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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

GARLAND B. GARRETT JR.
SECRETARY

May 13, 1997

JUN 12 1997

Jay Zimmerman
NCDEHNR
Division of Water Quality - Groundwater Section
3800 Barrett Dr., Suite 101
Raleigh, NC, 27609

Subject: Comprehensive Site Assessment Report
Asphaltic Materials Testing Laboratory
Priority Site # 48 / Lee Paving
Chatham County, NC

Dear Mr. Zimmerman,

In 1989, the North Carolina Department of Transportation (NCDOT) began an assessment of asphaltic materials testing laboratory sites within the state. Due to the extent of time and cost for the NCDOT and the North Carolina Department of Environment Health and Natural Resources (NCDEHNR) to undertake such an assignment, the 1996 General Assembly provided limited funding for an assessment of the seventy-two sites located within the state. The mandate by the Joint Legislative Transportation Oversight Committee required the assessments and DEHNR review be completed by July 1, 1997. The purpose of this letter is to submit a comprehensive site assessment report for the subject site. It is our opinion that this report adequately defines existing conditions at the site relative to asphalt testing contamination at the time of the investigation.

Pursuant to Memorandum of Agreements (4/1/96, 7/1/96 and the 1989 MOA) signed between NCDOT and NCDEHNR, the seventy-two sites will be assessed and analyzed by agreed upon methods for these contaminants only: Carbon Tetrachloride, Trichloroethene, 1-1-1 Trichloroethane and their degradation compounds ("the target chlorinated solvents"). NCDEHNR has agreed to respond in writing within two to three weeks upon receipt of the seventy-two assessment reports.

Due to the volume, complex nature and time frame of the site assessments being conducted across the state, it is recommended if additional testing is required that the work efforts be completed during the development of the corrective action plan. At that time additional testing will more accurately reflect future site conditions and issues regarding responsibility will have been addressed by NCDEHNR.

Sincerely,

Thomas C. Niver, P.G., CHMM
Environmental Engineer, Safety & Loss Control

enclosure

cc: Duane MacEntee, NCDOT
Ted Bush, NCDEHNR
Bryan Brice, Attorney General's Office, Transportation
Mark Stewart, Lee Paving
Wayne Sherman, Chatham County Health Department
Charlie Horne, Chatham County Manager

COMPREHENSIVE SITE ASSESSMENT
SITE NO. 48
LEE PAVING COMPANY
PITTSBORO, NORTH CAROLINA

June 1997

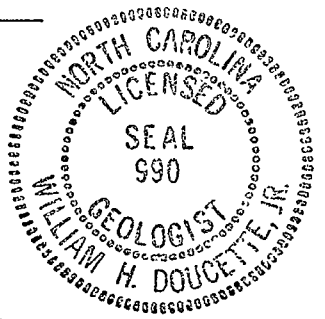
Provided by GERAGHTY & MILLER, INC.

Walter D. Plekan, Jr.
Scientist

Karen A. Trimberger, C.H.M.M.
Staff Scientist

Frederic D. Rash, E.I.T.
Project Engineer/Project Manager

William H. Doucette, Jr., Ph.D., L.G.
Associate/Project Officer



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SITE NO. 48
LEE PAVING, INC.
PITTSBORO, NORTH CAROLINA

PREFACE

In 1989, the North Carolina Department of Transportation (NCDOT) began an assessment of asphalt materials testing laboratory sites within the state. Due to the extent of time and cost for the NCDOT and the North Carolina Department of Environment, Health, and Natural Resources (NCDEHNR) to undertake such an assignment, the 1996 General Assembly provided limited funding for an assessment of the 72 sites within the state. The mandate by the Joint Legislative Transportation Oversight Committee required the assessments and NCDEHNR review be completed by July 1, 1997.

Pursuant to Memoranda of Agreement (4/1/96, 7/1/96, and 1989) (MOA) signed between the NCDOT and NCDEHNR, the 72 sites will be assessed and analyzed by agreed-upon methods for these contaminants only: carbon tetrachloride, trichloroethene (TCE), 1,1,1-trichloroethane, (1,1,1-TCA), and their degradation compounds ("the target chlorinated solvents"). NCDEHNR has agreed to respond in writing within 2 to 3 weeks upon receipt of the 72 assessment reports.

Due to the volume, complex nature, and time frame of the site assessments being conducted across the state, it is recommended that if any additional testing is required that the work efforts be completed during the development of the Corrective Action Plan (CAP). At that time, issues regarding responsibility will have been addressed by NCDEHNR, and the additional testing will more accurately reflect future site conditions. It is our opinion that this report adequately defines existing conditions at the site relative to asphalt testing contamination at the time of the investigation and is sufficient to prepare a Comprehensive Site Assessment (CSA) report.

COMPREHENSIVE SITE ASSESSMENT
SITE NO. 48
LEE PAVING COMPANY
PITTSBORO, NORTH CAROLINA

EXECUTIVE SUMMARY

This report presents the findings of soil and groundwater assessment activities during August 1996 through April 1997 on behalf of the North Carolina Department of Transportation (NCDOT) at the Lee Paving Company (Lee property) facility, which housed asphalt priority Site No. 48 asphalt testing laboratory. On-site testing of asphalt following the American Society of Testing Materials (ASTM) Method D 2172-88 was conducted. The testing procedures required the use of one or more of the following chlorinated solvents: carbon tetrachloride, trichloroethene (TCE), or 1,1,1-trichloroethane (1,1,1-TCA) for the quantitative extraction of bitumen from bituminous paving mixtures.

The field activities were conducted on behalf of the NCDOT Safety and Loss Control Division to define the extent of target chlorinated solvents impacts to the soil and groundwater at the site. The contaminants consist of the chlorinated solvents (target chlorinated solvents) carbon tetrachloride, TCE, 1,1,1-TCA, and their degradation products (chloroform; methylene chloride; methyl chloride; cis-1,2-dichloroethene; trans-1,2-dichloroethene; 1,1-dichloroethene; 1,1-dichloroethane; vinyl chloride; and chloroethane). The disposition of the spent solvents from the former testing operations is not well documented, and records or manifests tracking the volume of this material do not exist. However, it is known that spent solvents were generated as a result of asphalt testing, and such spent solvents may have been stored, possibly spilled, or disposed of onsite, thereby creating the potential for soil and groundwater contamination.

In 1989, a Memorandum of Agreement (MOA) was entered into between NCDOT and the North Carolina Department of Environmental Health and Natural Resources (NCDEHNR), Division of Water Quality (DWQ), Groundwater Section to conduct site assessments at 72 sites within the state where asphalt testing was conducted. NCDOT conducted initial screening investigations in 1989 pursuant to the MOA, followed by the preparation of Comprehensive Site

Assessments (CSAs) at 22 of these sites. In 1996, with funding from the General Assembly and a mandate from the Joint Legislative Transportation Oversight Committee, NCDOT continued site assessments at the remaining sites.

The NCDOT conducted a survey to identify which former asphalt testing facilities had a potential release of target chlorinated solvents. Based on these surveys, NCDEHNR ranked the sites in order of importance, for future investigations. A site screening investigation was conducted by an NCDOT Site Safety Engineer in April 1989. The soils surrounding the former asphalt laboratory testing building were screened during a soil-vapor survey. Water and soil samples were submitted for analysis. The water sample was collected from the onsite water-supply well. Laboratory analysis of the water sample detected concentrations of 1,1,1-TCA (318 micrograms per liter [µg/L]) and TCE (617 µg/L). A soil sample was collected from an unspecified location and had reported concentrations of carbon tetrachloride (3.19 micrograms per kilogram [µg/kg]). 1,1,1-TCA and TCE were reported below laboratory detection limits. Based on these sample results, the site was added to the priority list. No information is available on any other previous or ongoing site investigations.

An MOA between NCDOT and NCDEHNR was signed in April 1996, outlining the scope of work to be followed during the Phase I Screening Site Investigation at the asphalt sites. The site assessments were to be conducted based on the agreed-upon methods and in accordance with the "Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater" (NCDEHNR, 1993). The assessments were to focus only on the specific contaminants associated with former asphalt testing: (carbon tetrachloride, TCE, and 1,1,1-TCA and their degradation products ['the target chlorinated solvents']). A target chlorinated solvents transformation pathways flow chart is included in Appendix A.

A letter of agreement between the NCDOT and NCDEHNR, signed on July 3, 1996, outlines the laboratory analytical methods for Phase II investigations at the asphalt sites. In accordance with the "Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater" (NCDEHNR, 1993), United States Environmental Protection Agency (USEPA) Method 8021 was to be used for the vertical and horizontal delineation of soil, and

USEPA Methods 601 and 602 were to be used for the vertical and horizontal delineation of groundwater. For sites that did not obtain groundwater analytical results during the Phase I investigation, groundwater samples were to be collected for plume delineation by Standard Method (SM) 6230D. In addition, samples may be collected from within the source area and analyzed by USEPA Method 8260B for compound confirmation. This CSA report was prepared based on the findings of the investigation.

The Lee property, which formerly housed Site No. 48, is located approximately 5 miles east of Pittsboro, North Carolina. It is owned and operated by Lee Paving Company and is currently used as a modern plant which produces asphalt materials for roadway construction. The site property is in a light-residential land area bordered by undeveloped land and residential properties to the north and east, undeveloped land to the west, and State Road 1714 (Sugar Lake Road), an abandoned quarry, and residential properties to the south. This site is at an elevation of approximately 380 feet above mean sea level (ft msl). Topography of the site is characterized as relatively flat with a slight slope to the south.

This investigation was confined to the area surrounding the current and former asphalt testing laboratory buildings because (1) asphalt testing activities were confined to that area, and (2) the source area (i.e., soil contamination), if present, would be in the immediate vicinity of the buildings, based on knowledge of laboratory practices.

Field activities included site reconnaissance, conducting a soil-vapor survey at 9 locations around the current laboratory and at 6 locations in the vicinity of the former asphalt testing laboratory building; obtaining soil samples at 5 locations around the current laboratory and at 4 locations in the vicinity of 8 the former laboratory using Geoprobe™; attempting the installation of temporary piezometers at locations around the current and former asphalt testing laboratory buildings using Geoprobe™; collecting a water sample from the onsite water-supply well; collecting additional soil samples with stainless-steel hand augers from 2 locations near the current asphalt testing laboratory building, installing 13 shallow and 2 deep groundwater monitor wells; collecting groundwater samples from the monitor wells for analysis of target chlorinated solvents; conducting aquifer (slug) testing on three selected monitor wells to determine aquifer

characteristics; gauging groundwater levels in the monitor wells to evaluate groundwater flow direction; and surveying the top of casings at each monitor well.

The groundwater flow direction was calculated to be to the southeast, with an estimated shallow groundwater gradient of 0.061 feet per foot (ft/ft) on April 29, 1997. Based on the water-level data collected on April 29, 1997, the estimated groundwater gradient of the deeper portion of the aquifer was 0.017 ft/ft. A vertical groundwater gradient was calculated using data obtained from the shallow/deep monitor well pair (48MW-11/48DW-2). The vertical gradient on April 29, 1997, was 0.11 ft/ft upward. Slug-test data indicate an average hydraulic conductivity of approximately 2.39×10^{-3} centimeters per second (cm/sec) or 6.76 ft/day.

Based on the results of the soil-vapor survey, possible source areas of target and non-target chlorinated solvents were identified in the vicinity of the current and former laboratories. However, target chlorinated solvents were not detected above the laboratory quantitation limits in soil borings SS-1 through SS-9 and SS-11. Chloroform; 1,1-dichloroethane; 1,1,1-TCA; and TCE were detected below the calculated soil cleanup levels in soil samples SS-10-04 and SS-10-08. Therefore, an area which would represent a continuing source for target chlorinated solvents groundwater contamination was not identified.

The dissolved-phase target chlorinated solvents associated with the current asphalt testing laboratory has been horizontally and vertically defined at the site. Also, the dissolved-phase target chlorinated solvents contaminant plume associated with the former asphalt testing laboratory has been horizontally delineated within the area of 48MW-1 and 48MW-11 and the adjacent perimeter wells. However, based on the analytical results of monitor-well 48DW-2 (TCE - 250 µg/L and 1,1-DCE - 44 µg/L) above the 15A NCAC 2L Groundwater Quality Standards (2.8 µg/L and 7 µg/L, respectively), the extent of dissolved-phase target chlorinated solvents has not been vertically delineated. A densely wooded area south and east of 48DW-2 and insufficient right-of-way clearance (Sugar Lake Road) precluded the installation of an additional Type III well. Since it is uncertain when the implementation of corrective action will occur, further site evaluation may be necessary prior to the implementation of a CAP, to determine the most feasible option available at the future time of CAP preparation.

COMPREHENSIVE SITE ASSESSMENT
SITE NO. 48
LEE PAVING COMPANY
PITTSBORO, NORTH CAROLINA

1.0 PURPOSE AND SCOPE OF INVESTIGATION

This report presents findings of soil and groundwater assessment activities conducted from August 28, 1996, through April 29, 1997, on behalf of the North Carolina Department of Transportation (NCDOT) at the Lee Paving Company facility (Lee property), which housed asphalt priority Site No. 48 asphalt testing laboratory. On-site testing of asphalt following the American Society of Testing Materials (ASTM) Method D 2172-88 was conducted. The testing procedures required the use of one or more of the following chlorinated solvents: carbon tetrachloride, trichloroethene (TCE), or 1,1,1-trichloroethane (1,1,1-TCA) for the quantitative extraction of bitumen from bituminous paving mixtures.

The field activities were conducted on behalf of the NCDOT Safety and Loss Control Division to define the extent of target chlorinated solvents impacts to the soil and groundwater at the site. The contaminants consist of the chlorinated solvents (target chlorinated solvents) carbon tetrachloride, TCE, 1,1,1-TCA, and their degradation products (chloroform; methylene chloride; methyl chloride; cis-1,2-dichloroethene; trans-1,2-dichloroethene; 1,1-dichloroethene; 1,1-dichloroethane; vinyl chloride; and chloroethane). The disposition of the spent solvents from the former testing operations is not well documented, and records or manifests tracking the volume of this material do not exist. However, it is known that spent solvents were generated as a result of asphalt testing and such spent solvents may have been stored, possibly spilled, or disposed of onsite, thereby creating the potential for soil and groundwater contamination.

In 1989, a Memorandum of Agreement (MOA) was entered into between NCDOT and the North Carolina Department of Environmental Health and Natural Resources (NCDEHNR), Division of Water Quality (DWQ), Groundwater Section to conduct site assessments at 72 sites within the state where asphalt testing was conducted. NCDOT conducted initial screening investigations in 1989 pursuant to the MOA, followed by the preparation of Comprehensive Site

Assessments (CSAs) at 22 of these sites. In 1996, with funding from the General Assembly and a mandate from the Joint Legislative Transportation Oversight Committee, NCDOT continued site assessment of the remaining sites.

An MOA between NCDOT and NCDEHNR was signed in April 1996, outlining the scope of work to be followed during the Phase I Screening Site Investigation at the asphalt sites. The site assessments were to be conducted based on the agreed-upon methods and in accordance with the "Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater" (NCDEHNR, 1993). The assessments were to focus only on the specific contaminants associated with former asphalt testing (carbon tetrachloride, TCE, 1,1,1-TCA, and their degradation products [the 'target chlorinated solvents']). A target chlorinated solvents transformation pathways flow chart is included in Appendix A.

A letter of agreement between NCDOT and NCDEHNR, signed on July 3, 1996, outlines the laboratory analytical methods for the Phase II investigations at the asphalt sites. In accordance with the "Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater" (NCDEHNR, 1993), United States Environmental Protection Agency (USEPA) Method 8021 was to be used for the vertical and horizontal delineation of soil, and USEPA Methods 601 and 602 were to be used for the vertical and horizontal delineation of groundwater. For sites that did not obtain groundwater analytical results during the Phase I investigation, groundwater samples were to be collected for plume delineation by Standard Method (SM) 6230D. In addition, samples may be collected from within the source area and analyzed by USEPA Method 8260B for compound confirmation. This CSA was prepared based on the findings of the investigation. Copies of the letters of agreement are included in Appendix A.

The overall objectives of the investigation were to identify any contaminants associated with the asphalt testing laboratory activities (target chlorinated solvents) and determine the nature and horizontal and vertical extent of contamination for soils and groundwater. As outlined in the site-specific Work Plan and the Project Quality Assurance Plan (Project QAP) for North Carolina

Department of Transportation Asphalt Testing Facilities (Geraghty & Miller, 1996), Geraghty & Miller personnel:

- Conducted a soil-vapor survey at 9 locations around the current laboratory and at 6 locations in the vicinity of the former laboratory;
- Obtained soil samples at 5 locations around the current laboratory and at 4 locations in the vicinity of the former laboratory using Geoprobe™;
- Attempted the installation of temporary piezometers at 15 locations around the current and former asphalt laboratory buildings using Geoprobe™;
- Collected a water sample from the onsite water-supply well;
- Collected additional soil samples from 2 locations near the current asphalt testing laboratory with stainless-steel hand augers;
- Installed 13 shallow and 2 deep groundwater monitor wells;
- Collected groundwater samples from the monitor wells for analysis of target chlorinated solvents;
- Conducted aquifer (slug) testing on three selected monitor wells to determine aquifer characteristics;
- Gauged groundwater levels in the monitor wells to evaluate groundwater flow direction; and
- Surveyed the top of casings at each monitor well.

2.0 SITE DESCRIPTION

2.1 AREA OF INVESTIGATION

The Lee property, which formerly housed Site No. 48, is located east of Pittsboro, North Carolina (Figure 2-1). The facility is a modern asphalt plant. Figure 2-2 shows the site layout of the plant. Two asphalt testing laboratory buildings existed at the site. The current asphalt laboratory testing building is no longer used by NCDOT.

This investigation was confined to the areas surrounding the current and former asphalt testing laboratory buildings because (1) asphalt testing activities were confined to that area, and (2) the source area (i.e. soil contamination), if present, would be in the immediate vicinity of these buildings, based a knowledge of laboratory practices.

2.2 CONTAMINANT SOURCE INVENTORY

Historically, the solvent types used in asphalt testing included carbon tetrachloride, TCE, and 1,1,1-TCA or "TRICO." According to NCDOT personnel, historical records on solvent types and usage for Site No. 48 asphalt testing laboratories do not exist.

2.3 ADJACENT PROPERTIES

The site property is in a light residential land area bordered by undeveloped land and residential properties to the north and east, undeveloped land to the west, and State Road 1714 (Sugar Lake Road), an abandoned quarry, and residential properties to the south. A map depicting the site and adjacent properties is included as Figure 2-3. A list of property owners is presented on Table 2-1.

2.4 TOPOGRAPHY AND SURFACE-WATER DRAINAGE

Topographic coverage of the site is provided by the United States Geologic Survey (USGS) 7.5-minute Farrington and Merry Oaks, North Carolina, topographic quadrangles (Figure 2-4). The site topography is characterized as relatively flat with a slight slope to the south at an

elevation of approximately 380 feet above mean sea level (ft msl). Surface water from the site generally flows to the south toward the drainage ditches on either side of State Road 1714.

2.5 WATER WELL INVENTORY/WATER SUPPLY

A water-supply well exists approximately 250 feet southeast of the current asphalt testing laboratory. The well is operational and supplies water to all restrooms, sinks, and spigots at the site. Reportedly, bottled water is supplied to the site for drinking. Site reconnaissance identified the presence of water-supply wells on properties within 1,500 feet of the site. Off-site water-supply wells were not sampled during this investigation. Locations of known water-supply wells are shown on Figure 2-3.

2.6 UTILITY SURVEY

The Lee property is supplied with utilities, including electric and telephone. A utilities search was conducted at the site and included all underground as well as aboveground utilities near the suspected source area. Two septic systems, located southwest of the former asphalt testing laboratory building and 110 feet southwest of the current asphalt testing laboratory building, were identified at the site. Identified utilities are shown on Figure 2-2.

3.0 PREVIOUS INVESTIGATIONS/BACKGROUND DATA

The NCDOT conducted a survey to identify which former asphalt testing facilities had a potential release of target chlorinated solvents. Based on these surveys, NCDEHNR ranked these sites, in order of importance, for future investigations.

A preliminary site survey was conducted by an NCDOT Site Safety Engineer in April 1989. The soils surrounding the former asphalt testing laboratory building were screened through a soil-vapor survey. Water and soil samples were collected from the site. The water sample was collected from the water-supply well and detected concentrations of 1,1,1-TCA (318 micrograms per liter [µg/L]) and TCE (617 µg/L). A soil sample was collected from an unspecified location at the site and reported concentrations of carbon tetrachloride (3.19 micrograms per kilogram [µg/kg]). 1,1,1-TCA and TCE were reported below the laboratory detection limits. Information on the 1989 site screening investigation is included as Appendix B. No information is available on any other previous or ongoing site investigations at the subject site.

Background data were obtained from NCDEHNR and Environmental Data Resources, Inc. (EDR). Review of the data compiled from NCDEHNR, Division of Water Quality (DWQ), indicated that there were no permits or records for Lee Paving Company. The EDR report (Appendix C) noted the presence of a public water-supply system (PWS System) within 3,000 feet to the south-southwest of the Lee property. The PWS is owned by Crosswinds Boat Ramp, serves less than 101 persons, and has had no reported major violations. Aerial photographs of the site were not located during a search of NCDOT photogrammetry files.

4.0 POTENTIAL RECEPTORS AND ROUTES OF MIGRATION

4.1 POTENTIAL RECEPTORS

Potential receptors, as applied herein, are defined as features such as water-supply wells, surface-water bodies, or basements that could be adversely affected by the presence of the dissolved target chlorinated solvents detected at the site.

- Land use surrounding the site is predominantly light residential/undeveloped.
- An on-site water supply well, which supplies water to the facility, was identified 250 feet southeast of the current asphalt testing laboratory. Reportedly, bottled water is supplied to the site for drinking.
- Private water-supply wells were identified within 1,500 feet of the site. Figure 2-3 depicts properties with these water supply wells.

Where is closest offsite PW?!(

- Two septic systems, southwest of the former laboratory building and 110 feet southwest of the current laboratory building, were identified at the site.
- An intermittent creek, east of the site, was identified within 1,500 feet of the site.
- Basements were not observed on adjacent properties.

4.2 ROUTES OF MIGRATION

Humans could be exposed when they come in contact with groundwater, soil, surface water, or ambient air that has been impacted by target chlorinated solvents. The major routes of exposure are by inhalation, dermal absorption, and ingestion. In general, following a release to the subsurface, the greatest mass of target chlorinated solvents is present in the soil-sorbed phase. However, the most mobile phases are the vapor, dissolved, and liquid phases.

Private water-supply wells located on-site and at adjacent properties, the intermittent creek, and the on-site septic systems are possible routes of migration and possible exposure

pathways for humans. Actual migration and the potential for a future exposure pathway must be based on site characterization as documented in this report.

5.0 SUMMARY OF WORK SCOPE

Geraghty & Miller performed the following field activities at the site on August 28 and 29, 1996: (1) site reconnaissance, including measurement of building dimensions and other site features to further refine the base site map; (2) conducted a soil-vapor survey at 15 locations in the vicinity of the current and former asphalt testing laboratory buildings; (3) collected soil samples at 9 locations in the vicinity of the current and former asphalt testing laboratories, using Geoprobe™;(4) attempted the installation of temporary piezometers at 15 locations around the current and former asphalt testing laboratory buildings; and (5) collected and analyzed a groundwater sample from the on-site water-supply well. Geraghty & Miller also performed the following field activities at the site from November 12, 1996, through April 29, 1997: (1) installed 13 Type II and 2 Type III monitor wells; (2) collected and analyzed groundwater samples from the monitor-wells; (3) collected soil samples at 2 locations near the current asphalt laboratory building; (4) conducted aquifer testing (slug) on 3 monitor wells; and (6) performed water-level measurements and well surveying.

5.1 SOIL-VAPOR SURVEY AND SOIL SAMPLING

5.1.1 Soil-Vapor Survey

Soil-vapor sampling points (SV-1 through SV-9) were placed adjacent to the walls of the current asphalt testing laboratory building, and soil-vapor sampling points (SV-10 through SV-15) were placed in the vicinity of the former laboratory (Figure 5-1). The primary objective of the soil-vapor survey was to locate areas of elevated soil-vapor concentrations to assist in determining soil sampling locations. The soil-vapor sampling locations are depicted in Figure 5-1. Details of the soil-vapor survey are presented in Section 6.1.

5.1.2 Soil Sampling

Soil borings were advanced using Geoprobe™ equipment or a stainless steel hand auger. Soil samples were collected at seven locations around the current asphalt testing laboratory

building and at four locations in the vicinity of the former asphalt testing laboratory building to investigate the possible presence of soil-sorbed phase target chlorinated solvents (Figure 5-2). Locations for soil samples SS-1, SS-3, and SS-5 were selected based on the results of the soil-vapor survey. Details of the soil boring sampling investigation are presented in Section 6.2.

5.2 GROUNDWATER SAMPLING

5.2.1 Temporary Piezometer Installation and DPT Groundwater Sampling

Installation of temporary piezometers using Geoprobe™ equipment was attempted at eight locations around the current and former asphalt testing laboratory buildings. Refusal was encountered at each location due to the geology of the subsurface soils. The average depth to refusal was approximately 12 to 13 feet below land surface (ft bls). Therefore, installation of temporary piezometers was terminated.

5.2.2 Water-Supply Well Sampling

A groundwater sample was obtained from the on-site water-supply well. Details of the water-supply well sampling are included in Section 6.4. The location of the well is illustrated on Figure 2-2.

5.2.3 Monitor Well Installation

Thirteen shallow Type II and two Type III monitor wells were installed to evaluate the potential horizontal and vertical extent of dissolved-phase target chlorinated solvents in the groundwater at the site and to assess hydrogeologic conditions and/or parameters in the water-table aquifer. Details of the monitor well installation and sampling are included in Sections 6.5, 6.6, and 6.7. The rationale for each monitor well location is as follows:

- Monitor wells 48MW-1, 48MW-2, and 48MW-3 were installed adjacent to and presumably downgradient of the current and former asphalt testing laboratory buildings;

- Monitor wells 48MW-4 and 48MW-5 were installed presumably upgradient of the asphalt testing laboratory building locations;

- Monitor wells 48MW-6, 48MW-7, and 48DW-1 were installed south and presumably downgradient of the current and former asphalt testing laboratory building locations to delineate the extents of dissolved target chlorinated solvents in groundwater;

- Monitor wells 48MW-8 and 48MW-10 were installed crossgradient to the current and former asphalt testing laboratory buildings, respectively, to delineate the lateral extents of dissolved target chlorinated solvents in groundwater;

- Monitor well 48MW-9 was installed presumably upgradient of the current asphalt testing laboratory building to determine the upper edge of a dissolved-phase plume; and

- Monitor wells 48MW-11 through 48MW-13 and 48DW-2 were installed to delineate the downgradient and vertical extents of the dissolved-phase target chlorinated solvents plume.

A summary of well-construction details for all site wells is presented in Table 5-1. Drill logs and monitor well construction details are included in Appendix D.

5.2.4 Surveying

A water-level measuring point (top of casing) was established at each monitor well. The horizontal position (±1.0 ft) and elevations (±0.01 ft), relative to an assumed site elevation of 1,000 feet, for monitor wells 48MW-1 through 48MW-13, 48DW-1, and 48DW-2 were surveyed

by Piedmont Olsen Hensley. The benchmark is located on a power pole located between the current and former asphalt testing laboratory buildings.

5.2.5 Investigative-Derived Waste

A total of 85 drums (55-gallon) of investigative-derived waste (IDW) were generated during the site investigation activities at Site No. 48. The drums contain drill cuttings, development water, decontamination water from soil and groundwater sampling, purge water from well sampling, excess soil from Geoprobe™ soil sampling and well installation, polyethylene tubing, nylon rope, used Geoprobe™ soil sampling sleeves, and other expendable sampling supplies.

6.0 SAMPLE COLLECTION METHODOLOGY

6.1 SOIL-VAPOR SURVEY SAMPLE COLLECTION

On August 28, 1996, a soil-vapor survey using the Microseeps™ portable soil-vapor sampling system was conducted at nine points around the current asphalt testing laboratory building, and at six locations in the vicinity of the former asphalt testing laboratory building. Figure 5-1 shows the soil-vapor sampling locations. The soil-vapor samples were collected at each sampling point from a depth of 3.0 to 3.5 ft bls in accordance with Project QAP (Geraghty & Miller, 1996). A Thermo Environmental Instruments, Inc. Model 580B portable photoionization detector (PID) was used to screen the samples by connecting a tube from the Tedlar™ bag to a connector on the PID. The Microseeps™ equipment and Tedlar™ sample bag were purged with ultra-high-purity (UHP) zero air between sample points.

6.2 SOIL SAMPLE COLLECTION AND FIELD SCREENING

On August 29, 1996, Geoprobe™ soil samples (SS-1 through SS-5) were collected at five locations adjacent to the truck scale and the current asphalt testing laboratory building. Geoprobe™ soil samples (SS-6 through SS-9) were collected at four locations in the vicinity of the former laboratory. On December 6, 1996, soil samples SS-10 and SS-11 were collected using a decontaminated stainless steel hand auger between the current asphalt testing laboratory building and truck scale, because the area is inaccessible to Geoprobe™ sampling techniques. Figure 5-2 shows the soil sampling locations. Soil samples were collected in accordance with the Project QAP. The soil sampling equipment was decontaminated prior to each sampling location and subsequent depth interval in accordance with the Project QAP.

Generally, sample collection was successful at two depth intervals (0 to 5 ft bls and 5 to 10 ft bls). At each Geoprobe™ sampling location, the acetate sleeve was removed from the core barrel, cut open, and screened using the PID. At each hand-auger sampling location, the sample was removed from the core barrel and screened using the PID. One sample was collected from the portion along the interval yielding the highest PID reading. Soil samples were collected in laboratory-provided, 4-ounce amber glass sample containers, labeled, and placed in an insulated

cooler on wet ice to preserve at or below 4°C. The samples were shipped via overnight courier to Paradigm Analytical Laboratories, Inc. (Paradigm), Wilmington, North Carolina, for analysis of target chlorinated solvents by USEPA Method 8021. Sample containers, packaging, custody, and shipping protocol were followed in accordance with the Project QAP.

6.3 DPT GROUNDWATER COLLECTION

On August 28, 1996, installation of temporary piezometers using Geoprobe™ equipment was unsuccessful at eight locations. Three successive attempts were made at each of the eight locations, only to encounter refusal with every attempt. The average depth to refusal was approximately 16 ft bls. The refusal was attributed to the site-specific geology of the soils. Therefore, efforts to install temporary piezometers were terminated.

6.4 WATER SUPPLY WELL SAMPLING

The well head at the on-site water supply well was carefully inspected to determine the condition of the well, the existing pump system, and to locate any spigots or sample ports near the well itself. A groundwater sample was collected using the existing operational pump system. In order to obtain a representative sample, the sample was collected from the spigot closest to the pump system. Since the system is actively in use, the static water was purged for a minimum of 10 minutes at maximum flow near the end of the day following normal plant operations. Samples were collected in laboratory-provided, 40-mL preserved glass sample containers, labeled, and placed in an insulated cooler on wet ice to preserve at or below 4°C. The sample containers were shipped via overnight courier to Paradigm for analysis of target chlorinated solvents by SM 6230D. Sample containers, packaging, custody, and shipping protocol were followed in accordance the Project QAP. All purge water from well sampling was containerized in 55-gallon drums.

6.5 MONITOR WELL INSTALLATION

Each shallow well (48MW-1 through 48MW-13) was constructed of 2-inch inner diameter (ID) Schedule 40 polyvinyl chloride (PVC) solid casing and factory-slotted well screen (0.010-

inch slots) connected by threaded, flush joints. The screen of each well is equipped with a PVC bottom cap. The solid PVC casing of each well extends from the top of the well screen to approximately 6 inches below grade. The annular space of each well is packed with washed silica sand to a minimum level of 2 feet above the top of the well screen. A 2-foot-thick bentonite seal rests on top of the sand pack, above which a cement grout extends to within approximately 4 inches below the top of the PVC casing. The PVC casing of each well is equipped with a sealed, locking cap to prevent unauthorized access. In addition, each well casing is protected with a 12-inch steel manhole set to grade within a concrete pad.

Two deep monitor wells (48DW-1 and 48DW-2) were installed at the site. The deep well construction was performed in two phases. During the initial phase, a 6-inch-diameter galvanized steel casing was inserted into the drilled hole that had penetrated the bedrock. A Portland cement plug was installed at the lower end of the casing. Void spaces around the exterior of the casing were then filled with Portland cement and allowed to "setup" for at least 12 hours. Phase two involved drilling through the concrete plug at the bottom of the galvanized steel casing into bedrock. The two wells were constructed as open rock monitor wells. A well construction summary table for the 2 deep wells and 13 monitor wells is presented in Table 5-1. Well-construction diagram logs for the monitor wells well are provided in Appendix D.

6.6 MONITOR WELL DEVELOPMENT

Following installation, the monitor wells were developed to improve the hydraulic communication between the formation and the monitor wells and to ensure that representative groundwater samples were collected. The monitor wells were developed by submersible pump.

6.7 MONITOR WELL GROUNDWATER SAMPLE COLLECTION

Between December 4 and 6, 1996, monitor wells 48MW-1 through 48MW-5 were gauged for depth to water using an electric water-level meter. Prior to sample collection, a minimum of three well volumes were purged from each well using a decontaminated Grundfos® Redi-Flo 2 submersible pump (submersible pump) and clean, disposable polyethylene tubing. On February 3, 1997, monitor wells 48MW-6 through 48MW-9 and 48DW-1 were gauged for depth using an

electric water level meter and groundwater samples were collected. Prior to sample collection, a minimum of three well volumes were purged from each well using a Masterflex™ peristaltic pump and clean, disposable polyethylene tubing. The groundwater sample was collected from the deep well (48DW-1) using a decontaminated submersible pump and clean, disposable polyethylene tubing. On March 6, 1997, monitor wells 48MW-10 and 48MW-11 were gauged for depth using an electric water-level meter, and groundwater samples were collected using a decontaminated submersible pump and clean, disposable polyethylene tubing. On April 29, 1997, monitor wells 48MW-12, 48MW-13, and 48DW-2 also were gauged for depth using an electric water-level meter, and groundwater samples were collected using a decontaminated submersible pump and clean, disposable polyethylene tubing. Groundwater samples were collected from each well and placed in laboratory-supplied containers. The sample containers were then maintained on ice in coolers and shipped via overnight courier to Paradigm for laboratory analysis. The groundwater samples from wells 48MW-1 through 48MW-5 were analyzed for target chlorinated solvents by SM 6230D. The groundwater samples collected from 48MW-6 through 48MW-12 and 48DW-2 were analyzed for target chlorinated solvents by USEPA Methods 601 and 602. The groundwater sample collected from 48DW-1 was analyzed by USEPA Method 8260B for compound confirmation of target chlorinated solvents in accordance with the July 3, 1996 letter from NCDOT to NCDEHNR. Proper chain-of-custody documentation was maintained during sample shipment.

6.7.1 Slug Testing

In-situ hydraulic conductivity tests (slug tests) were performed on monitor wells 48MW-2, 48MW-4, and 48MW-5 on December 4, 1996, to determine an average hydraulic conductivity for the uppermost water-bearing zone at the site. Rising and falling head slug tests were conducted using a pressure transducer. The transducer was connected to an In-Situ, Inc. Hermit™ data logger, which was programmed to record water-level measurements at logarithmic intervals. A solid cylinder (slug) of known volume was lowered into the test well, creating an instantaneous, positive change in the water level. The rate at which the water level returned to static conditions was recorded as test 0 (slug-in data). Once the water level recovered, test 0 was stopped. The

data logger was then programmed to begin recording data for test 1. The data logger was activated, and the slug was immediately removed from the well, creating an instantaneous, negative change in the water level. The water-level recovery rate also was recorded (slug-out data). The transducer was removed from the well. The transducer and cable were decontaminated by using a non-phosphate detergent and distilled water solution and rinsed before and after each well test. The data collected during the slug tests were downloaded from the data logger and analyzed by AQTESOLV™ using the Bower & Rice Method.

6.8 SAMPLE IDENTIFICATION

A sample identification system was developed to enable the field personnel to establish unique and appropriate identifications for each sample collected. This system incorporates identifiers for the sample matrix, the sample location, and the sample number. The identification system has been designed to give reference to previously-existing sample location identification numbers. The identification number consists of the site identification, sample matrix and location code, and sample number. For soil borings, the sample matrix and location code was followed by the depth interval sampled in ft bls. Field replicates and equipment blanks were designated with "REP" and "EB," respectively, followed by the sample matrix codes.

The following are provided as examples to illustrate the use of the system for groundwater and soil samples:

Shallow Monitor Well Groundwater Samples:	48MW-#; 48MW-#GW
Deep Monitor Well Groundwater Samples:	48DW-#
Soil Samples:	SS-#; 48SS-#
Production Well Water Samples:	PW-#
Field QC Samples:	
Equipment Blanks:	EB-#-SS; 48EB-#SS 48EB-#-GW
Trip Blanks:	TB -#-(Date); 48TB-#-(Date) TB-#

Replicates:	REP-#-SS; 48REP-#-SS 48REP-#-GW

6.9 CHAIN-OF-CUSTODY AND TRANSPORTATION PROCEDURES

The field personnel were responsible for the care and custody of collected samples until the samples were properly and formally transferred to another person or facility. To simplify the chain-of-custody record, as few people as possible handled the sample or physical evidence during the investigation or inspection. All field documentation was completed using waterproof, indelible ink on either Geraghty & Miller pre-printed forms or in bound field logbooks. A chain-of-custody form was completed for all samples or physical evidence collected.

7.0 DATA REVIEW AND VALIDATION

The purpose of this section is to evaluate the laboratory analytical data for the completeness of data package deliverables (Modified Level II reporting level). The soil, groundwater, surface-water, and associated quality control (QC) sample data were validated following the rules set forth in the "Functional Guidelines for Evaluating Organic Analyses" (USEPA, 1994) and the criteria presented in the Project QAP. Additionally, all field data were reviewed to verify the completion of required documentation. The laboratory analytical data reports (G149-32, 35, 71, 72, 93, 96, and 111) are presented in Appendix E.

7.1 FIELD QUALITY ASSURANCE COMPONENTS

All field activities were appropriately documented on water and soil sampling logs. The soil, groundwater, and associated QC samples collected on August 29, 1996; December 4-6, 1996; February 3, 1997; March 6, 1997; and April 29, 1997, were appropriately labeled, stored in sample containers on ice at 4 °C, and shipped to Paradigm via overnight courier. Chain-of-custody forms were forwarded with the samples, and custody seals were affixed to the coolers prior to shipment to Paradigm.

7.1.1 August 1996 Sampling Event

Trip blank sample TB-01 and equipment rinsate blank sample EB-01-SS were included in the soil sampling program conducted on August 29, 1997, and analyzed for target chlorinated solvents using USEPA Method 8021. Trip blank sample TB-01-(8/29/96) was associated with groundwater sample PW-1 collected on August 29, 1997, and analyzed for target chlorinated solvents by SM 6230D. The field duplicate sample REP-01-SS (SS-4-4) was collected to assess field and analytical precision. Equipment rinsate blank and field duplicate samples were not collected in association with production well sample PW-1. Additionally, samples SS-3-4 and PW-1 were designated in the field for matrix spike/matrix spike duplicate (MS/MSD) analysis.

7.1.2 December 1996 Sampling Event

Trip blank sample 48TB-01-(12/6/96) and equipment rinsate blank sample 48EB-01-SS were associated with the soil samples collected on December 6, 1996, and analyzed for target chlorinated solvents by USEPA Method 8021. Trip blank sample 48TB-01-(12/4/96) and equipment rinsate blank sample 48EB-01-GW were associated with the groundwater samples collected on December 4-6, 1996, and analyzed for target chlorinated solvents by SM 6230D. The two field duplicate samples (48REP-01-SS {48SS-10-08} and 48REP-01-GW {48MW-3GW}) were collected to assess field and analytical precision. Additionally, samples 48SS-11-08 and 48MW-2GW were designated in the field for MS/MSD analysis.

7.1.3 February 1997 Sampling Event

Trip blank sample 48TB-02-(2/3/97) and equipment rinsate blank sample 48EB-02GW were associated with groundwater samples 48MW-6, 48MW-7, 48MW-8, 48MW-9, and 48REP-02GW collected on February 3, 1997, and analyzed for target chlorinated solvents by USEPA Methods 601 and 602. Trip blank sample 48TB-01-(2/3/97) and equipment rinsate blank sample 48EB-01GW were associated with groundwater samples 48DW-1 and 48REP-01GW collected on February 3, 1997, and analyzed for target chlorinated solvents by USEPA Method 8260B The two field duplicate samples (48REP-02GW {48MW-6} and 48REP-01GW {48DW-1}) were collected to assess field and analytical precision. Additionally, samples 48MW-7 and 48DW-1 were designated in the field for MS/MSD analysis.

7.1.4 March 1997 Sampling Event

Trip blank sample 48TB-01-(3/6/97) and equipment rinsate blank sample 48EB-01-GW were associated with the groundwater samples collected on March 6, 1997, and analyzed for target chlorinated solvents by USEPA Methods 601 and 602. Field duplicate samples 48REP-01-GW (48MW-10) was collected to assess field and analytical precision. Additionally, sample 48MW-11 was designated in the field for MS/MSD analysis.

7.1.5 April 1997 Sampling Event

Trip blank sample 48TB-01-(4/29/97) and equipment rinsate blank sample 48EB-01-GW were associated with the groundwater samples collected on April 29, 1997, and analyzed for target chlorinated solvents by USEPA Methods 601 and 602. Field duplicate sample 48REP-01-GW (48MW-12) was collected to assess field and analytical precision. Additionally, sample 48DW-2 was designated in the field for MS/MSD analysis.

7.2 LABORATORY QUALITY ASSURANCE COMPONENTS

All soil, groundwater, and associated QC samples collected were received in good condition and were analyzed for target chlorinated solvents by Paradigm (Reports No. G149-32, 35, 71, 72, 93, 96, and 111; Appendix E) within the required 14-day holding time. Deviations from QC standards are discussed below. With the exception of the deviations reported herein, all sample QC parameters were within established control limits. The attached data are useable within the confines of this review.

7.2.1 August 1996 sampling Event

7.2.1.1 Target Chlorinated Solvents in Geoprobe Soils (USEPA Method 8021)

The required quantitation limits were detected and adjusted for sample moisture content (solid samples). Target chlorinated solvents were not detected in the associated QC blank samples (VBLK091196 [solids]; VBLK090696 [water]), trip blank sample TB-01, or equipment rinsate blank sample EB-01-SS.

The trifluorotoluene surrogate recoveries and MS/MSD (sample SS-3-4) recoveries were within established QC limits with the exception of dichlorodifluoromethane (27.8/21.1%) and vinyl chloride (40.6/35.4%), which had MS/MSD recoveries below the lower QC limits. The MS/MSD relative percent difference (RPD) data and laboratory control sample (LCS) recoveries (LCS091196), however, were within control limits. The sample data were not qualified based on the MS/MSD recovery QC sample data.

The duplicate sample criteria were met for QC soil sample REP-01-SS and associated sample SS-4-4.

7.2.1.2 Target Chlorinated Solvents in Water-Supply Well (SM 6230D)

The chlorinated fraction (Hall side) for production well groundwater sample PW-1 was diluted 1:10 due to elevated target chlorinated solvent concentrations. This dilution resulted in a ten-fold increase in the quantitation limits for this soil sample. The PID side for sample PW-1, however, did not require sample dilution.

Methylene chloride (0.8 µg/L) was detected in trip blank QC sample TB-01-(8/29/96). Because this target chlorinated solvent was not detected in the associated groundwater sample PW-1, no action was required. Target chlorinated solvents were not detected in the associated QC blank samples (VBLK091296 [Hall: PW-1] and VBLK091196 [Hall/PID: TB-01-(8/29/96); PID: PW-1].

The surrogate recoveries and MS/MSD (sample PW-1) recoveries were within established QC limits.

The initial calibration data for batch 091196 (Hall/PID: PW-1 and TB-01-[8/29/96]) were within the established QC limits for relative response factor (RRF >0.05) and relative standard deviation (% RSD <30%).

The continuing calibration data for batches 091196 (Hall/PID: TB-01-[8/29/96]; PID: PW-1) and 091296 (Hall: PW-1) associated with initial calibration batch 091196 were within established QC limits for RRF (≥0.05) with the exception of 1,2-dibromo-3-chloropropane (0.044) for batch 091296. Because this compound was not detected in associated sample PW-1, the result for 1,2-dibromo-3-chloropropane is qualified as unusable and flagged "R." The percent difference (% D) associated with these two batches also had 2-chlorotoluene (36.4%) for batch 091196 and 2-chlorotoluene (32.3%) and 1,2-dibromo-3-chloropropane (40.2%) for batch 091296 outside the % D control limit (>25%). The detected and undetected data for these

compounds in the associated samples, therefore, were qualified as estimated and flagged "J" if detected and "<J" if not detected.

7.2.2 December 1996 Sampling Event

7.2.2.1 Target Chlorinated Solvents in Hand-Auger Soils (USEPA Method 8021)

The required quantitation limits were detected. Target chlorinated solvents were not detected in the associated QC blank samples (VBLK1120996 and VBLK1121896 [solids]; VBLK3121696 [water]), trip blank sample 48TB-01-(12/6/96), and equipment rinsate blank sample 48EB-01-SS.

