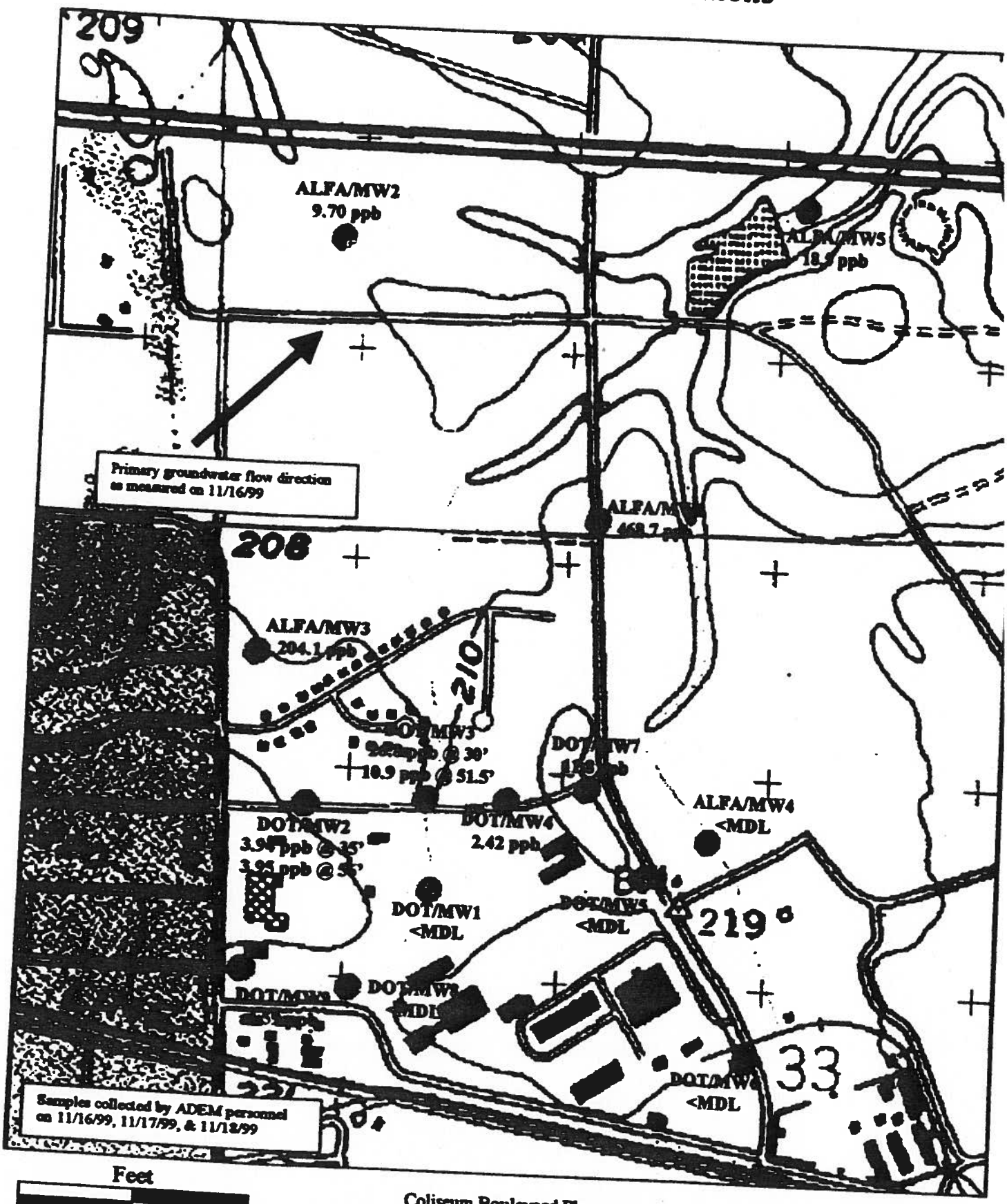
Groundwater Elevations Coliseum Boulevard Plume				
Monitoring Well ID	Date	Top of Casing Elevation (Feet)	Depth to Groundwater (Feet)	Elevation of Groundwater (Feet)
ALFA/MW-1	11/16/99	213.53	18.65	194.88
ALFA/MW-2	11/16/99	206.01	12.60	193.41
ALFA/MW-3	11/16/99	209.67	14.21	195.46
ALFA/MW-4	11/16/99	213.18	18.19	194.99
ALFA/MW-5	11/16/99	203.42	16.50	186.92
ALDOT/MW-1	11/16/99	218.42	22.36	196.06
ALDOT/MW-2	11/16/99	218.76	22.76	196.00
ALDOT/MW-3	11/16/99	211.01	15.26	195.75
ALDOT/MW-4	11/16/99	213.79	18.20	195.59
ALDOT/MW-5	11/16/99	218.06	22.59	195.47
ALDOT/MW-6	11/16/99	218.76	23.19	195.57
ALDOT/MW-7	11/16/99	217.97	22.60	195.37
ALDOT/MW-8	11/16/99	218.62	22.29	196.33
ALDOT/MW-9	11/16/99	216.97	20.78	196.19

Groundwater Analytical Results Coliseum Boulevard Plume								
Monitoring Well ID	Sample ID	Date Sample Collected	Depth of Pump (feet)	TCE (µg/L)	1,1-DCE (µg/L)	cis-1,2-DCE (µg/L)	Chloroform (µg/L)	1,2,4-trimethylbenzene (µg/L)
ALFA/MW-1	W1	11/18/99	42.3	468.7	2.90	<MDL	0.530	<MDL
ALFA/MW-2	W1	11/18/99	35	9.70	0.543	<MDL	1.02	<MDL
ALFA/MW-3	W1	11/18/99	40	204.1	11.0	<MDL	<MDL	<MDL
ALFA/MW-4	W1	11/17/99	47.5	<MDL	<MDL	<MDL	<MDL	<MDL
ALFA/MW-5	W1	11/18/99	23.5	18.5	<MDL	14.2	<MDL	<MDL
DOT/MW-1	W1	11/18/99	63	<MDL	<MDL	<MDL	<MDL	0.704
DOT/MW-2	W1	11/17/99	56	3.95	1.25	<MDL	2.44	<MDL
DOT/MW-2	W2B	11/18/99	35	3.94	1.01	<MDL	3.48	<MDL
DOT/MW-3	W1	11/18/99	51.5	10.9	<MDL	<MDL	<MDL	<MDL
DOT/MW-3	W2	11/18/99	30	26.8	<MDL	<MDL	0.993	<MDL
DOT/MW-4	W1	11/18/99	61.5	2.42	<MDL	<MDL	<MDL	<MDL
DOT/MW-5	W1	11/16/99	53.5	<MDL	<MDL	<MDL	<MDL	<MDL
DOT/MW-6	W1	11/16/99	59.5	<MDL	<MDL	<MDL	0.681	<MDL
DOT/MW-7	W1	11/17/99	64	11.8	0.665	<MDL	<MDL	<MDL
DOT/MW-8	W1	11/17/99	61	<MDL	<MDL	<MDL	2.00	<MDL
DOT/MW-9	W1	11/17/99	56	4.59	<MDL	<MDL	4.55	<MDL
Trip Blank	TB01/W1	11/16/99	N/A	<MDL	<MDL	<MDL	<MDL	<MDL
Trip Blank	TB02/W1	11/17/99	N/A	<MDL	<MDL	<MDL	<MDL	<MDL

TCE – Trichloroethene
DCE – Dichloroethene

MDL – Method Detection Limit
Samples collected by ADEM personnel

TCE Groundwater Concentrations



Feet

0 500 1,000

Coliseum Boulevard Plume
Montgomery, Montgomery County, Alabama

Montgomery North, Alabama
U.S.G.S. Topographic Map 1958
Photorevised 1981

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W E
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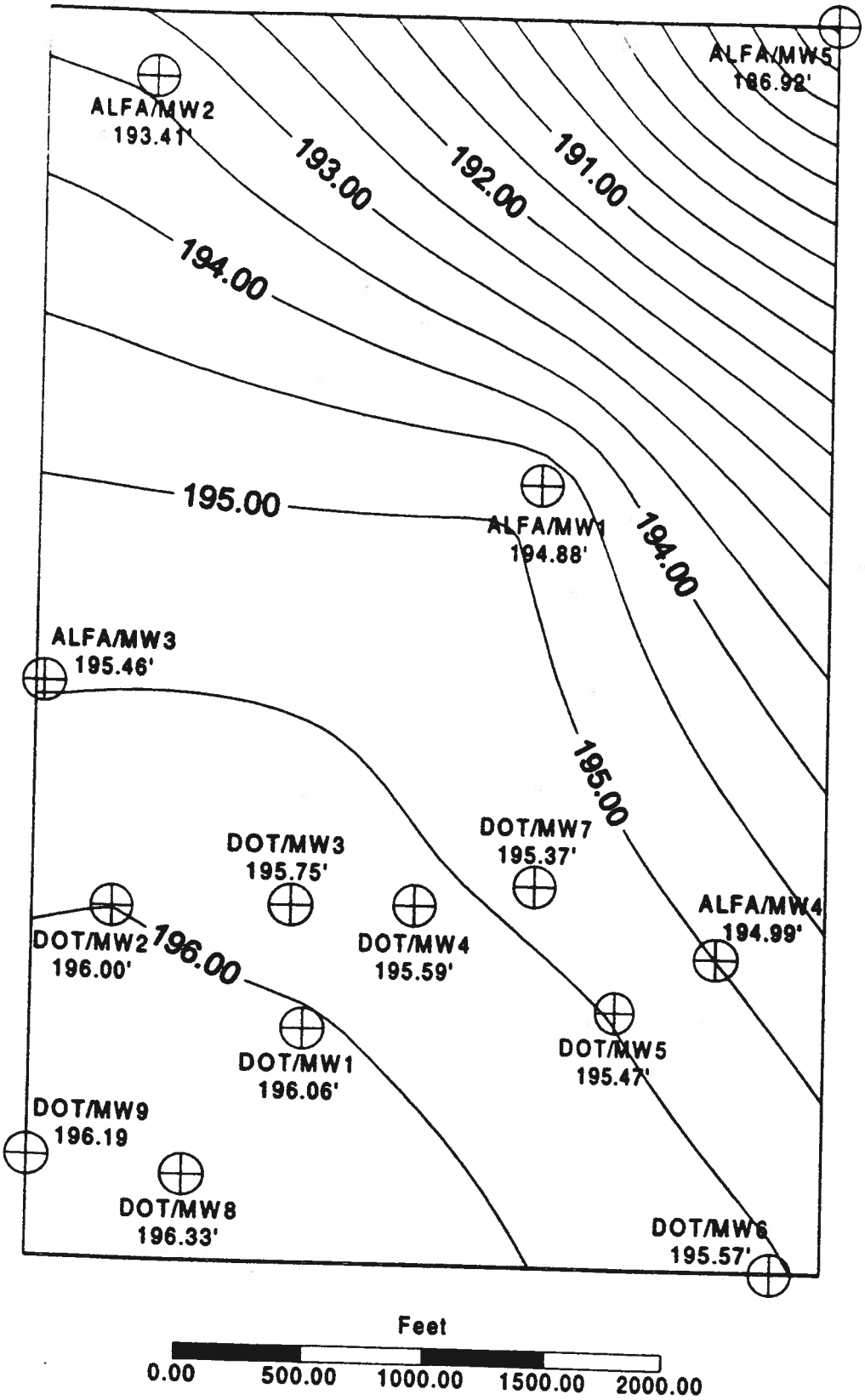

Coliseum Boulevard Plume Potentiometric Surface Map 11/16/99

REFERENCE 18

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DIRECTOR

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Mining:
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July 5, 2000

MEMORANDUM

TO: Stephen A. Cobb, Chief
Hazardous Waste Branch
Land Division

FROM: Joseph L. Gibson, Hydrogeologist J.L.G.
Groundwater Branch
Water division

RE: Groundwater Sampling - 2/16/00 – 3/1/00
Coliseum Boulevard Plume
Montgomery, Montgomery County, Alabama

From February 16, 2000 until March 1, 2000, TTL, Inc. personnel collected soil and groundwater samples from sixteen borings at the Coliseum Boulevard Plume Site. ADEM personnel were present to observe the investigation and collect split samples.

TTL, Inc. collected a total of 49 soil samples from the 16 borings and submitted them to an onsite mobile lab for Volatile Organic Compound (VOC) analysis. 1,1-Dichloroethene was detected in one sample at a concentration of 5.9 ppm, and Trichloroethene was detected in one sample at a concentration of 5.2 ppm. The analytical results for all of the remaining samples were below detection limits. ADEM personnel split 4 soil samples with TTL, Inc. and submitted them to the ADEM Central Laboratory for VOC analysis. The analytical results for these samples were below detection limits.

TTL, Inc. collected a total of 37 groundwater samples from the 16 borings. Trichloroethene was detected in 20 of the samples at concentrations that ranged from 0.1 ppb to 11,000 ppb. ADEM personnel split 7 groundwater samples with TTL, Inc. and submitted them to the ADEM Central Laboratory for VOC analysis. Trichloroethene was detected in 3 of the samples at concentrations of 977.5 ppb, 5,552.5 ppb, and 6,880 ppb.

cc: Sonja Massey, Chief, Groundwater Branch
Jymalyn Redmond, Chief, Site Assessment Unit

Birmingham
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Sample ID	[illegible]	[illegible]	[illegible]	[illegible]	TCE (µg/L)	Detection Limit (µg/L)
PH-1/9-10	Groundwater	Field	2/16/00	9–10'	22.6	0.1
PH-1/22-23	Groundwater	Field	2/16/00	22-23'	47.3	0.1
PH-2/13-14	Groundwater	Field	2/16/00	13–14'	4.5	0.1
CBP/PH2/W1	Groundwater	ADEM	2/16/00	13-14'	< MDL	125
PH-2/28-29	Groundwater	Field	2/16/00	28–29'	331	0.1
CBP/PH2/W2	Groundwater	ADEM	2/16/00	28–29'	977.5	125
PH-3/27-28	Groundwater	Field	2/17/00	27–28'	< MDL	0.1
PH-3/38-39	Groundwater	Field	2/17/00	38–39'	< MDL	0.1
PH-3/65-66	Groundwater	Field	2/17/00	65–66'	< MDL	0.1
PH-4/15-16	Groundwater	Field	2/18/00	15–16'	0.2	0.1
PH-4/33-34	Groundwater	Field	2/18/00	33–34'	690	0.1
PH-4/33-34 dup	Groundwater	Field	2/18/00	33–34'	480	0.1
PH-5/20-21	Groundwater	Field	2/22/00	20–21'	< MDL	0.1
PH-541-42	Groundwater	Field	2/22/00	41–42'	120	0.1
PH-6/26-27	Groundwater	Field	2/23/00	26–27'	< MDL	0.1
PH-6/26-27	Groundwater	Field	2/23/00	26–27'	< MDL	0.1
PH-6/57-60	Groundwater	Field	2/29/00	57-60'	< MDL	0.1
PH-6/57-60 dup	Groundwater	Field	2/29/00	57-60'	< MDL	0.1
PH-6/57-60	Groundwater	ADEM	2/29/00	57-60'	< MDL	125
PH-8/22-23	Groundwater	Field	2/23/00	22-23'	0.9	0.1
PH-8/22-23	Groundwater	ADEM	2/23/00	22-23'	< MDL	125
PH-8/55-58	Groundwater	Field	3/1/00	55-58'	< MDL	0.1
PH-8/55-58 dup	Groundwater	Field	3/1/00	55-58'	< MDL	0.1
PH-9/19-20	Groundwater	Field	2/23/00	19-20'	< MDL	0.1
PH-9/52-55	Groundwater	Field	2/29/00	52-55'	< MDL	0.1
PH-10/19-20	Groundwater	Field	2/23/00	19-20'	113	0.1
PH-10/45-48	Groundwater	Field	2/29/00	45-48'	1.1	0.1
PH-10/45-48	Groundwater	ADEM	2/29/00	45-48'	< MDL	5.0
PH-11/27-28	Groundwater	Field	2/23/00	27-28'	5,000 J	0.1
PH-11/27-28	Groundwater	ADEM	2/23/00	27-28'	6,880	5,000
PH-11/57-60	Groundwater	Field	2/29/00	57-60'	0.1	0.1
PH-12/24-25	Groundwater	Field	2/23/00	24-25'	75.3	0.1
PH-12/24-25 dup	Groundwater	Field	2/23/00	24-25'	92.1	0.1
PH-12/48-51	Groundwater	Field	2/29/00	48-51'	11,000 J	0.1
PH-12/48-51 dup	Groundwater	Field	2/29/00	48-51'	9,500 J	0.1
PH-12/48-51	Groundwater	ADEM	2/29/00	48-51'	5,552.5	1250
PH-13/22-23	Groundwater	Field	3/1/00	22-23'	< MDL	0.1
PH-13/57-60	Groundwater	Field	3/1/00	57-60'	< MDL	0.1
PH-14/31-32	Groundwater	Field	2/28/00	31-32'	1,440 J	0.1
PH-14/31-32 dup	Groundwater	Field	2/28/00	31-32'	1,690 J	0.1
PH-14/50-53	Groundwater	Field	2/28/00	50-53'	3,860 J	0.1
PH-15/30-31	Groundwater	Field	2/28/00	30-31'	< MDL	0.1
PH-15/56-62	Groundwater	Field	2/28/00	59-62'	< MDL	0.1
PH-16/17-18	Groundwater	Field	2/28/00	17-18'	< MDL	0.1

MDL – Method Detection Limit

J - Estimate

REFERENCE 19

ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
POST OFFICE BOX 301463 • 1400 COLISEUM BLVD. 36110-2059
MONTGOMERY, ALABAMA 36130-1463
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JAMES W. WARR
DIRECTOR

DON SIEG

Facsimil
Administration:
General Counsel:
Air:
Land:
Water:
Groundwater:
Field Operations:
Laboratory:
Mining:
Education/Outreach:

July 7, 2000

MEMORANDUM

TO: Stephen A. Cobb, Chief
Hazardous Waste Branch
Land Division

FROM: Joseph L. Gibson, Hydrogeologist J.L.G.
Groundwater Branch
Water division

RE: Groundwater Investigation - 5/9/00 – 5/25/00
Coliseum Boulevard Plume
Montgomery, Montgomery County, Alabama

From May 9, 2000 until May 25, 2000, TTL, Inc. personnel collected soil and groundwater samples from 13 borings at the Coliseum Boulevard Plume Site. ADEM personnel were present to observe the investigation and collect split samples.

