



**SUPPLEMENTAL SITE CHARACTERIZATION  
AFTER ACTION REPORT – ENVIRONMENTAL  
SITE INVESTIGATION VI**

**CENTER FOR PLANT HEALTH SCIENCE AND  
TECHNOLOGY, ANALYTICAL AND NATURAL  
PRODUCTS CHEMISTRY LABORATORY**

**GULFPORT, MISSISSIPPI**

**FINAL**

**Contract No. AG-6395-B-11-0047  
Task Order No. AG-6395-K-11-0381**

***Prepared for:***

**U.S. Department of Agriculture  
Animal and Plant Health Inspection Service  
Riverdale, Maryland**

***Prepared by:***

**BMT Designers and Planners, Inc.  
2120 Washington Boulevard, Suite 200  
Arlington, VA 22204**

**March 2012**



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## LIST OF ACRONYMS

µg/kg	microgram per kilogram (ppb)
µg/L	microgram per liter (ppb)
AAR	After Action Report
APHIS	Animal and Plant Health Inspection Service
ANPCL	Analytical and Natural Products Chemistry Laboratory
BMT	BMT Designers and Planners, Inc.
CPHST	Center for Plant Health Science and Technology
DDT	4,4'-dichlorodiphenyltrichloroethane
EPA	United States Environmental Protection Agency
ESI	Expanded Site Investigation
ft bgs	Feet below ground surface
HASP	Site-Specific Health and Safety Plan
IDW	Investigation Derived Waste
IFA	Imported Fire Ant
in bgs	Inches below ground surface
MDEQ	Mississippi Department for Environmental Quality
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NTCRA	Non-Time Critical Removal Action
OC	Organochlorine
PA/SI	Preliminary Assessment and Site Investigation
PPQ	Plant Protection and Quarantine
ppb	Parts per billion
QA	Quality Assurance
QAPP	Quality Assurance Program Plan
QC	Quality Control
TAL	Target Analyte List
TRG	Target Remediation Goal
USDA	United States Department of Agriculture
VOC	Volatile Organic Compound

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# 1. INTRODUCTION

From January 9 through 13, 2012, BMT Designers and Planners, Inc. (BMT) conducted Supplemental Site Characterization activities at the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) Center for Plant Health Science and Technology (CPHST) Analytical and Natural Products Chemistry Laboratory (ANPCL) located in Gulfport, Mississippi (Figure 1). This After Action Report (AAR) details soil and groundwater sampling activities and compares analytical results to the Mississippi Department of Environmental Quality's (MDEQ) target remediation goals (TRGs) for restricted and unrestricted use.

## 1.1 Location and Description

The CPHST ANPCL facility, hereafter referred to as the "Site" or "Facility", currently encompasses an area of approximately 4.6 acres located at 3505 25th Avenue in Gulfport, Harrison County, Mississippi (Figure 1). The USDA has occupied the subject property since 1958 and purchased the property from Sterling Drug, Inc. (Sterling) in 1962 (TtNUS, 2005). The Facility is located approximately 250 feet north of 34th Street and along US Route 49 (also known as 25th Avenue). The geographic coordinates measured on the United States Geological Survey 7.5-minute topographic map for the facility are 30°23'31" N, 89°05'38" W. The facility is bordered to the west and to the north by the Coca-Cola Bottling Company. The facility is entirely enclosed by fencing and has security present 24 hours a day, seven days a week. A detailed view of the Facility and the surrounding vicinity is shown in Figure 2.

The Gulfport Lab consists of an Analytical Chemistry section and an Imported Fire Ant (IFA) section. The Analytical Chemistry section conducts routine sample analysis for detecting the presence of pesticide residues and toxic substances, which directly supports ongoing APHIS programs, such as IFA, Asian longhorned beetle, boll weevil, grasshopper, and fruit fly. The Analytical Chemistry section also assists in conducting specialized organic chemistry analysis (trace element analysis) of commodities, especially fruits and vegetables, to determine country of origin. Through organic chemical analysis, we are able to identify commodities, pests, noxious weeds, diseases and pathogens (USDA, 2010).

The Gulfport Lab IFA section conducts field and laboratory experiments aimed at developing methods and tools for the survey, detection, regulation, and control of the IFA. Technology and scientific information developed by the IFA section is utilized by APHIS Plant Protection and Quarantine (PPQ), State Plant Regulatory Officials, the nursery industry, chemical industry, farmers, ranchers, homeowners, and other stakeholders. The Gulfport Lab is the sole source of developing new quarantine technologies in support of the Federal Imported Fire Ant Quarantine (Title 7, Code of Federal Regulations, Part 301.81) for nursery stock and other commodities of interest. Technologies that are developed are transferred to stakeholders through tools such as PPQ manuals, APHIS program aids, online information, and training workshops (USDA, 2010).

## **1.2 Previous Environmental Site Investigations**

A Preliminary Assessment and Site Investigation (PA/SI) was conducted at the Site from 2003 through 2005. Subsequent site characterization activities were termed “expanded site investigations” (ESI). ESI 1 identified organochlorine (OC) pesticides in soil and groundwater. Subsequent investigations completed from 2005 through 2007 (ESI 2 through 5) were aimed at delineating the extent of contamination in soil and groundwater at several locations throughout the facility. This AAR report summarizes the results of the sixth ESI (ESI 6) conducted to further delineate the extent of OC pesticide contamination in the Building 14 and 15 area and the northeast corner area. Additionally, ESI 6 was conducted to determine if there are OC pesticide contaminated soils in the vicinity of monitoring well MW-03.

Soil samples collected during site investigations conducted in 2009 and 2011 (ESI 4 and EI 5) serve as the basis for the current supplemental site characterization program. In order to differentiate soil borings advanced during each ESI, soil boring identifications include a reference to the ESI during which they were first advanced. For example soil borings advanced during ESI 4 contain ‘ESI4’ preceding the boring identification number (i.e., ESI4-06). In some soil boring locations, vertical delineation was not achieved during the ESI in which the boring was originally advanced and additional samples were collected from the same soil boring location during subsequent ESIs. In these cases, the original boring identification was retained. For example, soil samples were collected at progressively greater depth intervals from soil boring ESI4-06 during ESI 4, ESI 5, and ESI 6 and the soil boring identification ‘ESI4-06’ was retained for all samples.