The 1,4-dichlorobutane and trifluorotoluene surrogate recoveries and MS/MSD (sample 48SS-11-08) recoveries were within established QC limits with the exception of bromochloromethane (MSD 67.1%); carbon tetrachloride (MSD 4.9%); 1,2-dibromo-3-chloropropane (MSD 51.5%); dibromomethane (MSD 68.3%); 1,2-dichloroethane (MSD 65.4%); cis-1,2-dichloroethene (61.7%); 2,2-dichloropropane (MSD 4.9%); diisopropyl ether (MSD 63.1%) and o-xylene (MSD 61.7%), which had MS/MSD recoveries below the lower QC limits. Additionally, the MS/MSD RPDs for bromobenzene (35.8%); carbon tetrachloride (132.4%); chloromethane (38.0%); dichlorofluoromethane (30.6%); 2,2-dichloropropane (132.4%); 1,2,4-trichlorobenzene (62.9%); trichlorofluoromethane (30.6%); and 1,2,3-trichloropropane (35.8%) exceeded the QC limit (>30%). All LCS recoveries (LCS120996, however, were within QC limits. The sample data were not qualified based on the MS/MSD recovery and RPD advisory QC sample data.

The duplicate sample criteria were met for QC soil sample 48REP-01-SS and associated sample 48SS-10-08 with the exception of 1,2-dichloropropane; 1,1,1-trichloroethane; trichloroethene; trichlorofluoromethane; and m/p-xylene. The concentrations for these five compounds in samples 48SS-10-08 and 48REP-01-SS, therefore, are qualified as estimated and flagged "J."

7.2.2.2 Target Chlorinated Solvents in Monitor well Groundwater (SM 6230D)

The Hall side for groundwater sample 48MW-2GW was diluted 1:5 due to elevated 1,1,1-TCA and TCE concentrations which exceeded the non-diluted analytical run instrument upper calibration range. The diluted run data for these two target chlorinated solvents, therefore, were used in combination with the non-diluted run sample data for all other compounds. The PID side for sample 48MW-2GW did not require sample dilution.

Target chlorinated solvents were not detected in the associated QC blanks (VBLK1121696 [Hall/PID:48MW-1GW, 48MW-3GW, 48MW-4GW, 48MW-5GW, 48REP-01 - GW and 48TB-01-(12/4/96); Hall:48EB-01-GW] and VBLK1121796 [Hall/PID:48MW-2GW; PID:48EB-01-GW]), trip blank sample 48TB-01-(12/4/97), and equipment rinsate blank sample 48EB-01-GW.

The 1,4-dichlorobutane and trifluorotoluene surrogate recoveries and MS/MSD (sample 48MW-2GW) recoveries were within established QC limits with the exception of chloromethane (160.9/156.2%), which had MS/MSD recoveries above the upper QC limit. The MS/MSD RPDs for 1,1,1-TCA (31.6%) and TCE (33.7%) also exceeded the QC limit (>30%). All LCS recoveries (LCS121596), however, were within QC limits. The sample data were not qualified based on the MS/MSD recovery and RPD advisory QC sample data.

The initial calibration data for batch 121596 (48MW-1GW, 48MW-2GW, 48MW-3GW, 48MW-4GW, 48MW-5GW, 48REP-01-GW, 48EB-01-GW and 48TB-01-[12/4/96]) were within the established QC limits for relative response factor (RRF>0.05) and relative standard deviation (% RSD <30%).

The continuing calibration data for batches 121796 (Hall/PID: 48MW-2GW; PID: 48EB-01-GW) and 121696 (Hall/PID: 48MW-1GW, 48MW-3GW, 48MW-4GW, 48MW-5GW, 48REP-01-GW and 48TB-01-[12/4/96]; Hall: 48EB-01-GW) associated with initial calibration batch 121596 were within established QC limits for RRF (≥0.05). The % D associated with these data, however, had benzene (35.1%); bromoform (29.2%); bromomethane (25.1%); n-butylbenzene (31.1%); sec-butylbenzene (34.9%); tert-butylbenzene (35.1%); carbon

tetrachloride (27.3%); chloroform (29.6%); chloromethane (-26.3%); 2,2-dichloropropane (27.3%); diisopropylether (33.5%); ethylbenzene (35.7%); isopropylbenzene (33.8%); p-isopropyltoluene (32.3%); methyl tert-butyl ether (32.7%); naphthalene (33.1%); n-propylbenzene (37.3%); styrene (33.2%); toluene (35.0%); 1,2,4-trichlorobenzene (25.3%); 1,1,1-TCA (26.2%); TCE (28.9%); trichlorofluoromethane (22.2%); 1,2,4-trimethylbenzene (33.3%); 1,3,5-trimethylbenzene (33.4%); m/p-xylene (34.2%) and o-xylene (33.2%) for batch 121796 and 1,2-dibromo-3-chloropropane (-31.9%); 1,2-dibromoethane (-29.1%) and trichloroethene (-28.3%) for batch 121696 outside the %D control limit (>25%). The sample data for these compounds, therefore, were qualified as estimated and flagged "J" if detected and "<J" if not detected.

The duplicate sample criteria were met for QC groundwater sample 48REP-01-GW and associated sample 48MW-3GW.

7.2.3 February 1997 Sampling Event

7.2.3.1 Target Chlorinated Solvents in Monitor well Groundwater (USEPA Methods 601 and 602)

The required quantitation limits were detected. Target chlorinated solvents were not detected in the associated QC blank samples (VBLK3021097 [48TB-02-(2/3/97)] and VBLK3020997 [48MW-6, 48MW-7, 48MW-8, 48MW-9, 48REP-02GW and 48EB-02GW]), trip blank sample TB-02-(2/3/97), or equipment rinsate blank sample 48EB-02GW.

The 1,4-dichlorobutane and trifluorotoluene surrogate recoveries and MS/MSD (sample 48MW-7) recoveries were within established QC limits with the exception of methylene chloride (MS 132.5%), which had a MS recovery above the upper QC limit. All MS/MSD RPDs and LCS recoveries (LCS021097), however, were within control limits. The sample data were not qualified based on the MS/MSD recovery advisory QC sample data.

The duplicate sample criteria were met for QC groundwater sample 48REP-02GW and associated sample 48MW-6.

7.2.3.2 Target Chlorinated Solvents in Monitor-Well Groundwater (USEPA Method 8260B)

The required quantitation limits were detected. Target chlorinated solvents were not detected in the associated QC blank sample (VBLK3020997: 48DW-1, 48REP-01GW, 48EB-01GW and TB-01-[2/3/97]), trip blank sample 48TB-01-(2/3/97), or equipment rinsate blank sample 48EB-01GW.

The surrogate recoveries and MS/MSD (sample 48DW-1) recoveries were within established QC limits with the exception of 2-chloroethyl vinyl ether (MS 0%); 1,2,3-trichlorobenzene (MS 59.6%), and 1,2,4-trichlorobenzene (MS 67.8%), which had MS recoveries below the lower QC limits. The MS/MSD RPDs for 2-chloroethyl vinyl ether (NA); naphthalene (50.0%); 1,2,3-trichlorobenzene (47.2%); 1,2,4-trichlorobenzene (32.0%); and 1,2,3-trichloropropane (31.4%) also exceeded the QC limit of 30%. All LCS (LCS1111106) recoveries, however, were within established control limits. The sample data were not qualified based on the MS/MSD recovery and RPD advisory QC sample data.

The duplicate sample criteria were met for QC groundwater sample 48REP-01GW and associated sample 48DW-1.

7.2.4 March 1997 Sampling Event

7.2.4.1 Target Chlorinated Solvents in Monitor well Groundwater (USEPA Methods 601 and 602)

The PID side (USEPA Method 601) for groundwater sample 48MW-11 was diluted 1:20 due to elevated TCE concentration. The data for this sample, therefore, are a combination of the non-diluted and diluted analytical runs. Target chlorinated solvents were not detected in the associated QC blank samples (VBLK1031097 [Hall/PID: 48MW-10, 48REP-01-GW, 48TB-01-(3/6/97) and 48EB-01-GW; Hall: 48MW-11] and VBLK1031397 [PID: 48MW-11], trip blank sample 48TB-01-(3/6/97), and equipment rinsate blank sample 48EB-01-GW.

The surrogate (1,4-dichlorobutane and trifluorotoluene) recoveries and MS/MSD (sample 48MW-11) recoveries were within established QC limits with the exception of

bromodichloromethane (151.6/167.2%); bromoform (MSD 151.5%); chlorobenzene (MSD 158.9%); chloroform (143.6/153.7%); chloromethane (MSD 129.4%); dibromochloromethane (MSD 142.8%); 1,2-dibromomethane (153.3/178.8%); 1,2-dichloroethane (157.6/167.1%); cis-1,3-dichloropropene (MSD 158.4%); trans-1,3-dichloropropene (MSD 158.9%); methylene chloride (147.2/149.4%), and 1,1,2-trichloroethane (161.2/173.2%%), which had MS/MSD recoveries above the upper QC limits. All MS/MSD RPDs and LCS (LCS031097) recoveries, however, were within QC limits. The sample data were not qualified based on the MS/MSD recovery advisory QC sample data.

The duplicate sample criteria were met for QC groundwater sample 48REP-01-GW and associated sample 48MW-10.

7.2.5 April 1997 Sampling Event

7.2.5.1 Target Chlorinated Solvents in Monitor well Groundwater (USEPA Methods 601 and 602)

The PID side (USEPA Method 601) for groundwater sample 48DW-2 was diluted 1:4 due to an elevated TCE concentration above the instrument upper calibration range in the non diluted run. The data for this sample, therefore, are a combination of the non-diluted and diluted analytical runs.

Target chlorinated solvents were not detected in the associated QC blank samples (VBLK3050397 [Hall/PID: 48EB-01-GW, 48TB-01-(4/29/97), 48MW-12, and 48MW-13; PID: 48DW-2] and VBLK3050597 [Hall/PID: 48REP-01-GW; PID: 48DW-2]), trip blank sample 48TB-01-(4/29/97), and equipment rinsate blank sample 48EB-01-GW.

The surrogate (1,4-dichlorobutane and trifluorotoluene) recoveries and MS/MSD (sample 48DW-2) recoveries were within established QC limits with the exception of 1,1,1-TCA (12.3/6.1%) and TCE (31.4/29.5%), which had MS/MSD recoveries below the lower QC limits. All MS/MSD RPDs and LCS recoveries (LCS050397), however, were within QC limits. The sample data were not qualified based on the MS/MSD recovery advisory QC sample data.

The duplicate sample criteria were met for QC groundwater sample 48REP-01-GW and associated sample 48MW-12.

7.3 OVERALL DATA ASSESSMENT

The target chlorinated solvent analytical data included in Paradigm Reports No. G149-32, 35, 71, 72, 93, 96, and 111 (Appendix E) were validated according to the criteria presented in Section 7.0 and are valid. Estimated (J) and unusable data qualifiers, however, were assigned to the water supply well and monitor well groundwater sample data (SM 6230D) because continuing calibration QC sample criteria were not met. Additionally, the duplicate sample criteria for 1,2-dichloropropane; 1,1,1-TCA; TCE; trichlorofluoromethane; and m/p-xylene in soil sample 48SS-10-08 were not met. The data for these compounds, therefore, were qualified as estimated (J).

8.0 SOILS INVESTIGATION

8.1 REGIONAL GEOLOGY

The subject site is within the Piedmont Physiographic Province of North Carolina. The Piedmont Province is a northeast-trending igneous and metamorphic rock and is divided into several northeast-trending geologic belts. The site is in the Inner Piedmont Block, which is characterized by unconsolidated to consolidated sediments overlying metamorphic and igneous bedrock. Based on the Geologic Map of North Carolina (North Carolina Geological Survey, 1985), the bedrock in the region of the site area consists predominantly of a mica schist.

8.2 MONITOR WELL DRILLING PROGRAM

From November 12, 1996, through January 17, 1996, nine shallow Type II monitor wells (48MW-1 through 48MW-9) were installed at depths ranging from 21 to 50 ft bls using a drill rig equipped with hollow-stem augers and air-rotary equipment. During this period, one Type III monitor well (48DW-1) also was installed to a depth of 100 feet. Between March 3, 1997, and April 25, 1997, four additional Type II monitor wells (48MW-10 and 48MW-13) were installed to depths ranging from 30 ft bls to 40 ft bls, and an additional Type III monitor well (48DW-2) was installed to a depth of 66 ft bls using a drill rig equipped with hollow-stem augers and air rotary equipment. The locations of the monitor wells are depicted on Figure 2-2. Well-construction details are summarized on Table 5-1.

During well installation, 2-foot soil samples were collected from well borings 48MW-1 through 48MW-5 continuously to the completion depth of the boring, or until refusal, using decontaminated, stainless steel split-spoon samplers. Soil samples were collected at 5-foot intervals from monitor wells 48MW-6 through 48MW-13, 48DW-1, and 48DW-2. The soil samples were collected, screened using the PID, and the results recorded by Geraghty & Miller personnel.

The samples were also classified in the field by Geraghty & Miller personnel in general accordance with the Geraghty & Miller Quality Assurance Manual (1988). Soil classifications are presented on the monitor well boring logs included in Appendix D.

8.3 SITE-SPECIFIC GEOLOGY

The characteristics of the subsurface materials at the site were evaluated from information obtained during the installation of monitor wells 48MW-1 through 48MW-13, 48DW-1, and 48DW-2. Based on the boring logs, the subsurface material at the site generally consists of approximately 2 feet of fill material (sand and gravel) in some areas, underlain by clayey silt to approximately 13 to 15 ft bls on the eastern side of the site and to approximately 35-37 ft bls on the southwestern side of the site. The clayey silt is underlain by schist to a depth of 100 ft bls.

Three geologic cross-sections were developed using the lithologic information obtained during the monitor well installation. The locations of the cross-sections are shown in Figure 8-1, and the cross-sections are shown in Figures 8-2, 8-3, and 8-4. Cross-section A-A' extends across the site from west to east and includes the lithologic information from wells 48MW-9, 48MW-4, 48DW-1, 48MW-1, 48DW-2, 48MW-11, and 48MW-13. Cross-section B-B' extends across the site from north to south and includes the lithologic information from wells 48MW-5, 48DW-1, 48MW-2, and 48MW-7. Cross-section C-C' also extends across the site from north to south and includes the lithologic information from well 48MW-10, 48DW-2, 48MW-11, and 48MW-12.

8.4 RESULTS OF SOIL ANALYSES

8.4.1 Field Screening

During the Geoprobe™ and monitor well installation soil investigations, soil samples were collected, screened using the PID, and the results recorded by Geraghty & Miller personnel. During the Geoprobe™ investigation, the sample yielding the highest PID reading was retained for laboratory analysis.

8.4.2 Results of Soil-Vapor Survey

Table 8-1 is a summary of soil-vapor survey results. Soil-vapor concentrations were recorded at locations adjacent to the walls of the current and former asphalt testing laboratory buildings (Figure 5-1). The concentration of recorded samples ranged from background (0.0 parts per million [ppm]) to 398.0 ppm detected at locations around the current asphalt testing laboratory building. The range of concentrations of recorded samples in the vicinity of the former asphalt testing laboratory building was from 128 ppm to 314.0 ppm. The recorded concentrations are ionizable organics within the range of 0 to 10.7 electrovolts (eV) that Geraghty & Miller is interpreting as both target and non-target chlorinated solvents. The highest soil-vapor reading collected adjacent to the current asphalt testing laboratory building was observed at SV-7, near the area where spent "Trico" reportedly may have been piped out of the laboratory building. High soil-vapor readings were observed at all sampling points (SV-10 through SV-15) in the vicinity of the former asphalt testing laboratory building.

depths? see Table 8-1

8.4.3 Results of Soil Sampling

Soil sampling locations were placed adjacent to each wall of the current asphalt testing laboratory building and in the vicinity of the former laboratory, in the areas most likely to have been solvent storage or disposal areas, to investigate the possible presence of soil-sorbed target chlorinated solvents. Locations for soil samples SS-1, SS-3, and SS-5 were selected based on the results of the soil-vapor survey. Target chlorinated solvents were not detected above the laboratory quantitation limits in soil borings SS-1 through SS-9. Non-target chlorinated solvents, however, were detected above the laboratory quantitation limits in soil sample SS-5-5.

hand auger?

Soil samples SS-10 and SS-11 were collected on December 6, 1996, between the truck scales and the current asphalt testing laboratory building to investigate the possible presence of soil-sorbed target chlorinated solvents. Chloroform; 1,1-dichloroethane; 1,1,1-TCA; and TCE were detected below the calculated soil cleanup levels in soil samples SS-10-04 and SS-10-08. Soil cleanup levels are based on calculated values using the Organic Leachate Model as presented in Section 7.0, Table 4 of the "Groundwater Section Guidelines for the Investigation and Remediation of

Soils and Groundwater" (NCDEHNR, 1993). A summary of acceptable soil concentrations of target chlorinated solvents has been tabulated and is included in Appendix A. Non-target chlorinated solvents were detected above the laboratory quantitation limits in soil samples SS-10-04 and SS-10-08. Target and non-target chlorinated solvents were not detected above the laboratory quantitation limits in soil samples SS-11-04 and SS-11-08. The laboratory analytical data are summarized on Tables 8-2 and 8-3. The laboratory data reports are included in Appendix E.

8.5 EXTENT OF IMPACTED SOILS

Based on the results of the soil-vapor survey, possible source areas of target and non-target chlorinated solvents were identified in the vicinity of the current and former laboratories. However, target chlorinated solvents were not detected above the laboratory quantitation limits in soil borings SS-1 through SS-9 and SS-11. Chloroform; 1,1-dichloroethane; 1,1,1-TCA; and TCE were detected below the calculated soil cleanup levels in soil samples SS-10-04 and SS-10-08. Therefore, an area which would represent a continuing source for target chlorinated solvents groundwater contamination was not identified.

9.0 GROUNDWATER SAMPLING

9.1 REGIONAL HYDROGEOLOGY

Groundwater in the Inner Piedmont Province generally occurs within two units of an aquifer. The first is the unconfined aquifer unit which occurs within the overburden overlying and derived from the bedrock units. The second main aquifer unit exists within the various fractured bedrock units. Groundwater flow in the bedrock aquifer unit occurs primarily within fractures and may exist under unconfined or confined conditions depending upon the local geology. Additional aquifer units exist in areas of alluvial deposits, which may or may not be physically separated from the primary unconfined aquifer unit by confining units (aquitards).

9.1.1 Shallow Groundwater Flow Direction

Water-level measurement data collected from each of the monitor wells on December 4, 1996, and February 3, March 6, and April 29, 1997, are presented on Table 9-1. The water-level elevation data were used to construct potentiometric contour maps for the shallow portion of the aquifer on April 29, 1997 (Figure 9-1), and the deep portion of the aquifer on April 29, 1997 (Figure 9-2). The groundwater in the shallow portion of the aquifer flows across the site to the southeast. In addition, the groundwater in the shallow portion of the aquifer exhibits convergent flow. Water-level data from the deep wells suggest that groundwater in the deeper portion of the aquifer also flows towards the southeast.

9.1.2 Hydraulic Gradient

The groundwater flow direction was calculated to be to the southeast, with an estimated shallow groundwater gradient of 0.061 ft/ft on April 29, 1997. Based on the water-level data collected on April 29, 1997, the estimated groundwater gradient of deeper portion of the aquifer was 0.017 ft/ft.

A vertical groundwater gradient was calculated using data obtained from the shallow/deep monitor well pair 48MW-11/48DW-2. The vertical gradient on April 29, 1997, was upward at 0.11 ft/ft.

9.1.3 Hydraulic Properties

In-situ hydraulic conductivity test (slug test) results from monitor wells 48MW-4 and 48MW-5 were used to obtain estimates of the hydraulic conductivity for the upper portion of the shallow aquifer. Analysis of the rising head slug-test data provided hydraulic conductivity values of 3.02 x 10^{-3} cm/sec and 1.75 x 10^{-3} cm/sec, for monitor wells 48MW-4 and 48MW-5, respectively. An average hydraulic conductivity value of 2.39 x 10^{-3} cm/sec (6.76 ft/day) was calculated from these values. Time-drawdown plots are included in Appendix F.

9.2 GROUNDWATER INVESTIGATION - WATER-SUPPLY WELL

On August 29, 1996, a groundwater sample was collected from the on-site water-supply well (PW-1). The sample was analyzed for target chlorinated solvents by SM 6230D. The analytical results of the water-supply well sample are summarized on Table 9-2 and included in Appendix E. Reported concentrations which exceed the North Carolina Administrative Code, Title 15A, Chapter 2L (15A NCAC 2L) Standard for a compound are highlighted by an enclosed box. If a numerical 15A NCAC 2L Standard has not been established for a compound, detectable concentrations of the compound in a groundwater sample are considered to be in excess of North Carolina Water Quality Standards. TCE (140 µg/L) and 1,1-dichloroethene (1,1-DCE [29 µg/L]) were detected above the 15A NCAC 2L Groundwater Quality Standards (2.8 µg/L and 7.0 µg/L, respectively) in the groundwater sample collected from well PW-1. 1,1-Dichloroethane (6 µg/L) and 1,1,1-TCA (140 µg/L) were detected below the 15A NCAC 2L Groundwater Quality Standards (700 µg/L and 200 µg/L, respectively). Trace concentrations of methyl-tert-butyl ether (MTBE) and toluene were also detected in the sample.

9.3 GROUNDWATER INVESTIGATION - MONITOR WELLS

From December 4 through 6, 1996, monitor wells 48MW-1 through 48MW-5 were gauged for depth to water using an electric water-level meter. After gauging, the monitor wells were purged and sampled using a decontaminated Grundfos® Redi-Flo 2 stainless steel submersible electric pump (submersible pump) and clean, disposable polyethylene tubing. Groundwater samples were collected from each well and placed in laboratory-supplied containers. The containers were then maintained on ice in coolers and shipped via overnight courier to Paradigm for laboratory analysis. The groundwater samples were analyzed for target chlorinated solvents by SM 6230D. Proper chain-of-custody was maintained during all shipments of samples. All purge water was containerized in 55-gallon drums.

TCE and 1,1-DCE were detected in the groundwater samples collected from 48MW-1 (64 µg/L and 23 µg/L, respectively) and 48MW-3 (7 µg/L and 15 µg/L, respectively) above the 15A NCAC 2L Groundwater Quality Standards (TCE - 2.8 µg/L and 1,1-DCE - 7.0 µg/L). 1,1,1-TCA and 1,1-dichloroethane were detected below the 15A NCAC 2L Groundwater Quality Standards in the groundwater samples collected from 48MW-1 and 48MW-3. cis-1,2-Dichloroethene was detected below the 15A NCAC 2L Groundwater Quality Standard in the groundwater sample collected from 48MW-3. 1,1-DCE and 1,1,1-TCA were detected below the 15A NCAC 2L Groundwater Quality Standards in the groundwater sample collected from 48MW-4. Several non-target chlorinated solvents were also detected above the 15A NCAC 2L Groundwater Quality Standards in 48MW-5, including benzene, and benzene-related compounds.

Based on the analytical results from the December 1996 groundwater sampling event, additional monitor wells (48DW-1 and 48MW-6 through 48MW-9) were installed in an attempt to define the horizontal and vertical extent of the dissolved target chlorinated solvents plume at the site. Following the installation of the monitor wells, groundwater samples were collected from monitor wells 48DW-1 and 48MW-6 through 48MW-9 on February 3, 1997, with a Masterflex™ peristaltic pump (peristaltic pump) or a decontaminated submersible pump with clean, disposable polyethylene tubing. The groundwater samples collected from 48MW-6 through 48MW-9 were analyzed for target chlorinated solvents by USEPA Methods 601 and 602. The

groundwater sample collected from 48DW-1 was analyzed by USEPA Method 8260B for compound confirmation of target chlorinated solvents in accordance with the July 3, 1996 letter from NCDOT to NCDEHNR. Target and non-target chlorinated solvents were not detected above the laboratory quantitation limits for the groundwater samples collected from any of these monitor wells.

Additional monitor wells (48MW-10 and 48MW-11), also were installed on March 3, 1997, to further aid in delineation of the horizontal extent of the dissolved target chlorinated solvents plume associated with the former asphalt testing laboratory building. Groundwater samples were collected on March 6, 1997, using a submersible pump and clean, disposable polyethylene tubing and analyzed for target chlorinated solvents by USEPA Methods 601 and 602. TCE (470 µg/L) and 1,1-DCE (33 µg/L) were detected above the 15A NCAC 2L Groundwater Quality Standards (2.8 µg/L and 7.0 µg/L, respectively) in the groundwater samples collected from monitor well 48MW-11. 1,1-Dichloroethane; cis-1,2-dichloroethene; and 1,1,1-TCA were detected below the 15A NCAC 2L Groundwater Quality Standard in the groundwater samples collected from 48MW-11. Non-target chlorinated solvent (tetrachloroethene - 2 µg/L), was also detected above the 15A NCAC 2L Groundwater Quality Standard (0.7 µg/L) in the groundwater samples collected from 48MW-11. Target and non-target chlorinated solvents were not detected above the laboratory quantitation limits in the groundwater sample collected from monitor well 48MW-10.

Based on the groundwater analytical results of monitor well 48MW-11, additional shallow monitor wells (48MW-12 and 48MW-13), and deep well 48DW-2 were installed in an attempt to delineate the downgradient horizontal and vertical extent of the dissolved target chlorinated solvents plume. On April 29, 1997, groundwater samples were collected from monitor wells 48MW-12, 48MW-13, and 48DW-2 using clean, disposable polyethylene tubing and a decontaminated submersible pump and analyzed for target chlorinated solvents by USEPA Methods 601 and 602. 1,1-DCE (44 µg/L) and TCE (250 µg/L) were detected above the 15A NCAC 2L Groundwater Quality Standards (7.0 µg/L and 2.8 µg/L, respectively) in the groundwater sample collected from 48DW-2. 1,1,1-TCA, 1,1-dichloroethane, and cis-1,2-

dichloroethene were detected below the 15A NCAC 2L Groundwater Quality Standards in the groundwater sample collected from 48DW-2. Non-target chlorinated solvent, tetrachloroethene (1.0 µg/L), was also detected above the 15A NCAC 2L Groundwater Quality Standards (0.7 µg/L) in the groundwater samples collected from 48DW-2. Target and non-target chlorinated solvents were not detected above the laboratory quantitation limits in the groundwater samples collected from monitor wells 48MW-12 and 48MW-13.

The distribution of dissolved 1,1-DCE and TCE is shown on Figures 9-5 through 9-8. The analytical results from the groundwater samples collected from the site monitor wells on December 4 through 6, 1996; and February 3, March 6, and April 29, 1997, are summarized on Tables 9-2, 9-3, 9-4, and 9-5, respectively. The laboratory data reports are included in Appendix E.

9.4 EXTENT OF GROUNDWATER IMPACT

The results of the groundwater investigation indicate that groundwater in the unconfined aquifer at this site has been impacted by dissolved target chlorinated solvents in excess of the 15A NCAC 2L Groundwater Quality Standards. The horizontal and vertical extents of 1,1-DCE and TCE impacted groundwater associated with the current asphalt testing laboratory have been delineated within the area of 48MW-3 and the adjacent perimeter monitor wells, 48MW-2, 48MW-4, 48MW-5, 48MW-8, and 48MW-9, and deep well 48DW-1.

The horizontal extent of the dissolved-phase target chlorinated solvents associated with the former laboratory has been delineated within the area of 48MW-1 and 48MW-11 and the adjacent perimeter wells. However, based on analytical results of monitor wells 48DW-2 (TCE - 250 µg/L and 1,1-DCE - 44 µg/L), the extent of dissolved-phase target chlorinated solvents has not been vertically delineated. A densely wooded area south and west of 48DW-2 and insufficient right-of way clearance (Sugar Lake Road) precluded the installation of an additional Type III well. Since it is uncertain when the implementation of corrective action will occur, further site evaluation may be necessary prior to the implementation of a CAP to determine the most feasible option available at the future time of CAP preparation.

10.0 FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

10.1 FINDINGS

The following conclusions are drawn from the soil and groundwater investigations:

(1) Previous site activities included the testing of asphalt, possibly using carbon tetrachloride, TCE or 1,1,1-TCA.

(2) Non-potable water is supplied to the facility by the on-site water-supply well. Bottled water reportedly is used on-site as a source of drinking water.

(3) Two septic systems, located southwest of the former asphalt testing laboratory building and 110 feet southwest of the current asphalt testing laboratory building, were identified at the site.

(4) Soil-vapor sampling points were strategically placed adjacent to the walls of the current laboratory and in the vicinity of the former laboratory to determine the locations of elevated soil-vapor concentrations to aid in the placement of the soil sampling locations. Soil-vapor concentrations around the current asphalt testing laboratory building ranged from 0.0 ppm to 398.0 ppm and the former asphalt testing laboratory building had soil-vapor concentrations ranging from 128.0 ppm to 314.0 ppm. The recorded concentrations above background (0.0 ppm) are ionizable organics within the range of 0 to 10.7 eV of the PID that Geraghty & Miller is interpreting as both target and non-target chlorinated solvents.

(5) Soil samples were generally obtained from areas immediately adjacent to or in the immediate vicinity of the current and former asphalt testing laboratory buildings. The soil samples were collected from each side of the asphalt testing laboratory buildings. Laboratory analysis of the collected soil samples did not detect soil-sorbed target chlorinated solvents above the laboratory quantitation limits in soil borings SS-1 through SS-9 and SS-11. Chloroform; 1,1-dichloroethane; 1,1,-TCA; and TCE were

detected below the calculated soil cleanup levels in the soil samples collected from SS-10.

(6) The results of the groundwater investigation indicate that shallow groundwater is present beneath the site at depths ranging from 7.37 to 31.39 ft bls. The overall direction of groundwater flow is to the southeast at an estimated shallow groundwater gradient of 0.061 ft/ft on April 29, 1997. Based on the water-level data collected on April 29, 1997, the estimated groundwater gradient of deeper portion of the aquifer was 0.017 ft/ft. A vertical groundwater gradient was calculated using data obtained from the shallow/deep monitor well pair (48MW-11/48DW-2). The vertical gradient on April 29, 1997, was upward at 0.11 ft/ft.

(7) 1,1-DCE (29 µg/L) and TCE (140 µg/L) were detected in the sample obtained from the on-site water-supply well in excess of the 15A NCAC 2L Groundwater Quality Standards (7 µg/L and 2.8 µg/L, respectively).

(8) 1,1-DCE and TCE were detected in the groundwater samples collected from 48MW-1, 48MW-3, 48MW-11, and 48DW-2 above the 15A NCAC 2L Standards, indicating that the shallow and deep groundwater at the site has been impacted by target chlorinated solvents. Also, the groundwater samples collected from monitor well 48MW-4 detected 1,1-DCE and 1,1,1-TCA however, the concentration were well below water quality standards.

(9) Target chlorinated solvents were not detected above the laboratory quantitation limits in the groundwater samples collected from wells 48MW-2, 48MW-5 through 48MW-10, 48MW-12, 48MW-13, and 48DW-1.

10.2 CONCLUSIONS

The following conclusions are drawn from the soil and groundwater investigations:

(1) Target chlorinated solvents were not detected in excess of the calculated soil cleanup levels in any of soil samples collected from either the current or former laboratory.

Therefore, an area which would represent a continuing source for target chlorinated solvents groundwater contamination was not identified.

(2) Although the concentrations of TCE (7 µg/L) and 1,1-DCE (15 µg/L) were detected above the 15A NCAC 2L Groundwater Quality Standards (2.8 µg/L and 7 µg/L) in the groundwater sample collected from 48MW-3, the samples collected from the perimeter wells (48MW-4, 48MW-5, 48MW-7 through 48MW-9, and 48DW-1) did not detect any target chlorinated solvents above laboratory detection limits. Therefore, the horizontal and vertical extents of the dissolved target chlorinated solvents plume have been adequately defined within the area of 48MW-3 and the perimeter wells. The presence of TCE (250 µg/l) and 1,1-DCE (44 µg/l) in the groundwater sample collected from deep well 48DW-2 above the 15A NCAC 2L Groundwater Standards (2.8 µg/l and 7 µg/l, respectively) indicates the vertical extent of target chlorinated solvents associated with the former laboratory has not been defined. However, the horizontal extent of the dissolved-phase target chlorinated solvents has been defined within the area of 48MW-1 and 48MW-11 and the adjacent perimeter wells.

10.3 RECOMMENDATIONS

Based on the results of the soils investigation, an area which would represent a continuing source for target chlorinated solvents groundwater contamination was not identified.

The dissolved-phase target chlorinated solvents associated with the current asphalt testing laboratory has been horizontally and vertically defined at the site. Also, the dissolved-phase target chlorinated solvents contaminant plume associated with the former asphalt testing laboratory has been horizontally delineated within the area of 48MW-1 and 48MW-11 and the adjacent perimeter wells. However, based on the analytical results of monitor well 48DW-2 (TCE - 250 µg/L and 1,1-DCE - 44 µg/L) above the 15A NACA 2L Groundwater Quality Standards (2.8 µg/L and 7 µg/L, respectively), the extent of dissolved-phase target chlorinated solvents has not been vertically delineated. A densely wooded area south and west of 48DW-2 and insufficient right-of-

way clearance (Sugar Lake Road) precluded the installation of an additional Type III well. Since it is uncertain when the implementation of corrective action will occur, further site evaluation may be necessary prior to the implementation of a CAP to determine the most feasible option available at the future time of CAP preparation.

11.0 REFERENCES

Geraghty & Miller, Inc., 1996. Asphalt Materials Manufacturing Facility Site Investigation Project Quality Assurance Plan. Raleigh, NC.

Geraghty & Miller, Inc., 1988. Quality Assurance Manual.

North Carolina Department of Environment, Health, and Natural Resources (NCDEHNR), 1993. "Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater." Division of Environmental Management.

North Carolina Geologic Survey (NCGS), 1985. Geologic Map of North Carolina. Department of Natural Resources & Community Development.

United States Environmental Protection Agency (USEPA), 1994. USEPA Contract Laboratory Program - National Functional Guidelines for Organic Data Review. Office of Solid Waste and Emergency Response. EPA/540/R/94/090. December.

APPENDIX B

SITE SCREENING INFORMATION

Site #48

ASPHALT PLANT SAMPLING FORM

Date 4-27-89 Person Sampling Greg Kissel

Current Owner Lee Paving Sample Type (Soil) (Water) 29KW, 29KS

OSEP Code # (CN-PN-SN) Cnty/plnt/sample Chatham/Lee #3/29KW, 29KS

Location of Plant Sugar Lake Road E. of Pittsboro off US-64.

General Slope of Land (from sample point) 10%

Soil Type (Loamy, Granular, Rocky, Clay, Sandy, Other) Clay

Approximate Time & Durations of DOT site use 1968 – present

Previous or Simultaneous Use of site by other than DOT parties? (Y)/N) Yes

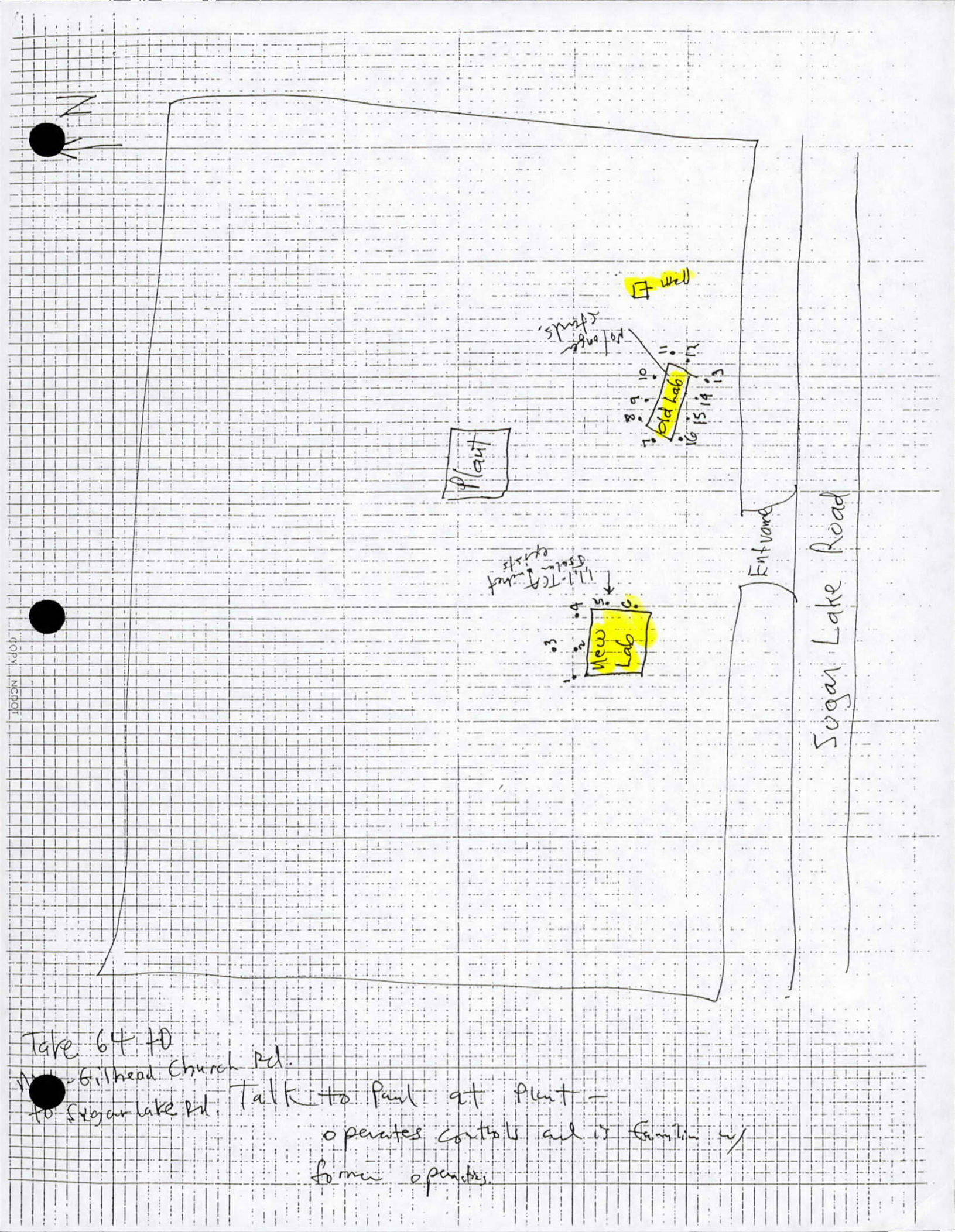
Froehling, Robertson, Soils & Materials, Corp of Engineers, Law

In the event that multiple screening samples are conducted with a VOA or similar instrument, list the sample numbers and results here.

Sample #	Reading	Sample #	Reading	Sample #	Reading
1	trace	7	< 1	13	trace
2	30 ppm	8	trace	14	5
3	trace	9	5	15	15
4	trace	10	15	16	trace
5	10 ppm	11	5		
6	15 ppm	12	trace		

Comments: Well 300' from new lab site. Water pulled from well. Holes 5 & 6 hard to get to. Located between Lab and scales-about 20" of room to get between. Old lab has some low level contamination surrounding it. New lab contaminated beside door to lab and beside E wall near triso collection site. Well06 lab results 4-28-89 318 ug/L T. Ethane and 617 T. Ethylene ug/L in water. (well 3.19 ppb C. Tetrachloride in soil.

Note: A copy of any lab analysis should be attached to this form.



Take 64 to
Gilhead Church Rd.
to Sugar Lake Rd. Talk to Paul at Plant —
operates controls and is familiar w/
former operators.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
P.O. BOX 25201
RALEIGH 27611-5201

JAMES G. MARTIN
GOVERNOR

JAMES E. HARRINGTON
SECRETARY

DIVISION OF HIGHWAYS

GEORGE E. WELLS, P.E.
STATE HIGHWAY ADMINISTRATOR

DATE 4-27-89

MEMORANDUM TO: TO WHOM IT MAY CONCERN

The Department of Transportation is conducting a survey of properties on which State asphalt testing laboratories were located to determine if any contaminants or other materials that may be potentially hazardous to the environment remain on any portion of these properties. The property which you now own may have been a site for one of the department's asphalt testing laboratories. By executing this letter, you, the undersigned owner, hereby grants permission for Department of Transportation personnel, or their authorized agents, to enter upon your property to the extent necessary to investigate the presence of contaminants or potentially hazardous substances. The investigation is limited solely to the taking of soil samples using hand-powered methods and the collection of water samples from on-site water supplies.

After completion of the site investigation and analysis of soil and water samples, the department agrees to share with you the results and conclusions of the investigation. If contaminants or potentially hazardous substances directly resulting from the past operations of these asphalt testing laboratories are detected, you will be advised as to the measures the Department will take to clean up or render harmless those contaminants or hazardous substances.

Thank you for your cooperation in this matter.

David L. Riggs

PROPERTY OWNER OR
COMPANY REPRESENTATIVE

Lee Paving
P.O. Drawer 1109
Sanford N.C. 27330-1109
ADDRESS
919-776-4338
TELEPHONE NO.

"Doc" Oldham V.P.

Sample Date(yy/mm/dd): 89/4/27 Tester: GGK
Division: 8 County: 52

nt Owner: Lee Paving

Address: Pittsboro, N. C.
Site Location: Sugar Lake Road E. of Pittsboro off U. S. 64

Sample Taken (y/n): Y
Sample Type(w/s): S
Sample#: 29ks

Soil Type: Clay

	mg/kg=ppm	mg/l=ppm	ug/kg=ppb	ug/l=ppb
Trichloroethylene (TCE):	<0.5 ppm			
Trichloroethane (TCA):	<0.5 ppb			
Carbon Tetrachloride (CCl4):	3.19 ppb			

Comments: Well 300' from new job site. Water pulled from well. Holes 5 & 6 hard to get to. Located between lab and scales about 20" of room to get between. Old lab has some low level contamination surrounding it. New lab contaminated beside door to lab and beside E wall near trico collection site.

NC DOT OSEP Asphalt Plant Sampling
(Plants with some contamination)

35 46

Sample Date(yy/mm/dd): 89/04/27 Tester: GGK
Division: 08 County: 52

Plant Owner: Lee Paving

Address: Pittsboro, N. C.
Site Location: Sugar Lake Road E. of Pittsboro off U. S. 64
Chatham / R.R.O.

Sample Taken (y/n): Y
Sample Type(w/s): s
Sample#: 29ks

Soil Type: Clay

	mg/kg=ppm	mg/l=ppm	ug/kg=ppb	ug/l=ppb
Trichloroethylene (TCE):	<0.5 ppm			
Trichloroethane (TCA):	<0.5 ppb			
Carbon Tetrachloride (CCl4):	3.19 ppb			

Comments: Well 300' from new job site. Water pulled from well. Holes 5 & 6 hard to get to. Located between lab and scales about 20" of room to get between. Old lab has some low level contamination surrounding it. New lab contaminated beside door to lab and beside E wall near trico collection site.