TTL, Inc. collected a total of 43 soil samples from the 13 borings and submitted them to an onsite mobile lab for Volatile Organic Compound (VOC) analysis. 1,1-Dichloroethene was detected in 2 sample at concentrations of 0.003 and 0.006 ppm. Cis-1,2-Dichloroethene was detected in 3 samples at concentrations of 0.003, 0.003, and 0.005 ppm. The analytical results for all of the remaining samples were below detection limits. ADEM personnel split 1 soil sample (PH27/1.5-2) with TTL, Inc. and submitted them to the ADEM Central Laboratory for VOC analysis. The analytical results for this sample was below detection limits.

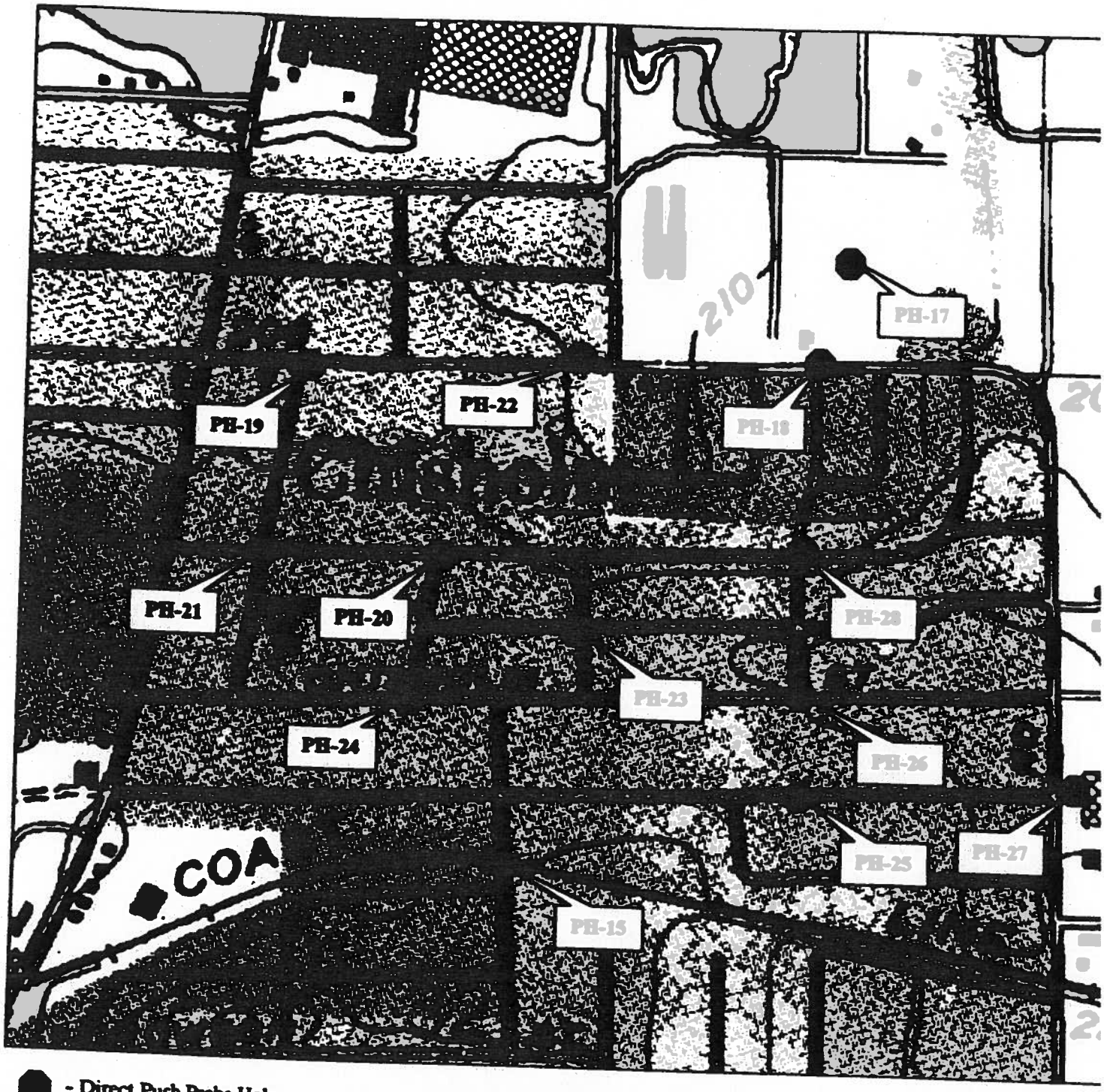
TTL, Inc. collected a total of 28 groundwater samples from the 13 borings. Trichloroethene was detected in 18 of the samples at concentrations that ranged from 2.38 ppb to 305 ppb. ADEM personnel split 1 groundwater sample (PH27/27-29) with TTL, Inc. and submitted it to the ADEM Central Laboratory for VOC analysis. Trichloroethene was detected in the sample at a concentration of 2498.0 ppb.

cc: Sonja Massey, Chief, Groundwater Branch
Jymalyn Redmond, Chief, Site Assessment Unit

Sample ID	[illegible]	[illegible]	[illegible]	[illegible]	[illegible] (µg/L)
PH17/11-12	Groundwater	Field	5/9/00	11-12	< MDL
PH17/43.5-45.5	Groundwater	Field	5/24/00	43.5-45.5	37.9
PH17/51-52	Groundwater	Field	5/9/00	51-52	36.4
PH17/51-52dup	Groundwater	Field	5/9/00	51-52	30.3
PH18/12-13	Groundwater	Field	5/9/00	12-13	< MDL
PH18/37-38	Groundwater	Field	5/9/00	37-38	305
PH19/13-14	Groundwater	Field	5/10/00	13-14	< MDL
PH19/54-55	Groundwater	Field	5/10/00	54-55	< MDL
PH20/23-24	Groundwater	Field	5/11/00	23-24	< MDL
PH20/47-48	Groundwater	Field	5/11/00	47-48	< MDL
PH21/24-26	Groundwater	Field	5/12/00	24-26	5.72
PH21/54-56	Groundwater	Field	5/12/00	54-56	7.81
PH22/17-18	Groundwater	Field	5/15/00	17-18	5.64
PH22/42-44	Groundwater	Field	5/15/00	42-44	17.6
PH23/23-24	Groundwater	Field	5/16/00	23-24	< MDL
PH23/58-60	Groundwater	Field	5/17/00	58-60	16.4
PH24/28-30	Groundwater	Field	5/18/00	28-30	20.4
PH24/58-60	Groundwater	Field	5/18/00	58-60	2.57
PH24/58-60dup	Groundwater	Field	5/18/00	58-60	2.38
PH25/21-23	Groundwater	Field	5/22/00	21-23	< MDL
PH26/26-28	Groundwater	Field	5/23/00	26-28	< MDL
PH26/32.5-34.5	Groundwater	Field	5/23/00	32.5-34.5	40.5
PH26/32.5-34.5dup	Groundwater	Field	5/23/00	32.5-34.5	44.6
PH26/54-56	Groundwater	Field	5/23/00	54-56	< MDL
PH27/27-29	Groundwater	ADEM	5/24/00	27-29	2,498.0
PH27/27-29	Groundwater	Field	5/24/00	27-29	297
PH27/55-58	Groundwater	Field	5/24/00	55-58	3.61
PH28/16.5-20	Groundwater	Field	5/24/00	16.5-20	2.49
PH28/44.5-46.5	Groundwater	Field	5/24/00	44.5-46.5	48.1

MDL – Method Detection Limit

Groundwater Sample Locations
5/9/00 – 5/25/00



● - Direct Push Probe Hole

Feet

0 500 1,000 1,500

N
W E
S

Coliseum Boulevard Plume
Montgomery, Montgomery County, Alabama

Montgomery North, Alabama
U.S.G.S. Topographic Map
1958
Photorevised 1981

REFERENCE 20

ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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MONTGOMERY, ALABAMA 36130-1463
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JAMES W. WARR
DIRECTOR

DON SIEGE
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General Counsel: 3
Air: 2
Land: 2
Water: 2
Groundwater: 2
Field Operations: 2
Laboratory: 2
Mining: 3
Education/Outreach: 3

July 5, 2000

MEMORANDUM

TO: Stephen A. Cobb, Chief
Hazardous Waste Branch
Land Division

FROM: Joseph L. Gibson, Hydrogeologist J. L. G.
Groundwater Branch
Water division

RE: Surface Water Sampling – 3/2/00 and 3/21/00
Coliseum Boulevard Plume
Montgomery, Montgomery County, Alabama

On March 2, 2000 ADEM personnel collected four surface water samples from two ditches at the Coliseum Boulevard Plume Site. Two samples were collected from the ditch located east of Coliseum Boulevard and west of the Vista View Subdivision, and two samples were collected from the ditch located to the east of the City of Montgomery Zoo. The samples were submitted to the ADEM Central Laboratory for Volatile Organic Compound (VOC) analysis. Trichloroethene was detected in two of the samples from the ditch located east of Coliseum Boulevard at concentrations of 43.1 ppb and 168.2 ppb. The analytical results for the samples collected from the ditch located to the east of the City of Montgomery Zoo were below detection limits.

On March 21, 2000 ADEM personnel collected six surface water samples from two ditches at the Coliseum Boulevard Plume Site. Four samples were collected from the ditch located east of Coliseum Boulevard and west of the Vista View Subdivision, and two samples were collected from the ditch located to the east of the City of Montgomery Zoo. The samples were submitted to the ADEM Central Laboratory for VOC analysis. Trichloroethene was detected in four of the samples from the ditch located east of Coliseum Boulevard at concentrations of 17.3 ppb, 32.3 ppb, 36.1 ppb, and 147.5 ppb. The analytical results for the samples collected from the ditch located to the east of the City of Montgomery Zoo were below detection limits.

cc: Sonja Massey, Chief, Groundwater Branch
Jymalyn Redmond, Chief, Site Assessment Unit

Birmingham
110 Vulcan Road
Birmingham, Alabama 35209-4702
(205) 942-6168
(205) 941-1603 [Fax]

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(334) 432-6598 [Fax]

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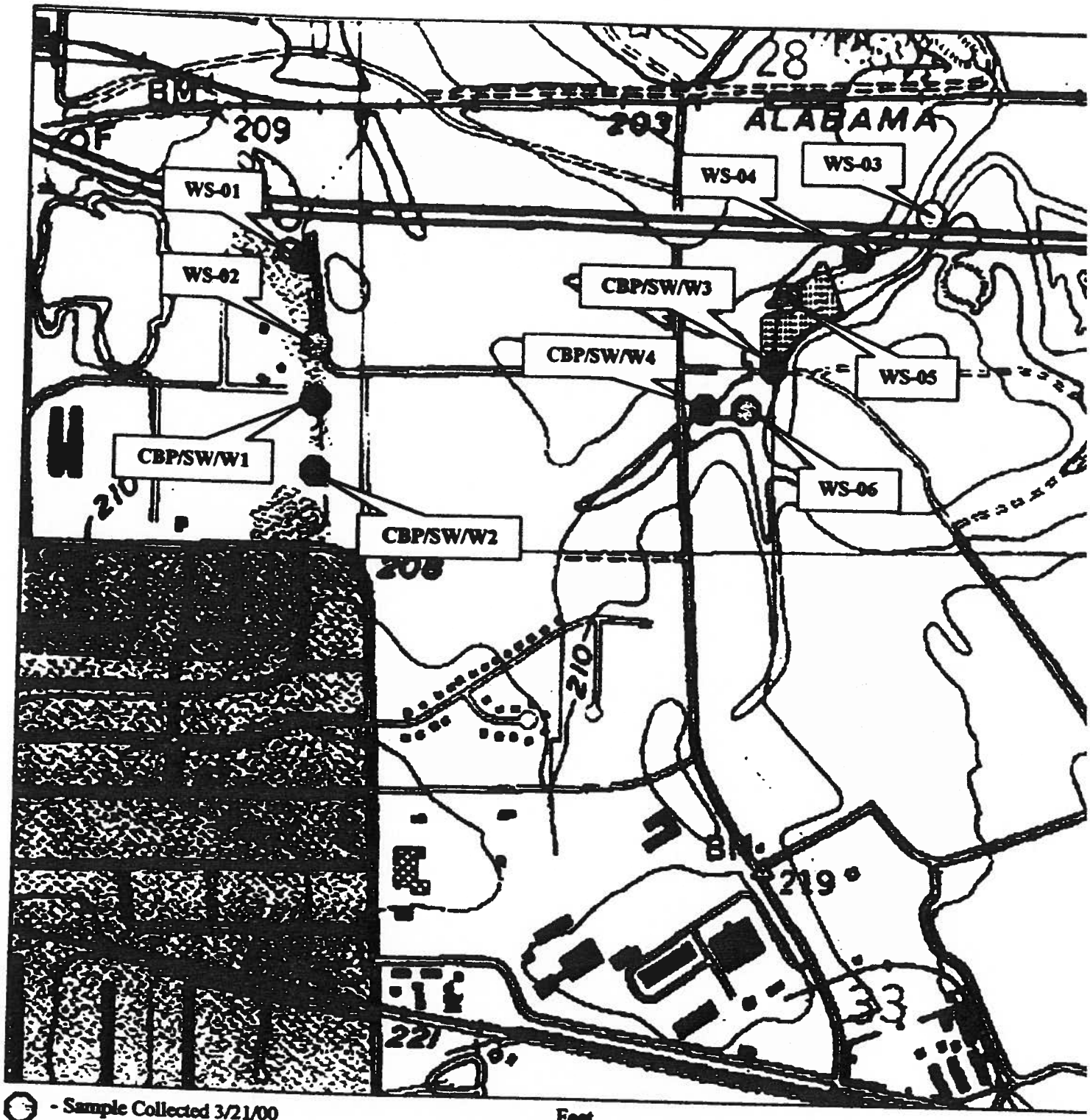
Surface Water Analytical Results for Trichloroethene at the Coliseum Boulevard Plume Site 3/2/00 – 3/21/00

Sample ID	Type	Lab	Date	TCE (ug/L)	Detection Limit (ug/L)
CBP/SW/W1	Surface Water	ADEM	3/2/00	< MDL	5.0
CBP/SW/W2	Surface Water	ADEM	3/2/00	< MDL	5.0
CBP/SW/W3	Surface Water	ADEM	3/2/00	168.2	125
CBP/SW/W4	Surface Water	ADEM	3/2/00	43.1	5.0
WS-01	Surface Water	ADEM	3/21/00	< MDL	5.0
WS-02	Surface Water	ADEM	3/21/00	< MDL	5.0
WS-03	Surface Water	ADEM	3/21/00	17.3	5.0
WS-04	Surface Water	ADEM	3/21/00	32.3	5.0
WS-05	Surface Water	ADEM	3/21/00	36.1	5.0
WS-06	Surface Water	ADEM	3/21/00	147.5	5.0

MDL – Method Detection Limit

Surface Water Sample Locations



- Sample Collected 3/21/00
- Sample Collected 3/2/00

Feet

0 500 1,000 1,500

N W S

Coliseum Boulevard Plume
Montgomery, Montgomery County, Alabama

Montgomery North, Alabama
U.S.G.S. Topographic Map
1958
Photorevised 1981

REFERENCE 21

ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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JAMES W. WARR
DIRECTOR

DON S

Facsi
Administra
A
Lan
Wat
Groundwat
Field Operation
Laborator
Education/Outreac

MEMORANDUM

DATE: April 17, 2000

TO: Joseph Gibson
Groundwater Branch
Water Division

FROM: E. Michelle Jimmerson
Facilities Unit
Field Operations Division

SUBJECT: Coliseum Blvd Plume

Sampling was performed on the ditch near the Coliseum BLVD. plume. The attached include the laboratory analyses and the field data as taken by Field Operations Division personnel. A GPS was taken of each sampling point and is available if needed.

Study Methodology

Sample preservation and chain-of-custody were conducted according to the Field Operations Division's Standard Operating Procedures and Quality Control Assurance Manual (Field Operations Division, ADEM, April 1992), for samples taken by ADEM personnel during the overview.

Laboratory analyses were performed at the ADEM Central Laboratory in Montgomery, Alabama. Chain-of-custody was maintained by locking the samples in a state vehicle when not in sight of a Field Operations Division employee.

