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REMEDIAL INVESTIGATION WORKPLAN – ADDENDUM

FOR

R.D. PATE ESTATE

101 East Main Street
Pikeville, Wayne County, North Carolina

SITE ID: NONCD0002795

Latitude: 35° 29' 51.46" North Longitude: 77° 58' 59.91" West

June 11, 2012

PREPARED FOR
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EA Project No. 07-7019.8

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July 13, 2012

-TRANSMITTAL LETTER-

Ms. Janet K. Macdonald, P.G.
REC Program
Inactive Hazardous Sites Branch, Superfund Section
NCDENR
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

Reference: **REMEDIAL INVESTIGATION WORKPLAN - ADDENDUM & QUARTERLY UPDATE**
R. D. PATE EASTATE
101 East Main Street
Pikeville, Wayne County, North Carolina
Site ID No. NONCD0002795

Dear Ms. Macdonald:

Please find enclosed for your review and comment the Remedial Investigation Workplan-Addendum, which summarizes previous Remedial Investigation activities and describes proposed additional assessment activities in order to complete the Remedial Investigation. In addition, the RI Workplan – Addendum provides information that serves as the Quaterly Update for July 15, 2012.

In response to the Notice of Violation (NOV) received from the NCDENR dated May 17, 2012, remedial activities and associated updates for the site were previously delayed. The delays were a result of various conditions, including several changes to our client's project manager position and associated monetary concerns. In addition, EA had previously been awaiting information pertaining to the demolition of the on-site building, which EA was recently informed had been completed. EA personnel recently conducted a site inspection on June 18, 2012 to assess the current site conditions since the demolition of the site building.

As discussed in our conference call with NCDENR personnel on June 28, 2012, EA understands the Remedial Investigation including Quarterly Updates should have continued despite any complications. EA would like to re-emphasize our commitment to remediating the site in compliance with IHSB guidelines in a timely and efficient manner moving forward.

R.D. Pate Estate
101 East Main Street
Pikeville, Wayne County, North Carolina
EA Project No. 07-7019.8
June 13, 2012

The following schedule has been developed for the additional Remedial Investigation Workplan – Addendum activities, Quarterly Updates, and subsequent actions at the R. D. Pate facility:

Submittal of Remedial Investigation Work Plan-Addendum to NCDENR	**7/15/2012**
Submittal of Quarterly Update to NCDENR	7/15/2012
Implementation of additional Remedial Investigation Workplan -Addendum	7/15/2012
Submittal of Quarterly Update to NCDENR	10/15/2012
Submittal of final Remedial Investigation (RI) Report to NCDENR	**12/30/2012**
Implementation of Remedial Action planning to include feasibility study and remedial design	1/1/2013
Submittal of Quarterly Update to NCDENR	1/15/2013
Submittal of Quarterly Update to NCDENR	4/15/2013
Submittal of Remedial Action (RA) Plan to NCDENR	**6/11/2013**

If you have any questions, please contact me at 704-846-8853. Thank you for your cooperation in this matter.

Sincerely,

EnviroAssessments, PLLC

Gary K. Sawyer, L.G., RSM
Attachment

TABLE OF CONTENTS

Page Number

1.0 INTRODUCTION 1

2.0 REMEDIAL INVESTIGATION WORKPLAN/BACKGROUND 1

3.0 SUMMARY OF RECENT REMEDIAL INVESTIGATION-PHASE I ACTIVITIES 2

4.0 PROPOSED ADDITIONAL REMEDIAL INVESTIGATION - ADDENDUM 4

5.0 REMEDIAL INVESTIGATION REPORT 14

6.0 SCHEDULE 15

7.0 CERTIFICATIONS 15

Tables

Table 1: Soil Analytical Results (Phase I Remedial Investigation)
Table 2: Groundwater Analytical Results (Phase I Remedial Investigation)
Table 3: Monitoring Well Construction/Water Level Information

Figures

Figure 1: Site Location Map
Figure 2: Site Plan -Overview
Figure 3a: 1,1,2,2-Trichloroethane Soil Isoconcentration Map
Figure 3b: Trichloroethene (TCE) Soil Isoconcentration Map
Figure 4: Shallow Groundwater Potentiometric Map
Figure 5a: 1,1,2,2-Trichloroethane Groundwater Isoconcentration Map
Figure 5b: Trichloroethene (TCE) Groundwater Isoconcentration Map
Figure 6: Proposed Groundwater Monitoring Well Locations

R.D. Pate Estate
101 East Main Street
Pikeville, Wayne County, North Carolina
EA Project No. 07-7019.8
June 11, 2012

1.0 INTRODUCTION

This Remedial Investigation (RI) Workplan - Addendum describes additional Phase One Remedial Investigation activities to be completed at the R. D. Pate Estate site located in Pikeville, Wayne County, North Carolina (hereinafter referred to as "the Project," Subject Site or Site). The purpose of this Remedial Investigation Work Plan – Addendum is to describe the approach and methods to be used to further assess environmental contamination at the R. D. Pate Estate site. On June 11, 2008, EA entered into an Administrative Agreement with Ms. Pamela Watson, Branch Banking and Trust Company, Executor and Trustee for the R.D. Pate Family Trust to enter into the Registered Environmental Consultant (REC) Program under the direction of the NCDENR IHSB pursuant the Inactive Hazardous Sites Act of 1987 (N.C.G.S. 130A-310 *et seq.*). This Remedial Investigation Workplan – Addendum reports the results of the Remedial Investigation assessment at the site to date and describes the tasks necessary to further delineate the lateral and vertical extent of the identified areas of soil and/or groundwater contamination.

Previous assessment activities at the site have identified soil and groundwater impact from volatile organic compounds (VOCs). Potential sources of soil and groundwater impact at the Project are a former on-site UST system (previously addressed closure through the NCDENR UST Division) and solvents used at the site during its operation as an automotive repair facility (subject of this investigation). Based on information obtained recently that the site building was demolished in the fall of 2011, EA conducted a site status inspection on June 18, 2012. The former facility building, concrete slab and subsurface features (floor drains, hydraulic lifts, and oil changing pit) were demolished and are no longer present at the site. Therefore, the previously identified AOPC and "interior" soil sampling and monitoring well locations are now exterior locations within the footprint of the former automotive repair facility building. All previously installed on-site and off-site monitoring wells appeared to be intact and operable.

The objectives of the investigation are to (1) assess areas of the site that may pose a potential threat to human health and the environment and (2) delineate the lateral and vertical extent of the identified soil and groundwater contamination at the Project and impacted off-site properties.

2.0 REMEDIAL INVESTIGATION WORKPLAN/BACKGROUND

As part of the REC program requirements, a Remedial Investigation (RI) Workplan, dated March 2010, was prepared and submitted to the IHSB that describes the approach and methods to be used to assess environmental contamination at the R. D. Pate Estate site. The objective of the investigation includes assessing areas of the site that may pose a potential threat to human health and the environment. Assessment activities include data gathering and analysis to evaluate the nature and general extent of contaminants of concern (COC) at the site. The data must be of sufficient quality and quantity to support subsequent site-related activities (e.g., risk assessment/evaluation, feasibility studies, etc.). The RI Workplan summarized the results of previous assessments at the site and describes the tasks necessary to assess the identified areas of potential concern. Also included as part of the Workplan are a Field Sampling and Analysis Plan, a Quality Assurance Project Plan, and a Site Health and Safety Plan.

Previous assessment activities at the site have identified soil and groundwater impact from volatile organic compounds (VOCs). Potential sources of soil and groundwater impact at the Project are a former on-site UST

system (previously addressed closure through the NCDENR UST Division) and solvents used at the site during its operation as an automotive repair facility (subject of this investigation).

Based on previous assessments in 2007/2008 (22 shallow soil sample locations, 7 shallow groundwater monitoring wells, and one (1) deep vertical extent Type III well) the source of the chlorinated solvent-related compounds (TCE and 1,1,2,2-Tetrachloroethane) appeared to be the area of the site located between the south side of the former building and the former UST basin.

The lateral extents of the chlorinated solvent contamination plumes in groundwater have not been defined in the down-gradient direction and the extent of impact to off-site properties has not been determined. The RI Workplan defined specific Areas of Potential Concern (AOPC) identified at the site to be assessed as follows:

- **AOPC # 1 – Former Automobile Service Area**

  One (1) soil sample was collected from this area in June 2008 (SB-1-1) and revealed a 1,1,2,2-Tetrachloroethane concentration of 0.00327 mg/kg, which exceeded its Soil Remediation Goal (SRG) for Human Health and Groundwater (0.0012 mg/kg).

- **AOPC # 2 – Former Grease Trap Area**

  Three (3) soil samples were collected from this area in June 2008 (SB-7-1 through SB-9-1), all of which revealed 1,1,2,2-Tetrachloroethane concentrations which exceeded the Soil Remediation Goal (SRG) for Human Health and Groundwater (0.0012 mg/kg).

- **Other Areas**

  Monitoring wells MW-1 and MW-2, along the western boundary of the site, were the only wells to reveal concentrations of solvent-related compounds. Monitoring well MW-1 revealed a 1,1,2,2-Tetrachloroethane concentration of 9.78 ug/L, which exceeds its respective Groundwater Remediation Goal of 0.2 ug/L. MW-1 also revealed a Trichloroethene concentration of 2.71 ug/L, which does not exceed the Groundwater Remediation Goal of 3 ug/L. Laboratory analysis of MW-2 revealed a minor concentration of cis-1,2 Dichloroethene (21 ug/L), which did not exceed its respective Groundwater Remediation Goal of 70 ug/L. In order to thoroughly delineate groundwater contamination on-site, the RI Workplan proposed groundwater sampling in on-site and off-site areas not previously investigated in great detail. In addition, historical groundwater data indicates that solvent-related compounds west of MW-1 and southwest of MW-2 require further delineation.

3.0 SUMMARY OF RECENT REMEDIAL INVESTIGATION–PHASE I ACTIVITIES

In March and April 2011, EA conducted additional Remedial Investigation activities at the site to further evaluate the nature, extent and magnitude of contamination identified in prior assessments. The additional activities involved detailed underground utility locating/mapping, the collection of 16 additional soil samples in the suspected areas of concern, the installation 6 (six) additional groundwater monitoring wells, low-flow groundwater sampling of all existing and recently installed monitoring wells, and State of North Carolina licensed surveyor used to survey soil sample and monitoring well locations and elevations and other pertinent site features. All soil and groundwater samples were analyzed for the 13 priority pollutant metals by EPA methods 6010/7471; semi-volatiles organic compounds (SVOCs) by method 8270 and volatile organic compounds (VOCs) by method 8260.

Soil Assessment

In March 2011, 16 additional soil borings were advanced at the site to assess subsurface conditions in areas of concern not previously investigated, and to better define conditions in those areas previously investigated. Soil borings were advanced to depths of approximately 12 to 16 inches below grade due to the shallow depth to groundwater of approximately 2.5 to 4.5 feet below ground surface. Soil boring locations are presented on the attached Site Plan- Overview (**Figure 2**). Soil Isoconcentration Maps are attached as **Figures 3a** and **3b**.

Six additional soil samples were collected in/near **AOPC #1**. Only one of the soil samples revealed solvent contamination (1,1,2,2-Tetrachloroethane) which exceeded its Protection of Groundwater SRG. In addition, some metals concentrations exceeded the Protection of Health and/or Groundwater SRGs in this area. The extent of solvent-related soil contamination in AOPC #1 appears to be defined and limited in extent to the subject site.

Seven additional soil samples were collected in/near **AOPC #2**. Three of the soil samples revealed solvent contamination concentrations similar to June 2008 (1,1,2,2-Tetrachloroethane), in addition to TCE in two samples, which exceeded Protection of Groundwater SRGs. In addition, some metals concentrations exceeded the Protection of Health and/or Groundwater SRGs in this area. The extent of solvent-related soil contamination in AOPC #2 appears to be mostly defined, except it may extend laterally to the north and onto the adjacent property.

Groundwater Assessment

Five intermediate depth groundwater monitoring wells installed to a depth of 28 feet (MW-8 through MW-11 and MW-13) and one additional shallow monitoring well installed to 14 feet (MW-12) were completed in March/April 2011. The locations of the wells are presented on the attached Site Plan – Overview **(Figure 2).** Monitoring Well Construction/Water Level Information is included in **Table 3**. A Shallow Groundwater Potentiometric Map is attached as **Figure 4** and Groundwater Isoconcentration Maps are attached at **Figures 5a** and **5b**. The additional wells were installed to better define lateral and vertical extent of the solvent contaminant plume and in assumed upgradient and downgradient locations. The depth to the unconfined water table ranged from approximately 2.5 to 4.5 feet below ground surface.

Two groundwater monitoring wells (MW-11 and MW-12) were installed off-site and further downgradient of MW-1 and MW-2 in an attempt to define the lateral and vertical limits of the contaminant plume. However, both of these new off-site and downgradient wells revealed that the solvent contamination plume above 2L Standards extends off-site and farther laterally and vertically to the west and southwest. In addition, the 1,1,2,2-Tetrachlroethane concentration in groundwater sample from intermediate well MW-11 exceeded Gross Contamination Levels (GCLs).

Upgradient intermediate well MW-9 on the eastern property boundary revealed one solvent compound above 2L Standards. Solvent contamination was not detected in shallow upgradient monitoring wells MW-4 and MW-7. Solvent contamination was not detected in deep Type III monitoring well DW-2 located near and/or south of the suspected source area (AOPC #2) in a downgradient to cross-gradient location.

Note: Benzene and/or other petroleum-related compounds were detected above 2L Standards in monitoring

wells MW-2, MW-3 and MW-6 during March/April 2011, at lower concentrations compared to June 2008. Also, Benzene was detected above 2L Standards in new monitoring wells MW-8, MW-9 and off-site well MW-12 during March/April 2011. However, the petroleum contamination incident was issued a *Notice of No Further Action* by the DWM on January 7, 2008, and is not being addressed as part of this Remedial Investigation.

Remedial Investigation – Phase I Conclusions

Based on the March/April 2011 groundwater sampling results, several on-site and off-site monitoring wells exhibited chlorinated solvent concentrations that exceeded 15A NCAC 2L groundwater standards. The lateral and vertical extent of the solvent-related groundwater contaminant plume has not been fully defined and appears to extend further off-site in general downgradient directions to the west and southwest of the suspected primary source area (AOPC #2). The downgradient migration of solvent (and petroleum) contaminants may also be influenced by underground utility pathways that are documented to the west and southwest and connected to the suspected primary source area. The extent of solvent contaminated soil appears to be reasonably well defined and may not require further soil sampling.

