# STATUS REPORT

# COLISEUM BOULEVARD PLUME INVESTIGATION

**October 30, 2000**

Submitted to:
The Alabama Department of Environmental Management
Montgomery, Alabama

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

Tuscaloosa • Montgomery • Florence

**Status Report**
**Coliseum Boulevard Plume Investigation**
**Montgomery, Alabama**
**October 2000**

## Summary

From August 14 to August 29, 2000, **TTL** used direct-push sampling equipment to collect 9 soil/sediment samples and 11 ground-water samples at five locations. The locations of the probeholes, which are identified as PH29 through PH33, are shown on Figure 1. A piezometer was constructed at each of the five locations. The soil/sediment and ground-water samples were analyzed for VOCs (volatile organic compounds) by **TTL's** laboratory in Tuscaloosa, Alabama.

## Collection of Soil/Sediment Samples

The Geoprobe equipment was used to drive a soil-conductivity probe to first clay within the water-bearing sands at each of the five probehole locations. A second probehole was driven about three feet from the first probehole. A Geoprobe macro-core sampling system was used to collect soil/sediment samples from each of these adjacent probeholes. The soil/sediment samples were collected continuously from the land surface to the top of the clay identified with the soil-conductivity probe. Heaving sands and gravels prevented continuous sample collection at one of the probeholes. An on-site geologist described the soil/sediment samples as they were retrieved. All probeholes were grouted.

Two soil/sediment samples from each of probeholes PH29 through 32 and one soil/sediment from probehole PH33 were selected for analysis for VOCs. None of the soil/sediment samples contained detectable VOCs (see Table 1).

## Collection of Ground-water Samples

Shallow and deeper ground-water samples were collected at each of the five probehole locations. An additional "intermediate" ground-water sample was collected at PH33 (near the Northern Bypass), because water was present on top of a clay that was only about 13 feet BLS. The ground-water samples were collected through a

Geoprobe™ "drop out" screen. The concentrations of TCE and other VOCs in the ground-water samples are provided in Table 2 and are shown on Figure 1.

**Piezometer Construction**

Piezometers PZ12 through PZ16 were constructed through probeholes driven at locations PH29 through PH33, respectively. The locations of these five additional piezometers and the ground-water elevations in the piezometers on October 4, 2000 are shown on Figure 1. Ground-water elevations in the piezometers and monitoring wells at the ALDOT Central Complex and the Vista View Development are provided in Table 3.

**Surface-Water Investigation**

On September 18, 2000, samples of water were collected from sites 2 and 3 along the ditch in the Coliseum Boulevard area. Samples of water were not collected at sites 1 and 4 along the ditch because there was no water at these sites. The water samples were transported to **TTL's** laboratory for analyses for VOCs. The results of these analyses are provided in Table 4. The water sample from Site 2 did not contain TCE. The water sample from site 3 contained 0.002 milligram per liter TCE. There was chloroform, bromodichloromethane or dibromochloromethane in the water samples from sites 2 and 3. These compounds are trihalomethanes commonly found in treated drinking water.

TABLE 1. Results of analyses for volatile organic compounds[1] in soil/sediment samples; Probeholes PH29 through PH33; Coliseum Blvd. Plume Investigation; Montgomery, Alabama.

| Sample Identifier | Depth of Sample (ft. BLS)[2] | Sample Date | (Concentrations are in µg/kg [micrograms per kilogram]) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Tetrachloroethylene | Trichloroethylene | Carbon Tetrachloride | cis-1,2-Dichloroethene | 1,1-Dichloroethene | Vinyl Chloride |
| | | | *3.0 µg/kg** | *3.0 µg/kg** | *3.0 µg/kg** | *3.0 µg/kg** | *3.0 µg/kg** | *3.0 µg/kg** |
| PH-29 | 7-8 | 8/21/00 | ND | ND | ND | ND | ND | ND |
| | 17-18 | 8/21/00 | ND | ND | ND | ND | ND | ND |
| PH-30 | 7-8 | 8/22/00 | ND | ND | ND | ND | ND | ND |
| | 13-14 | 8/22/00 | ND | ND | ND | ND | ND | ND |
| PH-31 | 5.5-6.5 | 8/25/00 | ND | ND | ND | ND | ND | ND |
| | 10-11 | 8/25/00 | ND | ND | ND | ND | ND | ND |
| PH-32 | 6.5-7.5 | 8/23/00 | ND | ND | ND | ND | ND | ND |
| | 37-38 | 8/23/00 | ND | ND | ND | ND | ND | ND |
| PH-33 | 4-5 | 8/29/00 | ND | ND | ND | ND | ND | ND |

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

[2] Feet below land surface.

* Method Detection Limit for the laboratory analyses.

ND = Compound not detected.

Table 2. Results of analyses for volatile organic compounds[1] in ground-water samples; Probeholes PH29 through PH33; Coliseum Blvd. Plume Investigation; Montgomery, Alabama.

| Sample Identifier | Depth of Sample (ft. BLS)[2] | Sample Date | (Concentrations are in µg/L [micrograms per Liter]) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Tetrachloroethylene | Trichloroethylene | Carbon Tetrachloride | cis-1,2-Dichloroethene | 1,1-Dichloroethene | Vinyl Chloride | 1,1,1 Trichloroethane | Chloroform | Chloromethane | Bromodichloromethane |
| | | | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** |
| PH-29 | 19-20 | 8/21/00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| | 41-43 | 8/28/00 | ND | **1.9** | ND | ND | **1.5** | ND | ND | **5.0** | ND | ND |
| PH-30 | 15-16 | 8/22/00 | ND | **12.6** | ND | ND | ND | ND | ND | ND | ND | ND |
| | 40.5-42.5 | 8/22/00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| PH-31 | 12-15 | 8/25/00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| | 35.5-37.5 | 8/25/00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| PH-32 | 39-41 | 8/23/00 | ND | **3.7** | ND | ND | ND | ND | ND | ND | ND | ND |
| | 77-79 | 8/24/00 | ND | **1.6** | ND | ND | ND | ND | ND | ND | **1.7** | ND |
| PH-33 | 6-8 | 8/29/00 | ND | **283** | ND | ND | ND | ND | ND | **13.4** | ND | **1.6** |
| | 11-13 | 8/29/00 | ND | **374** | ND | ND | **1.4** | ND | ND | **10.6** | ND | **1.1** |
| | 28-30 | 8/29/00 | ND | **8.4** | ND | ND | ND | ND | ND | ND | **5.8** | ND |

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

[2] Feet below land surface.

ND = Compound not detected.

* Method Detection Limit for the laboratory analyses.

TABLE 3. Ground-Water Elevations; Coliseum Blvd. Plume Investigation; Montgomery, Alabama. [Locations of monitoring wells and piezometers, and corresponding ground-water elevations on October 4, 2000 are shown on Figure 1.]

| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| | | | Monitoring Wells (ALDOT Central Complex) | | | |
| ALDOT MW1 | 215.16 | 218.42 | 14-63 | 10/20/99 | 22.04 | 196.38 |
| | | | | 11/16/99 | 22.36 | 196.06 |
| | | | | 3/7/00 | 23.04 | 195.38 |
| | | | | 6/15/00 | 23.11 | 195.31 |
| | | | | 7/19/00 | 23.43 | 194.99 |
| | | | | 10/4/00 | 24.04 | 194.38 |
| ALDOT MW2 | 218.84 | 218.76 | 16-70 | 10/20/99 | 22.43 | 196.33 |
| | | | | 11/16/99 | 22.76 | 196.00 |
| | | | | 3/7/00 | 23.43 | 195.33 |
| | | | | 6/15/00 | 23.37 | 195.39 |
| | | | | 7/19/00 | 23.72 | 195.04 |
| | | | | 10/4/00 | 24.41 | 194.35 |
| ALDOT MW3 | 211.23 | 211.01 | 15-51.5 | 10/19/99 | 14.94 | 196.07 |
| | | | | 11/16/99 | 15.26 | 195.75 |
| | | | | 3/7/00 | 15.73 | 195.28 |
| | | | | 6/15/00 | 15.85 | 195.16 |
| | | | | 7/19/00 | 16.20 | 194.81 |
| | | | | 10/4/00 | 16.78 | 194.23 |
| ALDOT MW4 | 214.14 | 213.79 | 13-62 | 10/20/99 | 17.93 | 195.86 |
| | | | | 11/16/99 | 18.20 | 195.59 |
| | | | | 3/7/00 | 18.69 | 195.10 |
| | | | | 6/15/00 | 18.80 | 194.99 |
| | | | | 7/19/00 | 19.11 | 194.68 |
| | | | | 10/4/00 | 19.72 | 194.07 |
| ALDOT MW5 | 218.18 | 218.06 | 14.5-53.5 | 10/19/99 | 22.31 | 195.75 |
| | | | | 11/16/99 | 22.59 | 195.47 |
| | | | | 3/7/00 | 23.25 | 194.81 |
| | | | | 6/15/00 | 23.28 | 194.78 |
| | | | | 7/19/00 | 23.57 | 194.49 |
| | | | | 10/4/00 | 24.13 | 193.93 |
| ALDOT MW6 | 218.82 | 218.76 | 15.5-59.5 | 10/19/99 | 22.88 | 195.88 |
| | | | | 11/16/99 | 23.19 | 195.57 |
| | | | | 3/7/00 | 24.04 | 194.72 |
| | | | | 6/15/00 | 24.11 | 194.65 |
| | | | | 7/19/00 | 24.35 | 194.41 |
| | | | | 10/4/00 | 24.86 | 193.90 |
| ALDOT MW7 | 218.05 | 217.97 | 20-64 | 10/20/99 | 22.34 | 195.63 |
| | | | | 11/16/99 | 22.60 | 195.37 |
| | | | | 3/7/00 | 23.10 | 194.87 |
| | | | | 6/15/00 | 23.19 | 194.78 |
| | | | | 7/19/00 | 23.48 | 194.49 |
| | | | | 10/4/00 | 24.07 | 193.90 |