Any further questions please contact me at 260-2707.

Attachment

APR 2000
RECEIVED
ADEM
GROUNDWATER
BRANCH

Birmingham
110 Vulcan Road
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Decatur, Alabama 35603-1508
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(256) 340-9359 [Fax]

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Mobile, Alabama 36615-1421
(334) 432-6533
(334) 432-6598 [Fax]

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	WS-01	WS-02	WS-03	WS-04	WS-05	WS-06
pH(s.u.)	8.03	6.84	6.99	6.84	6.98	6.94
Temperature (°C)	20.9	22	20.2	22.3	21.8	19.7
Specific Conductivity (umhos/cm)	90	130	110	130	120	100

WS-01 on north side of gate at the Zoo.
WS-02 near entrance to service area on left hand of street.
WS-03 on northern Blvd.
WS-04 near two beaver dams close to blvd near Vista View.
WS-05 in bend of creek in Vista View.
WS-06 in straight way off Colseum blvd.

APR 2000
RECEIVED

ADEM's MC TGOMERY LABORATORY AI YSIS REPORT

ADEM CENTRAL LAB

Report Date: 3/24/00

Sample ID: AA19481

Send Report To: E. M. JIMMERSON

Source of Sample: COLISEUM BLVD. PLUME

Location of Sample: DITCH WS - 01

Collection Date: 3/21/00

Collection Time: 2:00:00 PM

Sample Collector: EMP-MICHELLEPA

Sample Matrix: GWATER

Fund Code: 348

This sample was received in our lab by: VEN

Submittal Date: 3/22/00

Submittal Time: 8:00:00 AM

Original Report Date: 3/24/00

Validated By: WBB Date: 3/24/00

APR 2000 RECEIVED ADEM GROUNDWATER BRANCH

The results on the attached report are from the sample that was received and is referenced above. The sample was analyzed using standard EPA testing procedures and quality analysis protocol. Instrument calibration and quality control are within acceptable limits of precision and accuracy.

A close review by our Quality Assurance Program certifies that all prescribed test hold times were met and our strict quality assurance standards were observed.

Submitted by: Bill Brackin
Quality Assurance Manager

This cover sheet is an integral part of the analytical report that follows.

MAR 2000 RECEIVED ADEM - FO MONTGOMERY

ADEM's Central Laboratory has met all Requirements for Certification by EPA Region IV to Analyze Samples for all of the Parameters Required Under the Safe Drinking Water Act.

Volatiles in Liquids

Method Reference..... SW8260B

Date Completed... 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
1,1,1,2-Tetrachloroethane	< MDL	ug/L	5.0	630-20-6
1,1,1-Trichloroethane	< MDL	ug/L	5.0	71-55-6
1,1,2,2-Tetrachloroethane	< MDL	ug/L	5.0	79-34-5

Sample Number..... AA19481

Vola. s in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00 Analyst..... RLH

APR 2000 RECEIVED CHEM GROUNDWATER BRANCH

Parameter	Result	Units	Method Detection Limit	CAS#
1,1,2-Trichloroethane	< MDL	ug/L	5.0	79-34-5
1,1-Dichloroethane	< MDL	ug/L	5.0	75-34-3
1,1-Dichloroethene	< MDL	ug/L	5.0	75-35-4
1,1-Dichloropropanone	< MDL	ug/L	5.0	513-88-2
1,1-Dichloropropene	< MDL	ug/L	5.0	563-58-6
1,2,3-Trichlorobenzene	< MDL	ug/L	5.0	87-61-6
1,2,3-Trichloropropane	< MDL	ug/L	5.0	96-18-4
1,2,4-Trichlorobenzene	< MDL	ug/L	5.0	120-82-1
1,2,4-Trimethylbenzene	< MDL	ug/L	5.0	95-63-6
1,2-Dibromo-3-Chloropropane	< MDL	ug/L	5.0	96-12-8
1,2-Dibromoethane (EDB)	< MDL	ug/L	5.0	106-93-4
1,2-Dichlorobenzene	< MDL	ug/L	5.0	95-50-1
1,2-Dichloroethane	< MDL	ug/L	5.0	107-06-2
1,2-Dichloropropane	< MDL	ug/L	5.0	78-87-5
1,3,5-Trimethylbenzene	< MDL	ug/L	5.0	108-67-8
1,3-Dichlorobenzene	< MDL	ug/L	5.0	541-73-1
1,3-Dichloropropane	< MDL	ug/L	5.0	142-28-9
1,4-Dichlorobenzene	< MDL	ug/L	5.0	106-46-7
1-Chlorobutane	< MDL	ug/L	5.0	109-69-3
2,2-Dichloropropane	< MDL	ug/L	5.0	590-20-7
2-Butanone	< MDL	ug/L	5.0	95-49-8
2-Chlorotoluene	< MDL	ug/L	5.0	591-78-6
2-Hexanone	< MDL	ug/L	5.0	106-43-4
2-Nitropropane	< MDL	ug/L	5.0	99-87-6
4-Chlorotoluene	< MDL	ug/L	5.0	108-10-1
4-Isopropyltoluene	< MDL	ug/L	10.0	67-64-1
4-Methyl-2-pentanone (MIBK)	< MDL	ug/L	5.0	107-13-1
Acetone	< MDL	ug/L	5.0	107-05-1
Acrylonitrile	< MDL	ug/L	5.0	71-43-2
Allyl Chloride	< MDL	ug/L	5.0	108-86-1
Benzene	< MDL	ug/L	5.0	74-97-5
Bromobenzene	< MDL	ug/L	5.0	74-97-5
Bromochloromethane	< MDL	ug/L	5.0	
Bromodichloromethane	< MDL	ug/L	5.0	

Sample Number..... AA19481

Vol. es in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS
Bromoform	< MDL	ug/L	5.0	[illegible]
Bromomethane	< MDL	ug/L	5.0	74-83-9
Carbon Disulfide	< MDL	ug/L	5.0	75-15-0
Carbon Tetrachloride	< MDL	ug/L	5.0	56-23-5
Chloroacetonitrile	< MDL	ug/L	5.0	107-14-2
Chlorobenzene	< MDL	ug/L	5.0	108-90-7
Chloroethane	< MDL	ug/L	5.0	75-00-3
Chloroform	< MDL	ug/L	5.0	67-66-3
Chloromethane	< MDL	ug/L	5.0	74-87-3
cis-1,2-Dichloroethene	< MDL	ug/L	5.0	156-59-2
cis-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-01-5
Dibromochloromethane	< MDL	ug/L	5.0	124-48-1
Dibromomethane	< MDL	ug/L	5.0	74-95-3
Dichlorodifluoromethane	< MDL	ug/L	5.0	75-71-8
Diethyl Ether	< MDL	ug/L	5.0	60-29-7
Ethyl Methacrylate	< MDL	ug/L	5.0	97-63-2
Ethylbenzene	< MDL	ug/L	5.0	100-41-4
Hexachlorobutadiene	< MDL	ug/L	5.0	87-68-3
Hexachloroethane	< MDL	ug/L	5.0	67-72-1
Iodomethane	< MDL	ug/L	5.0	74-99-4
Isopropylbenzene	< MDL	ug/L	5.0	99-87-6
m-Xylene	< MDL	ug/L	5.0	126-98-7
Methacrylonitrile	< MDL	ug/L	5.0	1634-04-4
Methyl t-Butyl Ether	< MDL	ug/L	5.0	75-09-2
Methylacrylate	< MDL	ug/L	5.0	80-62-6
Methylene Chloride	< MDL	ug/L	5.0	104-51-8
Methylmethacrylate	< MDL	ug/L	5.0	103-65-1
n-Butylbenzene	< MDL	ug/L	5.0	91-20-3
n-Propylbenzene	< MDL	ug/L	5.0	95-65-8
Naphthalene	< MDL	ug/L	5.0	95-47-6
Nitrobenzene	< MDL	ug/L	5.0	108-42-3
o-Xylene	< MDL	ug/L	5.0	76-01-7
p-Xylene	< MDL	ug/L	5.0	
Pentachloroethane	< MDL	ug/L	5.0	

Sample Number..... AA19481

Vola. s in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00

Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
Propionitrile	< MDL	ug/L	5.0	107-12-0
sec-Butylbenzene	< MDL	ug/L	5.0	135-98-8
Styrene	< MDL	ug/L	5.0	100-42-5
tert-Butylbenzene	< MDL	ug/L	5.0	98-06-6
Tetrachloroethylene	< MDL	ug/L	5.0	127-18-4
Tetrahydrofuran	< MDL	ug/L	5.0	109-99-9
Toluene	< MDL	ug/L	5.0	108-88-3
trans-1,2-Dichloroethene	< MDL	ug/L	5.0	156-60-5
trans-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-02-6
trans-1,4-Dichloro-2-butene	< MDL	ug/L	5.0	110-57-6
Trichloroethene	< MDL	ug/L	5.0	79-01-6
Trichlorofluoromethane	< MDL	ug/L	5.0	75-69-4
Vinyl Chloride	< MDL	ug/L	5.0	75-01-4

APR 2000
RECEIVED
ADEM
GROUNDWATER
BRANCH

Sample Number..... AA19481

ADEM's MONTGOMERY LABORATORY ANALYSIS REPORT

ADEM CENTRAL LAB

ALABAMA GREAT SEAL

APR 2000 RECEIVED ADEM GROUNDWATER BRANCH

Report Date: 3/24/00

Sample ID: AA19482

Send Report To: E. M. JIMMERSON

Source of Sample: COLISEUM BLVD. PLUME

Location of Sample: DITCH WS - 02

Collection Date: 3/21/00

Collection Time: 2:10:00 PM

Sample Collector: EMP-MICHELLEPA

Sample Matrix: GWATER

Fund Code: 348

This sample was received in our lab by: ADEM

Submittal Date: 3/22/00

Submittal Time: 8:00:00 AM

Original Report Date: 3/24/00

Validated By: WBB Date: 3/23/00

The results on the attached report are from the sample that was received and is referenced above. The sample was analyzed using standard EPA testing procedures and quality analysis protocol. Instrument calibration and quality control are within acceptable limits of precision and accuracy.

A close review by our Quality Assurance Program certifies that all prescribed test hold times were met and our strict quality assurance standards were observed.

Submitted by: Bill Brackin
Quality Assurance Manager

APR 2000 RECEIVED ADEM - FO MONTGOMERY

This cover sheet is an integral part of the analytical report that follows.

ADEM's Central Laboratory has met all Requirements for Certification by EPA Region 4 to Analyze Samples for all of the Parameters Required Under the Safe Drinking Water Act.

Volatiles in Liquids

Method Reference..... SW8260B

Date Completed... 3/22/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
1,1,1,2-Tetrachloroethane	< MDL	ug/L	5.0	630-20-6
1,1,1-Trichloroethane	< MDL	ug/L	5.0	71-55-6
1,1,2,2-Tetrachloroethane	< MDL	ug/L	5.0	79-34-5

Sample Number..... AA19482

Volatiles in Liquids

Method Reference..... SW8260B

Date Completed.. 3/22/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS
1,1,2-Trichloroethane	< MDL	ug/L	5.0	79-00-5
1,1-Dichloroethane	< MDL	ug/L	5.0	75-34-3
1,1-Dichloroethane	< MDL	ug/L	5.0	75-35-4
1,1-Dichloropropanone	< MDL	ug/L	5.0	513-88-2
1,1-Dichloropropene	< MDL	ug/L	5.0	563-58-6
1,2,3-Trichlorobenzene	< MDL	ug/L	5.0	87-61-6
1,2,3-Trichloropropane	< MDL	ug/L	5.0	96-18-4
1,2,4-Trichlorobenzene	< MDL	ug/L	5.0	120-82-1
1,2,4-Trimethylbenzene	< MDL	ug/L	5.0	95-63-6
1,2-Dibromo-3-Chloropropane	< MDL	ug/L	5.0	96-12-8
1,2-Dibromoethane (EDB)	< MDL	ug/L	5.0	106-93-4
1,2-Dichlorobenzene	< MDL	ug/L	5.0	95-50-1
1,2-Dichloroethane	< MDL	ug/L	5.0	107-06-2
1,2-Dichloropropane	< MDL	ug/L	5.0	78-87-5
1,3,5-Trimethylbenzene	< MDL	ug/L	5.0	108-67-8
1,3-Dichlorobenzene	< MDL	ug/L	5.0	541-73-1
1,3-Dichloropropane	< MDL	ug/L	5.0	142-28-9
1,4-Dichlorobenzene	< MDL	ug/L	5.0	106-46-7
1-Chlorobutane	< MDL	ug/L	5.0	108-69-3
2,2-Dichloropropane	< MDL	ug/L	5.0	590-20-7
2-Butanone	< MDL	ug/L	5.0	78-93-3
2-Chlorotoluene	< MDL	ug/L	5.0	95-49-8
2-Hexanone	< MDL	ug/L	5.0	591-78-6
2-Nitropropane	< MDL	ug/L	5.0	95-49-8
4-Chlorotoluene	< MDL	ug/L	5.0	108-67-8
4-Isopropyltoluene	< MDL	ug/L	5.0	99-87-6
4-Methyl-2-pentanone (MIBK)	< MDL	ug/L	5.0	108-10-1
Acetone	< MDL	ug/L	10.0	67-64-1
Acrylonitrile	< MDL	ug/L	5.0	107-13-1
Allyl Chloride	< MDL	ug/L	5.0	107-05-1
Benzene	< MDL	ug/L	5.0	71-43-2
Bromobenzene	< MDL	ug/L	5.0	108-86-1
Bromochloromethane	< MDL	ug/L	5.0	74-97-5
Bromodichloromethane	< MDL	ug/L	5.0	74-97-5

4 APR 2000 RECEIVED ... BRANCH

Sample Number..... AA19482

Volatiles in Liquids

Method Reference..... SW8260B

Date Completed.. 3/22/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS
Bromoform	< MDL	ug/L	5.0	75-25-2
Bromomethane	< MDL	ug/L	5.0	74-83-9
Carbon Disulfide	< MDL	ug/L	5.0	75-15-0
Carbon Tetrachloride	< MDL	ug/L	5.0	56-23-5
Chloroacetonitrile	< MDL	ug/L	5.0	107-14-2
Chlorobenzene	< MDL	ug/L	5.0	108-90-7
Chloroethane	< MDL	ug/L	5.0	75-00-3
Chloroform	< MDL	ug/L	5.0	67-66-3
Chloromethane	< MDL	ug/L	5.0	74-87-3
cis-1,2-Dichloroethene	< MDL	ug/L	5.0	156-59-2
cis-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-01-5
Dibromochloromethane	< MDL	ug/L	5.0	124-48-1
Dibromomethane	< MDL	ug/L	5.0	74-95-3
Dichlorodifluoromethane	< MDL	ug/L	5.0	75-71-8
Diethyl Ether	< MDL	ug/L	5.0	60-29-7
Ethyl Methacrylate	< MDL	ug/L	5.0	97-63-2
Ethylbenzene	< MDL	ug/L	5.0	87-68-3
Hexachlorobutadiene	< MDL	ug/L	5.0	67-72-1
Hexachloroethane	< MDL	ug/L	5.0	74-88-4
Iodomethane	< MDL	ug/L	5.0	98-82-8
Isopropylbenzene	< MDL	ug/L	5.0	108-39-4
m-Xylene	< MDL	ug/L	5.0	126-98-7
Methacrylonitrile	< MDL	ug/L	5.0	1634-04-4
Methyl t-Butyl Ether	< MDL	ug/L	5.0	74-83-9
Methylacrylate	< MDL	ug/L	5.0	75-09-2
Methylene Chloride	< MDL	ug/L	5.0	80-62-6
Methylmethacrylate	< MDL	ug/L	5.0	104-51-8
n-Butylbenzene	< MDL	ug/L	5.0	103-65-1
n-Propylbenzene	< MDL	ug/L	5.0	91-20-3
Naphthalene	< MDL	ug/L	5.0	95-95-3
Nitrobenzene	< MDL	ug/L	5.0	95-47-6
o-Xylene	< MDL	ug/L	5.0	106-42-3
p-Xylene	< MDL	ug/L	5.0	76-01-7
Pentachloroethane	< MDL	ug/L	5.0	

Sample Number..... AA19482

APR 2000 RECEIVED GROUNDWATER BRANCH

Volc s in Liquids

Method Reference..... SW8260B

Date Completed.. 3/22/00

Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
Propionitrile	< MDL	ug/L	5.0	107-12-0
sec-Butylbenzene	< MDL	ug/L	5.0	135-98-8
Styrene	< MDL	ug/L	5.0	100-42-5
tert-Butylbenzene	< MDL	ug/L	5.0	98-06-6
Tetrachloroethylene	< MDL	ug/L	5.0	127-18-4
Tetrahydrofuran	< MDL	ug/L	5.0	109-99-9
Toluene	< MDL	ug/L	5.0	108-88-3
trans-1,2-Dichloroethene	< MDL	ug/L	5.0	156-60-5
trans-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-02-6
trans-1,4-Dichloro-2-butene	< MDL	ug/L	5.0	110-57-6
Trichloroethene	< MDL	ug/L	5.0	79-01-6
Trichlorofluoromethane	< MDL	ug/L	5.0	75-69-4
Vinyl Chloride	< MDL	ug/L	5.0	75-01-4

4 APR 2000 RECEIVED ADEM GROUNDWATER BRANCH

ADEM's MC TGOMERY LABORATORY AL YSIS REPORT

ADEM CENTRAL LAB

Report Date: 3/24/00

Sample ID: AA19483

Send Report To: E. M. JIMMERSON

Source of Sample: COLISEUM BLVD. PLUME

Location of Sample: DITCH WS - 03

Collection Date: 3/21/00

Collection Time: 2:20:00 PM

Sample Collector: EMP-MICHELLEPA

Sample Matrix: GWATER

Fund Code: 348

This sample was received in our lab by: VEH

Submittal Date: 3/22/00

Submittal Time: 8:00:00 AM

Original Report Date: 3/24/00

Validated By: WBB Date: 3/23/00

The results on the attached report are from the sample that was received and is referenced above. The sample was analyzed using standard EPA testing procedures and quality analysis protocol. Instrument calibration and quality control are within acceptable limits of precision and accuracy.