Therefore, the lateral and vertical extent of the solvent-contaminated groundwater plume will require further delineation in a subsequent phase of monitoring well installations, groundwater sampling and analysis. The additional phase of Remedial Investigation is required in order to fully define the extent of contamination, and to collect the information necessary for remedial action planning, including the feasibility study and remedial design, if appropriate.

4.0 PROPOSED ADDITIONAL REMEDIAL INVESTIGATION – ADDENDUM

Based on information obtained recently that the site building was demolished in the fall of 2011, EA conducted a site status inspection on June 18, 2012. The former facility building, concrete slab and subsurface features (floor drains, hydraulic lifts, and oil changing pit) were demolished and are no longer present at the site. Therefore, the previously identified AOPC and "interior" soil sampling and monitoring well locations are now exterior locations within the footprint of the former automotive repair facility building. All previously installed on-site and off-site monitoring wells appeared to be intact and operable.

Based on the findings of previous environmental assessment activities to date, additional Remedial Investigation appears to be warranted to further delineate the lateral and vertical extent of the identified solvent-contaminated groundwater plume. The activities to be performed during the additional Remedial Investigation - Addendum activities are outlined in this section.

Field sample collection techniques and procedures are included in the Field Sampling and Analysis Plan (FSAP) and analytical information and information concerning the QA/QC process are included in the Quality Assurance Project Plan (QAPP), both previously prepared for implementation as part of the original WorkPlan dated March 31, 2010. EA proposes investigation activities to further evaluate the lateral and vertical extent of the identified solvent-related groundwater contamination plume. The proposed activities are presented in the following sections. Tentative locations for additional Type II and Type III groundwater monitoring wells are depicted on **Figure 6**. It should be noted that the planned field activities and sampling locations are approximate, and will be adjusted as necessary based on field observations.

4.1 Pre-Investigation Activities

Prior to mobilizing to the site to implement the RI - Phase II Work Plan, the following activities will be completed.

4.1.1 Health and Safety Plan Training

A project-specific Health and Safety Plan (HASP) has previously been prepared as part of implementation of the original WorkPlan dated March 31, 2010. The HASP procedures will be adhered to that include procedures to eliminate or minimize job hazards to site workers and the surrounding community.

4.1.2 Utility Clearance

At least 72 hours prior to conducting invasive activities, the North Carolina underground utility locating service, NC One Call, will be notified. Most of the sampling locations will be within the Project property boundaries and out of the service area for NC One Call; therefore, a private underground utility locating service will be used to identify underground utilities in areas planned for invasive sampling activities. This subsurface survey work will be completed and verified prior to conducting invasive site work.

4.1.3 Access Agreements

Prior to performing the proposed Remedial Investigation – Addendum activities, EA personnel will obtain Right-of-Access agreements from surrounding off-site property owners to install groundwater monitoring wells in order to define the solvent-contaminated groundwater plume. Tentative locations for additional Type II and Type III groundwater monitoring wells are depicted on **Figure 6**.

4.2 CRITERION FOR WELL INSTALLATION AND GROUNDWATER SAMPLING

In order to thoroughly delineate the lateral and vertical extent of the groundwater contamination off-site, EA will conduct groundwater sampling in areas not previously investigated in great detail. A review of the groundwater data indicates that VOCs west of MW-11 and MW-12 and south and southwest of MW-12 and east of MW-9 require further delineation. Therefore, EA will collect groundwater samples using newly proposed monitoring wells, installed via hollow-stem auger, mud-rotary and/or air-rotary technology, from these areas. All groundwater samples will be collected using low flow technologies.

Laboratory analysis of the groundwater samples collected during the Remedial Investigation – Phase I activities did not identify concentrations of semi-volatile organic compounds (SVOCs) or metals exceeding 15A NCAC 2L Groundwater Standards except for a Naphthalene concentration of 155 ug/L detected in MW-2. However, the petroleum contamination at the Project is considered a “closed” incident pursuant to a Notice of Residual Petroleum filed at the Wayne County Register of Deeds office in January 2008. Therefore, EA recommends additional groundwater samples only be submitted and analyzed for laboratory analysis of additional groundwater samples be limited to volatile organic compounds (VOCs) by method 8260. If groundwater sample results indicate exceedances of 15A NCAC 2L groundwater standards, then the groundwater plume will be delineated in a subsequent phase of groundwater sampling and analysis.

4.3 SAMPLING METHODS

The procedures for sample collection, preservation, handling, chain of custody, field-equipment operation, decontamination and preventive maintenance will follow the USEPA, Region IV, Science and Ecosystem Support Division (SESD) *Field Branches Quality System and Technical Procedures* (FBQSTP). The FBQSTP supersedes the *Environmental Investigations Standard Operating Procedures and Quality Assurance Manual* (EISOPQAM), dated November 2001. The most recent version of the FBQSTP is located at www.epa.gov/region4/sesd/fbqstp. Additionally, the North Carolina Department of Environment and Natural Resources (NCDENR), Division of Waste Management, Superfund Section, Inactive Hazardous Sites Branch (IHSB), Inactive Hazardous Site Program *Guidelines for Assessment and Cleanup*, dated October 2009, will be followed.

4.3.1 Sampling Equipment and Containers

Field personnel responsible for sampling will verify availability of the necessary equipment for obtaining soil, water, and sediment samples at the site. A routine equipment check will be performed that includes the following:

- Meters, calibration standards and other field measurement equipment;
- Appropriate sample containers with labels;
- Applicable trip blanks;
- Sample shippers or coolers;
- Bagged ice;
- Electronic water-level indicator;
- Field sampling equipment
- Field book and indelible ink marker;
- Appropriate field sampling record forms;
- Chain of Custody forms;
- Cleaning and decontamination solutions, analyte-free water, and decontamination equipment.

The laboratory will provide all the necessary sample containers and will prepare the sample containers so that they comply with applicable preparation methods and quality assurance procedures.

4.3.2 Groundwater Sampling

Groundwater samples will be collected from existing permanent monitoring wells and from proposed wells to be installed via mud-rotary and/or air rotary technology. The locations and rational for the proposed groundwater samples is described above.

4.3.3 Monitoring Well Installation

Additional Type II and Type III (i.e. vertical extent) groundwater monitoring wells will be completed in selected off-site locations as depicted on **Figure 6**. As part of the additional Remedial Investigation – Addendum activities, seven (7) additional monitoring wells (4 Type II shallow/intermediate monitoring wells and 3 Type III vertical extent monitoring wells) are planned to assess groundwater conditions in areas of concern not previously investigated, and to better define conditions in those areas previously investigated (**Figures 5a** and **5b**), including upgradient, cross-gradient and downgradient locations. At least one of the proposed monitoring wells will be installed as a Type III vertical extent well in the vicinity of groundwater monitoring wells MW-12 and MW-11, which previously revealed the highest concentrations of solvent concentrations in the shallow and intermediate monitoring wells, respectively. Additional Type II and Type III wells will be installed to help define the lateral vertical extent of the groundwater contaminant plume. Proposed monitoring well installations will be conducted via hollow-stem auger, mud-rotary and/or air-rotary technology. The wells will consist of 1 or 2-inch PVC casing and screen as well as adequate filter pack, bentonite seal and grouting to the ground surface. A protective steal vault will be installed over the well's riser. The Type II shallow well screen will be installed in the lower, highly permeable portion of the surficial unconfined aquifer; the Type II intermediate depth well screen will be installed in the clayey upper confining layer of the deeper aquifer; and the Type III vertical extent well screen will be installed in the permeable portion of the upper confining layer of the deeper aquifer. All monitoring wells will be constructed in compliance with applicable guidance and standards. Well construction records will be completed and submitted by the drilling contractor.

4.3.4 Low-Flow Purging and Sample Collection

Groundwater samples will be collected by low-flow purging techniques to the extent possible. The procedures described below were developed in accordance with the USEPA guidance document "Low Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells", dated July 30, 1996.

The following steps outline the purging and sample collection activities for low-flow purging and sampling. A peristaltic pump and dedicated Teflon® tubing will be used and low flow rates will be obtained to minimize sample turbidity. If pumping with a peristaltic pump is not practical, a Teflon® bailer will be used to collect samples. Field parameter measurements will be made using instrumentation and a commercially manufactured flow through cell. Groundwater samples will be collected once field parameters have stabilized. The USEPA guidance will be used for purging and sampling procedures only.

1. Determine target depth for location of tubing. Target depth should be the portion of the screened interval that intersects the zone of highest hydraulic conductivity. If the zone of highest hydraulic conductivity is unknown, or if the screen is placed within homogenous material, then the target depth will be the midpoint of the saturated screen length. Primary flow zones should be identified in wells with screen lengths longer than 10 feet, or in wells with open boreholes in bedrock.

2. Measure and record the depth to water. Care should be taken to minimize disturbance of the water column within the well during pre-sample measurements.

3. Decontaminate tubing prior to use (if pumps and tubing are dedicated then this applies to the initial effort only).

4. Carefully lower the tubing to the predetermined target depth. Start the pump at a purge rate low enough to achieve 0.3 feet of drawdown or less based on historical data. If sampling the well for the first time, start the pump at the lowest possible setting (or approximately 100-milliliter [mL] per minute) and slowly increase the speed until discharge occurs. Check the water level. Adjust pump speed until there is little or no drawdown (less than 0.3 feet if possible). If the drawdown achieved at a pump rate of approximately 100 mL per minute exceeds 0.3 feet, but remains stable, continue purging until indicator field parameters stabilize.

5. Monitor and record pumping rate and water levels every three to five minutes (or as appropriate) during purging. Record adjustments to pumping rates as necessary.

6. During purging, monitor field parameters using a flow through cell (the flow through cell cannot be used for turbidity measurements and the sample for turbidity measurement must be collected prior to entering the flow through cell). Purging is considered complete and sampling may begin when the field parameters have stabilized. Stabilization is considered to be achieved when three consecutive readings, taken at three to five minute intervals, are within the following limits:

    - turbidity (+/- 10% for values >1 NTU)
    - dissolved oxygen (+/- 10%)
    - specific conductance (+/- 10%)
    - temperature (+/- 10%)
    - pH (± 0.1 standard unit)
    - redox potential (± 10 millivolts)

7. The final purge volume must be greater than the stabilized drawdown volume plus the tubing extraction volume.

8. During purging and sampling the tubing should remain filled with water.

9. Disconnect the tubing from the flow through cell to collect the analytical samples. Water samples for laboratory analyses must not be collected after water has passed through the flow through assembly. Fill sample containers directly from the tubing without alterations to the pumping rate.

10. If a VOC sample is to be collected, that fraction will be collected first. The VOC sample container will be completely filled without air space within the container. The remaining samples will be collected for SVOCs, metals, and any other fraction required for the sample location.

11. For subsequent sampling efforts, duplicate the pump intake depth and final purge rate from the initial sampling event (use final pump dial setting information).

12. If using a non-dedicated pump, remove the pump and perform an external rinse with deionized water on the pump and external tubing. Obtain and record a depth to bottom of well measurement before closing the well.

If the above sampling criteria cannot be met after four hours of purging, the following options are available:

- continue purging until stabilization is achieved;
- collect sample using a bailer; or
- discontinue purging and collect samples.

If the recharge rate of the well is less than the lowest possible extraction rate of the pump (i.e., drawdown does not stabilize at a purge rate of approximately 100 mL per minute or less), the purge rate will be increased and the water will be evacuated down to the pump intake level. This will result in several feet of stagnant water below the pump intake that will not be evacuated. The pump should then remain in place, and the well should be sampled after the water level has recovered to at or near the initial static water level. Collect the sample from the pump at a pumping rate of approximately 100 mL per minute.

4.5 POST-SAMPLING ACTIVITIES

All groundwater monitoring well locations will be laid out and marked in the field using a high-resolution GPS system. The final sampling points will be transferred onto scaled maps showing key site features and monitoring wells which have been located previously by a registered land surveyor. The GPS coordinates will be tied into surveyed benchmarks.

4.6 INVESTIGATION-DERIVED WASTES

Investigative derived waste (IDW) consisting of soil cuttings, development and purge water from monitoring wells, decontamination fluids, and personnel protective equipment (PPE) are expected to be generated during the Remedial Investigation. The IDW will be containerized in 55-gallon drums, sealed, labeled and staged in a secured area at the site pending characterization. Once the IDW has been characterized, it will be transported from the site for disposal.

4.7 FIELD AND LABORATORY QA/QC PROCEDURES

Documentation of field activities will be completed using a combination of logbooks, field data records (FDRs), sample tracking systems and sample custody records. Site and field logbooks are completed to provide a general record of activities and events that occur during each field task. FDRs have been designed for each exploration and sample collection task, to provide a complete record of data obtained during the activity.

Deviations from the procedures described in the Remedial Investigation – Phase II Work Plan will be

documented in the field logbooks and applicable FDRs. Such deviations may be dictated by site-specific conditions encountered during the sampling activity.

4.7.1 Field Logbooks

The field logbooks provide a daily hand written account of all field activities. All entries are made in permanent ink, and corrections are made with a single line with the author initials and date. Each page of the logbook will be dated and signed by the person completing the log. Partially completed pages will have a line drawn through the unused portion at the end of each day. The following information is generally entered into the field logbooks:

- The date and time of each entry. The daily log generally begins with weather conditions;
- A summary of important tasks or subtasks completed during the day;
- A description of field tests completed in association with the daily task;
- A description of samples collected including documentation of any quality control samples that were prepared (rinse blanks, duplicates, matrix spikes, split samples, etc.);
- Documentation of equipment maintenance and calibration activities;
- Documentation of equipment decontamination activities; and
- Descriptions of deviations from the work plan.

4.7.2 Field Data Records

Sample FDRs contain sample collection and/or exploration details. A FDR is completed each time a field sample is collected. The goal of the FDR is to document exploration and sample collection methods, materials, dates and times, and sample locations and identifiers. Field measurements and observations associated with a given exploration or sample collection task are recorded on the FDR. FDRs are maintained throughout the field program in files that become a permanent record of field program activities.

4.7.3 Sample Containers and Preservation

Sample container and preservation requirements for samples submitted for off-site analysis will be adhered to strictly during the Remedial Investigation – Phase II activities. The analytical laboratory may substitute other containers depending upon laboratory stock at the time of the sampling event: however, bottle type and preservative will not change.