## **1.3 Scope and Objectives**

The Supplemental Site Characterization program was conducted in accordance with an approved Work Plan to further delineate the horizontal and vertical extent of pesticide contaminated soil at several locations and to assess groundwater quality at the CPHST ANPCL (BMT, 2011). The objective of the Supplemental Site Characterization program was to delineate extent of soil contamination to TRGs for both restricted and unrestricted use. TRGs are established by the MDEQ using a risk-based approach and are protective of human health and the environment for the selected future land use (i.e., restricted or unrestricted). If concentrations of contaminants in environmental media meet the TRGs for unrestricted use, there are no restrictions on future land use. If concentrations of contaminants in environmental media do not meet TRGs for unrestricted use but meet TRGs for restricted use then appropriate institutional controls (i.e., fencing, paved surfaces, etc.) may be implemented to protect human health and the environment and a land use restriction must be implemented. Both institutional controls and land use restrictions must be agreed upon by the MDEQ. If TRGs for restricted use are exceeded, environmental media may be remediated to levels below the TRG for restricted or unrestricted use, or a Tier 2 evaluation may be conducted. A Tier 2 evaluation is a site-specific evaluation of human health and ecological risk (MDEQ, 2002).

### **1.3.1 Soil Investigation**

The primary contaminants of concern (COCs) in soil at the facility are the organochlorine (OC) pesticides aldrin, dieldrin, 4,4'-dichlorodiphenyltrichloroethane (DDT), heptachlor, and heptachlor epoxide. The Supplemental Soil Characterization program was primarily focused on the 60 ft by 40 ft area between Building 14 and Building 15 (along the western boundary of the facility) and an area in the northeastern corner of the site in the area of historical surface soil sample ESI4-19. Additionally, a third area located on the southern portion of the site was included in to determine if there is a potential source of OC pesticides in the vicinity of monitoring well MW-03, the monitoring well which has historically had the greatest concentrations of dieldrin (BMT, 2011a).

### **1.3.2 Groundwater Investigation**

An additional objective of the Supplemental Site Characterization program is to ensure that groundwater quality data collected from MW-05 is representative of groundwater quality in the area between Buildings 14 and 15. Monitoring well MW-05 has a screened interval (25 to 30 feet below ground surface [ft bgs]) below the water table and the zone of observed contamination. A shallow monitoring well with a screened interval corresponding to the water table was installed adjacent to MW-05. The new well, MW-05S, was developed and sampled to determine if there is any difference in groundwater quality between the shallow and deep groundwater in that area and ensure that groundwater quality between Buildings 14 and 15 has been accurately characterized.

Groundwater quality data has been collected from groundwater monitoring wells located at the ANPCL in 2004, 2007, 2009, and 2011. The metals iron, manganese, mercury, lead, and thallium; the volatile organic compounds (VOCs) chloroform and naphthalene; and the OC pesticides dieldrin, DDT, beta-BHC, and delta-BHC have been identified in groundwater at concentrations greater than their respective Mississippi Tier 1 TRGs (TtNUS, 2005, TtNUS, 2008, TtNUS, 2010, and BMT, 2011a). The six (6) existing groundwater monitoring wells and the new well (MW-05S) were sampled as part of ESI 6 Supplemental Site Characterization activities to assess groundwater quality at the facility.

ESI 6 Supplemental Site Characterization activities were conducted in accordance with an approved Work Plan (BMT, 2011), a Site Specific Quality Assurance Program Plan (QAPP) for ANPCL (BMT, 2010a), and an approved Site-Specific Health and Safety Plan (HASP) (BMT, 2010b).

### **1.3.3 Source Evaluation**

The source of OC pesticide contamination detected in surface soil, subsurface soil, and groundwater has not been identified. According to CPHST ANPCL personnel, OC pesticides have never been used, stored, or manufactured at the facility by USDA APHIS. An incinerator was formerly located in the area currently occupied by Building 15; however, it was reportedly never used due to permitting issues that could not be

resolved and was removed. The current Building 15 was constructed after the removal of the incinerator. According to CPHST ANPCL personnel, at the time of the incinerator removal the current storm water drainage system was installed. Extensive re-grading of parts of the facility was conducted at this time and borrow soil may have been brought in from an off-site source. It is possible that the fill brought on site from an off-site source may have been contaminated with OC pesticides.

Review of historical aerial photographs and topographic maps from 1954 through 2010 indicted that the Site has undergone several changes. In 1958 when USDA facility operations began at the Site, there were approximately eleven (11) buildings on the property along with several small sheds and other structures. By 1972 a large building in the central area of the site had been removed. Many of the structures currently on the site property can be identified in the 1976 aerial photograph. Additionally, in September 1997, 0.389 acres along the eastern property boundary were granted to the Department of Transportation as a highway easement (TtNUS, 2005). Aerial photographic coverage identified a structure in the area between Buildings 14 and 15 from prior to 1992 until sometime between 2003 and 2005, when it was removed. According to CPHST ANPCL personnel, this building was referred to as 'old Building 15' and was on the property when it was purchased from Sterling in 1963. Additionally, a large stand of trees was identified in aerial photographs in the northeast corner of the site. The presence of the stand of trees was confirmed by CPHST ANPCL personnel during Supplemental Site Characterization Activities (ESI 5). The stand of trees was removed sometime between 2003 and 2005. Irrigation lines formerly used to water the stand of trees remain in place (BMT, 2011a).

A review of Sterling land use and chemical manufacturing records for the Gulfport facility prior to its sale in 1963 may be warranted to determine if the pesticide contamination pre-dates USDA APHIS ownership of the facility.

## **2. SUPPLEMENTAL SITE CHARACTERIZATION PROGRAM**

The Supplemental Site Characterization program primarily focused on the vertical and horizontal delineation of the extent of OC pesticide contamination in soil between Buildings 14 and 15, an area in the northeast corner of the facility, and the area surrounding monitoring well MW-03. These areas were identified as the subject of the Supplemental Site Characterization Program because OC pesticides were detected in soil in these areas at concentrations greater than their TRGs during previous investigations. Additionally, one additional monitoring well (MW-05S) was installed adjacent to monitoring well MW-05 to ensure that groundwater quality in that area has been accurately characterized. Groundwater samples were collected from seven (7) on-site monitoring wells.

## **2.1 Utility Survey**

On January 9, 2012, prior to the advancement of soil borings at the facility, a comprehensive utility survey was conducted to identify subsurface utilities that potentially conflicted with proposed soil boring locations. The utility survey was conducted with a combination of electromagnetic and ground penetrating radar technologies. The survey successfully identified subsurface utilities including electric, water, telecommunications, natural gas, sanitary sewer, and storm sewer in the area of Buildings 14 and 15 and electric and irrigation lines in the northeast corner (ESI4-19) area. The location of identified subsurface utilities were surveyed (Section 2.8) so that utility locations could reliably be identified in advance of future site characterization or remedial action activities. Subsurface utility location maps for the Building 14 and 15 area and the northeast area are included as Figures 3 and 4, respectively. As indicated in the Site Specific Health and Safety Plan, proposed soil boring locations in conflict with identified utilities were moved a safe distance from the utility. In a few cases, soil borings could not be moved a safe distance from an identified utility. In these cases soil borings were advanced using safe digging techniques (i.e., hand auger) so that a utility would not be damaged if encountered during borehole advancement.