A close review by our Quality Assurance Program certifies that all prescribed test hold times were met and our strict quality assurance standards were observed.

Submitted by: Bill Brackin
Quality Assurance Manager

This cover sheet is an integral part of the analytical report that follows.

ADEM's Central Laboratory has met all Requirements for Certification by EPA Region IV to Analyze Samples for all of the Parameters Required Under the Safe Drinking Water Act.

4 MAR 2000 RECEIVED ADEM - FO MONTGOMERY

Volatiles in Liquids

Method Reference..... SW8260B

Date Completed... 3/22/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
1,1,1,2-Tetrachloroethane	< MDL	ug/L	5.0	630-20-6
1,1,1-Trichloroethane	< MDL	ug/L	5.0	71-55-6
1,1,2,2-Tetrachloroethane	< MDL	ug/L	5.0	79-34-5

Sample Number..... AA19483

Volatiles in Liquids

Method Reference..... SW8260B

Date Completed.. 3/22/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
1,1,2-Trichloroethane	< MDL	ug/L	5.0	79-00-5
1,1-Dichloroethane	< MDL	ug/L	5.0	75-34-3
1,1-Dichloroethene	< MDL	ug/L	5.0	75-35-4
1,1-Dichloropropanone	< MDL	ug/L	5.0	513-88-2
1,1-Dichloropropene	< MDL	ug/L	5.0	563-58-6
1,2,3-Trichlorobenzene	< MDL	ug/L	5.0	87-61-6
1,2,3-Trichloropropane	< MDL	ug/L	5.0	96-18-4
1,2,4-Trichlorobenzene	< MDL	ug/L	5.0	120-82-1
1,2,4-Trimethylbenzene	< MDL	ug/L	5.0	96-63-6
1,2-Dibromo-3-Chloropropane	< MDL	ug/L	5.0	96-12-8
1,2-Dibromoethane (EDB)	< MDL	ug/L	5.0	106-93-4
1,2-Dichlorobenzene	< MDL	ug/L	5.0	95-50-1
1,2-Dichloroethane	< MDL	ug/L	5.0	107-06-2
1,2-Dichloropropane	< MDL	ug/L	5.0	78-87-5
1,3,5-Trimethylbenzene	< MDL	ug/L	5.0	108-67-8
1,3-Dichlorobenzene	< MDL	ug/L	5.0	541-73-1
1,3-Dichloropropane	< MDL	ug/L	5.0	142-28-9
1,4-Dichlorobenzene	< MDL	ug/L	5.0	106-46-7
1-Chlorobutane	< MDL	ug/L	5.0	109-69-3
2,2-Dichloropropane	< MDL	ug/L	5.0	590-20-7
2-Butanone	< MDL	ug/L	5.0	78-93-3
2-Chlorotoluene	< MDL	ug/L	5.0	95-49-8
2-Hexanone	< MDL	ug/L	5.0	591-78-6
2-Nitropropane	< MDL	ug/L	5.0	106-43-4
4-Chlorotoluene	< MDL	ug/L	5.0	99-87-6
4-Isopropyltoluene	< MDL	ug/L	5.0	108-10-1
4-Methyl-2-pentanone (MIBK)	< MDL	ug/L	10.0	67-64-1
Acetone	< MDL	ug/L	5.0	107-13-1
Acrylonitrile	< MDL	ug/L	5.0	107-05-1
Ally Chloride	< MDL	ug/L	5.0	71-43-2
Benzene	< MDL	ug/L	5.0	108-86-1
Bromobenzene	< MDL	ug/L	5.0	74-97-5
Bromochloromethane	< MDL	ug/L	5.0	74-97-5
Bromodichloromethane	< MDL	ug/L	5.0	74-97-5

Sample Number..... AA19483

4 APR 2000 RECEIVED GROUNDWATER BRANCH

Volatiles in Liquids

Method Reference..... SW8260B

Date Completed.. 3/22/00

Analyst..... RLH

4 APR 2000 RECEIVED

Parameter	Result	Units	Method Detection Limit	CAS#
Bromoform	< MDL	ug/L	5.0	75-25-2
Bromomethane	< MDL	ug/L	5.0	74-83-9
Carbon Disulfide	< MDL	ug/L	5.0	75-15-0
Carbon Tetrachloride	< MDL	ug/L	5.0	56-23-5
Chloroacetonitrile	< MDL	ug/L	5.0	107-14-2
Chlorobenzene	< MDL	ug/L	5.0	108-90-7
Chloroethane	< MDL	ug/L	5.0	75-00-3
Chloroform	< MDL	ug/L	5.0	67-66-3
Chloromethane	< MDL	ug/L	5.0	74-87-3
cis-1,2-Dichloroethene	< MDL	ug/L	5.0	156-59-2
cis-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-01-5
Dibromochloromethane	< MDL	ug/L	5.0	124-48-1
Dibromomethane	< MDL	ug/L	5.0	74-95-3
Dichlorodifluoromethane	< MDL	ug/L	5.0	75-71-8
Diethyl Ether	< MDL	ug/L	5.0	60-29-7
Ethyl Methacrylate	< MDL	ug/L	5.0	97-63-2
Ethylbenzene	< MDL	ug/L	5.0	100-41-4
Hexachlorobutadiene	< MDL	ug/L	5.0	67-69-3
Hexachloroethane	< MDL	ug/L	5.0	67-72-1
Iodomethane	< MDL	ug/L	5.0	74-99-4
Isopropylbenzene	< MDL	ug/L	5.0	96-62-8
m-Xylene	< MDL	ug/L	5.0	109-38-3
Methacrylonitrile	< MDL	ug/L	5.0	126-98-7
Methyl t-Butyl Ether	< MDL	ug/L	5.0	1634-04-4
Methylacrylate	< MDL	ug/L	5.0	96-33-3
Methylene Chloride	< MDL	ug/L	5.0	75-09-2
Methylmethacrylate	< MDL	ug/L	5.0	80-62-6
n-Butylbenzene	< MDL	ug/L	5.0	104-51-8
n-Propylbenzene	< MDL	ug/L	5.0	103-65-1
Naphthalene	< MDL	ug/L	5.0	91-20-3
Nitrobenzene	< MDL	ug/L	5.0	95-65-3
o-Xylene	< MDL	ug/L	5.0	95-47-6
p-Xylene	< MDL	ug/L	5.0	106-42-3
Pentachloroethane	< MDL	ug/L	5.0	76-01-7

Sample Number..... AA19483

Volatiles in Liquids

Method Reference..... SW8260B

Date Completed... 3/22/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
Propionitrile	< MDL	ug/L	5.0	107-12-0
sec-Butylbenzene	< MDL	ug/L	5.0	135-98-8
Styrene	< MDL	ug/L	5.0	100-42-5
tert-Butylbenzene	< MDL	ug/L	5.0	98-06-6
Tetrachloroethylene	< MDL	ug/L	5.0	127-18-4
Tetrahydrofuran	< MDL	ug/L	5.0	109-99-9
Toluene	< MDL	ug/L	5.0	108-88-3
trans-1,2-Dichloroethene	< MDL	ug/L	5.0	156-60-5
trans-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-02-6
trans-1,4-Dichloro-2-butene	< MDL	ug/L	5.0	110-57-6
Trichloroethene	17.3	ug/L	5.0	79-01-6
Trichlorofluoromethane	< MDL	ug/L	5.0	75-69-4
Vinyl Chloride	< MDL	ug/L	5.0	75-01-4

4 APR 2000 RECEIVED ADEM GROUNDWATER BRANCH

Sample Number..... AA19483

ADEM's MONTGOMERY LABORATORY ANALYSIS REPORT

ADEM CENTRAL LAB

Report Date: 3/24/00

Sample ID: AA19484

Send Report To: E. M. JIMMERSON

Source of Sample: COLISEUM BLVD. PLUME

Location of Sample: DITCH WS - 04

Collection Date: 3/21/00

Collection Time: 2:45:00 PM

Sample Collector: EMP-MICHELLEPA

Sample Matrix: GWATER

Fund Code: 348

This sample was received in our lab by: VEH

Submittal Date: 3/22/00

Submittal Time: 8:00:00 AM

Original Report Date: 3/24/00

Validated By: WBB Date: 3/23/00

The results on the attached report are from the sample that was received and is referenced above. The sample was analyzed using standard EPA testing procedures and quality analysis protocol. Instrument calibration and quality control are within acceptable limits of precision and accuracy.

A close review by our Quality Assurance Program certifies that all prescribed test hold times were met and our strict quality assurance standards were observed.

Submitted by: Bill Brackin
Quality Assurance Manager

This cover sheet is an integral part of the analytical report that follows.

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Volatiles in Liquids

Method Reference..... SW8260B

Date Completed... 3/22/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
1,1,1,2-Tetrachloroethane	< MDL	ug/L	5.0	630-20-6
1,1,1-Trichloroethane	< MDL	ug/L	5.0	71-55-6
1,1,2,2-Tetrachloroethane	< MDL	ug/L	5.0	79-34-5

Sample Number..... AA19484

Vola. s in Liquids

Method Reference..... SW8260B

Date Completed.. 3/22/00

Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
1,1,2-Trichloroethane	< MDL	ug/L	5.0	79-00-5
1,1-Dichloroethane	< MDL	ug/L	5.0	75-34-3
1,1-Dichloroethane	< MDL	ug/L	5.0	75-35-4
1,1-Dichloropropanone	< MDL	ug/L	5.0	513-88-2
1,1-Dichloropropene	< MDL	ug/L	5.0	563-58-6
1,2,3-Trichlorobenzene	< MDL	ug/L	5.0	87-61-6
1,2,3-Trichloropropane	< MDL	ug/L	5.0	96-18-4
1,2,4-Trichlorobenzene	< MDL	ug/L	5.0	120-82-1
1,2,4-Trimethylbenzene	< MDL	ug/L	5.0	95-63-6
1,2-Dibromo-3-Chloropropane	< MDL	ug/L	5.0	96-12-8
1,2-Dibromoethane (EDB)	< MDL	ug/L	5.0	106-93-4
1,2-Dichlorobenzene	< MDL	ug/L	5.0	95-50-1
1,2-Dichloroethane	< MDL	ug/L	5.0	107-06-2
1,2-Dichloropropane	< MDL	ug/L	5.0	78-87-5
1,3,5-Trimethylbenzene	< MDL	ug/L	5.0	108-67-8
1,3-Dichlorobenzene	< MDL	ug/L	5.0	541-73-1
1,3-Dichloropropane	< MDL	ug/L	5.0	142-28-9
1,4-Dichlorobenzene	< MDL	ug/L	5.0	106-46-7
1-Chlorobutane	< MDL	ug/L	5.0	109-69-3
2,2-Dichloropropane	< MDL	ug/L	5.0	590-20-7
2-Butanone	< MDL	ug/L	5.0	78-93-3
2-Chlorotoluene	< MDL	ug/L	5.0	95-49-8
2-Hexanone	< MDL	ug/L	5.0	591-78-6
2-Nitropropane	< MDL	ug/L	5.0	95-49-8
4-Chlorotoluene	< MDL	ug/L	5.0	106-43-4
4-Isopropyltoluene	< MDL	ug/L	5.0	99-87-6
4-Methyl-2-pentanone (MIBK)	< MDL	ug/L	5.0	108-10-1
Acetone	< MDL	ug/L	10.0	67-64-1
Acrylonitrile	< MDL	ug/L	5.0	107-13-1
Allyl Chloride	< MDL	ug/L	5.0	107-05-1
Benzene	< MDL	ug/L	5.0	71-43-2
Bromobenzene	< MDL	ug/L	5.0	108-86-1
Bromochloromethane	< MDL	ug/L	5.0	74-97-5
Bromodichloromethane	< MDL	ug/L	5.0	74-97-5

APR 2000 RECEIVED GROUNDWATER BRANCH

Sample Number..... AA19484

Volat ; in Liquids

Method Reference..... SW8260B

Date Completed.. 3/22/00

Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	
Bromoform	< MDL	ug/L	5.0	75-25-2
Bromomethane	< MDL	ug/L	5.0	74-83-9
Carbon Disulfide	< MDL	ug/L	5.0	75-15-0
Carbon Tetrachloride	< MDL	ug/L	5.0	56-23-5
Chloroacetonitrile	< MDL	ug/L	5.0	107-14-2
Chlorobenzene	< MDL	ug/L	5.0	108-90-7
Chloroethane	< MDL	ug/L	5.0	75-00-3
Chloroform	< MDL	ug/L	5.0	67-66-3
Chloromethane	< MDL	ug/L	5.0	74-87-3
cis-1,2-Dichloroethene	< MDL	ug/L	5.0	156-59-2
cis-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-01-5
Dibromochloromethane	< MDL	ug/L	5.0	124-48-1
Dibromomethane	< MDL	ug/L	5.0	74-95-3
Dichlorodifluoromethane	< MDL	ug/L	5.0	75-71-8
Diethyl Ether	< MDL	ug/L	5.0	60-29-7
Ethyl Methacrylate	< MDL	ug/L	5.0	97-63-2
Ethylbenzene	< MDL	ug/L	5.0	100-41-4
Hexachlorobutadiene	< MDL	ug/L	5.0	87-68-3
Hexachloroethane	< MDL	ug/L	5.0	67-72-1
Iodomethane	< MDL	ug/L	5.0	74-88-4
Isopropylbenzene	< MDL	ug/L	5.0	98-82-8
m-Xylene	< MDL	ug/L	5.0	108-39-3
Methacrylonitrile	< MDL	ug/L	5.0	126-98-7
Methyl t-Butyl Ether	< MDL	ug/L	5.0	1634-04-4
Methylacrylate	< MDL	ug/L	5.0	96-33-3
Methylene Chloride	< MDL	ug/L	5.0	75-09-2
Methylmethacrylate	< MDL	ug/L	5.0	80-62-6
n-Butylbenzene	< MDL	ug/L	5.0	104-51-8
n-Propylbenzene	< MDL	ug/L	5.0	103-65-1
Naphthalene	< MDL	ug/L	5.0	91-20-3
Nitrobenzene	< MDL	ug/L	5.0	95-85-3
o-Xylene	< MDL	ug/L	5.0	95-47-6
p-Xylene	< MDL	ug/L	5.0	106-42-3
Pentachloroethane	< MDL	ug/L	5.0	79-01-7

Sample Number..... AA19484

Volat : in Liquids

Method Reference..... SW8260B

Date Completed.. 3/22/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
Propionitrile	< MDL	ug/L	5.0	107-12-0
sec-Butylbenzene	< MDL	ug/L	5.0	135-98-8
Styrene	< MDL	ug/L	5.0	100-42-5
tert-Butylbenzene	< MDL	ug/L	5.0	98-06-6
Tetrachloroethylene	< MDL	ug/L	5.0	127-18-4
Tetrahydrofuran	< MDL	ug/L	5.0	109-99-9
Toluene	< MDL	ug/L	5.0	108-88-3
trans-1,2-Dichloroethene	< MDL	ug/L	5.0	156-60-5
trans-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-02-6
trans-1,4-Dichloro-2-butene	< MDL	ug/L	5.0	110-57-6
Trichloroethene	32.3	ug/L	5.0	79-01-6
Trichlorofluoromethane	< MDL	ug/L	5.0	75-69-4
Vinyl Chloride	< MDL	ug/L	5.0	75-01-4

APR 2000
RECEIVED
IDEM
GROUNDWATER
BRANCH

ADEM's MO GOMERY LABORATORY AN YSIS REPORT

ADEM CENTRAL LAB

Report Date: 3/24/00

Sample ID: AA19485

Send Report To: E. M. JIMMERSON

Source of Sample: COLISEUM BLVD. PLUME

Location of Sample: DITCH WS - 06

Collection Date: 3/21/00

Collection Time: 3:00:00 PM

Sample Collector: EMP-MICHELLEPA

Sample Matrix: GWATER

Fund Code: 348

This sample was received in our lab by

Submittal Date: 3/22/00

Submittal Time: 8:00:00 AM

Original Report Date: 3/24/00

Validated By: WBB Date: 3/23/00

4 APR 2000 RECEIVED ADEM GROUNDWATER BRANCH

The results on the attached report are from the sample that was received and is referenced above. The sample was analyzed using standard EPA testing procedures and quality analysis protocol. Instrument calibration and quality control are within acceptable limits of precision and accuracy.

A close review by our Quality Assurance Program certifies that all prescribed test hold times were met and our strict quality assurance standards were observed.

Submitted by: Bill Brackin
Quality Assurance Manager

This cover sheet is an integral part of the analytical report that follows.