Groundwater samples for VOC analysis will be collected in accordance with USEPA SW-846 and analyzed by EPA Method 8260. Each groundwater sample will be collected directly into three pre-weighed 40 milliliter (mL) glass vials with hydrochloric acid (HCL) preservative and septum-sealed screwed caps. The samples will be placed on ice in a sample cooler and maintained at 4º Celsius (C) and all samples must be analyzed within 14 days of sample collection.

4.7.4 Sample Custody Requirements

A program of sample custody will be followed during sample handling activities in both field and laboratory operations. This program is designed to assure that each sample is accounted for at all times. The appropriate sampling and laboratory personnel will complete sample FDRs, chain-of-custody records, and laboratory receipt sheets.

The primary objective of sample custody procedures is to obtain an accurate written record that can trace the handling of all samples during the sample collection process, through analysis, until final disposition.

4.7.4.1 Field Sample Custody

Sample custody for samples collected during each sampling event will be maintained by the personnel collecting the samples. Each sampler is responsible for documenting each sample transfer, maintaining sample custody until samples are shipped off-site, and sample shipment. The sample custody protocol followed by the sampling crews involves:

- documenting procedures and amounts of reagents or supplies (e.g., filters) which become an integral part of the sample from sample preparation and preservation;
- recording sampling locations, sample bottle identification, and specific sample acquisition measures on the appropriate forms;
- using sample labels to document all information necessary for effective sample tracking; and
- completing sample FDR forms to establish sample custody in the field before sample shipment.

Prepared labels are normally developed for each sample prior to sample collection. At a minimum, each label will contain:

- sample location and depth (if applicable);
- date and time collected;
- sampler identification; and
- analyses requested and applicable preservative

A manually-prepared chain-of-custody record will be initiated at the time of sample collection. The chain-of-custody record documents:

- sample handling procedures including sample location, sample number and number of containers corresponding to each sample number;
- the requested analysis and applicable preservative;
- the dates and times of sample collection;
- the names of the sampler(s) and the person shipping the samples;
- the date and time that the samples were delivered for shipping;

- shipping tracking information (e.g., FedEx Air Bill); and
- the names of those responsible for receiving the samples at the laboratory.

Chain-of-custody records will be prepared and tracked by sample delivery group (SDG). SDGs will be identified by field personnel during sampling activities and will include associated field quality control samples.

4.7.4.2 Sample Container Packing

Sample containers will be packed in metal or plastic coolers for shipment or pick up by the laboratory. Bottles will be packed tightly so that no motion is possible. Styrofoam, vermiculite, and "bubble pack" are suitable as packing materials for most instances. Ice will be placed in the cooler along with all paperwork in a separate, resealable, air tight, plastic bag. A temperature blank provided by the laboratory will also be placed in each cooler prior to shipment to verify the cooler was maintained at 4º Centigrade (C) [+/- 2ºC] during sample shipment. Custody seals will then be placed on the cooler prior to shipment to or pick up by the laboratory. Cooler custody seals will be used to determine whether the coolers may have been tampered with.

4.7.4.3 Sample Shipment

The standard procedure that will be followed for shipping environmental samples to the analytical laboratory is provided below. In cases where the samples require shipment:

- Shipping of environmental samples will be done through Federal Express or equivalent overnight delivery service, or through the use of laboratory courier services. The air bill number will be used as receiving signature on the chain-of-custody.
- Prior to leaving for the field, the person responsible for sample collection will notify the analytical laboratory of the number, type and approximate collection and shipment dates for the samples.
- If prompt arrival of the samples cannot be guaranteed, the samplers will be responsible for proper storage of the samples until adequate transportation arrangements can be made.

4.7.4.4 Laboratory Receipt and Custody

Once the samples are received at the analytical laboratory, the field chain-of-custody record is completed and signed by the laboratory's sample custodian. The sample custodian will then initiate laboratory chain-of-custody protocols (comparing sample bottle labels against the field chain-of-custody record and noting any discrepancies, checking cooler temperature upon receipt and notifying the laboratory project manager if any issues are identified).

After sample receipt information is checked and recorded, the sample analysis information is entered into the laboratory's information system. The laboratory provides a unique sample identification number to each environmental sample for internal laboratory sample tracking. The signed field chain-of-custody records will be provided with the laboratory deliverables for the project.

4.7.5 Quality Assurance and Quality Control Samples

The following Quality Assurance/Quality Control (QA/QC) samples will be collected during the Phase I Remedial Investigation:

- Matrix Spike/Matrix Spike Duplicate samples (one per 20 primary samples/per medium);
- Equipment rinse blanks (one per day for VOCs);
- Field duplicates (one per 20 primary samples/per medium); and
- Trip blanks (one per cooler of VOC samples per day).

4.7.6 Surveying

Decisions to be made concerning groundwater flow and potential additional sampling needs will require acquisition of horizontal and vertical locations of monitoring wells/sampling points. Surveying activities will be performed by a State of North Carolina licensed surveyor. If no established benchmark is located near the site, a temporary benchmark will be established to obtain survey data.

4.8 DESCRIPTION OF EQUIPMENT AND PERSONNEL DECONTAMINATION PROCEDURES

4.8.1 Decontamination Pad

A decontamination pad will be constructed for field cleaning of sampling and drilling equipment. The decontamination pad will meet the following requirements:

- The pad will be constructed in an area believed to be free of surface contamination.
- The pad will be lined with a water impermeable material with no seams within the pad. The material should be easily replaced (disposable) or repairable.
- If possible, the pad will be constructed on a level, paved surface and facilitate the removal of wastewater. This may be accomplished by either constructing the pad with one corner lower than the rest, or by creating a lined sump or pit in one corner or along one site.
- Sawhorses or racks constructed to hold field equipment while being cleaned will be high enough above ground to prevent equipment from being splashed.
- Wastewater will be removed from the decontamination pad frequently.

At the completion of the field activities, the decontamination pad will be removed and any sump or pit will be backfilled with appropriate material

4.8.2 Decontamination of Field Sampling Equipment

Field sampling equipment (except water level meters) will be decontaminated between sample locations as follows:

- Clean with potable water and phosphate-free detergent solution using a brush, if necessary, to remove particulate matter and surface films.
- Rinse thoroughly with tap water.
- Rinse thoroughly with organic-free water and place on a clean foil-wrapped surface to air dry.
- All equipment must be wrapped in foil. If equipment is to be stored overnight before it is wrapped in foil, it will be covered and secured with clean, unused plastic sheeting.

Water level meters will be cleaned as follows:

- Wash with potable water and phosphate-free detergent.
- Rinse with tap water.
- Rinse with de-ionized water.

4.8.3 Decontamination of DPT Equipment

DPT rods and sampling equipment will be decontaminated between boring locations as follows:

- Clean with potable water and phosphate-free detergent solution using a brush, if necessary, to remove particulate matter and surface films.
- Rinse thoroughly with tap water.
- Remove from decontamination pad and cover with clean, unused plastic. If stored overnight, the plastic should be secured to ensure that it stays in place.

4.8.4 Personnel Decontamination Procedures

It is not expected that field activities will result in the need for personnel decontamination. The soils from cuttings that stick on shoes will be scraped from shoes and placed in drums with the soil cuttings.

5.0 REMEDIAL INVESTIGATION REPORT

Field and laboratory data will be compiled and interpreted during the course of this remedial investigation. In any imminent hazards, off-site migration or sensitive environments are identified, the NCDENR will be notified immediately and the appropriate actions will be taken. Routine information, such as interim results, schedule modifications, etc. will be conveyed in the form of Quarterly Update progress reports and communications with NCDENR.

Following the final phase of investigative field work, a final Remedial Investigation (RI) Report will be prepared and submitted to the NCDENR. The Remedial Investigation (RI) Report of completed assessment activities will include a discussion of investigation methods as well as deviations from the original work plan. Data collected during the assessment will be compiled into tables and figures. The report will also include a surveyed site map illustrating sample locations, soil test boring/monitoring well construction logs, field screening data, field notes, and laboratory analytical data.

Following submittal of the RI Report, information will be obtained as necessary for remedial action planning, including a feasibility study and remedial design, if appropriate. A formal Remedial Action (RA) Plan will be prepared, and submitted to the NCDENR, that presents the findings and evaluate remedial alternatives. Remedial alternatives will be presented in a feasibility study, along with justification for the selected remedy. To date, the most practical remedial alternative may involve a monitored natural attenuation scenario subsequent to the assessment and remediation of any contaminated soil that may be encountered.

6.0 SCHEDULE

The following schedule has been developed for the additional Remedial Investigation Workplan – Addendum activities and subsequent actions at the R. D. Pate facility:

Submittal of Remedial Investigation Work Plan-Addendum to NCDENR	**7/15/2012**
Submittal of Quarterly Update to NCDENR	7/15/2012
Implementation of additional Remedial Investigation Workplan -Addendum	7/15/2012
Submittal of Quarterly Update to NCDENR	10/15/2012
Submittal of final Remedial Investigation (RI) Report to NCDENR	**12/30/2012**
Implementation of Remedial Action planning to include feasibility study and remedial design	1/1/2013
Submittal of Quarterly Update to NCDENR	1/15/2013
Submittal of Quarterly Update to NCDENR	4/15/2013
Submittal of Remedial Action (RA) Plan to NCDENR	**6/11/2013**

7.0 CERTIFICATIONS

For Remediating Party and REC certifications, please review the following pages.

REC PROGRAM DOCUMENT CERTIFICATION FORM - PAGE 1 OF 2
IHSB SITE NAME R.D. Pate Estate
DATE & NAME OF DOCUMENT Remedial Investigation Workplan Addendum & Update 7/11/2012
TYPE OF SUBMITTAL (circle all that apply): Report, Work plan, Work Phase Comp. Statement, Schedule Change

REMEDIATING PARTY DOCUMENT CERTIFICATION STATEMENT (.0306(B)(2))

"I certify under penalty of law that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this certification, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material and information contained herein is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for willfully submitting false, inaccurate or incomplete information."

Branch Banking + Trust Co. Trustee
Sr. Env. Risk Officer, Cindi Lewis
Name of Remediating Party

Signature of Remediating Party

7/13/2012
Date

NOTARIZATION

North Carolina (Enter State)
Mecklenburg **COUNTY**

I, Roxanne Crouch, a Notary Public of said County and State, do hereby certify that Cindi Lewis did personally appear and sign before me this day, produced proper identification in the form of drivers license, was duly sworn or affirmed, and declared that, to the best of his or her knowledge and belief, after thorough investigation, the information contained in the above certification is true and accurate, and he or she then signed this Certification in my presence.

WITNESS my hand and official seal this 13 day of July, 2012.

Roxanne Crouch
Notary Public (signature)

(OFFICIAL SEAL)

My commission expires: April 6, 2015

Document Certification Form No. DC - I
(Revised 8/11)

REC PROGRAM DOCUMENT CERTIFICATION FORM - PAGE 2 OF 2
IHSB SITE NAME R.D. Pate Estate
DATE & NAME OF DOCUMENT Remedial Investigation Workplan Addendum & Update 7/11/2012
TYPE OF SUBMITTAL (circle all that apply): Report, Work plan, Work Phase Comp. Statement, Schedule Change

REGISTERED SITE MANAGER CERTIFICATION OF SIGNATURES

As the Registered Environmental Consultant for the Site for which this filing is made, I certify that the signatures included herewith are genuine and authentic original handwritten signatures and/or true, accurate, and complete copies of the genuine and authentic original handwritten signatures of the persons who purport to sign for this filing. I further certify that I have collected through reliable means the originals and/or copies of said signatures from the persons authorized to sign for this filing who, in fact, signed the originals thereof. Those persons and I understand and agree that any copies of signatures have the same legally binding effect as original handwritten signatures, and I certify that any person for whom I am submitting a copy of their signature has provided me with their express consent to submit said copy. Additionally, I certify that I am authorized to attest to the genuineness and authenticity of the signatures, both originals and any copies, being submitted herewith and that by signing below, I do in fact attest to the genuineness and authenticity of all the signatures, both originals and copies, being submitted for this filing.

GARY K. SAWYER
Name of Registered Site Manager

Signature of Registered Site Manager — Date: 7-13-2012

REGISTERED SITE MANAGER DOCUMENT CERTIFICATION STATEMENT (.0306(b)(1))

"I certify under penalty of law that I am personally familiar with the information contained in this submittal, including any and all supporting documents accompanying this certification, and that the material and information contained herein is, to the best of my knowledge and belief, true, accurate and complete and complies with the Inactive Hazardous Sites Response Act G.S. 130A-310, et seq, and the remedial action program Rules 15A NCAC 13C .0300. I am aware that there are significant penalties for willfully submitting false, inaccurate or incomplete information."

GARY K. SAWYER
Name of Registered Site Manager

Signature of Registered Site Manager — Date: 7-13-2012

NOTARIZATION

North Carolina (Enter State)

UNION COUNTY

I, Addie J. Wynn, a Notary Public of said County and State, do hereby certify that Gary K. Sawyer did personally appear and sign before me this day, produced proper identification in the form of NCDL, was duly sworn or affirmed, and declared that, he or she is the duly authorized environmental consultant of the remediating party of the property referenced above and that, to the best of his or her knowledge and belief, after thorough investigation, the information contained in the above certifications is true and accurate, and he or she then signed these Certifications in my presence.

WITNESS my hand and official seal this 13th day of July, 2012.