NORTH CAROLINA

GROUNDWATER CONTAMINATION INCIDENT MANAGEMENT

SITE PRIORITY RANKING SYSTEM

Groundwater Incident File # N/A Site Rank 117

Incident Name Lee Paving Co., Sugar Lake Road site Ranking Performed by WF

Date Ranking Performed 29 Nov 89

Region/County RRO / Chatham

I. Contaminants Involved

Carbon tetrachloride (3,3,18)

(If more space is required, use back of form)

II. Exposure Assessment

Points Awarded

A. Contaminated Drinking Water Supplies

1. Private, domestic supply well(s) containing substances in concentrations exceeding Class GA underground water quality standards; award to each impacted well the matrix value(s) from the Sax Toxicity - persistence matrix, shown in Attachment A to explanatory notes, for the contaminants found in each well, and sum the values from all impacted wells 54

2. Public or institutional water well containing substances in concentrations exceeding Class GA underground water quality standards; award to each impacted well the matrix value(s) form

the Sax Toxicity - persistence matrix, shown in Attachment A to the explanatory notes, for the contaminants found in each well, and sum the values from all impacted wells 0

3. If a water supply well identified in items II.A.1 and II.A.2 cannot be replaced by an existing public water supply source, award 5 points per irreplaceable well 15

B. Threat to Uncontaminated Drinking Water Wells

1. Private, domestic water supply well located within 1,500 feet downgradient hydrogeologically of the contaminant source; award 5 points per well 0

2. Public or institutional water supply well located within 1/2 mile downgradient hydrogeologically of the contaminant source; award 10 points per well 0

3. If any well identified in items II.B.1. and II.B.2. is located within 250 feet downgradient hydrogeologically of the contaminant source; award an additional 10 points per threatened well 0

III. Contaminant Hazard Assessment

A. The assessment of hazard is based on Sax Toxicity and the persistence of the most hazardous substance detected in an investigation and the amount, estimated or actual, discharged

1. The highest matrix value for the contaminants involved in the incident from the Sax Toxicity-persistence matrix (shown in Attachment A to the explanatory notes) 18

2. The value for the amount discharged is based on gallons of material, where other volumetric or weight measures are used to characterize a material, the relationship 1 ton $\approx$ 1 cubic yard $\approx$ 4 drums $\approx$220 gallons will be used to determine the number of gallons discharged and is assigned according to the following table:

no discharge	-	0
≤ 10 gallons	-	1
>10 but ≤ 100 gallons	-	2
>100 but ≤ 1000 gallons	-	5
>1000 gallons	-	10

10

IV. Source Assessment

A. Primary Source - Uncontrolled or unabated Primary Sources such as, but not limited to, dump sites, stockpiles, lagoons, land applications, septic tanks, landfills, underground or above ground storage tanks, and transportation accidents

1. Suspected or confirmed source remains in active use, continues to receive petroleum products, raw materials, wastewater or solid waste, and continues to discharge contaminants; award 20 points

0

2. Active use of suspected or confirmed source has been discontinued or the source resulted from a one-time release of contaminants, such as a spill resulting from a transportation accident, but the source continues to release contaminants into the environment as with a closed landfill or a transportation accident where no remediation of contaminated soil or product has been accomplished; award 10 points

10

B. Secondary Source

1. Free product thickness ≥ 1/4 inch detected on the water table in observation or monitoring well; award 50 points

0

2. Soil exhibits partial or full saturation with contaminant, or product vapors in excess of 100 ppm as measured by organic vapor detection equipment; award 20 points

0

V. Hydrogeological Assessment

A. Depth to Water Table - The depth is measured vertically from the deepest point of penetration of the contaminant to the highest

level of the seasonal high water table; if the depth is not known, it should be estimated from the best available data; and a value assigned from the following table:

Depth	Assigned Value
≥ 50 feet	0
< 50 to ≥ 30 feet	2
< 30 to ≥ 20 feet	4
< 20 to ≥ 10 feet	6
Contaminant has reached groundwater	8
Contaminant has entered the fractured bedrock aquifer	10

10

B. Average Horizontal, Linear Groundwater Velocity - From the relationship for steady state, average velocity, $v = K/n \, dh/dl$, an estimate of movement of conservative contaminats may be made. The horizontal, saturated hydraulic conductivity (K) may be determined by aquifer test or estimated by field or laboratory tests or as a last resort, from generalized tables of aquifer materials, shown in Attachment A to the explanatory notes, K = 1×10^{-5} ft/day. The porosity (n) of aquifer materials may be determined from laboratory tests or estimated from aquifer test or generalized tables, shown in the Attachment A to the explanatory notes, n = 0.44. From the monitoring of water level elevations in wells penetrating the aquifer of concern or estimates based on interpretations of the topography of the site area, the gradient of the water table may be estimated, dh/dl = 42/320 ft/ft. From the computed velocity a rank value may be assigned as follows:

7.32×10^{-7} ft/day

Average Velocity ($\bar{v} = k/n \, dh/dl$)	Assigned Value
$< 2.74 \times 10^{-3}$ ft/day	0
$\geq 2.74 \times 10^{-3}$ to $< 1.0 \times 10^{-2}$ ft/day	1
$\geq 1.0 \times 10^{-2}$ to 1.0×10^{-1} ft/day	3
$\geq 1.0 \times 10^{-1}$ to 1.0 ft/day	5
≥ 1.0 ft/day	10

0

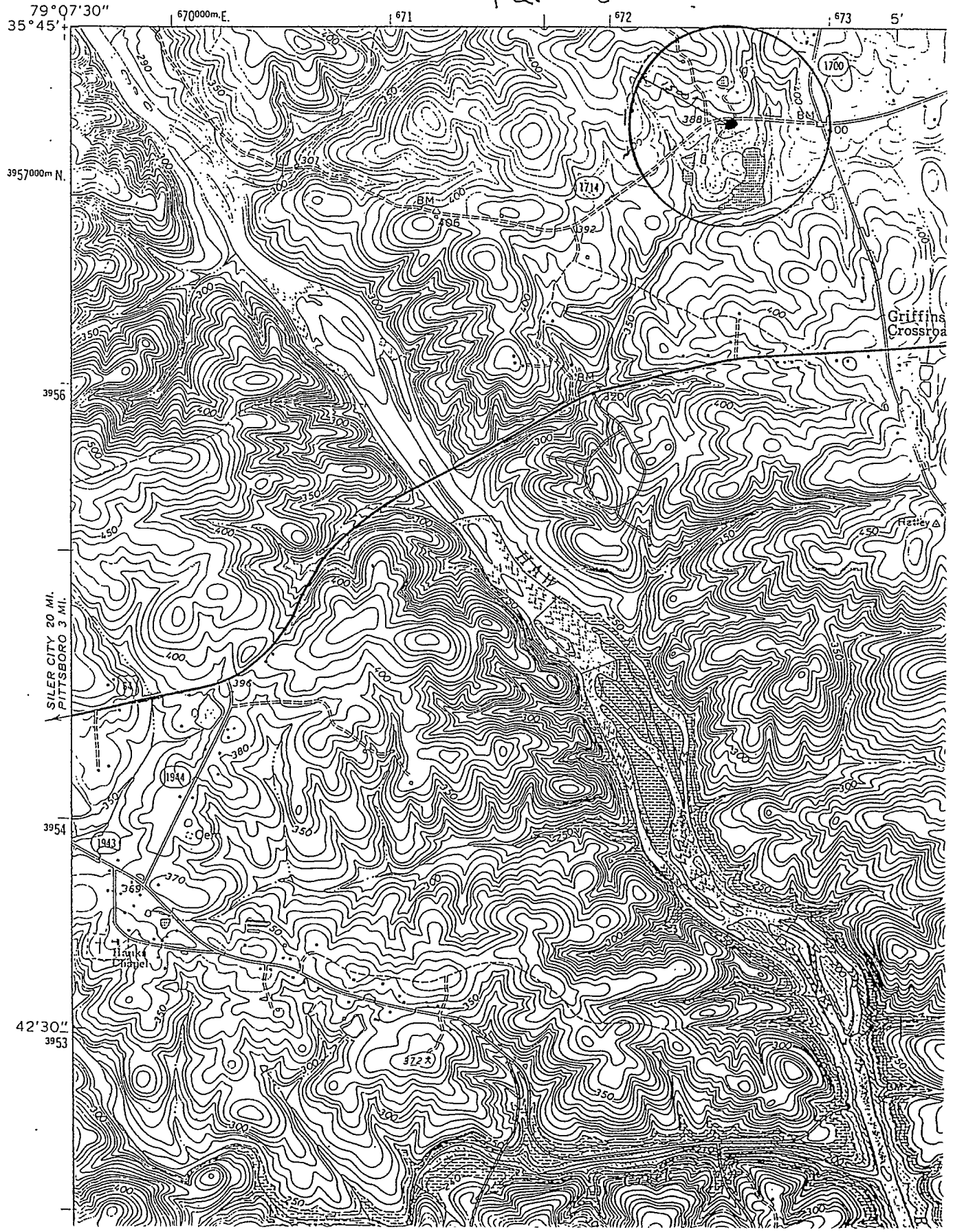
VI. Site Rank (sum of assigned values)

117

5155 I SW
(BYNUM)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Farrington



APPENDIX C

EDR REPORT

The EDR-Radius Map
with GeoCheck™

Lee Paving Plant #3
Sugar Lake Road SR 1714
Pittsboro, NC 27312

Inquiry Number: 0131831.1r

August 21, 1996

Environmental Data Resources, Inc.

Creators of Toxicheck/®

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The search met the specific requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-94, or custom distances requested by the user.

The address of the subject property for which the search was intended is:

SUGAR LAKE ROAD SR 1714
PITTSBORO, NC 27312

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the subject property or within the ASTM E 1527-94 search radius around the subject property for the following Databases:

NPL:	National Priority List
Delisted NPL:	NPL Deletions
RCRIS-TSD:	Resource Conservation and Recovery Information System
State Haz. Waste:	Inactive Hazardous Sites Inventory
CERCLIS:	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP:	Comprehensive Environmental Response, Compensation, and Liability Information System
CORRACTS:	Corrective Action Report
SWF/LF:	List of Solid Waste Facility
LUST:	Incidents Management Database
UST:	Petroleum Underground Storage Tank Database
RAATS:	RCRA Administrative Action Tracking System
RCRIS-SQG:	Resource Conservation and Recovery Information System
RCRIS-LQG:	Resource Conservation and Recovery Information System
HMIRS:	Hazardous Materials Information Reporting System
PADS:	PCB Activity Database System
ERNS:	Emergency Response Notification System
FINDS:	Facility Index System
TRIS:	Toxic Chemical Release Inventory System
NPL Liens:	Federal Superfund Liens
TSCA:	Toxic Substances Control Act
MLTS:	Material Licensing Tracking System
RODS:	Records Of Decision
CONSENT:	Superfund (CERCLA) Consent Decrees

Unmapped (orphan) sites are not considered in the foregoing analysis.

Search Results:

Search results for the subject property and the search radius, are listed below:

Subject Property:

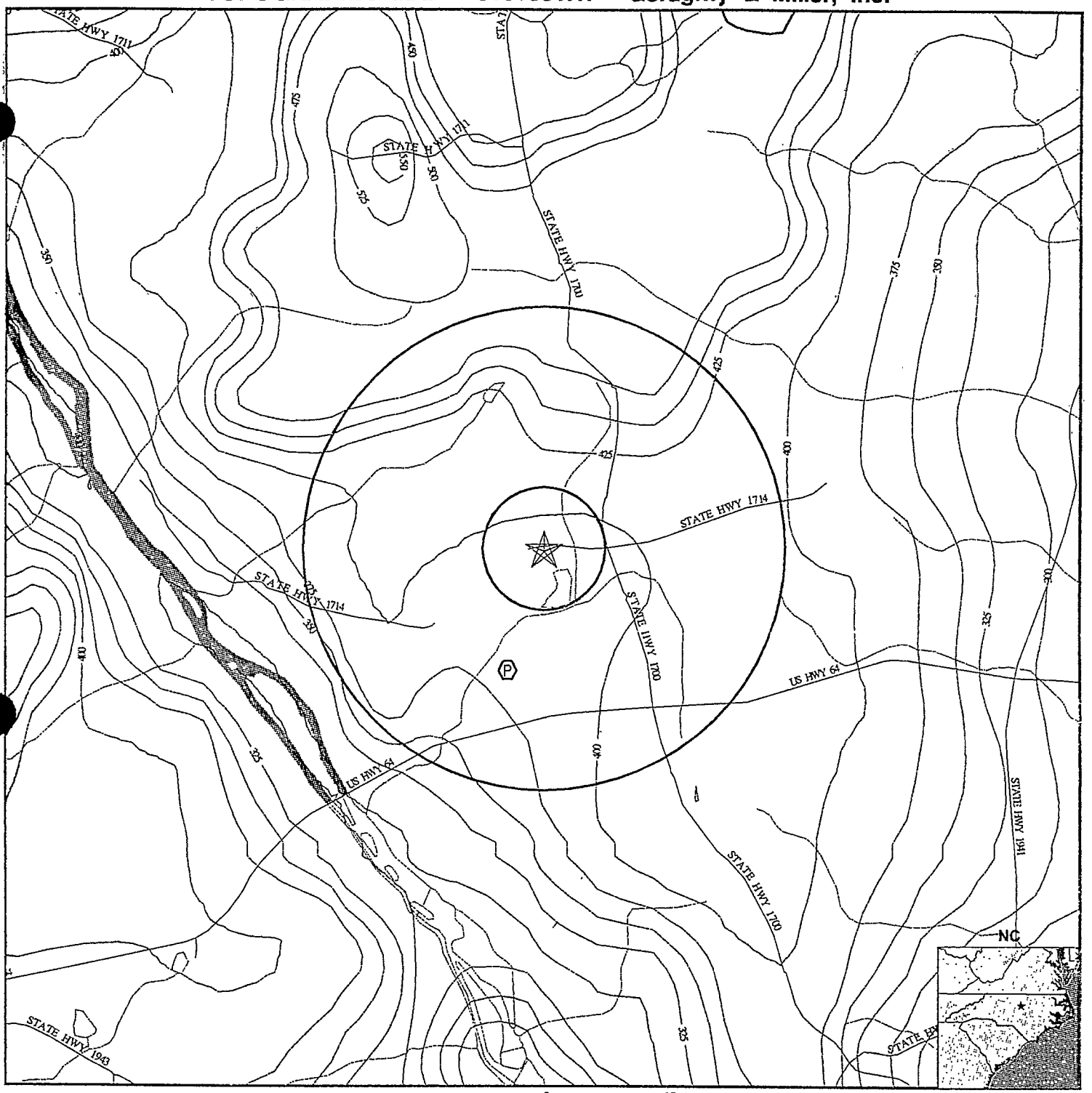
The subject property was not listed in any of the databases searched by EDR.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
CHATHAM COUNTY LANDFILL	UST, LUST
ATT MICROWAVE TOWER	LUST
AT & T MICROWAVE TOWER	LUST
CHATHAM CO. SCHOOL BUS GARAGE	LUST
SPORTSMAN TRADING POST	LUST
DFR-CHATHAM CO. OFFICE HDQRS.	LUST
SPORTSMAN TRADING POST	LUST
C-MINI MART #6	LUST
VISTA POINT	UST
PITTSBORO	UST
CHATHAM CO HDQ	UST
LETT'S BUILDER MART	UST
EARL THOMAS GRADING, INC.	UST
CHATHAM COUNTY SCHOOL BUS GAR	UST
THE PANTRY #174	UST
LEE PAVING CO/PITTSBORO PLT	FINDS

TOPOGRAPHIC MAP - 0131831.1r - Geraghty & Miller, Inc.



Source: US Geological Survey 1-Degree Digital Elevation Model
Compiled 09/15/92

- Major Roads
- Contour lines (25 foot interval unless otherwise shown)
- Waterways

- Earthquake epicenter, Richter 5 or greater.
- (F)(S) - Closest well according to (F)ederal or (S)tate database in quadrant.
- (P) - Closest public water supply well.

TARGET PROPERTY:	Lee Paving Plant #3	CUSTOMER:	Geraghty & Miller, Inc.
ADDRESS:	Sugar Lake Road SR 1714	CONTACT:	Mr. Fred Rash
CITY/STATE/ZIP:	Pittsboro NC 27312	INQUIRY #:	0131831.1r
LAT/LONG:	35.7460 / 79.0918	DATE:	August 21, 1996 4:51 pm

GEOCHECK VERSION 2.1
SUMMARY

GEOLOGIC AGE IDENTIFICATION†

Geologic Code:	Cv
Era:	Paleozoic
System:	Cambrian
Series:	Cambrian volcanic rocks

ROCK STRATIGRAPHIC UNIT†

Category:	Volcanic Rocks

GROUNDWATER FLOW INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, including well data collected on nearby properties, regional groundwater flow information (from deep aquifers), or surface topography.‡

General Topographic Gradient:	General South
General Hydrogeologic Gradient:	No hydrogeologic data available.

USGS TOPOGRAPHIC MAP ASSOCIATED WITH THIS SITE

Target Property:	2435079-F1 MERRY OAKS, NC

FEDERAL DATABASE WELL INFORMATION

WELL QUADRANT	DISTANCE FROM TP	LITHOLOGY	DEPTH TO WATER TABLE

NO WELLS FOUND

STATE DATABASE INFORMATION

NORTH CARLOLINA LOCATIONS OF RARE AND ENDANGERED SPECIES DATABASE:

ID	Class

NO RECORDS FOUND

NORTH CAROLINA NATURAL AREAS DATABASE:

ID	Name

NO RECORDS FOUND

PUBLIC WATER SUPPLY SYSTEM INFORMATION (EPA-FRDS)

Searched by Nearest Well.
NOTE: PWS System location is not always the same as well location.

PWS Name:	CROSSWINDS BOAT RAMP
	27611
Location Relative to TP:	1/2 - 1 Mile South
Well currently has or has had major violation(s):	No

† Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

‡ U.S. EPA Ground Water Handbook, Vol I: Ground Water and Contamination, Office of Research and development EPA/625/6-90/016a,Chapter 4, page 78, September 1990.

GEOCHECK VERSION 2.1
SUMMARY

AREA RADON INFORMATION

Zip Code: 27312

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.300 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

OVERVIEW MAP - 0131831.1r - Geraghty & Miller, Inc.

★ - Indicates TARGET PROPERTY.

▲ - Indicates sites at elevations higher than or equal to the target property.

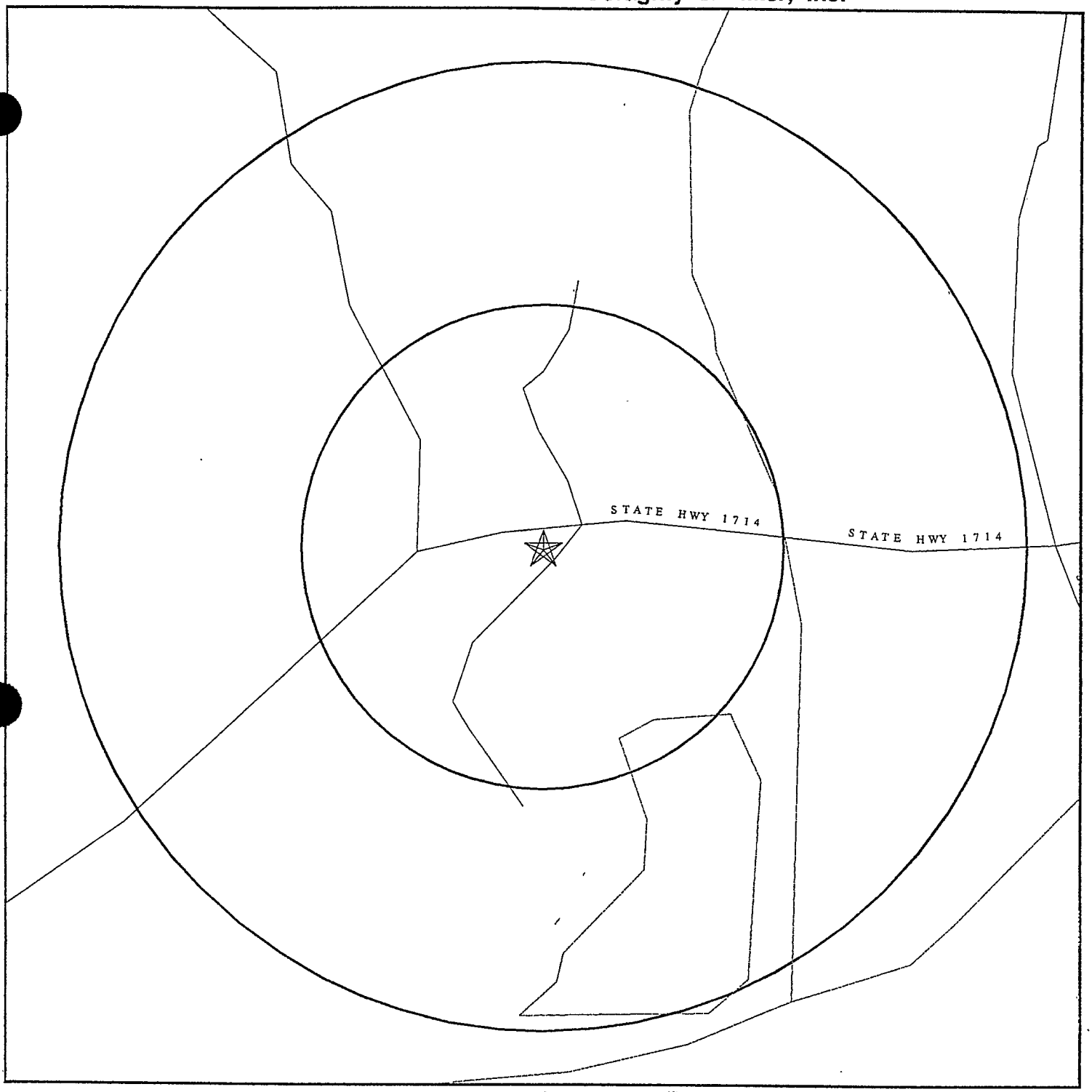
◆ - Indicates sites at elevations lower than the target property.

- Coal Gasification Sites (if requested)
- National Priority List Sites
- Landfill Sites

- Power transmission lines (USGS DLG, 1993)
- Oil & Gas pipelines (USGS DLG, 1993)

TARGET PROPERTY:	Lee Paving Plant #3	CUSTOMER:	Geraghty & Miller, Inc.
ADDRESS:	Sugar Lake Road SR 1714	CONTACT:	Mr. Fred Rash
CITY/STATE/ZIP:	Pittsboro NC 27312	INQUIRY #:	0131831.1r
LAT/LONG:	35.7460 / 79.0918	DATE:	August 21, 1996 4:50 pm

DETAIL MAP - 0131831.1r - Geraghty & Miller, Inc.



★ - Indicates TARGET PROPERTY.

▲ - Indicates sites at elevations higher than or equal to the target property.

◆ - Indicates sites at elevations lower than the target property.

- Coal Gasification Sites (if requested)
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites

- Power transmission lines (USGS DLG, 1993)
- Oil & Gas pipelines (USGS DLG, 1993)

TARGET PROPERTY:	Lee Paving Plant #3	CUSTOMER:	Geraghty & Miller, Inc.
ADDRESS:	Sugar Lake Road SR 1714	CONTACT:	Mr. Fred Rash
CITY/STATE/ZIP:	Pittsboro NC 27312	INQUIRY #:	0131831.1r
LAT/LONG:	35.7460 / 79.0918	DATE:	August 21, 1996 4:50 pm

MAP FINDINGS SUMMARY SHOWING ALL SITES

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NPL		1.000	0	0	0	0	NR	0
Delisted NPL		TP	NR	NR	NR	NR	NR	0
RCRIS-TSD		1.000	0	0	0	0	NR	0
State Haz. Waste		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		TP	NR	NR	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	0	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
ROD		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0
Coal Gas		N/A	N/A	N/A	N/A	N/A	N/A	N/A

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

MAP FINDINGS SUMMARY SHOWING ONLY SITES HIGHER THAN OR THE SAME ELEVATION AS TP

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NPL		1.000	0	0	0	0	NR	0
Delisted NPL		TP	NR	NR	NR	NR	NR	0
RCRIS-TSD		1.000	0	0	0	0	NR	0
State Haz. Waste		1.000	0	0	0	0	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		TP	NR	NR	NR	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	0	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
RCRIS Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRIS Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
FINDS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
ROD		1.000	0	0	0	0	NR	0
CONSENT		1.000	0	0	0	0	NR	0
Coal Gas		N/A	N/A	N/A	N/A	N/A	N/A	N/A

TP = Target Property

NR = Not Requested at this Search Distance

* Sites may be listed in more than one database

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

Coal Gas Site Search: EDR does not presently have coal gas site information available in this state.

NO SITES FOUND

City	EDR ID	Site Name	Site Address	Zip	Database(s)	Facility ID
PITTSBORO	U001199663	VISTA POINT	#4	27312	UST	0-021123
PITTSBORO	U001188893	CHATHAM COUNTY LANDFILL	S.R. 1578	27312	UST, LUST	10601
PITTSBORO	S101572675	ATT MICROWAVE TOWER	SR 1954 JOE WOMBLE RD		LUST	9057
PITTSBORO	S101574287	AT & T MICROWAVE TOWER	SR 1954 JOE WOMBLE RD		LUST	7384
PITTSBORO	U001194017	PITTSBORO	S.R. 1954	27312	UST	0-012319
PITTSBORO	S100711128	CHATHAM CO. SCHOOL BUS GARAGE	SR 1965		LUST	6751
PITTSBORO	S101403730	SPORTSMAN TRADING POST	HWY 64		LUST	13135
PITTSBORO	S101525327	DFR-CHATHAM CO. OFFICE HDQRS.	HWY 64 W.		LUST	14053
PITTSBORO	S101523178	SPORTSMAN TRADING POST	US 64 / SR 1700		LUST	6750
PITTSBORO	S101169077	C-MINI MART #6	HWY 64 EAST / SR 1701		LUST	10847
PITTSBORO	U001200076	CHATHAM CO HDQ	HWY 64 W	27312	UST	0-021792
PITTSBORO	U001190775	LETT'S BUILDER MART	HIGHWAY 64 EAST	27312	UST	0-007931
PITTSBORO	U001188109	EARL THOMAS GRADING, INC.	P.O. BOX 88--HIGHWAY 64 WEST	27312	UST	0-003163
PITTSBORO	1000534243	LEE PAVING CO/PITTSBORO PLT	MT GILEAD CHURCH RD	27312	FINDS	
PITTSBORO	U001188890	CHATHAM COUNTY SCHOOL BUS GAR	NC SR 1965	27312	UST	0-004322
PITTSBORO	U001186804	THE PANTRY #174	508 W. STREET, HIGHWAY #64	27312	UST	0-001190

GEOCHECK VERSION 2.1
PUBLIC WATER SUPPLY SYSTEM INFORMATION

Searched by Nearest Well.

PWS SUMMARY:

PWS ID:	NC0319420	PWS Status:	Active	Distance from TP:	1/2 - 1 Mile
Date Initiated:	April / 1983	Date Deactivated:	Not Reported	Dir relative to TP:	South
PWS Name:	CROSSWINDS BOAT RAMP 27611				

Addressee / Facility Type: System Owner/Responsible Party
Facility Name: WILLIAM BERRY OR MGR
PO BOX 27687
RALEIGH, NC 27611

Addressee / Facility Type: System Owner/Responsible Party
Facility Name: DIV PARKS & REC
PO BOX 27687
RALEIGH, NC 27611

Facility Latitude:	35 44 20	Facility Longitude:	079 05 40
Facility Latitude:	35 46 36	Facility Longitude:	078 38 30
City Served:	Not Reported:		
Treatment Class:	Untreated	Population Served:	Under 101 Persons

Well currently has or has had major violation(s): No

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM RECORDS:

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA/NTIS
Telephone: 703-603-8904
CERCLIS: CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/31/96
Date Made Active at EDR: 06/03/96
Database Release Frequency: Monthly
Date of Data Arrival at EDR: 04/23/96
Elapsed ASTM days: 41
Date of Last EDR Contact: 07/17/96

ERNS: Emergency Response Notification System
Source: EPA/NTIS
Telephone: 202-260-2342
ERNS: Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/95
Date Made Active at EDR: 02/19/96
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 01/26/96
Elapsed ASTM days: 24
Date of Last EDR Contact: 06/25/96

NPL: National Priority List
Source: EPA
Telephone: 703-603-8852
NPL: National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, it is EDR's policy to plot NPL sites greater than approximately 300 acres in size as areas (polygons). A polygon boundary is based upon EPA's defined Area of Impact (AOI) for the particular NPL site. The AOI may be the boundaries of the property, the boundaries as determined by the extent of plume migration, or other such boundaries as defined by EPA. Sites smaller in size are point-geocoded at the site's address.

Date of Government Version: 09/01/95
Date Made Active at EDR: 10/25/95
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 10/17/95
Elapsed ASTM days: 8
Date of Last EDR Contact: 06/19/96

RCRIS: Resource Conservation and Recovery Information System
Source: EPA/NTIS
Telephone: 703-308-7907
RCRIS: Resource Conservation and Recovery Information System. RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 05/31/96
Date Made Active at EDR: 07/17/96
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 06/10/96
Elapsed ASTM days: 37
Date of Last EDR Contact: 06/05/96

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FEDERAL NON-ASTM RECORDS:

CONSENT: Superfund (CERCLA) Consent Decrees
Source: EPA Regional Offices
Telephone: Varies
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: Varies
Database Release Frequency: Varies
Date of Last EDR Contact: N/A
Date of Next Scheduled EDR Contact: 09/01/95

CORRACTS: Corrective Action Report
Source: EPA
Telephone: 703-308-7907
CORRACTS: CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 04/10/95
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 06/19/96
Date of Next Scheduled EDR Contact: 09/16/96

FINDS: Facility Index System
Source: EPA/NTIS
Telephone: 800-908-2493
FINDS: Facility Index System. FINDS contains both facility information and "pointers" to other sources that contain more detail. These include: RCRIS, PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]), CERCLIS, DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), FRDS (Federal Reporting Data System), SIA (Surface Impoundments), CICIS (TSCA Chemicals in Commerce Information System), PADS, RCRA-J (medical waste transporters/disposers), TRIS and TSCA.

Date of Government Version: 09/30/95
Database Release Frequency: Quarterly
Date of Last EDR Contact: 06/05/96
Date of Next Scheduled EDR Contact: 10/07/96

HMIRS: Hazardous Materials Information Reporting System
Source: U.S. Department of Transportation
Telephone: 202-366-4555
HMIRS: Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/95
Database Release Frequency: Annually
Date of Last EDR Contact: 07/29/96
Date of Next Scheduled EDR Contact: 10/28/96

MLTS: Material Licensing Tracking System
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 02/13/96
Database Release Frequency: Quarterly
Date of Last EDR Contact: 07/15/96
Date of Next Scheduled EDR Contact: 10/14/96

NPL LIENS: Federal Superfund Liens
Source: EPA
Telephone: 205-564-4267
NPL LIENS: Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/91
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 06/25/96
Date of Next Scheduled EDR Contact: 08/26/96

PADS: PCB Activity Database System
Source: EPA
Telephone: 202-260-3992
PADS: PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 10/14/94
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 05/20/96
Date of Next Scheduled EDR Contact: 08/19/96

RAATS: RCRA Administrative Action Tracking System
Source: EPA
Telephone: 202-564-4104
RAATS: RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA.

Date of Government Version: 04/17/95
Database Release Frequency: Semi-Annually
Date of Last EDR Contact: 06/19/96
Date of Next Scheduled EDR Contact: 09/16/96

ROD: Records Of Decision
Source: NTIS
Telephone: 703-416-0703
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 03/31/95
Database Release Frequency: No Update Planned
Date of Last EDR Contact: 06/07/96
Date of Next Scheduled EDR Contact: 09/02/96

TRIS: Toxic Chemical Release Inventory System
Source: EPA/NTIS
Telephone: 202-260-2320
TRIS: Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/92
Database Release Frequency: Annually
Date of Last EDR Contact: 07/08/96
Date of Next Scheduled EDR Contact: 09/30/96

TSCA: Toxic Substances Control Act
Source: EPA/NTIS
Telephone: 202-260-1444
TSCA: Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site. USEPA has no current plan to update and/or re-issue this database.

Date of Government Version: 01/31/95
Database Release Frequency: Annually
Date of Last EDR Contact: 06/21/96
Date of Next Scheduled EDR Contact: 09/16/96

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STATE OF NORTH CAROLINA ASTM RECORDS:

LUST: Incidents Management Database
Source: Department of Environment, Health & Natural Resources
Telephone: 919-733-1315
LUST: Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 04/01/96
Date Made Active at EDR: 06/06/96
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 04/26/96
Elapsed ASTM days: 41
Date of Last EDR Contact: 07/09/96

SHWS: Inactive Hazardous Sites Inventory
Source: Department of Environment, Health & Natural Resources
Telephone: 919-733-2801
SHWS: State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 03/26/96
Date Made Active at EDR: 06/06/96
Database Release Frequency: Annually
Date of Data Arrival at EDR: 05/13/96
Elapsed ASTM days: 24
Date of Last EDR Contact: 07/22/96

SWF/LF: List of Solid Waste Facility
Source: Department of Environment, Health & Natural Resources
Telephone: 919-733-0692
SWF/LF: Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Section 2004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 03/25/96
Date Made Active at EDR: 06/06/96
Database Release Frequency: Semi-Annually
Date of Data Arrival at EDR: 05/09/96
Elapsed ASTM days: 28
Date of Last EDR Contact: 05/06/96

UST: Petroleum Underground Storage Tank Database
Source: Department of Environment, Health & Natural Resources
Telephone: 919-733-1308
UST: Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 07/01/96
Date Made Active at EDR: 08/12/96
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 07/15/96
Elapsed ASTM days: 28
Date of Last EDR Contact: 07/10/96

Historical and Other Database(s)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Former Manufactured Gas (Coal Gas) Sites: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly been obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report, Real Property Scan does not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

DELISTED NPL: Delisted NPL Sites
Source: EPA
Telephone: 703-603-8769
DELISTED NPL: The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

NFRAP: No Further Remedial Action Planned
Source: EPA/NTIS
Telephone: 703-416-0702
NFRAP: As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

FRDS: Federal Reporting Data System
Source: EPA/Office of Drinking Water
Telephone: 202-260-2805
FRDS provides information regarding public water supplies and their compliance with monitoring requirements, maximum contaminant levels (MCL's), and other requirements of the Safe Drinking Water Act of 1986.

Area Radon Information: The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

Oil/Gas Pipelines/Electrical Transmission Lines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines and electrical transmission lines.

Sensitive Receptors: There are individuals who, due to their fragile immune systems, are deemed to be especially sensitive to environmental discharges. These typically include the elderly, the sick, and children. While the exact location of these sensitive receptors cannot be determined, EDR indicates those facilities, such as schools, hospitals, day care centers, and nursing homes, where sensitive receptors are likely to be located.

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1994 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Water Dams: National Inventory of Dams
Source: Federal Emergency Management Agency
Telephone: 202-646-2801
WATER DAMS: National computer database of more than 74,000 dams maintained by the Federal Emergency Management Agency.

Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

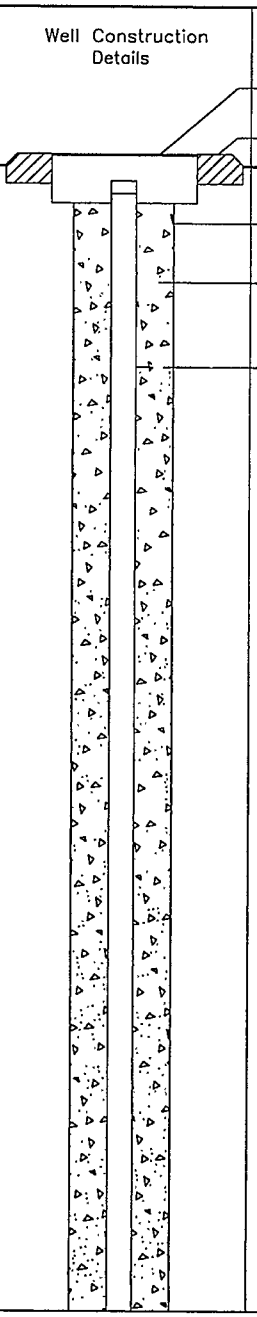
MONITOR WELL 48MW-1
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

DRAFTER: A. WARREN

Date(s) Drilled: 11-14-96 to 11-16-96	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Rotary/Air Hammer	Drill Bit Size/Type: 8/6	Top of Casing Elevation (ft msl): 995.20
Drill Rig Type: Speedstar 300	Drilled By: Groundwater Protection	Total Depth Drilled (ft bls): 50.0
Groundwater Level (ft bls): First / Completion / 24 Hours: 27.98	Number of Samples: Disturbed: NA / Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8/6 / Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

CHECKED: K. TRIMBERGER | APPROVED:
DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | 10MAR97 | DWG

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION
0					LIGHT BROWN TO RED BROWN, MOIST, STIFF SILT, TRACE CLAY, TRACE FINE GRAVEL.
5					RED TO RED BROWN MOIST HARD SILT, LITTLE CLAY.
					-SOME YELLOW, VERY STIFF.
10					YELLOW AND GREY - HARD TRACE CLAY.
					FEW BLACK VEINS.
					SOME YELLOW AND GREY.
15					
20					
25					
30					



REMARKS

GERAGHTY & MILLER INC.

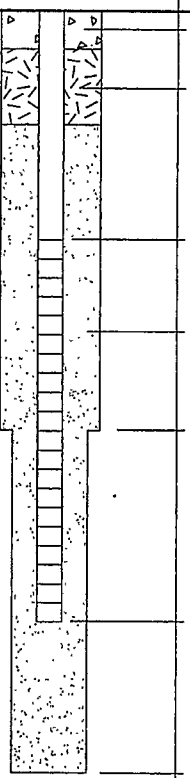
Project: North Carolina Department of Transportation
Project Location: Site #48 Pittsboro, North Carolina
Project Number: NC0360.192

MONITOR WELL 48MW-1
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 11-15-97	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Rotary/Air Hammer	Drill Bit Size/Type: 8/6	Top of Casing Elevation (ft msl): 995.20
Drill Rig Type: Speedstar 300	Drilled By: Groundwater Protection	Total Depth Drilled (ft bls): 50.0
Groundwater Level (ft bls): First: Completion: 24 Hours: 27.98	Number of Samples: Disturbed: NA Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8/6 Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: MW | FILE NO.: NCDOT | PROJECT NO.: NC0360.192 | DWG D OMAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
30					8-IN AIR HAMMER TO 41.0-FT.		
35							
40					SWITCHED TO 6" AIR HAMMER.		
45							
50							
55							
60							



Project: North Carolina Department of Transportation
Project Location: Site #48 Pittsboro, North Carolina
Project Number: NC0360.192

MONITOR WELL 48MW-2
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 11-14-97	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Rotary/Air Hammer	Drill Bit Size/Type: 8/6	Top of Casing Elevation (ft msl): 993.80
Drill Rig Type: Speedstar 300	Drilled By: Groundwater Protection	Total Depth Drilled (ft bls): 50.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 25.62	Number of Samples: Disturbed: NA; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8/6; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D OMAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION
0					RED BROWN, MOIST, VERY STIFF, SILT, TRACE FINE GRAVEL, TRACE CLAY.
					RED TO RED BROWN WITH LITTLE YELLOW HARD SILT.
5					-SOME YELLOW.
					-VERY STIFF TO YELLOW.
					MULTICOLORING - RED IS DOMINATE WITH YELLOW, ORANGE BROWN, WITH FEW BLACK VEINS.
10					RED/BROWN - INCREASING AMOUNTS OF BLACK VEINS, VERY STIFF.
					LIGHT RED/BROWN TO YELLOWISH/ORANGE WITH RED VERY STIFF, MOIST SILT.
					TRACE CLAY WITH VEINS, TRACE FINE TO COARSE GRAVEL.
15					- VERY STIFF, MOIST SILT, MANY VEINS, SLIGHTLY STRUCTURE, TRACE CLAY.
					SOME RED AND GREY, MOIST, VERY STIFF SILT, TRACE CLAY.
					LIGHT BROWN TO YELLOWISH/ORANGE, MOIST, VERY STIFF SILT, SOME RED AND GREY WITH BLACK VEINS, TRACE CLAY, LITTLE STRUCTURE.
20					- HARD.
25					LIGHT BROWN TO YELLOWISH/ORANGE, MOIST, HARD SILT, SOME ROCK FRAGMENTS.
					SWITCHED TO 6" AIR HAMMER.
30					

Well Construction Details

REMARKS

- 12" Diameter Manhole
- Concrete Pad
- Portland/Bentonite Cement Grout
- 2" Dia., Sch. 40 PVC Well Casing
- 8" Dia. Drilled Borehole
- Bottom of 8" Dia. Borehole

GERAGHTY & MILLER INC.

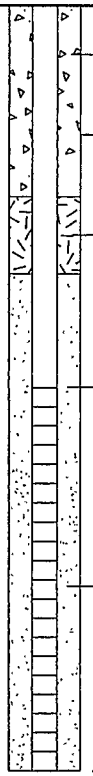
Project: North Carolina Department of Transportation
Project Location: Site #48 Pittsboro, North Carolina
Project Number: NC0360.192

MONITOR WELL 48MW-2
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 11-15-97	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Rotary/Air Hammer	Drill Bit Size/Type: 8/6	Top of Casing Elevation (ft msl): 993.80
Drill Rig Type: Speedstar 300	Drilled By: Groundwater Protection	Total Depth Drilled (ft bls): 50.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 25.62	Number of Samples: Disturbed: NA; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8/6; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: M | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D OMAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
30							
35							
40							
45							
50							
55							
60							



Portland/Bentonite Cement Grout

6" Dia. Drilled Borehole

Bentonite Pellets

2" Dia., Sch. 40 PVC, 0.010-Slot Well Screen

Sand Filter Pack

Bottom of Screen and Well

GERAGHTY & MILLER INC.

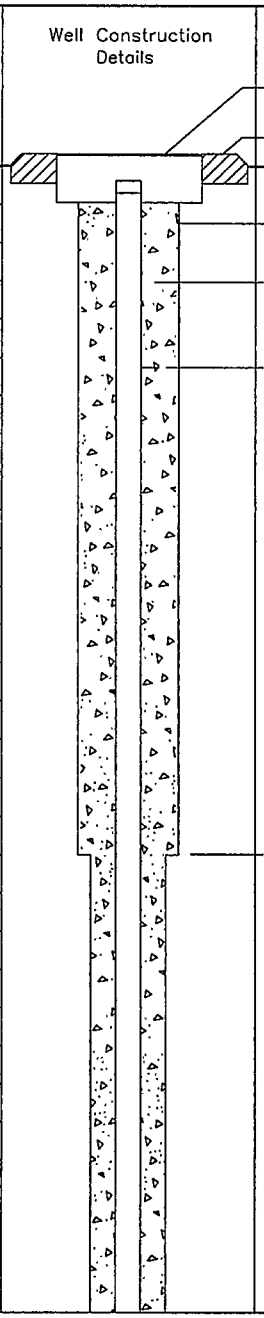
Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-3
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 11-13-96 to 11-14-96	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Rotary/Air Hammer	Drill Bit Size/Type: 8/6	Top of Casing Elevation (ft msl): 997.71
Drill Rig Type: Speedstar 300	Drilled By: Groundwater Protection	Total Depth Drilled (ft bls): 56.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 29.89	Number of Samples: Disturbed: NA ; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8/6 ; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D: OMAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION
0					RED-ORANGE BROWN MOIST VERY STIFF SILT TRACE CLAY, TRACE FINE GRAVEL.
					MOIST HARD SILT, TRACE CLAY.
5					ORANGE-BROWN MOIST HARD SILT, TRACE CLAY TRACE FINE GRAVEL.
					LIGHT BROWN-YELLOWISH ORANGE HARD SILT WITH BLACK VEINS.
					SOME GRAY, YELLOW, ORANGE AND BROWN, TRACE CLAY.
10					LIGHT BROWN TO LIGHT GRAY HARD SILT, SOME FINE TO MEDIUM GRAVEL.
					LIGHT BROWN TO YELLOW/ORANGE HARD SILT, LITTLE STRUCTURE.
15					LIGHT GRAY, HARD, FINE TO COARSE GRAVEL AND SILT. 18.0-FT: SWITCH TO 6" AIR HAMMER.
20					
25					
30					



REMARKS

GERAGHTY & MILLER INC.

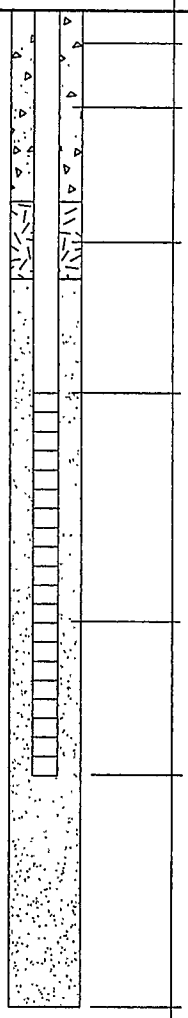
Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-3
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 11-13-96 to 11-14-96	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Rotary/Air Hammer	Drill Bit Size/Type: 8/6	Top of Casing Elevation (ft msl): 997.71
Drill Rig Type: Speedstar 300	Drilled By: Groundwater Protection	Total Depth Drilled (ft bls): 56.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 29.89	Number of Samples: Disturbed: NA ; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8/6 ; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | 10MAR97 | DWG

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
30							
35							
40							
45							
50							
55							
60							



GERAGHTY & MILLER INC.

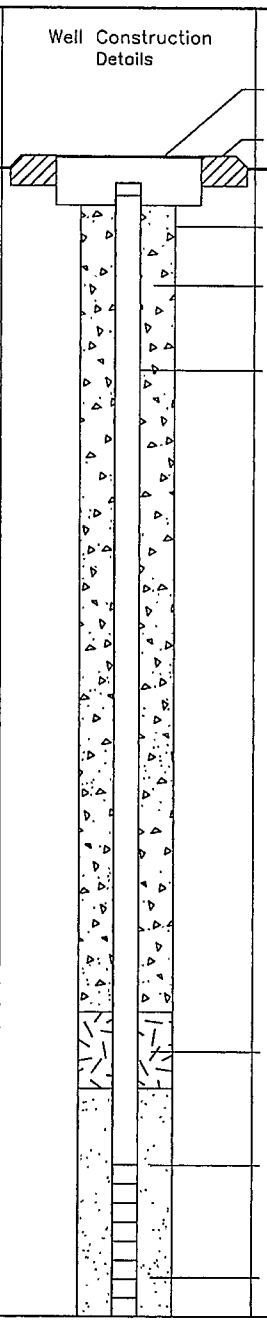
Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-4
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 11-13-96	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Rotary	Drill Bit Size/Type: 8"	Top of Casing Elevation (ft msl): 998.21
Drill Rig Type: Speedstar 300	Drilled By: Groundwater Protection	Total Depth Drilled (ft bls): 36.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 15.81	Number of Samples: Disturbed: NA ; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8 ; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D OMAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION
0					DARK BROWN MOIST VERY STIFF SILT, TRACE FINE GRAVEL.
					LIGHT BROWN TO RED MOIST HARD SILT, SOME BLACK, YELLOW AND GRAY, TRACE CLAY.
5					- VERY STIFF.
					7.6-FT: LIGHT GRAY WITH RED TINT, MOIST, VERY STIFF SILT, TRACE CLAY AND BLACK VEINS THROUGHOUT WITH REDS, ORANGES AND GRAYS.
10					LIGHT GRAY DRY HARD SILT, WITH BLACK VEINS, RED, MOIST CLAY, ALSO WITH VEINS.
					NO SPOON - AS ABOVE - HARD.
15					LIGHT GRAY, GREENISH - MOIST, VERY STIFF SILT TRACE CLAY WITH BLACK VEINS.
20					
25					
30					



Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-4
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 11-13-96	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Rotary	Drill Bit Size/Type: 8"	Top of Casing Elevation (ft msl): 998.21
Drill Rig Type: Speedstar 300	Drilled By: Groundwater Protection	Total Depth Drilled (ft bls): 36.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 15.81	Number of Samples: Disturbed: NA ; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8 ; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | APPROVED: | CHECKED: K. TRIMBERGER | DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D 0MAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
30						8" Dia. Drilled Hole	
35						Sand Filter Pack	
40						Bottom of Screen and Well	
45							
50							
55							
60							

Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-5
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 11-12-96 to 11-13-96	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: HSA/Air Hammer	Drill Bit Size/Type: 10"/6"	Top of Casing Elevation (ft msl): 1001.68
Drill Rig Type: Speedstar 300	Drilled By: Groundwater Protection	Total Depth Drilled (ft bls): 43.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 22.07	Number of Samples: Disturbed: NA ; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 10/6 ; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG DATE: 10MAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION
0					LIGHT BROWN REDDISH MOIST HARD SILT, LITTLE CLAY, LITTLE FINE TO MEDIUM SAND, TRACE FINE GRAVEL.
					LIGHT BROWN TO RED YELLOW ORANGE, MOIST VERY STIFF SILT, TRACE CLAY.
5					-SLIGHTLY MOTTLED.
					-HARD.
10					LIGHT BROWN, RED, YELLOW GRAY, MOIST, VERY STIFF SILT, LITTLE STRUCTURE/BEDDING PLANTS TRACE CLAY.
					MOSTLY RED WITH VARIOUS COLORS, TRACE STRUCTURE, MOSTLY MOTTLED.
					-ADDING BLACK VEINS, LITTLE STRUCTURE, LESS MOTTLED, MATERIALS SPLIT EASILY ALONG BLACK VEINS.
15					MULTICOLORED, VERY STIFF, MOIST SILT WITH STRUCTURE, SLIGHTLY MOTTLED, WEATHERED ROCK.
					LIGHT BROWN, YELLOW ORANGE MULTICOLORED, HARD MOIST SILT STRUCTURE/LAYERING WEATHERED ROCK.
20					LIGHT BROWN TO LIGHT GRAY WITH YELLOW AND ORANGE, HARD MOIST SILT, LITTLE STRUCTURE, WEATHERED ROCK.
					TRACE ROCK FRAGMENTS.
					21.0-FT: SPOON REFUSAL.
25					LIGHT BROWN TO LIGHT GRAY, DRY, VERY STIFF SILT AND ROCK FRAGMENTS, LITTLE STRUCTURE.
					GRAY, GREEN AND LIGHT BROWN, DRY, HARD WEATHERED ROCK WITH STRUCTURE AND BLACK VEINS.
30					FEW VERY MOIST AREAS SQUISHY WET BUT NOT VERY VIABLE.