ADEM's Central Laboratory has met all Requirements for Certification by EPA Region IV and Analyze Samples for all of the Parameters Required Under the Safe Drinking Water Act.

4 MAR 2000 RECEIVED ADEM - FO WATERSHED

Volatiles in Liquids

Method Reference..... SW8260B

Date Completed... 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
1,1,1,2-Tetrachloroethane	< MDL	ug/L	5.0	630-20-6
1,1,1-Trichloroethane	< MDL	ug/L	5.0	71-55-6
1,1,2,2-Tetrachloroethane	< MDL	ug/L	5.0	79-34-5

Sample Number..... AA19485

Vol !es in Liquids

Method Reference..... SW8260B

Date Completed... 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	
1,1,2-Trichloroethane	< MDL	ug/L	5.0	79-00-5
1,1-Dichloroethane	< MDL	ug/L	5.0	75-34-3
1,1-Dichloroethene	< MDL	ug/L	5.0	75-35-4
1,1-Dichloropropanone	< MDL	ug/L	5.0	78-98-8
1,1-Dichloropropene	< MDL	ug/L	5.0	563-58-6
1,2,3-Trichlorobenzene	< MDL	ug/L	5.0	87-61-6
1,2,3-Trichloropropane	< MDL	ug/L	5.0	96-18-4
1,2,4-Trichlorobenzene	< MDL	ug/L	5.0	120-82-1
1,2,4-Trimethylbenzene	< MDL	ug/L	5.0	96-12-8
1,2-Dibromo-3-Chloropropane	< MDL	ug/L	5.0	106-93-4
1,2-Dibromoethane (EDB)	< MDL	ug/L	5.0	95-50-1
1,2-Dichlorobenzene	< MDL	ug/L	5.0	107-06-2
1,2-Dichloroethane	< MDL	ug/L	5.0	78-87-5
1,2-Dichloropropane	< MDL	ug/L	5.0	108-67-8
1,3,5-Trimethylbenzene	< MDL	ug/L	5.0	541-73-1
1,3-Dichlorobenzene	< MDL	ug/L	5.0	142-28-9
1,3-Dichloropropane	< MDL	ug/L	5.0	106-46-7
1,4-Dichlorobenzene	< MDL	ug/L	5.0	109-69-3
1-Chlorobutane	< MDL	ug/L	5.0	590-20-7
2,2-Dichloropropane	< MDL	ug/L	5.0	78-93-3
2-Butanone	< MDL	ug/L	5.0	95-49-8
2-Chlorotoluene	< MDL	ug/L	5.0	591-78-6
2-Hexanone	< MDL	ug/L	5.0	79-46-9
2-Nitropropane	< MDL	ug/L	5.0	108-43-4
4-Chlorotoluene	< MDL	ug/L	5.0	99-87-6
4-Isopropyltoluene	< MDL	ug/L	5.0	108-10-1
4-Methyl-2-pentanone (MIBK)	< MDL	ug/L	5.0	67-64-1
Acetone	< MDL	ug/L	10.0	107-13-1
Acrylonitrile	< MDL	ug/L	5.0	107-05-1
Ally Chloride	< MDL	ug/L	5.0	71-43-2
Benzene	< MDL	ug/L	5.0	108-86-1
Bromobenzene	< MDL	ug/L	5.0	74-97-5
Bromochloromethane	< MDL	ug/L	5.0	74-97-5
Bromodichloromethane	< MDL	ug/L	5.0	74-97-5

APR 2000 BUREAU OF GROUNDWATER BRANCH

Sample Number..... AA19485

Volat[illegible] in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00

Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS#
Bromoform	< MDL	ug/L	5.0	75-27-4
Bromomethane	< MDL	ug/L	5.0	75-25-2
Carbon Disulfide	< MDL	ug/L	5.0	75-15-0
Carbon Tetrachloride	< MDL	ug/L	5.0	56-23-5
Chloroacetonitrile	< MDL	ug/L	5.0	107-14-2
Chlorobenzene	< MDL	ug/L	5.0	108-90-7
Chloroethane	< MDL	ug/L	5.0	75-00-3
Chloroform	< MDL	ug/L	5.0	67-66-3
Chloromethane	< MDL	ug/L	5.0	74-87-3
cis-1,2-Dichloroethene	< MDL	ug/L	5.0	156-59-2
cis-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-01-5
Dibromochloromethane	< MDL	ug/L	5.0	124-48-1
Dibromomethane	< MDL	ug/L	5.0	74-95-3
Dichlorodifluoromethane	< MDL	ug/L	5.0	75-71-8
Diethyl Ether	< MDL	ug/L	5.0	60-29-7
Ethyl Methacrylate	< MDL	ug/L	5.0	97-63-2
Ethylbenzene	< MDL	ug/L	5.0	100-41-4
Hexachlorobutadiene	< MDL	ug/L	5.0	67-69-3
Hexachloroethane	< MDL	ug/L	5.0	67-72-1
Iodomethane	< MDL	ug/L	5.0	74-83-4
Isopropylbenzene	< MDL	ug/L	5.0	99-87-6
m-Xylene	< MDL	ug/L	5.0	108-39-3
Methacrylonitrile	< MDL	ug/L	5.0	126-98-7
Methyl t-Butyl Ether	< MDL	ug/L	5.0	1634-04-4
Methylacrylate	< MDL	ug/L	5.0	96-33-3
Methylene Chloride	< MDL	ug/L	5.0	75-09-2
Methylmethacrylate	< MDL	ug/L	5.0	80-62-6
n-Butylbenzene	< MDL	ug/L	5.0	104-51-8
n-Propylbenzene	< MDL	ug/L	5.0	91-20-3
Naphthalene	< MDL	ug/L	5.0	98-95-3
Nitrobenzene	< MDL	ug/L	5.0	95-47-6
o-Xylene	< MDL	ug/L	5.0	106-42-3
p-Xylene	< MDL	ug/L	5.0	79-01-7
Pentachloroethane	< MDL	ug/L	5.0	

RECEIVED 75-25-2 GROUNDWATER BRANCH 75-15-0 56-23-5 107-14-2 108-90-7 75-00-3 67-66-3 74-87-3 156-59-2 10061-01-5 124-48-1 74-95-3 75-71-8 60-29-7 97-63-2 100-41-4 87-68-3 67-72-1 74-83-4 99-87-6 108-39-3 126-98-7 1634-04-4 96-33-3 75-09-2 80-62-6 104-51-8 103-65-1 91-20-3 98-95-3 95-47-6 106-42-3 79-01-7

Sample Number..... AA19485

Vola s in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00

Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
Propionitrile	< MDL	ug/L	5.0	107-12-0
sec-Butylbenzene	< MDL	ug/L	5.0	135-98-8
Styrene	< MDL	ug/L	5.0	100-42-5
tert-Butylbenzene	< MDL	ug/L	5.0	98-06-6
Tetrachloroethylene	< MDL	ug/L	5.0	127-18-4
Tetrahydrofuran	< MDL	ug/L	5.0	109-99-9
Toluene	< MDL	ug/L	5.0	108-88-3
trans-1,2-Dichloroethene	< MDL	ug/L	5.0	156-60-5
trans-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-02-6
trans-1,4-Dichloro-2-butene	< MDL	ug/L	5.0	110-57-6
Trichloroethene	36.1	ug/L	5.0	79-01-6
Trichlorofluoromethane	< MDL	ug/L	5.0	75-69-4
Vinyl Chloride	< MDL	ug/L	5.0	75-01-4

Sample Number..... AA19485

ADEM's MC TGOMERY LABORATORY AI YSIS REPORT

ADEM CENTRAL LAB

Report Date: 3/24/00

Send Report To: E. M. JIMMERSON

Sample ID: AA19486

Source of Sample: COLISEUM BLVD. PLUME

Location of Sample: DITCH WS - 08

Collection Date: 3/21/00

Collection Time: 3:15:00 PM

Sample Collector: EMP-MICHELLEPA

Sample Matrix: GWATER

Fund Code: 348

This sample was received in our lab by: VEH

Submittal Date: 3/22/00

Submittal Time: 8:00:00 AM

Original Report Date: 3/24/00

Validated By: WBB Date: 3/24/00

APR 2000 RECEIVED ADEM GROUNDWATER BRANCH

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A close review by our Quality Assurance Program certifies that all prescribed test hold times were met and our strict quality assurance standards were observed.

Submitted by: Bill Brackin
Quality Assurance Manager

This cover sheet is an integral part of the analytical report that follows.

ADEM's Central Laboratory has met all Requirements for Certification by EPA Region IV Analyze Samples for all of the Parameters Required Under the Safe Drinking Water A

MAR 2000 RECEIVED MED.-B

Volatiles in Liquids

Method Reference..... SW8260B

Date Completed... 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
1,1,1,2-Tetrachloroethane	< MDL	ug/L	5.0	630-20-6
1,1,1-Trichloroethane	< MDL	ug/L	5.0	71-55-6
1,1,2,2-Tetrachloroethane	< MDL	ug/L	5.0	79-34-5

Sample Number..... AA19486

Vola s in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	
1,1,2-Trichloroethane	< MDL	ug/L	5.0	79-00-5
1,1-Dichloroethane	< MDL	ug/L	5.0	75-34-3
1,1-Dichloroethene	< MDL	ug/L	5.0	75-35-4
1,1-Dichloropropanone	< MDL	ug/L	5.0	513-88-2
1,1-Dichloropropene	< MDL	ug/L	5.0	563-58-6
1,2,3-Trichlorobenzene	< MDL	ug/L	5.0	87-61-6
1,2,3-Trichloropropane	< MDL	ug/L	5.0	96-18-4
1,2,4-Trichlorobenzene	< MDL	ug/L	5.0	120-82-1
1,2,4-Trimethylbenzene	< MDL	ug/L	5.0	95-63-6
1,2-Dibromo-3-Chloropropane	< MDL	ug/L	5.0	96-12-8
1,2-Dibromoethane (EDB)	< MDL	ug/L	5.0	106-93-4
1,2-Dichlorobenzene	< MDL	ug/L	5.0	95-50-1
1,2-Dichloroethane	< MDL	ug/L	5.0	107-06-2
1,2-Dichloropropane	< MDL	ug/L	5.0	78-87-5
1,3,5-Trimethylbenzene	< MDL	ug/L	5.0	108-67-8
1,3-Dichlorobenzene	< MDL	ug/L	5.0	541-73-1
1,3-Dichloropropane	< MDL	ug/L	5.0	142-28-9
1,4-Dichlorobenzene	< MDL	ug/L	5.0	106-46-7
1-Chlorobutane	< MDL	ug/L	5.0	109-69-3
2,2-Dichloropropane	< MDL	ug/L	5.0	590-20-7
2-Butanone	< MDL	ug/L	5.0	78-93-3
2-Chlorotoluene	< MDL	ug/L	5.0	95-49-8
2-Hexanone	< MDL	ug/L	5.0	591-78-6
2-Nitropropane	< MDL	ug/L	5.0	79-46-9
4-Chlorotoluene	< MDL	ug/L	5.0	106-43-4
4-Isopropyltoluene	< MDL	ug/L	5.0	99-87-6
4-Methyl-2-pentanone (MIBK)	< MDL	ug/L	5.0	108-10-1
Acetone	< MDL	ug/L	10.0	67-64-1
Acrylonitrile	< MDL	ug/L	5.0	107-13-1
Allyl Chloride	< MDL	ug/L	5.0	107-05-1
Benzene	< MDL	ug/L	5.0	71-43-2
Bromobenzene	< MDL	ug/L	5.0	108-86-1
Bromochloromethane	< MDL	ug/L	5.0	74-97-5
Bromodichloromethane	< MDL	ug/L	5.0	74-97-5

APR 2000
GROUNDWATER

Vola s in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
Bromoform	< MDL	ug/L	5.0	75-25-2
Bromomethane	< MDL	ug/L	5.0	74-83-9
Carbon Disulfide	< MDL	ug/L	5.0	75-15-0
Carbon Tetrachloride	< MDL	ug/L	5.0	56-23-5
Chloroacetonitrile	< MDL	ug/L	5.0	107-14-2
Chlorobenzene	< MDL	ug/L	5.0	108-90-7
Chloroethane	< MDL	ug/L	5.0	75-00-3
Chloroform	< MDL	ug/L	5.0	67-66-3
Chloromethane	< MDL	ug/L	5.0	74-87-3
cis-1,2-Dichloroethene	< MDL	ug/L	5.0	156-59-2
cis-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-01-5
Dibromochloromethane	< MDL	ug/L	5.0	124-48-1
Dibromomethane	< MDL	ug/L	5.0	74-95-3
Dichlorodifluoromethane	< MDL	ug/L	5.0	75-71-8
Diethyl Ether	< MDL	ug/L	5.0	60-29-7
Ethyl Methacrylate	< MDL	ug/L	5.0	97-63-2
Ethylbenzene	< MDL	ug/L	5.0	100-41-4
Hexachlorobutadiene	< MDL	ug/L	5.0	87-68-3
Hexachloroethane	< MDL	ug/L	5.0	67-72-1
Iodomethane	< MDL	ug/L	5.0	74-88-4
Isopropylbenzene	< MDL	ug/L	5.0	99-62-8
m-Xylene	< MDL	ug/L	5.0	108-39-3
Methacrylonitrile	< MDL	ug/L	5.0	126-98-7
Methyl t-Butyl Ether	< MDL	ug/L	5.0	1634-04-4
Methylacrylate	< MDL	ug/L	5.0	96-33-3
Methylene Chloride	< MDL	ug/L	5.0	75-09-2
Methylmethacrylate	< MDL	ug/L	5.0	98-82-8
n-Butylbenzene	< MDL	ug/L	5.0	104-51-8
n-Propylbenzene	< MDL	ug/L	5.0	103-65-1
Naphthalene	< MDL	ug/L	5.0	91-20-3
Nitrobenzene	< MDL	ug/L	5.0	95-85-3
o-Xylene	< MDL	ug/L	5.0	95-47-6
p-Xylene	< MDL	ug/L	5.0	106-42-3
Pentachloroethane	< MDL	ug/L	5.0	76-01-7

Sample Number..... AA19486

Vola. s in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
Propionitrile	< MDL	ug/L	5.0	107-12-0
sec-Butylbenzene	< MDL	ug/L	5.0	135-98-8
Styrene	< MDL	ug/L	5.0	100-42-5
tert-Butylbenzene	< MDL	ug/L	5.0	98-06-6
Tetrachloroethylene	< MDL	ug/L	5.0	127-18-4
Tetrahydrofuran	< MDL	ug/L	5.0	109-99-9
Toluene	< MDL	ug/L	5.0	108-88-3
trans-1,2-Dichloroethene	< MDL	ug/L	5.0	156-60-5
trans-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-02-6
trans-1,4-Dichloro-2-butene	< MDL	ug/L	5.0	110-57-6
Trichloroethene	147.5	ug/L	5.0	79-01-6
Trichlorofluoromethane	< MDL	ug/L	5.0	75-69-4
Vinyl Chloride	< MDL	ug/L	5.0	75-01-4

APR 2000
RECEIVED
ADEM
GROUNDWATER
BRANCH

ADEM's MC TGOMERY LABORATORY AI LYSIS REPORT

ADEM CENTRAL LAB

ALABAMA GREAT SEAL

APR 2000 RECEIVED ADEM GROUNDWATER BRANCH

Report Date: 3/24/00

Sample ID: AA19484

Send Report To: E. M. JIMMERSON

Source of Sample: COLISEUM BLVD. PLUME

Location of Sample: DITCH WS - 04

Collection Date: 3/21/00

Collection Time: 2:45:00 PM

Sample Collector: EMP-MICHELLEPA

Sample Matrix: GWATER

Fund Code: 348

This sample was received in our lab by: VEH

Submittal Date: 3/22/00

Submittal Time: 8:00:00 AM

Original Report Date: 3/24/00

Validated By: WBB Date: 3/23/00

The results on the attached report are from the sample that was received and is referenced above. The sample was analyzed using standard EPA testing procedures and quality analysis protocol. Instrument calibration and quality control are within acceptable limits of precision and accuracy.

A close review by our Quality Assurance Program certifies that all prescribed test hold times were met and our strict quality assurance standards were observed.

Submitted by: Bill Brackin
Quality Assurance Manager

MAR 2000 RECEIVED ADEM - FO MONTGOMERY

This cover sheet is an integral part of the analytical report that follows.

ADEM's Central Laboratory has met all Requirements for Certification by EPA Region IV to Analyze Samples for all of the Parameters Required Under the Safe Drinking Water Act.