Continued on next page

| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| ALDOT MW8 | 218.72 | 218.62 | 17-61 | 10/19/99 | 22.00 | 196.62 |
| | | | | 11/16/99 | 22.29 | 196.33 |
| | | | | 3/7/00 | 23.11 | 195.51 |
| | | | | 6/15/00 | 23.13 | 195.49 |
| | | | | 7/19/00 | 23.45 | 195.17 |
| | | | | 10/4/00 | 24.12 | 194.50 |
| ALDOT MW9 | 217.20 | 216.97 | 17-56 | 10/19/99 | 20.43 | 196.54 |
| | | | | 11/16/99 | 20.78 | 196.19 |
| | | | | 3/7/00 | 21.69 | 195.28 |
| | | | | 6/15/00 | 21.62 | 195.35 |
| | | | | 7/19/00 | 21.97 | 195.00 |
| | | | | 10/4/00 | 22.70 | 194.27 |
| | | | Piezometers | | | |
| PZ1 | 221.26 | 220.93 | 21.5-30.5 | 3/7/00 | 25.81 | 195.12 |
| | | | | 6/15/00 | 25.62 | 195.31 |
| | | | | 7/19/00 | 26.01 | 194.92 |
| | | | | 10/4/00 | 26.75 | 194.18 |
| PZ2 | 207.30 | 207.20 | 15.5-24.5 | 3/7/00 | 11.93 | 195.27 |
| | | | | 6/15/00 | 12.36 | 194.84 |
| | | | | 7/19/00 | 12.78 | 194.42 |
| | | | | 10/4/00 | 13.32 | 193.88 |
| PZ3 | 220.67 | 220.50 | 24-34 | 3/7/00 | 25.18 | 195.32 |
| | | | | 6/15/00 | 25.13 | 195.37 |
| | | | | 7/19/00 | 25.49 | 195.01 |
| | | | | 10/4/00 | 26.27 | 194.23 |
| PZ4 | 216.66 | 216.19 | 26.5-35.5 | 3/7/00 | 27.13 | 189.06 |
| | | | | 6/15/00 | 26.94 | 189.25 |
| | | | | 7/19/00 | 27.33 | 188.86 |
| | | | | 10/4/00 | 28.20 | 187.99 |
| PZ5 | 204.82 | 204.72 | 15-19.8 | 6/15/00 | 10.14 | 194.58 |
| | | | | 7/19/00 | 10.60 | 194.12 |
| | | | | 10/4/00 | 11.13 | 193.59 |
| PZ6 | 212.55 | 212.41 | 23-27.8 | 6/15/00 | 20.00 | 192.41 |
| | | | | 7/19/00 | 20.45 | 191.96 |
| | | | | 10/4/00 | 21.22 | 191.19 |
| PZ7 | 206.22 | 206.20 | 17-21.8 | 6/15/00 | 11.69 | 194.51 |
| | | | | 7/19/00 | 12.15 | 194.05 |
| | | | | 10/4/00 | 12.96 | 193.24 |
| PZ8 | 209.58 | 209.51 | 17-21.8 | 6/15/00 | 15.88 | 193.63 |
| | | | | 7/19/00 | 16.39 | 193.12 |
| | | | | 10/4/00 | 16.99 | 192.52 |
| PZ9 | 205.28 | 205.12 | 17-21.8 | 6/15/00 | 13.40 | 191.72 |
| | | | | 7/19/00 | 13.90 | 191.22 |
| | | | | 10/4/00 | 14.59 | 190.53 |

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| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| PZ10 | 214.37 | 213.93 | 23-27.8 | 6/15/00 | 19.87 | 194.06 |
| | | | | 7/19/00 | 20.32 | 193.61 |
| | | | | 10/4/00 | 21.20 | 192.73 |
| PZ11 | 212.00 | 211.76 | 27-31.8 | 6/15/00 | 23.38 | 188.38 |
| | | | | 7/19/00 | 23.87 | 187.89 |
| | | | | 10/4/00 | 24.76 | 187.00 |
| PZ12 | 212.56 | 212.26 | 20-25 | 10/4/00 | 19.41 | 192.85 |
| PZ13 | 208.30 | 207.95 | 20-25 | 10/4/00 | 14.04 | 193.91 |
| PZ14 | 204.83 | 204.54 | 15-20 | 10/4/00 | 11.53 | 193.01 |
| PZ15 | 220.62 | 220.37 | 44-49 | 10/4/00 | 39.62 | 180.75 |
| PZ16 | 193.47 | 193.44 | 8-13 | 10/4/00 | 6.89 | 186.55 |
| PD-1 | 206.33 | 205.97 | 10-19.8 | 6/15/00 | 11.22 | 194.75 |
| | | | | 7/19/00 | 11.55 | 194.42 |
| | | | | 10/4/00 | 12.11 | 193.86 |
| PD-2 | 201.86 | 201.74 | 13-17.8 | 6/15/00 | 7.24 | 194.50 |
| | | | | 7/19/00 | 7.54 | 194.20 |
| | | | | 10/4/00 | 8.06 | 193.68 |
| PD-3 | 202.62 | 202.52 | 15-19.8 | 6/15/00 | 10.77 | 191.75 |
| | | | | 7/19/00 | 11.00 | 191.52 |
| | | | | 10/4/00 | 11.30 | 191.22 |
| PD-4 | 202.22 | 202.15 | Unknown | 6/15/00 | 8.58 | 193.57 |
| | | | | 7/19/00 | 8.80 | 193.35 |
| | | | | 10/4/00 | 9.21 | 192.94 |
| | | **Monitoring Wells (Vista View Development)** | | | | |
| Alfa MW-1 | 213.99 | 213.53 | 32.8-42.8 | 11/16/99 | 18.65 | 194.88 |
| | | | | 3/7/00 | 18.87 | 194.66 |
| | | | | 6/15/00 | 19.06 | 194.47 |
| | | | | 7/19/00 | 19.36 | 194.17 |
| | | | | 10/4/00 | 19.92 | 193.61 |
| Alfa MW-2 | 206.24 | 206.01 | 34.5-44.5 | 11/16/99 | 12.60 | 193.41 |
| | | | | 3/7/00 | 11.57 | 194.44 |
| | | | | 6/15/00 | 12.77 | 193.24 |
| | | | | 7/19/00 | 13.20 | 192.81 |
| | | | | 10/4/00 | 13.54 | 192.47 |
| Alfa MW-3 | 209.85 | 209.67 | 30.5-40.5 | 11/16/99 | 14.21 | 195.46 |
| | | | | 3/7/00 | 14.40 | 195.27 |
| | | | | 6/15/00 | 14.62 | 195.05 |
| | | | | 7/19/00 | 15.02 | 194.65 |
| | | | | 10/4/00 | 15.65 | 194.02 |

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| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| Alfa MW-4 | 213.27 | 213.18 | 38.5-48.5 | 11/16/99 | 18.19 | 194.99 |
| | | | | 3/7/00 | 18.78 | 194.40 |
| | | | | 6/15/00 | 18.81 | 194.37 |
| | | | | 7/19/00 | 19.09 | 194.09 |
| | | | | 10/4/00 | 19.61 | 193.57 |
| Alfa MW-5 | 200.26 | 203.42 | 14.2-24.2 | 11/16/99 | 16.50 | 186.92 |
| | | | | 3/7/00 | 16.10 | 187.32 |
| | | | | 6/15/00 | 16.69 | 186.73 |
| | | | | 7/19/00 | 16.79 | 186.63 |
| | | | | 10/4/00 | 16.79 | 186.63 |

[1] Feet above mean sea level. Elevations of land surface and measuring points of monitoring wells at ALDOT Complex and piezometers PZ5 through PZ16 and PD-1, PD-2, PD-3, and PD-4 were surveyed by Larry E. Speaks & Associates. Elevations of land surface and measuring points of Alfa monitoring wells and piezometers PZ1 through PZ4 were surveyed by Goodwyn, Mills & Cawood.

[2] Top of casing.

[3] Feet below land surface.

[4] Feet below measuring point.

Table 4. Results of analyses[1] for VOCs (volatile organic compounds) in surface-water samples collected from ditch near Coliseum Blvd.; Coliseum Blvd. Plume Investigation; Montgomery, Alabama. [Locations of the sample sites are shown on Figure 1.]

| Sample Date | VOC | Sample Identifier | | | |
|---|---|---|---|---|---|
| | | Site 1 | Site 2 | Site 3 | Site 4 |
| | | [Concentrations are in milligrams/Liter] | | | |
| **September 18, 2000** | | | | | |
| | Chloroform | NS* | 0.042 | 0.010 | NS |
| | Trichloroethylene | NS | <0.001 | 0.002 | NS |
| | Bromodichloromethane | NS | 0.006 | 0.002 | NS |
| | Dibromochloromethane | NS | 0.002 | <0.001 | NS |

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

NS = Not sampled because dry

# STATUS REPORT

# COLISEUM BOULEVARD PLUME INVESTIGATION

**September 21, 2000**

Submitted to:
The Alabama Department of Environmental Management
Montgomery, Alabama

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

**Tuscaloosa • Montgomery • Florence**

**Status Report**
**Coliseum Boulevard Plume Investigation**
**Montgomery, Alabama**
**September 21, 2000**

## Synopsis

From May 1 to May 25, 2000, **TTL** collected soil and ground-water samples from 12 locations using direct-push sampling equipment. The locations of probeholes, which are identified as PH17 through PH28, are shown on Figure 1. Thirty-nine soil/sediment samples and 26 ground-water samples were collected from the 12 locations. Piezometers were constructed at 7 of the 12 locations and at three locations along the ditch near Coliseum Boulevard. The soil/sediment and ground-water samples were analyzed, in the field, for selected VOCs (volatile organic compounds). Selected samples also were analyzed for VOCs by **TTL**'s laboratory in Tuscaloosa, Alabama. Finally, samples of surface water were collected at four sites (see Figure 2) along the ditch in the Coliseum Boulevard area. These samples were analyzed by **TTL**'s laboratory.

Additional probeholes were completed at five sample locations from August 14 to August 29, 2000. Soil/sediment and ground-water samples were collected from each of these five additional locations for analyses at **TTL**'s laboratory and a piezometer was constructed at each location. The locations of these additional probeholes/piezometers will be added to the site map as soon as the information is received from the registered land surveyor and reports will be summarized in the next status report.

## Procedures

### Soils/sediments

The Geoprobe equipment was used to drive a soil-conductivity logger to determine the depths to clays beneath the water-bearing sands at the 12 probeholes completed from May 1 to May 25, 2000. A second probehole then was driven about three (3) feet from the initial probehole. A Geoprobe macro-core sampling system was used to collect soil/sediment samples from each of these adjacent probeholes. The soil/sediment samples were collected continuously from the land surface to the top of the clay identified with the soil-conductivity logger. Heaving sands and gravels prevented continuous sample collection at a few of the probeholes. An on-site geologist described the soil/sediment samples as they were retrieved. All probeholes were grouted through Geoprobe rods upon completion of sample collection.

Generally, 2 to 3 soil/sediment samples from each probehole were selected for field analysis for VOCs. Using an on-site mobile laboratory, the samples were analyzed for PCE (tetrachloroethylene); TCE (trichloroethylene); carbon tetrachloride; cis-1,2-dichloroethene;

1,1 dichloroethene; and vinyl chloride. Five of the total of 39 soil/sediment samples collected from probeholes PH17 through PH28 were split and analyzed for VOCs by **TTL's** fixed laboratory in Tuscaloosa, Alabama.

Figure 1 shows concentration of TCE in soil, where detected. Results are shown on Table 1.

Ground Water

Sample Collection

Shallow and deeper ground-water samples were collected at each of the probehole locations. The ground-water samples were collected through a Geoprobe™ "drop out" screen.

The ground-water samples from the 12 probeholes were analyzed, in the field, with the mobile gas chromatograph. The samples were analyzed for PCE; TCE; carbon tetrachloride; cis-1,2-dichloroethene; 1,1 dichloroethene; and vinyl chloride. Three of the ground-water samples were split and analyzed for VOCs by **TTL's** fixed laboratory in Tuscaloosa, Alabama.

The concentrations of TCE and other detected VOCs in the ground-water samples are shown on Figure 1. Results are presented in Table 2.

Piezometer Construction

Piezometers, which are identified as PZ5 through PZ11, PD1, PD2, and PD3, were constructed to obtain additional information about the direction of ground-water flow. The piezometers were constructed in probeholes that were driven immediately adjacent to the probeholes used for the soil-conductivity logging. The locations of these piezometers and the ground-water elevations in the piezometers on July 19, 2000 are shown on Figure 2. Ground-water elevations on July 19, 2000 are shown in Table 3.

**Surface Water Investigation**

Samples of the water in the ditch that is in the Coliseum Boulevard area were collected on July 24, August 2, and August 11, 2000. The samples were collected at four sites along the ditch when there was water at the sites. The sites where the samples were collected are shown on Figure 2. Samples were not collected at two of the sites during the July 24, 2000 sampling event because there was no water. There was no water at one of the four sites during the August 2, 2000 sampling event.