## **2.2 Soil Sampling Program Objective**

The objective of the soil sampling program was to further delineate the extent of surface and subsurface soil contamination at the facility. Based on results of previous environmental site investigations conducted at the site, the collection of additional surface and subsurface samples was necessary for the horizontal and vertical delineation of OC pesticide contaminated soil at two (2) locations on the Facility: the gridded area between Buildings 14 and 15, and the northeast corner of the Facility around sample ESI4-19. Additionally, soil samples were collected in the vicinity of monitoring well MW-03 to determine if surface or subsurface soils are serving as a source of groundwater contamination observed in monitoring well MW-03. These areas within the Facility are depicted on Figure 5.

### **2.2.1 Soil Sampling Program**

Supplemental soil characterization activities were conducted on January 10, 11, and 12, 2012. A total of ninety-eight (98) discrete soil samples were collected from forty-four (44) soil boring locations. A total of twenty-two (22) soil borings were advanced using Geoprobe® direct-push techniques. A total of five (5) soil borings, located in inaccessible areas (i.e., behind buildings) or located in close proximity to subsurface utilities, were advanced using a hand auger. Soil boring depths ranged from 24 to 96 inches below ground surface (in bgs). Soil boring lithology was logged for each borehole and was recorded in soil boring logs. Soil boring logs are included as Appendix A.

Thirty-nine (39) surface soil samples and fifty-nine (59) subsurface soil samples were collected and submitted for laboratory analysis of OC pesticides via EPA Method 8081A. All samples were collected and shipped to the analytical laboratory in accordance with the provisions of the site-specific QAPP and

HASP. A summary of the soil sampling program rationale and samples collected is provided in Table 1 and described below.

### **Northeast Corner (ESI4-19) Area**

In 2009, dieldrin was detected in surface soil sample ESI4-19 at a concentration (140 µg/kg) greater than the TRG for unrestricted use (TtNUS, 2010). Subsequent soil sampling conducted in 2011 (ESI 5) confirmed the presence of dieldrin in surface soil at sample point ESI4-19 at concentrations greater than the TRG for unrestricted use and in the surrounding area at concentrations greater than the TRG for restricted use. Dieldrin was not detected at concentrations greater than the TRG for unrestricted use in any subsurface soil samples. The 2011 soil sampling, however, did not delineate the extent of soil contamination in the area and further horizontal delineation of the extent of dieldrin contamination in this area was warranted (BMT, 2011a).

A sample grid was established around the 2011 sampling locations to determine the horizontal extent of surface soil contamination. Figure 6 shows the location of the soil sampling effort aimed at delineating the extent of dieldrin contamination associated with the ESI 6 investigation in the vicinity of the earlier samples (ESI 4 and 5) that exceeded the TRG for unrestricted use. The sample grid included sixteen (16) soil boring locations (ESI6-01 through ESI6-16) and extended to the property boundary to the east, into the asphalt parking lot to the south, and approximately 30 feet to the north and west. Soil samples were collected from each soil boring at two (2) discrete depth intervals (0 to 6 and 18 to 24 in bgs). Soil borings ESI6-09 and ESI6-13 through -16 were advanced through the asphalt parking lot. In asphalt covered sampling locations, soil samples were collected from the first six inches of soil below the asphalt and associated bedding material and the second samples were collected from the six inch interval located 18 to 24 inches below the top of the asphalt surface. A total of sixteen (16) surface soil samples and sixteen (16) subsurface samples were collected and submitted for laboratory analysis of OC pesticides.

### **Building 14 and 15 Area – Horizontal Delineation**

Based on a review of the existing data set including data collected from ESI 4 and ESI 5, further expansion of the sampling grid in all directions was necessary to delineate the horizontal extent of contamination in the Building 14 and 15 area. The extent to which horizontal delineation can be accomplished in this area is limited by site features including the fenced western property boundary, Buildings 14 and 15 located to the north and south of the gridded area, and the facility road located to the east of the gridded area. Considering these restrictions, the sample grid was expanded horizontally only where sampling was not restricted by site features.

A total of twenty (20) additional soil borings (ESI6-17 through ESI6-36) were advanced to support further horizontal delineation of soil contamination. The locations of soil borings ESI6-17 through ESI6-36 are depicted on Figure 7. Surface soil samples (0 to 6 in bgs) and subsurface soil samples from 18 to 24 in

bgs were collected from each soil boring. Soil boring locations located adjacent to ESI 4 or ESI 5 sample locations in which OC pesticides were detected at concentrations greater than the TRGs for restricted or unrestricted use at a depth of 30 to 36 in bgs were also sampled at the 30 to 36 in bgs interval. A total of twenty (20) surface soil samples and twenty-five (25) subsurface samples were collected and submitted for laboratory analysis of OC pesticides.

#### **Building 14 and 15 Area – Vertical Delineation**

Only four (4) soil samples were collected during ESI 4 (2009) at the 24 to 36 in bgs depth interval (TtNUS, 2010). The subsequent sampling program (ESI 5) further delineated to the vertical extent of contamination in the area between Buildings 145 and 15; however, complete vertical delineation of the extent of OC pesticide contamination in this area was not achieved (BMT, 2011a). During ESI 6, five (5) soil borings were advanced in the same location as previous (ESI 4 and ESI 5) soil borings in an effort to complete the vertical delineation of the area between Buildings 14 and 15. A total of eleven (11) subsurface soil samples were collected and were submitted for laboratory analysis of OC pesticides.

#### **Monitoring Well MW3 Area**

Three (3) soil borings (ESI6-37 through ESI6-39) were advanced in the vicinity of monitoring well MW-03 to determine if surface or subsurface soils are a potential source of OC pesticides detected in monitoring well MW-03. The locations of soil borings ESI6-37 through ESI6-39 are depicted on Figure 8. A total of three (3) surface soil samples and six (6) subsurface samples were collected and submitted for laboratory analysis of OC pesticides.