Volatiles in Liquids

Method Reference..... SW8260B

Date Completed... 3/22/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
1,1,1,2-Tetrachloroethane	< MDL	ug/L	5.0	630-20-6
1,1,1-Trichloroethane	< MDL	ug/L	5.0	71-55-6
1,1,2,2-Tetrachloroethane	< MDL	ug/L	5.0	79-34-5

Sample Number..... AA19484

Vola. s in Liquids

Method Reference..... SW8260B

Date Completed.. 3/22/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
1,1,2-Trichloroethane	< MDL	ug/L	5.0	79-00-5
1,1-Dichloroethane	< MDL	ug/L	5.0	75-34-3
1,1-Dichloroethene	< MDL	ug/L	5.0	75-35-4
1,1-Dichloropropanone	< MDL	ug/L	5.0	513-88-2
1,1-Dichloropropene	< MDL	ug/L	5.0	563-58-6
1,2,3-Trichlorobenzene	< MDL	ug/L	5.0	87-61-6
1,2,3-Trichloropropane	< MDL	ug/L	5.0	96-18-4
1,2,4-Trichlorobenzene	< MDL	ug/L	5.0	120-82-1
1,2,4-Trimethylbenzene	< MDL	ug/L	5.0	95-63-6
1,2-Dibromo-3-Chloropropane	< MDL	ug/L	5.0	96-12-8
1,2-Dibromoethane (EDB)	< MDL	ug/L	5.0	106-93-4
1,2-Dichlorobenzene	< MDL	ug/L	5.0	95-50-1
1,2-Dichloroethane	< MDL	ug/L	5.0	107-06-2
1,2-Dichloropropane	< MDL	ug/L	5.0	78-87-5
1,3,5-Trimethylbenzene	< MDL	ug/L	5.0	108-67-8
1,3-Dichlorobenzene	< MDL	ug/L	5.0	541-73-1
1,3-Dichloropropane	< MDL	ug/L	5.0	142-28-9
1,4-Dichlorobenzene	< MDL	ug/L	5.0	106-46-7
1-Chlorobutane	< MDL	ug/L	5.0	100-00-3
2,2-Dichloropropane	< MDL	ug/L	5.0	590-20-7
2-Butanone	< MDL	ug/L	5.0	78-93-3
2-Chlorotoluene	< MDL	ug/L	5.0	95-49-8
2-Hexanone	< MDL	ug/L	5.0	591-78-6
2-Nitropropane	< MDL	ug/L	5.0	95-49-8
4-Chlorotoluene	< MDL	ug/L	5.0	106-43-4
4-Isopropyltoluene	< MDL	ug/L	5.0	99-87-6
4-Methyl-2-pentanone (MIBK)	< MDL	ug/L	5.0	108-10-1
Acetone	< MDL	ug/L	10.0	67-64-1
Acrylonitrile	< MDL	ug/L	5.0	107-13-1
Allyl Chloride	< MDL	ug/L	5.0	107-05-1
Benzene	< MDL	ug/L	5.0	71-43-2
Bromobenzene	< MDL	ug/L	5.0	108-86-1
Bromochloromethane	< MDL	ug/L	5.0	74-97-5
Bromodichloromethane	< MDL	ug/L	5.0	74-97-5

APR 2000 RECEIVED GROUNDWATER BRANCH

Sample Number..... AA19484

Volat ; in Liquids

Method Reference..... SW8260B

Date Completed.. 3/22/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS
Bromoform	< MDL	ug/L	5.0	75-25-2
Bromomethane	< MDL	ug/L	5.0	74-83-9
Carbon Disulfide	< MDL	ug/L	5.0	75-15-0
Carbon Tetrachloride	< MDL	ug/L	5.0	56-23-5
Chloroacetonitrile	< MDL	ug/L	5.0	107-14-2
Chlorobenzene	< MDL	ug/L	5.0	108-90-7
Chloroethane	< MDL	ug/L	5.0	75-00-3
Chloroform	< MDL	ug/L	5.0	67-66-3
Chloromethane	< MDL	ug/L	5.0	74-87-3
cis-1,2-Dichloroethene	< MDL	ug/L	5.0	156-59-2
cis-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-01-5
Dibromochloromethane	< MDL	ug/L	5.0	124-48-1
Dibromomethane	< MDL	ug/L	5.0	74-95-3
Dichlorodifluoromethane	< MDL	ug/L	5.0	75-71-8
Diethyl Ether	< MDL	ug/L	5.0	60-29-7
Ethyl Methacrylate	< MDL	ug/L	5.0	97-63-2
Ethylbenzene	< MDL	ug/L	5.0	100-41-4
Hexachlorobutadiene	< MDL	ug/L	5.0	87-68-3
Hexachloroethane	< MDL	ug/L	5.0	67-72-1
Iodomethane	< MDL	ug/L	5.0	74-88-4
Isopropylbenzene	< MDL	ug/L	5.0	98-82-8
m-Xylene	< MDL	ug/L	5.0	108-38-3
Methacrylonitrile	< MDL	ug/L	5.0	126-98-7
Methyl t-Butyl Ether	< MDL	ug/L	5.0	1634-04-4
Methylacrylate	< MDL	ug/L	5.0	96-33-3
Methylene Chloride	< MDL	ug/L	5.0	75-69-2
Methylmethacrylate	< MDL	ug/L	5.0	80-62-6
n-Butylbenzene	< MDL	ug/L	5.0	104-51-8
n-Propylbenzene	< MDL	ug/L	5.0	103-65-1
Naphthalene	< MDL	ug/L	5.0	91-20-3
Nitrobenzene	< MDL	ug/L	5.0	95-85-3
o-Xylene	< MDL	ug/L	5.0	95-47-6
p-Xylene	< MDL	ug/L	5.0	106-42-3
Pentachloroethane	< MDL	ug/L	5.0	76-01-7

Sample Number..... AA19484

Volat ; in Liquids

Method Reference..... SW8260B

Date Completed.. 3/22/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
Propionitrile	< MDL	ug/L	5.0	107-12-0
sec-Butylbenzene	< MDL	ug/L	5.0	135-98-8
Styrene	< MDL	ug/L	5.0	100-42-5
tert-Butylbenzene	< MDL	ug/L	5.0	98-06-6
Tetrachloroethylene	< MDL	ug/L	5.0	127-18-4
Tetrahydrofuran	< MDL	ug/L	5.0	109-99-9
Toluene	< MDL	ug/L	5.0	108-88-3
trans-1,2-Dichloroethene	< MDL	ug/L	5.0	156-60-5
trans-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-02-6
trans-1,4-Dichloro-2-butene	< MDL	ug/L	5.0	110-57-6
Trichloroethene	32.3	ug/L	5.0	79-01-6
Trichlorofluoromethane	< MDL	ug/L	5.0	75-69-4
Vinyl Chloride	< MDL	ug/L	5.0	75-01-4

APR 2000
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GROUNDWATER
BRANCH

ADEM's MO GOMERY LABORATORY AN YSIS REPORT

ADEM CENTRAL LAB

Report Date: 3/24/00

Sample ID: AA19485

Send Report To: E. M. JIMMERSON

Source of Sample: COLISEUM BLVD. PLUME

Location of Sample: DITCH WS - 05

Collection Date: 3/21/00

Collection Time: 3:00:00 PM

Sample Collector: EMP-MICHELLEPA

Sample Matrix: GWATER

Fund Code: 348

This sample was received in our lab by: VERDEM

Submittal Date: 3/22/00

Submittal Time: 8:00:00 AM

Original Report Date: 3/24/00

Validated By: WBB Date: 3/23/00

APR 2000 RECEIVED VERDEM GROUNDWATER BRANCH

The results on the attached report are from the sample that was received and is referenced above. The sample was analyzed using standard EPA testing procedures and quality analysis protocol. Instrument calibration and quality control are within acceptable limits of precision and accuracy.

A close review by our Quality Assurance Program certifies that all prescribed test hold times were met and our strict quality assurance standards were observed.

Submitted by: Bill Brackin
Quality Assurance Manager

This cover sheet is an integral part of the analytical report that follows.

ADEM's Central Laboratory has met all Requirements for Certification by EPA Region IV Analyze Samples for all of the Parameters Required Under the Safe Drinking Water Act.

MAR 2000 RECEIVED ADEM - FO MONTGOMERY

Volatiles in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
1,1,1,2-Tetrachloroethane	< MDL	ug/L	5.0	630-20-6
1,1,1-Trichloroethane	< MDL	ug/L	5.0	71-55-6
1,1,2,2-Tetrachloroethane	< MDL	ug/L	5.0	79-34-5

Sample Number..... AA19485

Vol les in Liquids

Method Reference..... SW8260B

Date Completed... 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	
1,1,2-Trichloroethane	< MDL	ug/L	5.0	79-00-5
1,1-Dichloroethane	< MDL	ug/L	5.0	75-34-3
1,1-Dichloroethene	< MDL	ug/L	5.0	75-35-4
1,1-Dichloropropanone	< MDL	ug/L	5.0	513-88-2
1,1-Dichloropropene	< MDL	ug/L	5.0	563-58-6
1,2,3-Trichlorobenzene	< MDL	ug/L	5.0	87-61-6
1,2,3-Trichloropropane	< MDL	ug/L	5.0	96-18-4
1,2,4-Trichlorobenzene	< MDL	ug/L	5.0	120-82-1
1,2,4-Trimethylbenzene	< MDL	ug/L	5.0	95-63-6
1,2-Dibromo-3-Chloropropane	< MDL	ug/L	5.0	96-12-8
1,2-Dibromoethane (EDB)	< MDL	ug/L	5.0	106-93-4
1,2-Dichlorobenzene	< MDL	ug/L	5.0	95-50-1
1,2-Dichloroethane	< MDL	ug/L	5.0	107-06-2
1,2-Dichloropropane	< MDL	ug/L	5.0	78-87-5
1,3,5-Trimethylbenzene	< MDL	ug/L	5.0	108-67-8
1,3-Dichlorobenzene	< MDL	ug/L	5.0	541-73-1
1,3-Dichloropropane	< MDL	ug/L	5.0	142-28-9
1,4-Dichlorobenzene	< MDL	ug/L	5.0	106-46-7
1-Chlorobutane	< MDL	ug/L	5.0	109-69-3
2,2-Dichloropropane	< MDL	ug/L	5.0	590-20-7
2-Butanone	< MDL	ug/L	5.0	78-93-3
2-Chlorotoluene	< MDL	ug/L	5.0	95-49-8
2-Hexanone	< MDL	ug/L	5.0	591-78-6
2-Nitropropane	< MDL	ug/L	5.0	79-46-9
4-Chlorotoluene	< MDL	ug/L	5.0	106-43-4
4-Isopropyltoluene	< MDL	ug/L	5.0	99-87-6
4-Methyl-2-pentanone (MIBK)	< MDL	ug/L	5.0	108-10-1
Acetone	< MDL	ug/L	10.0	67-64-1
Acrylonitrile	< MDL	ug/L	5.0	107-13-1
Allyl Chloride	< MDL	ug/L	5.0	107-05-1
Benzene	< MDL	ug/L	5.0	71-43-2
Bromobenzene	< MDL	ug/L	5.0	108-86-1
Bromochloromethane	< MDL	ug/L	5.0	74-97-5
Bromodichloromethane	< MDL	ug/L	5.0	74-97-5

APR 2000 RECEIVED GROUNDWATER BRANCH

Sample Number..... AA19485

Volat. ; in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS#
Bromoform	< MDL	ug/L	5.0	75-25-2
Bromomethane	< MDL	ug/L	5.0	74-83-9
Carbon Disulfide	< MDL	ug/L	5.0	75-15-0
Carbon Tetrachloride	< MDL	ug/L	5.0	56-23-5
Chloroacetonitrile	< MDL	ug/L	5.0	107-14-2
Chlorobenzene	< MDL	ug/L	5.0	108-90-7
Chloroethane	< MDL	ug/L	5.0	75-00-3
Chloroform	< MDL	ug/L	5.0	67-66-3
Chloromethane	< MDL	ug/L	5.0	74-87-3
cis-1,2-Dichloroethene	< MDL	ug/L	5.0	156-59-2
cis-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-01-5
Dibromochloromethane	< MDL	ug/L	5.0	124-48-1
Dibromomethane	< MDL	ug/L	5.0	74-95-3
Dichlorodifluoromethane	< MDL	ug/L	5.0	75-71-8
Diethyl Ether	< MDL	ug/L	5.0	60-29-7
Ethyl Methacrylate	< MDL	ug/L	5.0	97-63-2
Ethylbenzene	< MDL	ug/L	5.0	100-41-4
Hexachlorobutadiene	< MDL	ug/L	5.0	87-68-3
Hexachloroethane	< MDL	ug/L	5.0	67-72-1
Iodomethane	< MDL	ug/L	5.0	74-88-4
Isopropylbenzene	< MDL	ug/L	5.0	98-82-8
m-Xylene	< MDL	ug/L	5.0	108-38-3
Methacrylonitrile	< MDL	ug/L	5.0	126-98-7
Methyl t-Butyl Ether	< MDL	ug/L	5.0	1634-04-4
Methylacrylate	< MDL	ug/L	5.0	96-33-3
Methylene Chloride	< MDL	ug/L	5.0	75-09-2
Methylmethacrylate	< MDL	ug/L	5.0	80-62-6
n-Butylbenzene	< MDL	ug/L	5.0	104-51-8
n-Propylbenzene	< MDL	ug/L	5.0	103-65-1
Naphthalene	< MDL	ug/L	5.0	91-20-3
Nitrobenzene	< MDL	ug/L	5.0	95-95-3
o-Xylene	< MDL	ug/L	5.0	95-47-6
p-Xylene	< MDL	ug/L	5.0	106-42-3
Pentachloroethane	< MDL	ug/L	5.0	76-01-7

RECEIVED
75-ADEM
GROUNDWATER
BRANCH

Sample Number..... AA19485

Vola s in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00

Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
Propionitrile	< MDL	ug/L	5.0	107-12-0
sec-Butylbenzene	< MDL	ug/L	5.0	135-98-8
Styrene	< MDL	ug/L	5.0	100-42-5
tert-Butylbenzene	< MDL	ug/L	5.0	98-06-6
Tetrachloroethylene	< MDL	ug/L	5.0	127-18-4
Tetrahydrofuran	< MDL	ug/L	5.0	109-99-9
Toluene	< MDL	ug/L	5.0	108-88-3
trans-1,2-Dichloroethene	< MDL	ug/L	5.0	156-60-5
trans-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-02-6
trans-1,4-Dichloro-2-butene	< MDL	ug/L	5.0	110-57-6
Trichloroethene	36.1	ug/L	5.0	79-01-6
Trichlorofluoromethane	< MDL	ug/L	5.0	75-69-4
Vinyl Chloride	< MDL	ug/L	5.0	75-01-4

Sample Number..... AA19485

ADEM's MC TGOMERY LABORATORY AI YSIS REPORT

ADEM CENTRAL LAB

Report Date: 3/24/00

Send Report To: E. M. JIMMERSON

Sample ID: AA19486

Source of Sample: COLISEUM BLVD. PLUME

Location of Sample: DITCH WS - 06

Collection Date: 3/21/00

Collection Time: 3:15:00 PM

Sample Collector: EMP-MICHELLEPA

Sample Matrix: GWATER

Fund Code: 348

This sample was received in our lab by VEH

Submittal Date: 3/22/00

Submittal Time: 8:00:00 AM

Original Report Date: 3/24/00

Validated By: WBB Date: 3/24/00

APR 2000 RECEIVED ADEM GROUNDWATER BRANCH

The results on the attached report are from the sample that was received and is referenced above. The sample was analyzed using standard EPA testing procedures and quality analysis protocol. Instrument calibration and quality control are within acceptable limits of precision and accuracy.

A close review by our Quality Assurance Program certifies that all prescribed test hold times were met and our strict quality assurance standards were observed.

Submitted by: Bill Brackin
Quality Assurance Manager

This cover sheet is an integral part of the analytical report that follows.