The samples that were collected during the three events were returned to **TTL**'s laboratory for analyses for VOCs. The results of these analyses are provided in Table 4.

TABLE 1. Results of analyses for volatile organic compounds in soil/sediment samples; Probeholes 17-28, Coliseum Blvd Plume Investigation, Montgomery, Alabama.

| Sample Identifier | Depth of Sample (ft. BLS)[1] | Sample Date | (Concentrations are in µg/kg [micrograms per kilogram]) Tetrachloroethylene | | Trichloroethylene | | Carbon Tetrachloride | | cis-1,2-Dichloroethene | | 1,1-Dichloroethene | | Vinyl Chloride | | M,P Xylenes[3] | Toluene[3] | Ethylbenzene[3] | O-Xylene[3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2.0 µg/kg* Field[2] | 3.0 µg/kg** Lab[2] | 2.0 µg/kg* Field[2] | 3.0 µg/kg** Lab[2] | 2.0 µg/kg* Field[2] | 3.0 µg/kg** Lab[2] | 2.0 µg/kg* Field[2] | 3.0 µg/kg** Lab[2] | 2.0 µg/kg* Field[2] | 3.0 µg/kg** Lab[2] | 2.0 µg/kg* Field[2] | 3.0 µg/kg** Lab[2] | 3.0 µg/kg** Lab[2] | 3.0 µg/kg** Lab[2] | 3.0 µg/kg** Lab[2] | 3.0 µg/kg** Lab[2] |
| | | | MAY 2000 | | | | | | | | | | | | | | | |
| PH-17 | 3.5-4 | 05/08/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 8-8.5 | 05/08/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-18 | 3.5-4 | 05/09/2000 | ND | NS | ND | NS | ND | NS | 3.0 | NS | 3.0 | NS | ND | NS | | | | |
| | 7.5-8 | 05/09/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| Dup[4] | 7.5-8 | 05/09/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 9.5-10 | 05/09/2000 | ND | NS | ND | NS | ND | NS | 3.0 | NS | ND | NS | ND | NS | | | | |
| PH-19 | 3.5-4 | 05/10/2000 | ND | NS | ND | NS | ND | NS | 5.0 | NS | 6.0 | NS | ND | NS | | | | |
| | 6-6.5 | 05/10/2000 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | | | | |
| | 8-8.5 | 05/10/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 11.5-12 | 05/10/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-20 | 5-5.5 | 05/11/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 10.5-11 | 05/11/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 21-21.5 | 05/11/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 23-23.5 | 05/11/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-21 | 4-4.5 | 05/12/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 12.5-13 | 05/12/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 22.5-23 | 05/12/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-22 | 2.5-3 | 05/15/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 4.5-5 | 05/15/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 15-15.5 | 05/15/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-23 | 4-4.5 | 05/16/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 10.5-11 | 05/16/2000 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | | | | |
| | 14-14.5 | 05/16/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 21-21.5 | 05/16/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 23.5-24 | 05/16/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-24 | 10-10.5 | 05/18/2000 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 11.9 | 6.1 | 2.6 | 3.2 |
| Dup[4] | 10-10.5 | 05/18/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 12.5-13 | 05/18/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 26.5-27 | 05/18/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-25 | 4-4.5 | 05/22/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 9.5-10 | 05/22/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 19-19.5 | 05/22/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-26 | 2-2.5 | 05/23/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 9-9.5 | 05/23/2000 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | | | | |
| | 24.5-25 | 05/23/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| Dup[4] | 24.5-25 | 05/23/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-27 | 2-2.5 | 05/24/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 9.5-10 | 05/24/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 26-26.5 | 05/24/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-28 | 5-5.5 | 05/25/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| Dup[4] | 5-5.5 | 05/25/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 7-7.5 | 05/25/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 15.5-16 | 05/25/2000 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | | | | |

[1] Feet Below Land Surface

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

[3] Detected when sample analyzed for VOCs in TTL's laboratory. The samples that were analyzed in TTL's laboratory (see also footnote 2) were scanned for 33 VOCs. Included in these 33 VOCs were the 6 VOCs analyzed in the field. A "blank" in this column indicates that the specified VOC was not detected at the "Method Detection Limit" for those samples that were analyzed in the laboratory. Likewise, a concentration is shown when the specified VOC was detected.

[4] Dup=Duplicate sample for Quality Assurance/Quality Control for field analysis.

* Detection concentration for the field analyses.

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

ND = Compound not detected.

NS = Not sampled for laboratory analysis.

TABLE 2. Results of analyses for volatile organic compounds in ground-water samples; Probeholes 17-28; Coliseum Blvd. Plume Investigation; Montgomery, Alabama.

(Concentrations are in µg/L [micrograms per Liter])

| Sample Identifier | Depth of Sample (ft. BLS)[1] | Sample Date | Tetrachloroethylene | | Trichloroethylene | | Carbon Tetrachloride | | cis-1,2-Dichloroethene | | 1,1-Dichloroethene | | Vinyl Chloride | | 1,1,1 Trichloroethane[3] | Chloroform[3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2.0 µg/L* | 1.0 µg/L** | 2.0 µg/L* | 1.0 µg/L** | 2.0 µg/L* | 1.0 µg/L** | 2.0 µg/L* | 1.0 µg/L** | 2.0 µg/L* | 1.0 µg/L** | 2.0 µg/L* | 1.0 µg/L** | 1.0 µg/L** | 1.0 µg/L** |
| | | | Field[2] | Lab[2] | Field[2] | Lab[2] | Field[2] | Lab[2] | Field[2] | Lab[2] | Field[2] | Lab[2] | Field[2] | Lab[2] | Lab[2] | Lab[2] |
| | | | MAY 2000 | | | | | | | | | | | | | |
| PH-17 | 11-12 | 05/08/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 43.5-45.5 | 05/24/2000 | ND | NS | **37.9** | NS | ND | NS | ND | NS | **7.30** | NS | **25.7** | NS | | |
| | 51-52 | 05/08/2000 | ND | NS | **36.4d[5]** | NS | ND | NS | ND | NS | **5.25** | NS | **98.2d[5]** | NS | | |
| Dup[4,6] | 51-52 | 05/09/2000 | ND | NS | **30.3** | NS | ND | NS | ND | NS | **4.20** | NS | **75.7** | NS | | |
| PH-18 | 12-13 | 05/09/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 37-38 | 05/09/2000 | ND | ND | **305d[5]** | **305** | ND | **11.7** | ND | ND | **11.4** | **16.6** | ND | ND | | **2.2** |
| PH-19 | 13-14 | 05/10/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | **5.8** | NS | | |
| | 54-55 | 05/10/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| PH-20 | 23-24 | 05/11/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 47-48 | 05/11/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | **5.12** | NS | | |
| PH-21 | 24-26 | 05/12/2000 | ND | NS | **5.72** | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 54-56 | 05/12/2000 | ND | NS | **7.81** | NS | ND | NS | ND | NS | ND | NS | **54.6** | NS | | |
| PH-22 | 17-18 | 05/15/2000 | ND | NS | **5.64** | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 42-44 | 05/15/2000 | ND | NS | **17.6** | NS | ND | NS | ND | NS | ND | NS | **28.0** | NS | | |
| PH-23 | 22-24 | 05/16/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 58-60 | 05/17/2000 | ND | NS | **16.4** | NS | ND | NS | ND | NS | ND | NS | **39.4** | NS | | |
| PH-24 | 28-30 | 05/18/2000 | ND | NS | **20.4** | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 58-60 | 05/18/2000 | ND | NS | **2.57** | NS | ND | NS | ND | NS | **6.43** | NS | **6.62** | NS | | |
| Dup | 58-60 | 05/18/2000 | ND | NS | **2.38** | NS | ND | NS | ND | NS | **14.10** | NS | **10.9** | NS | | |
| PH-25 | 21-23 | 05/22/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | **2.80** | NS | | |
| | 49-51 | 05/26/2000 | NA | ND | NA | **59.2** | NA | ND | NA | ND | NA | **3.6** | NA | ND | | |
| PH-26 | 26-28 | 05/23/2000 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | | |
| | 32.5-34.5 | 05/23/2000 | ND | NS | **40.5** | NS | ND | NS | ND | NS | ND | NS | **6.9** | NS | | |
| Dup | 32.5-34.5 | 05/23/2000 | ND | NS | **44.6** | NS | ND | NS | ND | NS | ND | NS | **11.1** | NS | | |
| | 54-56 | 05/23/2000 | ND | NS | ND | NS | ND | NS | ND | NS | **18.2** | NS | **30.0** | NS | | |
| PH-27 | 27-29 | 05/24/2000 | ND | NS | **297d[5]** | NS | ND | NS | **19.7** | NS | **8.10** | NS | ND | NS | | |
| | 55-58 | 05/24/2000 | ND | NS | **3.61** | NS | ND | NS | ND | NS | ND | NS | **6.21** | NS | | |
| PH-28 | 16.5-20 | 05/25/2000 | ND | NS | **2.49** | NS | ND | NS | ND | NS | ND | NS | **4.38** | NS | | |
| | 44.5-46.5 | 05/25/2000 | ND | NS | **48.1** | NS | ND | NS | ND | NS | **42.5** | NS | **14.9** | NS | | |

[1] Feet below land surface

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

3 Detected when sample analyzed for VOCs in TTL's laboratory. The samples that were analyzed in TTL's laboratory were scanned for 33 VOCs. Included in these 33 VOCs were the 6 VOCs analyzed in the field. A "blank" in this column indicates that the specified VOC was not detected at the "Method Detection Limit" for those samples that were analyzed in the laboratory. Likewise, a concentration is shown when the specified VOC was detected.

[4] Dup=Duplicate sample for Quality Assurance/Quality Control for field analysis.

[5] d= Individual value obtained by dilution.