Well Construction Details

REMARKS

- 12" Diameter Manhole
- Concrete Pad
- 10" Dia. Drilled Borehole
- Portland/Bentonite Cement Grout
- 2" Dia., Sch. 40 PVC Well Casing
- Bentonite Pellets

GERAGHTY & MILLER INC.

Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-5
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 11-12-96 to 11-13-96	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: HSA/Air Hammer	Drill Bit Size/Type: 10"/6"	Top of Casing Elevation (ft msl): 1001.68
Drill Rig Type: Speedstar 300	Drilled By: Groundwater Protection	Total Depth Drilled (ft bls): 43.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 22.07	Number of Samples: Disturbed: NA ; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 10/6 ; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
30					LIGHT BROWN TO LIGHT GRAY DRY, POWDERY SILT WEATHERED ROCK WITH ROCK FRAGMENTS.		10" Dia. Drilled Borehole
					AUGER REFUSAL. SWITCH TO 6" AIR HAMMER.		2" Dia., Sch. 40 PVC, 0.010-Slot Well Screen
35							Bottom of 10" Dia. Drilled Borehole
							Sand Filter Pack
40							6" Dia. Drilled Borehole
							Bottom of Screen and Well
45							
50							
55							
60							

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D 10MAR97

GERAGHTY & MILLER INC.

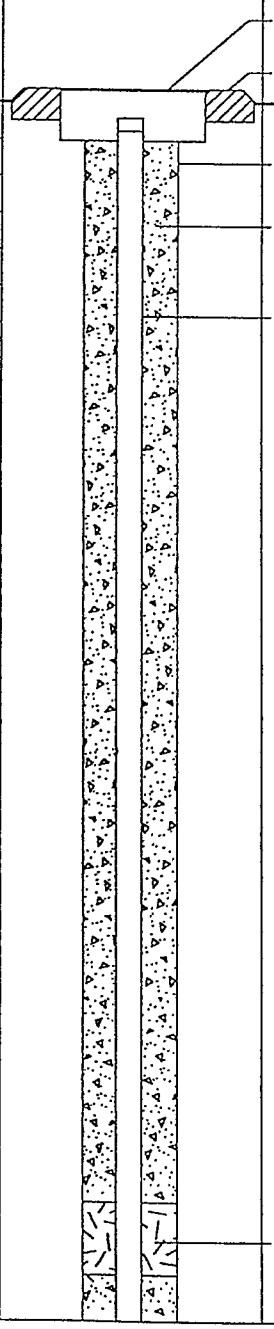
Project: North Carolina Department of Transportation
Project Location: Site #48 Pittsboro, North Carolina
Project Number: NC0360.192

MONITOR WELL 48MW-6
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 1-15-97	Logged By: W. Plekan	Checked By:
Drilling Method: Air Rotary	Drill Bit Size/Type:	Top of Casing Elevation (ft msl):
Drill Rig Type:	Drilled By: Groundwater Protection	Total Depth Drilled (ft bls): 44.0
Groundwater Level (ft bls): First / Completion / 24 Hours	Number of Samples: Disturbed: NA / Undisturbed: NA	Sampler Type:
Diameter of Hole (inches): 10 / Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack:	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments:		

DRAFTER: A. W | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: 6 | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG DATE: MAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION
0					
5					
10					LIGHT BROWN MOIST VERY STIFF SILT
15					LIGHT BROWN WITH RED TINT, MOIST VERY STIFF, RANDOM BLACK SILT VEINS
20					SPOON REFUSAL AT 20.0'
25					ROLLERBITE REFUSAL AT 23.0' SWITCH TO 10" AIR HAMMER
30					



GERAGHTY & MILLER INC.

Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-6
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled	1-15-97		Logged By	W. Plekan	Checked By
Drilling Method	Air Rotary/Air Hammer		Drill Bit Size/Type		Top of Casing Elevation (ft msl)
Drill Rig Type			Drilled By	Groundwater Protection	Total Depth Drilled (ft bls) 44.0
Groundwater Level (ft bls)	First	Completion / 24 Hours	Number of Samples	Disturbed: NA / Undisturbed: NA	Sampler Type
Diameter of Hole (inches)	10	Diameter of Well (inches) 2	Type of Well Casing	2", Sch. 40, PVC	Screen Perforation 0.010-Slot
Type of Sand Pack			Type/Thickness of Seal(s)	Bentonite Pellets/2-ft	
Comments					

DRAFTER: A. WAL | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: M | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG DATE: AR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
35						10" Dia. Drilled Hole	
40						2" Dia., Sch. 40 PVC, 0.010-Slot Well Screen	
45						Sand Filter Pack	
50						Bottom of Screen and Well	
55							
60							

GERAGHTY & MILLER INC.

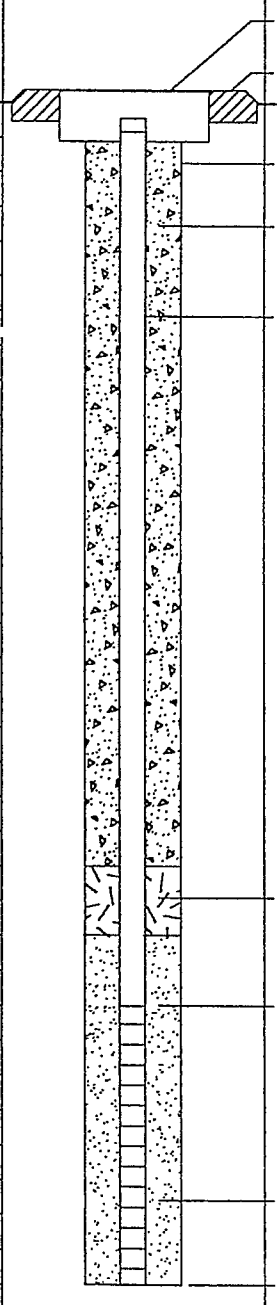
Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-7
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled 1-16-97	Logged By W. Plekan	Checked By
Drilling Method Air Rotary/Air Hammer	Drill Bit Size/Type	Top of Casing Elevation (ft msl)
Drill Rig Type	Drilled By McCall Brothers	Total Depth Drilled (ft bls) 34.0
Groundwater Level (ft bls): First / Completion / 24 Hours	Number of Samples: Disturbed: NA / Undisturbed: NA	Sampler Type
Diameter of Hole (inches) 10 / Diameter of Well (inches) 2	Type of Well Casing 2", Sch. 40, PVC	Screen Perforation 0.010-Slot
Type of Sand Pack	Type/Thickness of Seal(s) Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: 48MW-7 | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG DATE: 10MAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION
0					
5					
10					LT. BROWN, LITTLE RED, LT. GREY, MOIST VERY STIFF, BLACK VEINS
15					LT. BROWN, TO YELLOW/ORANGE DRY TO MOIST HARD SILT WITH BLACK SILT VEINS
					ROLLER BIT REFUSAL AT 17.0
20					SWITCH TO 10" AIR HAMMER
25					
30					



GERAGHTY & MILLER INC.

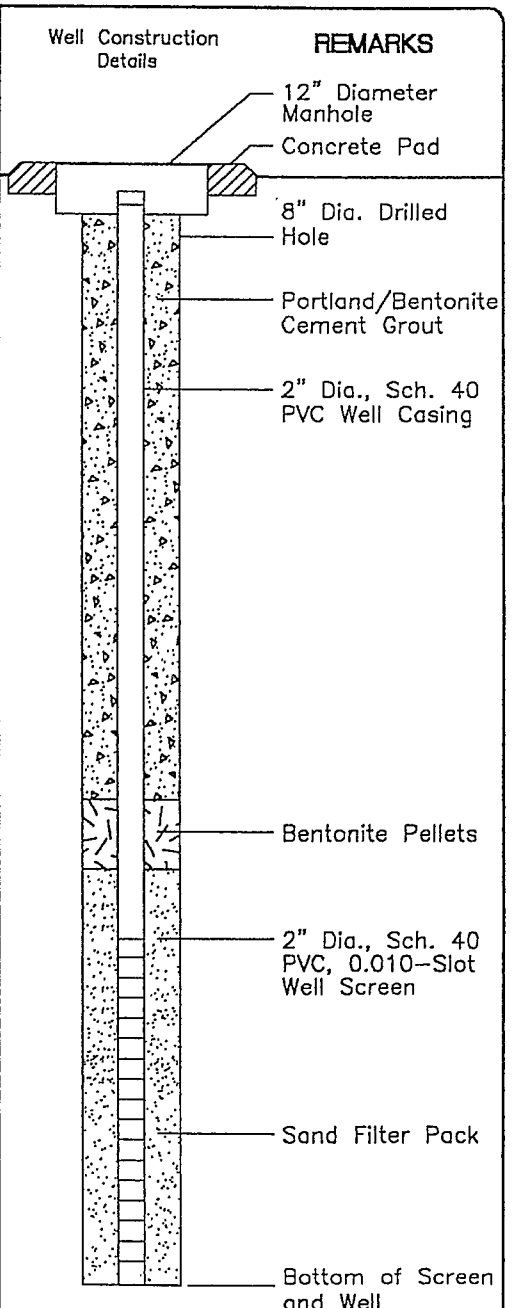
Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-8
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled 1-16-97	Logged By W. Plekan	Checked By
Drilling Method Air Rotary/Air Hammer	Drill Bit Size/Type	Top of Casing Elevation (ft msl)
Drill Rig Type	Drilled By McCall Brothers	Total Depth Drilled (ft bls) 32.0
Groundwater Level (ft bls) First / Completion / 24 Hours	Number of Samples Disturbed: NA / Undisturbed: NA	Sampler Type
Diameter of Hole (inches) 10 / Diameter of Well (inches) 2	Type of Well Casing 2", Sch. 40, PVC	Screen Perforation 0.010-Slot
Type of Sand Pack	Type/Thickness of Seal(s) Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: 48MW-8 | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG DATE: 10MAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION
0					
5					
10					RED-ORANGE, LITTLE GREY MOIST STIFF SILT
15					LT. GREY-YELLOW GREY DRY TO MOIST HARD SILT
20					LT. BROWN TO YELLOWISH ORANGE DRY TO MOIST HARD SILT, TRACE ROCK FRAGMENTS
25					
30					



GERAGHTY & MILLER INC.

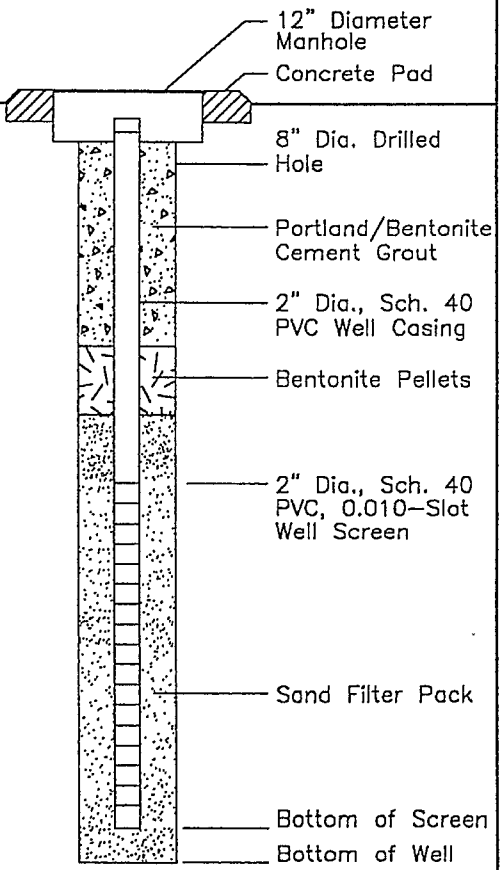
Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-9
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled 1-16-97	Logged By W. Plekan	Checked By
Drilling Method Air Rotary	Drill Bit Size/Type	Top of Casing Elevation (ft msl)
Drill Rig Type	Drilled By McCall Brothers	Total Depth Drilled (ft bls) 22.0
Groundwater Level (ft bls) First / Completion / 24 Hours	Number of Samples Disturbed: NA / Undisturbed: NA	Sampler Type
Diameter of Hole (inches) 10 / Diameter of Well (inches) 2	Type of Well Casing 2", Sch. 40, PVC	Screen Perforation 0.010-Slot
Type of Sand Pack	Type/Thickness of Seal(s) Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: 48MW-9 | FILE NO.: NCDOT | PROJECT NO.: NC0360.192 | DWG DATE: 10MAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION
0					
5					
10					RED-ORANGE MOIST VERY STIFF, BLACK SILT VEINS
15					YELLOW/ORANGE MOIST HARD SILT, LITTLE AMOUNTS OF BLACK VEINS
20					YELLOWISH BROWN DRY TO MOIST HARD SILT, WITH BLACK VEINS
25					
30					



GERAGHTY & MILLER INC.

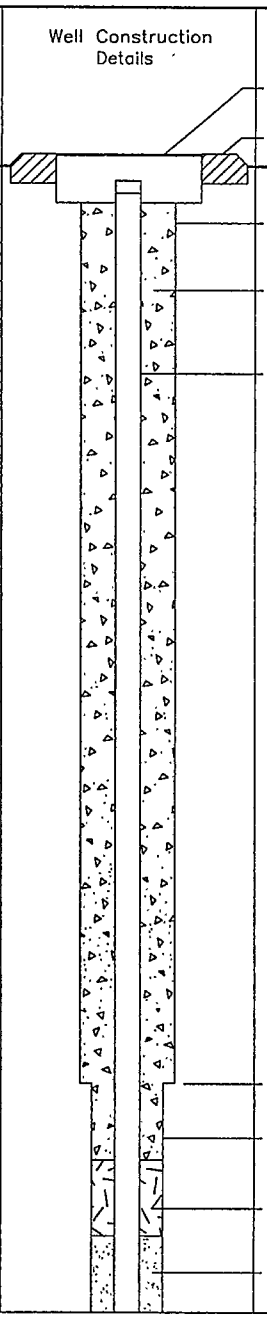
Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-10
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 3-3-97	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Rotary/Air Hammer	Drill Bit Size/Type: 8"/6"	Top of Casing Elevation (ft msl):
Drill Rig Type: Foremost CT450	Drilled By: McCall Brothers	Total Depth Drilled (ft bls): 43.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 24.70	Number of Samples: Disturbed: NA ; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8/6 ; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: M | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D 10MAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION
0					
					LIGHT BROWN, LITTLE YELLOWISH ORANGE, MOIST STIFF SILT.
5					
					LIGHT BROWN TO YELLOW ORANGE, MOIST STIFF SILT, TRACE CLAY.
10					
					14.5-FT: LIGHT BROWN TO LIGHT GRAY MOIST, VERY STIFF SILT, TRACE CLAY, SOME BLACK SILT VEINS.
15					
20					
					LIGHT GRAY HARD WEATHERED ROCK.
					SWITCH TO 6" AIR HAMMER.
25					
30					



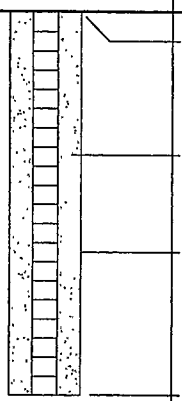
Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-10
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 3-3-97	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Rotary/Air Hammer	Drill Bit Size/Type: 8"/6"	Top of Casing Elevation (ft msl):
Drill Rig Type: Foremost CT450	Drilled By: McCall Brothers	Total Depth Drilled (ft bls): 43.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 24.70	Number of Samples: Disturbed: NA ; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8/6 ; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D OMAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
30							
35							
40							
45							
50							
55							
60							



GERAGHTY & MILLER INC.

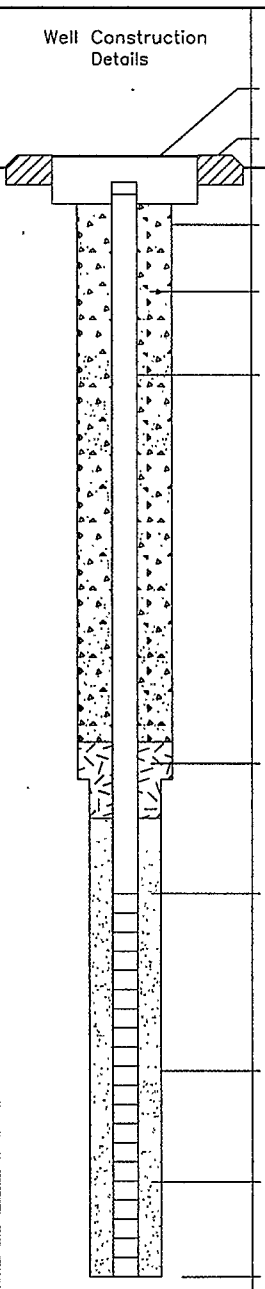
Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-11
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 3-3-97	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Rotary/Air Hammer	Drill Bit Size/Type: 8"/6"	Top of Casing Elevation (ft msl):
Drill Rig Type: Foremost CT450	Drilled By: McCall Brothers	Total Depth Drilled (ft bls): 29.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours:	Number Slot Samples: 0.010-Slot; Disturbed: NA; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8/6	Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D OMAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION
0					
5					RED, ORANGE, YELLOW AND BROWN MOIST STIFF SILT, TRACE CLAY.
10					YELLOWISH ORANGE, LITTLE BROWN MOIST STIFF SILT, TRACE CLAY.
15					LIGHT BROWN HARD WEATHERED ROCK.
					SWITCHED TO 6" AIR HAMMER.
20					
25					
30					



GERAGHTY & MILLER INC.

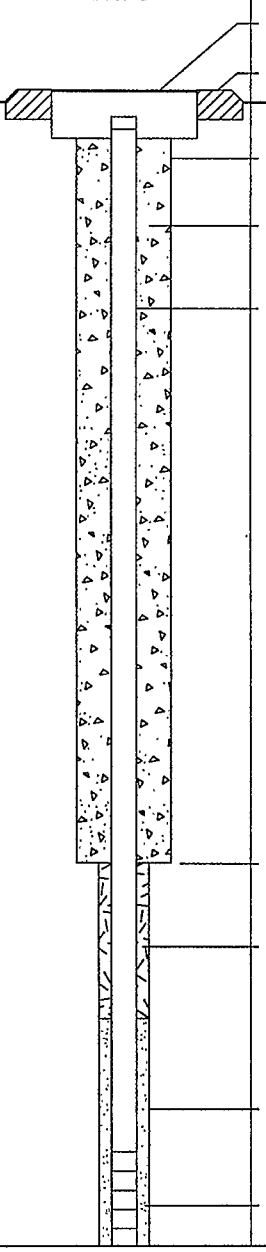
Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-12
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 4-17-97	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Hollow Stem Auger/Air Hammer	Drill Bit Size/Type: 8"/4"	Top of Casing Elevation (ft msl):
Drill Rig Type: Foremost CT450	Drilled By: Parratt-Wolff	Total Depth Drilled (ft bls): 38.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 24.70	Number of Samples: Disturbed: NA ; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8/4 ; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D OMAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION
0					
5					LIGHT GREY, MOIST HARD SILT, LITTLE WEATHERED ROCK.
10					
15					SPOON REFUSAL AT 15.0-FT.
20					LIGHT GRAY HARD WEATHERED ROCK.
25					AUGER REFUSAL. SWITCH TO 4" AIR HAMMER. THROUGH ROCK TO 38.0-FT. SET 2" PVC WELL WITH 10-FT OF 10-SLOT SCREEN.
30					



GERAGHTY & MILLER INC.

Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-12
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 4-17-97	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Hollow Stem Auger/Air Hammer	Drill Bit Size/Type: 8"/4"	Top of Casing Elevation (ft msl):
Drill Rig Type: Foremost CT450	Drilled By: Parratt-Wolff	Total Depth Drilled (ft bls): 38.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 24.70	Number of Samples: Disturbed: NA ; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8/4 ; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/2-ft	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D: 0MAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
30							
35							Bottom of Screen; 4" Diameter Drilled Borehole; Sand Filter Pack; Bottom of 4" Dia. Drilled Borehole
40							
45							
50							
55							
60							

GERAGHTY & MILLER INC.

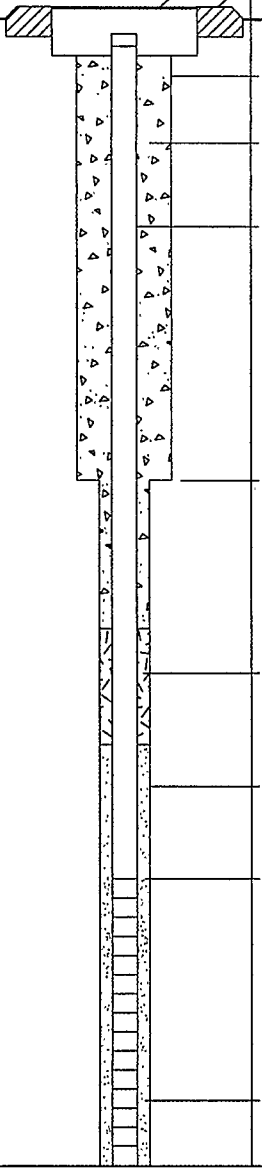
Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-13
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 4-17-97 to 4-22-97	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Hollow Stem Auger/Air Hammer	Drill Bit Size/Type: 8"/4"	Top of Casing Elevation (ft msl):
Drill Rig Type: Foremost CT450	Drilled By: Parratt-Wolff	Total Depth Drilled (ft bls): 33.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 24.70	Number of Samples: Disturbed: NA ; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8/4 ; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/3-ft	
Comments		

Depth ft bls	Elevation ft msl	Sample Interval	Blows/ft	Lithologic Log	LITHOLOGIC DESCRIPTION
0					
5					LIGHT GREY, MOIST HARD SILT.
10					LIGHT GREY, MOIST HARD SILT AND WEATHERED ROCK. SPOON REFUSAL.
15					AUGER REFUSAL - SWITCH TO 4" AIR HAMMER. THROUGH ROCK TO 33.0-FT. SET 2" PVC WELL WITH 10-FT OF 10-SLOT SCREEN.
20					
25					
30					

Well Construction Details



REMARKS

- 12" Diameter Manhole
- Concrete Pad
- 8" Dia. Drilled Hole
- Portland/Bentonite Cement Grout
- 2" Dia., Sch. 40 PVC Well Casing
- Bottom of 8" Dia. Borehole
- Bentonite Pellets
- 4" Diameter Drilled Borehole
- 2" Dia. Sch. 40 10-Slot, PVC Well Screen
- Sand Filter Pack

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D OMAR97

GERAGHTY & MILLER INC.

Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48MW-13
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 4-17-97 to 4-22-97	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Hollow Stem Auger/Air Hammer	Drill Bit Size/Type: 8"/4"	Top of Casing Elevation (ft msl):
Drill Rig Type: Foremost CT450	Drilled By: Parratt-Wolff	Total Depth Drilled (ft bls): 33.0
Groundwater Level (ft bls): First: ; Completion: ; 24 Hours: 24.70	Number of Samples: Disturbed: NA ; Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 8/4 ; Diameter of Well (inches): 2	Type of Well Casing: 2", Sch. 40, PVC	Screen Perforation: 0.010-Slot
Type of Sand Pack: Washed Silica	Type/Thickness of Seal(s): Bentonite Pellets/3-ft	
Comments		

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
30						Sand Filter Pack	
						4" Diameter Drilled Borehole	
						Bottom of Screen	
35						Bottom of 4" Dia. Drilled Borehole	
40							
45							
50							
55							
60							

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: MW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D 0MAR97

GERAGHTY & MILLER INC.

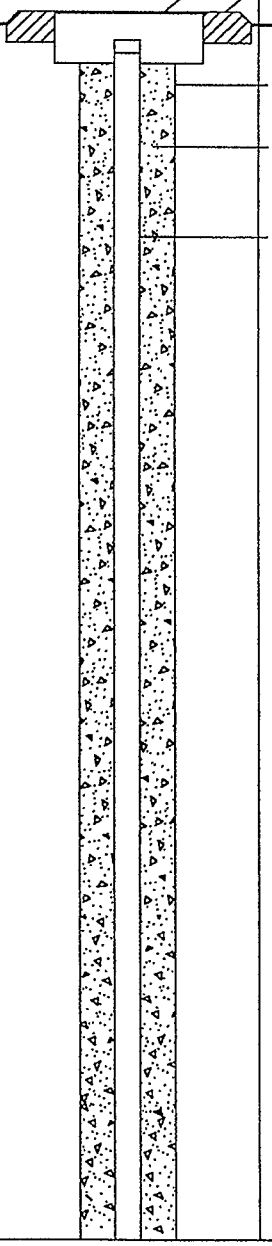
Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48DW-1
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled 1-15-97	Logged By W. Plekan	Checked By
Drilling Method Air Hammer	Drill Bit Size/Type	Top of Casing Elevation (ft msl)
Drill Rig Type	Drilled By Groundwater Protection	Total Depth Drilled (ft bls) 100.0
Groundwater Level (ft bls) First / Completion / 24 Hours	Number of Samples / Disturbed: NA / Undisturbed: NA	Sampler Type
Diameter of Hole (inches) 10 / Diameter of Well (inches)	Type of Well Casing 6 5/8" Steel Casing	Screen Perforation 0.010-Slot
Type of Sand Pack	Type/Thickness of Seal(s)	
Comments		

DRAFTER: A. WARREN | APPROVED: | CHECKED: K. TRIMBERGER | DRAWING: 48DW-1 | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG DATE: 10MAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION
0					10" AIR HAMMER



REMARKS

GERAGHTY & MILLER INC.

Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48DW-1
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled 1-15-97	Logged By W. Plekan	Checked By
Drilling Method Air Hammer	Drill Bit Size/Type	Top of Casing Elevation (ft msl)
Drill Rig Type	Drilled By Groundwater Protection	Total Depth Drilled (ft bls) 100.0
Groundwater Level (ft bls) First / Completion / 24 Hours	Number of Samples Disturbed: NA / Undisturbed: NA	Sampler Type
Diameter of Hole (inches) 10 / Diameter of Well (inches)	Type of Well Casing 6 5/8" Steel Casing	Screen Perforation 0.010-Slot
Type of Sand Pack	Type/Thickness of Seal(s)	
Comments		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED:
DRAWING: 48DW-1B | FILE NO.: NCDOT
PRJCT NO.: NC0360.192
DWG DATE: 10MAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
35							10" Dia. Drilled Hole
					TOP OF BEDROCK		2" Dia., Sch. 40 PVC, 0.010-Slot Well Screen
45							Sand Filter Pack
50							
55							

GERAGHTY & MILLER INC.

Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48DW-1
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled 1-15-97	Logged By W. Plekan	Checked By
Drilling Method Air Hammer	Drill Bit Size/Type	Top of Casing Elevation (ft msl)
Drill Rig Type	Drilled By Groundwater Protection	Total Depth Drilled (ft bls) 100.0
Groundwater Level (ft bls) First / Completion / 24 Hours	Number of Samples / Disturbed: NA / Undisturbed: NA	Sampler Type
Diameter of Hole (inches) 10 / Diameter of Well (inches)	Type of Well Casing 6 5/8" Steel Casing	Screen Perforation 0.010-Slot
Type of Sand Pack	Type/Thickness of Seal(s)	
Comments		

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
					6" Air Hammer		
65							
70							
75							6 5/8" Steel Casing
80							
85							
90							
95							
100							Bottom of Well

DRAFTER: A. WARREN | APPROVED: | CHECKED: K. TRIMBERGER | DRAWNG: 48DW-1C | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG DATE: 10MAR97

GERAGHTY & MILLER INC.

Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48DW-2
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 4-14-97 to 4-25-97	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Hammer	Drill Bit Size/Type: 10"/6"	Top of Casing Elevation (ft msl):
Drill Rig Type: Foremost CT450	Drilled By: McCall Brothers	Total Depth Drilled (ft bls): 66.0
Groundwater Level (ft bls): First / Completion / 24 Hours	Number of Samples: Disturbed: NA / Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 10/6 / Diameter of Well (inches): 6	Type of Well Casing: 6" Galvanized Steel Casing	Screen Perforation: 0.010-Slot
Type of Sand Pack:	Type/Thickness of Seal(s):	
Comments:		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: DW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D OMAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
0							12" Diameter Manhole; Concrete Pad
5							10" Dia. Drilled Borehole; Portland/Bentonite Cement Grout; 6" Diameter Galvanized Steel Well Casing
10							
15							
20							
25					TOP OF BEDROCK		Top of Bedrock
30							

GERAGHTY & MILLER INC.

Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48DW-2
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 4-14-97 to 4-25-97	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Hammer	Drill Bit Size/Type: 10"/6"	Top of Casing Elevation (ft msl):
Drill Rig Type: Foremost CT450	Drilled By: McCall Brothers	Total Depth Drilled (ft bls): 66.0
Groundwater Level (ft bls): First / Completion / 24 Hours	Number of Samples: Disturbed: NA / Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 10/6 / Diameter of Well (inches): 6	Type of Well Casing: 6" Galvanized Steel Casing	Screen Perforation: 0.010-Slot
Type of Sand Pack:	Type/Thickness of Seal(s):	
Comments:		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: DW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D OMAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
30							10" Dia. Drilled Borehole
35							Portland/Bentonite Cement Grout
							6" Diameter Galvanized Steel Well Casing
40							
					SET 6" GALVANIZED STEEL CASING WITH 10" AIR HAMMER.		Bottom of 10" Diameter Drilled Borehole
45							
50							Open Rock Well
55							
60							

Project : North Carolina Department of Transportation
Project Location : Site #48 Pittsboro, North Carolina
Project Number : NC0360.192

MONITOR WELL 48DW-2
WELL CONSTRUCTION DIAGRAM AND LITHOLOGIC LOG

Date(s) Drilled: 4-14-97 to 4-25-97	Logged By: W. Plekan	Checked By: W. Plekan
Drilling Method: Air Hammer	Drill Bit Size/Type: 10"/6"	Top of Casing Elevation (ft msl):
Drill Rig Type: Foremost CT450	Drilled By: McCall Brothers	Total Depth Drilled (ft bls): 66.0
Groundwater Level (ft bls): First / Completion / 24 Hours	Number of Samples: Disturbed: NA / Undisturbed: NA	Sampler Type: Split Spoon
Diameter of Hole (inches): 10/6 / Diameter of Well (inches): 6	Type of Well Casing: 6" Galvanized Steel Casing	Screen Perforation: 0.010-Slot
Type of Sand Pack:	Type/Thickness of Seal(s):	
Comments:		

DRAFTER: A. WARREN | CHECKED: K. TRIMBERGER | APPROVED: | DRAWING: DW | FILE NO.: NCDOT | PRJCT NO.: NC0360.192 | DWG D OMAR97

Depth ft bls	Elevation ft msl	SAMPLES: Sample Interval	SAMPLES: Blows/ft	SAMPLES: Lithologic Log	LITHOLOGIC DESCRIPTION	Well Construction Details	REMARKS
60							
65							Bottom of Open Rock Well
70							
75							
80							
85							
90							

GERAGHTY & MILLER INC.

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: 48SS-11-04
Client Project ID: NC0360.192.003
Lab Sample ID: 18088
Lab Project ID: G149-71 %Solids: 74.9

Analyzed By: RNP
Date Collected: 12/6/96
Date Received: 12/7/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	12/18/96	1	1.3	BQL
Bromobenzene	12/18/96	1	2.7	BQL
Bromochloromethane	12/18/96	1	1.3	BQL
Bromodichloromethane	12/18/96	1	1.3	BQL
Bromoform	12/18/96	1	2.7	BQL
Bromomethane	12/18/96	1	2.7	BQL
n-Butylbenzene	12/18/96	1	1.3	BQL
sec-Butylbenzene	12/18/96	1	1.3	BQL
tert-Butylbenzene	12/18/96	1	1.3	BQL
Carbon tetrachloride	12/18/96	1	1.3	BQL
Chlorobenzene	12/18/96	1	1.3	BQL
Chloroethane	12/18/96	1	1.3	BQL
Chloroform	12/18/96	1	1.3	BQL
Chloromethane	12/18/96	1	1.3	BQL
2-Chlorotoluene	12/18/96	1	1.3	BQL
4-Chlorotoluene	12/18/96	1	2.7	BQL
Dibromochloromethane	12/18/96	1	1.3	BQL
1,2-Dibromo-3-chloropropane	12/18/96	1	1.3	BQL
1,2-Dibromoethane (EDB)	12/18/96	1	1.3	BQL
Dibromomethane	12/18/96	1	1.3	BQL
1,2-Dichlorobenzene	12/18/96	1	1.3	BQL
1,3-Dichlorobenzene	12/18/96	1	1.3	BQL
1,4-Dichlorobenzene	12/18/96	1	1.3	BQL
Dichlorodifluoromethane	12/18/96	1	6.7	BQL
1,1-Dichloroethane	12/18/96	1	1.3	BQL
1,2-Dichloroethane	12/18/96	1	1.3	BQL
1,1-Dichloroethene	12/18/96	1	1.3	BQL
cis-1,2-Dichloroethene	12/18/96	1	1.3	BQL
trans-1,2-Dichloroethene	12/18/96	1	1.3	BQL
1,2-Dichloropropane	12/18/96	1	1.3	BQL
2,2-Dichloropropane	12/18/96	1	2.7	BQL
cis-1,3-Dichloropropene	12/18/96	1	1.3	BQL
trans-1,3-Dichloropropene	12/18/96	1	1.3	BQL
Diisopropyl ether (DIPE)	12/18/96	1	1.3	BQL
Ethylbenzene	12/18/96	1	1.3	BQL
Hexachlorobutadiene	12/18/96	1	1.3	BQL
Isopropylbenzene	12/18/96	1	1.3	BQL
p-Isopropyltoluene	12/18/96	1	1.3	BQL
Methyl-tert butyl ether (MTBE)	12/18/96	1	1.3	BQL
Methylene Chloride	12/18/96	1	6.7	BQL
Naphthalene	12/18/96	1	1.3	BQL
n-Propylbenzene	12/18/96	1	1.3	BQL

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: 48SS-11-04
Client Project ID: NC0360.192.003
Lab Sample ID: 18088
Lab Project ID: G149-71 %Solids: 74.9

Analyzed By: RNP
Date Collected: 12/6/96
Date Received: 12/7/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Styrene	12/18/96	1	2.7	BQL
1,1,1,2-Tertrachloroethane	12/18/96	1	1.3	BQL
1,1,2,2-Tertrachloroethane	12/18/96	1	1.3	BQL
Tetrachloroethene	12/18/96	1	1.3	BQL
Toluene	12/18/96	1	1.3	BQL
1,2,3-Trichlorobenzene	12/18/96	1	1.3	BQL
1,2,4-Trichlorobenzene	12/18/96	1	1.3	BQL
1,1,1-Trichloroethane	12/18/96	1	1.3	BQL
1,1,2-Trichloroethane	12/18/96	1	1.3	BQL
Trichloroethene	12/18/96	1	1.3	BQL
Trichlorofluromethane	12/18/96	1	1.3	BQL
1,2,3-Trichloropropane	12/18/96	1	2.7	BQL
1,2,4-Trimethylbenzene	12/18/96	1	1.3	BQL
1,3,5-Trimethylbenzene	12/18/96	1	2.7	BQL
Vinyl Chloride	12/18/96	1	1.3	BQL
m/p-Xylene	12/18/96	1	2.7	BQL
o-Xylene	12/18/96	1	2.7	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	44	110
Trifluorotoluene	40	40	100

Comments:
All values corrected for dilution and %solids.

Reviewed By: [signature]

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: 48SS-11-08
Client Project ID: NC0360.192.003
Lab Sample ID: 18089
Lab Project ID: G149-71 %Solids: 72.7

Analyzed By: RNP
Date Collected: 12/6/96
Date Received: 12/7/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	12/18/96	1	1.4	BQL
Bromobenzene	12/18/96	1	2.8	BQL
Bromochloromethane	12/18/96	1	1.4	BQL
Bromodichloromethane	12/18/96	1	1.4	BQL
Bromoform	12/18/96	1	2.8	BQL
Bromomethane	12/18/96	1	2.8	BQL
n-Butylbenzene	12/18/96	1	1.4	BQL
sec-Butylbenzene	12/18/96	1	1.4	BQL
tert-Butylbenzene	12/18/96	1	1.4	BQL
Carbon tetrachloride	12/18/96	1	1.4	BQL
Chlorobenzene	12/18/96	1	1.4	BQL
Chloroethane	12/18/96	1	1.4	BQL
Chloroform	12/18/96	1	1.4	BQL
Chloromethane	12/18/96	1	1.4	BQL
2-Chlorotoluene	12/18/96	1	1.4	BQL
4-Chlorotoluene	12/18/96	1	2.8	BQL
Dibromochloromethane	12/18/96	1	1.4	BQL
1,2-Dibromo-3-chloropropane	12/18/96	1	1.4	BQL
1,2-Dibromoethane (EDB)	12/18/96	1	1.4	BQL
Dibromomethane	12/18/96	1	1.4	BQL
1,2-Dichlorobenzene	12/18/96	1	1.4	BQL
1,3-Dichlorobenzene	12/18/96	1	1.4	BQL
1,4-Dichlorobenzene	12/18/96	1	1.4	BQL
Dichlorodifluoromethane	12/18/96	1	6.9	BQL
1,1-Dichloroethane	12/18/96	1	1.4	BQL
1,2-Dichloroethane	12/18/96	1	1.4	BQL
1,1-Dichloroethene	12/18/96	1	1.4	BQL
cis-1,2-Dichloroethene	12/18/96	1	1.4	BQL
trans-1,2-Dichloroethene	12/18/96	1	1.4	BQL
1,2-Dichloropropane	12/18/96	1	1.4	BQL
2,2-Dichloropropane	12/18/96	1	2.8	BQL
cis-1,3-Dichloropropene	12/18/96	1	1.4	BQL
trans-1,3-Dichloropropene	12/18/96	1	1.4	BQL
Diisopropyl ether (DIPE)	12/18/96	1	1.4	BQL
Ethylbenzene	12/18/96	1	1.4	BQL
Hexachlorobutadiene	12/18/96	1	1.4	BQL
Isopropylbenzene	12/18/96	1	1.4	BQL
p-Isopropyltoluene	12/18/96	1	1.4	BQL
Methyl-tert butyl ether (MTBE)	12/18/96	1	1.4	BQL
Methylene Chloride	12/18/96	1	6.9	BQL
Naphthalene	12/18/96	1	1.4	BQL
n-Propylbenzene	12/18/96	1	1.4	BQL

Flags:
BQL = Below Quantitation Limit

Results for Volatiles
by GC 8021

Client Sample ID: 48SS-11-08
Client Project ID: NC0360.192.003
Lab Sample ID: 18089
Lab Project ID: G149-71 %Solids: 72.7

Analyzed By: RNP
Date Collected: 12/6/96
Date Received: 12/7/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Styrene	12/18/96	1	2.8	BQL
1,1,1,2-Tertrachloroethane	12/18/96	1	1.4	BQL
1,1,2,2-Tertrachloroethane	12/18/96	1	1.4	BQL
Tetrachloroethene	12/18/96	1	1.4	BQL
Toluene	12/18/96	1	1.4	BQL
1,2,3-Trichlorobenzene	12/18/96	1	1.4	BQL
1,2,4-Trichlorobenzene	12/18/96	1	1.4	BQL
1,1,1-Trichloroethane	12/18/96	1	1.4	BQL
1,1,2-Trichloroethane	12/18/96	1	1.4	BQL
Trichloroethene	12/18/96	1	1.4	BQL
Trichlorofluromethane	12/18/96	1	1.4	BQL
1,2,3-Trichloropropane	12/18/96	1	2.8	BQL
1,2,4-Trimethylbenzene	12/18/96	1	1.4	BQL
1,3,5-Trimethylbenzene	12/18/96	1	2.8	BQL
Vinyl Chloride	12/18/96	1	1.4	BQL
m/p-Xylene	12/18/96	1	2.8	BQL
o-Xylene	12/18/96	1	2.8	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	42	105
Trifluorotoluene	40	39	98

Comments:
All values corrected for dilution and %solids.

Reviewed By: MR

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: 48REP-01-SS
Client Project ID: NC0360.192.003
Lab Sample ID: 18092
Lab Project ID: G149-71 %Solids: 73.1

Analyzed By: WML
Date Collected: 12/6/96
Date Received: 12/7/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	12/10/96	1	1.4	**5.7**
Bromobenzene	12/10/96	1	2.7	BQL
Bromochloromethane	12/10/96	1	1.4	BQL
Bromodichloromethane	12/10/96	1	1.4	BQL
Bromoform	12/10/96	1	2.7	BQL
Bromomethane	12/10/96	1	2.7	BQL
n-Butylbenzene	12/10/96	1	1.4	BQL
sec-Butylbenzene	12/10/96	1	1.4	BQL
tert-Butylbenzene	12/10/96	1	1.4	BQL
Carbon tetrachloride	12/10/96	1	1.4	BQL
Chlorobenzene	12/10/96	1	1.4	BQL
Chloroethane	12/10/96	1	1.4	BQL
Chloroform	12/10/96	1	1.4	**3.1**
Chloromethane	12/10/96	1	1.4	BQL
2-Chlorotoluene	12/10/96	1	1.4	BQL
4-Chlorotoluene	12/10/96	1	2.7	BQL
Dibromochloromethane	12/10/96	1	1.4	BQL
1,2-Dibromo-3-chloropropane	12/10/96	1	1.4	BQL
1,2-Dibromoethane (EDB)	12/10/96	1	1.4	BQL
Dibromomethane	12/10/96	1	1.4	BQL
1,2-Dichlorobenzene	12/10/96	1	1.4	BQL
1,3-Dichlorobenzene	12/10/96	1	1.4	BQL
1,4-Dichlorobenzene	12/10/96	1	1.4	BQL
Dichlorodifluoromethane	12/10/96	1	6.8	BQL
1,1-Dichloroethane	12/10/96	1	1.4	**4.2**
1,2-Dichloroethane	12/10/96	1	1.4	BQL
1,1-Dichloroethene	12/10/96	1	1.4	**1.5**
cis-1,2-Dichloroethene	12/10/96	1	1.4	BQL
trans-1,2-Dichloroethene	12/10/96	1	1.4	BQL
1,2-Dichloropropane	12/10/96	1	1.4	**2.8**
2,2-Dichloropropane	12/10/96	1	2.7	BQL
cis-1,3-Dichloropropene	12/10/96	1	1.4	BQL
trans-1,3-Dichloropropene	12/10/96	1	1.4	BQL
Diisopropyl ether (DIPE)	12/10/96	1	1.4	**5.4**
Ethylbenzene	12/10/96	1	1.4	**32**
Hexachlorobutadiene	12/10/96	1	1.4	BQL
Isopropylbenzene	12/10/96	1	1.4	**41**
p-Isopropyltoluene	12/10/96	1	1.4	**120**
Methyl-tert butyl ether (MTBE)	12/10/96	1	1.4	BQL
Methylene Chloride	12/10/96	1	6.8	BQL
Naphthalene	12/10/96	1	1.4	**120**
n-Propylbenzene	12/10/96	1	1.4	BQL

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: 48REP-01-SS
Client Project ID: NC0360.192.003
Lab Sample ID: 18092
Lab Project ID: G149-71 %Solids: 73.1

Analyzed By: WML
Date Collected: 12/6/96
Date Received: 12/7/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Styrene	12/10/96	1	2.7	BQL
1,1,1,2-Tertrachloroethane	12/10/96	1	1.4	BQL
1,1,2,2-Tertrachloroethane	12/10/96	1	1.4	BQL
Tetrachloroethene	12/10/96	1	1.4	BQL
Toluene	12/10/96	1	1.4	**6**
1,2,3-Trichlorobenzene	12/10/96	1	1.4	BQL
1,2,4-Trichlorobenzene	12/10/96	1	1.4	BQL
1,1,1-Trichloroethane	12/10/96	1	1.4	**16**
1,1,2-Trichloroethane	12/10/96	1	1.4	BQL
Trichloroethene	12/10/96	1	1.4	**2**
Trichlorofluromethane	12/10/96	1	1.4	**1.9**
1,2,3-Trichloropropane	12/10/96	1	2.7	BQL
1,2,4-Trimethylbenzene	12/10/96	1	1.4	**110**
1,3,5-Trimethylbenzene	12/10/96	1	2.7	**120**
Vinyl Chloride	12/10/96	1	1.4	BQL
m/p-Xylene	12/10/96	1	2.7	**83**
o-Xylene	12/10/96	1	2.7	**81**

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	40	100
Trifluorotoluene	40	44	110

Comments:
All values corrected for dilution and %solids.