**Table 1: Summary of Supplemental Soil Characterization Program**

Boring Identification	Boring Location	Sample Depth(s) (in bgs)	Rationale for Sample Collection
ESI4-06	Within the gridded area between Buildings 14 and 15.	42-48"	Vertical delineation of the gridded area between Buildings 14 and 15 (Figure 7).
ESI4-13	Within the gridded area between Buildings 14 and 15.	66-72", 78-84", 90-96"	Vertical delineation of the gridded area between Buildings 14 and 15 (Figure 7).
ESI4-14	Within the gridded area between Buildings 14 and 15.	54-60", 66-72"	Vertical delineation of the gridded area between Buildings 14 and 15 (Figure 7).
ESI5-14	South of gridded area between Buildings 14 and 15.	42-48", 54-60"	Vertical delineation of the gridded area between Buildings 14 and 15 (Figure 7).
ESI5-15	South of gridded area between Buildings 14 and 15.	54-60", 66-72", 78-84"	Vertical delineation of the gridded area between Buildings 14 and 15 (Figure 7).
ESI6-01 through ESI6-16	Northeast Corner (ESI4-19) Area.	0-6", 18-24"	Horizontal delineation of the extent of contamination in the northeast corner (ESI4-19) area (Figure 6).
ESI6-17 through ESI6-20	North of gridded area, east of building 14.	0-6", 18-24"	Horizontal delineation of the gridded area between Buildings 14 and 15 (Figure 7).
ESI6-21, ESI6-22, and ESI6-25 through ESI6-31	East of gridded area between Buildings 14 and 15.	0-6", 18-24"	Horizontal delineation of the gridded area between Buildings 14 and 15 (Figure 7).
ESI6-23 and ESI6-24	East of gridded area between Buildings 14 and 15.	0-6", 18-24", 30-36"	Horizontal delineation of the gridded area between Buildings 14 and 15 (Figure 7).
ESI6-32 through ESI6-34	South of gridded area, east and south of Building 15.	0-6", 18-24", 30-36"	Horizontal delineation of the gridded area between Buildings 14 and 15 (Figure 7).
ESI6-35 and ESI6-36	South of gridded area between Buildings 14 and 15.	0-6", 18-24"	Horizontal delineation of the Buildings 14 and 15 area (Figure 7).
ESI6-37 through ESI6-39	Monitoring well MW3 Area.	0-6", 18-24", 30-36"	Determine if surface and/or subsurface soils are serving as a source of groundwater contamination observed in MW-03 (Figure 8).

### 2.3 Monitoring Well Installation

On January 11, 2012, monitoring well MW-05S was installed adjacent to existing monitoring well MW-05 to ensure that groundwater quality data collected from MW-05 is representative of groundwater quality in the area between Buildings 14 and 15 (Section 1.3.2). Monitoring well MW-05S was constructed with total depth of 13 feet (ft) bgs, a screened interval of 3 to 13 ft bgs, and flush mount manhole surface completion. The soil boring log detailing monitoring well construction and soil boring lithology for MW-05S is included in Appendix B.

On January 12, 2012, monitoring well MW-05S was developed in accordance with the QAPP (BMT, 2010a) and EPA Region IV Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (EPA, 2001). Monitoring well MW-05S was developed in two phases, the first phase utilized a high flow pump and surge method to remove residual materials within the well and within the filter pack. During the second development phase, the well was purged until the physical parameters pH, temperature, turbidity, and specific conductivity had stabilized. Stabilized physical parameters for MW-05S are presented in Table 6 (Section 4). Upon the completion of monitoring well development, MW-05S was sampled (Section 2.4).

## 2.4 Groundwater Sampling Program

Groundwater samples were collected from seven (7) on site groundwater monitoring wells as part of supplemental site characterization activities. Groundwater samples were collected using a low-flow purging technique in accordance with the standard operating procedure for the low-flow purging provided in the site-specific QAPP (BMT, 2010a). Groundwater samples were submitted for laboratory analysis of target analyte list (TAL) metals (total and dissolved) via EPA Method 6010B, OC pesticides via EPA Method 8081A, and volatile organic compounds (VOCs) via EPA Method 8260B. Groundwater monitoring well locations are depicted on Figure 9. Monitoring well construction details, expressed in ft bgs, are summarized in Table 2.

**Table 2: Monitoring Well Construction Details**

Well ID	MW-01	MW-02	MW-03	MW-04	MW-05	MW-05S	MW-06
Installation Date	2/18/04	2/18/04	2/18/04	6/27/06	6/27/06	1/10/12	6/27/06
Total Depth (ft bgs)	12.38	12.45	12.10	13.69	30.16	13.00	19.07
Screened Interval (ft bgs)	12.38 to 2.38	12.45 to 2.45	12.10 to 2.10	13.69 to 8.69	30.16 to 25.16	3.0 to 13.0	19.07 to 14.07
Elevation to top of casing (famsl)	29.65	30.46	29.02	30.94	30.79	30.81	31.13
Well Diameter (inches)	3/4	3/4	3/4	3/4	3/4	1	3/4

Note: famsl – feet above mean sea level

Prior to groundwater sample collection, all monitoring wells were gauged using a GeoTech® water level indicator to measure the water level to the nearest one hundredth of an inch. A groundwater elevation contour map was generated depicting the groundwater potentiometric surface and inferred flow direction across the Site (Figure 9). Groundwater flows to the southeast at a gradient of approximately 0.003 ft/ft.

## 2.5 Quality Assurance/Quality Control (QA/QC) Samples

In accordance with the site specific QAPP, appropriate QA/QC samples were collected in the field from soil and groundwater to assess sampling and analytical precision and accuracy, as well as any interference present in the sample matrices. Groundwater QA/QC samples collected as part of the program included one (1) duplicate sample and one (1) matrix spike/matrix spike duplicate (MS/MSD) sample. Groundwater QA/QC samples were submitted for laboratory analysis of TAL metals (total and dissolved), OC pesticides, and VOCs. Additionally, one (1) trip blank was submitted as part of the QA/QC samples and was analyzed for VOCs.

Soil QA/QC samples included one (1) equipment rinsate sample collected from the Geoprobe® macrocore sampler, one (1) equipment rinsate sample collected from the hand auger, twelve (12) duplicate samples, and five (5) matrix MS/MSD samples. Soil QA/QC samples were submitted for laboratory analysis of OC pesticides. All QA/QC samples were collected and submitted for laboratory analysis in accordance with the provisions of the QAPP (BMT, 2010a).

## **2.6 Data Validation**

In accordance with the QAPP, all analytical data was provided by the analytical laboratory in “Level 4” data packages that included QC summary report forms as well as raw data to facilitate data validation. The analytical report was used for “Level 4” data validation. Data validation procedures are detailed in the QAPP (BMT, 2010a). At the time of the Draft After Action Report, data validation has not been completed. Validated analytical data will be included in the Final After Action Report.

## **2.7 Investigation-derived Waste**

Investigation-derived waste (IDW) generated during the Supplemental Site Characterization activities included spent field expendables, groundwater monitoring well development water, groundwater monitoring well purge water, and equipment decontamination fluids. Soil cuttings generated during the soil boring program were returned to the soil boring from which they came. No excess soil was generated during the soil boring program.

IDW in the form of spent field expendables were bagged and disposed of in the Facility solid waste stream. Spent field expendables included, but were not limited to, spent personal protective equipment including gloves and ear plugs, approximately 100 feet of used groundwater sampling tubing, approximately forty (40) four-foot acetate macro-core liners, spent filters and associated filtration tubing, and miscellaneous refuse (expendable equipment packaging, plastic sheeting, paper towels, etc.).