[6] PQL was 4.0 µg/L

* Detected Concentration for field analysis

** MDL = Method Detection Limit for laboratory analysis

ND = Compound not Detected

NS = Not sampled for laboratory analysis

NA = Not sampled for field analysis

TABLE 3. Ground-Water Elevations; Coliseum Blvd. Plume Investigation; Montgomery, Alabama. [Locations of monitoring wells and piezometers, and corresponding ground-water elevations on July 19, 2000 are shown on Figure 2.]

| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| | | | Monitoring Wells (ALDOT Central Complex) | | | |
| ALDOT MW1 | 215.16 | 218.42 | 14-63 | 10/20/1999 | 22.04 | 196.38 |
| | | | | 11/16/1999 | 22.36 | 196.06 |
| | | | | 03/07/2000 | 23.04 | 195.38 |
| | | | | 06/15/2000 | 23.11 | 195.31 |
| | | | | 07/19/2000 | 23.43 | 194.99 |
| ALDOT MW2 | 218.84 | 218.76 | 16-70 | 10/20/1999 | 22.43 | 196.33 |
| | | | | 11/16/1999 | 22.76 | 196.00 |
| | | | | 03/07/2000 | 23.43 | 195.33 |
| | | | | 06/15/2000 | 23.37 | 195.39 |
| | | | | 07/19/2000 | 23.72 | 195.04 |
| ALDOT MW3 | 211.23 | 211.01 | 15-51.5 | 10/19/1999 | 14.94 | 196.07 |
| | | | | 11/16/1999 | 15.26 | 195.75 |
| | | | | 03/07/2000 | 15.73 | 195.28 |
| | | | | 06/15/2000 | 15.85 | 195.16 |
| | | | | 07/19/2000 | 16.20 | 194.81 |
| ALDOT MW4 | 214.14 | 213.79 | 13-62 | 10/20/1999 | 17.93 | 195.86 |
| | | | | 11/16/1999 | 18.20 | 195.59 |
| | | | | 03/07/2000 | 18.69 | 195.10 |
| | | | | 06/15/2000 | 18.80 | 194.99 |
| | | | | 07/19/2000 | 19.11 | 194.68 |
| ALDOT MW5 | 218.18 | 218.06 | 14.5-53.5 | 10/19/1999 | 22.31 | 195.75 |
| | | | | 11/16/1999 | 22.59 | 195.47 |
| | | | | 03/07/2000 | 23.25 | 194.81 |
| | | | | 06/15/2000 | 23.28 | 194.78 |
| | | | | 07/19/2000 | 23.57 | 194.49 |
| ALDOT MW6 | 218.82 | 218.76 | 15.5-59.5 | 10/19/1999 | 22.88 | 195.88 |
| | | | | 11/16/1999 | 23.19 | 195.57 |
| | | | | 03/07/2000 | 24.04 | 194.72 |
| | | | | 06/15/2000 | 24.11 | 194.65 |
| | | | | 07/19/2000 | 24.35 | 194.41 |
| ALDOT MW7 | 218.05 | 217.97 | 20-64 | 10/20/1999 | 22.34 | 195.63 |
| | | | | 11/16/1999 | 22.60 | 195.37 |
| | | | | 03/07/2000 | 23.10 | 194.87 |
| | | | | 06/15/2000 | 23.19 | 194.78 |
| | | | | 07/19/2000 | 23.48 | 194.49 |
| ALDOT MW8 | 218.72 | 218.62 | 17-61 | 10/19/1999 | 22.00 | 196.62 |
| | | | | 11/16/1999 | 22.29 | 196.33 |
| | | | | 03/07/2000 | 23.11 | 195.51 |
| | | | | 06/15/2000 | 23.13 | 195.49 |
| | | | | 07/19/2000 | 23.45 | 195.17 |
| ALDOT MW9 | 217.20 | 216.97 | 17-56 | 10/19/1999 | 20.43 | 196.54 |
| | | | | 11/16/1999 | 20.78 | 196.19 |
| | | | | 03/07/2000 | 21.69 | 195.28 |
| | | | | 06/15/2000 | 21.62 | 195.35 |
| | | | | 07/19/2000 | 21.97 | 195.00 |

**Continued on next page**

| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| | | | Piezometers | | | |
| PZ1 | 221.26 | 220.93 | 21.5-30.5 | 03/07/2000 | 25.81 | 195.12 |
| | | | | 06/15/2000 | 25.62 | 195.31 |
| | | | | 07/19/2000 | 26.01 | 194.92 |
| PZ2 | 207.30 | 207.20 | 15.5-24.5 | 03/07/2000 | 11.93 | 195.27 |
| | | | | 06/15/2000 | 12.36 | 194.84 |
| | | | | 07/19/2000 | 12.78 | 194.42 |
| PZ3 | 220.67 | 220.50 | 24-34 | 03/07/2000 | 25.18 | 195.32 |
| | | | | 06/15/2000 | 25.13 | 195.37 |
| | | | | 07/19/2000 | 25.49 | 195.01 |
| PZ4 | 216.66 | 216.19 | 26.5-35.5 | 03/07/2000 | 27.13 | 189.06 |
| | | | | 06/15/2000 | 26.94 | 189.25 |
| | | | | 07/19/2000 | 27.33 | 188.86 |
| PZ5 | 204.82 | 204.72 | 15-19.8 | 06/15/2000 | 10.14 | 194.58 |
| | | | | 07/19/2000 | 10.60 | 194.12 |
| PZ6 | 212.55 | 212.41 | 23-27.8 | 06/15/2000 | 20.00 | 192.41 |
| | | | | 07/19/2000 | 20.45 | 191.96 |
| PZ7 | 206.22 | 206.20 | 17-21.8 | 06/15/2000 | 11.69 | 194.51 |
| | | | | 07/19/2000 | 12.15 | 194.05 |
| PZ8 | 209.58 | 209.51 | 17-21.8 | 06/15/2000 | 15.88 | 193.63 |
| | | | | 07/19/2000 | 16.39 | 193.12 |
| PZ9 | 205.28 | 205.12 | 17-21.8 | 06/15/2000 | 13.40 | 191.72 |
| | | | | 07/19/2000 | 13.90 | 191.22 |
| PZ10 | 214.37 | 213.93 | 23-27.8 | 06/15/2000 | 19.87 | 194.06 |
| | | | | 07/19/2000 | 20.32 | 193.61 |
| PZ11 | 212.00 | 211.76 | 27-31.8 | 06/15/2000 | 23.38 | 188.38 |
| | | | | 07/19/2000 | 23.87 | 187.89 |
| PD-1 | 206.33 | 205.97 | 10-19.8 | 06/15/2000 | 11.22 | 194.75 |
| | | | | 07/19/2000 | 11.55 | 194.42 |
| PD-2 | 201.86 | 201.74 | 13-17.8 | 06/15/2000 | 7.24 | 194.50 |
| | | | | 07/19/2000 | 7.54 | 194.20 |
| PD-3 | 202.62 | 202.52 | 15-19.8 | 06/15/2000 | 10.77 | 191.75 |
| | | | | 07/19/2000 | 11.00 | 191.52 |
| PD-4 | 202.22 | 202.15 | Unknown | 06/15/2000 | 8.58 | 193.57 |
| | | | | 07/19/2000 | 8.80 | 193.35 |

**Continued on next page**

| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| | | | Monitoring Wells (Vista View Development) | | | |
| Alfa MW-1 | 213.99 | 213.53 | 32.8-42.8 | 11/16/1999 | 18.65 | 194.88 |
| | | | | 03/07/2000 | 18.87 | 194.66 |
| | | | | 06/15/2000 | 19.06 | 194.47 |
| | | | | 07/19/2000 | 19.36 | 194.17 |
| Alfa MW-2 | 206.24 | 206.01 | 34.5-44.5 | 11/16/1999 | 12.60 | 193.41 |
| | | | | 03/07/2000 | 11.57 | 194.44 |
| | | | | 06/15/2000 | 12.77 | 193.24 |
| | | | | 07/19/2000 | 13.20 | 192.81 |
| Alfa MW-3 | 209.85 | 209.67 | 30.5-40.5 | 11/16/1999 | 14.21 | 195.46 |
| | | | | 03/07/2000 | 14.40 | 195.27 |
| | | | | 06/15/2000 | 14.62 | 195.05 |
| | | | | 07/19/2000 | 15.02 | 194.65 |
| Alfa MW-4 | 213.27 | 213.18 | 38.5-48.5 | 11/16/1999 | 18.19 | 194.99 |
| | | | | 03/07/2000 | 18.78 | 194.40 |
| | | | | 06/15/2000 | 18.81 | 194.37 |
| | | | | 07/19/2000 | 19.09 | 194.09 |
| Alfa MW-5 | 200.26 | 203.42 | 14.2-24.2 | 11/16/1999 | 16.50 | 186.92 |
| | | | | 03/07/2000 | 16.10 | 187.32 |
| | | | | 06/15/2000 | 16.69 | 186.73 |
| | | | | 07/19/2000 | 16.79 | 186.63 |

[1] Feet above mean sea level. Elevations of land surface and measuring points of monitoring wells at ALDOT Complex and piezometers PZ5 through PZ11 and PD-1, PD-2, PD-3, and PD-4 were surveyed by Larry E. Speaks & Associates. Elevations of land surface and measuring points of Alfa monitoring wells and piezometers PZ1 through PZ4 were surveyed by Goodwyn, Mills & Cawood.

[2] Top of casing.

[3] Feet below land surface.

[4] Feet below measuring point.

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

**Table 4.** Results of analyses of surface water samples collected from ditch near Coliseum Boulevard, Montgomery Alabama. [ Locations of surface water sample sites are shown on Figure 2. ]

| | Site 1 | Site 2 | Site 3 | Site 4 |
|---|---|---|---|---|
| **Concentrations are expressed in milligrams/liter** | | | | |
| **July 24, 2000** | (No storm events several days prior to sampling) | | | |
| Trichloroethylene | NS | 0.015 | 0.010 | NS |
| Toluene | NS | 0.013 | <0.001 | NS |
| 1,1-Dichloroethene | NS | 0.003 | <0.001 | NS |
| cis, 1,2-Dichloroethene | NS | 0.003 | 0.003 | NS |
| **August 2, 2000** | (storm event during sampling) | | | |
| Trichloroethylene | <0.001 | <0.001 | <0.001 | NS |
| **August 11, 2000** | (storm event prior evening - August 10, 2000) | | | |
| Trichloroethylene | <0.001 | <0.001 | 0.002 | <0.001 |
| Toluene | <0.001 | 0.001 | <0.001 | <0.001 |
| | | | | |

**NS - Not Sampled**

Results of analyses for VOCs in soil and ground-water samples collected August 21-28, 2000.

Note: Ground-water samples denoted by * (concentrations in micrograms per liter)

| Probehole ID | Location | Depth | VOCs | |
|---|---|---|---|---|
| PH29 | Brockway Dr | 7-8' | ND | |
| | | 17-18' | ND | |
| | | 19-20'* | ND | |
| | | 41-43'* | TCE | 1.9 |
| | | | 1,1,DCE | 1.5 |
| | | | Chloroform | 5.0 |
| PH30 | Chisholm Comm. Center | 7-8' | ND | |
| | | 13-14' | ND | |
| | | 15-16'* | TCE | 12.6 |
| | | 40.5-42.5* | ND | |
| PH31 | Admin. Office (Zoo) | 5.5-6.5' | ND | |
| | | 10-11' | ND | |
| | | 12-15'* | ND | |
| | | 35.5-37.5'* | ND | |
| PH32 | Broadway St. | 6.5-7.5' | ND | |
| | | 37-38' | ND | |
| | | 39-41'* | TCE | 3.7 |
| | | 77-79'* | TCE | 1.6 |
| | | | Chloromethane | 1.7 |

| Probehole ID | Location | Depth | VOCs |
|---|---|---|---|
| PH33 | No. Blvd. | 4-5' | ND |
| | | 6-8'* | TCE 283<br>Bromodichloromethane 1.6<br>Chloroform 13.4 |
| | | 11-13'* | TCE 374<br>1,1,DCE 1.4<br>Chloroform 10.6<br>Bromodichloromethane 1.1 |
| | | 28-30'* | TCE 8.4<br>Chloromethane 5.8 |

# STATUS REPORT

# COLISEUM BOULEVARD PLUME INVESTIGATION

**October 30, 2000**

Submitted to:
The Alabama Department of Environmental Management
Montgomery, Alabama

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

**Tuscaloosa • Montgomery • Florence**

**Status Report**
**Coliseum Boulevard Plume Investigation**
**Montgomery, Alabama**
**October 2000**

## Summary

From August 14 to August 29, 2000, **TTL** used direct-push sampling equipment to collect 9 soil/sediment samples and 11 ground-water samples at five locations. The locations of the probeholes, which are identified as PH29 through PH33, are shown on Figure 1. A piezometer was constructed at each of the five locations. The soil/sediment and ground-water samples were analyzed for VOCs (volatile organic compounds) by **TTL's** laboratory in Tuscaloosa, Alabama.