Reviewed By: WML

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: 48EB-01-SS
Client Project ID: NC0360.192.003
Lab Sample ID: 18093
Lab Project ID: G149-71

Analyzed By: CKC
Date Collected: 12/6/96
Date Received: 12/7/96
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	12/16/96	1	1.0	BQL
Bromobenzene	12/16/96	1	2.0	BQL
Bromochloromethane	12/16/96	1	1.0	BQL
Bromodichloromethane	12/16/96	1	1.0	BQL
Bromoform	12/16/96	1	2.0	BQL
Bromomethane	12/16/96	1	2.0	BQL
n-Butylbenzene	12/16/96	1	1.0	BQL
sec-Butylbenzene	12/16/96	1	1.0	BQL
tert-Butylbenzene	12/16/96	1	1.0	BQL
Carbon tetrachloride	12/16/96	1	1.0	BQL
Chlorobenzene	12/16/96	1	1.0	BQL
Chloroethane	12/16/96	1	1.0	BQL
Chloroform	12/16/96	1	1.0	BQL
Chloromethane	12/16/96	1	1.0	BQL
2-Chlorotoluene	12/16/96	1	1.0	BQL
4-Chlorotoluene	12/16/96	1	2.0	BQL
Dibromochloromethane	12/16/96	1	1.0	BQL
1,2-Dibromo-3-chloropropane	12/16/96	1	1.0	BQL
1,2-Dibromoethane (EDB)	12/16/96	1	1.0	BQL
Dibromomethane	12/16/96	1	1.0	BQL
1,2-Dichlorobenzene	12/16/96	1	1.0	BQL
1,3-Dichlorobenzene	12/16/96	1	1.0	BQL
1,4-Dichlorobenzene	12/16/96	1	1.0	BQL
Dichlorodifluoromethane	12/16/96	1	5.0	BQL
1,1-Dichloroethane	12/16/96	1	1.0	BQL
1,2-Dichloroethane	12/16/96	1	1.0	BQL
1,1-Dichloroethene	12/16/96	1	1.0	BQL
cis-1,2-Dichloroethene	12/16/96	1	1.0	BQL
trans-1,2-Dichloroethene	12/16/96	1	1.0	BQL
1,2-Dichloropropane	12/16/96	1	1.0	BQL
2,2-Dichloropropane	12/16/96	1	2.0	BQL
cis-1,3-Dichloropropene	12/16/96	1	1.0	BQL
trans-1,3-Dichloropropene	12/16/96	1	1.0	BQL
Diisopropyl ether (DIPE)	12/16/96	1	1.0	BQL
Ethylbenzene	12/16/96	1	1.0	BQL
Hexachlorobutadiene	12/16/96	1	1.0	BQL
Isopropylbenzene	12/16/96	1	1.0	BQL
p-Isopropyltoluene	12/16/96	1	1.0	BQL
Methyl-tert butyl ether (MTBE)	12/16/96	1	1.0	BQL
Methylene Chloride	12/16/96	1	5.0	BQL
Naphthalene	12/16/96	1	1.0	BQL
n-Propylbenzene	12/16/96	1	1.0	BQL

Flags:
BQL = Below Quantitation Limit

Results for Volatiles
by GC 8021

Client Sample ID: 48EB-01-SS
Client Project ID: NC0360.192.003
Lab Sample ID: 18093
Lab Project ID: G149-71

Analyzed By: CKC
Date Collected: 12/6/96
Date Received: 12/7/96
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Styrene	12/16/96	1	2.0	BQL
1,1,1,2-Tertrachloroethane	12/16/96	1	1.0	BQL
1,1,2,2-Tertrachloroethane	12/16/96	1	1.0	BQL
Tetrachloroethene	12/16/96	1	1.0	BQL
Toluene	12/16/96	1	1.0	BQL
1,2,3-Trichlorobenzene	12/16/96	1	1.0	BQL
1,2,4-Trichlorobenzene	12/16/96	1	1.0	BQL
1,1,1-Trichloroethane	12/16/96	1	1.0	BQL
1,1,2-Trichloroethane	12/16/96	1	1.0	BQL
Trichloroethene	12/16/96	1	1.0	BQL
Trichlorofluromethane	12/16/96	1	1.0	BQL
1,2,3-Trichloropropane	12/16/96	1	2.0	BQL
1,2,4-Trimethylbenzene	12/16/96	1	1.0	BQL
1,3,5-Trimethylbenzene	12/16/96	1	2.0	BQL
Vinyl Chloride	12/16/96	1	1.0	BQL
m/p-Xylene	12/16/96	1	2.0	BQL
o-Xylene	12/16/96	1	2.0	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	37	92
Trifluorotoluene	40	40	100

Comments:
All values corrected for dilution.

Reviewed By: MR

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: 48TB-01-(12/6/96)
Client Project ID: NC0360.192.003
Lab Sample ID: 18094
Lab Project ID: G149-71

Analyzed By: CKC
Date Collected: 12/6/96
Date Received: 12/7/96
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	12/16/96	1	1.0	BQL
Bromobenzene	12/16/96	1	2.0	BQL
Bromochloromethane	12/16/96	1	1.0	BQL
Bromodichloromethane	12/16/96	1	1.0	BQL
Bromoform	12/16/96	1	2.0	BQL
Bromomethane	12/16/96	1	2.0	BQL
n-Butylbenzene	12/16/96	1	1.0	BQL
sec-Butylbenzene	12/16/96	1	1.0	BQL
tert-Butylbenzene	12/16/96	1	1.0	BQL
Carbon tetrachloride	12/16/96	1	1.0	BQL
Chlorobenzene	12/16/96	1	1.0	BQL
Chloroethane	12/16/96	1	1.0	BQL
Chloroform	12/16/96	1	1.0	BQL
Chloromethane	12/16/96	1	1.0	BQL
2-Chlorotoluene	12/16/96	1	1.0	BQL
4-Chlorotoluene	12/16/96	1	2.0	BQL
Dibromochloromethane	12/16/96	1	1.0	BQL
1,2-Dibromo-3-chloropropane	12/16/96	1	1.0	BQL
1,2-Dibromoethane (EDB)	12/16/96	1	1.0	BQL
Dibromomethane	12/16/96	1	1.0	BQL
1,2-Dichlorobenzene	12/16/96	1	1.0	BQL
1,3-Dichlorobenzene	12/16/96	1	1.0	BQL
1,4-Dichlorobenzene	12/16/96	1	1.0	BQL
Dichlorodifluoromethane	12/16/96	1	5.0	BQL
1,1-Dichloroethane	12/16/96	1	1.0	BQL
1,2-Dichloroethane	12/16/96	1	1.0	BQL
1,1-Dichloroethene	12/16/96	1	1.0	BQL
cis-1,2-Dichloroethene	12/16/96	1	1.0	BQL
trans-1,2-Dichloroethene	12/16/96	1	1.0	BQL
1,2-Dichloropropane	12/16/96	1	1.0	BQL
2,2-Dichloropropane	12/16/96	1	2.0	BQL
cis-1,3-Dichloropropene	12/16/96	1	1.0	BQL
trans-1,3-Dichloropropene	12/16/96	1	1.0	BQL
Diisopropyl ether (DIPE)	12/16/96	1	1.0	BQL
Ethylbenzene	12/16/96	1	1.0	BQL
Hexachlorobutadiene	12/16/96	1	1.0	BQL
Isopropylbenzene	12/16/96	1	1.0	BQL
p-Isopropyltoluene	12/16/96	1	1.0	BQL
Methyl-tert butyl ether (MTBE)	12/16/96	1	1.0	BQL
Methylene Chloride	12/16/96	1	5.0	BQL
Naphthalene	12/16/96	1	1.0	BQL
n-Propylbenzene	12/16/96	1	1.0	BQL

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: 48TB-01-(12/6/96)
Client Project ID: NC0360.192.003
Lab Sample ID: 18094
Lab Project ID: G149-71

Analyzed By: CKC
Date Collected: 12/6/96
Date Received: 12/7/96
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Styrene	12/16/96	1	2.0	BQL
1,1,1,2-Tertrachloroethane	12/16/96	1	1.0	BQL
1,1,2,2-Tertrachloroethane	12/16/96	1	1.0	BQL
Tetrachloroethene	12/16/96	1	1.0	BQL
Toluene	12/16/96	1	1.0	BQL
1,2,3-Trichlorobenzene	12/16/96	1	1.0	BQL
1,2,4-Trichlorobenzene	12/16/96	1	1.0	BQL
1,1,1-Trichloroethane	12/16/96	1	1.0	BQL
1,1,2-Trichloroethane	12/16/96	1	1.0	BQL
Trichloroethene	12/16/96	1	1.0	BQL
Trichlorofluromethane	12/16/96	1	1.0	BQL
1,2,3-Trichloropropane	12/16/96	1	2.0	BQL
1,2,4-Trimethylbenzene	12/16/96	1	1.0	BQL
1,3,5-Trimethylbenzene	12/16/96	1	2.0	BQL
Vinyl Chloride	12/16/96	1	1.0	BQL
m/p-Xylene	12/16/96	1	2.0	BQL
o-Xylene	12/16/96	1	2.0	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	38	95
Trifluorotoluene	40	40	100

Comments:
All values corrected for dilution.

Reviewed By: [signature]

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: VBLK3121696
Client Project ID: NC0360.192.003
Lab Sample ID:
Lab Project ID: G149-71

Analyzed By: CKC
Date Collected:
Date Received:
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	12/16/96	1	1.0	BQL
Bromobenzene	12/16/96	1	2.0	BQL
Bromochloromethane	12/16/96	1	1.0	BQL
Bromodichloromethane	12/16/96	1	1.0	BQL
Bromoform	12/16/96	1	2.0	BQL
Bromomethane	12/16/96	1	2.0	BQL
n-Butylbenzene	12/16/96	1	1.0	BQL
sec-Butylbenzene	12/16/96	1	1.0	BQL
tert-Butylbenzene	12/16/96	1	1.0	BQL
Carbon tetrachloride	12/16/96	1	1.0	BQL
Chlorobenzene	12/16/96	1	1.0	BQL
Chloroethane	12/16/96	1	1.0	BQL
Chloroform	12/16/96	1	1.0	BQL
Chloromethane	12/16/96	1	1.0	BQL
2-Chlorotoluene	12/16/96	1	1.0	BQL
4-Chlorotoluene	12/16/96	1	2.0	BQL
Dibromochloromethane	12/16/96	1	1.0	BQL
1,2-Dibromo-3-chloropropane	12/16/96	1	1.0	BQL
1,2-Dibromoethane (EDB)	12/16/96	1	1.0	BQL
Dibromomethane	12/16/96	1	1.0	BQL
1,2-Dichlorobenzene	12/16/96	1	1.0	BQL
1,3-Dichlorobenzene	12/16/96	1	1.0	BQL
1,4-Dichlorobenzene	12/16/96	1	1.0	BQL
Dichlorodifluoromethane	12/16/96	1	5.0	BQL
1,1-Dichloroethane	12/16/96	1	1.0	BQL
1,2-Dichloroethane	12/16/96	1	1.0	BQL
1,1-Dichloroethene	12/16/96	1	1.0	BQL
cis-1,2-Dichloroethene	12/16/96	1	1.0	BQL
trans-1,2-Dichloroethene	12/16/96	1	1.0	BQL
1,2-Dichloropropane	12/16/96	1	1.0	BQL
2,2-Dichloropropane	12/16/96	1	2.0	BQL
cis-1,3-Dichloropropene	12/16/96	1	1.0	BQL
trans-1,3-Dichloropropene	12/16/96	1	1.0	BQL
Diisopropyl ether (DIPE)	12/16/96	1	1.0	BQL
Ethylbenzene	12/16/96	1	1.0	BQL
Hexachlorobutadiene	12/16/96	1	1.0	BQL
Isopropylbenzene	12/16/96	1	1.0	BQL
p-Isopropyltoluene	12/16/96	1	1.0	BQL
Methyl-tert butyl ether (MTBE)	12/16/96	1	1.0	BQL
Methylene Chloride	12/16/96	1	5.0	BQL
Naphthalene	12/16/96	1	1.0	BQL
n-Propylbenzene	12/16/96	1	1.0	BQL

Flags:
BQL = Below Quantitation Limit

SURROGATE RECOVERY LIMITS

	6230D	8021	601	8260B	8270B	602
1,4-Dichlorobutane	85-120%	83-123%	87-113%			
Trifluorotoluene	85-122%	84-122%				
Bromofluorobenzene						82-112%
1,2-Dichloroethane-d4				68-132%		
Toluene-d8				80-118%		
				80-116%		
2-Fluorophenol					43-116%	
Phenol-d5					35-144%	
2,4,6-Tribromophenol					33-141%	
Nitrobenzene-d14					21-100%	
2-Fluorobiphenyl					10-94%	
p-Terphenyl-d14					10-123%	

Lee Paving / NCDOT #48

June 1997
CSA

APPENDIX E

LABORATORY ANALYTICAL DATA REPORTS

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID: 48MW-11
Client Project ID: NCO360.192
Lab Sample ID: 21224
Lab Project ID: G149-96

Analyzed By: WML
Date Collected: 03/06/97
Date Received: 03/07/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	3/13/97	1	1	BQL
Bromoform	3/13/97	1	2	BQL
Bromomethane	3/13/97	1	2	BQL
Carbon tetrachloride	3/13/97	1	1	BQL
Chlorobenzene	3/13/97	1	1	BQL
Chloroethane	3/13/97	1	1	BQL
Chloroform	3/13/97	1	1	BQL
Chloromethane	3/13/97	1	1	BQL
Dibromochloromethane	3/13/97	1	1	BQL
1,2-Dibromoethane (EDB)	3/13/97	1	1	BQL
1,2-Dichlorobenzene	3/13/97	1	1	BQL
1,3-Dichlorobenzene	3/13/97	1	1	BQL
1,4-Dichlorobenzene	3/13/97	1	1	BQL
1,1-Dichloroethane	3/13/97	1	1	**2**
1,2-Dichloroethane	3/13/97	1	1	BQL
1,1-Dichloroethene	3/13/97	1	1	**33**
cis-1,2-Dichloroethene	3/13/97	1	1	**2**
trans-1,2-Dichloroethene	3/13/97	1	1	BQL
1,2-Dichloropropane	3/13/97	1	1	BQL
cis-1,3-Dichloropropene	3/13/97	1	1	BQL
trans-1,3-Dichloropropene	3/13/97	1	1	BQL
Methylene Chloride	3/13/97	1	5	BQL
1,1,2,2-Tertrachloroethane	3/13/97	1	1	BQL
Tetrachloroethene	3/13/97	1	1	**2**
1,1,1-Trichloroethane	3/13/97	1	1	**84**
1,1,2-Trichloroethane	3/13/97	1	1	BQL
Trichloroethene	3/13/97	1	1	**200** E
Trichlorofluoromethane	3/13/97	1	1	BQL
Vinyl Chloride	3/13/97	1	1	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	40	100

Comments:

All values corrected for dilution.
E= Estimated value; compound exceeded calibration upper limit.

Flags:

BQL = Below quantitation limit.

Reviewed By: RNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID: 48MW-11
Client Project ID: NCO360.192
Lab Sample ID: 21224
Lab Project ID: G149-96

Analyzed By: WML
Date Collected: 03/06/97
Date Received: 03/07/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	3/11/97	20	20	BQL
Bromoform	3/11/97	20	40	BQL
Bromomethane	3/11/97	20	40	BQL
Carbon tetrachloride	3/11/97	20	20	BQL
Chlorobenzene	3/11/97	20	20	BQL
Chloroethane	3/11/97	20	20	BQL
Chloroform	3/11/97	20	20	BQL
Chloromethane	3/11/97	20	20	BQL
Dibromochloromethane	3/11/97	20	20	BQL
1,2-Dibromoethane (EDB)	3/11/97	20	20	BQL
1,2-Dichlorobenzene	3/11/97	20	20	BQL
1,3-Dichlorobenzene	3/11/97	20	20	BQL
1,4-Dichlorobenzene	3/11/97	20	20	BQL
1,1-Dichloroethane	3/11/97	20	20	BQL
1,2-Dichloroethane	3/11/97	20	20	BQL
1,1-Dichloroethene	3/11/97	20	20	**22**
cis-1,2-Dichloroethene	3/11/97	20	20	BQL
trans-1,2-Dichloroethene	3/11/97	20	20	BQL
1,2-Dichloropropane	3/11/97	20	20	BQL
cis-1,3-Dichloropropene	3/11/97	20	20	BQL
trans-1,3-Dichloropropene	3/11/97	20	20	BQL
Methylene Chloride	3/11/97	20	100	BQL
1,1,2,2-Tertrachloroethane	3/11/97	20	20	BQL
Tetrachloroethene	3/11/97	20	20	BQL
1,1,1-Trichloroethane	3/11/97	20	20	**90**
1,1,2-Trichloroethane	3/11/97	20	20	BQL
Trichloroethene	3/11/97	20	20	**470**
Trichlorofluoromethane	3/11/97	20	20	BQL
Vinyl Chloride	3/11/97	20	20	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	41	102

Revision No.: 04039701
Revision Date: 4/3/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By: RNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID: 48REP-01-GW
Client Project ID: NCO360.192
Lab Sample ID: 21227
Lab Project ID: G149-96

Analyzed By: WML
Date Collected: 03/06/97
Date Received: 03/07/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	3/11/97	1	1	BQL
Bromoform	3/11/97	1	2	BQL
Bromomethane	3/11/97	1	2	BQL
Carbon tetrachloride	3/11/97	1	1	BQL
Chlorobenzene	3/11/97	1	1	BQL
Chloroethane	3/11/97	1	1	BQL
Chloroform	3/11/97	1	1	BQL
Chloromethane	3/11/97	1	1	BQL
Dibromochloromethane	3/11/97	1	1	BQL
1,2-Dibromoethane (EDB)	3/11/97	1	1	BQL
1,2-Dichlorobenzene	3/11/97	1	1	BQL
1,3-Dichlorobenzene	3/11/97	1	1	BQL
1,4-Dichlorobenzene	3/11/97	1	1	BQL
1,1-Dichloroethane	3/11/97	1	1	BQL
1,2-Dichloroethane	3/11/97	1	1	BQL
1,1-Dichloroethene	3/11/97	1	1	BQL
cis-1,2-Dichloroethene	3/11/97	1	1	BQL
trans-1,2-Dichloroethene	3/11/97	1	1	BQL
1,2-Dichloropropane	3/11/97	1	1	BQL
cis-1,3-Dichloropropene	3/11/97	1	1	BQL
trans-1,3-Dichloropropene	3/11/97	1	1	BQL
Methylene Chloride	3/11/97	1	5	BQL
1,1,2,2-Tertrachloroethane	3/11/97	1	1	BQL
Tetrachloroethene	3/11/97	1	1	BQL
1,1,1-Trichloroethane	3/11/97	1	1	BQL
1,1,2-Trichloroethane	3/11/97	1	1	BQL
Trichloroethene	3/11/97	1	1	BQL
Trichlorofluoromethane	3/11/97	1	1	BQL
Vinyl Chloride	3/11/97	1	1	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	42	105

Revision No.: 04039701
Revision Date: 4/3/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By: RNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID: 48TB-01 3/6/97
Client Project ID: NCO360.192
Lab Sample ID: 21228
Lab Project ID: G149-96

Analyzed By: WML
Date Collected: 03/06/97
Date Received: 03/07/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	3/11/97	1	1	BQL
Bromoform	3/11/97	1	2	BQL
Bromomethane	3/11/97	1	2	BQL
Carbon tetrachloride	3/11/97	1	1	BQL
Chlorobenzene	3/11/97	1	1	BQL
Chloroethane	3/11/97	1	1	BQL
Chloroform	3/11/97	1	1	BQL
Chloromethane	3/11/97	1	1	BQL
Dibromochloromethane	3/11/97	1	1	BQL
1,2-Dibromoethane (EDB)	3/11/97	1	1	BQL
1,2-Dichlorobenzene	3/11/97	1	1	BQL
1,3-Dichlorobenzene	3/11/97	1	1	BQL
1,4-Dichlorobenzene	3/11/97	1	1	BQL
1,1-Dichloroethane	3/11/97	1	1	BQL
1,2-Dichloroethane	3/11/97	1	1	BQL
1,1-Dichloroethene	3/11/97	1	1	BQL
cis-1,2-Dichloroethene	3/11/97	1	1	BQL
trans-1,2-Dichloroethene	3/11/97	1	1	BQL
1,2-Dichloropropane	3/11/97	1	1	BQL
cis-1,3-Dichloropropene	3/11/97	1	1	BQL
trans-1,3-Dichloropropene	3/11/97	1	1	BQL
Methylene Chloride	3/11/97	1	5	BQL
1,1,2,2-Tertrachloroethane	3/11/97	1	1	BQL
Tetrachloroethene	3/11/97	1	1	BQL
1,1,1-Trichloroethane	3/11/97	1	1	BQL
1,1,2-Trichloroethane	3/11/97	1	1	BQL
Trichloroethene	3/11/97	1	1	BQL
Trichlorofluoromethane	3/11/97	1	1	BQL
Vinyl Chloride	3/11/97	1	1	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	40	100

Revision No.: 04039701
Revision Date: 4/3/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By: BNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID: 48EB-01-GW
Client Project ID: NCO360.192
Lab Sample ID: 21229
Lab Project ID: G149-96

Analyzed By: WML
Date Collected: 03/06/97
Date Received: 03/07/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	3/11/97	1	1	BQL
Bromoform	3/11/97	1	2	BQL
Bromomethane	3/11/97	1	2	BQL
Carbon tetrachloride	3/11/97	1	1	BQL
Chlorobenzene	3/11/97	1	1	BQL
Chloroethane	3/11/97	1	1	BQL
Chloroform	3/11/97	1	1	BQL
Chloromethane	3/11/97	1	1	BQL
Dibromochloromethane	3/11/97	1	1	BQL
1,2-Dibromoethane (EDB)	3/11/97	1	1	BQL
1,2-Dichlorobenzene	3/11/97	1	1	BQL
1,3-Dichlorobenzene	3/11/97	1	1	BQL
1,4-Dichlorobenzene	3/11/97	1	1	BQL
1,1-Dichloroethane	3/11/97	1	1	BQL
1,2-Dichloroethane	3/11/97	1	1	BQL
1,1-Dichloroethene	3/11/97	1	1	BQL
cis-1,2-Dichloroethene	3/11/97	1	1	BQL
trans-1,2-Dichloroethene	3/11/97	1	1	BQL
1,2-Dichloropropane	3/11/97	1	1	BQL
cis-1,3-Dichloropropene	3/11/97	1	1	BQL
trans-1,3-Dichloropropene	3/11/97	1	1	BQL
Methylene Chloride	3/11/97	1	5	BQL
1,1,2,2-Tertrachloroethane	3/11/97	1	1	BQL
Tetrachloroethene	3/11/97	1	1	BQL
1,1,1-Trichloroethane	3/11/97	1	1	BQL
1,1,2-Trichloroethane	3/11/97	1	1	BQL
Trichloroethene	3/11/97	1	1	BQL
Trichlorofluoromethane	3/11/97	1	1	BQL
Vinyl Chloride	3/11/97	1	1	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	37	92

Revision No.: 04039701
Revision Date: 4/3/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By: TNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID: VBLK1031097
Client Project ID: NCO360.192
Lab Sample ID:
Lab Project ID: G149-96

Analyzed By: WML
Date Collected:
Date Received:
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	3/10/97	1	1	BQL
Bromoform	3/10/97	1	2	BQL
Bromomethane	3/10/97	1	2	BQL
Carbon tetrachloride	3/10/97	1	1	BQL
Chlorobenzene	3/10/97	1	1	BQL
Chloroethane	3/10/97	1	1	BQL
Chloroform	3/10/97	1	1	BQL
Chloromethane	3/10/97	1	1	BQL
Dibromochloromethane	3/10/97	1	1	BQL
1,2-Dibromoethane (EDB)	3/10/97	1	1	BQL
1,2-Dichlorobenzene	3/10/97	1	1	BQL
1,3-Dichlorobenzene	3/10/97	1	1	BQL
1,4-Dichlorobenzene	3/10/97	1	1	BQL
1,1-Dichloroethane	3/10/97	1	1	BQL
1,2-Dichloroethane	3/10/97	1	1	BQL
1,1-Dichloroethene	3/10/97	1	1	BQL
cis-1,2-Dichloroethene	3/10/97	1	1	BQL
trans-1,2-Dichloroethene	3/10/97	1	1	BQL
1,2-Dichloropropane	3/10/97	1	1	BQL
cis-1,3-Dichloropropene	3/10/97	1	1	BQL
trans-1,3-Dichloropropene	3/10/97	1	1	BQL
Methylene Chloride	3/10/97	1	5	BQL
1,1,2,2-Tertrachloroethane	3/10/97	1	1	BQL
Tetrachloroethene	3/10/97	1	1	BQL
1,1,1-Trichloroethane	3/10/97	1	1	BQL
1,1,2-Trichloroethane	3/10/97	1	1	BQL
Trichloroethene	3/10/97	1	1	BQL
Trichlorofluoromethane	3/10/97	1	1	BQL
Vinyl Chloride	3/10/97	1	1	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	41	102

Revision No.: 04039701
Revision Date: 4/3/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By: RNF

Results for MS/MSD

by GC 601

Client Sample ID: 48MW-11
Client Project ID: NC0360.192
Lab Sample ID: 21224
Lab Project ID: G149-96
Analyzed By: WML

Date Analyzed: 3/13/97
Date Collected: 3/6/97
Date Received: 3/7/97
Matrix: Water

	Sample	Spiked	MS	MSD	Limits Lower	Limits Upper	RPD	Limit Max.
Bromodichloromethane	BQL	20.0	151.6 *	167.2 *	53.3	146.7	9.8	30
Bromoform	BQL	20.0	124.2	151.5 *	62.6	137.4	19.8	30
Bromomethane	BQL	20.0	106.6	131.2	23.4	176.6	20.7	30
Carbon tetrachloride	BQL	20.0	68.3	68.3	>0	239.2	0.1	30
Chlorobenzene	BQL	20.0	151.1	158.9 *	41.5	158.5	5.1	30
Chloroethane	BQL	20.0	121.4	124.9	41.6	158.4	2.8	30
Chloroform	BQL	20.0	143.6 *	153.7 *	62.0	138.0	6.8	30
Chloromethane	BQL	20.0	114.5	129.4 *	71.1	128.9	12.2	30
Dibromochloromethane	BQL	20.0	134.3	142.8 *	63.3	136.7	6.1	30
1,2-Dibromoethane (EDB)	BQL	20.0	153.3 *	178.8 *	61.5	138.5	15.4	30
1,2-Dichlorobenzene	BQL	20.0	156.5	155.7	40.5	159.5	0.6	30
1,3-Dichlorobenzene	BQL	20.0	152.0	149.6	25.1	174.9	1.6	30
1,4-Dichlorobenzene	BQL	20.0	156.5	155.7	23.3	176.7	0.6	30
1,1-Dichloroethane	BQL	20.0	141.7	147.7	32.6	167.4	4.2	30
1,2-Dichloroethane	BQL	20.0	157.6 *	167.1 *	50.9	149.1	5.8	30
1,1-Dichloroethene	1.1	20.0	138.4	136.5	17.3	182.7	1.3	30
cis-1,2-Dichloroethene	BQL	20.0	71.9	74.5	>0	204.6	3.6	30
trans-1,2-Dichloroethene	BQL	20.0	125.8	131.0	25.1	174.9	4.1	30
1,2-Dichloropropane	BQL	20.0	151.4	157.6	38.3	161.7	4.0	30
cis-1,3-Dichloropropene	BQL	20.0	142.5	158.4 *	48.5	151.5	10.6	30
trans-1,3-Dichloropropene	BQL	20.0	136.6	158.9 *	59.7	140.3	15.1	30
Methylene Chloride	BQL	20.0	147.2 *	149.4 *	69.6	130.4	1.4	30
1,1,2,2-Tertrachloroethane	BQL	20.0	143.2	147.6	>0	241.2	3.0	30
Tetrachloroethene	BQL	20.0	149.4	153.5	>0	248.5	2.7	30
1,1,1-Trichloroethane	4.5	20.0	56.7	53.7	18.0	182.0	5.4	30
1,1,2-Trichloroethane	BQL	20.0	161.2 *	173.2 *	60.8	139.2	7.1	30
Trichloroethene	23.4	20.0	138.8	135.5	55.7	144.3	2.4	30
Trichlorofluoromethane	BQL	20.0	130.0	127.6	30.7	169.3	1.8	30
Vinyl Chloride	BQL	20.0	131.4	126.7	18.9	181.1	3.6	30

Revision No.: 04039701
Revision Date: 4/3/97

Comments:

Concentrations are on column amounts.

Flags:

* = Out of limits.
NA = Not applicable
BQL = Below quantitation limit.

Reviewed By: RNI

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Laboratory Control Spike (LCS)

by GC 601

Client Sample ID: LCS031097
Client Project ID: NC0360.192
Lab Sample ID: None assigned
Lab Project ID: G149-96

Analyst: WML
Date Collected: Not applicable
Date Received: Not applicable
Matrix: Water

	Spiked	LCS	Limits Lower	Limits Upper
Bromodichloromethane	20	102.4	8.1	191.9
Bromoform	20	96.0	18.5	181.5
Bromomethane	20	114.3	17.5	182.5
Carbon tetrachloride	20	56.9	15.2	184.8
Chlorobenzene	20	104.1	13.6	186.4
Chloroethane	20	104.3	13.6	186.4
Chloroform	20	105.9	7.4	192.6
Chloromethane	20	104.3	10.9	189.1
Dibromochloromethane	20	93.4	8.1	191.9
1,2-Dibromoethane (EDB)	20	93.6	>0	206.3
1,2-Dichlorobenzene	20	104.5	5.3	194.7
1,3-Dichlorobenzene	20	104.1	9.9	190.1
1,4-Dichlorobenzene	20	103.8	0.7	199.3
1,1-Dichloroethane	20	111.7	10.0	190.0
1,2-Dichloroethane	20	102.1	>0	203.0
1,1-Dichloroethene	20	119.9	16.4	183.6
cis-1,2-Dichloroethene	20	51.1	19.4	180.6
trans-1,2-Dichloroethene	20	112.8	11.7	188.3
1,2-Dichloropropane	20	107.1	9.7	190.3
cis-1,3-Dichloropropene	20	105.6	5.1	194.9
trans-1,3-Dichloropropene	20	103.1	8.5	191.5
Methylene Chloride	20	76.2	>0	261.9
1,1,2,2-Tertrachloroethane	20	105.0	>0	209.1
Tetrachloroethene	20	110.6	55.1	144.9
1,1,1-Trichloroethane	20	112.9	26.5	173.5
1,1,2-Trichloroethane	20	100.9	7.9	192.1
Trichloroethene	20	108.6	21.9	178.1
Trichlorofluromethane	20	119.6	6.8	193.2
Vinyl Chloride	20	126.2	14.5	185.5

Revision No.: 04039701
Revision Date: 4/3/97

Comments:

Concentration values are on column amount.

Flags:

* = Out of limits.
NA = Not applicable

Reviewed By: RNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 602

Client Sample ID: 48MW-10
Client Project ID: NCO360.192
Lab Sample ID: 21223
Lab Project ID: G149-96

Analyzed By: WML
Date Collected: 03/06/97
Date Received: 03/07/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	3/11/97	1	1	BQL
Diisopropyl ether (DIPE)	3/11/97	1	1	BQL
Ethylbenzene	3/11/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	3/11/97	1	2	BQL
Toluene	3/11/97	1	1	BQL
m/p-Xylene	3/11/97	1	2	BQL
o-Xylene	3/11/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	39	98

Revision No.: 04039701
Revision Date: 4/3/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: RNV

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 602

Client Sample ID: 48MW-11
Client Project ID: NCO360.192
Lab Sample ID: 21224
Lab Project ID: G149-96

Analyzed By: WML
Date Collected: 03/06/97
Date Received: 03/07/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	3/13/97	1	1	BQL
Diisopropyl ether (DIPE)	3/13/97	1	1	BQL
Ethylbenzene	3/13/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	3/13/97	1	2	BQL
Toluene	3/13/97	1	1	BQL
m/p-Xylene	3/13/97	1	2	BQL
o-Xylene	3/13/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	36	90

Revision No.: 04039701
Revision Date: 4/3/97

Comments:
All values corrected for dilution.

Flags:
BQL = Below quantitation limit

Reviewed By: RNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 602

Client Sample ID: 48REP-01-GW
Client Project ID: NCO360.192
Lab Sample ID: 21227
Lab Project ID: G149-96

Analyzed By: WML
Date Collected: 03/06/97
Date Received: 03/07/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	3/11/97	1	1	BQL
Diisopropyl ether (DIPE)	3/11/97	1	1	BQL
Ethylbenzene	3/11/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	3/11/97	1	2	BQL
Toluene	3/11/97	1	1	BQL
m/p-Xylene	3/11/97	1	2	BQL
o-Xylene	3/11/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	40	100

Revision No.: 04039701
Revision Date: 4/3/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: RNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 602

Client Sample ID: 48TB-01 3/6/97
Client Project ID: NCO360.192
Lab Sample ID: 21228
Lab Project ID: G149-96

Analyzed By: WML
Date Collected: 03/06/97
Date Received: 03/07/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	3/11/97	1	1	BQL
Diisopropyl ether (DIPE)	3/11/97	1	1	BQL
Ethylbenzene	3/11/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	3/11/97	1	2	BQL
Toluene	3/11/97	1	1	BQL
m/p-Xylene	3/11/97	1	2	BQL
o-Xylene	3/11/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	40	100

Revision No.: 04039701
Revision Date: 4/3/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: BNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 602

Client Sample ID: 48EB-01-GW
Client Project ID: NCO360.192
Lab Sample ID: 21229
Lab Project ID: G149-96

Analyzed By: WML
Date Collected: 03/06/97
Date Received: 03/07/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	3/11/97	1	1	BQL
Diisopropyl ether (DIPE)	3/11/97	1	1	BQL
Ethylbenzene	3/11/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	3/11/97	1	2	BQL
Toluene	3/11/97	1	1	BQL
m/p-Xylene	3/11/97	1	2	BQL
o-Xylene	3/11/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	40	100

Revision No.: 04039701
Revision Date: 4/3/97

Comments:
All values corrected for dilution.

Flags:
BQL = Below quantitation limit

Reviewed By: RJP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 602

Client Sample ID: VBLK10313097
Client Project ID: NCO360.192
Lab Sample ID:
Lab Project ID: G149-96

Analyzed By: WML
Date Collected:
Date Received:
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	3/13/97	1	1	BQL
Diisopropyl ether (DIPE)	3/13/97	1	1	BQL
Ethylbenzene	3/13/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	3/13/97	1	2	BQL
Toluene	3/13/97	1	1	BQL
m/p-Xylene	3/13/97	1	2	BQL
o-Xylene	3/13/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	39	98

Revision No.: 04039701
Revision Date: 4/3/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: RNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 602

Client Sample ID: VBLK1031097
Client Project ID: NCO360.192
Lab Sample ID:
Lab Project ID: G149-96

Analyzed By: WML
Date Collected:
Date Received:
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	3/10/97	1	1	BQL
Diisopropyl ether (DIPE)	3/10/97	1	1	BQL
Ethylbenzene	3/10/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	3/10/97	1	2	BQL
Toluene	3/10/97	1	1	BQL
m/p-Xylene	3/10/97	1	2	BQL
o-Xylene	3/10/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	39	98

Revision No.: 04039701
Revision Date: 4/3/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: RNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for MS/MSD

by GC 602

Client Sample ID: 48MW-11
Client Project ID: NC0360.192
Lab Sample ID: 21224
Lab Project ID: G149-96

Analyzed By: WML
Date Collected: 03/06/97
Date Received: 03/07/97
Matrix: Water

	Sample	Spiked	MS	MSD	Limits Lower	Limits Upper	RPD	Limit Max.
Benzene	BQL	20.0	112.0	112.9	55.0	145.0	0.8	30
Diisopropyl ether	BQL	20.0	122.6	118.9	69.1	130.9	3.0	30
Ethylbenzene	BQL	20.0	111.7	112.4	42.9	157.1	0.6	30
Methyl-tert butyl ether	BQL	20.0	64.3	65.1	21.8	178.2	1.2	30
Toluene	BQL	20.0	111.9	112.7	50.4	149.6	0.7	30
m/p-Xylene	BQL	20.0	116.8	117.5	43.0	157.0	0.6	30
o-Xylene	BQL	20.0	116.7	115.3	63.1	136.9	1.2	30

Revision No.: 04039701
Revision Date: 4/3/97

Comments:

Concentrations are corrected for dry weight.

Flags:

* = Out of limits.
NA = Not applicable
BQL = Below quantitation limit.

Reviewed By: RJP

GERAGHTY & MILLER, INC.
Environment and Infrastructure
a heidemij company

Laboratory Task Order No. 20687

CHAIN-OF-CUSTODY RECORD

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192 MSA 3-28-97

Project Number NC0360.25+

Project Location Pittsboro NC

Laboratory Paradigm

Sampler(s)/Affiliation MPD - GEM

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION: 601+602 40ml VOA HCl Preserved	Temp Blank						6149-96		TOTAL
48MW-10	L	3/6/97 1200		3									3
48MW-11	L	3/6/97 1125		3									3
48MW-11MS	L	3/6/97 1125		3									3
48MW-11MSD	L	3/6/97 1125		3									3
48RefP-01-GW	L	3/6/97		3									3
48TB013/6/97	L	3/6/97		3									3
48EB-01-GW	L	3/6/97 1150		3									3
TempBlank		3/6/97			1								1

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 22

Relinquished by: Michael Dwyer	Organization: Geraghty & Miller	Date 3/6/97	Time 1700	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	
Relinquished by: Kevin Stephenson	Organization: P.A.L	Date 3/7/97	Time 10:05	Seal Intact? (Yes) No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks:

FedX # 973938 4163

Delivery Method: ☐ In Person ☒ Common Carrier FedX ☐ Lab Courier ☐ Other

GERAGHTY & MILLER, INC.
Environment and Infrastructure
a heidemij company

Laboratory Task Order No. 20687

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

192 (MEK) 3-28-97

Project Number NC0360.25T
Project Location Pittsboro NC
Laboratory Paradigm
Sampler(s)/Affiliation MPD - GEM

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	601+602 40ml voa Hcl preserved.	Temp Blank						G149-96		TOTAL
48MW-10	L	3/6/97 1200		3									3
48MW-11	L	3/6/97 1125		3									3
48MW-11MS	L	3/6/97 1125		3									3
48MW-11MSD	L	3/6/97 1125		3									3
48RP01-GW	L	3/6/97		3									3
48TB01 3/6/97	L	3/6/97		3									3
48EB-01-GW	L	3/6/97 1150		3									3
Temp Blank		3/6/97			1								1

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 22

Relinquished by: Michael Dwyer	Organization: Geraghty & Miller	Date 3/6/97 Time 1700	Seal Intact?
Received by:	Organization:	Date / / Time	Yes No N/A
Relinquished by: Vivian Stephenson	Organization: P.A.L	Date 3/7/97 Time 10:05	Seal Intact?
Received by:	Organization:	Date / / Time	(Yes) No N/A

Special Instructions/Remarks: FedX # 9739384163

03/28/97 11:09 TX/RX NO.4429 P.002

FedEx USA Airbill 9739384163

Ex Removal Copy

106 500 43920298 6081

Sender's FedEx Account Number

(919) 571-1662

Standard Overnight

Priority Overnight

First Overnight

Freight

FedEx Letter

FedEx Pak

FedEx Box

Special Handling

Does this shipment contain dangerous goods?

Yes

Dry Ice

Payment

Bill to: Sender

Recipient

Third Party

FedEx Account No 1811-4189-1

MARK RANDALL (910)350-1903

PARADIGM ANALYTICAL LABS

2627 NORTHCHASE PKWY SE

WILMINGTON NC 28405

Hold Saturday

Saturday Delivery check here

Total Packages

DECLARED VALUE

SERVICE

Release Signature

9739384163

232

WCSL 0296
Rev. Date 10/95 • PART #147381

GERAGHTY & MILLER, INC.
Environmental Services
A Heidemij Company

LABORATORY TASK ORDER

Task Order No.: 20687

Geraghty & Miller Office: Raleigh NC Phone: (919) 571-1112 Date: 3/5/97
Address: 3700 Plaza Pl Ste 350 Project Number: NC0360.192 PhIII
Raleigh, NC Laboratory Reporting Level: ☐ I ☑ II ☐ III ☐ IV
Project Name: Depot Site UD 48 Location: Pittsboro NC
Laboratory: Paradigm Phone: (910) 350-1903 Contact: Mark Randall
Lab Provides Sample Containers? ☑ Yes ☐ No Date Required: 3/5/97 Ship To: G + M Raleigh
Estimated Date Of Sample Receipt By Laboratory: 3/7/97 Report Due: 3/21/97
Reports Delivered To: G + M Raleigh Number Of Reports: 1
Work Description: Groundwater/samples
Send Invoice To: G + M Raleigh

PHYSICAL PROPERTIES	# Water	Method	Det. Limit	# Soil	Method	Det. Limit	NON-METALLICS	# Water	Method	Det. Limit	# Soil	Method	Det. Limit
pH							Acidity						
Spec. Cond.							Alkalinity (Total)						
Hardness (total)							Carbonate						
TDS							Bicarbonate						
TSS							Bromide						
Temperature							Chloride						
Turbidity							Cyanide						
Ignitability							Fluoride						
Corrosivity							Ammonia						
Reactivity							Nitrate						
E.P. Tox. Extraction							TKN						
TCLP Extraction							Nitrite						
E.P. Tox. Complete							Phosphorus						
TCLP Complete							Silica						
METALS[1]							Sulfate						
Aluminum							Sulfide						
Antimony							Surfactants (MBAS)						
Arsenic							ORGANICS						
Barium							BOD						
Beryllium							COD						
Cadmium							Oil & Grease						
Calcium							TOC						
Chromium							TOX						
Hex Chromium							TRPH						
Copper							Purg. Halocarbons[2]						
							Non-Halogenated VOCs[2]						
Lead							Purgeable Arom.[2]						
Magnesium							Phenols[2]						
Manganese							Pesticides/PCBs[2]						
Mercury							PNAs[2]						
Nickel							Org. Phos. Pest.[2]						
Potassium							Dioxins						
Selenium							Chlor. Herb.[2]						
Silver							Volatile Organics[2]	+5 GC	8021	1 ppb			
Sodium							Semi Volatile Organics[2]						
Thallium							APPENDIX IX[3]						
Tin							RADIONUCLIDES						
Vanadium							Gross Alpha						
Zinc							Gross Beta						
Priority Pollutant Metals[2]							Radium 226						
TCL (HSL) Metals[2]							Radium 228						

[1] Metals are Total Metals Unless Specified as Dissolved Under Special Instructions. [2] Attach Table of Elements or Compounds to be Analyzed. [3] Includes All Organic and Inorganic Compounds.

Special Instructions Or Other: [illegible] 1) [illegible], 2) MS, 3) MSD, 4) Trip blk, 5) Equip blk. [illegible] trip blk [illegible] bottles

G&M Project Manager Signature: [signature] Date: [illegible] G&M QA Officer Signature: [signature] Date: 3-7-97
Laboratory Acceptance: [signature] Date: 3/7/97

G&M Form 32

LABORATORY TASK ORDER AMENDMENTS

☐ No Changes
Required Change:

G&M Representative Signature: Date:

RETURN YELLOW COPY TO PROJECT MANAGER OR QUALITY ASSURANCE OFFICER — ATTACH PINK COPY TO CHAIN OF CUSTODY FORM

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway S.E.
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Fred Rash
Geraghty & Miller
2840 Plaza Place
Raleigh,NC 27612

Date 05-05-97

Report Number: G149-111

Client Project Number: NC0360.192
Project Location: Pittsboro, NC
LTO Number: 19956

Dear Mr. Rash :

Enclosed are the results of the analytical services performed under the referenced project. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call for assistance. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical service projects. We look forward to working with you again on any additional needs which you may have.

Sincerely,

Paradigm Analytical Laboratories

Laboratory Director
Mark Randall

PARADIGM ANALYTICAL LABORATORIES, INC.

CASE NARRATIVE FOR PROJECTS 149-111

LTO # 19956

SURROGATES:

149-111 - 601, 602

All within acceptance criteria

BLANKS:

149-111 - 601, 602

All blanks - all compounds BQL

MATRIX SPIKES/MATRIX SPIKE DUPLICATES:

149-111

601 MS/MSD

2 compounds failed acceptance criteria for recovery.
1 compound failed RPD acceptance criteria (30%).

601 LCS

All compounds within acceptance criteria.