ADEM's Central Laboratory has met all Requirements for Certification by EPA Region IV Analyze Samples for all of the Parameters Required Under the Safe Drinking Water A

MAR 2000 RECEIVED ADEM-FB

Volatiles in Liquids

Method Reference..... SW8260B

Date Completed... 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
1,1,1,2-Tetrachloroethane	< MDL	ug/L	5.0	630-20-6
1,1,1-Trichloroethane	< MDL	ug/L	5.0	71-55-6
1,1,2,2-Tetrachloroethane	< MDL	ug/L	5.0	79-34-5

Sample Number..... AA19486

Vola. s in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00 Analyst..... RLH

APR 2000 RECEIVED ADEM & GROUNDWATER BRANCH

Parameter	Result	Units	Method Detection Limit	CAS
1,1,2-Trichloroethane	< MDL	ug/L	5.0	79-00-5
1,1-Dichloroethane	< MDL	ug/L	5.0	75-34-3
1,1-Dichloroethene	< MDL	ug/L	5.0	75-35-4
1,1-Dichloropropanone	< MDL	ug/L	5.0	513-88-2
1,1-Dichloropropene	< MDL	ug/L	5.0	563-58-6
1,2,3-Trichlorobenzene	< MDL	ug/L	5.0	87-61-6
1,2,3-Trichloropropane	< MDL	ug/L	5.0	96-18-4
1,2,4-Trichlorobenzene	< MDL	ug/L	5.0	120-82-1
1,2,4-Trimethylbenzene	< MDL	ug/L	5.0	95-63-6
1,2-Dibromo-3-Chloropropane	< MDL	ug/L	5.0	96-12-8
1,2-Dibromoethane (EDB)	< MDL	ug/L	5.0	106-93-4
1,2-Dichlorobenzene	< MDL	ug/L	5.0	95-50-1
1,2-Dichloroethane	< MDL	ug/L	5.0	107-06-2
1,2-Dichloropropane	< MDL	ug/L	5.0	78-87-5
1,3,5-Trimethylbenzene	< MDL	ug/L	5.0	108-67-8
1,3-Dichlorobenzene	< MDL	ug/L	5.0	541-73-1
1,3-Dichloropropane	< MDL	ug/L	5.0	142-28-9
1,4-Dichlorobenzene	< MDL	ug/L	5.0	106-46-7
1-Chlorobutane	< MDL	ug/L	5.0	109-69-3
2,2-Dichloropropane	< MDL	ug/L	5.0	590-20-7
2-Butanone	< MDL	ug/L	5.0	78-93-3
2-Chlorotoluene	< MDL	ug/L	5.0	95-49-8
2-Hexanone	< MDL	ug/L	5.0	591-78-6
2-Nitropropane	< MDL	ug/L	5.0	79-46-9
4-Chlorotoluene	< MDL	ug/L	5.0	106-43-4
4-Isopropyltoluene	< MDL	ug/L	5.0	99-87-6
4-Methyl-2-pentanone (MIBK)	< MDL	ug/L	5.0	108-10-1
Acetone	< MDL	ug/L	10.0	67-64-1
Acrylonitrile	< MDL	ug/L	5.0	107-13-1
Ally Chloride	< MDL	ug/L	5.0	107-05-1
Benzene	< MDL	ug/L	5.0	71-43-2
Bromobenzene	< MDL	ug/L	5.0	108-86-1
Bromochloromethane	< MDL	ug/L	5.0	74-97-5
Bromodichloromethane	< MDL	ug/L	5.0	74-97-5

Vola s in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
Bromoform	< MDL	ug/L	5.0	75-25-2
Bromomethane	< MDL	ug/L	5.0	74-83-9
Carbon Disulfide	< MDL	ug/L	5.0	75-15-0
Carbon Tetrachloride	< MDL	ug/L	5.0	56-23-5
Chloroacetonitrile	< MDL	ug/L	5.0	107-14-2
Chlorobenzene	< MDL	ug/L	5.0	108-90-7
Chloroethane	< MDL	ug/L	5.0	75-00-3
Chloroform	< MDL	ug/L	5.0	67-66-3
Chloromethane	< MDL	ug/L	5.0	74-87-3
cis-1,2-Dichloroethene	< MDL	ug/L	5.0	156-59-2
cis-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-01-5
Dibromochloromethane	< MDL	ug/L	5.0	124-48-1
Dibromomethane	< MDL	ug/L	5.0	74-95-3
Dichlorodifluoromethane	< MDL	ug/L	5.0	75-71-8
Diethyl Ether	< MDL	ug/L	5.0	60-29-7
Ethyl Methacrylate	< MDL	ug/L	5.0	97-63-2
Ethylbenzene	< MDL	ug/L	5.0	100-41-4
Hexachlorobutadiene	< MDL	ug/L	5.0	87-68-3
Hexachloroethane	< MDL	ug/L	5.0	67-72-1
Iodomethane	< MDL	ug/L	5.0	74-88-4
Isopropylbenzene	< MDL	ug/L	5.0	98-82-8
m-Xylene	< MDL	ug/L	5.0	108-38-3
Methacrylonitrile	< MDL	ug/L	5.0	126-98-7
Methyl t-Butyl Ether	< MDL	ug/L	5.0	1634-04-4
Methylacrylate	< MDL	ug/L	5.0	96-33-3
Methylene Chloride	< MDL	ug/L	5.0	75-09-2
Methylmethacrylate	< MDL	ug/L	5.0	80-62-6
n-Butylbenzene	< MDL	ug/L	5.0	104-51-8
n-Propylbenzene	< MDL	ug/L	5.0	103-65-1
Naphthalene	< MDL	ug/L	5.0	91-20-3
Nitrobenzene	< MDL	ug/L	5.0	98-95-3
o-Xylene	< MDL	ug/L	5.0	95-47-6
p-Xylene	< MDL	ug/L	5.0	106-42-3
Pentachloroethane	< MDL	ug/L	5.0	76-01-7

Sample Number..... AA19486

Vola. s in Liquids

Method Reference..... SW8260B

Date Completed.. 3/23/00 Analyst..... RLH

Parameter	Result	Units	Method Detection Limit	CAS #
Propionitrile	< MDL	ug/L	5.0	107-12-0
sec-Butylbenzene	< MDL	ug/L	5.0	135-98-8
Styrene	< MDL	ug/L	5.0	100-42-5
tert-Butylbenzene	< MDL	ug/L	5.0	98-06-6
Tetrachloroethylene	< MDL	ug/L	5.0	127-18-4
Tetrahydrofuran	< MDL	ug/L	5.0	109-99-9
Toluene	< MDL	ug/L	5.0	108-88-3
trans-1,2-Dichloroethene	< MDL	ug/L	5.0	156-60-5
trans-1,3-Dichloropropene	< MDL	ug/L	5.0	10061-02-6
trans-1,4-Dichloro-2-butene	< MDL	ug/L	5.0	110-57-6
Trichloroethene	147.5	ug/L	5.0	79-01-6
Trichlorofluoromethane	< MDL	ug/L	5.0	75-69-4
Vinyl Chloride	< MDL	ug/L	5.0	75-01-4

APR 2000
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GROUNDWATER
BRANCH

REFERENCE 22

ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
POST OFFICE BOX 301463 • 1400 COLISEUM BLVD 36110-2059
MONTGOMERY, ALABAMA 36130-1463
WWW.ADEM.STATE.AL.US
(334) 271-7700

JAMES W. WARR
DIRECTOR

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July 7, 2000

MEMORANDUM

TO: Stephen A. Cobb, Chief
Hazardous Waste Branch
Land Division

FROM: Joseph L. Gibson, Hydrogeologist J. L. G.
Groundwater Branch
Water division

RE: Surface Water Sampling – 5/24/00
Coliseum Boulevard Plume
Montgomery, Montgomery County, Alabama

On May 24, 2000, ADEM personnel collected four surface water samples from the surface water drainage pathway from the Coliseum Boulevard Plume Site. Two samples were collected from an unnamed tributary to Three-Mile Branch located south of the railroad tracks and north of the Northern Bypass. Two samples were collected from Three-Mile Branch with one sample collected north (downgradient) of the confluence of the unnamed tributary and one sample collected south (upgradient) of the confluence of the unnamed tributary.

The samples were submitted to an onsite mobile lab for Volatile Organic Compound (VOC) analysis. The analytical results for the samples were below detection limits. One split sample (CBP/SW/UT/W3) was collected and submitted to the ADEM Central Laboratory for VOC analysis. The analytical results for this sample was below detection limits.

cc: Sonja Massey, Chief, Groundwater Branch
Jymalyn Redmond, Chief, Site Assessment Unit

Birmingham
110 Vulcan Road
Birmingham, Alabama 35209-4702
(205) 942-6168
(205) 941-6603 [Fax]

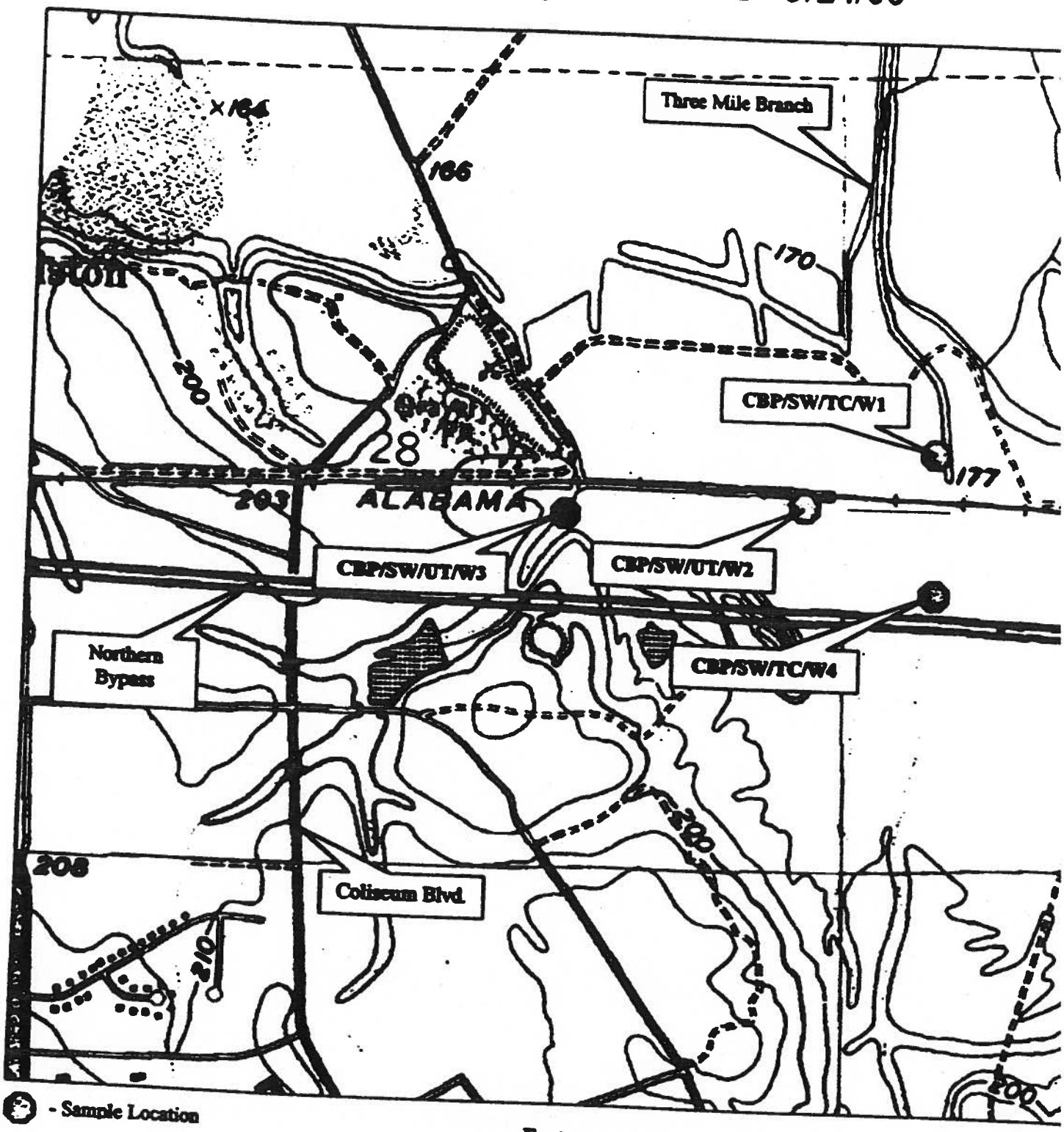
Decatur
2708 6th Avenue, SE Suite B
Decatur, Alabama 35603-1508
(256) 353-1713
(256) 340-9359 [Fax]

Mobile
2204 Perimeter Road
Mobile, Alabama 36615-1131
(334) 450-3400
(334) 479-2593 [Fax]

Mobile – Coastal
4171 Commanders Drive
Mobile, Alabama 36615-1421
(334) 432-6533
(334) 432-6598 [Fax]

Printed on Recycled Pa

Surface Water Sample Locations - 5/24/00



Feet

0 500 1,000 1,500

N W E S

Coliseum Boulevard Plume
Montgomery, Montgomery County, Alabama

Montgomery North, Alabama
U.S.G.S. Topographic Map
1958
Photorevised 1981

REFERENCE 23

Page: 1
Name: Joseph Gibson
Date: 8/29/00

Phone Conversation Record

State of Alabama
Department of Environmental Management

Conversation with: Keith Yarbrough
Phone #: (334) 245-7784
Company: Montgomery Water Works
Location: Montgomery, Al

NOTES: Mr. Yarbrough stated that the Montgomery Water Works is a blended system and serves approximately 216,000 people. The system pumps groundwater from Forty-two wells and pumps surface water from an intake on the Tallapoosa River. Four of the wells in the north well field (15,18, 20, 2) are in stand-by status and are only used in times of drought, and these wells have been use during the summer of 2000. He also Stated that wells 9E and 9W have been closed due to PCE contamination and well 19 has been abandoned.

REFERENCE 24

Page: 1
Name: Joseph Gibson
Date: 9/11/00

Phone Conversation Record

State of Alabama
Department of Environmental Management

Conversation with: Gerald Wilson
Phone #: (334) 245-7784
Company: Alabama Department of Finance
Location: Montgomery, Al

NOTES: Mr. Wilson stated that the Printing and Publication facility on Chisholm Street was opened in 1987, and print of publications for state agencies is conducted at the facility. Mr. Wilson stated that TCE is no used at the facility, but it has been present in some of the cleaning solutions in very small quantities. He also states that fifty-nine employees work at the facility.

REFERENCE 25

Page: 1
Name: Joseph Gibson
Date: 9/11/00

Phone Conversation Record

State of Alabama
Department of Environmental Management

Conversation with: Paula Boychuck
Phone #: (334) 240-4504
Company: Chisholm Community Center
Location: Montgomery, Al

NOTES: Ms. Boychuck stated that the Chisholm Community Center provides Recreational activities for children and adults and employs five people. The center also provides summer activities for approximately 100 children a day. During a typical day other than the summer programs approximately 25 to 50 people use the center. The center was built in 1982.

REFERENCE 26

Page: 1
Name: Joseph Gibson
Date: 9/11/00

Phone Conversation Record

State of Alabama
Department of Environmental Management

Conversation with: Gail Coccaro
Phone #: (334) 240-4900
Company: Montgomery Zoo
Location: Montgomery, Al

NOTES: Ms. Coccaro stated that the Montgomery Zoo was open in 1972 on 6 acres, and expanded to 40 acres in 1991. The zoo employs 80 people and approximately 300,000 people a year visit the zoo. The zoo use the Montgomery Water Works for the majority of their water supply, but some of the exhibits use water from the lake at the northwest corner of the zoo.

REFERENCE 27

Page: 1
Name: Joseph Gibson
Date: 9/11/00

Phone Conversation Record

State of Alabama
Department of Environmental Management

Conversation with: Paula Lacosta
Phone #: (334) 269-3643
Company: Chisholm Elementary School
Location: Montgomery, Al

NOTES: Ms. Lacosta stated that the school was open in 1925 and has a current enrollment of 830 students. The school has a staff of 75 people.

REFERENCE 28

MEMORANDUM

September 20, 2000

To: Mr. Joe Gibson

From: Jim Bearrentine

Re: ALDOT Materials and Tests Complex
and 6TH Division Offices

Dear Mr. Gibson:

Attached is the information you requested. Information concerning the age of the buildings was obtained through a review of drawings and discussions with Ms. Ann Rutherford of our ROW Department and Messrs. John Lorentson and George Conner of our Maintenance Department. Information concerning the number of employees was obtained from Mr. George McNeil of the Finance Department.

Age of buildings - See composite site plan drawing by Chambless and Associates, P.C. Drawing shows construction date for all buildings on ALDOT complex. Note - South wing of Materials and Tests building not shown was constructed in 1994.

Number of employees - General Office - 830
Materials and Tests - 94
6th Division Office - 114
6th Division Lab - 15

Should you have questions, please feel free to contact this office.

Yours very truly,

Jim Bearrentine

Jim Bearrentine, P.E.
Assistant Hazardous Materials Coordinator

JB/RB:rb
Attachment

cc: File

REFERENCE 29

TTL, INC. PRACTICING IN THE GEOSCIENCES

4154 Lomac Street • Montgomery, AL 36106-2886 • Telephone 334-244-0766 • Telefax 334-244-6668

TRANSMITTAL

TO: Alabama Department of Environmental Management
1400 Coliseum Boulevard
Montgomery, Alabama 36110

DATE: September 21, 2000

ATTN: Ms. Jymalyn Redmond

PROJECT:

Coliseum Boulevard Plume Investigation
Montgomery, Alabama

WE ARE SENDING:

Attached are two copies of results of an ambient air sample collected on Broadway Street on July 18, 2000.

Sincerely,
TTL, INC.