## Collection of Soil/Sediment Samples

The Geoprobe equipment was used to drive a soil-conductivity probe to first clay within the water-bearing sands at each of the five probehole locations. A second probehole was driven about three feet from the first probehole. A Geoprobe macro-core sampling system was used to collect soil/sediment samples from each of these adjacent probeholes. The soil/sediment samples were collected continuously from the land surface to the top of the clay identified with the soil-conductivity probe. Heaving sands and gravels prevented continuous sample collection at one of the probeholes. An on-site geologist described the soil/sediment samples as they were retrieved. All probeholes were grouted.

Two soil/sediment samples from each of probeholes PH29 through 32 and one soil/sediment from probehole PH33 were selected for analysis for VOCs. None of the soil/sediment samples contained detectable VOCs (see Table 1).

## Collection of Ground-water Samples

Shallow and deeper ground-water samples were collected at each of the five probehole locations. An additional "intermediate" ground-water sample was collected at PH33 (near the Northern Bypass), because water was present on top of a clay that was only about 13 feet BLS. The ground-water samples were collected through a

Geoprobe™ "drop out" screen. The concentrations of TCE and other VOCs in the ground-water samples are provided in Table 2 and are shown on Figure 1.

**Piezometer Construction**

Piezometers PZ12 through PZ16 were constructed through probeholes driven at locations PH29 through PH33, respectively. The locations of these five additional piezometers and the ground-water elevations in the piezometers on October 4, 2000 are shown on Figure 1. Ground-water elevations in the piezometers and monitoring wells at the ALDOT Central Complex and the Vista View Development are provided in Table 3.

**Surface-Water Investigation**

On September 18, 2000, samples of water were collected from sites 2 and 3 along the ditch in the Coliseum Boulevard area. Samples of water were not collected at sites 1 and 4 along the ditch because there was no water at these sites. The water samples were transported to **TTL's** laboratory for analyses for VOCs. The results of these analyses are provided in Table 4. The water sample from Site 2 did not contain TCE. The water sample from site 3 contained 0.002 milligram per liter TCE. There was chloroform, bromodichloromethane or dibromochloromethane in the water samples from sites 2 and 3. These compounds are trihalomethanes commonly found in treated drinking water.

TABLE 1. Results of analyses for volatile organic compounds[1] in soil/sediment samples; Probeholes PH29 through PH33; Coliseum Blvd. Plume Investigation; Montgomery, Alabama.

| Sample Identifier | Depth of Sample (ft. BLS)[2] | Sample Date | (Concentrations are in µg/kg [micrograms per kilogram]) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Tetrachloroethylene | Trichloroethylene | Carbon Tetrachloride | cis-1,2-Dichloroethene | 1,1-Dichloroethene | Vinyl Chloride |
| | | | *3.0 µg/kg** | *3.0 µg/kg** | *3.0 µg/kg** | *3.0 µg/kg** | *3.0 µg/kg** | *3.0 µg/kg** |
| PH-29 | 7-8 | 8/21/00 | ND | ND | ND | ND | ND | ND |
| | 17-18 | 8/21/00 | ND | ND | ND | ND | ND | ND |
| PH-30 | 7-8 | 8/22/00 | ND | ND | ND | ND | ND | ND |
| | 13-14 | 8/22/00 | ND | ND | ND | ND | ND | ND |
| PH-31 | 5.5-6.5 | 8/25/00 | ND | ND | ND | ND | ND | ND |
| | 10-11 | 8/25/00 | ND | ND | ND | ND | ND | ND |
| PH-32 | 6.5-7.5 | 8/23/00 | ND | ND | ND | ND | ND | ND |
| | 37-38 | 8/23/00 | ND | ND | ND | ND | ND | ND |
| PH-33 | 4-5 | 8/29/00 | ND | ND | ND | ND | ND | ND |

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

[2] Feet below land surface.

* Method Detection Limit for the laboratory analyses.

ND = Compound not detected.

Table 2. Results of analyses for volatile organic compounds[1] in ground-water samples; Probeholes PH29 through PH33; Coliseum Blvd. Plume Investigation; Montgomery, Alabama.

| Sample Identifier | Depth of Sample (ft. BLS)[2] | Sample Date | (Concentrations are in µg/L [micrograms per Liter]) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Tetrachloroethylene | Trichloroethylene | Carbon Tetrachloride | cis-1,2-Dichloroethene | 1,1-Dichloroethene | Vinyl Chloride | 1,1,1 Trichloroethane | Chloroform | Chloromethane | Bromodichloromethane |
| | | | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** | *1.0 µg/L** |
| PH-29 | 19-20 | 8/21/00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| | 41-43 | 8/28/00 | ND | **1.9** | ND | ND | **1.5** | ND | ND | **5.0** | ND | ND |
| PH-30 | 15-16 | 8/22/00 | ND | **12.6** | ND | ND | ND | ND | ND | ND | ND | ND |
| | 40.5-42.5 | 8/22/00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| PH-31 | 12-15 | 8/25/00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| | 35.5-37.5 | 8/25/00 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND |
| PH-32 | 39-41 | 8/23/00 | ND | **3.7** | ND | ND | ND | ND | ND | ND | ND | ND |
| | 77-79 | 8/24/00 | ND | **1.6** | ND | ND | ND | ND | ND | ND | **1.7** | ND |
| PH-33 | 6-8 | 8/29/00 | ND | **283** | ND | ND | ND | ND | ND | **13.4** | ND | **1.6** |
| | 11-13 | 8/29/00 | ND | **374** | ND | ND | **1.4** | ND | ND | **10.6** | ND | **1.1** |
| | 28-30 | 8/29/00 | ND | **8.4** | ND | ND | ND | ND | ND | ND | **5.8** | ND |

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

[2] Feet below land surface.

ND = Compound not detected.

* Method Detection Limit for the laboratory analyses.

TABLE 3. Ground-Water Elevations; Coliseum Blvd. Plume Investigation; Montgomery, Alabama. [Locations of monitoring wells and piezometers, and corresponding ground-water elevations on October 4, 2000 are shown on Figure 1.]

| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| | | | Monitoring Wells (ALDOT Central Complex) | | | |
| ALDOT MW1 | 215.16 | 218.42 | 14-63 | 10/20/99 | 22.04 | 196.38 |
| | | | | 11/16/99 | 22.36 | 196.06 |
| | | | | 3/7/00 | 23.04 | 195.38 |
| | | | | 6/15/00 | 23.11 | 195.31 |
| | | | | 7/19/00 | 23.43 | 194.99 |
| | | | | 10/4/00 | 24.04 | 194.38 |
| ALDOT MW2 | 218.84 | 218.76 | 16-70 | 10/20/99 | 22.43 | 196.33 |
| | | | | 11/16/99 | 22.76 | 196.00 |
| | | | | 3/7/00 | 23.43 | 195.33 |
| | | | | 6/15/00 | 23.37 | 195.39 |
| | | | | 7/19/00 | 23.72 | 195.04 |
| | | | | 10/4/00 | 24.41 | 194.35 |
| ALDOT MW3 | 211.23 | 211.01 | 15-51.5 | 10/19/99 | 14.94 | 196.07 |
| | | | | 11/16/99 | 15.26 | 195.75 |
| | | | | 3/7/00 | 15.73 | 195.28 |
| | | | | 6/15/00 | 15.85 | 195.16 |
| | | | | 7/19/00 | 16.20 | 194.81 |
| | | | | 10/4/00 | 16.78 | 194.23 |
| ALDOT MW4 | 214.14 | 213.79 | 13-62 | 10/20/99 | 17.93 | 195.86 |
| | | | | 11/16/99 | 18.20 | 195.59 |
| | | | | 3/7/00 | 18.69 | 195.10 |
| | | | | 6/15/00 | 18.80 | 194.99 |
| | | | | 7/19/00 | 19.11 | 194.68 |
| | | | | 10/4/00 | 19.72 | 194.07 |
| ALDOT MW5 | 218.18 | 218.06 | 14.5-53.5 | 10/19/99 | 22.31 | 195.75 |
| | | | | 11/16/99 | 22.59 | 195.47 |
| | | | | 3/7/00 | 23.25 | 194.81 |
| | | | | 6/15/00 | 23.28 | 194.78 |
| | | | | 7/19/00 | 23.57 | 194.49 |
| | | | | 10/4/00 | 24.13 | 193.93 |
| ALDOT MW6 | 218.82 | 218.76 | 15.5-59.5 | 10/19/99 | 22.88 | 195.88 |
| | | | | 11/16/99 | 23.19 | 195.57 |
| | | | | 3/7/00 | 24.04 | 194.72 |
| | | | | 6/15/00 | 24.11 | 194.65 |
| | | | | 7/19/00 | 24.35 | 194.41 |
| | | | | 10/4/00 | 24.86 | 193.90 |
| ALDOT MW7 | 218.05 | 217.97 | 20-64 | 10/20/99 | 22.34 | 195.63 |
| | | | | 11/16/99 | 22.60 | 195.37 |
| | | | | 3/7/00 | 23.10 | 194.87 |
| | | | | 6/15/00 | 23.19 | 194.78 |
| | | | | 7/19/00 | 23.48 | 194.49 |
| | | | | 10/4/00 | 24.07 | 193.90 |

Continued on next page

| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| ALDOT MW8 | 218.72 | 218.62 | 17-61 | 10/19/99 | 22.00 | 196.62 |
| | | | | 11/16/99 | 22.29 | 196.33 |
| | | | | 3/7/00 | 23.11 | 195.51 |
| | | | | 6/15/00 | 23.13 | 195.49 |
| | | | | 7/19/00 | 23.45 | 195.17 |
| | | | | 10/4/00 | 24.12 | 194.50 |
| ALDOT MW9 | 217.20 | 216.97 | 17-56 | 10/19/99 | 20.43 | 196.54 |
| | | | | 11/16/99 | 20.78 | 196.19 |
| | | | | 3/7/00 | 21.69 | 195.28 |
| | | | | 6/15/00 | 21.62 | 195.35 |
| | | | | 7/19/00 | 21.97 | 195.00 |
| | | | | 10/4/00 | 22.70 | 194.27 |
| | | | Piezometers | | | |
| PZ1 | 221.26 | 220.93 | 21.5-30.5 | 3/7/00 | 25.81 | 195.12 |
| | | | | 6/15/00 | 25.62 | 195.31 |
| | | | | 7/19/00 | 26.01 | 194.92 |
| | | | | 10/4/00 | 26.75 | 194.18 |
| PZ2 | 207.30 | 207.20 | 15.5-24.5 | 3/7/00 | 11.93 | 195.27 |
| | | | | 6/15/00 | 12.36 | 194.84 |
| | | | | 7/19/00 | 12.78 | 194.42 |
| | | | | 10/4/00 | 13.32 | 193.88 |
| PZ3 | 220.67 | 220.50 | 24-34 | 3/7/00 | 25.18 | 195.32 |
| | | | | 6/15/00 | 25.13 | 195.37 |
| | | | | 7/19/00 | 25.49 | 195.01 |
| | | | | 10/4/00 | 26.27 | 194.23 |
| PZ4 | 216.66 | 216.19 | 26.5-35.5 | 3/7/00 | 27.13 | 189.06 |
| | | | | 6/15/00 | 26.94 | 189.25 |
| | | | | 7/19/00 | 27.33 | 188.86 |
| | | | | 10/4/00 | 28.20 | 187.99 |
| PZ5 | 204.82 | 204.72 | 15-19.8 | 6/15/00 | 10.14 | 194.58 |
| | | | | 7/19/00 | 10.60 | 194.12 |
| | | | | 10/4/00 | 11.13 | 193.59 |
| PZ6 | 212.55 | 212.41 | 23-27.8 | 6/15/00 | 20.00 | 192.41 |
| | | | | 7/19/00 | 20.45 | 191.96 |
| | | | | 10/4/00 | 21.22 | 191.19 |
| PZ7 | 206.22 | 206.20 | 17-21.8 | 6/15/00 | 11.69 | 194.51 |
| | | | | 7/19/00 | 12.15 | 194.05 |
| | | | | 10/4/00 | 12.96 | 193.24 |
| PZ8 | 209.58 | 209.51 | 17-21.8 | 6/15/00 | 15.88 | 193.63 |
| | | | | 7/19/00 | 16.39 | 193.12 |
| | | | | 10/4/00 | 16.99 | 192.52 |
| PZ9 | 205.28 | 205.12 | 17-21.8 | 6/15/00 | 13.40 | 191.72 |
| | | | | 7/19/00 | 13.90 | 191.22 |
| | | | | 10/4/00 | 14.59 | 190.53 |