Approximately 50 gallons of liquid IDW was generated during Supplemental Site Characterization activities. All liquid IDW was containerized at the time of generation in a steel 55-gallon drum. The drum was clearly labeled with the contents and date of generation and was staged in front of Building 6 for removal at a later date. On February 6, 2012, the drum containing liquid IDW was removed from the site for off-site disposal. The waste manifest for the transport and disposal of the liquid IDW drum is included as Appendix C.

## **2.8 Site Survey**

On January 12, 2012, a survey of newly installed MW-05S, all existing wells, and all soil boring locations advanced during the supplemental site characterization program was conducted. The survey included relative well locations and well head elevations in order to establish a uniform spatial reference for all wells. The horizontal coordinates of each well location were determined with respect to the State Planar Coordinate System to within  $\pm 3$  feet. Well elevations were determined to within  $\pm 0.01$  foot. Survey data was used to generate a well location map and to determine relative groundwater elevations used for groundwater potentiometric surface mapping (Section 2.4). East Mississippi State Plane coordinates and well head elevations for Site wells and soil borings are included as Appendix D.

In addition to the monitoring wells and soil boring locations, identified subsurface utilities (Section 2.1) and other site features were also surveyed. Utility locations were surveyed so that utilities could reliably be identified in advance of future site characterization or remedial activities and survey data was used to generate utility location maps for the area surrounding Buildings 14 and 15 and the northeastern corner (ESI4-19) area (Figures 3 and 4). The survey of other site features was used in conjunction with aerial photography to update the existing Site map.

### 3. SOIL RESULTS AND DISCUSSION

Soil analytical results were compared to MDEQ TRGs for restricted and unrestricted use. Soil analytical results are included as Appendix E and are discussed in detail in the proceeding sections.

#### 3.1 Soil Sampling Results – Northeast Corner (ESI4-19) Area

A total of sixteen (16) soil borings (ESI6-01 through ESI6-16) were collected from a gridded area surrounding the ESI4-19 sampling location (Figure 6). Soil samples were collected from 2 discrete depth intervals from each soil boring (0 to 6 and 18 to 24 in bgs). The pesticide dieldrin was detected in surface soil samples from ten (10) of the sixteen (16) soil borings at concentrations ranging from 47 ppb (ESI6-03) to 3,100 ppb (ESI6-11). Dieldrin concentrations exceeded the TRG for unrestricted use (39.9 ppb) in ten (10) of the sixteen (16) surface soil samples and exceeded the TRG for restricted use (358 ppb) in five (5) of the sixteen (16) surface soil samples. OC pesticides were not detected in any subsurface soil samples (i.e., greater than 6 in bgs) collected from the northeast corner (ESI4-19) area soil borings. A summary of northeast corner (ESI4-19) area sample results is provided in Table 3. A tag map depicting dieldrin analytical results for the northeast corner (ESI4-19) area from the current site characterization program and previous site investigations (2009 and 2011) soil borings is included in Appendix F (F-1).

**Table 3: Northeast Corner (ESI4-19) Area Sample Results Summary**

OC Pesticide	TRG UR (ppb)	Frequency Exceeding TRG UR	TRG R (ppb)	Frequency Exceeding TRG R	Maximum Concentration (ppb)	Location of Maximum Concentration
<i>Northeast Corner (ESI4-19) Area - 0-6"</i>						
Dieldrin	39.9	10/16	358	5/16	3,100	ESI6-11
<i>Northeast Corner (ESI4-19) Area - 18-24"</i>						
Dieldrin	39.9	0/16	358	0/16	11	ESI6-11

Note: UR – TRG for Unrestricted Use  
R – TRG for Restricted Use  
ND – Not Detected  
TRG – MDEQ Tier 1 Target Remediation Goal

OC pesticide contamination in the northeast corner (ESI4-19) area is confined to surface soil. No additional vertical delineation of OC pesticide contamination in this area is warranted. The horizontal extent of OC pesticide contamination in surface soil in this area has not been completely delineated. Dieldrin is present in surface soil at concentrations greater than the TRG for restricted use at the eastern

property boundary (ESI6-08) and in the most western sample location (ESI6-06). Additional delineation to the east is limited by the property boundary. The delineation effort is insufficient to define the extent of surface soil contamination to the west at several locations to meet TRGs for restricted or unrestricted use.

Dieldrin is present in the most northern samples (ESI6-01 through ESI6-05) in this area at concentrations above the TRG for unrestricted use. Horizontal delineation to the north has been achieved to restricted criteria; however, the delineation effort is insufficient to define the extent of surface soil contamination to the north at several locations to meet TRGs for unrestricted use.

### **3.2 Soil Sampling Results - Horizontal Delineation of the Building 14 and 15 Area**

Soil samples were collected from various discrete depth intervals at twenty locations (ESI6-17 through ESI5-36) located north, east, and south of the area between Buildings 14 and 15. The locations and depths of samples collected were determined based on the results of the previous site investigations conducted in 2009 and 2011. Horizontal delineation sample locations and previous sample locations (2009 and 2011) are depicted in Figure 7. For discussion purposes, soil sampling results were divided into three separate areas: North of the Area Between Buildings 14 and 15, East of Buildings 14 and 15, and South of Buildings 14 and 15. A detailed summary of soil sampling results for each area is included in the following subsections.

#### **3.2.1 North of the Area Between Buildings 14 and 15**

Dieldrin was detected at a concentration (41 ppb) greater than its TRG for unrestricted use (39.9 ppb) in surface soil sample ESI5-06 collected north of the gridded area between Building 14 and 15 during the 2011 site investigation (ESI 5). Dieldrin was not detected at concentrations greater than the TRG for unrestricted use in subsurface soil samples collected from soil boring ESI5-06. No other OC pesticides were detected in soil samples from ESI5-06 at concentrations greater than their respective TRGs.

In January 2012 (ESI 6), two (2) soil borings (ESI6-17 and ESI6-19) were advanced adjacent to Building 14 directly north of soil boring ESI5-06 and two (2) soil borings (ESI6-18 and ESI6-20) were advanced east of Building 14, across the site roadway (adjacent to Building 8). Soil boring locations are depicted in Figure 7. Soil samples were collected from two (2) discrete intervals (0 to 6 and 18 to 24 in bgs) in each soil boring. OC pesticides were not detected at concentrations greater than their respective TRGs for unrestricted use in soil boring ESI6-19. Dieldrin was detected in surface soil samples from ESI6-18 and ESI6-20 at concentrations greater than the TRG for unrestricted use; however, dieldrin did not exceed the TRG for unrestricted use in subsurface soil from these borings. The OC pesticides DDT and heptachlor epoxide were detected in the surface soil sample collected from ESI6-17 at concentrations greater than their respective TRGs for unrestricted use and dieldrin was detected at a concentration greater than its TRG for restricted use. Dieldrin was the only OC pesticide detected in the subsurface soil sample from ESI6-17 at a concentration greater than the TRG for unrestricted use. Analytical results for all samples

collected from soil borings ESI6-17 through ESI6-20 are summarized in Table 4 and a tag map depicting analytical results for the horizontal delineation soil borings is included in Appendix F (F-2).