(OFFICIAL SEAL)

Notary Public (signature)

My commission expires: November 09, 2015

ADDIE J. WYNN NOTARY PUBLIC UNION COUNTY, NC

Document Certification Form No. DC - II
(Revised 8/11)

TABLES

TABLE 1

SOIL ANALYTICAL RESULTS
PHASE I REMEDIAL INVESTIGATION

TABLE 1

SOIL ANALYTICAL RESULTS (MARCH 2011)
R.D. PATE ESTATE
INCIDENT NUMBER: 7568
101 EAST MAIN STREET
PIKEVILLE, WAYNE COUNTY, NORTH CAROLINA
ENVIROASSESSMENTS, PLLC PROJECT NO. 07-7019.7

Sample ID	Analytical Method	RI-1-2 (MW-8)	RI-2-2 (MW-9)	RI-3-2 (MW-10)	RI-4-2 (MW-11)	RI-5-2 (MW-12)	AOPC#1-1	AOPC#1-2	AOPC#1-3	AOPC#1-4	IHSB Preliminary Health-Based SRG	IHSB Protection of Groundwater SRG
Sample Depth (ft, bgs)		2	2	2	2	2	1	1	1	1		
Collection Date		3/30/2011	3/30/2011	3/30/2011	3/31/2011	3/31/2011	3/30/2011	3/30/2011	3/30/2011	3/30/2011		
Volatile Organic Compounds (VOCs) by EPA Method 8260B Plus Tics												
Benzene	8260	**0.325**	ND	ND	ND	**0.0448**	ND	ND	ND	ND	1.1	0.0073
Toluene	8260	ND	ND	ND	ND	ND	ND	ND	ND	0.0021 J	820	5.5
Ethylbenzene	8260	2.650	ND	ND	ND	0.0113	ND	ND	ND	ND	5.4	8.1
M&P Xylenes	8260	5.520	ND	ND	ND	0.0101	ND	ND	ND	ND	390	6.0
O-Xylene	8260	0.164 J	ND	ND	ND	ND	ND	ND	ND	ND	430	6.0
Total Xylenes	8260	5.690	ND	ND	ND	0.0101	ND	ND	ND	ND	130	6.0
1,1,2,2 Tetrachloroethane	8260	ND	ND	ND	ND	ND	ND	ND	ND	**0.0079 J**	0.56	0.0012
Isopropylbenzene	8260	0.335	ND	ND	ND	ND	ND	ND	ND	ND	270	1.3
N-Propylbenzene	8260	1.120	ND	ND	ND	0.0022 J	ND	ND	ND	ND	260	1.5
1,3,5-Trimethylbenzene	8260	1.600	ND	ND	ND	ND	ND	ND	ND	ND	160	6.7
1,2,4-Trimethylbenzene	8260	**7.990**	ND	ND	ND	0.0026 J	ND	ND	0.0044 J	0.0031 J	12	6.7
N-Butylbenzene	8260	0.969	ND	ND	ND	ND	ND	ND	ND	ND	NE	4.3
Tert-Butylbenzene	8260	ND	ND	ND	ND	ND	ND	ND	ND	ND	NE	3.4
Sec-Butylbenzene	8260	0.214	ND	ND	ND	ND	ND	ND	ND	ND	NE	3.3
Trichloroethene (TCE)	8260	ND	ND	ND	ND	ND	0.0048	ND	ND	0.0170	0.88	0.018
Acetone	8260	ND	0.0363 J	0.157 J	0.0114 J	0.0314 J	0.0653 J	0.0460 J	0.114	0.0997 J	12000	24
Trichlorofluoromethane	8260	ND	ND	ND	ND	ND	ND	ND	ND	ND	160	24
Naphthalene	8260	**1.950**	ND	ND	ND	ND	ND	ND	0.0048 J	ND	3.6	0.21
P-Isopropyltoluene	8260	0.394	ND	ND	ND	ND	ND	ND	ND	ND	NE	NE
2-Butanone (MEK)	8260	ND	ND	ND	ND	ND	0.0075 J	0.0034 J	0.0123 J	ND	5600	16
Cis-1,2-Dichloroethene	8260	ND	ND	ND	ND	0.0030 J	ND	ND	ND	ND	32	0.36
Trans-1,2-Dichloroethene	8260	ND	ND	ND	ND	0.0019 J	ND	ND	ND	ND	30	0.51
Tetrachloroethene (PCE)	8260	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.55	0.005
2-Chlorotoluene	8260	ND	ND	ND	ND	ND	ND	ND	ND	ND	320	1.2
Total TICs	8260	65.14	0.0611	0.03831	0.00591	0.228	0.0657	107.73	0.07793	134.21	NE	NE
Semi-Volatile Organic Compounds by EPA Method 8270 plus TICs												
2-Methylnaphthalene	8270	**2.060 J**	ND	ND	ND	ND	ND	ND	ND	ND	62	1.6
1-Methylnaphthalene	8270	ND	ND	ND	ND	ND	ND	ND	ND	ND	22	NE
Naphthalene	8270	**2.290 J**	ND	ND	ND	ND	ND	ND	ND	ND	3.6	0.21
Benzo(a)anthracene	8270	ND	0.134 J	ND	ND	ND	ND	ND	ND	ND	0.15	0.18
Benzo(b)fluoranthene	8270	ND	0.103 J	ND	ND	ND	ND	ND	ND	ND	0.15	0.6
Benzo(k)fluoranthene	8270	ND	0.0865 J	ND	ND	ND	ND	ND	ND	ND	1.5	5.9
Benzo(a)pyrene	8270	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.015	0.059
Benzo(g,h,i)perylene	8270	ND	ND	ND	ND	ND	ND	ND	ND	ND	NE	360
Butylbenzylphthalate	8270	ND	0.0882 J	ND	ND	ND	ND	ND	ND	ND	260	150
Chrysene	8270	ND	0.142 J	ND	ND	ND	0.0640 J	ND	ND	ND	15	18
3,3-Dichlorobenzidine	8270	ND	0.157 J	ND	ND	ND	ND	ND	ND	ND	1.1	NE
4,6-Dinitro-2-methylphenol	8270	ND	0.0768 J	ND	ND	ND	ND	ND	ND	ND	0.98	NE
2,4-Dinitrophenol	8270	ND	1.580 J	ND	ND	ND	ND	ND	ND	ND	24	NE
Fluoranthene	8270	ND	0.106 J	ND	ND	ND	0.100 J	ND	ND	ND	460	330
4-Nitroaniline	8270	ND	0.145 J	ND	ND	ND	ND	ND	ND	ND	24	NE
4-Nitrophenol	8270	ND	0.532 J	ND	ND	ND	ND	ND	ND	ND	NE	NE
Pentachlorophenol	8270	ND	**0.998 J**	ND	ND	ND	ND	ND	ND	ND	0.89	0.031
Pyrene	8270	ND	0.0932 J	ND	ND	ND	ND	ND	ND	ND	340	220
Bis(2-Ethylhexyl)phthalate	8270	ND	ND	0.275 J	ND	ND	ND	ND	ND	ND	35	7.2
Phenanthrene	8270	ND	ND	ND	ND	ND	0.0742 J	ND	ND	ND	NE	57
Anthracene	8270	ND	ND	ND	ND	ND	ND	ND	ND	ND	3400	660
Dibenz(a,h)antracene	8270	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.015	0.19
Indeno(1,2,3-cd)pyrene	8270	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.15	2.0
Total TICs	8270	2.223	0.2778	ND	1.001	0.720	0.304	0.591	0.6091	0.236	NE	NE
Total Metals by EPA Method 6010B												
Antimony	6010	ND	0.63	ND	0.45 J	**1.0**	**2.0**	0.49	**1.0**	0.74	6.2	0.9
Arsenic	6010	0.50	2.8	0.86	1.8	2.3	3.1	1.2	1.7	2.0	4.4	5.8
Beryllium	6010	0.050 J	0.081 J	0.040 J	0.080 J	0.079 J	0.18	0.051 J	0.077 J	0.086	32	63
Cadmium	6010	ND	0.22	ND	ND	ND	0.091 J	0.31	1.6	0.45	14	3.0
Chromium	6010	2.8	5.5	2.7	2.4	7.6	5.5	3.8	5.5	6.9	24000	360000
Copper	6010	3.4	17.2	13.2	13.9	21.1	71.6	7.6	41.9	28.5	620	700
Lead	6010	39.1	111	104	50.3	46.6	422	60.8	**291**	185	400	270
Nickel	6010	0.60	1.9	1.4	0.70	3.1	3.6	1.2	3.5	4.7	300	130
Selenium	6010	0.48 J	ND	ND	0.63 J	0.91 J	0.61 J	ND	ND	0.75	78	2.1
Silver	6010	0.033 J	0.16 J	0.077 J	0.037 J	0.054 J	0.28 J	0.084 J	0.15 J	0.18 J	78	3.4
Thallium	6010	**0.38 J**	ND	ND	ND	ND	ND	ND	ND	ND	1.0	0.28
Zinc	6010	15.4	376	20.1	28.1	23.7	126	81.0	104	75.1	4600	1200
Mercury by EPA Method 7471												
Mercury	7471	0.019	0.11	0.28	0.022	0.024	0.29	**1.7**	0.15	**1.5**	1.1	NE

Notes:
All concentrations are reported in milligrams per kilograms (mg/kg).
ft, bgs - feet below ground surface
NE - Not Established
NT - Not Tested
ND - Not Detected
IHSB - North Carolina Inactive Hazardous Sites Branch
Bold values exceed respective IHSB Heath-Based and/or Protection of Groundwater Soil Remediation Goals (SRG).
"J" Value indicates an estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

TABLE 1

SOIL ANALYTICAL RESULTS (MARCH 2011)
R.D. PATE ESTATE
INCIDENT NUMBER: 7568
101 EAST MAIN STREET
PIKEVILLE, WAYNE COUNTY, NORTH CAROLINA
ENVIROASSESSMENTS, PLLC PROJECT NO. 07-7019.7

Sample ID	Analytical Method	AOPC#2-1	AOPC#2-2	AOPC#2-3	AOPC#2-4	AOPC#2-5A	AOPC#2-5B	AOPC#2-6	AOPC#2-7	IHSB Preliminary Health-Based SRG	IHSB Protection of Groundwater PSRG
Sample Depth (ft, bgs)		1	1	1	1	1	1	1	1		
Collection Date		3/30/2011	3/30/2011	3/31/2011	3/31/2011	3/31/2011	3/31/2011	3/31/2011	3/31/2011		
Volatile Organic Compounds (VOCs) by EPA Method 8260B Plus TICs											
Benzene	8260	ND	ND	ND	ND	ND	ND	ND	0.0017 J	1.1	0.0073
Toluene	8260	ND	ND	ND	ND	ND	ND	ND	ND	820	5.5
Ethylbenzene	8260	ND	ND	ND	ND	ND	0.176	0.228	ND	5.4	8.1
M&P Xylenes	8260	ND	ND	ND	ND	ND	0.287	0.361	ND	390	6.0
O-Xylene	8260	ND	ND	ND	ND	ND	ND	0.104	ND	430	6.0
Total Xylenes	8260	ND	ND	ND	ND	ND	0.321	0.464	ND	130	6.0
1,1,2,2 Tetrachloroethane	8260	**0.0331**	**0.0028 J**	ND	**0.0231**	ND	ND	ND	ND	0.56	0.0012
Isopropylbenzene	8260	ND	ND	ND	ND	ND	0.0726 J	0.0702	ND	270	1.3
N-Propylbenzene	8260	ND	ND	ND	ND	ND	0.171	0.346	ND	260	1.5
1,3,5-Trimethylbenzene	8260	ND	ND	ND	ND	ND	0.422	0.730	ND	160	6.7
1,2,4-Trimethylbenzene	8260	ND	ND	ND	ND	ND	0.671	4.520	ND	12	6.7
N-Butylbenzene	8260	ND	ND	ND	ND	ND	0.187	0.465	ND	NE	4.3
Tert-Butylbenzene	8260	ND	ND	ND	ND	ND	ND	ND	ND	NE	3.4
Sec-Butylbenzene	8260	ND	ND	ND	ND	ND	0.0708 J	0.0983	ND	NE	3.3
Trichloroethene (TCE)	8260	**0.0478**	0.0044 J	0.0031 J	**0.0490**	ND	ND	ND	0.0072	0.88	0.018
Acetone	8260	ND	0.0302 J	0.0319 J	0.0443 J	ND	ND	ND	0.0698 J	12000	24
Trichlorofluoromethane	8260	ND	ND	ND	ND	ND	ND	ND	ND	160	24
Naphthalene	8260	0.0014 J	ND	ND	ND	ND	**0.275**	**0.381**	ND	3.6	0.21
P-Isopropyltoluene	8260	ND	ND	ND	ND	ND	0.157	0.236	ND	NE	NE
2-Butanone (MEK)	8260	ND	ND	ND	ND	ND	ND	ND	ND	5600	16
Cis-1,2-Dichloroethene	8260	ND	ND	ND	ND	ND	ND	0.0327 J	0.0015 J	32	0.36
Trans-1,2-Dichloroethene	8260	ND	ND	ND	ND	ND	ND	ND	ND	30	0.51
Tetrachloroethene (PCE)	8260	ND	ND	ND	0.0043 J	ND	ND	ND	ND	0.55	0.005
2-Chlorotoluene	8260	ND	ND	ND	ND	ND	ND	0.393	ND	320	1.2
Total TICs	8260	0.00661	0.00767	0.02832	0.00858	0.00810	10.131	38.510	0.09815	NE	NE
Semi-Volatile Organic Compounds (SVOCs) by EPA Method 8270 plus TICs											
2-Methylnaphthalene	8270	ND	ND	ND	ND	ND	ND	0.726	ND	62	1.6
1-Methylnaphthalene	8270	ND	ND	ND	ND	ND	ND	0.496	ND	22	NE
Naphthalene	8270	ND	ND	ND	ND	ND	ND	**0.449**	ND	3.6	0.21
Benzo(a)anthracene	8270	ND	ND	ND	**0.765**	ND	ND	ND	ND	0.15	0.18
Benzo(b)fluoranthene	8270	ND	ND	ND	**0.506**	ND	ND	ND	ND	0.15	0.6
Benzo(k)fluoranthene	8270	ND	ND	ND	0.497	ND	ND	ND	ND	1.5	5.9
Benzo(a)pyrene	8270	ND	ND	ND	**0.569**	ND	ND	ND	ND	0.015	0.059
Benzo(g,h,i)perylene	8270	ND	ND	ND	0.321 J	ND	ND	ND	ND	NE	360
Butylbenzylphthalate	8270	ND	ND	ND	ND	ND	ND	ND	ND	260	150
Chrysene	8270	ND	ND	ND	0.672	ND	ND	0.0819 J	ND	15	18
3,3-Dichlorobenzidine	8270	ND	ND	ND	ND	ND	ND	ND	ND	1.1	NE
4,6-Dinitro-2-methylphenol	8270	ND	ND	ND	ND	ND	ND	ND	ND	0.98	NE
2,4-Dinitrophenol	8270	ND	ND	ND	ND	ND	ND	ND	ND	24	NE
Fluoranthene	8270	0.0768 J	ND	0.0841 J	1.980	ND	ND	ND	ND	460	330
4-Nitroaniline	8270	ND	ND	ND	ND	ND	ND	ND	ND	24	NE
4-Nitrophenol	8270	ND	ND	ND	ND	ND	ND	ND	ND	NE	NE
Pentachlorophenol	8270	ND	ND	ND	ND	ND	ND	ND	ND	0.89	0.031
Pyrene	8270	ND	ND	ND	1.030	ND	ND	0.0785 J	ND	340	220
Bis(2-Ethylhexyl)phthalate	8270	ND	ND	ND	ND	ND	ND	ND	ND	35	7.2
Phenanthrene	8270	ND	ND	ND	0.843	ND	ND	0.0762 J	ND	NE	57
Anthracene	8270	ND	ND	ND	0.273 J	ND	ND	ND	ND	3400	660
Dibenz(a,h)antracene	8270	ND	ND	ND	**0.174 J**	ND	ND	ND	ND	0.015	0.19
Indeno(1,2,3-cd)pyrene	8270	ND	ND	ND	**0.333 J**	ND	ND	ND	ND	0.15	2.0
Total TICs	8270	1.931	0.739	0.7765	2.849	4.9756	0.756	3.6084	0.1041	NE	NE
Total Metals by EPA Method 6010B											
Antimony	6010	0.75	ND	0.58	ND	ND	ND	0.62	**1.5**	6.2	0.9
Arsenic	6010	4.2	0.71	1.4	2.3	0.32 J	0.44 J	1.1	1.4	4.4	5.8
Beryllium	6010	0.053 J	0.047 J	0.096 J	0.072 J	ND	ND	0.046 J	0.070 J	32	63
Cadmium	6010	ND	ND	ND	ND	ND	ND	ND	0.075 J	14	3.0
Chromium	6010	2.2	5.4	34.4	2.6	0.70	0.71	2.7	3.2	24000	360000
Copper	6010	14.9	7.1	19.6	11.9	1.0	2.0	31.8	56.1	620	700
Lead	6010	**1820**	23.9	**392**	81.6	5.5	10	82.2	216	400	270
Nickel	6010	0.77	7.4	2.9	0.89	ND	0.35 J	2.1	1.6	300	130
Selenium	6010	ND	ND	ND	ND	ND	ND	ND	0.51 J	78	2.1
Silver	6010	0.14 J	0.049 J	0.16 J	0.093 J	ND	ND	0.10 J	0.12 J	78	3.4
Thallium	6010	ND	ND	ND	ND	ND	ND	ND	ND	1.0	0.28
Zinc	6010	18.1	14.4	74.2	27.0	8.3	2.3	37.7	79.1	4600	1200
Mercury by EPA Method 7471											
Mercury	7471	0.036	0.052	0.20	0.52	0.014	0.10	0.051	0.071	1.1	NE