Ashley C. Cousins

Ashley C. Cousins, P.E., CHMM

EPA Method TO 14/15

CCAS

Air Toxics Report

Date Sampled: 7/18/00 Sampled by: GM, JC
Date Received: 7/20/00 Client: TTL, Inc.
Date Analyzed: 7/28/00 Address: 4250 Lomac Street
Date Reported: 8/10/00 Montgomery, AL 36106
Analyst: Bruce Gallant
Attention: A. Cousins

CCAS Log No.: 0007014-05
Client Sample ID Ambient
Description: Ambient Air
Client Job ID: 0799-091-04
Canister Number: 438
Sample Prep: Chuk Anozie
total dilution factor: 2

Compound	MW	CAS Number	PQL+ ppbv	PQL+ ug/M³	Results ppbv	Results ug/M³
Benzene	78.1	71-43-2	1.0	3.5	N.D.	N.D.
Carbon Tetrachloride	153.8	56-23-5	1.0	6.9	N.D.	N.D.
Chlorobenzene	112.6	108-90-7	1.0	5.0	N.D.	N.D.
Chloroform	119.4	67-66-3	2.0	10	N.D.	N.D.
1,2-Dibromoethane (EDB)	187.9	106-93-4	2.0	20	N.D.	N.D.
1,2-Dichlorobenzene	147.0	955-50-1	2.0	10	N.D.	N.D.
1,3-Dichlorobenzene	147.0	541-73-1	2.0	10	N.D.	N.D.
1,4-Dichlorobenzene	147.0	106-46-7	2.0	10	N.D.	N.D.
1,1-Dichloroethane (1,1-DCA)	99.0	75-34-3	2.0	8.8	N.D.	N.D.
1,2-Dichloroethane(1,2-DCA)	99.0	107-06-2	2.0	8.8	N.D.	N.D.
1,1-Dichloroethylene(1,1-DCE)	96.9	75-35-4	1.0	4.3	N.D.	N.D.
cis- 1,2-Dichloroethylene (*c*-1,2-DCE)	96.9	156-59-2	2.0	8.7	N.D.	N.D.
1,2-Dichloropropane	113.0	78-87-5	2.0	10	N.D.	N.D.
cis- 1,3-Dichloropropene	111.0	10061-01-5	1.0	5.0	N.D.	N.D.
trans- 1,3-Dichloropropene	111.0	10061-02-6	2.0	10	N.D.	N.D.
Ethylbenzene	106.17	100-41-4	1.0	4.7	N.D.	N.D.
Ethyl Chloride (Chloroethane)	64.5	75-00-3	2.0	5.8	N.D.	N.D.
Freon 11 (Trichlorofluoromethane)	137.4	75-69-4	1.0	6.1	N.D.	N.D.
Freon 12 (Dichlorodifluoromethane)	120.9	75-71-8	1.0	5.4	N.D.#	N.D.#
Freon 113 (1,1,2-Trichlorotrifluoroethane)	187.4	354-58-5	1.0	8.4	N.D.	N.D.
Freon 114 (1,2-Dichlorotetrafluoroethane)	170.9	76-14-12	1.0	7.6	N.D.	N.D.
Methyl Bromide (Bromomethane)	94.9	74-83-9	2.0	8.5	N.D.	N.D.
Methyl Chloride (Chloromethane)	50.5	74-87-3	2.0	4.5	N.D.	N.D.
Methylene Chloride (Dichloromethane)	84.8	75-09-2	10	40	N.D.	N.D.
Perchloroethylene (PCE)	165.8	127-18-4	1.0	7.4	N.D.	N.D.
Styrene	104.2	100-42-5	2.0	9.3	N.D.	N.D.
1,1,2,2-Tetrachloroethane	167.9	79-34-5	4.0	30	N.D.	N.D.
Toluene	92.2	108-88-3	2.0	8.2	N.D.	N.D.
1,1,1-Trichloroethane (1,1,1-TCA)	133.4	71-55-6	2.0	10	N.D.	N.D.
1,1,2-Trichloroethane (1,1,2-TCA)	133.4	79-00-5	2.0	10	N.D.	N.D.
Trichloroethylene (TCE)	131.3	79-01-6	2.0	10	N.D.	N.D.

3:17 PM8/28/00

11140 Petal Street, #250
Dallas, TX 75238

EPA Method TO 14/15

CCAS

Air Toxics Report

Date Sampled: 7/18/00 Sampled by: GM, JC
Date Received: 7/20/00 Client: TTL, Inc.
Date Analyzed: 7/28/00 Address: 4250 Lomac Street
Date Reported: 8/10/00 Montgomery, AL 36106
Analyst: Bruce Gallant
Attention: A. Cousins

CCAS Log No.: 0007014-05
Client Sample ID Ambient
Description: Ambient Air
Client Job ID: 0799-091-04
Canister Number: 438
Sample Prep: Chuk Anozie

Compound	MW	CAS Number	PQL+ ppbv	PQL+ ug/M^3	Results ppbv	Results ug/M
1,2,4-Trimethylbenzene (Pseudocumene)	120.2	95-63-6	2.0	10	N.D.	N.D
1,3,5-Trimethylbenzene (Mesitylene)	120.2	108-67-8	2.0	10	N.D.	N.D
m-Xylene*	106.2	108-38-3	1.0	4.7	N.D.	N.D
p-Xylene*	106.2	106-42-3	1.0	4.7	*	*
o-Xylene	106.2	95-47-6	1.0	4.7	N.D.	N.D.
Vinyl Chloride	62.5	75-01-4	1.0	2.8	N.D.	N.D.

* Coeluting compounds, reported as sum under m-Xylene

Sample-specific QA recoveries:		%	OK Y/N
IS	Bromochloromethane	110	Y
SS	Bromofluorobenzene	105	Y
IS	Chlorobenzene D5	109	Y
SS	1,4-Difluorobenzene	116	Y

+ Practical Quantitation Limit, a 2-4X multiple of the experimentally established Method Detection Limit.
Acceptance criteria 70-130% for SS, 50-200% for IS.
IS acceptance criteria corresponds to EPA guidelines.
TO-15 0007014-05 XLS

Respectfully submitted,

Stephen Havlicek, Ph.D./CEO

3:17 PM8/28/00

11140 Petal Street, #250
Dallas, TX 75238

EPA Method TO 14/15

CCAS

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Chloroform	119.4	67-66-3	2.0	10	N.D.	N.D.
1,2-Dibromoethane (EDB)	187.9	106-93-4	2.0	20	N.D.	N.D.
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TO-15 0007014-05 XLS

Respectfully submitted,

Stephen Havlicek, Ph.D./CEO

3:17 PM8/28/00

11140 Petal Street, #250
Dallas, TX 75238

REFERENCE 30

U.S. Census Bureau

United States Department of Commerce

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Statistical Abstract

Population Clocks

U.S. 275,590,967
World 6,092,596,154
16:09 EDT Aug 28, 2000

State & County QuickFacts

Alabama

Go!

Latest Economic Indicators

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(URL reload)

1990 US Census Data
Database: C90STF1A
Summary Level: State--County

Montgomery County: FIPS.STATE=01, FIPS.COUNTY90=101

PERSONS
Universe: Persons
Total.....209085
FAMILIES
Universe: Families
Total.....53573
PERSONS PER FAMILY
Universe: Families
Persons per family.....3.21

FIGURES

FIGURES

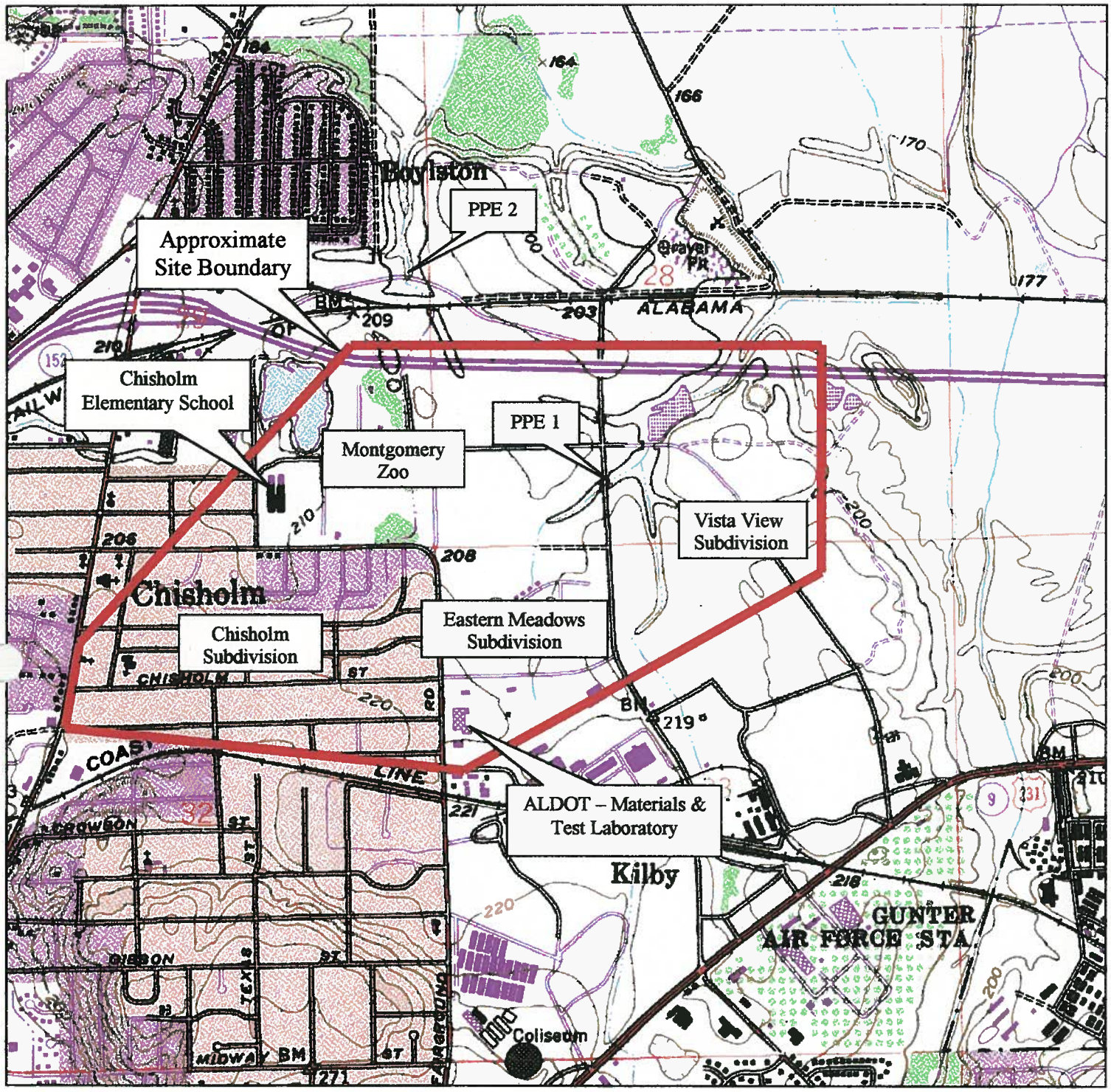
1. Site Sketch

2. Photo-documentation Log for the Coliseum Boulevard Plume Site, Montgomery County, Alabama: September 11, 2000

3. U. S. G. S. 7.5 Minute Topographic Quadrangle Maps

FIGURE 1

Site Sketch



Feet

0 1,000 2,000 3,000

N W E S

Coliseum Boulevard Plume
Montgomery, Montgomery County, Alabama

Montgomery North, Alabama
U.S.G.S. Topographic Map
1958
Photorevised 1981

Figure 1

FIGURE 2

Ditch Located North of the Alabama Department of Transportation Complex
(Coliseum Boulevard Plume Site)

Unnamed Tributary of Three Mile Branch Located south of the Northern Boulevard
(Coliseum Boulevard Plume Site)

Ditch Located North of the City of Montgomery Zoo
(Coliseum Boulevard Plume Site)

Wetland Located Along the Western Surface Water Pathway
(Coliseum Boulevard Plume Site)

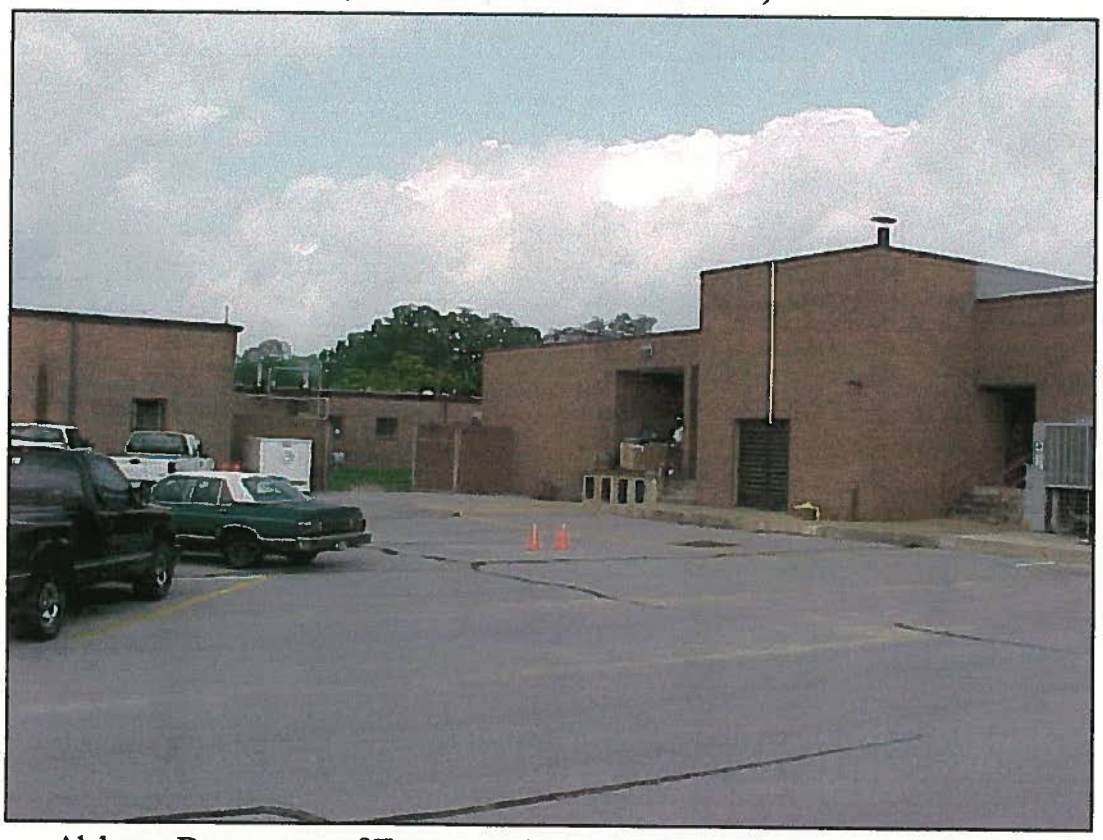
Undeveloped Property Located North of the Vista View Subdivision
(Coliseum Boulevard Plume Site)

Installation of a Geoprobe Boring on the Northeastern Portion of the Site
(Coliseum Boulevard Plume Site)

Alabama Department of Transportation 6th Division Offices
(Coliseum Boulevard Plume Site)

Alabama Department of Transportation Gas Pumps
(Coliseum Boulevard Plume Site)

Alabama Department of Transportation Materials & Test Bureau Laboratory
(Front)
(Coliseum Boulevard Plume Site)

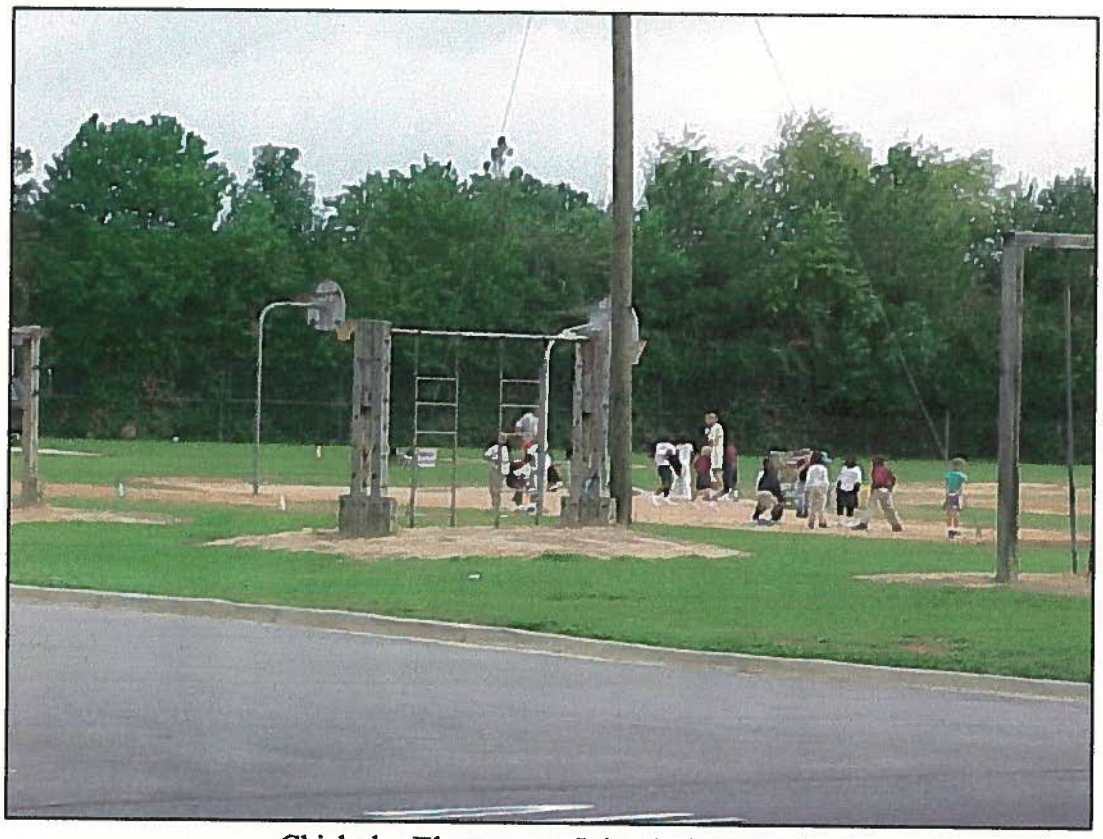


Alabama Department of Transportation Materials & Test Bureau Laboratory
(Rear)
(Coliseum Boulevard Plume Site)

Alabama Department of Finance Printing & Publication Division
(Coliseum Boulevard Plume Site)

Eastern Meadows Subdivision
(Coliseum Boulevard Plume Site)

Chisholm Elementary School
(Coliseum Boulevard Plume Site)



Chisholm Elementary School Playground
(Coliseum Boulevard Plume Site)

City of Montgomery Zoo
(Coliseum Boulevard Plume Site)

Chisholm Community Center
(Coliseum Boulevard Plume Site)

Vista Terrace Apartments
(Coliseum Boulevard Plume Site)

Chisholm Subdivision
(Coliseum Boulevard Plume Site)

Vista View Shopping Center
(Coliseum Boulevard Plume Site)

Vista View Subdivision
(Coliseum Boulevard Plume Site)

FIGURE 3

Figure Three

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

CBP Repository