**Table 4: Horizontal Delineation Results Summary – North of the Area Between Buildings 14 and 15**

OC Pesticide	TRG UR (ppb)	Frequency Exceeding TRG UR	TRG R (ppb)	Frequency Exceeding TRG R	Maximum Concentration (ppb)	Location of Maximum Concentration
<i>Horizontal Delineation – North of the Area Between Building 14 and 15 (ESI6-17 through ESI6-20) - 0-6"</i>						
DDT	1,880	1/4	16,800	0/4	4,300	ESI6-17
Dieldrin	39.9	3/4	358	1/4	1,700	ESI6-17
Heptachlor Epoxide	70.2	1/4	629	0/4	350	ESI6-17
<i>Horizontal Delineation - North of the Area Between Building 14 and 15 (ESI6-17 through ESI6-20) - 18-24"</i>						
DDT	1,880	0/4	16,800	0/4	45	ND
Dieldrin	39.9	1/4	358	0/4	40	ESI6-17
Heptachlor Epoxide	70.2	0/4	629	0/4	ND	ND

Note: UR – TRG for Unrestricted Use  
R – TRG for Restricted Use  
ND – Not Detected  
TRG – MDEQ Tier 1 Target Remediation Goal

Dieldrin is present in surface soil north of the Building 14 and 15 area at concentrations greater than the TRG for restricted use and east of Building 14 (across the roadway and adjacent to Building 8) at concentrations greater than TRGs for unrestricted use. DDT and heptachlor epoxide are also present in surface soil north of the Building 14 and 15 area at concentrations greater than TRGs for unrestricted use. Additional delineation of the horizontal extent of contamination to the north and northeast of Building 14 is necessary to determine to extent of OC pesticide contamination above TRGs for restricted and unrestricted use.

OC pesticide contamination north of the Building 14 and 15 area is generally confined to surface soil. Dieldrin was detected at a concentration (40 ppb) greater than its TGR for unrestricted use (39.9 ppb) in soil boring ESI6-17 at a depth of 18 to 24 in bgs. Vertical delineation of dieldrin contamination in subsurface soil north of the Building 14 and 15 area is not warranted; however, the result should be considered during the implementation of remedial action.

### 3.2.2 East of Buildings 14 and 15

During the 2011 site investigation (ESI 5), dieldrin was detected in surface soil samples collected from 4 of 6 soil boring locations advanced east of the area between Buildings 14 and 15 (across the facility roadway) at concentrations greater than its TRG for unrestricted use. Dieldrin was also detected in subsurface soil samples collected from the 18 to 24 in bgs interval in 2 of 6 soil boring locations (ESI5-10 and ESI5-11) at concentrations greater than the TRG for unrestricted use. Dieldrin was not detected in any subsurface soil samples from the 30 to 36 in bgs interval at concentrations greater than the TRG during the ESI 5 sampling program.

In January 2012 (ESI 6), eight (8) soil borings (ESI6-21 through ESI6-25 and ESI6-29 through ESI6-31) were advanced farther to the east to determine the horizontal extent of dieldrin contamination east of the Building 14 and 15 area (Figure 7). Soil samples were collected from two (2) discrete depth intervals (0 to 6 and 18 to 24 in bgs) in each soil boring. Soil samples were collected from an additional depth interval (30 to 36 in bgs) from soil borings ESI6-23 and ESI6-24. OC pesticides were not detected at concentrations greater than their respective TRGs in any of the soil samples collected from this area. A tag map depicting analytical results for the soil borings advanced to the east of the Building 14 and 15 area is included in Appendix F (F-2).

The extent of OC pesticide contamination in surface and subsurface soil to the east of the Building 14 and 15 area has been delineated to TRGs for unrestricted use. No additional soil sampling is necessary to delineate the horizontal or vertical extent of OC pesticide contamination in this area.

### **3.2.3 South of Buildings 14 and 15**

During the 2011 site investigation (ESI 5), four (4) soil borings (ESI5-13 through -16) were advanced south of the area between Buildings 14 and 15, south, east, and southwest of Building 15. Dieldrin was detected in surface soil from the two most southern soil borings (ESI5-13 and ESI5-16) at concentrations greater than the TRG for unrestricted use.

In January of 2012 (ESI 6), a total of eight (8) soil borings were advanced south of the area between Buildings 14 and 15. Two (2) soil borings (ESI6-35 and ESI6-36) were advanced south of Building 15, between Building 16 and the western property boundary. Three (3) soil borings (ESI6-32 through ESI6-34) were advanced southeast, east, and south of Building 15. Three (3) soil borings (ESI6-26 through ESI6-28) were advanced across the site roadway to east and southeast of Building 15. Soil boring locations are depicted in Figure 7.

Soil borings ESI6-35 and ESI6-36 were advanced south of Building 15 between the property boundary and Building 16. Soil samples were collected from two (2) discrete intervals (0 to 6 and 18 to 24 in bgs) in each soil boring. OC pesticides were not detected at concentrations greater than their respective TRGs for unrestricted use in soil boring ESI6-36. OC pesticides were not detected at concentrations greater than their respective TRGs for unrestricted use in the surface soil sample collected from soil boring ESI6-35; however, dieldrin was detected at a concentration (100 ppb) greater than the TRG for unrestricted use (39.9 ppb) in the sample collected from 18 to 24 in bgs. A sample was not collected from soil boring ESI6-35 at the 30 to 36 in bgs interval. Based on the magnitude of the TRG exceedance, further vertical delineation of the extent of dieldrin contamination in soil boring ESI6-35 is not warranted; however, the result should be considered during the implementation of a remedial action.

Soil borings ESI6-32, ESI6-33, and ESI6-34 were advanced southeast, east, and south of Building 15, respectively (Figure 7). Soil samples were collected from three (3) discrete depth intervals (0 to 6, 18 to 24, and 30 to 36 in bgs) in each soil boring. Dieldrin and heptachlor epoxide were detected in the surface soil sample collected from soil boring ESI6-32 at concentrations greater than their TRGs for restricted and unrestricted use, respectively. Heptachlor epoxide was not detected in subsurface soil samples at concentrations greater than its TRG for unrestricted use in subsurface soil samples from ESI6-32. Dieldrin was not detected in the sample from the 18 to 24 in bgs interval at a concentration greater than its TRG for unrestricted use; however, dieldrin was detected in the sample collected from the 30 to 36 in bgs interval at a concentration (120 ppb) greater than its TRG for unrestricted use. Based on the magnitude of the TRG exceedance, further vertical delineation of the extent of dieldrin contamination in soil boring ESI6-35 is not warranted; however, the result should be considered during the implementation of a remedial action. Additionally, the variability in the vertical distribution of dieldrin in soil boring ESI6-32 suggests that this area has been disturbed since the initial release of OC pesticides.