602 MS/MSD

0 compounds failed acceptance criteria for recovery.
0 compounds failed RPD acceptance criteria.

HOLDING TIME:

All samples analyzed within holding time

DILUTIONS:

See attached

COMMENTS:

All reported GC results were qualitatively confirmed by GC/MS.

Lab Proj	Client Sample ID	Client_prog	Lab ID	Matrix	Report
G149-111	48 EB-1	NC0360.192	23798	Water	601
G149-111	48 EB-1	NC0360.192	23798	Water	602
G149-111	48 TB-1	NC0360.192	23799	Water	601
G149-111	48 TB-1	NC0360.192	23799	Water	602
G149-111	48 MW-13	NC0360.192	23800	Water	601
G149-111	48 MW-13	NC0360.192	23800	Water	602
G149-111	48 MW-12	NC0360.192	23801	Water	601
G149-111	48 MW-12	NC0360.192	23801	Water	602
G149-111	48 DW-2	NC0360.192	23802	Water	601
G149-111	48 DW-2	NC0360.192	23802	Water	602
G149-111	48 DW-2MS	NC0360.192	23803	Water	601
G149-111	48 DW-2MS	NC0360.192	23803	Water	602
G149-111	48 DW-2MSD	NC0360.192	23804	Water	601
G149-111	48 DW-2MSD	NC0360.192	23804	Water	602
G149-111	48 REP-1	NC0360.192	23805	Water	601
G149-111	48 REP-1	NC0360.192	23805	Water	602

PARADIGM ANALYTICAL LABORATORIES, INC.

DILUTIONS

149-111

SAMPLE ID	601	602
23798	x1	x1
23799	x1	x1
23800	x1	x1
23801	x1	x1
23802	x4	x1
23805	x1	x1

BLANKS

SAMPLE ID	601	602
23798	VBLK3050397	VBLK3050397
23799	VBLK3050397	VBLK3050397
23800	VBLK3050397	VBLK3050397
23801	VBLK3050397	VBLK3050397
23802	VBLK3050397	VBLK3050597
23805	VBLK3050597	VBLK3050597

SURROGATE RECOVERY LIMITS

	6230D	8021	601	8260B	8270B	602
1,4-Dichlorobutane	85-120%	83-123%	87-113%			
Trifluorotoluene	85-122%	84-122%				82-112%
Bromofluorobenzene				68-132%		
1,2-Dichloroethane-d4				80-118%		
Toluene-d8				80-116%		
2-Fluorophenol					43-116%	
Phenol-d5					35-144%	
2,4,6-Tribromophenol					33-141%	
Nitrobenzene-d14					21-100%	
2-Fluorobiphenyl					10-94%	
p-Terphenyl-d14					10-123%	

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 601

Client Sample ID: 48 EB-01-GW
Client Project ID: NC0360.192
Lab Sample ID: 23798
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected: 04/29/97
Date Received: 04/30/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	5/3/97	1	1	BQL
Bromoform	5/3/97	1	2	BQL
Bromomethane	5/3/97	1	2	BQL
Carbon tetrachloride	5/3/97	1	1	BQL
Chlorobenzene	5/3/97	1	1	BQL
Chloroethane	5/3/97	1	1	BQL
Chloroform	5/3/97	1	1	BQL
Chloromethane	5/3/97	1	1	BQL
Dibromochloromethane	5/3/97	1	1	BQL
1,2-Dibromoethane (EDB)	5/3/97	1	1	BQL
1,2-Dichlorobenzene	5/3/97	1	1	BQL
1,3-Dichlorobenzene	5/3/97	1	1	BQL
1,4-Dichlorobenzene	5/3/97	1	1	BQL
1,1-Dichloroethane	5/3/97	1	1	BQL
1,2-Dichloroethane	5/3/97	1	1	BQL
1,1-Dichloroethene	5/3/97	1	1	BQL
cis-1,2-Dichloroethene	5/3/97	1	1	BQL
trans-1,2-Dichloroethene	5/3/97	1	1	BQL
1,2-Dichloropropane	5/3/97	1	1	BQL
cis-1,3-Dichloropropene	5/3/97	1	1	BQL
trans-1,3-Dichloropropene	5/3/97	1	1	BQL
Methylene Chloride	5/3/97	1	5	BQL
1,1,2,2-Tertrachloroethane	5/3/97	1	1	BQL
Tetrachloroethene	5/3/97	1	1	BQL
1,1,1-Trichloroethane	5/3/97	1	1	BQL
1,1,2-Trichloroethane	5/3/97	1	1	BQL
Trichloroethene	5/3/97	1	1	BQL
Trichlorofluoromethane	5/3/97	1	1	BQL
Vinyl Chloride	5/3/97	1	1	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	39	98

Revision No: 05179701
Revision Date: 5/17/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By: PNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 601

Client Sample ID: 48 TB-01-(4/29/97)
Client Project ID: NC0360.192
Lab Sample ID: 23799
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected: 04/29/97
Date Received: 04/30/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	5/3/97	1	1	BQL
Bromoform	5/3/97	1	2	BQL
Bromomethane	5/3/97	1	2	BQL
Carbon tetrachloride	5/3/97	1	1	BQL
Chlorobenzene	5/3/97	1	1	BQL
Chloroethane	5/3/97	1	1	BQL
Chloroform	5/3/97	1	1	BQL
Chloromethane	5/3/97	1	1	BQL
Dibromochloromethane	5/3/97	1	1	BQL
1,2-Dibromoethane (EDB)	5/3/97	1	1	BQL
1,2-Dichlorobenzene	5/3/97	1	1	BQL
1,3-Dichlorobenzene	5/3/97	1	1	BQL
1,4-Dichlorobenzene	5/3/97	1	1	BQL
1,1-Dichloroethane	5/3/97	1	1	BQL
1,2-Dichloroethane	5/3/97	1	1	BQL
1,1-Dichloroethene	5/3/97	1	1	BQL
cis-1,2-Dichloroethene	5/3/97	1	1	BQL
trans-1,2-Dichloroethene	5/3/97	1	1	BQL
1,2-Dichloropropane	5/3/97	1	1	BQL
cis-1,3-Dichloropropene	5/3/97	1	1	BQL
trans-1,3-Dichloropropene	5/3/97	1	1	BQL
Methylene Chloride	5/3/97	1	5	BQL
1,1,2,2-Tertrachloroethane	5/3/97	1	1	BQL
Tetrachloroethene	5/3/97	1	1	BQL
1,1,1-Trichloroethane	5/3/97	1	1	BQL
1,1,2-Trichloroethane	5/3/97	1	1	BQL
Trichloroethene	5/3/97	1	1	BQL
Trichlorofluoromethane	5/3/97	1	1	BQL
Vinyl Chloride	5/3/97	1	1	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	39	98

Revision No: 05179701
Revision Date: 5/17/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By: PMP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID: 48 MW-13
Client Project ID: NC0360.192
Lab Sample ID: 23800 -
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected: 04/29/97
Date Received: 04/30/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	5/4/97	1	1	BQL
Bromoform	5/4/97	1	2	BQL
Bromomethane	5/4/97	1	2	BQL
Carbon tetrachloride	5/4/97	1	1	BQL
Chlorobenzene	5/4/97	1	1	BQL
Chloroethane	5/4/97	1	1	BQL
Chloroform	5/4/97	1	1	BQL
Chloromethane	5/4/97	1	1	BQL
Dibromochloromethane	5/4/97	1	1	BQL
1,2-Dibromoethane (EDB)	5/4/97	1	1	BQL
1,2-Dichlorobenzene	5/4/97	1	1	BQL
1,3-Dichlorobenzene	5/4/97	1	1	BQL
1,4-Dichlorobenzene	5/4/97	1	1	BQL
1,1-Dichloroethane	5/4/97	1	1	BQL
1,2-Dichloroethane	5/4/97	1	1	BQL
1,1-Dichloroethene	5/4/97	1	1	BQL
cis-1,2-Dichloroethene	5/4/97	1	1	BQL
trans-1,2-Dichloroethene	5/4/97	1	1	BQL
1,2-Dichloropropane	5/4/97	1	1	BQL
cis-1,3-Dichloropropene	5/4/97	1	1	BQL
trans-1,3-Dichloropropene	5/4/97	1	1	BQL
Methylene Chloride	5/4/97	1	5	BQL
1,1,2,2-Tertrachloroethane	5/4/97	1	1	BQL
Tetrachloroethene	5/4/97	1	1	BQL
1,1,1-Trichloroethane	5/4/97	1	1	BQL
1,1,2-Trichloroethane	5/4/97	1	1	BQL
Trichloroethene	5/4/97	1	1	BQL
Trichlorofluoromethane	5/4/97	1	1	BQL
Vinyl Chloride	5/4/97	1	1	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	38	95

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By: [signature]

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 601

Client Sample ID: 48 MW-12
Client Project ID: NC0360.192
Lab Sample ID: 23801
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected: 04/29/97
Date Received: 04/30/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	5/4/97	1	1	BQL
Bromoform	5/4/97	1	2	BQL
Bromomethane	5/4/97	1	2	BQL
Carbon tetrachloride	5/4/97	1	1	BQL
Chlorobenzene	5/4/97	1	1	BQL
Chloroethane	5/4/97	1	1	BQL
Chloroform	5/4/97	1	1	BQL
Chloromethane	5/4/97	1	1	BQL
Dibromochloromethane	5/4/97	1	1	BQL
1,2-Dibromoethane (EDB)	5/4/97	1	1	BQL
1,2-Dichlorobenzene	5/4/97	1	1	BQL
1,3-Dichlorobenzene	5/4/97	1	1	BQL
1,4-Dichlorobenzene	5/4/97	1	1	BQL
1,1-Dichloroethane	5/4/97	1	1	BQL
1,2-Dichloroethane	5/4/97	1	1	BQL
1,1-Dichloroethene	5/4/97	1	1	BQL
cis-1,2-Dichloroethene	5/4/97	1	1	BQL
trans-1,2-Dichloroethene	5/4/97	1	1	BQL
1,2-Dichloropropane	5/4/97	1	1	BQL
cis-1,3-Dichloropropene	5/4/97	1	1	BQL
trans-1,3-Dichloropropene	5/4/97	1	1	BQL
Methylene Chloride	5/4/97	1	5	BQL
1,1,2,2-Tertrachloroethane	5/4/97	1	1	BQL
Tetrachloroethene	5/4/97	1	1	BQL
1,1,1-Trichloroethane	5/4/97	1	1	BQL
1,1,2-Trichloroethane	5/4/97	1	1	BQL
Trichloroethene	5/4/97	1	1	BQL
Trichlorofluoromethane	5/4/97	1	1	BQL
Vinyl Chloride	5/4/97	1	1	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	38	95

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By: [signature]

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 601

Client Sample ID: 48 DW-2
Client Project ID: NC0360.192
Lab Sample ID: 23802
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected: 04/29/97
Date Received: 04/30/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	5/5/97	1	1	BQL
Bromoform	5/5/97	1	2	BQL
Bromomethane	5/5/97	1	2	BQL
Carbon tetrachloride	5/5/97	1	1	BQL
Chlorobenzene	5/5/97	1	1	BQL
Chloroethane	5/5/97	1	1	BQL
Chloroform	5/5/97	1	1	BQL
Chloromethane	5/5/97	1	1	BQL
Dibromochloromethane	5/5/97	1	1	BQL
1,2-Dibromoethane (EDB)	5/5/97	1	1	BQL
1,2-Dichlorobenzene	5/5/97	1	1	BQL
1,3-Dichlorobenzene	5/5/97	1	1	BQL
1,4-Dichlorobenzene	5/5/97	1	1	BQL
1,1-Dichloroethane	5/5/97	1	1	**7**
1,2-Dichloroethane	5/5/97	1	1	BQL
1,1-Dichloroethene	5/5/97	1	1	**44**
cis-1,2-Dichloroethene	5/5/97	1	1	**6**
trans-1,2-Dichloroethene	5/5/97	1	1	BQL
1,2-Dichloropropane	5/5/97	1	1	BQL
cis-1,3-Dichloropropene	5/5/97	1	1	BQL
trans-1,3-Dichloropropene	5/5/97	1	1	BQL
Methylene Chloride	5/5/97	1	5	BQL
1,1,2,2-Tertrachloroethane	5/5/97	1	1	BQL
Tetrachloroethene	5/5/97	1	1	**1**
1,1,1-Trichloroethane	5/5/97	1	1	**41**
1,1,2-Trichloroethane	5/5/97	1	1	BQL
Trichloroethene	5/5/97	1	1	**170** E
Trichlorofluoromethane	5/5/97	1	1	BQL
Vinyl Chloride	5/5/97	1	1	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	36	90

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By: RNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 601

Client Sample ID: 48 DW-2
Client Project ID: NC0360.192
Lab Sample ID: 23802
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected: 04/29/97
Date Received: 04/30/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	5/4/97	4	4	BQL
Bromoform	5/4/97	4	8	BQL
Bromomethane	5/4/97	4	8	BQL
Carbon tetrachloride	5/4/97	4	4	BQL
Chlorobenzene	5/4/97	4	4	BQL
Chloroethane	5/4/97	4	4	BQL
Chloroform	5/4/97	4	4	BQL
Chloromethane	5/4/97	4	4	BQL
Dibromochloromethane	5/4/97	4	4	BQL
1,2-Dibromoethane (EDB)	5/4/97	4	4	BQL
1,2-Dichlorobenzene	5/4/97	4	4	BQL
1,3-Dichlorobenzene	5/4/97	4	4	BQL
1,4-Dichlorobenzene	5/4/97	4	4	BQL
1,1-Dichloroethane	5/4/97	4	4	**8**
1,2-Dichloroethane	5/4/97	4	4	BQL
1,1-Dichloroethene	5/4/97	4	4	**36**
cis-1,2-Dichloroethene	5/4/97	4	4	**5**
trans-1,2-Dichloroethene	5/4/97	4	4	BQL
1,2-Dichloropropane	5/4/97	4	4	BQL
cis-1,3-Dichloropropene	5/4/97	4	4	BQL
trans-1,3-Dichloropropene	5/4/97	4	4	BQL
Methylene Chloride	5/4/97	4	20	BQL
1,1,2,2-Tertrachloroethane	5/4/97	4	4	BQL
Tetrachloroethene	5/4/97	4	4	BQL
1,1,1-Trichloroethane	5/4/97	4	4	**56**
1,1,2-Trichloroethane	5/4/97	4	4	BQL
Trichloroethene	5/4/97	4	4	**250**
Trichlorofluoromethane	5/4/97	4	4	BQL
Vinyl Chloride	5/4/97	4	4	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	38	95

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By: [signature]

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 601

Client Sample ID: 48 REP-01-GW
Client Project ID: NC0360.192
Lab Sample ID: 23805
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected: 04/29/97
Date Received: 04/30/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	5/5/97	1	1	BQL
Bromoform	5/5/97	1	2	BQL
Bromomethane	5/5/97	1	2	BQL
Carbon tetrachloride	5/5/97	1	1	BQL
Chlorobenzene	5/5/97	1	1	BQL
Chloroethane	5/5/97	1	1	BQL
Chloroform	5/5/97	1	1	BQL
Chloromethane	5/5/97	1	1	BQL
Dibromochloromethane	5/5/97	1	1	BQL
1,2-Dibromoethane (EDB)	5/5/97	1	1	BQL
1,2-Dichlorobenzene	5/5/97	1	1	BQL
1,3-Dichlorobenzene	5/5/97	1	1	BQL
1,4-Dichlorobenzene	5/5/97	1	1	BQL
1,1-Dichloroethane	5/5/97	1	1	BQL
1,2-Dichloroethane	5/5/97	1	1	BQL
1,1-Dichloroethene	5/5/97	1	1	BQL
cis-1,2-Dichloroethene	5/5/97	1	1	BQL
trans-1,2-Dichloroethene	5/5/97	1	1	BQL
1,2-Dichloropropane	5/5/97	1	1	BQL
cis-1,3-Dichloropropene	5/5/97	1	1	BQL
trans-1,3-Dichloropropene	5/5/97	1	1	BQL
Methylene Chloride	5/5/97	1	5	BQL
1,1,2,2-Tertrachloroethane	5/5/97	1	1	BQL
Tetrachloroethene	5/5/97	1	1	BQL
1,1,1-Trichloroethane	5/5/97	1	1	BQL
1,1,2-Trichloroethane	5/5/97	1	1	BQL
Trichloroethene	5/5/97	1	1	BQL
Trichlorofluoromethane	5/5/97	1	1	BQL
Vinyl Chloride	5/5/97	1	1	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	38	95

Revision No: 05179701
Revision Date: 5/17/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By: PTP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 601

Client Sample ID: VBLK3050397
Client Project ID: NC0360.192
Lab Sample ID:
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected:
Date Received:
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	5/3/97	1	1	BQL
Bromoform	5/3/97	1	2	BQL
Bromomethane	5/3/97	1	2	BQL
Carbon tetrachloride	5/3/97	1	1	BQL
Chlorobenzene	5/3/97	1	1	BQL
Chloroethane	5/3/97	1	1	BQL
Chloroform	5/3/97	1	1	BQL
Chloromethane	5/3/97	1	1	BQL
Dibromochloromethane	5/3/97	1	1	BQL
1,2-Dibromoethane (EDB)	5/3/97	1	1	BQL
1,2-Dichlorobenzene	5/3/97	1	1	BQL
1,3-Dichlorobenzene	5/3/97	1	1	BQL
1,4-Dichlorobenzene	5/3/97	1	1	BQL
1,1-Dichloroethane	5/3/97	1	1	BQL
1,2-Dichloroethane	5/3/97	1	1	BQL
1,1-Dichloroethene	5/3/97	1	1	BQL
cis-1,2-Dichloroethene	5/3/97	1	1	BQL
trans-1,2-Dichloroethene	5/3/97	1	1	BQL
1,2-Dichloropropane	5/3/97	1	1	BQL
cis-1,3-Dichloropropene	5/3/97	1	1	BQL
trans-1,3-Dichloropropene	5/3/97	1	1	BQL
Methylene Chloride	5/3/97	1	5	BQL
1,1,2,2-Tertrachloroethane	5/3/97	1	1	BQL
Tetrachloroethene	5/3/97	1	1	BQL
1,1,1-Trichloroethane	5/3/97	1	1	BQL
1,1,2-Trichloroethane	5/3/97	1	1	BQL
Trichloroethene	5/3/97	1	1	BQL
Trichlorofluoromethane	5/3/97	1	1	BQL
Vinyl Chloride	5/3/97	1	1	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	40	100

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By: [signature]

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 601

Client Sample ID: VBLK3050597
Client Project ID: NC0360.192
Lab Sample ID:
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected:
Date Received:
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Bromodichloromethane	5/5/97	1	1	BQL
Bromoform	5/5/97	1	2	BQL
Bromomethane	5/5/97	1	2	BQL
Carbon tetrachloride	5/5/97	1	1	BQL
Chlorobenzene	5/5/97	1	1	BQL
Chloroethane	5/5/97	1	1	BQL
Chloroform	5/5/97	1	1	BQL
Chloromethane	5/5/97	1	1	BQL
Dibromochloromethane	5/5/97	1	1	BQL
1,2-Dibromoethane (EDB)	5/5/97	1	1	BQL
1,2-Dichlorobenzene	5/5/97	1	1	BQL
1,3-Dichlorobenzene	5/5/97	1	1	BQL
1,4-Dichlorobenzene	5/5/97	1	1	BQL
1,1-Dichloroethane	5/5/97	1	1	BQL
1,2-Dichloroethane	5/5/97	1	1	BQL
1,1-Dichloroethene	5/5/97	1	1	BQL
cis-1,2-Dichloroethene	5/5/97	1	1	BQL
trans-1,2-Dichloroethene	5/5/97	1	1	BQL
1,2-Dichloropropane	5/5/97	1	1	BQL
cis-1,3-Dichloropropene	5/5/97	1	1	BQL
trans-1,3-Dichloropropene	5/5/97	1	1	BQL
Methylene Chloride	5/5/97	1	5	BQL
1,1,2,2-Tertrachloroethane	5/5/97	1	1	BQL
Tetrachloroethene	5/5/97	1	1	BQL
1,1,1-Trichloroethane	5/5/97	1	1	BQL
1,1,2-Trichloroethane	5/5/97	1	1	BQL
Trichloroethene	5/5/97	1	1	BQL
Trichlorofluoromethane	5/5/97	1	1	BQL
Vinyl Chloride	5/5/97	1	1	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	38	95

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit.

Reviewed By:

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for MS/MSD
by GC 601

Client Sample ID: 48 DW-2
Client Project ID: NC0360.192
Lab Sample ID: 23802
Lab Project ID: G149-111
Analyzed By: CKC

Date Analyzed: 5/3/97
Date Collected: 4/29/97
Date Received: 4/30/97
Matrix: Water

	Sample	Spiked	MS	MSD	Limits Lower	Limits Upper	RPD	Limit Max.
Bromodichloromethane	BQL	20.0	108.7	99.5	53.3	146.7	8.8	30
Bromoform	BQL	20.0	94.3	86.1	62.6	137.4	9.1	30
Bromomethane	BQL	20.0	108.1	99.3	23.4	176.6	8.5	30
Carbon tetrachloride	BQL	20.0	128.3	112.4	>0	239.2	13.2	30
Chlorobenzene	BQL	20.0	98.2	93.3	41.5	158.5	5.2	30
Chloroethane	BQL	20.0	113.2	102.0	41.6	158.4	10.4	30
Chloroform	BQL	20.0	112.9	102.5	62.0	138.0	9.6	30
Chloromethane	BQL	20.0	108.8	99.2	71.1	128.9	9.2	30
Dibromochloromethane	BQL	20.0	101.6	93.4	63.3	136.7	8.4	30
1,2-Dibromoethane (EDB)	BQL	20.0	102.2	94.1	61.5	138.5	8.3	30
1,2-Dichlorobenzene	BQL	20.0	99.2	90.5	40.5	159.5	9.1	30
1,3-Dichlorobenzene	BQL	20.0	101.9	93.7	25.1	174.9	8.5	30
1,4-Dichlorobenzene	BQL	20.0	99.2	90.5	23.3	176.7	9.1	30
1,1-Dichloroethane	**1.9**	20.0	109.6	99.4	32.6	167.4	9.7	30
1,2-Dichloroethane	BQL	20.0	109.8	101.3	50.9	149.1	8.1	30
1,1-Dichloroethene	**9.0**	20.0	127.7	122.2	17.3	182.7	4.4	30
cis-1,2-Dichloroethene	**1.3**	20.0	107.0	96.7	>0	204.6	10.2	30
trans-1,2-Dichloroethene	BQL	20.0	116.3	104.6	25.1	174.9	10.6	30
1,2-Dichloropropane	BQL	20.0	113.4	105.1	38.3	161.7	7.6	30
cis-1,3-Dichloropropene	BQL	20.0	107.8	98.4	48.5	151.5	9.1	30
trans-1,3-Dichloropropene	BQL	20.0	103.4	95.4	59.7	140.3	8.1	30
Methylene Chloride	BQL	20.0	110.0	101.5	69.6	130.4	8.0	30
1,1,2,2-Tertrachloroethane	BQL	20.0	103.6	92.1	>0	241.2	11.7	30
Tetrachloroethene	BQL	20.0	119.4	107.1	>0	248.5	10.8	30
1,1,1-Trichloroethane	**14.1**	20.0	12.3 *	6.1 *	18.0	182.0	67.2 *	30
1,1,2-Trichloroethane	BQL	20.0	113.0	100.7	60.8	139.2	11.5	30
Trichloroethene	**62.1**	20.0	31.4 *	29.5 *	55.7	144.3	6.0	30
Trichlorofluoromethane	BQL	20.0	132.4	113.7	30.7	169.3	15.2	30
Vinyl Chloride	BQL	20.0	122.4	107.6	18.9	181.1	12.9	30

Comments:

Concentrations are on column amounts.

Flags:

* = Out of limits.
NA = Not applicable
BQL = Below quantitation limit.

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Laboratory Control Spike (LCS)

by GC 601

Client Sample ID: LCS050397
Client Project ID: NC0360.192
Lab Sample ID: None assigned
Lab Project ID: G149-111

Analyst: WML
Date Collected: Not applicable
Date Received: Not applicable
Matrix: Water

	Spiked	LCS	Limits Lower	Limits Upper
Bromodichloromethane	20	112.4	8.1	191.9
Bromoform	20	105.4	18.5	181.5
Bromomethane	20	100.3	17.5	182.5
Carbon tetrachloride	20	72.3	15.2	184.8
Chlorobenzene	20	112.9	13.6	186.4
Chloroethane	20	85.7	13.6	186.4
Chloroform	20	114.3	7.4	192.6
Chloromethane	20	85.7	10.9	189.1
Dibromochloromethane	20	106.0	8.1	191.9
1,2-Dibromoethane (EDB)	20	109.6	>0	206.3
1,2-Dichlorobenzene	20	112.4	5.3	194.7
1,3-Dichlorobenzene	20	111.8	9.9	190.1
1,4-Dichlorobenzene	20	108.6	0.7	199.3
1,1-Dichloroethane	20	111.2	10.0	190.0
1,2-Dichloroethane	20	110.2	>0	203.0
1,1-Dichloroethene	20	105.3	16.4	183.6
cis-1,2-Dichloroethene	20	111.6	19.4	180.6
trans-1,2-Dichloroethene	20	107.7	11.7	188.3
1,2-Dichloropropane	20	112.5	9.7	190.3
cis-1,3-Dichloropropene	20	113.1	5.1	194.9
trans-1,3-Dichloropropene	20	111.8	8.5	191.5
Methylene Chloride	20	85.3	>0	261.9
1,1,2,2-Tertrachloroethane	20	132.3	>0	209.1
Tetrachloroethene	20	118.2	55.1	144.9
1,1,1-Trichloroethane	20	110.8	26.5	173.5
1,1,2-Trichloroethane	20	118.3	7.9	192.1
Trichloroethene	20	109.9	21.9	178.1
Trichlorofluromethane	20	102.7	6.8	193.2
Vinyl Chloride	20	104.2	14.5	185.5

Comments:

Concentration values are on column amount.

Flags:

* = Out of limits.
NA = Not applicable

Reviewed By: 

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 602

Client Sample ID: 48 EB-01-GW
Client Project ID: NC0360.192
Lab Sample ID: 23798
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected: 04/29/97
Date Received: 04/30/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	5/3/97	1	1	BQL
Diisopropyl ether (DIPE)	5/3/97	1	1	BQL
Ethylbenzene	5/3/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	5/3/97	1	2	BQL
Toluene	5/3/97	1	1	BQL
m/p-Xylene	5/3/97	1	2	BQL
o-Xylene	5/3/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	40	100

Revision No: 05179701
Revision Date: 5/17/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: PJW

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 602

Client Sample ID: 48 TB-01-(4/29/97)
Client Project ID: NC0360.192
Lab Sample ID: 23799
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected: 04/29/97
Date Received: 04/30/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	5/3/97	1	1	BQL
Diisopropyl ether (DIPE)	5/3/97	1	1	BQL
Ethylbenzene	5/3/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	5/3/97	1	2	BQL
Toluene	5/3/97	1	1	BQL
m/p-Xylene	5/3/97	1	2	BQL
o-Xylene	5/3/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	40	100

Revision No: 05179701
Revision Date: 5/17/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: PNF

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 602

Client Sample ID: 48 MW-13
Client Project ID: NC0360.192
Lab Sample ID: 23800
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected: 04/29/97
Date Received: 04/30/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	5/4/97	1	1	BQL
Diisopropyl ether (DIPE)	5/4/97	1	1	BQL
Ethylbenzene	5/4/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	5/4/97	1	2	BQL
Toluene	5/4/97	1	1	BQL
m/p-Xylene	5/4/97	1	2	BQL
o-Xylene	5/4/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	40	100

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: _____

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 602

Client Sample ID: 48 MW-12
Client Project ID: NC0360.192
Lab Sample ID: 23801
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected: 04/29/97
Date Received: 04/30/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	5/4/97	1	1	BQL
Diisopropyl ether (DIPE)	5/4/97	1	1	BQL
Ethylbenzene	5/4/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	5/4/97	1	2	BQL
Toluene	5/4/97	1	1	BQL
m/p-Xylene	5/4/97	1	2	BQL
o-Xylene	5/4/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	40	100

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: hm

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 602

Client Sample ID: 48 REP-01-GW
Client Project ID: NC0360.192
Lab Sample ID: 23805
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected: 04/29/97
Date Received: 04/30/97
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	5/5/97	1	1	BQL
Diisopropyl ether (DIPE)	5/5/97	1	1	BQL
Ethylbenzene	5/5/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	5/5/97	1	2	BQL
Toluene	5/5/97	1	1	BQL
m/p-Xylene	5/5/97	1	2	BQL
o-Xylene	5/5/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	40	100

Revision No: 05179701
Revision Date: 5/17/97

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: PNP

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 602

Client Sample ID: VBLK3050397
Client Project ID: NC0360.192
Lab Sample ID:
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected:
Date Received:
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	5/3/97	1	1	BQL
Diisopropyl ether (DIPE)	5/3/97	1	1	BQL
Ethylbenzene	5/3/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	5/3/97	1	2	BQL
Toluene	5/3/97	1	1	BQL
m/p-Xylene	5/3/97	1	2	BQL
o-Xylene	5/3/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	40	100

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: [signature]

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 602

Client Sample ID: VBLK3050597
Client Project ID: NC0360.192
Lab Sample ID:
Lab Project ID: G149-111

Analyzed By: CKC
Date Collected:
Date Received:
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	5/5/97	1	1	BQL
Diisopropyl ether (DIPE)	5/5/97	1	1	BQL
Ethylbenzene	5/5/97	1	1	BQL
Methyl-tert-butyl ether (MTBE)	5/5/97	1	2	BQL
Toluene	5/5/97	1	1	BQL
m/p-Xylene	5/5/97	1	2	BQL
o-Xylene	5/5/97	1	2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
Trifluorotoluene	40	40	100

Comments:

All values corrected for dilution.

Flags:

BQL = Below quantitation limit

Reviewed By: [signature]

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for MS/MSD

by GC 602

Client Sample ID: 48 DW-2
Client Project ID: NC0360.192
Lab Sample ID: 23802
Lab Project ID: G149-111

Analyzed By: WML
Date Collected: 04/29/97
Date Received: 04/30/97
Matrix: Water

	Sample	Spiked	MS	MSD	Limits Lower	Limits Upper	RPD	Limit Max.
Benzene	BQL	20.0	99.6	93.9	55.0	145.0	6.0	30
Diisopropyl ether	BQL	20.0	95.7	90.4	69.1	130.9	5.6	30
Ethylbenzene	BQL	20.0	99.6	91.5	42.9	157.1	8.5	30
Methyl-tert butyl ether	BQL	20.0	49.7	43.7	21.8	178.2	13.0	30
Toluene	BQL	20.0	99.4	92.5	50.4	149.6	7.2	30
m/p-Xylene	BQL	20.0	99.2	91.2	43.0	157.0	8.4	30
o-Xylene	BQL	20.0	93.0	86.8	63.1	136.9	6.9	30

Comments:

Concentrations are corrected for dry weight.

Flags:

* = Out of limits.
NA = Not applicable
BQL = Below quantitation limit.

Reviewed By: [signature]

GERAGHTY & MILLER, INC.
Environment and Infrastructure
a heidemij company

Laboratory Task Order No. 19956

CHAIN-OF-CUSTODY RECORD

Page 1 of

Project Number NCC3600.192

Project Location PITTSBORO, NC

Laboratory PARADIGM ANALYTICAL

Sampler(s)/Affiliation Cr. CALVIN WHITFIELD

G149-111

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION: Cool/4oC 40 mL mls 4oC/HCl									TOTAL
48EB-1	L	4-29-97 1345		3									3
48TB-1	L	4-29-97		3									3
48MW-13	L	4-29-97 1430		3									3
48MW-12	L	4-29-97 1515		3									3
48DW-2	L	4-29-97 1600		3									3
48DW-2MS	L	4-29-97 1600		3									3
48DW-2MSD	L	4-29-97 1600		3									3
48REP-1	L	4-29-97		3									3

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 24

Relinquished by: D. Calvin Whitfield	Organization: K&M	Date 4/29/97	Time 1730	Seal Intact? (Yes) No N/A
Received by: Christ Stephenson	Organization: Paradigm	Date 4/30/97	Time 10:11	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: ANY QUESTIONS PLEASE CALL FRED RASH @ 919-571-1662
Received at 1.5°C

Delivery Method: ☐ In Person ☒ Common Carrier FEDEX (SPECIFY) ☐ Lab Courier ☐ Other (SPECIFY)

GERAGHTY & MILLER, INC.
Environment and Infrastructure
a heidemij company

Laboratory Task Order No. 19956

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number NCC3600.192

Project Location PITTSBORO, NC

Laboratory PARADIGM ANALYTICAL

Sampler(s)/Affiliation Cr. CALVIN WHITFIELD

G149-111

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION: 60l/40z 40ml vials 4oc/HCl									TOTAL
~~48EB-01-GW~~ ~~48EB-1~~	L	4-29-97 1345		3									3
~~48TB-01-(4/29/97)~~ ~~48TB-1~~	L	4-29-97		3									3
48MW-13	L	4-29-97 1430		3									3
48MW-12	L	4-29-97 1515		3									3
48DUP-2	L	4-29-97 1600		3									3
48DUP-2MS	L	4-29-97 1600		3									3
48DUP-2MSD	L	4-29-97 1600		3									3
~~48REP-01-GW~~ ~~48Rep-1~~	L	4-29-97		3									3

Sample Code: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 24

Relinquished by: D. Calvin Whitfield	Organization: K&M	Date 4/29/97	Time 1730	Seal Intact? (Yes) No N/A
Received by: Christ Stephenson	Organization: Paradigm	Date 4/30/97	Time 10:11	
Relinquished by:	Organization:	Date / /	Time	Seal Intact? Yes No N/A
Received by:	Organization:	Date / /	Time	

Special Instructions/Remarks: ANY QUESTIONS PLEASE CALL FRED RASH @ 919-571-1662
Received at 1.5°C

Delivery Method: ☐ In Person ☒ Common Carrier FEDEX ☐ Lab Courier ☐ Other _____

2241015265

16 600 24143546 6203

4.29.9

G. Calvin Whitfield 919 571-1662

Geraghty & Miller Inc.

2846 Plaza Place Suite 350

Raleigh NC 27612

NC0360.192 Site 48

Sample Receiving 713-350-1933

...ANALYTICAL LA...

7 ...T.CHAL. P .WY ..

1811-4189-1

.. IN.T.. .C

2 2 4 1 0 1 5 2 6 5

272

GERAGHTY & MILLER, INC.
Environmental Services
A Heidemij Company

LABORATORY TASK ORDER

Task Order No.: 19956

Geraghty & Miller Office: Raleigh Phone: 919-571-[illegible] Date: [illegible]
Address: [illegible] Ste 350
Raleigh NC 27612 Project Number: [illegible]
Laboratory Reporting Level: ☐ I ☑ II ☐ III ☐ IV
Project Name: [illegible] Location: [illegible] NC
Laboratory: [illegible] Phone: 910-350-1903 Contact: [illegible]
Lab Provides Sample Containers? ☑ Yes ☐ No Date Required: [illegible] Ship To: G&M Raleigh
Estimated Date Of Sample Receipt By Laboratory: [illegible] Report Due: [illegible]
Reports Delivered To: G&M Raleigh Number Of Reports: 1
Work Description: groundwater samples
Send Invoice To: G&M Raleigh

PHYSICAL PROPERTIES	# Water	Method	Det. Limit	# Soil	Method	Det. Limit	NON-METALLICS	# Water	Method	Det. Limit	# Soil	Method	Det. Limit
pH							Acidity						
Spec. Cond.							Alkalinity (Total)						
Hardness (total)							Carbonate						
TDS							Bicarbonate						
TSS							Bromide						
Temperature							Chloride						
Turbidity							Cyanide						
Ignitability							Fluoride						
Corrosivity							Ammonia						
Reactivity							Nitrate						
E.P. Tox. Extraction							TKN						
TCLP Extraction							Nitrite						
E.P. Tox. Complete							Phosphorus						
TCLP Complete							Silica						
METALS[1]							Sulfate						
Aluminum							Sulfide						
Antimony							Surfactants (MBAS)						
Arsenic							ORGANICS						
Barium							BOD						
Berylium							COD						
Cadmium							Oil & Grease						
Calcium							TOC						
Chromium							TOX						
Hex Chromium							TRPH						
Copper							Purg. Halocarbons[2]						
Iron							Non-Halogenated VOCs[2]						
Lead							Purgeable Arom.[2]						
Magnesium							Phenols[2]						
Manganese							Pesticides/PCBs[2]						
Mercury							PNAs[2]						
Nickel							Org. Phos. Pest.[2]						
Potassium							Dioxins						
Selenium							Chlor. Herb.[2]						
Silver							Volatile Organics[2]	[illegible]	[illegible]	1 ppb			
Sodium							Semi Volatile Organics[2]						
Thallium							APPENDIX IX[3]						
Tin							RADIONUCLIDES						
Vanadium							Gross Alpha						
Zinc							Gross Beta						
Priority Pollutant Metals[2]							Radium 226						
TCL (HSL) Metals[2]							Radium 228						

[1] Metals are Total Metals Unless Specified as Dissolved Under Special Instructions. [2] Attach Table of Elements or Compounds to be Analyzed. [3] Includes All Organic and Inorganic Compounds.

Special Instructions Or Other: [illegible]

G&M Project Manager Signature: [illegible] Date: [illegible] G&M QA Officer Signature: [illegible] Date: [illegible]
Laboratory Acceptance: ________ Date: ________

G&M Form 32

LABORATORY TASK ORDER AMENDMENTS

☐ No Changes
Required Change:
Add 1 sample for 601/602 for [illegible]
PLEASE PROVIDE A 3-DAY TAT NOT A 5-DAY

G&M Representative Signature: [illegible] Date: 4/25/97

RETURN YELLOW COPY TO PROJECT MANAGER OR QUALITY ASSURANCE OFFICER — ATTACH PINK COPY TO CHAIN OF CUSTODY FORM

PARADIGM ANALYTICAL LABORATORIES, INC.
2627 Northchase Parkway S.E.
Wilmington, North Carolina 28405
(910) 350-1903
Fax (910) 350-1557

Mr. Fred Rash
Geraghty & Miller
2840 Plaza Place
Raleigh,NC 27612

Date 9-19-96

Report Number: G149- 32 & 35

Client Project Number: NC0360.191
Project Location: Pittsboro, NC #48
LTO Number: 20789

Dear Mr. Rash :

Enclosed are the results of the analytical services performed under the referenced project. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from date of this report unless other arrangements are requested.

If there are any questions about the report or the services performed during this project, please call for assistance. We will be happy to answer any questions or concerns which you may have.

Thank you for using Paradigm Analytical Labs for your analytical service projects. We look forward to working with you again on any additional needs which you may have.

Sincerely,

Paradigm Analytical Laboratories

Laboratory Director
Mark Randall

CASE NARRATIVE FOR PROJECTS 149-32&35

LTO # 20789

SURROGATES:

149-32 & 35

All within acceptance criteria

BLANKS:

149-32 & 35

All blanks - all compounds BQL

MATRIX SPIKES/MATRIX SPIKE DUPLICATES:

149-32

8021 MS/MSD

2 compounds failed recovery criteria.
No compounds failed RPD criteria.

8021 LCS

All compounds within acceptance criteria

MS/MSD/LCS spiked at 20 ppb

149-35

6230D MS/MSD

No compounds failed acceptance criteria for recovery.
No compounds failed RPD acceptance criteria (30%).

MS/MSD spiked at 5 ppb

HOLDING TIME:

All samples analyzed within holding time

DILUTIONS:

See attached

COMMENTS:

All reported results were qualitatively confirmed by GC/MS.

PAL Proj#	Client Sample ID	COC/Proj ID	Lab ID	Analyses
G149-32	SS-1-4	NC0360.191	14364	8021-SO
G149-32	SS-1-10	NC0360.191	14365	8021-SO
G149-32	SS-2-4	NC0360.191	14366	8021-SO
G149-32	SS-2-10	NC0360.191	14367	8021-SO
G149-32	SS-3-4	NC0360.191	14368	8021-SO
G149-32	SS-3-4MS	NC0360.191	14497	8021-SO
G149-32	SS-3-4MSD	NC0360.191	14498	8021-SO
G149-32	SS-3-10	NC0360.191	14369	8021-SO
G149-32	SS-4-4	NC0360.191	14370	8021-SO
G149-32	SS-4-10	NC0360.191	14371	8021-SO
G149-32	SS-5-1.5	NC0360.191	14372	8021-SO
G149-32	SS-5-5	NC0360.191	14373	8021-SO
G149-32	SS-6-1	NC0360.191	14374	8021-SO
G149-32	SS-7-3	NC0360.191	14375	8021-SO
G149-32	SS-8-4	NC0360.191	14376	8021-SO
G149-32	SS-9-4	NC0360.191	14377	8021-SO
G149-32	REP-01-SS	NC0360.191	14378	8021-SO
G149-32	TB-01	NC0360.191	14379	8021-WA
G149-32	EB-01-SS	NC0360.191	14380	8021-WA
G149-35	PW-1	NC0360.191	14410	6230D-WA
G149-35	PW-1 MS	NC0360.191	14411	6230D-WA
G149-35	PW-1 MSD	NC0360.191	14412	6230D-WA
G149-35	TB-01(08/29)	NC0360.191	14413	6230D-WA

SAMPLES AND ASSOCIATED BLANKS, CALIBRATION CURVES AND CONTINUING CAL.

SAMPLE ID	ASSOCIATED BLANK		CALIBRATION CU		CONTINUING CAL	
	PID	Hall	PID	HALL	PID	Hall
14410	VBLK091196	VBLK091296	91196	91196	91196	91296
14413	VBLK091196	VBLK091196	91196	91196	91196	91196
14364	VBLK091196	VBLK091196				
14365	VBLK091196	VBLK091196				
14366	VBLK091196	VBLK091196				
14367	VBLK091196	VBLK091196				
14368	VBLK091196	VBLK091196				
14369	VBLK091196	VBLK091196				
14370	VBLK091196	VBLK091196				
14371	VBLK091196	VBLK091196				
14372	VBLK091196	VBLK091196				
14373	VBLK091196	VBLK091196				
14374	VBLK091196	VBLK091196				
14375	VBLK091196	VBLK091196				
14376	VBLK091196	VBLK091196				
14377	VBLK091196	VBLK091196				
14378	VBLK091196	VBLK091196				
14379	VBLK090696	VBLK090696				
14380	VBLK090696	VBLK090696				

PARADIGM ANALYTICAL LABORATORIES, INC.

DILUTIONS 149-32 & 35

SAMPLE ID	PID	HALL
14410	1X	10X

PARADIGM ANALYTICAL LABORATORIES, INC.

Surrogate Recovery Limits

	6230D	8021
1,4-Dichlorobutane	85-120%	83-123%
Trifluorotoluene	85-122%	84-122%

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-1-4
Client Project ID: NC0360.191
Lab Sample ID: 14364
Lab Project ID: G149-32 %Solids: 72.0

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/12/96	1	1.4	BQL
Bromobenzene	9/12/96	1	2.8	BQL
Bromochloromethane	9/12/96	1	1.4	BQL
Bromodichloromethane	9/12/96	1	1.4	BQL
Bromoform	9/12/96	1	2.8	BQL
Bromomethane	9/12/96	1	2.8	BQL
n-Butylbenzene	9/12/96	1	1.4	BQL
sec-Butylbenzene	9/12/96	1	1.4	BQL
tert-Butylbenzene	9/12/96	1	1.4	BQL
Carbon tetrachloride	9/12/96	1	1.4	BQL
Chlorobenzene	9/12/96	1	1.4	BQL
Chloroethane	9/12/96	1	1.4	BQL
Chloroform	9/12/96	1	1.4	BQL
Chloromethane	9/12/96	1	1.4	BQL
2-Chlorotoluene	9/12/96	1	1.4	BQL
4-Chlorotoluene	9/12/96	1	2.8	BQL
Dibromochloromethane	9/12/96	1	1.4	BQL
1,2-Dibromo-3-chloropropane	9/12/96	1	1.4	BQL
1,2-Dibromoethane (EDB)	9/12/96	1	1.4	BQL
Dibromomethane	9/12/96	1	1.4	BQL
1,2-Dichlorobenzene	9/12/96	1	1.4	BQL
1,3-Dichlorobenzene	9/12/96	1	1.4	BQL
1,4-Dichlorobenzene	9/12/96	1	1.4	BQL
Dichlorodifluoromethane	9/12/96	1	1.4	BQL
1,1-Dichloroethane	9/12/96	1	1.4	BQL
1,2-Dichloroethane	9/12/96	1	1.4	BQL
1,1-Dichloroethene	9/12/96	1	1.4	BQL
cis-1,2-Dichloroethene	9/12/96	1	1.4	BQL
trans-1,2-Dichloroethene	9/12/96	1	1.4	BQL
1,2-Dichloropropane	9/12/96	1	1.4	BQL
2,2-Dichloropropane	9/12/96	1	2.8	BQL
cis-1,3-Dichloropropene	9/12/96	1	1.4	BQL
trans-1,3-Dichloropropene	9/12/96	1	1.4	BQL
Diisopropyl ether (DIPE)	9/12/96	1	1.4	BQL
Ethylbenzene	9/12/96	1	1.4	BQL
Hexachlorobutadiene	9/12/96	1	1.4	BQL
Isopropylbenzene	9/12/96	1	1.4	BQL
p-Isopropyltoluene	9/12/96	1	1.4	BQL
Methyl-tert butyl ether (MTBE)	9/12/96	1	1.4	BQL
Methylene Chloride	9/12/96	1	6.9	BQL

Flags:

BQL = Below Quantitation Limit

Results for Volatiles

by GC 8021

Client Sample ID: SS-1-4
Client Project ID: NC0360.191
Lab Sample ID: 14364
Lab Project ID: G149-32 %Solids: 72.0

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/12/96	1	1.4	BQL
n-Propylbenzene	9/12/96	1	1.4	BQL
Styrene	9/12/96	1	2.8	BQL
1,1,1,2-Tertrachloroethane	9/12/96	1	1.4	BQL
1,1,2,2-Tertrachloroethane	9/12/96	1	1.4	BQL
Tetrachloroethene	9/12/96	1	1.4	BQL
Toluene	9/12/96	1	1.4	BQL
1,2,3-Trichlorobenzene	9/12/96	1	1.4	BQL
1,2,4-Trichlorobenzene	9/12/96	1	1.4	BQL
1,1,1-Trichloroethane	9/12/96	1	1.4	BQL
1,1,2-Trichloroethane	9/12/96	1	1.4	BQL
Trichloroethene	9/12/96	1	1.4	BQL
Trichlorofluromethane	9/12/96	1	1.4	BQL
1,2,3-Trichloropropane	9/12/96	1	2.8	BQL
1,2,4-Trimethylbenzene	9/12/96	1	1.4	BQL
1,3,5-Trimethylbenzene	9/12/96	1	2.8	BQL
Vinyl Chloride	9/12/96	1	1.4	BQL
m/p-Xylene	9/12/96	1	2.8	BQL
o-Xylene	9/12/96	1	2.8	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	35	87
Trifluorotoluene	40	38	95

Comments:

All values corrected for dilution and %solids.