Notes:
All concentrations are reported in milligrams per kilograms (mg/kg).
ft, bgs - feet below ground surface
NE - Not Established
NT - Not Tested
ND - Not Detected
IHSB - North Carolina Inactive Hazardous Sites Branch
Bold values exceed respective IHSB Heath-Based and/or Protection of Groundwater Soil Remediation Goals (SRG).
J Value indicates an estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
PHASE I REMEDIAL INVESTIGATION

TABLE 2

GROUNDWATER ANALYTICAL RESULTS (MARCH/APRIL 2011)
R.D. PATE ESTATE
INCIDENT NUMBER: 7568
101 EAST MAIN STREET
PIKEVILLE, WAYNE COUNTY, NORTH CAROLINA
ENVIROASSESSMENTS, PLLC PROJECT NO. 07-7019.7

Sample ID	Analytical	MW-1	MW-1D	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	North Carolina 2L Groundwater	Gross Contamination Levels for
Collection Date	Method	4/5/2011	4/5/2011	4/6/2011	4/1/2011	4/1/2011	3/30/2011	4/5/2011	4/1/2011	4/6/2011	4/6/2011	Quality Standards	Groundwater
Compounds (VOCs) by EPA Method 8260B Plus TICs													
Methyl tert-butyl ether (MTBE)	8260B	ND	ND	1.0 J	0.52 J	ND	1.4	0.66 J	ND	ND	ND	20	20000
1,1,2,2-Tetrachloroethane	8260B	**3.2**	**4.7**	ND	0.74 J	ND	**3.7**	ND	ND	0.89 J	**4.8**	1	1000
Trichloroethene (TCE)	8260B	0.74 J	ND	ND	0.72 J	ND	1.1	ND	ND	ND	ND	3	3000
Acetone	8260B	ND	ND	334	ND	ND	ND	ND	ND	41.0	13.8 J	6000	6000000
Toluene	8260B	ND	ND	112	0.83 J	ND	ND	ND	ND	0.44 J	0.53 J	600	260000
Benzene	8260B	ND	ND	**946**	**21.1**	ND	ND	**3.1**	ND	**3.7**	**1.3**	1	5000
Dichlorodifluoromethane	8260B	ND	ND	ND	0.38 J	ND	ND	ND	ND	ND	ND	0.4	400
cis-1,2-Dichloroethene	8260B	ND	ND	17.6	1.0	ND	ND	ND	ND	ND	ND	70	70000
trans-1,2-Dichloroethene	8260B	ND	ND	10.2	0.89 J	ND	ND	ND	ND	ND	ND	100	100000
Diisopropyl ether	8260B	ND	ND	57.8	20.9	ND	ND	8.7	ND	1.7	ND	70	70000
Ethylbenzene	8260B	ND	ND	**732**	0.30 J	ND	ND	3.6	ND	12.4	0.31 J	600	84500
Naphthalene	8260B	0.45 J	ND	**420**	4.8	ND	ND	**14.8**	ND	2.2	ND	6	6000
o-Xylene	8260B	ND	ND	99.5	1.1	ND	ND	0.24 J	ND	1.0	ND	500	85500
m&p-Xylene	8260B	ND	ND	**1110**	ND	ND	ND	ND	ND	27.9	ND	500	85500
1,2-Dichloroethane	8260B	ND	ND	ND	ND	ND	ND	0.14 J	ND	ND	ND	0.4	400
2-Butanone (MEK)	8260B	ND	ND	98.0	ND	ND	ND	ND	ND	7.1	ND	4000	4000000
4-Methyl-2-pentanone (MIBK)	8260B	ND	ND	ND	ND	ND	ND	ND	ND	1.1 J	ND	100	100000
2-Chlorotoluene	8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	NE
1,1,2-Trichloroethane	8260B	ND	**1.3**	ND	ND	ND	ND	ND	ND	ND	ND	0.6	600
Vinyl chloride	8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	30
Chloroform	8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	70	70000
Tetrachloroethene (PCE)	8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7	700
Bromodichloromethane	8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	NE
Dibromochloromethane	8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.4	400
Methylene Chloride	8260B	ND	ND	**8.2 J**	ND	ND	ND	ND	ND	ND	ND	5	5000
Total TICs	8260B	ND	ND	4015.8	0.17775	ND	ND	282.42	ND	164.37	ND	NE	NE
ic Compounds (SVOCs) by EPA Method 8270 Plus TICs													
bis(2-Ethylhexyl)phthalate	8270	ND	ND	1.9 J	ND	ND	1.1 J	ND	ND	NT	NT	3	170
Naphthalene	8270	ND	ND	**155**	2.5 J	ND	ND	4.6 J	ND	NT	NT	6	6000
1-Methylnaphthalene	8270	ND	ND	**17.2**	ND	ND	ND	**1.2 J**	ND	NT	NT	1	1000
2-Methylnaphthalene	8270	ND	ND	23.2	ND	ND	ND	ND	ND	NT	NT	30	12500
Acenaphthene	8270	ND	ND	1.9 J	ND	ND	ND	ND	ND	NT	NT	80	2120
Dibenzofuran	8270	ND	ND	2.6 J	ND	ND	ND	ND	ND	NT	NT	28	28000
Fluorene	8270	ND	ND	4.1 J	ND	ND	ND	ND	ND	NT	NT	300	990
Phenanthrene	8270	ND	ND	4.4 J	ND	ND	ND	ND	ND	NT	NT	200	410
Total TICs	8270	68.46	51.77	735.6	78.41	109.46	76.72	59.69	ND	NT	NT	NE	NE
Totals Metals by EPA Method 6010B													
Antimony	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NE	NE
Arsenic	6010	ND	ND	2.8 J	ND	ND	ND	ND	ND	ND	ND	10	NE
Beryllium	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NE	NE
Cadmium	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2	NE
Chromium	6010	ND	ND	ND	ND	5.8	ND	ND	ND	ND	ND	10	10000
Copper	6010	7.5	4.7 J	ND	ND	13.7	3.0 J	ND	2.1 J	ND	3.4 J	1000	NE
Lead	6010	ND	ND	ND	ND	14.8	ND	ND	ND	ND	ND	15	15000
Nickel	6010	ND	ND	ND	ND	2.6 J	ND	ND	ND	17.0	13.9	100	NE
Selenium	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	NE
Silver	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	20000
Thallium	6010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NE	NE
Zinc	6010	200	175	8.7 J	ND	53.5	19.0	13.2	16.9	60.4	94.3	1000	NE
Mercury by EPA Method 7471													
Mercury	7471	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	NE

Notes:
All concentrations are reported in micrograms per liter (ug/L).
ft, bgs - feet below ground surface
NE - Not Established
NT - Not Tested
ND - Not Detected
NA - Not Applicable * Type III Well RB = Rinse Blank TB = Trip Blank D = Duplicate
Bold results exceed NCAC 2L Standards.
Bold results exceed Gross Contamination Levels (GCLs) for Groundwater.
"J" Value indicates an estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

TABLE 2

GROUNDWATER ANALYTICAL RESULTS (MARCH/APRIL 2011)
R.D. PATE ESTATE
INCIDENT NUMBER: 7568
101 EAST MAIN STREET
PIKEVILLE, WAYNE COUNTY, NORTH CAROLINA
ENVIROASSESSMENTS, PLLC PROJECT NO. 07-7019.7

Sample ID	Analytical	MW-10	MW-11	MW-12	MW-13	DW-2*	PWS	RB-MW-11	TB-1	TB-2	TB-4	North Carolina 2L Groundwater	Gross Contamination Levels
Collection Date	Method	4/5&6/2011	4/6/2011	4/6/2011	4/6/2011	4/1/2011	4/6/2011	3/31/2011	4/6/2011	4/6/2011	4/1/2011	Quality Standards	for Groundwater
Compounds (VOCs) by EPA Method 8260B Plus TICs													
Methyl tert-butyl ether (MTBE)	8260B	ND	ND	0.59 J	ND	ND	ND	ND	ND	ND	ND	20	20000
1,1,2,2-Tetrachloroethane	8260B	**7.4**	***418***	**47.3**	**19.9**	ND	ND	ND	ND	ND	ND	1	1000
Trichloroethene (TCE)	8260B	0.55 J	**55.5**	**12.1**	**3.4**	ND	ND	ND	ND	ND	ND	3	3000
Acetone	8260B	10.7 J	10.9 J	ND	33.3	ND	ND	5.2 J	11.7 J	16.4 J	13.4 J	6000	6000000
Toluene	8260B	0.28 J	0.39 J	1.2	0.75 J	ND	ND	0.42 J	ND	ND	ND	600	260000
Benzene	8260B	ND	ND	**75.0**	ND	ND	ND	ND	ND	ND	ND	1	5000
Dichlorodifluoromethane	8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.4	400
cis-1,2-Dichloroethene	8260B	ND	1.9	9.9	ND	ND	ND	ND	ND	ND	ND	70	70000
trans-1,2-Dichloroethene	8260B	ND	0.97 J	6.5	ND	ND	ND	ND	ND	ND	ND	100	100000
Diisopropyl ether	8260B	ND	ND	3.3	ND	ND	ND	ND	ND	ND	ND	70	70000
Ethylbenzene	8260B	ND	ND	16.9	ND	ND	ND	ND	ND	ND	ND	600	84500
Naphthalene	8260B	ND	ND	2.6	ND	ND	ND	ND	ND	ND	ND	6	6000
o-Xylene	8260B	ND	ND	3.0	ND	ND	ND	ND	ND	ND	ND	500	85500
m&p-Xylene	8260B	ND	ND	3.3	ND	ND	ND	ND	ND	ND	ND	500	85500
1,2-Dichloroethane	8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.4	400
2-Butanone (MEK)	8260B	ND	ND	ND	ND	ND	ND	ND	5.3	6.0	ND	4000	4000000
4-Methyl-2-pentanone (MIBK)	8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	100000
2-Chlorotoluene	8260B	ND	ND	4.6	ND	ND	ND	ND	ND	ND	ND	100	NE
1,1,2-Trichloroethane	8260B	ND	**2.5**	**0.79 J**	ND	ND	ND	ND	ND	ND	ND	0.6	600
Vinyl chloride	8260B	ND	ND	**1.4**	ND	ND	ND	ND	ND	ND	ND	0.03	30
Chloroform	8260B	ND	0.55 J	ND	ND	ND	4.3	ND	ND	0.36 J	ND	70	70000
Tetrachloroethene (PCE)	8260B	ND	**2.0**	ND	ND	ND	ND	ND	ND	ND	ND	0.7	700
Bromodichloromethane	8260B	ND	ND	ND	ND	ND	**1.5**	ND	ND	ND	ND	0.6	NE
Dibromochloromethane	8260B	ND	ND	ND	ND	ND	0.71 J	ND	ND	ND	ND	0.4	400
Methylene Chloride	8260B	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	5000
Total TICs	8260B	ND	ND	145.42	ND	ND	ND	ND	ND	ND	ND	NE	NE
ic Compounds (SVOCs) by EPA Method 8270 Plus TICs													
bis(2-Ethylhexyl)phthalate	8270	NT	ND	ND	NT	ND	NT	NT	NT	NT	NT	3	170
Naphthalene	8270	NT	ND	ND	NT	ND	NT	NT	NT	NT	NT	6	6000
1-Methylnaphthalene	8270	NT	ND	ND	NT	ND	NT	NT	NT	NT	NT	1	1000
2-Methylnaphthalene	8270	NT	ND	ND	NT	ND	NT	NT	NT	NT	NT	30	12500
Acenaphthene	8270	NT	ND	ND	NT	ND	NT	NT	NT	NT	NT	80	2120
Dibenzofuran	8270	NT	ND	ND	NT	ND	NT	NT	NT	NT	NT	28	28000
Fluorene	8270	NT	ND	ND	NT	ND	NT	NT	NT	NT	NT	300	990
Phenanthrene	8270	NT	ND	ND	NT	ND	NT	NT	NT	NT	NT	200	410
Total TICs	8270	NT	163.8	113.23	NT	86.6	NT	NT	NT	NT	NT	NE	NE
Totals Metals by EPA Method 6010B													
Antimony	6010	ND	ND	ND	ND	ND	NT	NT	NT	NT	NT	NE	NE
Arsenic	6010	ND	ND	ND	ND	ND	NT	NT	NT	NT	NT	10	NE
Beryllium	6010	ND	ND	ND	ND	4.1	NT	NT	NT	NT	NT	NE	NE
Cadmium	6010	ND	ND	ND	ND	ND	NT	NT	NT	NT	NT	2	NE
Chromium	6010	4.6 J	ND	ND	ND	ND	NT	NT	NT	NT	NT	10	10000
Copper	6010	4.3 J	3.4 J	ND	ND	17.0	NT	NT	NT	NT	NT	1000	NE
Lead	6010	ND	ND	ND	ND	ND	NT	NT	NT	NT	NT	15	15000
Nickel	6010	21.4	7.3	7.8	13.5	ND	NT	NT	NT	NT	NT	100	NE
Selenium	6010	ND	ND	ND	ND	ND	NT	NT	NT	NT	NT	20	NE
Silver	6010	ND	ND	ND	ND	ND	NT	NT	NT	NT	NT	20	20000
Thallium	6010	ND	ND	ND	ND	ND	NT	NT	NT	NT	NT	NE	NE
Zinc	6010	86.6	31.8	45.3	32.0	56.2	NT	NT	NT	NT	NT	1000	NE
Mercury by EPA Method 7471													
Mercury	7471	ND	ND	ND	ND	ND	NT	NT	NT	NT	NT	1	NE