Dieldrin was detected in surface soil from soil boring ESI6-33 at a concentration (440 ppb) greater than its TRG for restricted use (358 ppb). Dieldrin was not detected in subsurface soil samples collected from soil boring ESI6-33 at concentrations greater than its TRG for unrestricted use. Dieldrin contamination in the vicinity of soil boring ESI6-33 is limited to surface soil.

Dieldrin was detected in surface soil from soil boring ESI6-34 at a concentration of 40 ppb and in the soil sample collected from the 18 to 14 in bgs interval at a concentration of 81 ppb; both concentrations are greater than the TRG for unrestricted use (39.9 ppb). Dieldrin was not detected at a concentration greater than the TRG for unrestricted use in the soil sample collected from ESI6-34 at 30 to 36 in bgs. Dieldrin contamination in the vicinity of soil boring ESI6-33 is limited to surface soil and subsurface soil to 24 in bgs.

Soil borings ESI6-26 through ESI6-28 were advanced southeast of Building 15, across the site roadway (Figure 7). Soil samples were collected from two (2) discrete intervals (0 to 6 and 18 to 24 in bgs) in each soil boring. OC pesticides were not detected at concentrations greater than TRGs for unrestricted use in soil boring ESI6-26.

Dieldrin was detected in the surface soil sample from soil boring ESI6-27 at a concentration (2,700 ppb) greater than the TRG for restricted use (358 ppb) and heptachlor epoxide was detected at a concentration (260 ppb) greater than its TRG for unrestricted use (70.2 ppb). Dieldrin and heptachlor epoxide were not detected in the subsurface soil sample collected from ESI6-27 at concentrations greater than their respective TRGs for unrestricted use. OC pesticide contamination in the ESI6-27 area is confined to surface soil.

The OC pesticides DDT and heptachlor epoxide were detected in the surface soil sample collected from EIS6-28 at concentrations greater than their respective TRGs for unrestricted use, and dieldrin was detected in the surface soil sample at a concentration greater than its TRG for restricted use. Dieldrin, heptachlor epoxide, and DDT were not detected in the subsurface soil sample collected from ESI6-28 at concentrations greater than their respective TRGs for unrestricted use. OC pesticide contamination in the ESI6-28 area is confined to surface soil.

Analytical results for all samples collected from soil borings advanced south of the Building 14 and 15 area (ESI6-26 through ESI6-28 and ESI6-32 through ESI6-36) are summarized in Table 5 and a tag map depicting analytical results for the horizontal delineation soil borings is included in Appendix F (F-2).

**Table 5: Horizontal Delineation Results Summary – South of the Area Between Buildings 14 and 15**

OC Pesticide	TRG UR (ppb)	Frequency Exceeding TRG UR	TRG R (ppb)	Frequency Exceeding TRG R	Maximum Concentration (ppb)	Location of Maximum Concentration
<i>Horizontal Delineation – South of the Area Between Building 14 and 15 - 0-6"</i>						
DDT	1,880	1/8	16,800	0/8	2,200	ESI6-28
Dieldrin	39.9	5/8	358	4/8	2,700	ESI6-27
Heptachlor Epoxide	70.2	2/8	629	0/8	230	ESI6-32
<i>Horizontal Delineation - South of the Area Between Building 14 and 15 - 18-24"</i>						
DDT	1,880	0/8	16,800	0/8	9.8	ESI6-28
Dieldrin	39.9	2/8	358	0/8	100	ESI6-35
Heptachlor Epoxide	70.2	0/8	629	0/8	ND	ND
<i>Horizontal Delineation - South of the Area Between Building 14 and 15 - 30-36"</i>						
DDT	1,880	0/3	16,800	0/3	ND	ND
Dieldrin	39.9	1/3	358	0/3	120	ESI6-32
Heptachlor Epoxide	70.2	0/3	629	0/3	13	ESI6-32

Note: Soil sample results presented in Table 5 include soil borings ESI6-26 through ESI6-28 and ESI6-32 through ESI6-36

UR – TRG for Unrestricted Use

R – TRG for Restricted Use

ND – Not Detected

TRG – MDEQ Tier 1 Target Remediation Goal

The southern extent of dieldrin contamination between Building 16 and the property boundary has been delineated; however, dieldrin was detected in a single sample from the 18-24 in bgs interval from ESI6-35 at a concentration (100 ppb) greater than the TRG for unrestricted use. Based on the magnitude of the result, additional delineation of the vertical extent of dieldrin between Building 16 and the property boundary is not warranted. The extent of contamination under building 16 has not been determined; however, it is not anticipated to be extensive due to the low concentrations detected in ESI6-34, 35, and 36.

Dieldrin, heptachlor epoxide, and DDT are present in surface soil south and east of Building 15 and in surface soil across the site roadway to the southeast at concentrations greater than TRGs for restricted or

unrestricted use. The delineation effort is insufficient to define the extent of surface soil contamination to the southeast at several locations to meet TRGs for restricted or unrestricted use.

### **3.3 Soil Sampling Results - Vertical Delineation of the Area Between Buildings 14 and 15**

Soil samples were collected from five (5) soil boring locations that were sampled during the 2009 and 2011 site investigations (ESI 4 and ESI 5) in an effort to determine the vertical extent of OC pesticide contamination exceeding the TRG for unrestricted use. Soil samples were collected from soil borings ESI4-06, ESI4-13, ESI4-14, ESI5-14, and ESI5-15 because OC pesticide concentrations in the terminal sample collection depth from each boring were greater than TRGs for unrestricted use (TtNUS, 2010 and BMT, 2011).

One (1) additional subsurface soil sample was collected from soil boring ESI4-06 at 42 to 48 in bgs in an effort to delineate the vertical extent of dieldrin contamination. Dieldrin was detected at a concentration (51 ppb) greater than the TRG for unrestricted use (39.9 ppb). The vertical extent of dieldrin contamination was not delineated to the TRG for unrestricted use in soil boring ESI4-06. Based on the magnitude of the TRG exceedances, further vertical delineation of the extent of dieldrin contamination in soil boring ESI4-06 is not warranted; however, the result should be considered during the implementation of a remedial action.

Three (3) additional soil samples were collected from soil boring ESI4-13 at depth intervals of 66 to 72, 78 to 84, and 90 to 96 in bgs in an effort to delineate the vertical extent of aldrin and dieldrin contamination. The vertical extent of aldrin and dieldrin contamination in soil boring ESI4-13 was determined to be approximately 84 in bgs.