Reviewed By: MW

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: SS-1-10
Client Project ID: NC0360.191
Lab Sample ID: 14365
Lab Project ID: G149-32 %Solids: 75.4

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/11/96	1	1.3	BQL
Bromobenzene	9/11/96	1	2.7	BQL
Bromochloromethane	9/11/96	1	1.3	BQL
Bromodichloromethane	9/11/96	1	1.3	BQL
Bromoform	9/11/96	1	2.7	BQL
Bromomethane	9/11/96	1	2.7	BQL
n-Butylbenzene	9/11/96	1	1.3	BQL
sec-Butylbenzene	9/11/96	1	1.3	BQL
tert-Butylbenzene	9/11/96	1	1.3	BQL
Carbon tetrachloride	9/11/96	1	1.3	BQL
Chlorobenzene	9/11/96	1	1.3	BQL
Chloroethane	9/11/96	1	1.3	BQL
Chloroform	9/11/96	1	1.3	BQL
Chloromethane	9/11/96	1	1.3	BQL
2-Chlorotoluene	9/11/96	1	1.3	BQL
4-Chlorotoluene	9/11/96	1	2.7	BQL
Dibromochloromethane	9/11/96	1	1.3	BQL
1,2-Dibromo-3-chloropropane	9/11/96	1	1.3	BQL
1,2-Dibromoethane (EDB)	9/11/96	1	1.3	BQL
Dibromomethane	9/11/96	1	1.3	BQL
1,2-Dichlorobenzene	9/11/96	1	1.3	BQL
1,3-Dichlorobenzene	9/11/96	1	1.3	BQL
1,4-Dichlorobenzene	9/11/96	1	1.3	BQL
Dichlorodifluoromethane	9/11/96	1	1.3	BQL
1,1-Dichloroethane	9/11/96	1	1.3	BQL
1,2-Dichloroethane	9/11/96	1	1.3	BQL
1,1-Dichloroethene	9/11/96	1	1.3	BQL
cis-1,2-Dichloroethene	9/11/96	1	1.3	BQL
trans-1,2-Dichloroethene	9/11/96	1	1.3	BQL
1,2-Dichloropropane	9/11/96	1	1.3	BQL
2,2-Dichloropropane	9/11/96	1	2.7	BQL
cis-1,3-Dichloropropene	9/11/96	1	1.3	BQL
trans-1,3-Dichloropropene	9/11/96	1	1.3	BQL
Diisopropyl ether (DIPE)	9/11/96	1	1.3	BQL
Ethylbenzene	9/11/96	1	1.3	BQL
Hexachlorobutadiene	9/11/96	1	1.3	BQL
Isopropylbenzene	9/11/96	1	1.3	BQL
p-Isopropyltoluene	9/11/96	1	1.3	BQL
Methyl-tert butyl ether (MTBE)	9/11/96	1	1.3	BQL
Methylene Chloride	9/11/96	1	6.6	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: SS-1-10
Client Project ID: NC0360.191
Lab Sample ID: 14365
Lab Project ID: G149-32 %Solids: 75.4

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/11/96	1	1.3	BQL
n-Propylbenzene	9/11/96	1	1.3	BQL
Styrene	9/11/96	1	2.7	BQL
1,1,1,2-Tertrachloroethane	9/11/96	1	1.3	BQL
1,1,2,2-Tertrachloroethane	9/11/96	1	1.3	BQL
Tetrachloroethene	9/11/96	1	1.3	BQL
Toluene	9/11/96	1	1.3	BQL
1,2,3-Trichlorobenzene	9/11/96	1	1.3	BQL
1,2,4-Trichlorobenzene	9/11/96	1	1.3	BQL
1,1,1-Trichloroethane	9/11/96	1	1.3	BQL
1,1,2-Trichloroethane	9/11/96	1	1.3	BQL
Trichloroethene	9/11/96	1	1.3	BQL
Trichlorofluromethane	9/11/96	1	1.3	BQL
1,2,3-Trichloropropane	9/11/96	1	2.7	BQL
1,2,4-Trimethylbenzene	9/11/96	1	1.3	BQL
1,3,5-Trimethylbenzene	9/11/96	1	2.7	BQL
Vinyl Chloride	9/11/96	1	1.3	BQL
m/p-Xylene	9/11/96	1	2.7	BQL
o-Xylene	9/11/96	1	2.7	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	41	102
Trifluorotoluene	40	41	102

Comments:

All values corrected for dilution and %solids.

Reviewed By: mn

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: SS-2-4
Client Project ID: NC0360.191
Lab Sample ID: 14366
Lab Project ID: G149-32 %Solids: 70.8

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/11/96	1	1.4	BQL
Bromobenzene	9/11/96	1	2.8	BQL
Bromochloromethane	9/11/96	1	1.4	BQL
Bromodichloromethane	9/11/96	1	1.4	BQL
Bromoform	9/11/96	1	2.8	BQL
Bromomethane	9/11/96	1	2.8	BQL
n-Butylbenzene	9/11/96	1	1.4	BQL
sec-Butylbenzene	9/11/96	1	1.4	BQL
tert-Butylbenzene	9/11/96	1	1.4	BQL
Carbon tetrachloride	9/11/96	1	1.4	BQL
Chlorobenzene	9/11/96	1	1.4	BQL
Chloroethane	9/11/96	1	1.4	BQL
Chloroform	9/11/96	1	1.4	BQL
Chloromethane	9/11/96	1	1.4	BQL
2-Chlorotoluene	9/11/96	1	1.4	BQL
4-Chlorotoluene	9/11/96	1	2.8	BQL
Dibromochloromethane	9/11/96	1	1.4	BQL
1,2-Dibromo-3-chloropropane	9/11/96	1	1.4	BQL
1,2-Dibromoethane (EDB)	9/11/96	1	1.4	BQL
Dibromomethane	9/11/96	1	1.4	BQL
1,2-Dichlorobenzene	9/11/96	1	1.4	BQL
1,3-Dichlorobenzene	9/11/96	1	1.4	BQL
1,4-Dichlorobenzene	9/11/96	1	1.4	BQL
Dichlorodifluoromethane	9/11/96	1	1.4	BQL
1,1-Dichloroethane	9/11/96	1	1.4	BQL
1,2-Dichloroethane	9/11/96	1	1.4	BQL
1,1-Dichloroethene	9/11/96	1	1.4	BQL
cis-1,2-Dichloroethene	9/11/96	1	1.4	BQL
trans-1,2-Dichloroethene	9/11/96	1	1.4	BQL
1,2-Dichloropropane	9/11/96	1	1.4	BQL
2,2-Dichloropropane	9/11/96	1	2.8	BQL
cis-1,3-Dichloropropene	9/11/96	1	1.4	BQL
trans-1,3-Dichloropropene	9/11/96	1	1.4	BQL
Diisopropyl ether (DIPE)	9/11/96	1	1.4	BQL
Ethylbenzene	9/11/96	1	1.4	BQL
Hexachlorobutadiene	9/11/96	1	1.4	BQL
Isopropylbenzene	9/11/96	1	1.4	BQL
p-Isopropyltoluene	9/11/96	1	1.4	BQL
Methyl-tert butyl ether (MTBE)	9/11/96	1	1.4	BQL
Methylene Chloride	9/11/96	1	7.1	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-2-4
Client Project ID: NC0360.191
Lab Sample ID: 14366
Lab Project ID: G149-32 %Solids: 70.8

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/11/96	1	1.4	BQL
n-Propylbenzene	9/11/96	1	1.4	BQL
Styrene	9/11/96	1	2.8	BQL
1,1,1,2-Tertrachloroethane	9/11/96	1	1.4	BQL
1,1,2,2-Tertrachloroethane	9/11/96	1	1.4	BQL
Tetrachloroethene	9/11/96	1	1.4	BQL
Toluene	9/11/96	1	1.4	BQL
1,2,3-Trichlorobenzene	9/11/96	1	1.4	BQL
1,2,4-Trichlorobenzene	9/11/96	1	1.4	BQL
1,1,1-Trichloroethane	9/11/96	1	1.4	BQL
1,1,2-Trichloroethane	9/11/96	1	1.4	BQL
Trichloroethene	9/11/96	1	1.4	BQL
Trichlorofluromethane	9/11/96	1	1.4	BQL
1,2,3-Trichloropropane	9/11/96	1	2.8	BQL
1,2,4-Trimethylbenzene	9/11/96	1	1.4	BQL
1,3,5-Trimethylbenzene	9/11/96	1	2.8	BQL
Vinyl Chloride	9/11/96	1	1.4	BQL
m/p-Xylene	9/11/96	1	2.8	BQL
o-Xylene	9/11/96	1	2.8	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	42	105
Trifluorotoluene	40	40	100

Comments:

All values corrected for dilution and %solids.

Reviewed By: [signature]

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-2-10
Client Project ID: NC0360.191
Lab Sample ID: 14367
Lab Project ID: G149-32 %Solids: 69.3

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/11/96	1	1.4	BQL
Bromobenzene	9/11/96	1	2.9	BQL
Bromochloromethane	9/11/96	1	1.4	BQL
Bromodichloromethane	9/11/96	1	1.4	BQL
Bromoform	9/11/96	1	2.9	BQL
Bromomethane	9/11/96	1	2.9	BQL
n-Butylbenzene	9/11/96	1	1.4	BQL
sec-Butylbenzene	9/11/96	1	1.4	BQL
tert-Butylbenzene	9/11/96	1	1.4	BQL
Carbon tetrachloride	9/11/96	1	1.4	BQL
Chlorobenzene	9/11/96	1	1.4	BQL
Chloroethane	9/11/96	1	1.4	BQL
Chloroform	9/11/96	1	1.4	BQL
Chloromethane	9/11/96	1	1.4	BQL
2-Chlorotoluene	9/11/96	1	1.4	BQL
4-Chlorotoluene	9/11/96	1	2.9	BQL
Dibromochloromethane	9/11/96	1	1.4	BQL
1,2-Dibromo-3-chloropropane	9/11/96	1	1.4	BQL
1,2-Dibromoethane (EDB)	9/11/96	1	1.4	BQL
Dibromomethane	9/11/96	1	1.4	BQL
1,2-Dichlorobenzene	9/11/96	1	1.4	BQL
1,3-Dichlorobenzene	9/11/96	1	1.4	BQL
1,4-Dichlorobenzene	9/11/96	1	1.4	BQL
Dichlorodifluoromethane	9/11/96	1	1.4	BQL
1,1-Dichloroethane	9/11/96	1	1.4	BQL
1,2-Dichloroethane	9/11/96	1	1.4	BQL
1,1-Dichloroethene	9/11/96	1	1.4	BQL
cis-1,2-Dichloroethene	9/11/96	1	1.4	BQL
trans-1,2-Dichloroethene	9/11/96	1	1.4	BQL
1,2-Dichloropropane	9/11/96	1	1.4	BQL
2,2-Dichloropropane	9/11/96	1	2.9	BQL
cis-1,3-Dichloropropene	9/11/96	1	1.4	BQL
trans-1,3-Dichloropropene	9/11/96	1	1.4	BQL
Diisopropyl ether (DIPE)	9/11/96	1	1.4	BQL
Ethylbenzene	9/11/96	1	1.4	BQL
Hexachlorobutadiene	9/11/96	1	1.4	BQL
Isopropylbenzene	9/11/96	1	1.4	BQL
p-Isopropyltoluene	9/11/96	1	1.4	BQL
Methyl-tert butyl ether (MTBE)	9/11/96	1	1.4	BQL
Methylene Chloride	9/11/96	1	7.2	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: SS-2-10
Client Project ID: NC0360.191
Lab Sample ID: 14367
Lab Project ID: G149-32 %Solids: 69.3

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/11/96	1	1.4	BQL
n-Propylbenzene	9/11/96	1	1.4	BQL
Styrene	9/11/96	1	2.9	BQL
1,1,1,2-Tertrachloroethane	9/11/96	1	1.4	BQL
1,1,2,2-Tertrachloroethane	9/11/96	1	1.4	BQL
Tetrachloroethene	9/11/96	1	1.4	BQL
Toluene	9/11/96	1	1.4	BQL
1,2,3-Trichlorobenzene	9/11/96	1	1.4	BQL
1,2,4-Trichlorobenzene	9/11/96	1	1.4	BQL
1,1,1-Trichloroethane	9/11/96	1	1.4	BQL
1,1,2-Trichloroethane	9/11/96	1	1.4	BQL
Trichloroethene	9/11/96	1	1.4	BQL
Trichlorofluromethane	9/11/96	1	1.4	BQL
1,2,3-Trichloropropane	9/11/96	1	2.9	BQL
1,2,4-Trimethylbenzene	9/11/96	1	1.4	BQL
1,3,5-Trimethylbenzene	9/11/96	1	2.9	BQL
Vinyl Chloride	9/11/96	1	1.4	BQL
m/p-Xylene	9/11/96	1	2.9	BQL
o-Xylene	9/11/96	1	2.9	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	42	105
Trifluorotoluene	40	40	100

Comments:
All values corrected for dilution and %solids.

Reviewed By: MW

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-3-4
Client Project ID: NC0360.191
Lab Sample ID: 14368
Lab Project ID: G149-32 %Solids: 69.4

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/11/96	1	1.4	BQL
Bromobenzene	9/11/96	1	2.9	BQL
Bromochloromethane	9/11/96	1	1.4	BQL
Bromodichloromethane	9/11/96	1	1.4	BQL
Bromoform	9/11/96	1	2.9	BQL
Bromomethane	9/11/96	1	2.9	BQL
n-Butylbenzene	9/11/96	1	1.4	BQL
sec-Butylbenzene	9/11/96	1	1.4	BQL
tert-Butylbenzene	9/11/96	1	1.4	BQL
Carbon tetrachloride	9/11/96	1	1.4	BQL
Chlorobenzene	9/11/96	1	1.4	BQL
Chloroethane	9/11/96	1	1.4	BQL
Chloroform	9/11/96	1	1.4	BQL
Chloromethane	9/11/96	1	1.4	BQL
2-Chlorotoluene	9/11/96	1	1.4	BQL
4-Chlorotoluene	9/11/96	1	2.9	BQL
Dibromochloromethane	9/11/96	1	1.4	BQL
1,2-Dibromo-3-chloropropane	9/11/96	1	1.4	BQL
1,2-Dibromoethane (EDB)	9/11/96	1	1.4	BQL
Dibromomethane	9/11/96	1	1.4	BQL
1,2-Dichlorobenzene	9/11/96	1	1.4	BQL
1,3-Dichlorobenzene	9/11/96	1	1.4	BQL
1,4-Dichlorobenzene	9/11/96	1	1.4	BQL
Dichlorodifluoromethane	9/11/96	1	1.4	BQL
1,1-Dichloroethane	9/11/96	1	1.4	BQL
1,2-Dichloroethane	9/11/96	1	1.4	BQL
1,1-Dichloroethene	9/11/96	1	1.4	BQL
cis-1,2-Dichloroethene	9/11/96	1	1.4	BQL
trans-1,2-Dichloroethene	9/11/96	1	1.4	BQL
1,2-Dichloropropane	9/11/96	1	1.4	BQL
2,2-Dichloropropane	9/11/96	1	2.9	BQL
cis-1,3-Dichloropropene	9/11/96	1	1.4	BQL
trans-1,3-Dichloropropene	9/11/96	1	1.4	BQL
Diisopropyl ether (DIPE)	9/11/96	1	1.4	BQL
Ethylbenzene	9/11/96	1	1.4	BQL
Hexachlorobutadiene	9/11/96	1	1.4	BQL
Isopropylbenzene	9/11/96	1	1.4	BQL
p-Isopropyltoluene	9/11/96	1	1.4	BQL
Methyl-tert butyl ether (MTBE)	9/11/96	1	1.4	BQL
Methylene Chloride	9/11/96	1	7.2	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: SS-3-4
Client Project ID: NC0360.191
Lab Sample ID: 14368
Lab Project ID: G149-32 %Solids: 69.4

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/11/96	1	1.4	BQL
n-Propylbenzene	9/11/96	1	1.4	BQL
Styrene	9/11/96	1	2.9	BQL
1,1,1,2-Tertrachloroethane	9/11/96	1	1.4	BQL
1,1,2,2-Tertrachloroethane	9/11/96	1	1.4	BQL
Tetrachloroethene	9/11/96	1	1.4	BQL
Toluene	9/11/96	1	1.4	BQL
1,2,3-Trichlorobenzene	9/11/96	1	1.4	BQL
1,2,4-Trichlorobenzene	9/11/96	1	1.4	BQL
1,1,1-Trichloroethane	9/11/96	1	1.4	BQL
1,1,2-Trichloroethane	9/11/96	1	1.4	BQL
Trichloroethene	9/11/96	1	1.4	BQL
Trichlorofluromethane	9/11/96	1	1.4	BQL
1,2,3-Trichloropropane	9/11/96	1	2.9	BQL
1,2,4-Trimethylbenzene	9/11/96	1	1.4	BQL
1,3,5-Trimethylbenzene	9/11/96	1	2.9	BQL
Vinyl Chloride	9/11/96	1	1.4	BQL
m/p-Xylene	9/11/96	1	2.9	BQL
o-Xylene	9/11/96	1	2.9	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	43	108
Trifluorotoluene	40	40	100

Comments:

All values corrected for dilution and %solids.

Reviewed By: MM

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-3-10
Client Project ID: NC0360.191
Lab Sample ID: 14369
Lab Project ID: G149-32 %Solids: 70.3

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/12/96	1	1.4	BQL
Bromobenzene	9/12/96	1	2.8	BQL
Bromochloromethane	9/12/96	1	1.4	BQL
Bromodichloromethane	9/12/96	1	1.4	BQL
Bromoform	9/12/96	1	2.8	BQL
Bromomethane	9/12/96	1	2.8	BQL
n-Butylbenzene	9/12/96	1	1.4	BQL
sec-Butylbenzene	9/12/96	1	1.4	BQL
tert-Butylbenzene	9/12/96	1	1.4	BQL
Carbon tetrachloride	9/12/96	1	1.4	BQL
Chlorobenzene	9/12/96	1	1.4	BQL
Chloroethane	9/12/96	1	1.4	BQL
Chloroform	9/12/96	1	1.4	BQL
Chloromethane	9/12/96	1	1.4	BQL
2-Chlorotoluene	9/12/96	1	1.4	BQL
4-Chlorotoluene	9/12/96	1	2.8	BQL
Dibromochloromethane	9/12/96	1	1.4	BQL
1,2-Dibromo-3-chloropropane	9/12/96	1	1.4	BQL
1,2-Dibromoethane (EDB)	9/12/96	1	1.4	BQL
Dibromomethane	9/12/96	1	1.4	BQL
1,2-Dichlorobenzene	9/12/96	1	1.4	BQL
1,3-Dichlorobenzene	9/12/96	1	1.4	BQL
1,4-Dichlorobenzene	9/12/96	1	1.4	BQL
Dichlorodifluoromethane	9/12/96	1	1.4	BQL
1,1-Dichloroethane	9/12/96	1	1.4	BQL
1,2-Dichloroethane	9/12/96	1	1.4	BQL
1,1-Dichloroethene	9/12/96	1	1.4	BQL
cis-1,2-Dichloroethene	9/12/96	1	1.4	BQL
trans-1,2-Dichloroethene	9/12/96	1	1.4	BQL
1,2-Dichloropropane	9/12/96	1	1.4	BQL
2,2-Dichloropropane	9/12/96	1	2.8	BQL
cis-1,3-Dichloropropene	9/12/96	1	1.4	BQL
trans-1,3-Dichloropropene	9/12/96	1	1.4	BQL
Diisopropyl ether (DIPE)	9/12/96	1	1.4	BQL
Ethylbenzene	9/12/96	1	1.4	BQL
Hexachlorobutadiene	9/12/96	1	1.4	BQL
Isopropylbenzene	9/12/96	1	1.4	BQL
p-Isopropyltoluene	9/12/96	1	1.4	BQL
Methyl-tert butyl ether (MTBE)	9/12/96	1	1.4	BQL
Methylene Chloride	9/12/96	1	7.1	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-3-10
Client Project ID: NC0360.191
Lab Sample ID: 14369
Lab Project ID: G149-32 %Solids: 70.3

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/12/96	1	1.4	BQL
n-Propylbenzene	9/12/96	1	1.4	BQL
Styrene	9/12/96	1	2.8	BQL
1,1,1,2-Tertrachloroethane	9/12/96	1	1.4	BQL
1,1,2,2-Tertrachloroethane	9/12/96	1	1.4	BQL
Tetrachloroethene	9/12/96	1	1.4	BQL
Toluene	9/12/96	1	1.4	BQL
1,2,3-Trichlorobenzene	9/12/96	1	1.4	BQL
1,2,4-Trichlorobenzene	9/12/96	1	1.4	BQL
1,1,1-Trichloroethane	9/12/96	1	1.4	BQL
1,1,2-Trichloroethane	9/12/96	1	1.4	BQL
Trichloroethene	9/12/96	1	1.4	BQL
Trichlorofluromethane	9/12/96	1	1.4	BQL
1,2,3-Trichloropropane	9/12/96	1	2.8	BQL
1,2,4-Trimethylbenzene	9/12/96	1	1.4	BQL
1,3,5-Trimethylbenzene	9/12/96	1	2.8	BQL
Vinyl Chloride	9/12/96	1	1.4	BQL
m/p-Xylene	9/12/96	1	2.8	BQL
o-Xylene	9/12/96	1	2.8	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	35	87
Trifluorotoluene	40	38	95

Comments:

All values corrected for dilution and %solids.

Reviewed By: MN

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-4-4
Client Project ID: NC0360.191
Lab Sample ID: 14370
Lab Project ID: G149-32 %Solids: 72.3

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/12/96	1	1.4	BQL
Bromobenzene	9/12/96	1	2.8	BQL
Bromochloromethane	9/12/96	1	1.4	BQL
Bromodichloromethane	9/12/96	1	1.4	BQL
Bromoform	9/12/96	1	2.8	BQL
Bromomethane	9/12/96	1	2.8	BQL
n-Butylbenzene	9/12/96	1	1.4	BQL
sec-Butylbenzene	9/12/96	1	1.4	BQL
tert-Butylbenzene	9/12/96	1	1.4	BQL
Carbon tetrachloride	9/12/96	1	1.4	BQL
Chlorobenzene	9/12/96	1	1.4	BQL
Chloroethane	9/12/96	1	1.4	BQL
Chloroform	9/12/96	1	1.4	BQL
Chloromethane	9/12/96	1	1.4	BQL
2-Chlorotoluene	9/12/96	1	1.4	BQL
4-Chlorotoluene	9/12/96	1	2.8	BQL
Dibromochloromethane	9/12/96	1	1.4	BQL
1,2-Dibromo-3-chloropropane	9/12/96	1	1.4	BQL
1,2-Dibromoethane (EDB)	9/12/96	1	1.4	BQL
Dibromomethane	9/12/96	1	1.4	BQL
1,2-Dichlorobenzene	9/12/96	1	1.4	BQL
1,3-Dichlorobenzene	9/12/96	1	1.4	BQL
1,4-Dichlorobenzene	9/12/96	1	1.4	BQL
Dichlorodifluoromethane	9/12/96	1	1.4	BQL
1,1-Dichloroethane	9/12/96	1	1.4	BQL
1,2-Dichloroethane	9/12/96	1	1.4	BQL
1,1-Dichloroethene	9/12/96	1	1.4	BQL
cis-1,2-Dichloroethene	9/12/96	1	1.4	BQL
trans-1,2-Dichloroethene	9/12/96	1	1.4	BQL
1,2-Dichloropropane	9/12/96	1	1.4	BQL
2,2-Dichloropropane	9/12/96	1	2.8	BQL
cis-1,3-Dichloropropene	9/12/96	1	1.4	BQL
trans-1,3-Dichloropropene	9/12/96	1	1.4	BQL
Diisopropyl ether (DIPE)	9/12/96	1	1.4	BQL
Ethylbenzene	9/12/96	1	1.4	BQL
Hexachlorobutadiene	9/12/96	1	1.4	BQL
Isopropylbenzene	9/12/96	1	1.4	BQL
p-Isopropyltoluene	9/12/96	1	1.4	BQL
Methyl-tert butyl ether (MTBE)	9/12/96	1	1.4	BQL
Methylene Chloride	9/12/96	1	6.9	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: SS-4-4
Client Project ID: NC0360.191
Lab Sample ID: 14370
Lab Project ID: G149-32 %Solids: 72.3

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/12/96	1	1.4	BQL
n-Propylbenzene	9/12/96	1	1.4	BQL
Styrene	9/12/96	1	2.8	BQL
1,1,1,2-Tertrachloroethane	9/12/96	1	1.4	BQL
1,1,2,2-Tertrachloroethane	9/12/96	1	1.4	BQL
Tetrachloroethene	9/12/96	1	1.4	BQL
Toluene	9/12/96	1	1.4	BQL
1,2,3-Trichlorobenzene	9/12/96	1	1.4	BQL
1,2,4-Trichlorobenzene	9/12/96	1	1.4	BQL
1,1,1-Trichloroethane	9/12/96	1	1.4	BQL
1,1,2-Trichloroethane	9/12/96	1	1.4	BQL
Trichloroethene	9/12/96	1	1.4	BQL
Trichlorofluromethane	9/12/96	1	1.4	BQL
1,2,3-Trichloropropane	9/12/96	1	2.8	BQL
1,2,4-Trimethylbenzene	9/12/96	1	1.4	BQL
1,3,5-Trimethylbenzene	9/12/96	1	2.8	BQL
Vinyl Chloride	9/12/96	1	1.4	BQL
m/p-Xylene	9/12/96	1	2.8	BQL
o-Xylene	9/12/96	1	2.8	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	35	87
Trifluorotoluene	40	38	95

Comments:
All values corrected for dilution and %solids.

Reviewed By: MW

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-4-10
Client Project ID: NC0360.191
Lab Sample ID: 14371
Lab Project ID: G149-32 %Solids: 67.1

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/12/96	1	1.5	BQL
Bromobenzene	9/12/96	1	3.0	BQL
Bromochloromethane	9/12/96	1	1.5	BQL
Bromodichloromethane	9/12/96	1	1.5	BQL
Bromoform	9/12/96	1	3.0	BQL
Bromomethane	9/12/96	1	3.0	BQL
n-Butylbenzene	9/12/96	1	1.5	BQL
sec-Butylbenzene	9/12/96	1	1.5	BQL
tert-Butylbenzene	9/12/96	1	1.5	BQL
Carbon tetrachloride	9/12/96	1	1.5	BQL
Chlorobenzene	9/12/96	1	1.5	BQL
Chloroethane	9/12/96	1	1.5	BQL
Chloroform	9/12/96	1	1.5	BQL
Chloromethane	9/12/96	1	1.5	BQL
2-Chlorotoluene	9/12/96	1	1.5	BQL
4-Chlorotoluene	9/12/96	1	3.0	BQL
Dibromochloromethane	9/12/96	1	1.5	BQL
1,2-Dibromo-3-chloropropane	9/12/96	1	1.5	BQL
1,2-Dibromoethane (EDB)	9/12/96	1	1.5	BQL
Dibromomethane	9/12/96	1	1.5	BQL
1,2-Dichlorobenzene	9/12/96	1	1.5	BQL
1,3-Dichlorobenzene	9/12/96	1	1.5	BQL
1,4-Dichlorobenzene	9/12/96	1	1.5	BQL
Dichlorodifluoromethane	9/12/96	1	7.5	BQL
1,1-Dichloroethane	9/12/96	1	1.5	BQL
1,2-Dichloroethane	9/12/96	1	1.5	BQL
1,1-Dichloroethene	9/12/96	1	1.5	BQL
cis-1,2-Dichloroethene	9/12/96	1	1.5	BQL
trans-1,2-Dichloroethene	9/12/96	1	1.5	BQL
1,2-Dichloropropane	9/12/96	1	1.5	BQL
2,2-Dichloropropane	9/12/96	1	3.0	BQL
cis-1,3-Dichloropropene	9/12/96	1	1.5	BQL
trans-1,3-Dichloropropene	9/12/96	1	1.5	BQL
Diisopropyl ether (DIPE)	9/12/96	1	1.5	BQL
Ethylbenzene	9/12/96	1	1.5	BQL
Hexachlorobutadiene	9/12/96	1	1.5	BQL
Isopropylbenzene	9/12/96	1	1.5	BQL
p-Isopropyltoluene	9/12/96	1	1.5	BQL
Methyl-tert butyl ether (MTBE)	9/12/96	1	1.5	BQL
Methylene Chloride	9/12/96	1	7.5	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: SS-4-10
Client Project ID: NC0360.191
Lab Sample ID: 14371
Lab Project ID: G149-32 %Solids: 67.1

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/12/96	1	1.5	BQL
n-Propylbenzene	9/12/96	1	1.5	BQL
Styrene	9/12/96	1	3.0	BQL
1,1,1,2-Tertrachloroethane	9/12/96	1	1.5	BQL
1,1,2,2-Tertrachloroethane	9/12/96	1	1.5	BQL
Tetrachloroethene	9/12/96	1	1.5	BQL
Toluene	9/12/96	1	1.5	BQL
1,2,3-Trichlorobenzene	9/12/96	1	1.5	BQL
1,2,4-Trichlorobenzene	9/12/96	1	1.5	BQL
1,1,1-Trichloroethane	9/12/96	1	1.5	BQL
1,1,2-Trichloroethane	9/12/96	1	1.5	BQL
Trichloroethene	9/12/96	1	1.5	BQL
Trichlorofluromethane	9/12/96	1	1.5	BQL
1,2,3-Trichloropropane	9/12/96	1	3.0	BQL
1,2,4-Trimethylbenzene	9/12/96	1	1.5	BQL
1,3,5-Trimethylbenzene	9/12/96	1	3.0	BQL
Vinyl Chloride	9/12/96	1	1.5	BQL
m/p-Xylene	9/12/96	1	3.0	BQL
o-Xylene	9/12/96	1	3.0	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	38	95
Trifluorotoluene	40	38	95

Comments:
All values corrected for dilution and %solids.

Reviewed By: [signature]

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-5-1.5
Client Project ID: NC0360.191
Lab Sample ID: 14372
Lab Project ID: G149-32 %Solids: 90.3

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/12/96	1	1.1	BQL
Bromobenzene	9/12/96	1	2.2	BQL
Bromochloromethane	9/12/96	1	1.1	BQL
Bromodichloromethane	9/12/96	1	1.1	BQL
Bromoform	9/12/96	1	2.2	BQL
Bromomethane	9/12/96	1	2.2	BQL
n-Butylbenzene	9/12/96	1	1.1	BQL
sec-Butylbenzene	9/12/96	1	1.1	BQL
tert-Butylbenzene	9/12/96	1	1.1	BQL
Carbon tetrachloride	9/12/96	1	1.1	BQL
Chlorobenzene	9/12/96	1	1.1	BQL
Chloroethane	9/12/96	1	1.1	BQL
Chloroform	9/12/96	1	1.1	BQL
Chloromethane	9/12/96	1	1.1	BQL
2-Chlorotoluene	9/12/96	1	1.1	BQL
4-Chlorotoluene	9/12/96	1	2.2	BQL
Dibromochloromethane	9/12/96	1	1.1	BQL
1,2-Dibromo-3-chloropropane	9/12/96	1	1.1	BQL
1,2-Dibromoethane (EDB)	9/12/96	1	1.1	BQL
Dibromomethane	9/12/96	1	1.1	BQL
1,2-Dichlorobenzene	9/12/96	1	1.1	BQL
1,3-Dichlorobenzene	9/12/96	1	1.1	BQL
1,4-Dichlorobenzene	9/12/96	1	1.1	BQL
Dichlorodifluoromethane	9/12/96	1	1.1	BQL
1,1-Dichloroethane	9/12/96	1	1.1	BQL
1,2-Dichloroethane	9/12/96	1	1.1	BQL
1,1-Dichloroethene	9/12/96	1	1.1	BQL
cis-1,2-Dichloroethene	9/12/96	1	1.1	BQL
trans-1,2-Dichloroethene	9/12/96	1	1.1	BQL
1,2-Dichloropropane	9/12/96	1	1.1	BQL
2,2-Dichloropropane	9/12/96	1	2.2	BQL
cis-1,3-Dichloropropene	9/12/96	1	1.1	BQL
trans-1,3-Dichloropropene	9/12/96	1	1.1	BQL
Diisopropyl ether (DIPE)	9/12/96	1	1.1	BQL
Ethylbenzene	9/12/96	1	1.1	BQL
Hexachlorobutadiene	9/12/96	1	1.1	BQL
Isopropylbenzene	9/12/96	1	1.1	BQL
p-Isopropyltoluene	9/12/96	1	1.1	BQL
Methyl-tert butyl ether (MTBE)	9/12/96	1	1.1	BQL
Methylene Chloride	9/12/96	1	5.5	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: SS-5-1.5
Client Project ID: NC0360.191
Lab Sample ID: 14372
Lab Project ID: G149-32 %Solids: 90.3

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/12/96	1	1.1	BQL
n-Propylbenzene	9/12/96	1	1.1	BQL
Styrene	9/12/96	1	2.2	BQL
1,1,1,2-Tertrachloroethane	9/12/96	1	1.1	BQL
1,1,2,2-Tertrachloroethane	9/12/96	1	1.1	BQL
Tetrachloroethene	9/12/96	1	1.1	BQL
Toluene	9/12/96	1	1.1	BQL
1,2,3-Trichlorobenzene	9/12/96	1	1.1	BQL
1,2,4-Trichlorobenzene	9/12/96	1	1.1	BQL
1,1,1-Trichloroethane	9/12/96	1	1.1	BQL
1,1,2-Trichloroethane	9/12/96	1	1.1	BQL
Trichloroethene	9/12/96	1	1.1	BQL
Trichlorofluromethane	9/12/96	1	1.1	BQL
1,2,3-Trichloropropane	9/12/96	1	2.2	BQL
1,2,4-Trimethylbenzene	9/12/96	1	1.1	BQL
1,3,5-Trimethylbenzene	9/12/96	1	2.2	BQL
Vinyl Chloride	9/12/96	1	1.1	BQL
m/p-Xylene	9/12/96	1	2.2	BQL
o-Xylene	9/12/96	1	2.2	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	36	90
Trifluorotoluene	40	38	95

Comments:
All values corrected for dilution and %solids.

Reviewed By: [signature]

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-5-5
Client Project ID: NC0360.191
Lab Sample ID: 14373
Lab Project ID: G149-32 %Solids: 75.0

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/12/96	1	1.3	BQL
Bromobenzene	9/12/96	1	2.7	BQL
Bromochloromethane	9/12/96	1	1.3	BQL
Bromodichloromethane	9/12/96	1	1.3	BQL
Bromoform	9/12/96	1	2.7	BQL
Bromomethane	9/12/96	1	2.7	BQL
n-Butylbenzene	9/12/96	1	1.3	**54**
sec-Butylbenzene	9/12/96	1	1.3	**14**
tert-Butylbenzene	9/12/96	1	1.3	**29**
Carbon tetrachloride	9/12/96	1	1.3	BQL
Chlorobenzene	9/12/96	1	1.3	BQL
Chloroethane	9/12/96	1	1.3	BQL
Chloroform	9/12/96	1	1.3	BQL
Chloromethane	9/12/96	1	1.3	BQL
2-Chlorotoluene	9/12/96	1	1.3	BQL
4-Chlorotoluene	9/12/96	1	2.7	BQL
Dibromochloromethane	9/12/96	1	1.3	BQL
1,2-Dibromo-3-chloropropane	9/12/96	1	1.3	BQL
1,2-Dibromoethane (EDB)	9/12/96	1	1.3	BQL
Dibromomethane	9/12/96	1	1.3	BQL
1,2-Dichlorobenzene	9/12/96	1	1.3	BQL
1,3-Dichlorobenzene	9/12/96	1	1.3	BQL
1,4-Dichlorobenzene	9/12/96	1	1.3	BQL
Dichlorodifluoromethane	9/12/96	1	6.7	BQL
1,1-Dichloroethane	9/12/96	1	1.3	BQL
1,2-Dichloroethane	9/12/96	1	1.3	BQL
1,1-Dichloroethene	9/12/96	1	1.3	BQL
cis-1,2-Dichloroethene	9/12/96	1	1.3	BQL
trans-1,2-Dichloroethene	9/12/96	1	1.3	BQL
1,2-Dichloropropane	9/12/96	1	1.3	BQL
2,2-Dichloropropane	9/12/96	1	2.7	BQL
cis-1,3-Dichloropropene	9/12/96	1	1.3	BQL
trans-1,3-Dichloropropene	9/12/96	1	1.3	BQL
Diisopropyl ether (DIPE)	9/12/96	1	1.3	BQL
Ethylbenzene	9/12/96	1	1.3	**1.4**
Hexachlorobutadiene	9/12/96	1	1.3	BQL
Isopropylbenzene	9/12/96	1	1.3	BQL
p-Isopropyltoluene	9/12/96	1	1.3	**29**
Methyl-tert butyl ether (MTBE)	9/12/96	1	1.3	BQL
Methylene Chloride	9/12/96	1	6.7	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-5-5
Client Project ID: NC0360.191
Lab Sample ID: 14373
Lab Project ID: G149-32 %Solids: 75.0

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/12/96	1	1.3	**78**
n-Propylbenzene	9/12/96	1	1.3	BQL
Styrene	9/12/96	1	2.7	BQL
1,1,1,2-Tertrachloroethane	9/12/96	1	1.3	BQL
1,1,2,2-Tertrachloroethane	9/12/96	1	1.3	BQL
Tetrachloroethene	9/12/96	1	1.3	BQL
Toluene	9/12/96	1	1.3	BQL
1,2,3-Trichlorobenzene	9/12/96	1	1.3	BQL
1,2,4-Trichlorobenzene	9/12/96	1	1.3	BQL
1,1,1-Trichloroethane	9/12/96	1	1.3	BQL
1,1,2-Trichloroethane	9/12/96	1	1.3	BQL
Trichloroethene	9/12/96	1	1.3	BQL
Trichlorofluromethane	9/12/96	1	1.3	BQL
1,2,3-Trichloropropane	9/12/96	1	2.7	BQL
1,2,4-Trimethylbenzene	9/12/96	1	1.3	**54**
1,3,5-Trimethylbenzene	9/12/96	1	2.7	**29**
Vinyl Chloride	9/12/96	1	1.3	BQL
m/p-Xylene	9/12/96	1	2.7	**5.8**
o-Xylene	9/12/96	1	2.7	**5.7**

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	35	87
Trifluorotoluene	40	38	95

Comments:

All values corrected for dilution and %solids.

Reviewed By: MA

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: SS-6-1
Client Project ID: NC0360.191
Lab Sample ID: 14374
Lab Project ID: G149-32 %Solids: 77.2

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/12/96	1	1.3	BQL
Bromobenzene	9/12/96	1	2.6	BQL
Bromochloromethane	9/12/96	1	1.3	BQL
Bromodichloromethane	9/12/96	1	1.3	BQL
Bromoform	9/12/96	1	2.6	BQL
Bromomethane	9/12/96	1	2.6	BQL
n-Butylbenzene	9/12/96	1	1.3	BQL
sec-Butylbenzene	9/12/96	1	1.3	BQL
tert-Butylbenzene	9/12/96	1	1.3	BQL
Carbon tetrachloride	9/12/96	1	1.3	BQL
Chlorobenzene	9/12/96	1	1.3	BQL
Chloroethane	9/12/96	1	1.3	BQL
Chloroform	9/12/96	1	1.3	BQL
Chloromethane	9/12/96	1	1.3	BQL
2-Chlorotoluene	9/12/96	1	1.3	BQL
4-Chlorotoluene	9/12/96	1	2.6	BQL
Dibromochloromethane	9/12/96	1	1.3	BQL
1,2-Dibromo-3-chloropropane	9/12/96	1	1.3	BQL
1,2-Dibromoethane (EDB)	9/12/96	1	1.3	BQL
Dibromomethane	9/12/96	1	1.3	BQL
1,2-Dichlorobenzene	9/12/96	1	1.3	BQL
1,3-Dichlorobenzene	9/12/96	1	1.3	BQL
1,4-Dichlorobenzene	9/12/96	1	1.3	BQL
Dichlorodifluoromethane	9/12/96	1	1.3	BQL
1,1-Dichloroethane	9/12/96	1	1.3	BQL
1,2-Dichloroethane	9/12/96	1	1.3	BQL
1,1-Dichloroethene	9/12/96	1	1.3	BQL
cis-1,2-Dichloroethene	9/12/96	1	1.3	BQL
trans-1,2-Dichloroethene	9/12/96	1	1.3	BQL
1,2-Dichloropropane	9/12/96	1	1.3	BQL
2,2-Dichloropropane	9/12/96	1	2.6	BQL
cis-1,3-Dichloropropene	9/12/96	1	1.3	BQL
trans-1,3-Dichloropropene	9/12/96	1	1.3	BQL
Diisopropyl ether (DIPE)	9/12/96	1	1.3	BQL
Ethylbenzene	9/12/96	1	1.3	BQL
Hexachlorobutadiene	9/12/96	1	1.3	BQL
Isopropylbenzene	9/12/96	1	1.3	BQL
p-Isopropyltoluene	9/12/96	1	1.3	BQL
Methyl-tert butyl ether (MTBE)	9/12/96	1	1.3	BQL
Methylene Chloride	9/12/96	1	6.5	BQL

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-6-1
Client Project ID: NC0360.191
Lab Sample ID: 14374
Lab Project ID: G149-32 %Solids: 77.2

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/12/96	1	1.3	BQL
n-Propylbenzene	9/12/96	1	1.3	BQL
Styrene	9/12/96	1	2.6	BQL
1,1,1,2-Tertrachloroethane	9/12/96	1	1.3	BQL
1,1,2,2-Tertrachloroethane	9/12/96	1	1.3	BQL
Tetrachloroethene	9/12/96	1	1.3	BQL
Toluene	9/12/96	1	1.3	BQL
1,2,3-Trichlorobenzene	9/12/96	1	1.3	BQL
1,2,4-Trichlorobenzene	9/12/96	1	1.3	BQL
1,1,1-Trichloroethane	9/12/96	1	1.3	BQL
1,1,2-Trichloroethane	9/12/96	1	1.3	BQL
Trichloroethene	9/12/96	1	1.3	BQL
Trichlorofluromethane	9/12/96	1	1.3	BQL
1,2,3-Trichloropropane	9/12/96	1	2.6	BQL
1,2,4-Trimethylbenzene	9/12/96	1	1.3	BQL
1,3,5-Trimethylbenzene	9/12/96	1	2.6	BQL
Vinyl Chloride	9/12/96	1	1.3	BQL
m/p-Xylene	9/12/96	1	2.6	BQL
o-Xylene	9/12/96	1	2.6	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	37	92
Trifluorotoluene	40	38	95

Comments:

All values corrected for dilution and %solids.