Notes:
All concentrations are reported in micrograms per liter (ug/L).
ft, bgs - feet below ground surface
NE - Not Established
NT - Not Tested
ND - Not Detected
NA - Not Applicable * Type III Well RB = Rinse Blank TB = Trip Blank D = Duplicate
Bold results exceed NCAC 2L Standards.
Bold results exceed Gross Contamination Levels (GCLs) for Groundwater.
"J" Value indicates an estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

TABLE 3

MONITORING WELL CONSTRUCTION/WATER LEVEL INFORMATION

TABLE 3

MONITORING WELL CONSTRUCTION/WATER LEVEL INFORMATION
R.D. PATE ESTATE
INCIDENT NUMBER: 7568
PIKEVILLE, WAYNE COUNTY, NORTH CAROLINA
ENVIROASSESSMENTS, PLLC - PROJECT NO. 07-7019.7

Well I.D.	Installation Date	Well Inner Diameter (in.)	Total Well Depth (ft., bgs)	Screened Interval (ft., bgs)	Top of Casing Relative Elevation (ft.)	DTW 4/5/2011 (ft., TOC)	Relative Water Table Elevation (ft.)
MW-1	9/5/2007	2	14	4 to 14	136.11	3.70	132.41
MW-2	9/5/2007	2	14	4 to 14	135.45	3.50	131.95
MW-3	9/5/2007	2	14	4 to 14	135.70	3.89	131.81
MW-4	9/5/2007	2	14	4 to 14	135.75	2.43	133.32
MW-5	6/3/2008	1	14	4 to 14	136.30	3.85	132.45
MW-6	6/3/2008	1	14	4 to 14	135.16	3.94	131.22
MW-7	7/15/2008	2	15	5 to 10	136.76	4.13	132.63
MW-8	3/30/2011	1	28	18 to 28	135.81	19.15	116.66
MW-9	3/30/2011	1	28	18 to 28	136.60	14.43	122.17
MW-10	3/30/2011	1	28	18 to 28	136.45	21.54	114.91
MW-11	3/31/2011	1	28	18 to 28	136.26	10.51	125.75
MW-12	3/31/2011	1	15	5 to 15	136.20	4.56	131.64
MW-13	3/31/2011	1	28	18 to 28	136.38	18.66	117.72
DW-2*	7/15/2008	2	60	55 to 60	135.79	7.17	128.62

TOC = top of casing.

DTW = depth to water.

bgs = below ground surface

* = Type III Monitoring Well

FIGURES

FIGURE 1

SITE LOCATION MAP

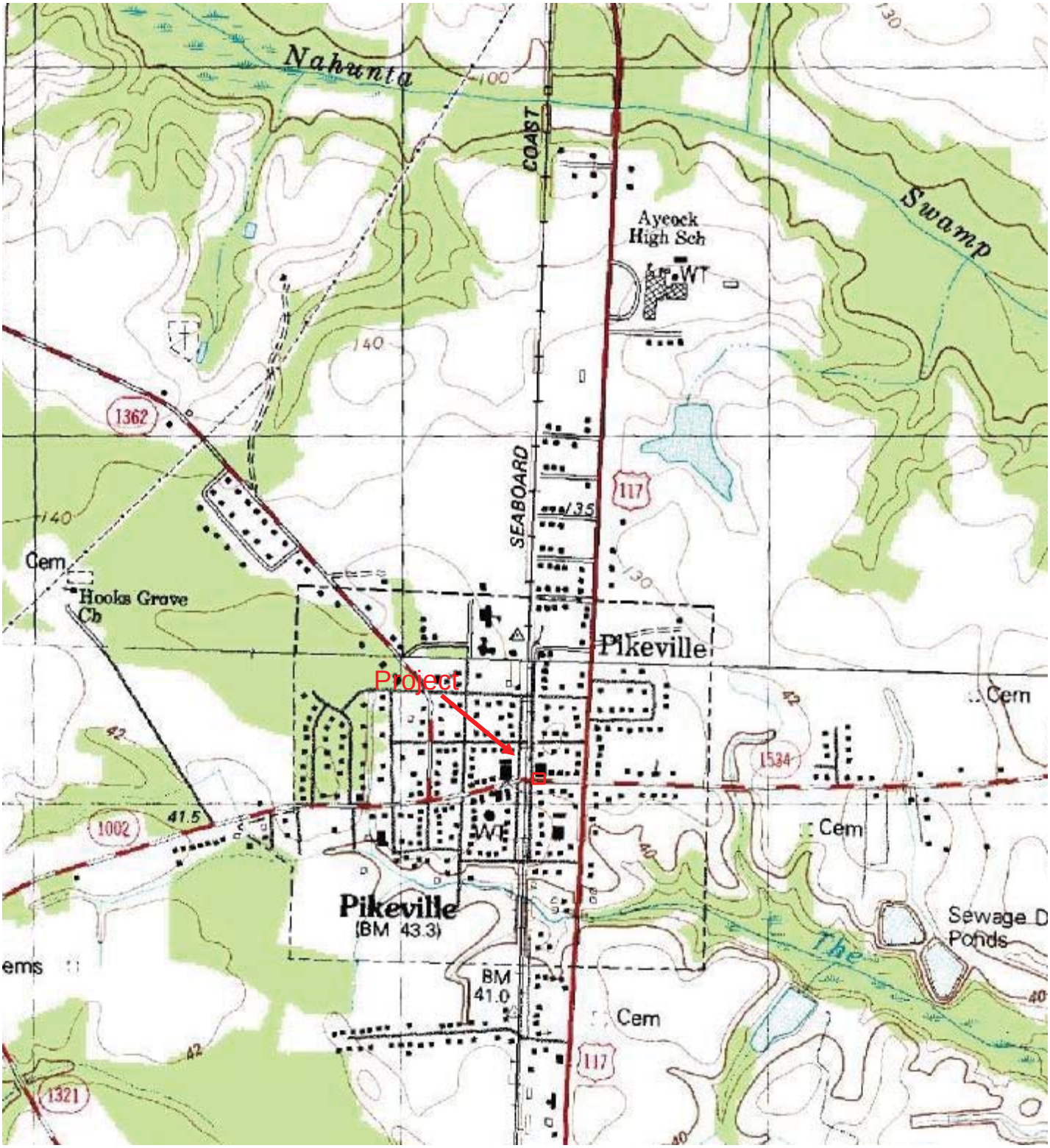

Figure 1 – Site Location Map

Source: USGS 7.5 Minute Topographic Map Pikeville North Carolina Quadrangle 1988

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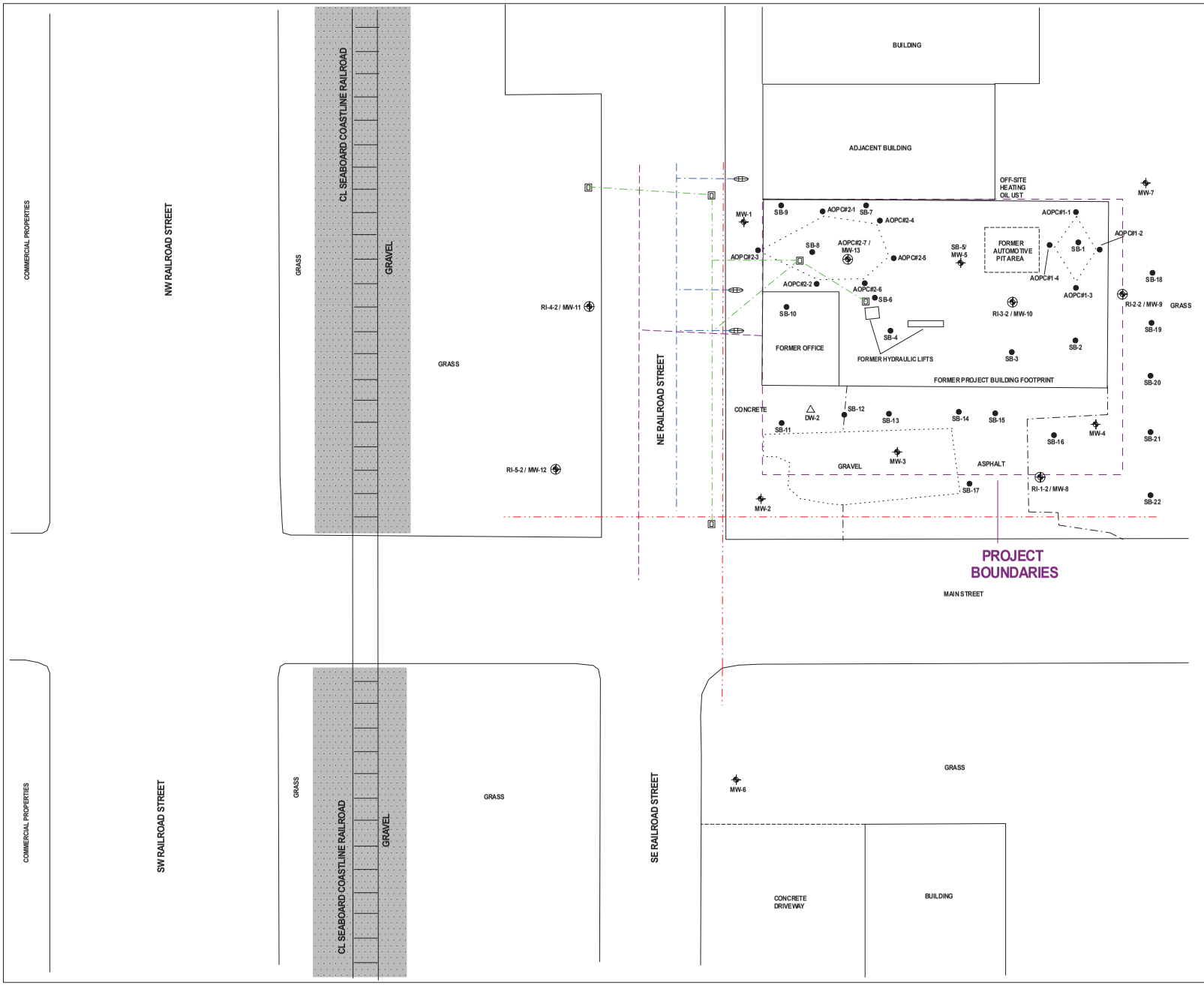
N

Site Name: **R.D. Pate Estate**
101 East Main Street
Pikeville, North Carolina

BB&T Project Number: ESA071433
EA Project Number: 07-7019.8

FIGURE 2

SITE PLAN - OVERVIEW



SITE PLAN - OVERVIEW

R.D. PATE ESTATE
101 EAST MAIN STREET
PIKEVILLE, NORTH CAROLINA
EA PROJECT NUMBER 07-7019.7

FIGURE: 2 | DATE: JULY 2012

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LEGEND

- TYPE II GROUNDWATER MONITORING WELL LOCATION
- TYPE III GROUNDWATER MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION
- TYPE II MONITORING WELL AND SOIL SAMPLE (2011) LOCATION
- OVERHEAD ELECTRICAL LINES
- MUNICIPAL WATER LINE
- MUNICIPAL STORM SEWER LINE
- MUNICIPAL SANITARY SEWER LINE
- FORMER DRAIN/GREASE TRAP
- WATER METER

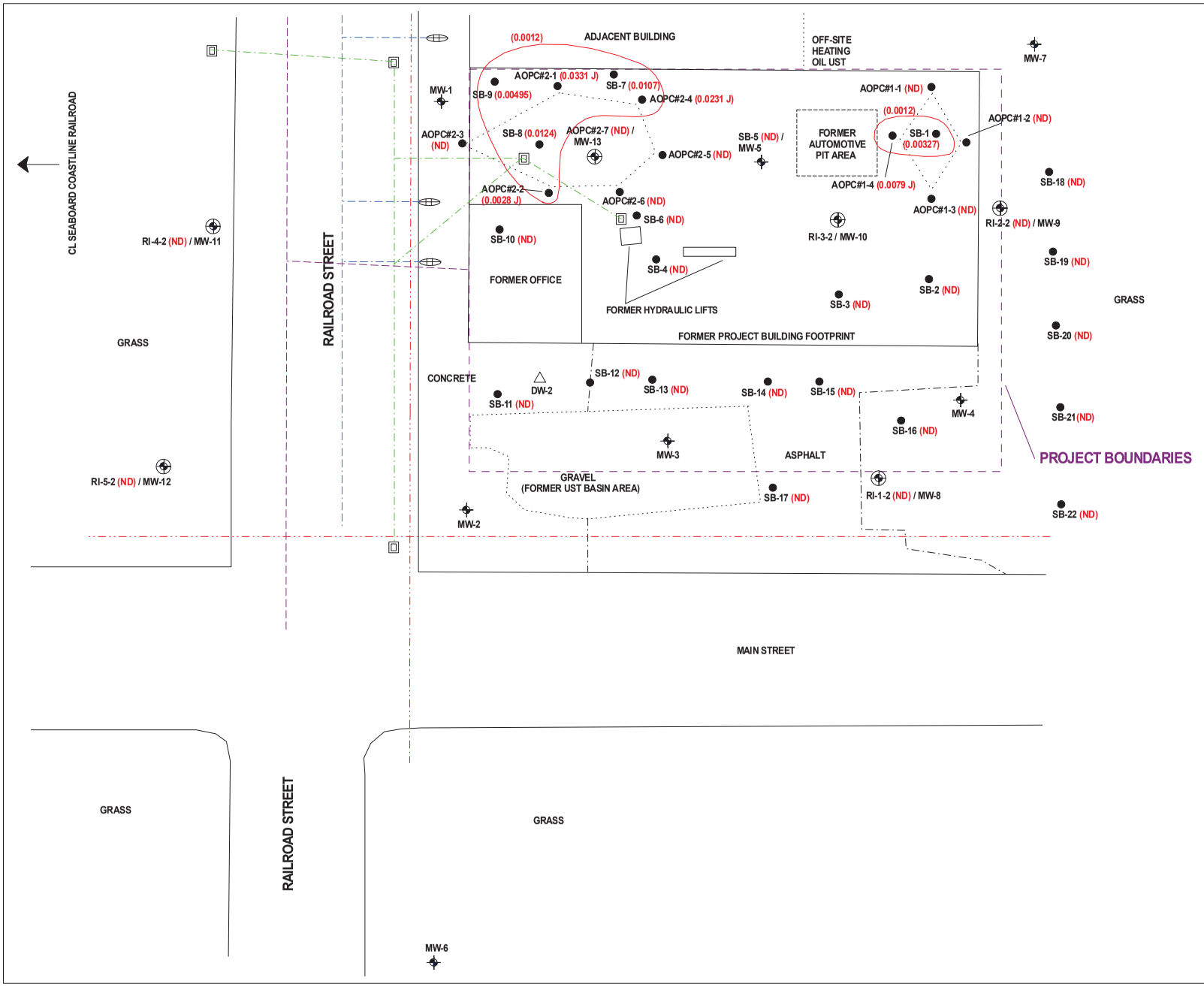
N

0 20 40

Scale: 1"=20'