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| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| PZ10 | 214.37 | 213.93 | 23-27.8 | 6/15/00 | 19.87 | 194.06 |
| | | | | 7/19/00 | 20.32 | 193.61 |
| | | | | 10/4/00 | 21.20 | 192.73 |
| PZ11 | 212.00 | 211.76 | 27-31.8 | 6/15/00 | 23.38 | 188.38 |
| | | | | 7/19/00 | 23.87 | 187.89 |
| | | | | 10/4/00 | 24.76 | 187.00 |
| PZ12 | 212.56 | 212.26 | 20-25 | 10/4/00 | 19.41 | 192.85 |
| PZ13 | 208.30 | 207.95 | 20-25 | 10/4/00 | 14.04 | 193.91 |
| PZ14 | 204.83 | 204.54 | 15-20 | 10/4/00 | 11.53 | 193.01 |
| PZ15 | 220.62 | 220.37 | 44-49 | 10/4/00 | 39.62 | 180.75 |
| PZ16 | 193.47 | 193.44 | 8-13 | 10/4/00 | 6.89 | 186.55 |
| PD-1 | 206.33 | 205.97 | 10-19.8 | 6/15/00 | 11.22 | 194.75 |
| | | | | 7/19/00 | 11.55 | 194.42 |
| | | | | 10/4/00 | 12.11 | 193.86 |
| PD-2 | 201.86 | 201.74 | 13-17.8 | 6/15/00 | 7.24 | 194.50 |
| | | | | 7/19/00 | 7.54 | 194.20 |
| | | | | 10/4/00 | 8.06 | 193.68 |
| PD-3 | 202.62 | 202.52 | 15-19.8 | 6/15/00 | 10.77 | 191.75 |
| | | | | 7/19/00 | 11.00 | 191.52 |
| | | | | 10/4/00 | 11.30 | 191.22 |
| PD-4 | 202.22 | 202.15 | Unknown | 6/15/00 | 8.58 | 193.57 |
| | | | | 7/19/00 | 8.80 | 193.35 |
| | | | | 10/4/00 | 9.21 | 192.94 |
| | | **Monitoring Wells (Vista View Development)** | | | | |
| Alfa MW-1 | 213.99 | 213.53 | 32.8-42.8 | 11/16/99 | 18.65 | 194.88 |
| | | | | 3/7/00 | 18.87 | 194.66 |
| | | | | 6/15/00 | 19.06 | 194.47 |
| | | | | 7/19/00 | 19.36 | 194.17 |
| | | | | 10/4/00 | 19.92 | 193.61 |
| Alfa MW-2 | 206.24 | 206.01 | 34.5-44.5 | 11/16/99 | 12.60 | 193.41 |
| | | | | 3/7/00 | 11.57 | 194.44 |
| | | | | 6/15/00 | 12.77 | 193.24 |
| | | | | 7/19/00 | 13.20 | 192.81 |
| | | | | 10/4/00 | 13.54 | 192.47 |
| Alfa MW-3 | 209.85 | 209.67 | 30.5-40.5 | 11/16/99 | 14.21 | 195.46 |
| | | | | 3/7/00 | 14.40 | 195.27 |
| | | | | 6/15/00 | 14.62 | 195.05 |
| | | | | 7/19/00 | 15.02 | 194.65 |
| | | | | 10/4/00 | 15.65 | 194.02 |

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| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| Alfa MW-4 | 213.27 | 213.18 | 38.5-48.5 | 11/16/99 | 18.19 | 194.99 |
| | | | | 3/7/00 | 18.78 | 194.40 |
| | | | | 6/15/00 | 18.81 | 194.37 |
| | | | | 7/19/00 | 19.09 | 194.09 |
| | | | | 10/4/00 | 19.61 | 193.57 |
| Alfa MW-5 | 200.26 | 203.42 | 14.2-24.2 | 11/16/99 | 16.50 | 186.92 |
| | | | | 3/7/00 | 16.10 | 187.32 |
| | | | | 6/15/00 | 16.69 | 186.73 |
| | | | | 7/19/00 | 16.79 | 186.63 |
| | | | | 10/4/00 | 16.79 | 186.63 |

[1] Feet above mean sea level. Elevations of land surface and measuring points of monitoring wells at ALDOT Complex and piezometers PZ5 through PZ16 and PD-1, PD-2, PD-3, and PD-4 were surveyed by Larry E. Speaks & Associates. Elevations of land surface and measuring points of Alfa monitoring wells and piezometers PZ1 through PZ4 were surveyed by Goodwyn, Mills & Cawood.

[2] Top of casing.

[3] Feet below land surface.

[4] Feet below measuring point.

Table 4. Results of analyses[1] for VOCs (volatile organic compounds) in surface-water samples collected from ditch near Coliseum Blvd.; Coliseum Blvd. Plume Investigation; Montgomery, Alabama. [Locations of the sample sites are shown on Figure 1.]

| Sample Date | VOC | Sample Identifier | | | |
|---|---|---|---|---|---|
| | | Site 1 | Site 2 | Site 3 | Site 4 |
| | | [Concentrations are in milligrams/Liter] | | | |
| **September 18, 2000** | | | | | |
| | Chloroform | NS* | 0.042 | 0.010 | NS |
| | Trichloroethylene | NS | <0.001 | 0.002 | NS |
| | Bromodichloromethane | NS | 0.006 | 0.002 | NS |
| | Dibromochloromethane | NS | 0.002 | <0.001 | NS |

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

NS = Not sampled because dry

# STATUS REPORT

# COLISEUM BOULEVARD PLUME INVESTIGATION

**September 21, 2000**

Submitted to:
The Alabama Department of Environmental Management
Montgomery, Alabama

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

**Tuscaloosa • Montgomery • Florence**

# Status Report
# Coliseum Boulevard Plume Investigation
# Montgomery, Alabama
# September 21, 2000

## Synopsis

From May 1 to May 25, 2000, **TTL** collected soil and ground-water samples from 12 locations using direct-push sampling equipment. The locations of probeholes, which are identified as PH17 through PH28, are shown on Figure 1. Thirty-nine soil/sediment samples and 26 ground-water samples were collected from the 12 locations. Piezometers were constructed at 7 of the 12 locations and at three locations along the ditch near Coliseum Boulevard. The soil/sediment and ground-water samples were analyzed, in the field, for selected VOCs (volatile organic compounds). Selected samples also were analyzed for VOCs by **TTL**'s laboratory in Tuscaloosa, Alabama. Finally, samples of surface water were collected at four sites (see Figure 2) along the ditch in the Coliseum Boulevard area. These samples were analyzed by **TTL**'s laboratory.

Additional probeholes were completed at five sample locations from August 14 to August 29, 2000. Soil/sediment and ground-water samples were collected from each of these five additional locations for analyses at **TTL**'s laboratory and a piezometer was constructed at each location. The locations of these additional probeholes/piezometers will be added to the site map as soon as the information is received from the registered land surveyor and reports will be summarized in the next status report.

## Procedures

Soils/sediments

The Geoprobe equipment was used to drive a soil-conductivity logger to determine the depths to clays beneath the water-bearing sands at the 12 probeholes completed from May 1 to May 25, 2000. A second probehole then was driven about three (3) feet from the initial probehole. A Geoprobe macro-core sampling system was used to collect soil/sediment samples from each of these adjacent probeholes. The soil/sediment samples were collected continuously from the land surface to the top of the clay identified with the soil-conductivity logger. Heaving sands and gravels prevented continuous sample collection at a few of the probeholes. An on-site geologist described the soil/sediment samples as they were retrieved. All probeholes were grouted through Geoprobe rods upon completion of sample collection.

Generally, 2 to 3 soil/sediment samples from each probehole were selected for field analysis for VOCs. Using an on-site mobile laboratory, the samples were analyzed for PCE (tetrachloroethylene); TCE (trichloroethylene); carbon tetrachloride; cis-1,2-dichloroethene;

1,1 dichloroethene; and vinyl chloride. Five of the total of 39 soil/sediment samples collected from probeholes PH17 through PH28 were split and analyzed for VOCs by **TTL's** fixed laboratory in Tuscaloosa, Alabama.

Figure 1 shows concentration of TCE in soil, where detected. Results are shown on Table 1.

Ground Water

Sample Collection

Shallow and deeper ground-water samples were collected at each of the probehole locations. The ground-water samples were collected through a Geoprobe™ "drop out" screen.

The ground-water samples from the 12 probeholes were analyzed, in the field, with the mobile gas chromatograph. The samples were analyzed for PCE; TCE; carbon tetrachloride; cis-1,2-dichloroethene; 1,1 dichloroethene; and vinyl chloride. Three of the ground-water samples were split and analyzed for VOCs by **TTL's** fixed laboratory in Tuscaloosa, Alabama.

The concentrations of TCE and other detected VOCs in the ground-water samples are shown on Figure 1. Results are presented in Table 2.

Piezometer Construction

Piezometers, which are identified as PZ5 through PZ11, PD1, PD2, and PD3, were constructed to obtain additional information about the direction of ground-water flow. The piezometers were constructed in probeholes that were driven immediately adjacent to the probeholes used for the soil-conductivity logging. The locations of these piezometers and the ground-water elevations in the piezometers on July 19, 2000 are shown on Figure 2. Ground-water elevations on July 19, 2000 are shown in Table 3.

**Surface Water Investigation**

Samples of the water in the ditch that is in the Coliseum Boulevard area were collected on July 24, August 2, and August 11, 2000. The samples were collected at four sites along the ditch when there was water at the sites. The sites where the samples were collected are shown on Figure 2. Samples were not collected at two of the sites during the July 24, 2000 sampling event because there was no water. There was no water at one of the four sites during the August 2, 2000 sampling event.

The samples that were collected during the three events were returned to **TTL**'s laboratory for analyses for VOCs. The results of these analyses are provided in Table 4.