Reviewed By: mn

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-7-3
Client Project ID: NC0360.191
Lab Sample ID: 14375
Lab Project ID: G149-32 %Solids: 77.7

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/12/96	1	1.3	BQL
Bromobenzene	9/12/96	1	2.6	BQL
Bromochloromethane	9/12/96	1	1.3	BQL
Bromodichloromethane	9/12/96	1	1.3	BQL
Bromoform	9/12/96	1	2.6	BQL
Bromomethane	9/12/96	1	2.6	BQL
n-Butylbenzene	9/12/96	1	1.3	BQL
sec-Butylbenzene	9/12/96	1	1.3	BQL
tert-Butylbenzene	9/12/96	1	1.3	BQL
Carbon tetrachloride	9/12/96	1	1.3	BQL
Chlorobenzene	9/12/96	1	1.3	BQL
Chloroethane	9/12/96	1	1.3	BQL
Chloroform	9/12/96	1	1.3	BQL
Chloromethane	9/12/96	1	1.3	BQL
2-Chlorotoluene	9/12/96	1	1.3	BQL
4-Chlorotoluene	9/12/96	1	2.6	BQL
Dibromochloromethane	9/12/96	1	1.3	BQL
1,2-Dibromo-3-chloropropane	9/12/96	1	1.3	BQL
1,2-Dibromoethane (EDB)	9/12/96	1	1.3	BQL
Dibromomethane	9/12/96	1	1.3	BQL
1,2-Dichlorobenzene	9/12/96	1	1.3	BQL
1,3-Dichlorobenzene	9/12/96	1	1.3	BQL
1,4-Dichlorobenzene	9/12/96	1	1.3	BQL
Dichlorodifluoromethane	9/12/96	1	1.3	BQL
1,1-Dichloroethane	9/12/96	1	1.3	BQL
1,2-Dichloroethane	9/12/96	1	1.3	BQL
1,1-Dichloroethene	9/12/96	1	1.3	BQL
cis-1,2-Dichloroethene	9/12/96	1	1.3	BQL
trans-1,2-Dichloroethene	9/12/96	1	1.3	BQL
1,2-Dichloropropane	9/12/96	1	1.3	BQL
2,2-Dichloropropane	9/12/96	1	2.6	BQL
cis-1,3-Dichloropropene	9/12/96	1	1.3	BQL
trans-1,3-Dichloropropene	9/12/96	1	1.3	BQL
Diisopropyl ether (DIPE)	9/12/96	1	1.3	BQL
Ethylbenzene	9/12/96	1	1.3	BQL
Hexachlorobutadiene	9/12/96	1	1.3	BQL
Isopropylbenzene	9/12/96	1	1.3	BQL
p-Isopropyltoluene	9/12/96	1	1.3	BQL
Methyl-tert butyl ether (MTBE)	9/12/96	1	1.3	BQL
Methylene Chloride	9/12/96	1	6.4	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: SS-7-3
Client Project ID: NC0360.191
Lab Sample ID: 14375
Lab Project ID: G149-32 %Solids: 77.7

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/12/96	1	1.3	BQL
n-Propylbenzene	9/12/96	1	1.3	BQL
Styrene	9/12/96	1	2.6	BQL
1,1,1,2-Tertrachloroethane	9/12/96	1	1.3	BQL
1,1,2,2-Tertrachloroethane	9/12/96	1	1.3	BQL
Tetrachloroethene	9/12/96	1	1.3	BQL
Toluene	9/12/96	1	1.3	BQL
1,2,3-Trichlorobenzene	9/12/96	1	1.3	BQL
1,2,4-Trichlorobenzene	9/12/96	1	1.3	BQL
1,1,1-Trichloroethane	9/12/96	1	1.3	BQL
1,1,2-Trichloroethane	9/12/96	1	1.3	BQL
Trichloroethene	9/12/96	1	1.3	BQL
Trichlorofluromethane	9/12/96	1	1.3	BQL
1,2,3-Trichloropropane	9/12/96	1	2.6	BQL
1,2,4-Trimethylbenzene	9/12/96	1	1.3	BQL
1,3,5-Trimethylbenzene	9/12/96	1	2.6	BQL
Vinyl Chloride	9/12/96	1	1.3	BQL
m/p-Xylene	9/12/96	1	2.6	BQL
o-Xylene	9/12/96	1	2.6	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	35	87
Trifluorotoluene	40	38	95

Comments:

All values corrected for dilution and %solids.

Reviewed By: WW

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-8-4
Client Project ID: NC0360.191
Lab Sample ID: 14376
Lab Project ID: G149-32 %Solids: 86.3

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/12/96	1	1.2	BQL
Bromobenzene	9/12/96	1	2.3	BQL
Bromochloromethane	9/12/96	1	1.2	BQL
Bromodichloromethane	9/12/96	1	1.2	BQL
Bromoform	9/12/96	1	2.3	BQL
Bromomethane	9/12/96	1	2.3	BQL
n-Butylbenzene	9/12/96	1	1.2	BQL
sec-Butylbenzene	9/12/96	1	1.2	BQL
tert-Butylbenzene	9/12/96	1	1.2	BQL
Carbon tetrachloride	9/12/96	1	1.2	BQL
Chlorobenzene	9/12/96	1	1.2	BQL
Chloroethane	9/12/96	1	1.2	BQL
Chloroform	9/12/96	1	1.2	BQL
Chloromethane	9/12/96	1	1.2	BQL
2-Chlorotoluene	9/12/96	1	1.2	BQL
4-Chlorotoluene	9/12/96	1	2.3	BQL
Dibromochloromethane	9/12/96	1	1.2	BQL
1,2-Dibromo-3-chloropropane	9/12/96	1	1.2	BQL
1,2-Dibromoethane (EDB)	9/12/96	1	1.2	BQL
Dibromomethane	9/12/96	1	1.2	BQL
1,2-Dichlorobenzene	9/12/96	1	1.2	BQL
1,3-Dichlorobenzene	9/12/96	1	1.2	BQL
1,4-Dichlorobenzene	9/12/96	1	1.2	BQL
Dichlorodifluoromethane	9/12/96	1	1.2	BQL
1,1-Dichloroethane	9/12/96	1	1.2	BQL
1,2-Dichloroethane	9/12/96	1	1.2	BQL
1,1-Dichloroethene	9/12/96	1	1.2	BQL
cis-1,2-Dichloroethene	9/12/96	1	1.2	BQL
trans-1,2-Dichloroethene	9/12/96	1	1.2	BQL
1,2-Dichloropropane	9/12/96	1	1.2	BQL
2,2-Dichloropropane	9/12/96	1	2.3	BQL
cis-1,3-Dichloropropene	9/12/96	1	1.2	BQL
trans-1,3-Dichloropropene	9/12/96	1	1.2	BQL
Diisopropyl ether (DIPE)	9/12/96	1	1.2	BQL
Ethylbenzene	9/12/96	1	1.2	BQL
Hexachlorobutadiene	9/12/96	1	1.2	BQL
Isopropylbenzene	9/12/96	1	1.2	BQL
p-Isopropyltoluene	9/12/96	1	1.2	BQL
Methyl-tert butyl ether (MTBE)	9/12/96	1	1.2	BQL
Methylene Chloride	9/12/96	1	5.8	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: SS-8-4
Client Project ID: NC0360.191
Lab Sample ID: 14376
Lab Project ID: G149-32 %Solids: 86.3

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/12/96	1	1.2	BQL
n-Propylbenzene	9/12/96	1	1.2	BQL
Styrene	9/12/96	1	2.3	BQL
1,1,1,2-Tertrachloroethane	9/12/96	1	1.2	BQL
1,1,2,2-Tertrachloroethane	9/12/96	1	1.2	BQL
Tetrachloroethene	9/12/96	1	1.2	BQL
Toluene	9/12/96	1	1.2	BQL
1,2,3-Trichlorobenzene	9/12/96	1	1.2	BQL
1,2,4-Trichlorobenzene	9/12/96	1	1.2	BQL
1,1,1-Trichloroethane	9/12/96	1	1.2	BQL
1,1,2-Trichloroethane	9/12/96	1	1.2	BQL
Trichloroethene	9/12/96	1	1.2	BQL
Trichlorofluromethane	9/12/96	1	1.2	BQL
1,2,3-Trichloropropane	9/12/96	1	2.3	BQL
1,2,4-Trimethylbenzene	9/12/96	1	1.2	BQL
1,3,5-Trimethylbenzene	9/12/96	1	2.3	BQL
Vinyl Chloride	9/12/96	1	1.2	BQL
m/p-Xylene	9/12/96	1	2.3	BQL
o-Xylene	9/12/96	1	2.3	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	35	87
Trifluorotoluene	40	38	95

Comments:
All values corrected for dilution and %solids.

Reviewed By: [signature]

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-9-4
Client Project ID: NC0360.191
Lab Sample ID: 14377
Lab Project ID: G149-32 %Solids: 84.9

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/12/96	1	1.2	BQL
Bromobenzene	9/12/96	1	2.4	BQL
Bromochloromethane	9/12/96	1	1.2	BQL
Bromodichloromethane	9/12/96	1	1.2	BQL
Bromoform	9/12/96	1	2.4	BQL
Bromomethane	9/12/96	1	2.4	BQL
n-Butylbenzene	9/12/96	1	1.2	BQL
sec-Butylbenzene	9/12/96	1	1.2	BQL
tert-Butylbenzene	9/12/96	1	1.2	BQL
Carbon tetrachloride	9/12/96	1	1.2	BQL
Chlorobenzene	9/12/96	1	1.2	BQL
Chloroethane	9/12/96	1	1.2	BQL
Chloroform	9/12/96	1	1.2	BQL
Chloromethane	9/12/96	1	1.2	BQL
2-Chlorotoluene	9/12/96	1	1.2	BQL
4-Chlorotoluene	9/12/96	1	2.4	BQL
Dibromochloromethane	9/12/96	1	1.2	BQL
1,2-Dibromo-3-chloropropane	9/12/96	1	1.2	BQL
1,2-Dibromoethane (EDB)	9/12/96	1	1.2	BQL
Dibromomethane	9/12/96	1	1.2	BQL
1,2-Dichlorobenzene	9/12/96	1	1.2	BQL
1,3-Dichlorobenzene	9/12/96	1	1.2	BQL
1,4-Dichlorobenzene	9/12/96	1	1.2	BQL
Dichlorodifluoromethane	9/12/96	1	1.2	BQL
1,1-Dichloroethane	9/12/96	1	1.2	BQL
1,2-Dichloroethane	9/12/96	1	1.2	BQL
1,1-Dichloroethene	9/12/96	1	1.2	BQL
cis-1,2-Dichloroethene	9/12/96	1	1.2	BQL
trans-1,2-Dichloroethene	9/12/96	1	1.2	BQL
1,2-Dichloropropane	9/12/96	1	1.2	BQL
2,2-Dichloropropane	9/12/96	1	2.4	BQL
cis-1,3-Dichloropropene	9/12/96	1	1.2	BQL
trans-1,3-Dichloropropene	9/12/96	1	1.2	BQL
Diisopropyl ether (DIPE)	9/12/96	1	1.2	BQL
Ethylbenzene	9/12/96	1	1.2	BQL
Hexachlorobutadiene	9/12/96	1	1.2	BQL
Isopropylbenzene	9/12/96	1	1.2	BQL
p-Isopropyltoluene	9/12/96	1	1.2	BQL
Methyl-tert butyl ether (MTBE)	9/12/96	1	1.2	BQL
Methylene Chloride	9/12/96	1	5.9	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: SS-9-4
Client Project ID: NC0360.191
Lab Sample ID: 14377
Lab Project ID: G149-32 %Solids: 84.9

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/12/96	1	1.2	BQL
n-Propylbenzene	9/12/96	1	1.2	BQL
Styrene	9/12/96	1	2.4	BQL
1,1,1,2-Tertrachloroethane	9/12/96	1	1.2	BQL
1,1,2,2-Tertrachloroethane	9/12/96	1	1.2	BQL
Tetrachloroethene	9/12/96	1	1.2	BQL
Toluene	9/12/96	1	1.2	BQL
1,2,3-Trichlorobenzene	9/12/96	1	1.2	BQL
1,2,4-Trichlorobenzene	9/12/96	1	1.2	BQL
1,1,1-Trichloroethane	9/12/96	1	1.2	BQL
1,1,2-Trichloroethane	9/12/96	1	1.2	BQL
Trichloroethene	9/12/96	1	1.2	BQL
Trichlorofluromethane	9/12/96	1	1.2	BQL
1,2,3-Trichloropropane	9/12/96	1	2.4	BQL
1,2,4-Trimethylbenzene	9/12/96	1	1.2	BQL
1,3,5-Trimethylbenzene	9/12/96	1	2.4	BQL
Vinyl Chloride	9/12/96	1	1.2	BQL
m/p-Xylene	9/12/96	1	2.4	BQL
o-Xylene	9/12/96	1	2.4	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	36	90
Trifluorotoluene	40	38	95

Comments:

All values corrected for dilution and %solids.

Reviewed By: lm

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: REP-01-SS
Client Project ID: NC0360.191
Lab Sample ID: 14378
Lab Project ID: G149-32 %Solids: 72.0

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/12/96	1	1.4	BQL
Bromobenzene	9/12/96	1	2.8	BQL
Bromochloromethane	9/12/96	1	1.4	BQL
Bromodichloromethane	9/12/96	1	1.4	BQL
Bromoform	9/12/96	1	2.8	BQL
Bromomethane	9/12/96	1	2.8	BQL
n-Butylbenzene	9/12/96	1	1.4	BQL
sec-Butylbenzene	9/12/96	1	1.4	BQL
tert-Butylbenzene	9/12/96	1	1.4	BQL
Carbon tetrachloride	9/12/96	1	1.4	BQL
Chlorobenzene	9/12/96	1	1.4	BQL
Chloroethane	9/12/96	1	1.4	BQL
Chloroform	9/12/96	1	1.4	BQL
Chloromethane	9/12/96	1	1.4	BQL
2-Chlorotoluene	9/12/96	1	1.4	BQL
4-Chlorotoluene	9/12/96	1	2.8	BQL
Dibromochloromethane	9/12/96	1	1.4	BQL
1,2-Dibromo-3-chloropropane	9/12/96	1	1.4	BQL
1,2-Dibromoethane (EDB)	9/12/96	1	1.4	BQL
Dibromomethane	9/12/96	1	1.4	BQL
1,2-Dichlorobenzene	9/12/96	1	1.4	BQL
1,3-Dichlorobenzene	9/12/96	1	1.4	BQL
1,4-Dichlorobenzene	9/12/96	1	1.4	BQL
Dichlorodifluoromethane	9/12/96	1	1.4	BQL
1,1-Dichloroethane	9/12/96	1	1.4	BQL
1,2-Dichloroethane	9/12/96	1	1.4	BQL
1,1-Dichloroethene	9/12/96	1	1.4	BQL
cis-1,2-Dichloroethene	9/12/96	1	1.4	BQL
trans-1,2-Dichloroethene	9/12/96	1	1.4	BQL
1,2-Dichloropropane	9/12/96	1	1.4	BQL
2,2-Dichloropropane	9/12/96	1	2.8	BQL
cis-1,3-Dichloropropene	9/12/96	1	1.4	BQL
trans-1,3-Dichloropropene	9/12/96	1	1.4	BQL
Diisopropyl ether (DIPE)	9/12/96	1	1.4	BQL
Ethylbenzene	9/12/96	1	1.4	BQL
Hexachlorobutadiene	9/12/96	1	1.4	BQL
Isopropylbenzene	9/12/96	1	1.4	BQL
p-Isopropyltoluene	9/12/96	1	1.4	BQL
Methyl-tert butyl ether (MTBE)	9/12/96	1	1.4	BQL
Methylene Chloride	9/12/96	1	7.0	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: REP-01-SS
Client Project ID: NC0360.191
Lab Sample ID: 14378
Lab Project ID: G149-32 %Solids: 72.0

Analyzed By: CKC
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/12/96	1	1.4	BQL
n-Propylbenzene	9/12/96	1	1.4	BQL
Styrene	9/12/96	1	2.8	BQL
1,1,1,2-Tertrachloroethane	9/12/96	1	1.4	BQL
1,1,2,2-Tertrachloroethane	9/12/96	1	1.4	BQL
Tetrachloroethene	9/12/96	1	1.4	BQL
Toluene	9/12/96	1	1.4	BQL
1,2,3-Trichlorobenzene	9/12/96	1	1.4	BQL
1,2,4-Trichlorobenzene	9/12/96	1	1.4	BQL
1,1,1-Trichloroethane	9/12/96	1	1.4	BQL
1,1,2-Trichloroethane	9/12/96	1	1.4	BQL
Trichloroethene	9/12/96	1	1.4	BQL
Trichlorofluromethane	9/12/96	1	1.4	BQL
1,2,3-Trichloropropane	9/12/96	1	2.8	BQL
1,2,4-Trimethylbenzene	9/12/96	1	1.4	BQL
1,3,5-Trimethylbenzene	9/12/96	1	2.8	BQL
Vinyl Chloride	9/12/96	1	1.4	BQL
m/p-Xylene	9/12/96	1	2.8	BQL
o-Xylene	9/12/96	1	2.8	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	36	90
Trifluorotoluene	40	38	95

Comments:

All values corrected for dilution and %solids.

Reviewed By: [signature]

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: TB-01-(08/29/96)
Client Project ID: NC0360.191
Lab Sample ID: 14379
Lab Project ID: G149-32

Analyzed By: RNP
Date Collected: 08/29/96
Date Received: 08/30/96
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	09/07/96	1	1.0	BQL
Bromobenzene	09/07/96	1	2.0	BQL
Bromochloromethane	09/07/96	1	1.0	BQL
Bromodichloromethane	09/07/96	1	1.0	BQL
Bromoform	09/07/96	1	2.0	BQL
Bromomethane	09/07/96	1	2.0	BQL
n-Butylbenzene	09/07/96	1	1.0	BQL
sec-Butylbenzene	09/07/96	1	1.0	BQL
tert-Butylbenzene	09/07/96	1	1.0	BQL
Carbon tetrachloride	09/07/96	1	1.0	BQL
Chlorobenzene	09/07/96	1	1.0	BQL
Chloroethane	09/07/96	1	1.0	BQL
Chloroform	09/07/96	1	1.0	BQL
Chloromethane	09/07/96	1	1.0	BQL
2-Chlorotoluene	09/07/96	1	1.0	BQL
4-Chlorotoluene	09/07/96	1	2.0	BQL
Dibromochloromethane	09/07/96	1	1.0	BQL
1,2-Dibromo-3-chloropropane	09/07/96	1	1.0	BQL
1,2-Dibromoethane (EDB)	09/07/96	1	1.0	BQL
Dibromomethane	09/07/96	1	1.0	BQL
1,2-Dichlorobenzene	09/07/96	1	1.0	BQL
1,3-Dichlorobenzene	09/07/96	1	1.0	BQL
1,4-Dichlorobenzene	09/07/96	1	1.0	BQL
Dichlorodifluoromethane	09/07/96	1	5.0	BQL
1,1-Dichloroethane	09/07/96	1	1.0	BQL
1,2-Dichloroethane	09/07/96	1	1.0	BQL
1,1-Dichloroethene	09/07/96	1	1.0	BQL
cis-1,2-Dichloroethene	09/07/96	1	1.0	BQL
trans-1,2-Dichloroethene	09/07/96	1	1.0	BQL
1,2-Dichloropropane	09/07/96	1	1.0	BQL
2,2-Dichloropropane	09/07/96	1	2.0	BQL
cis-1,3-Dichloropropene	09/07/96	1	1.0	BQL
trans-1,3-Dichloropropene	09/07/96	1	1.0	BQL
Diisopropyl ether (DIPE)	09/07/96	1	1.0	BQL
Ethylbenzene	09/07/96	1	1.0	BQL
Hexachlorobutadiene	09/07/96	1	1.0	BQL
Isopropylbenzene	09/07/96	1	1.0	BQL
p-Isopropyltoluene	09/07/96	1	1.0	BQL
Methyl-tert butyl ether (MTBE)	09/07/96	1	1.0	BQL
Methylene Chloride	09/07/96	1	5.0	BQL

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: TB-01-(08/29/96)
Client Project ID: NC0360.191
Lab Sample ID: 14379
Lab Project ID: G149-32

Analyzed By: RNP
Date Collected: 08/29/96
Date Received: 08/30/96
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Naphthalene	09/07/96	1	1.0	BQL
n-Propylbenzene	09/07/96	1	1.0	BQL
Styrene	09/07/96	1	2.0	BQL
1,1,1,2-Tertrachloroethane	09/07/96	1	1.0	BQL
1,1,2,2-Tertrachloroethane	09/07/96	1	1.0	BQL
Tetrachloroethene	09/07/96	1	1.0	BQL
Toluene	09/07/96	1	1.0	BQL
1,2,3-Trichlorobenzene	09/07/96	1	1.0	BQL
1,2,4-Trichlorobenzene	09/07/96	1	1.0	BQL
1,1,1-Trichloroethane	09/07/96	1	1.0	BQL
1,1,2-Trichloroethane	09/07/96	1	1.0	BQL
Trichloroethene	09/07/96	1	1.0	BQL
Trichlorofluromethane	09/07/96	1	1.0	BQL
1,2,3-Trichloropropane	09/07/96	1	2.0	BQL
1,2,4-Trimethylbenzene	09/07/96	1	1.0	BQL
1,3,5-Trimethylbenzene	09/07/96	1	2.0	BQL
Vinyl Chloride	09/07/96	1	1.0	BQL
m/p-Xylene	09/07/96	1	2.0	BQL
o-Xylene	09/07/96	1	2.0	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	38	95
Trifluorotoluene	40	40	100

Comments:

All values corrected for dilution.
Revision #10099601
Revision Date: 10/09/96

Reviewed By: MN

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: EB-01-SS
Client Project ID: NC0360.191
Lab Sample ID: 14380
Lab Project ID: G149-32

Analyzed By: RNP
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	9/7/96	1	1.0	BQL
Bromobenzene	9/7/96	1	2.0	BQL
Bromochloromethane	9/7/96	1	1.0	BQL
Bromodichloromethane	9/7/96	1	1.0	BQL
Bromoform	9/7/96	1	2.0	BQL
Bromomethane	9/7/96	1	2.0	BQL
n-Butylbenzene	9/7/96	1	1.0	BQL
sec-Butylbenzene	9/7/96	1	1.0	BQL
tert-Butylbenzene	9/7/96	1	1.0	BQL
Carbon tetrachloride	9/7/96	1	1.0	BQL
Chlorobenzene	9/7/96	1	1.0	BQL
Chloroethane	9/7/96	1	1.0	BQL
Chloroform	9/7/96	1	1.0	BQL
Chloromethane	9/7/96	1	1.0	BQL
2-Chlorotoluene	9/7/96	1	1.0	BQL
4-Chlorotoluene	9/7/96	1	2.0	BQL
Dibromochloromethane	9/7/96	1	1.0	BQL
1,2-Dibromo-3-chloropropane	9/7/96	1	1.0	BQL
1,2-Dibromoethane (EDB)	9/7/96	1	1.0	BQL
Dibromomethane	9/7/96	1	1.0	BQL
1,2-Dichlorobenzene	9/7/96	1	1.0	BQL
1,3-Dichlorobenzene	9/7/96	1	1.0	BQL
1,4-Dichlorobenzene	9/7/96	1	1.0	BQL
Dichlorodifluoromethane	9/7/96	1	1.0	BQL
1,1-Dichloroethane	9/7/96	1	1.0	BQL
1,2-Dichloroethane	9/7/96	1	1.0	BQL
1,1-Dichloroethene	9/7/96	1	1.0	BQL
cis-1,2-Dichloroethene	9/7/96	1	1.0	BQL
trans-1,2-Dichloroethene	9/7/96	1	1.0	BQL
1,2-Dichloropropane	9/7/96	1	1.0	BQL
2,2-Dichloropropane	9/7/96	1	2.0	BQL
cis-1,3-Dichloropropene	9/7/96	1	1.0	BQL
trans-1,3-Dichloropropene	9/7/96	1	1.0	BQL
Diisopropyl ether (DIPE)	9/7/96	1	1.0	BQL
Ethylbenzene	9/7/96	1	1.0	BQL
Hexachlorobutadiene	9/7/96	1	1.0	BQL
Isopropylbenzene	9/7/96	1	1.0	BQL
p-Isopropyltoluene	9/7/96	1	1.0	BQL
Methyl-tert butyl ether (MTBE)	9/7/96	1	1.0	BQL
Methylene Chloride	9/7/96	1	5.0	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles
by GC 8021

Client Sample ID: EB-01-SS
Client Project ID: NC0360.191
Lab Sample ID: 14380
Lab Project ID: G149-32

Analyzed By: RNP
Date Collected: 8/29/96
Date Received: 8/30/96
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Naphthalene	9/7/96	1	1.0	BQL
n-Propylbenzene	9/7/96	1	1.0	BQL
Styrene	9/7/96	1	2.0	BQL
1,1,1,2-Tertrachloroethane	9/7/96	1	1.0	BQL
1,1,2,2-Tertrachloroethane	9/7/96	1	1.0	BQL
Tetrachloroethene	9/7/96	1	1.0	BQL
Toluene	9/7/96	1	1.0	BQL
1,2,3-Trichlorobenzene	9/7/96	1	1.0	BQL
1,2,4-Trichlorobenzene	9/7/96	1	1.0	BQL
1,1,1-Trichloroethane	9/7/96	1	1.0	BQL
1,1,2-Trichloroethane	9/7/96	1	1.0	BQL
Trichloroethene	9/7/96	1	1.0	BQL
Trichlorofluromethane	9/7/96	1	1.0	BQL
1,2,3-Trichloropropane	9/7/96	1	2.0	BQL
1,2,4-Trimethylbenzene	9/7/96	1	1.0	BQL
1,3,5-Trimethylbenzene	9/7/96	1	2.0	BQL
Vinyl Chloride	9/7/96	1	1.0	BQL
m/p-Xylene	9/7/96	1	2.0	BQL
o-Xylene	9/7/96	1	2.0	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	38	95
Trifluorotoluene	40	40	100

Comments:
All values corrected for dilution.

Reviewed By: MN

Flags:
BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: VBLK090696
Client Project ID: NC0360.191
Lab Sample ID:
Lab Project ID: G149-32

Analyzed By: RNP
Date Collected:
Date Received:
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Benzene	9/7/96	1	1.0	BQL
Bromobenzene	9/7/96	1	2.0	BQL
Bromochloromethane	9/7/96	1	1.0	BQL
Bromodichloromethane	9/7/96	1	1.0	BQL
Bromoform	9/7/96	1	2.0	BQL
Bromomethane	9/7/96	1	2.0	BQL
n-Butylbenzene	9/7/96	1	1.0	BQL
sec-Butylbenzene	9/7/96	1	1.0	BQL
tert-Butylbenzene	9/7/96	1	1.0	BQL
Carbon tetrachloride	9/7/96	1	1.0	BQL
Chlorobenzene	9/7/96	1	1.0	BQL
Chloroethane	9/7/96	1	1.0	BQL
Chloroform	9/7/96	1	1.0	BQL
Chloromethane	9/7/96	1	1.0	BQL
2-Chlorotoluene	9/7/96	1	1.0	BQL
4-Chlorotoluene	9/7/96	1	2.0	BQL
Dibromochloromethane	9/7/96	1	1.0	BQL
1,2-Dibromo-3-chloropropane	9/7/96	1	1.0	BQL
1,2-Dibromoethane (EDB)	9/7/96	1	1.0	BQL
Dibromomethane	9/7/96	1	1.0	BQL
1,2-Dichlorobenzene	9/7/96	1	1.0	BQL
1,3-Dichlorobenzene	9/7/96	1	1.0	BQL
1,4-Dichlorobenzene	9/7/96	1	1.0	BQL
Dichlorodifluoromethane	9/7/96	1	1.0	BQL
1,1-Dichloroethane	9/7/96	1	1.0	BQL
1,2-Dichloroethane	9/7/96	1	1.0	BQL
1,1-Dichloroethene	9/7/96	1	1.0	BQL
cis-1,2-Dichloroethene	9/7/96	1	1.0	BQL
trans-1,2-Dichloroethene	9/7/96	1	1.0	BQL
1,2-Dichloropropane	9/7/96	1	1.0	BQL
2,2-Dichloropropane	9/7/96	1	2.0	BQL
cis-1,3-Dichloropropene	9/7/96	1	1.0	BQL
trans-1,3-Dichloropropene	9/7/96	1	1.0	BQL
Diisopropyl ether (DIPE)	9/7/96	1	1.0	BQL
Ethylbenzene	9/7/96	1	1.0	BQL
Hexachlorobutadiene	9/7/96	1	1.0	BQL
Isopropylbenzene	9/7/96	1	1.0	BQL
p-Isopropyltoluene	9/7/96	1	1.0	BQL
Methyl-tert butyl ether (MTBE)	9/7/96	1	1.0	BQL
Methylene Chloride	9/7/96	1	5.0	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: VBLK090696
Client Project ID: NC0360.191
Lab Sample ID:
Lab Project ID: G149-32

Analyzed By: RNP
Date Collected:
Date Received:
Matrix: Water

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/L)	Result (ug/L)
Naphthalene	9/7/96	1	1.0	BQL
n-Propylbenzene	9/7/96	1	1.0	BQL
Styrene	9/7/96	1	2.0	BQL
1,1,1,2-Tertrachloroethane	9/7/96	1	1.0	BQL
1,1,2,2-Tertrachloroethane	9/7/96	1	1.0	BQL
Tetrachloroethene	9/7/96	1	1.0	BQL
Toluene	9/7/96	1	1.0	BQL
1,2,3-Trichlorobenzene	9/7/96	1	1.0	BQL
1,2,4-Trichlorobenzene	9/7/96	1	1.0	BQL
1,1,1-Trichloroethane	9/7/96	1	1.0	BQL
1,1,2-Trichloroethane	9/7/96	1	1.0	BQL
Trichloroethene	9/7/96	1	1.0	BQL
Trichlorofluromethane	9/7/96	1	1.0	BQL
1,2,3-Trichloropropane	9/7/96	1	2.0	BQL
1,2,4-Trimethylbenzene	9/7/96	1	1.0	BQL
1,3,5-Trimethylbenzene	9/7/96	1	2.0	BQL
Vinyl Chloride	9/7/96	1	1.0	BQL
m/p-Xylene	9/7/96	1	2.0	BQL
o-Xylene	9/7/96	1	2.0	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	36	90
Trifluorotoluene	40	40	100

Comments:

All values corrected for dilution.

Reviewed By: _____

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: VBLK091196
Client Project ID: NC0360.191
Lab Sample ID:
Lab Project ID: G149-32 %Solids: 100.0

Analyzed By: CKC
Date Collected:
Date Received:
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Benzene	9/11/96	1	1.0	BQL
Bromobenzene	9/11/96	1	2.0	BQL
Bromochloromethane	9/11/96	1	1.0	BQL
Bromodichloromethane	9/11/96	1	1.0	BQL
Bromoform	9/11/96	1	2.0	BQL
Bromomethane	9/11/96	1	2.0	BQL
n-Butylbenzene	9/11/96	1	1.0	BQL
sec-Butylbenzene	9/11/96	1	1.0	BQL
tert-Butylbenzene	9/11/96	1	1.0	BQL
Carbon tetrachloride	9/11/96	1	1.0	BQL
Chlorobenzene	9/11/96	1	1.0	BQL
Chloroethane	9/11/96	1	1.0	BQL
Chloroform	9/11/96	1	1.0	BQL
Chloromethane	9/11/96	1	1.0	BQL
2-Chlorotoluene	9/11/96	1	1.0	BQL
4-Chlorotoluene	9/11/96	1	2.0	BQL
Dibromochloromethane	9/11/96	1	1.0	BQL
1,2-Dibromo-3-chloropropane	9/11/96	1	1.0	BQL
1,2-Dibromoethane (EDB)	9/11/96	1	1.0	BQL
Dibromomethane	9/11/96	1	1.0	BQL
1,2-Dichlorobenzene	9/11/96	1	1.0	BQL
1,3-Dichlorobenzene	9/11/96	1	1.0	BQL
1,4-Dichlorobenzene	9/11/96	1	1.0	BQL
Dichlorodifluoromethane	9/11/96	1	1.0	BQL
1,1-Dichloroethane	9/11/96	1	1.0	BQL
1,2-Dichloroethane	9/11/96	1	1.0	BQL
1,1-Dichloroethene	9/11/96	1	1.0	BQL
cis-1,2-Dichloroethene	9/11/96	1	1.0	BQL
trans-1,2-Dichloroethene	9/11/96	1	1.0	BQL
1,2-Dichloropropane	9/11/96	1	1.0	BQL
2,2-Dichloropropane	9/11/96	1	2.0	BQL
cis-1,3-Dichloropropene	9/11/96	1	1.0	BQL
trans-1,3-Dichloropropene	9/11/96	1	1.0	BQL
Diisopropyl ether (DIPE)	9/11/96	1	1.0	BQL
Ethylbenzene	9/11/96	1	1.0	BQL
Hexachlorobutadiene	9/11/96	1	1.0	BQL
Isopropylbenzene	9/11/96	1	1.0	BQL
p-Isopropyltoluene	9/11/96	1	1.0	BQL
Methyl-tert butyl ether (MTBE)	9/11/96	1	1.0	BQL
Methylene Chloride	9/11/96	1	5.0	BQL

Flags:

BQL = Below Quantitation Limit

PARADIGM ANALYTICAL LABORATORIES, INC.

Results for Volatiles

by GC 8021

Client Sample ID: VBLK091196
Client Project ID: NC0360.191
Lab Sample ID:
Lab Project ID: G149-32 %Solids: 100.0

Analyzed By: CKC
Date Collected:
Date Received:
Matrix: Soil

Compound	Date Analyzed	Dilution	Quantitation Limit (ug/KG)	Result (ug/KG)
Naphthalene	9/11/96	1	1.0	BQL
n-Propylbenzene	9/11/96	1	1.0	BQL
Styrene	9/11/96	1	2.0	BQL
1,1,1,2-Tertrachloroethane	9/11/96	1	1.0	BQL
1,1,2,2-Tertrachloroethane	9/11/96	1	1.0	BQL
Tetrachloroethene	9/11/96	1	1.0	BQL
Toluene	9/11/96	1	1.0	BQL
1,2,3-Trichlorobenzene	9/11/96	1	1.0	BQL
1,2,4-Trichlorobenzene	9/11/96	1	1.0	BQL
1,1,1-Trichloroethane	9/11/96	1	1.0	BQL
1,1,2-Trichloroethane	9/11/96	1	1.0	BQL
Trichloroethene	9/11/96	1	1.0	BQL
Trichlorofluromethane	9/11/96	1	1.0	BQL
1,2,3-Trichloropropane	9/11/96	1	2.0	BQL
1,2,4-Trimethylbenzene	9/11/96	1	1.0	BQL
1,3,5-Trimethylbenzene	9/11/96	1	2.0	BQL
Vinyl Chloride	9/11/96	1	1.0	BQL
m/p-Xylene	9/11/96	1	2.0	BQL
o-Xylene	9/11/96	1	2.0	BQL

Surrogate Spike Recoveries	Spike Added	Spike Result	Percent Recovered
1,4-Dichlorobutane	40	45	112
Trifluorotoluene	40	41	102

Comments:

All values corrected for dilution and %solids.

Reviewed By: MM

Flags:

BQL = Below Quantitation Limit

Results for MS/MSD

by GC 8021

Client Sample ID: SS-3-4
Client Project ID: NC0360.191
Lab Sample ID: 14368
Lab Project ID: G149-32
Analyzed By: CKC

%Solids: 69.4

Date Analyzed: 09/12/96
Date Collected: 08/29/96
Date Received: 08/30/96
Matrix: Soil

	Sample	Spiked	MS	MSD	Limits Lower	Limits Upper	RPD	Limit Max.
Benzene	BQL	28.8	90.5	87.0	55.0	145.0	3.9	30
Bromobenzene	BQL	28.8	91.6	90.2	59.6	140.4	1.6	30
Bromochloromethane	BQL	28.8	96.3	90.0	71.6	128.4	6.8	30
Bromodichloromethane	BQL	28.8	107.1	101.9	59.4	140.6	5.0	30
Bromoform	BQL	28.8	87.9	83.1	61.5	138.5	5.7	30
Bromomethane	BQL	28.8	57.5	48.3	42.7	157.3	17.5	30
n-Butylbenzene	BQL	28.8	101.9	99.5	43.3	156.7	2.4	30
sec-Butylbenzene	BQL	28.8	99.7	96.1	25.0	175.0	3.7	30
tert-Butylbenzene	BQL	28.8	100.9	97.7	46.0	154.0	3.2	30
Carbon tetrachloride	BQL	28.8	139.7	127.2	24.1	175.9	9.4	30
Chlorobenzene	BQL	28.8	120.2	108.9	34.6	165.4	9.9	30
Chloroethane	BQL	28.8	68.6	57.4	39.1	160.9	17.8	30
Chloroform	BQL	28.8	111.2	106.7	50.4	149.6	4.2	30
Chloromethane	BQL	28.8	25.9	28.2	>0	199.4	8.4	30
2-Chlorotoluene	BQL	28.8	119.0	112.2	16.1	183.9	5.9	30
4-Chlorotoluene	BQL	28.8	119.3	115.7	20.3	179.7	3.0	30
Dibromochloromethane	BQL	28.8	98.1	91.5	61.7	138.3	6.9	30
1,2-Dibromo-3-chloropropane	BQL	28.8	67.0	77.7	55.7	144.3	14.7	30
1,2-Dibromoethane (EDB)	BQL	28.8	89.6	86.4	65.4	134.6	3.7	30
Dibromomethane	BQL	28.8	85.6	80.3	70.5	129.5	6.4	30
1,2-Dichlorobenzene	BQL	28.8	106.4	111.3	21.6	178.4	4.5	30
1,3-Dichlorobenzene	BQL	28.8	113.9	116.2	20.9	179.1	2.0	30
1,4-Dichlorobenzene	BQL	28.8	113.1	118.4	27.9	172.1	4.6	30
Dichlorodifluoromethane	BQL	28.8	27.8 *	21.1 *	43.7	156.3	27.6	30
1,1-Dichloroethane	BQL	28.8	105.9	100.1	55.6	144.4	5.6	30
1,2-Dichloroethane	BQL	28.8	97.0	95.1	74.3	125.7	2.0	30
1,1-Dichloroethene	BQL	28.8	82.2	74.3	42.4	157.6	10.1	30
cis-1,2-Dichloroethene	BQL	28.8	114.0	107.7	63.7	136.3	5.7	30
trans-1,2-Dichloroethene	BQL	28.8	101.4	95.2	43.8	156.2	6.4	30
1,2-Dichloropropane	BQL	28.8	115.9	110.1	59.8	140.2	5.2	30
2,2-Dichloropropane	BQL	28.8	69.8	63.6	24.1	175.9	9.4	30
cis-1,3-Dichloropropene	BQL	28.8	111.7	107.5	41.5	158.5	3.9	30
trans-1,3-Dichloropropene	BQL	28.8	107.8	104.1	57.7	142.3	3.4	30
Diisopropyl ether	BQL	28.8	81.7	78.0	69.1	130.9	4.6	30
Ethylbenzene	BQL	28.8	105.0	101.8	42.9	157.1	3.1	30
Hexachlorobutadiene	BQL	28.8	122.7	124.2	8.2	191.8	1.2	30
Isopropylbenzene	BQL	28.8	100.5	98.7	39.3	160.7	1.7	30
p-Isopropyltoluene	BQL	28.8	97.9	97.0	42.0	158.0	0.9	30
Methyl-tert butyl ether	BQL	28.8	40.9	39.0	21.8	178.2	4.6	30
Methylene Chloride	BQL	28.8	119.6	116.7	>0	335.3	2.5	30
Naphthalene	BQL	28.8	74.5	77.0	40.2	159.8	3.3	30
n-Propylbenzene	BQL	28.8	65.7	63.6	38.9	161.1	3.2	30
Styrene	BQL	28.8	192.6	186.6	>0	213.9	3.2	30
1,1,1,2-Tertrachloroethane	BQL	28.8	114.1	112.6	40.3	159.7	1.3	30
1,1,2,2-Tertrachloroethane	BQL	28.8	183.3	180.4	>0	263.8	1.6	30
Tetrachloroethene	BQL	28.8	104.6	110.5	44.0	156.0	5.5	30
Toluene	BQL	28.8	96.3	92.9	50.4	149.6	3.6	30
1,2,3-Trichlorobenzene	BQL	28.8	111.6	117.4	26.2	173.8	5.1	30
1,2,4-Trichlorobenzene	BQL	28.8	124.5	127.5	19.5	180.5	2.4	30
1,1,1-Trichloroethane	BQL	28.8	110.6	104.7	35.3	164.7	5.5	30

Results for MS/MSD

by GC 8021

Client Sample ID: SS-3-4
Client Project ID: NC0360.191
Lab Sample ID: 14368
Lab Project ID: G149-32
Analyzed By: CKC

%Solids: 69.4

Date Analyzed: 09/12/96
Date Collected: 08/29/96
Date Received: 08/30/96
Matrix: Soil

	Sample	Spiked	MS	MSD	Limits Lower	Limits Upper	RPD	Limit Max.
1,1,2-Trichloroethane	BQL	28.8	106.8	102.3	67.7	132.3	4.3	30
Trichloroethene	BQL	28.8	112.1	105.5	40.8	159.2	6.0	30
Trichlorofluromethane	BQL	28.8	71.3	61.5	27.0	173.0	14.7	30
1,2,3-Trichloropropane	BQL	28.8	91.6	90.2	59.6	140.4	1.6	30
1,2,4-Trimethylbenzene	BQL	28.8	103.1	99.9	35.4	164.6	3.2	30
1,3,5-Trimethylbenzene	BQL	28.8	100.9	97.9	27.5	172.5	3.1	30
Vinyl Chloride	BQL	28.8	40.6 *	35.4 *	52.8	147.2	13.6	30
m/p-Xylene	BQL	57.6	97.0	92.8	43.0	157.0	4.5	30
o-Xylene	BQL	28.8	96.3	93.3	63.1	136.9	3.2	30

Comments:

Concentrations are corrected for dry weight.

Flags:

* = Out of limits.
NA = Not applicable
BQL = Below quantitation limit.

Reviewed By: MM

Results for Labortory Control Spike (LCS)

by GC 8021

Client Sample ID: LCS091196
Client Project ID: NC0360.191
Lab Sample ID: None assigned
Lab Project ID: G149-32

%Solids: 100.0

Analyst: CKC
Date Collected: Not applicable
Date Received: Not applicable
Matrix: Soil

	Spiked	LCS	Limits Lower	Limits Upper
Benzene	20	107.1	41.6	158.4
Bromobenzene	20	105.8	13.9	186.1
Bromochloromethane	20	105.8	>0	201.1
Bromodichloromethane	20	111.5	8.1	191.9
Bromoform	20	106.2	18.5	181.5
Bromomethane	20	71.3	17.5	182.5
n-Butylbenzene	20	51.3	33.3	166.7
sec-Butylbenzene	20	112.7	37.3	162.7
tert-Butylbenzene	20	109.2	35.9	164.1
Carbon tetrachloride	20	81.8	15.2	184.8
Chlorobenzene	20	112.8	13.6	186.4
Chloroethane	20	86.6	13.6	186.4
Chloroform	20	117.3	7.4	192.6
Chloromethane	20	86.6	10.9	189.1
2-Chlorotoluene	20	114.9	10.9	189.1
4-Chlorotoluene	20	113.9	6.8	193.2
Dibromochloromethane	20	102.4	8.1	191.9
1,2-Dibromo-3-chloropropane	20	114.0	26.3	173.7
1,2-Dibromoethane (EDB)	20	109.1	>0	206.3
Dibromomethane	20	109.1	>0	202.5
1,2-Dichlorobenzene	20	113.6	5.3	194.7
1,3-Dichlorobenzene	20	114.9	9.9	190.1
1,4-Dichlorobenzene	20	113.9	0.7	199.3
Dichlorodifluoromethane	20	42.4	6.8	193.2
1,1-Dichloroethane	20	113.9	10.0	190.0
1,2-Dichloroethane	20	113.4	>0	203.0
1,1-Dichloroethene	20	104.8	16.4	183.6
cis-1,2-Dichloroethene	20	117.4	19.4	180.6
trans-1,2-Dichloroethene	20	110.4	11.7	188.3
1,2-Dichloropropane	20	118.3	9.7	190.3
2,2-Dichloropropane	20	117.4	15.2	184.8
cis-1,3-Dichloropropene	20	115.0	5.1	194.9
trans-1,3-Dichloropropene	20	109.9	8.5	191.5
Diisopropyl ether	20	105.8	30.1	169.9
Ethylbenzene	20	126.8	41.5	158.5
Hexachlorobutadiene	20	108.3	11.3	188.7
Isopropylbenzene	20	113.8	40.4	159.6
p-Isopropyltoluene	20	52.6	41.4	158.6
Methyl-tert butyl ether	20	67.2	34.6	165.4
Methylene Chloride	20	105.1	>0	261.9
Naphthalene	20	105.4	37.6	162.4
n-Propylbenzene	20	76.6	41.5	158.5
Styrene	20	108.9	10.2	189.8
1,1,1,2-Tertrachloroethane	20	59.6	6.5	193.5
1,1,2,2-Tertrachloroethane	20	110.2	>0	209.1
Tetrachloroethene	20	111.4	77.6	122.4
Toluene	20	126.8	40.3	159.7
1,2,3-Trichlorobenzene	20	108.5	3.5	196.5
1,2,4-Trichlorobenzene	20	113.4	16.8	183.2
1,1,1-Trichloroethane	20	119.4	26.5	173.5

Results for Labortory Control Spike (LCS)

by GC 8021

Client Sample ID: LCS091196
Client Project ID: NC0360.191
Lab Sample ID: None assigned
Lab Project ID: G149-32

Analyst: CKC
Date Collected: Not applicable
Date Received: Not applicable
%Solids: 100.0
Matrix: Soil

	Spiked	LCS	Limits Lower	Limits Upper
1,1,2-Trichloroethane	20	112.4	7.9	192.1
Trichloroethene	20	121.8	21.9	178.1
Trichlorofluromethane	20	90.8	6.8	193.2
1,2,3-Trichloropropane	20	110.2	62.7	137.3
1,2,4-Trimethylbenzene	20	112.7	37.7	162.3
1,3,5-Trimethylbenzene	20	109.0	42.1	157.9
Vinyl Chloride	20	69.4	14.5	185.5
m/p-Xylene	40	114.7	>0	239.5
o-Xylene	20	108.9	35.6	164.4

Comments:

Concentration values are on column amount.

Flags:

* = Out of limits.
NA = Not applicable

Reviewed By: [signature]