FIGURE 3a

1,1,2,2-TRICHLOROETHANE SOIL ISOCONCENTRATION MAP



1,1,2,2-TETRACHLOROETHENE SOIL ISOCONCENTRATION MAP (2008 & 2011)

R. D. PATE ESTATE
101 EAST MAIN STREET
PIKEVILLE, NORTH CAROLINA
EA PROJECT NO. 07-7019.7

FIGURE: 3a | DATE: JULY 2012

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LEGEND

- TYPE II GROUNDWATER MONITORING WELL LOCATION
- TYPE III GROUNDWATER MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION
- TYPE II MONITORING WELL AND SOIL SAMPLE (2011) LOCATION
- OVERHEAD ELECTRICAL LINES
- MUNICIPAL WATER LINE
- MUNICIPAL STORM SEWER LINE
- MUNICIPAL SANITARY SEWER LINE
- FORMER DRAIN/GREASE TRAP
- WATER METER
- 1,1,2,2-TETRACHLOROETHANE CONTOUR LINE

ALL SOIL CONCENTRATIONS ARE REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg).

ND NON-DETECT

SRG SOIL REMEDIATION GOAL

IHSB PRELIMINARY HEALTH-BASED SRG FOR 1,1,2,2-TETRAHLOROETHANE = 0.56 mg/kg

IHSB PRELIMINARY PROTECTION OF GROUNDWATER SRG FOR 1,1,2,2-TETRAHLOROETHANE = 0.0012 mg/kg

J ESTIMATED CONCENTRATION ABOVE THE ADJUSTED METHOD DETECTION LIMIT AND BELOW THE ADJUSTED REPORTING LIMIT.

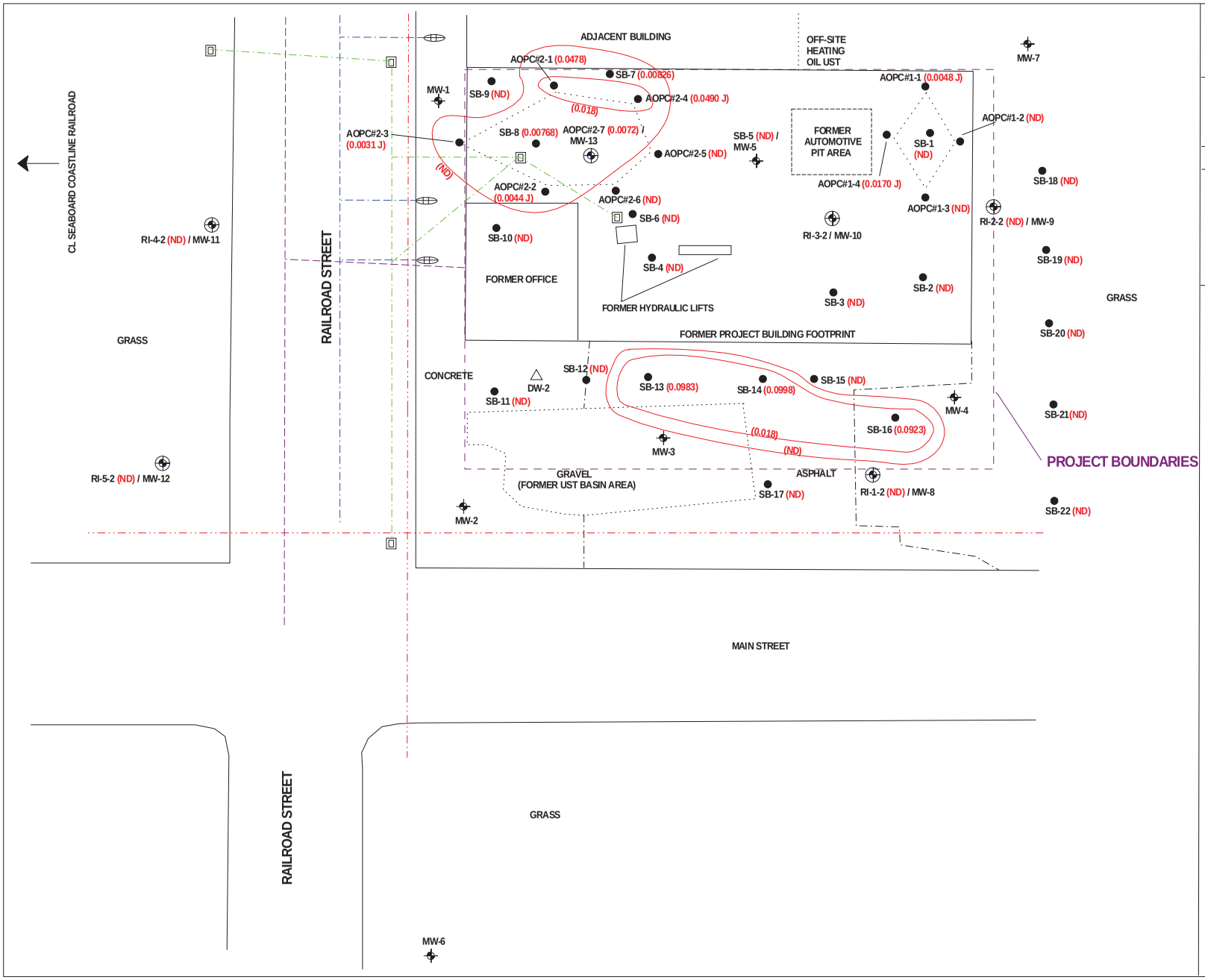
N

0 10 20

Scale: 1"=10'

FIGURE 3b

TRICHOLORETHENE (TCE) SOIL ISOCONCENTRATION MAP



TRICHLOROETHENE (TCE) SOIL ISOCONCENTRATION MAP (2008 & 2011)

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EA PROJECT NO. 07-7019.7

FIGURE: 3b | DATE: JULY 2012

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LEGEND

- TYPE II GROUNDWATER MONITORING WELL LOCATION
- TYPE III GROUNDWATER MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION
- TYPE II MONITORING WELL AND SOIL SAMPLE (2011) LOCATION
- OVERHEAD ELECTRICAL LINES
- MUNICIPAL WATER LINE
- MUNICIPAL STORM SEWER LINE
- MUNICIPAL SANITARY SEWER LINE
- FORMER DRAIN/GREASE TRAP
- WATER METER
- TRICHLOROETHENE CONTOUR LINE

ALL SOIL CONCENTRATIONS ARE REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg).

ND NON-DETECT

SRG SOIL REMEDIATION GOAL

IHSB PRELIMINARY HEALTH-BASED SRG FOR TCE = 0.88 mg/kg

IHSB PRELIMINARY PROTECTION OF GROUNDWATER SRG FOR TCE = 0.018 mg/kg

J ESTIMATED CONCENTRATION ABOVE THE ADJUSTED METHOD DETECTION LIMIT AND BELOW THE ADJUSTED REPORTING LIMIT.

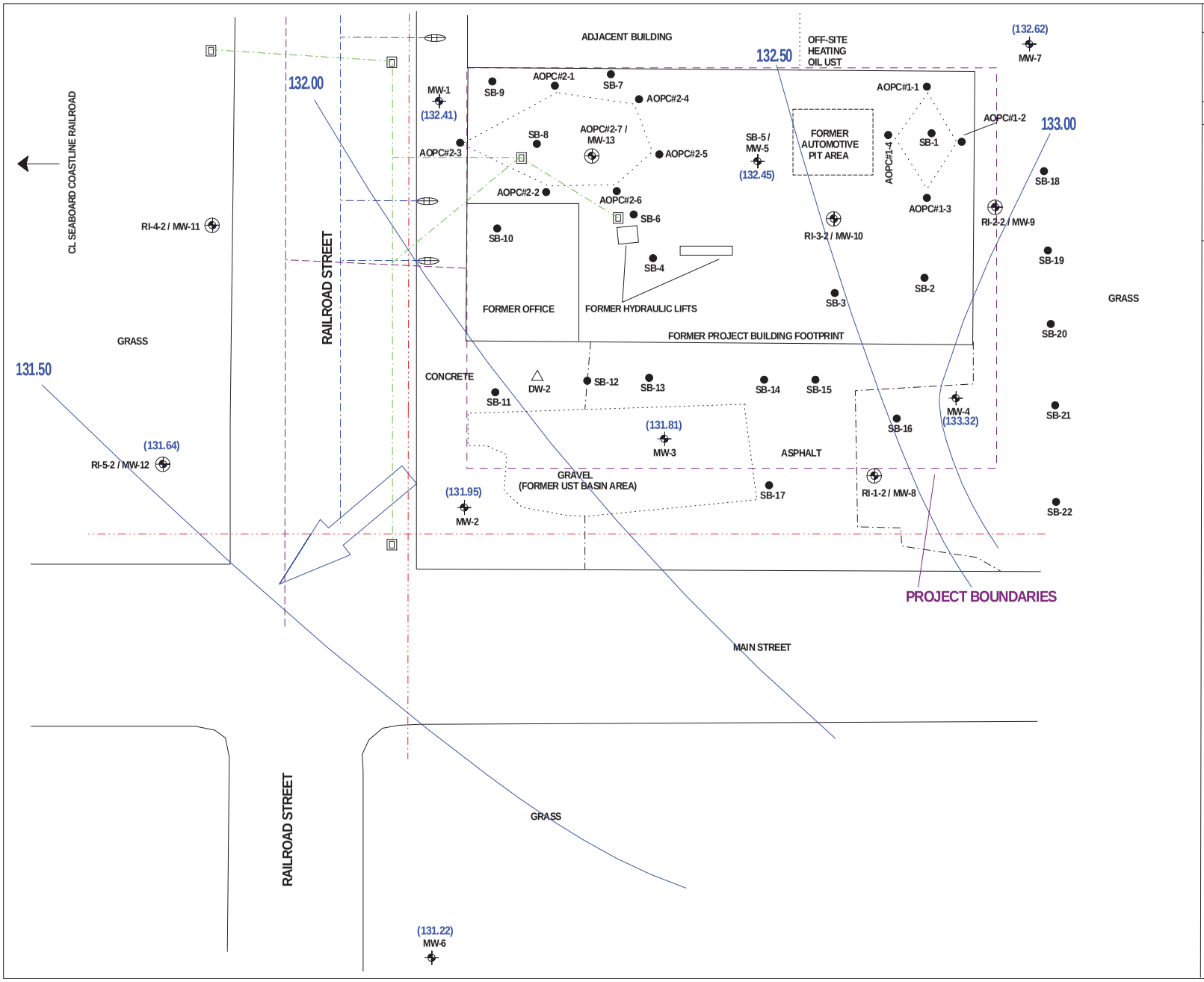
N

0 10 20

Scale: 1"=10'

FIGURE 4

SHALLOW GROUNDWATER POTENTIOMETRIC MAP



SHALLOW GROUNDWATER PONTENTIOMETRIC MAP

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FIGURE: 4 | DATE: JULY 2012

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LEGEND

- TYPE II GROUNDWATER MONITORING WELL LOCATION
- TYPE III GROUNDWATER MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION
- TYPE II MONITORING WELL AND SOIL SAMPLE (2011) LOCATION
- OVERHEAD ELECTRICAL LINES
- MUNICIPAL WATER LINE
- MUNICIPAL STORM SEWER LINE
- MUNICIPAL SANITARY SEWER LINE
- FORMER DRAIN/GREASE TRAP
- WATER METER
- 132.50 POTENTIOMETRIC CONTOUR
- GENERALIZED GROUNDWATER FLOW DIRECTION