TABLE 1. Results of analyses for volatile organic compounds in soil/sediment samples; Probeholes 17-28, Coliseum Blvd Plume Investigation, Montgomery, Alabama.

| Sample Identifier | Depth of Sample (ft. BLS)[1] | Sample Date | (Concentrations are in µg/kg [micrograms per kilogram]) Tetrachloroethylene | | Trichloroethylene | | Carbon Tetrachloride | | cis-1,2-Dichloroethene | | 1,1-Dichloroethene | | Vinyl Chloride | | M,P Xylenes[3] | Toluene[3] | Ethylbenzene[3] | O-Xylene[3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2.0 µg/kg* Field[2] | 3.0 µg/kg** Lab[2] | 2.0 µg/kg* Field[2] | 3.0 µg/kg** Lab[2] | 2.0 µg/kg* Field[2] | 3.0 µg/kg** Lab[2] | 2.0 µg/kg* Field[2] | 3.0 µg/kg** Lab[2] | 2.0 µg/kg* Field[2] | 3.0 µg/kg** Lab[2] | 2.0 µg/kg* Field[2] | 3.0 µg/kg** Lab[2] | 3.0 µg/kg** Lab[2] | 3.0 µg/kg** Lab[2] | 3.0 µg/kg** Lab[2] | 3.0 µg/kg** Lab[2] |
| | | | MAY 2000 | | | | | | | | | | | | | | | |
| PH-17 | 3.5-4 | 05/08/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 8-8.5 | 05/08/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-18 | 3.5-4 | 05/09/2000 | ND | NS | ND | NS | ND | NS | 3.0 | NS | 3.0 | NS | ND | NS | | | | |
| | 7.5-8 | 05/09/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| Dup[4] | 7.5-8 | 05/09/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 9.5-10 | 05/09/2000 | ND | NS | ND | NS | ND | NS | 3.0 | NS | ND | NS | ND | NS | | | | |
| PH-19 | 3.5-4 | 05/10/2000 | ND | NS | ND | NS | ND | NS | 5.0 | NS | 6.0 | NS | ND | NS | | | | |
| | 6-6.5 | 05/10/2000 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | | | | |
| | 8-8.5 | 05/10/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 11.5-12 | 05/10/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-20 | 5-5.5 | 05/11/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 10.5-11 | 05/11/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 21-21.5 | 05/11/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 23-23.5 | 05/11/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-21 | 4-4.5 | 05/12/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 12.5-13 | 05/12/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 22.5-23 | 05/12/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-22 | 2.5-3 | 05/15/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 4.5-5 | 05/15/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 15-15.5 | 05/15/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-23 | 4-4.5 | 05/16/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 10.5-11 | 05/16/2000 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | | | | |
| | 14-14.5 | 05/16/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 21-21.5 | 05/16/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 23.5-24 | 05/16/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-24 | 10-10.5 | 05/18/2000 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | 11.9 | 6.1 | 2.6 | 3.2 |
| Dup[4] | 10-10.5 | 05/18/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 12.5-13 | 05/18/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 26.5-27 | 05/18/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-25 | 4-4.5 | 05/22/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 9.5-10 | 05/22/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 19-19.5 | 05/22/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-26 | 2-2.5 | 05/23/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 9-9.5 | 05/23/2000 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | | | | |
| | 24.5-25 | 05/23/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| Dup[4] | 24.5-25 | 05/23/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-27 | 2-2.5 | 05/24/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 9.5-10 | 05/24/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 26-26.5 | 05/24/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| PH-28 | 5-5.5 | 05/25/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| Dup[4] | 5-5.5 | 05/25/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 7-7.5 | 05/25/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | | | |
| | 15.5-16 | 05/25/2000 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | | | | |

[1] Feet Below Land Surface

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

[3] Detected when sample analyzed for VOCs in TTL's laboratory. The samples that were analyzed in TTL's laboratory (see also footnote 2) were scanned for 33 VOCs. Included in these 33 VOCs were the 6 VOCs analyzed in the field. A "blank" in this column indicates that the specified VOC was not detected at the "Method Detection Limit" for those samples that were analyzed in the laboratory. Likewise, a concentration is shown when the specified VOC was detected.

[4] Dup=Duplicate sample for Quality Assurance/Quality Control for field analysis.

* Detection concentration for the field analyses.

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

ND = Compound not detected.

NS = Not sampled for laboratory analysis.

TABLE 2. Results of analyses for volatile organic compounds in ground-water samples; Probeholes 17-28; Coliseum Blvd. Plume Investigation; Montgomery, Alabama.

(Concentrations are in µg/L [micrograms per Liter])

| Sample Identifier | Depth of Sample (ft. BLS)[1] | Sample Date | Tetrachloroethylene | | Trichloroethylene | | Carbon Tetrachloride | | cis-1,2-Dichloroethene | | 1,1-Dichloroethene | | Vinyl Chloride | | 1,1,1 Trichloroethane[3] | Chloroform[3] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2.0 µg/L* Field[2] | 1.0 µg/L** Lab[2] | 2.0 µg/L* Field[2] | 1.0 µg/L** Lab[2] | 2.0 µg/L* Field[2] | 1.0 µg/L** Lab[2] | 2.0 µg/L* Field[2] | 1.0 µg/L** Lab[2] | 2.0 µg/L* Field[2] | 1.0 µg/L** Lab[2] | 2.0 µg/L* Field[2] | 1.0 µg/L** Lab[2] | 1.0 µg/L** Lab[2] | 1.0 µg/L** Lab[2] |
| | | | MAY 2000 | | | | | | | | | | | | | |
| PH-17 | 11-12 | 05/08/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 43.5-45.5 | 05/24/2000 | ND | NS | **37.9** | NS | ND | NS | ND | NS | **7.30** | NS | **25.7** | NS | | |
| | 51-52 | 05/08/2000 | ND | NS | **36.4d[5]** | NS | ND | NS | ND | NS | **5.25** | NS | **98.2d[5]** | NS | | |
| Dup[4,6] | 51-52 | 05/09/2000 | ND | NS | **30.3** | NS | ND | NS | ND | NS | **4.20** | NS | **75.7** | NS | | |
| PH-18 | 12-13 | 05/09/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 37-38 | 05/09/2000 | ND | ND | **305d[5]** | **305** | ND | **11.7** | ND | ND | **11.4** | **16.6** | ND | ND | | **2.2** |
| PH-19 | 13-14 | 05/10/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | **5.8** | NS | | |
| | 54-55 | 05/10/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| PH-20 | 23-24 | 05/11/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 47-48 | 05/11/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | **5.12** | NS | | |
| PH-21 | 24-26 | 05/12/2000 | ND | NS | **5.72** | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 54-56 | 05/12/2000 | ND | NS | **7.81** | NS | ND | NS | ND | NS | ND | NS | **54.6** | NS | | |
| PH-22 | 17-18 | 05/15/2000 | ND | NS | **5.64** | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 42-44 | 05/15/2000 | ND | NS | **17.6** | NS | ND | NS | ND | NS | ND | NS | **28.0** | NS | | |
| PH-23 | 22-24 | 05/16/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 58-60 | 05/17/2000 | ND | NS | **16.4** | NS | ND | NS | ND | NS | ND | NS | **39.4** | NS | | |
| PH-24 | 28-30 | 05/18/2000 | ND | NS | **20.4** | NS | ND | NS | ND | NS | ND | NS | ND | NS | | |
| | 58-60 | 05/18/2000 | ND | NS | **2.57** | NS | ND | NS | ND | NS | **6.43** | NS | **6.62** | NS | | |
| Dup | 58-60 | 05/18/2000 | ND | NS | **2.38** | NS | ND | NS | ND | NS | **14.10** | NS | **10.9** | NS | | |
| PH-25 | 21-23 | 05/22/2000 | ND | NS | ND | NS | ND | NS | ND | NS | ND | NS | **2.80** | NS | | |
| | 49-51 | 05/26/2000 | NA | ND | NA | **59.2** | NA | ND | NA | ND | NA | **3.6** | NA | ND | | |
| PH-26 | 26-28 | 05/23/2000 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | | |
| | 32.5-34.5 | 05/23/2000 | ND | NS | **40.5** | NS | ND | NS | ND | NS | ND | NS | **6.9** | NS | | |
| Dup | 32.5-34.5 | 05/23/2000 | ND | NS | **44.6** | NS | ND | NS | ND | NS | ND | NS | **11.1** | NS | | |
| | 54-56 | 05/23/2000 | ND | NS | ND | NS | ND | NS | ND | NS | **18.2** | NS | **30.0** | NS | | |
| PH-27 | 27-29 | 05/24/2000 | ND | NS | **297d[5]** | NS | ND | NS | **19.7** | NS | **8.10** | NS | ND | NS | | |
| | 55-58 | 05/24/2000 | ND | NS | **3.61** | NS | ND | NS | ND | NS | ND | NS | **6.21** | NS | | |
| PH-28 | 16.5-20 | 05/25/2000 | ND | NS | **2.49** | NS | ND | NS | ND | NS | ND | NS | **4.38** | NS | | |
| | 44.5-46.5 | 05/25/2000 | ND | NS | **48.1** | NS | ND | NS | ND | NS | **42.5** | NS | **14.9** | NS | | |

[1] Feet below land surface

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

3 Detected when sample analyzed for VOCs in TTL's laboratory. The samples that were analyzed in TTL's laboratory were scanned for 33 VOCs. Included in these 33 VOCs were the 6 VOCs analyzed in the field. A "blank" in this column indicates that the specified VOC was not detected at the "Method Detection Limit" for those samples that were analyzed in the laboratory. Likewise, a concentration is shown when the specified VOC was detected.

[4] Dup=Duplicate sample for Quality Assurance/Quality Control for field analysis.

[5] d= Individual value obtained by dilution.

[6] PQL was 4.0 µg/L

* Detected Concentration for field analysis

** MDL = Method Detection Limit for laboratory analysis

ND = Compound not Detected

NS = Not sampled for laboratory analysis

NA = Not sampled for field analysis

TABLE 3. Ground-Water Elevations; Coliseum Blvd. Plume Investigation; Montgomery, Alabama. [Locations of monitoring wells and piezometers, and corresponding ground-water elevations on July 19, 2000 are shown on Figure 2.]

| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| | | | Monitoring Wells (ALDOT Central Complex) | | | |
| ALDOT MW1 | 215.16 | 218.42 | 14-63 | 10/20/1999 | 22.04 | 196.38 |
| | | | | 11/16/1999 | 22.36 | 196.06 |
| | | | | 03/07/2000 | 23.04 | 195.38 |
| | | | | 06/15/2000 | 23.11 | 195.31 |
| | | | | 07/19/2000 | 23.43 | 194.99 |
| ALDOT MW2 | 218.84 | 218.76 | 16-70 | 10/20/1999 | 22.43 | 196.33 |
| | | | | 11/16/1999 | 22.76 | 196.00 |
| | | | | 03/07/2000 | 23.43 | 195.33 |
| | | | | 06/15/2000 | 23.37 | 195.39 |
| | | | | 07/19/2000 | 23.72 | 195.04 |
| ALDOT MW3 | 211.23 | 211.01 | 15-51.5 | 10/19/1999 | 14.94 | 196.07 |
| | | | | 11/16/1999 | 15.26 | 195.75 |
| | | | | 03/07/2000 | 15.73 | 195.28 |
| | | | | 06/15/2000 | 15.85 | 195.16 |
| | | | | 07/19/2000 | 16.20 | 194.81 |
| ALDOT MW4 | 214.14 | 213.79 | 13-62 | 10/20/1999 | 17.93 | 195.86 |
| | | | | 11/16/1999 | 18.20 | 195.59 |
| | | | | 03/07/2000 | 18.69 | 195.10 |
| | | | | 06/15/2000 | 18.80 | 194.99 |
| | | | | 07/19/2000 | 19.11 | 194.68 |
| ALDOT MW5 | 218.18 | 218.06 | 14.5-53.5 | 10/19/1999 | 22.31 | 195.75 |
| | | | | 11/16/1999 | 22.59 | 195.47 |
| | | | | 03/07/2000 | 23.25 | 194.81 |
| | | | | 06/15/2000 | 23.28 | 194.78 |
| | | | | 07/19/2000 | 23.57 | 194.49 |
| ALDOT MW6 | 218.82 | 218.76 | 15.5-59.5 | 10/19/1999 | 22.88 | 195.88 |
| | | | | 11/16/1999 | 23.19 | 195.57 |
| | | | | 03/07/2000 | 24.04 | 194.72 |
| | | | | 06/15/2000 | 24.11 | 194.65 |
| | | | | 07/19/2000 | 24.35 | 194.41 |
| ALDOT MW7 | 218.05 | 217.97 | 20-64 | 10/20/1999 | 22.34 | 195.63 |
| | | | | 11/16/1999 | 22.60 | 195.37 |
| | | | | 03/07/2000 | 23.10 | 194.87 |
| | | | | 06/15/2000 | 23.19 | 194.78 |
| | | | | 07/19/2000 | 23.48 | 194.49 |
| ALDOT MW8 | 218.72 | 218.62 | 17-61 | 10/19/1999 | 22.00 | 196.62 |
| | | | | 11/16/1999 | 22.29 | 196.33 |
| | | | | 03/07/2000 | 23.11 | 195.51 |
| | | | | 06/15/2000 | 23.13 | 195.49 |
| | | | | 07/19/2000 | 23.45 | 195.17 |
| ALDOT MW9 | 217.20 | 216.97 | 17-56 | 10/19/1999 | 20.43 | 196.54 |
| | | | | 11/16/1999 | 20.78 | 196.19 |
| | | | | 03/07/2000 | 21.69 | 195.28 |
| | | | | 06/15/2000 | 21.62 | 195.35 |
| | | | | 07/19/2000 | 21.97 | 195.00 |