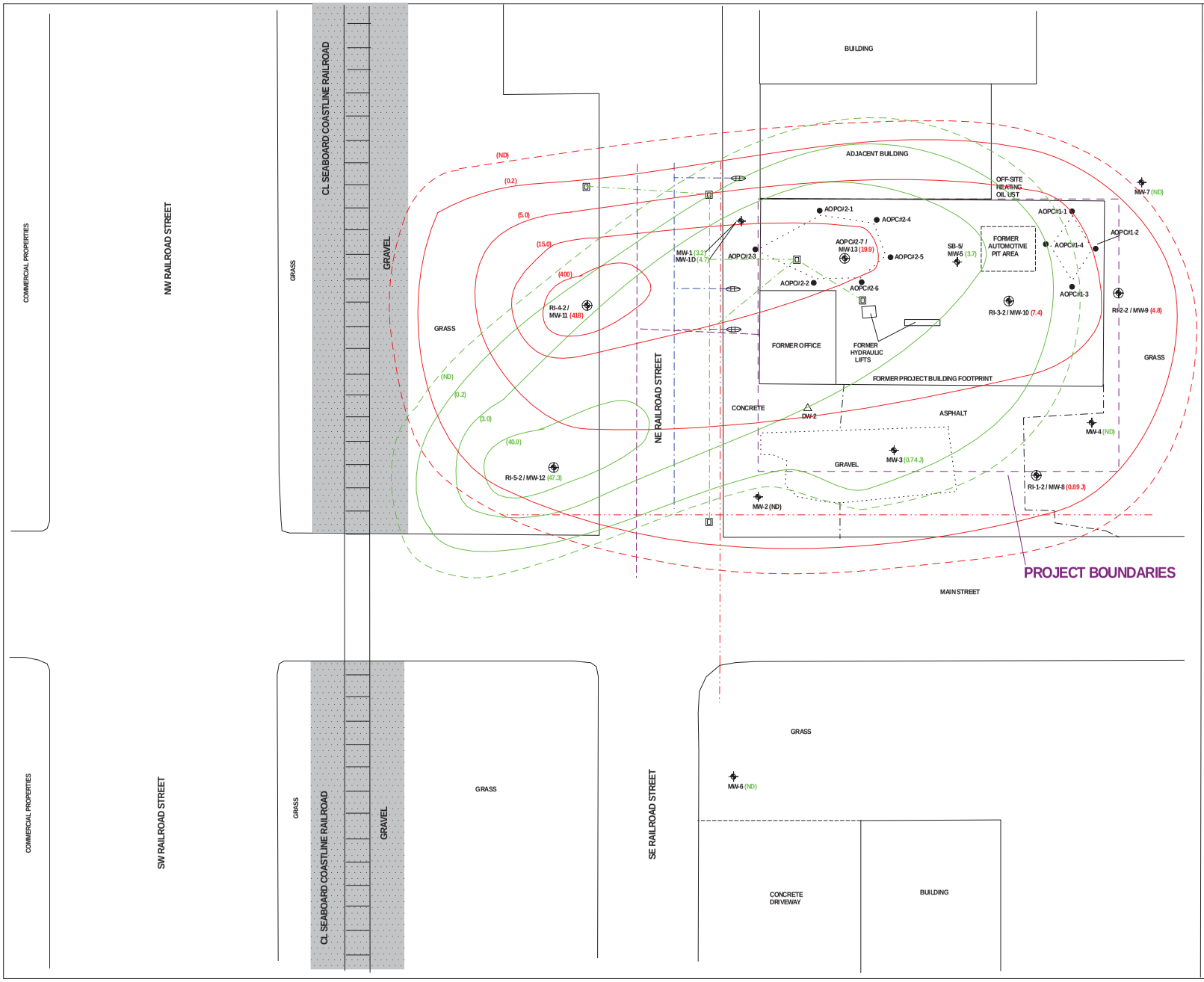
N

0 10 20

Scale: 1"=10'

FIGURE 5a

1,1,2,2-TRICHLOROETHANE GROUNDWATER ISOCONCENTRATION MAP



1,1,2,2-TETRACHLOROETHANE SHALLOW & INTERMEDIATE GROUNDWATER ISOCONCENTRATION MAP (APRIL 2011)

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FIGURE: 5a | DATE: JULY 2012

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LEGEND

- TYPE II GROUNDWATER MONITORING WELL LOCATION
- TYPE III GROUNDWATER MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION
- TYPE II MONITORING WELL AND SOIL SAMPLE (2011) LOCATION
- OVERHEAD ELECTRICAL LINES
- MUNICIPAL WATER LINE
- MUNICIPAL STORM SEWER LINE
- MUNICIPAL SANITARY SEWER LINE
- FORMER DRAIN/GREASE TRAP
- WATER METER
- SHALLOW 1,1,2,2-TETRCHLOROETHANE CONTOUR LINE
- INTERMEDIATE 1,1,2,2-TETRCHLOROETHANE CONTOUR LINE

ALL GROUNDWATER CONCENTRATIONS ARE REPORTED IN MICROGRAMS PER LITER (ug/L).

ND NON-DETECT

NCAC 2L GROUNDWATER QUALITY STANDARD FOR 1,1,2,2-TETRACHLOROETHANE = 1.0 ug/L

J ESTIMATED CONCENTRATION ABOVE THE ADJUSTED METHOD DETECTION LIMIT AND BELOW THE ADJUSTED REPORTING LIMIT.

N

0 20 40

Scale: 1"=20'

FIGURE 5b

TRICHLOROETHENE (TCE) GROUNDWATER ISOCONCENTRATION MAP

TRICHLOROETHENE (TCE) SHALLOW & INTERMEDIATE GROUNDWATER ISOCONCENTRATION MAP (APRIL 2011)

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FIGURE: 5b | DATE: JULY 2012

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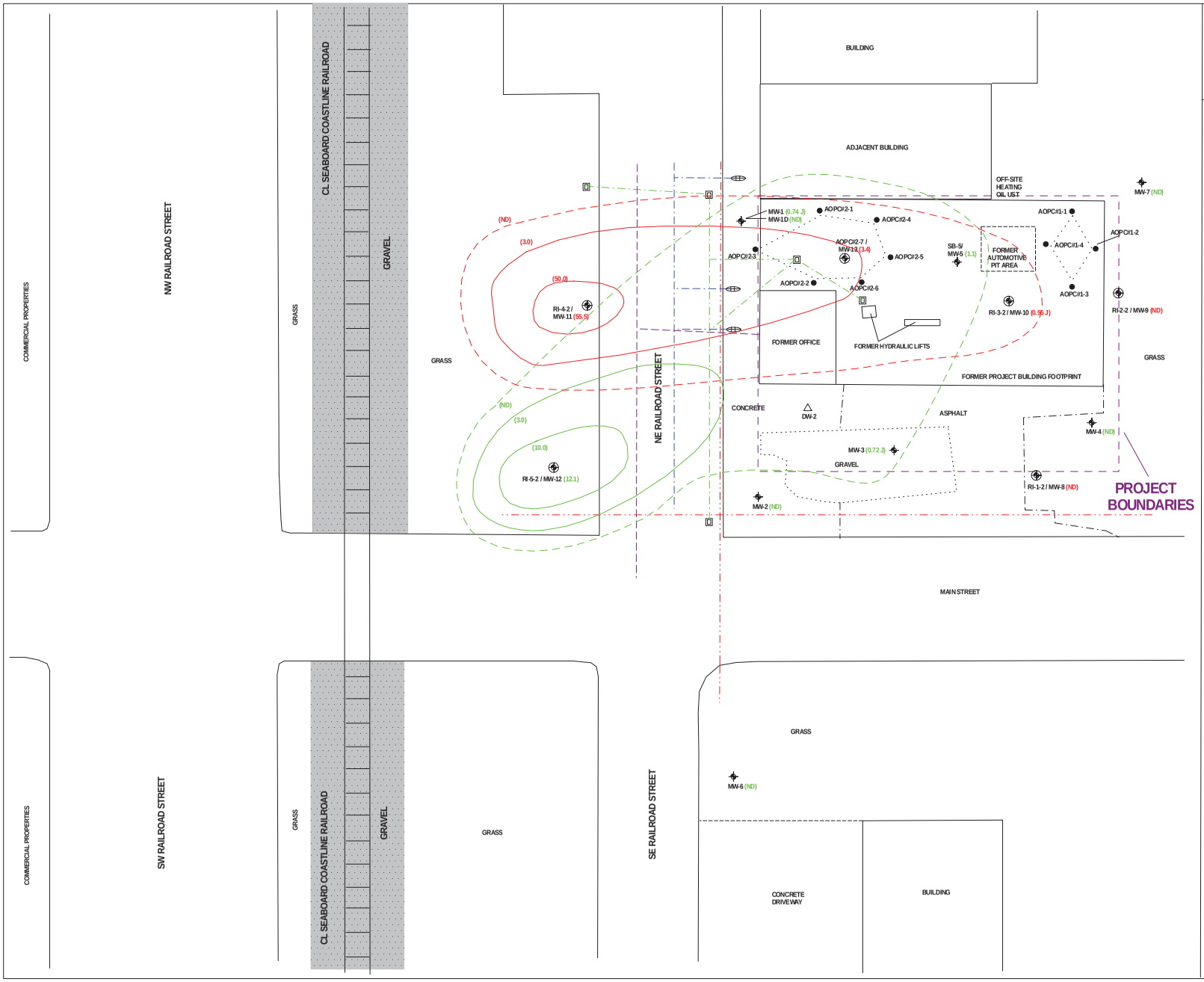


LEGEND

- TYPE II GROUNDWATER MONITORING WELL LOCATION
- TYPE III GROUNDWATER MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION
- TYPE II MONITORING WELL AND SOIL SAMPLE (2011) LOCATION
- OVERHEAD ELECTRICAL LINES
- MUNICIPAL WATER LINE
- MUNICIPAL STORM SEWER LINE
- MUNICIPAL SANITARY SEWER LINE
- FORMER DRAIN/GREASE TRAP
- WATER METER
- SHALLOW TRICHLOROETHENE (TCE) CONTOUR LINE
- INTERMEDIATE TRICHLOROETHENE (TCE) CONTOUR LINE

ALL GROUNDWATER CONCENTRATIONS ARE REPORTED IN MICROGRAMS PER LITER (ug/L).

ND NON-DETECT

NCAC 2L GROUNDWATER QUALITY STANDARD FOR TRICHLOROETHENE = 3.0 ug/L

J ESTIMATED CONCENTRATION ABOVE THE ADJUSTED METHOD DETECTION LIMIT AND BELOW THE ADJUSTED REPORTING LIMIT.

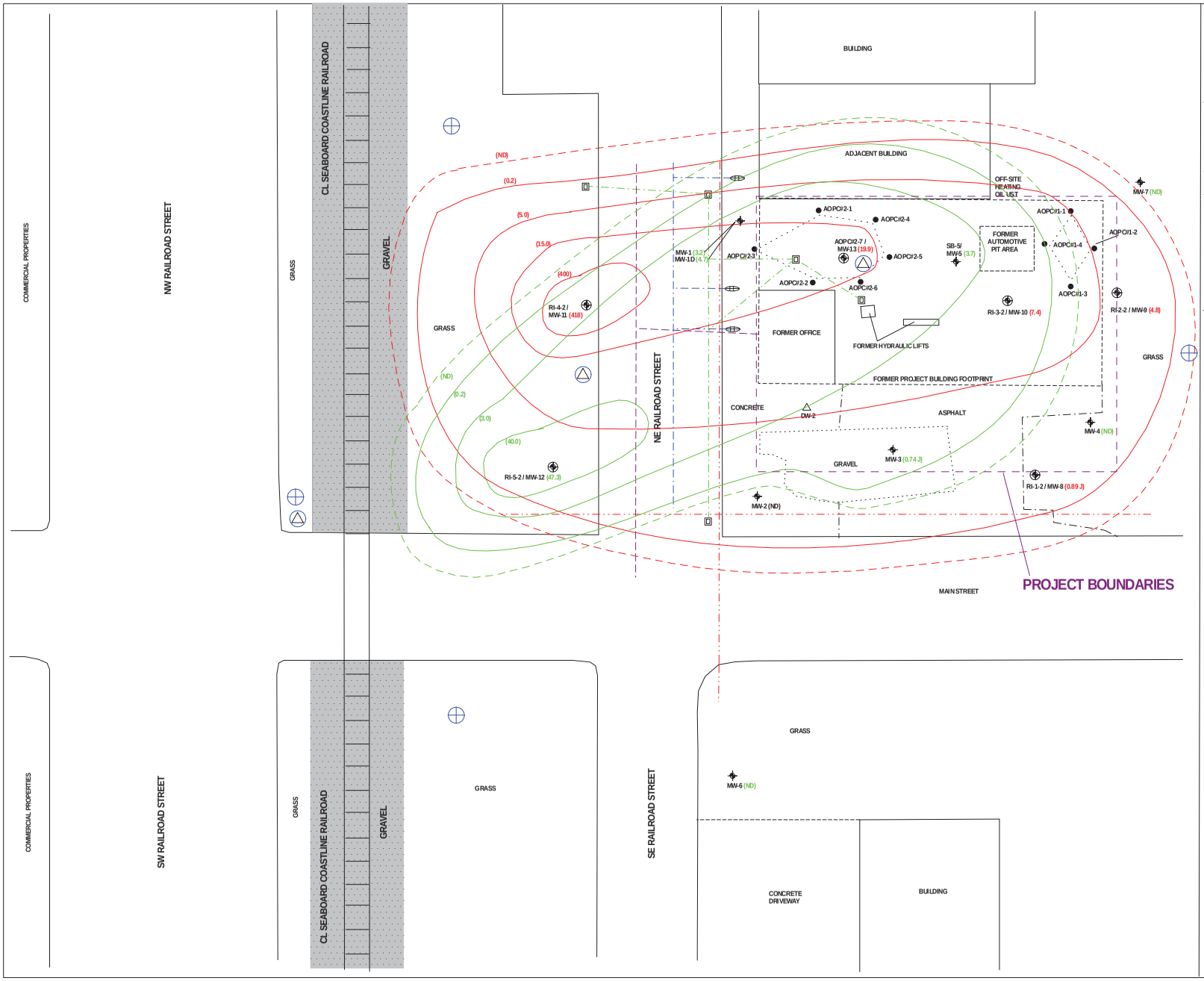
N

0 20 40

Scale: 1"=20'

FIGURE 6

PROPOSED GROUNDWATER MONITORING WELL LOCATIONS



PROPOSED GROUNDWATER MONITORING WELL LOCATIONS

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PIKEVILLE, NORTH CAROLINA
EA PROJECT NUMBER 07-7019.7

FIGURE: 6 | DATE: JULY 2012

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LEGEND

- TYPE II GROUNDWATER MONITORING WELL LOCATION
- TYPE III GROUNDWATER MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION
- TYPE II MONITORING WELL AND SOIL SAMPLE (2011) LOCATION
- PROPOSED TYPE II MONITORING WELL LOCATION
- PROPOSED TYPE III MONITORING WELL LOCATION
- OVERHEAD ELECTRICAL LINES
- MUNICIPAL WATER LINE
- MUNICIPAL STORM SEWER LINE
- MUNICIPAL SANITARY SEWER LINE
- FORMER DRAIN/GREASE TRAP
- WATER METER
- SHALLOW 1,1,2,2-TETRCHLOROETHANE CONTOUR LINE
- INTERMEDIATE 1,1,2,2-TETRCHLOROETHANE CONTOUR LINE

ALL GROUNDWATER CONCENTRATIONS ARE REPORTED IN MICROGRAMS PER LITER (ug/L).

ND NON-DETECT

NCAC 2L GROUNDWATER QUALITY STANDARD FOR 1,1,2,2-TETRACHLOROETHANE = 0.2 ug/L

J ESTIMATED CONCENTRATION ABOVE THE ADJUSTED METHOD DETECTION LIMIT AND BELOW THE ADJUSTED REPORTING LIMIT.

0 20 40

N

Scale: 1"=20'