**Continued on next page**

| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| | | | Piezometers | | | |
| PZ1 | 221.26 | 220.93 | 21.5-30.5 | 03/07/2000 | 25.81 | 195.12 |
| | | | | 06/15/2000 | 25.62 | 195.31 |
| | | | | 07/19/2000 | 26.01 | 194.92 |
| PZ2 | 207.30 | 207.20 | 15.5-24.5 | 03/07/2000 | 11.93 | 195.27 |
| | | | | 06/15/2000 | 12.36 | 194.84 |
| | | | | 07/19/2000 | 12.78 | 194.42 |
| PZ3 | 220.67 | 220.50 | 24-34 | 03/07/2000 | 25.18 | 195.32 |
| | | | | 06/15/2000 | 25.13 | 195.37 |
| | | | | 07/19/2000 | 25.49 | 195.01 |
| PZ4 | 216.66 | 216.19 | 26.5-35.5 | 03/07/2000 | 27.13 | 189.06 |
| | | | | 06/15/2000 | 26.94 | 189.25 |
| | | | | 07/19/2000 | 27.33 | 188.86 |
| PZ5 | 204.82 | 204.72 | 15-19.8 | 06/15/2000 | 10.14 | 194.58 |
| | | | | 07/19/2000 | 10.60 | 194.12 |
| PZ6 | 212.55 | 212.41 | 23-27.8 | 06/15/2000 | 20.00 | 192.41 |
| | | | | 07/19/2000 | 20.45 | 191.96 |
| PZ7 | 206.22 | 206.20 | 17-21.8 | 06/15/2000 | 11.69 | 194.51 |
| | | | | 07/19/2000 | 12.15 | 194.05 |
| PZ8 | 209.58 | 209.51 | 17-21.8 | 06/15/2000 | 15.88 | 193.63 |
| | | | | 07/19/2000 | 16.39 | 193.12 |
| PZ9 | 205.28 | 205.12 | 17-21.8 | 06/15/2000 | 13.40 | 191.72 |
| | | | | 07/19/2000 | 13.90 | 191.22 |
| PZ10 | 214.37 | 213.93 | 23-27.8 | 06/15/2000 | 19.87 | 194.06 |
| | | | | 07/19/2000 | 20.32 | 193.61 |
| PZ11 | 212.00 | 211.76 | 27-31.8 | 06/15/2000 | 23.38 | 188.38 |
| | | | | 07/19/2000 | 23.87 | 187.89 |
| PD-1 | 206.33 | 205.97 | 10-19.8 | 06/15/2000 | 11.22 | 194.75 |
| | | | | 07/19/2000 | 11.55 | 194.42 |
| PD-2 | 201.86 | 201.74 | 13-17.8 | 06/15/2000 | 7.24 | 194.50 |
| | | | | 07/19/2000 | 7.54 | 194.20 |
| PD-3 | 202.62 | 202.52 | 15-19.8 | 06/15/2000 | 10.77 | 191.75 |
| | | | | 07/19/2000 | 11.00 | 191.52 |
| PD-4 | 202.22 | 202.15 | Unknown | 06/15/2000 | 8.58 | 193.57 |
| | | | | 07/19/2000 | 8.80 | 193.35 |

**Continued on next page**

| Well Identifier | Elevation of Land Surface (ft. AMSL)[1] | Elevation of Measuring Point[2] (ft. AMSL) | Screened Interval (ft. BLS)[3] | Date of Measurement | Depth to Water (ft. BMP)[4] | Ground-Water Elevation (ft. AMSL) |
|---|---|---|---|---|---|---|
| | | | Monitoring Wells (Vista View Development) | | | |
| Alfa MW-1 | 213.99 | 213.53 | 32.8-42.8 | 11/16/1999 | 18.65 | 194.88 |
| | | | | 03/07/2000 | 18.87 | 194.66 |
| | | | | 06/15/2000 | 19.06 | 194.47 |
| | | | | 07/19/2000 | 19.36 | 194.17 |
| Alfa MW-2 | 206.24 | 206.01 | 34.5-44.5 | 11/16/1999 | 12.60 | 193.41 |
| | | | | 03/07/2000 | 11.57 | 194.44 |
| | | | | 06/15/2000 | 12.77 | 193.24 |
| | | | | 07/19/2000 | 13.20 | 192.81 |
| Alfa MW-3 | 209.85 | 209.67 | 30.5-40.5 | 11/16/1999 | 14.21 | 195.46 |
| | | | | 03/07/2000 | 14.40 | 195.27 |
| | | | | 06/15/2000 | 14.62 | 195.05 |
| | | | | 07/19/2000 | 15.02 | 194.65 |
| Alfa MW-4 | 213.27 | 213.18 | 38.5-48.5 | 11/16/1999 | 18.19 | 194.99 |
| | | | | 03/07/2000 | 18.78 | 194.40 |
| | | | | 06/15/2000 | 18.81 | 194.37 |
| | | | | 07/19/2000 | 19.09 | 194.09 |
| Alfa MW-5 | 200.26 | 203.42 | 14.2-24.2 | 11/16/1999 | 16.50 | 186.92 |
| | | | | 03/07/2000 | 16.10 | 187.32 |
| | | | | 06/15/2000 | 16.69 | 186.73 |
| | | | | 07/19/2000 | 16.79 | 186.63 |

[1] Feet above mean sea level. Elevations of land surface and measuring points of monitoring wells at ALDOT Complex and piezometers PZ5 through PZ11 and PD-1, PD-2, PD-3, and PD-4 were surveyed by Larry E. Speaks & Associates. Elevations of land surface and measuring points of Alfa monitoring wells and piezometers PZ1 through PZ4 were surveyed by Goodwyn, Mills & Cawood.

[2] Top of casing.

[3] Feet below land surface.

[4] Feet below measuring point.

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

**Table 4.** Results of analyses of surface water samples collected from ditch near Coliseum Boulevard, Montgomery Alabama. [ Locations of surface water sample sites are shown on Figure 2. ]

| | Site 1 | Site 2 | Site 3 | Site 4 |
|---|---|---|---|---|
| **Concentrations are expressed in milligrams/liter** | | | | |
| **July 24, 2000** | (No storm events several days prior to sampling) | | | |
| Trichloroethylene | NS | 0.015 | 0.010 | NS |
| Toluene | NS | 0.013 | <0.001 | NS |
| 1,1-Dichloroethene | NS | 0.003 | <0.001 | NS |
| cis, 1,2-Dichloroethene | NS | 0.003 | 0.003 | NS |
| **August 2, 2000** | (storm event during sampling) | | | |
| Trichloroethylene | <0.001 | <0.001 | <0.001 | NS |
| **August 11, 2000** | (storm event prior evening - August 10, 2000) | | | |
| Trichloroethylene | <0.001 | <0.001 | 0.002 | <0.001 |
| Toluene | <0.001 | 0.001 | <0.001 | <0.001 |
| | | | | |

**NS - Not Sampled**

Results of analyses for VOCs in soil and ground-water samples collected August 21-28, 2000.

Note: Ground-water samples denoted by * (concentrations in micrograms per liter)

| Probehole ID | Location | Depth | VOCs | |
|---|---|---|---|---|
| PH29 | Brockway Dr | 7-8' | ND | |
| | | 17-18' | ND | |
| | | 19-20'* | ND | |
| | | 41-43'* | TCE | 1.9 |
| | | | 1,1,DCE | 1.5 |
| | | | Chloroform | 5.0 |
| PH30 | Chisholm Comm. Center | 7-8' | ND | |
| | | 13-14' | ND | |
| | | 15-16'* | TCE | 12.6 |
| | | 40.5-42.5* | ND | |
| PH31 | Admin. Office (Zoo) | 5.5-6.5' | ND | |
| | | 10-11' | ND | |
| | | 12-15'* | ND | |
| | | 35.5-37.5'* | ND | |
| PH32 | Broadway St. | 6.5-7.5' | ND | |
| | | 37-38' | ND | |
| | | 39-41'* | TCE | 3.7 |
| | | 77-79'* | TCE | 1.6 |
| | | | Chloromethane | 1.7 |

| Probehole ID | Location | Depth | VOCs |
|---|---|---|---|
| PH33 | No. Blvd. | 4-5' | ND |
| | | 6-8'* | TCE 283<br>Bromodichloromethane 1.6<br>Chloroform 13.4 |
| | | 11-13'* | TCE 374<br>1,1,DCE 1.4<br>Chloroform 10.6<br>Bromodichloromethane 1.1 |
| | | 28-30'* | TCE 8.4<br>Chloromethane 5.8 |

Map

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

CPB Repository

## LEGEND:

PH-17 ● Probehole and identifier

*19'-20' = 113 ug/l TCE (Field)
*45'-48' = 1.1 ug/l TCE (Field)
45'-48' = 2.3 ug/l TCE (Lab)

Depth of ground-water sample = TCE in micrograms per liter
(Field) = Field Analysis
(Lab) = Laboratory Analysis

5.5' = 5.9 ug/kg 1,1 DCE (Field)

Depth of soil/sediment sample = Concentration of VOC in micrograms per kilogram

TCE = Trichloroethylene
1,1-DCE = 1,1-Dichloroethene
cis 1,2-DCE = cis 1,2-Dichloroethene
ND Non-Detect

J Denotes estimated concentration

Dup Denotes duplicate sample for quality assurance/quality control for field analysis

* Denotes other VOC(s) detected (field) (see Tables 1 & 2)

* Denotes other VOC(s) detected (Lab) (see Tables 1 & 2)

SCALE:1"=400'

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PRACTICING IN THE GEOSCIENCES

Figure 1. Concentrations of TCE (trichloroethylene) in ground-water samples and concentrations of TCE and other VOCs (volatile organic compounds) in soil/sediment samples in probeholes 17-28; Coliseum Boulevard Plume Investigation; Montgomery, Alabama.