Two (2) additional soil samples were collected from soil boring ESI4-14 at depth intervals of 54 to 60 and 66 to 72 in bgs in an effort to delineate the vertical extent of dieldrin contamination. The vertical extent of dieldrin contamination in ESI4-14 was determined to be 60 approximately in bgs.

Two (2) additional soil samples were collected from soil boring ESI5-14 at depth intervals of 42 to 48 and 54 to 60 in bgs in an effort to delineate the vertical extent of dieldrin contamination. The vertical extent of dieldrin contamination in ESI5-14 was determined to be approximately 48 in bgs.

Three (3) additional soil samples were collected from soil boring ESI5-15 at depth intervals of 54 to 60, 66 to 72, and 78 to 84 in bgs in an effort to delineate the vertical extent of dieldrin, heptachlor, and heptachlor epoxide contamination. The vertical extent of dieldrin and heptachlor contamination in ESI5-15 was determined to be approximately 48 in bgs. The vertical extent of heptachlor epoxide contamination in ESI5-15 was determined to be approximately 60 in bgs.

Vertical delineation soil boring locations are depicted on Figure 7 and analytical results are included in Appendix E. A tag map depicting analytical results for the vertical delineation soil borings is included in Appendix F (F-3).

OC pesticide contamination surrounding Building 15 has been vertically delineated to the TRGs for unrestricted use. The extent of contamination is confined to surface soil to the southeast, is to a depth of 60 in bgs between Building 15 and the western property boundary, ranges from 60 to 84 in bgs to the north, and is to a depth of approximately 36 in bgs to the south. Soil samples were not collected beneath Building 15.

### 3.4 Soil Sampling Results - Monitoring Well MW-03 Area

Three (3) soil borings (ESI6-37 through ESI6-39) were advanced in the monitoring well MW-03 area (Figure 8) in an effort to determine if surface and/or subsurface soils in the vicinity of monitoring well MW-03 are a potential source of pesticides detected in groundwater. Soil samples were collected from three (3) discrete depth intervals (0 to 6, 18 to 24, and 30 to 36 in bgs) in each soil boring. OC pesticides were not detected at concentrations greater than TRGs for unrestricted use in soil boring ESI6-37. Dieldrin was detected in the surface soil sample collected from ESI6-38 at a concentration greater than its TRG for unrestricted use. Two (2) OC pesticides (dieldrin and DDT) were detected in the surface soil sample collected from ESI6-39 at concentrations greater than their respective TRGs for unrestricted use.

Analytical results for samples collected in the monitoring well MW-03 area are summarized in Table 6 and a tag map depicting analytical results for the monitoring well MW-03 area is included in Appendix F (F-4).

**Table 6: Characterization Results Summary - Monitoring Well MW-03 Area**

OC Pesticide	TRG UR (ppb)	Frequency Exceeding TRG UR	TRG R (ppb)	Frequency Exceeding TRG R	Maximum Concentration (ppb)	Location of Maximum Concentration
<i>Characterization of Monitoring Well MW-03 Area - 0-6"</i>						
DDT	1,880	1/3	16,800	0/3	2,100	ESI6-39
Dieldrin	39.9	2/3	358	0/3	190	ESI6-39
<i>Characterization of Monitoring Well MW-03 Area - 18-24"</i>						
DDT	1,880	0/3	16,800	0/3	5.3	ESI6-39
Dieldrin	39.9	0/3	358	0/3	22	ESI6-39
<i>Characterization of Monitoring Well MW-03 Area - 30-36"</i>						
DDT	1,880	0/3	16,800	0/3	98	ESI6-39
Dieldrin	39.9	0/3	358	0/3	11	ESI6-39

Note: Soil sample results presented in Table 6 include soil borings ESI6-37 through ESI6-39

UR – TRG for Unrestricted Use

R – TRG for Restricted Use

ND – Not Detected

TRG – MDEQ Tier 1 Target Remediation Goal

Based on the soil sampling data, OC pesticide contamination in the monitoring well MW-03 area is confined to surface soil. The pesticides dieldrin and DDT were detected at concentrations greater than the TRG for unrestricted use in surface soil; however, dieldrin and DDT were not detected at concentrations greater than their respective TRGs for unrestricted use in subsurface soil. The horizontal extent of OC pesticide contamination in surface soil in the area of monitoring well MW-03 has not been delineated relative to TRGs for unrestricted use. OC pesticide contamination in soil in the MW-03 area may contribute to observed concentrations of dieldrin detected in groundwater from MW-03; however, it is likely that the observed groundwater contamination is a result of migration of contaminants from a hydraulically upgradient source area (i.e., the area between Building 14 and 15).

#### 4. GROUNDWATER RESULTS AND DISCUSSION

Groundwater samples were collected from each of the six (6) existing monitoring wells and one (1) newly installed monitoring well (MW-05S) using low-flow sampling techniques. Groundwater physical parameters were recorded during sample collection and are summarized in Table 7.

**Table 7: Groundwater Physical Parameter Summary**

Monitoring Well	Dissolved Oxygen (mg/L)	Temp. (°C)	Salinity (%)	pH	Specific Conductivity (mS/cm)	Turbidity (NTU)	ORP (mV)
MW-01	0.54	21.26	0.1	5.66	0.146	237	9
MW-02	1.82	20.45	0.1	4.29	0.132	1,000	236
MW-03	1.21	22.10	0.0	5.65	0.223	999	16
MW-04	0.82	24.15	0.1	5.75	0.299	1,000	-15
MW-05	1.01	23.90	0.1	5.87	0.199	1,000	135
MW-05S	0.63	21.15	0.1	5.82	0.134	1,000	-134
MW-06	0.57	22.73	0.1	5.07	0.132	465	178

Note: mg/L - milligrams per liter  
mS/cm – millisiemens per centimeter  
NTU - Nephelometric Turbidity Unit  
mV – millivolts

Groundwater analytical results were compared to MDEQ Tier 1 TRGs. The OC pesticides dieldrin and beta-BHC were detected in groundwater at concentrations greater than their respective TRGs (0.00419 and 0.0372 µg/L). Dieldrin was detected in monitoring wells MW-02 and MW-03 at concentrations of 0.16 and 0.86 µg/L, respectively. Beta-BHC was detected in monitoring well MW-03 at a concentration of 0.14 µg/L. No other OC pesticides were detected in groundwater at concentrations greater than their TRGs. The peak concentration of dieldrin in groundwater (0.86 µg/L) was detected in MW-03, which is located on the southeast portion of the facility.

A total of eight (8) metals (aluminum, arsenic, beryllium, iron, lead, manganese, thallium, and vanadium) were detected in unfiltered groundwater samples at concentrations greater than their respective TRGs. Filtered groundwater samples better represent metals concentrations in groundwater, particularly in

sediment-laden groundwater as was observed in all monitoring wells (turbidity ranged from 237 NTU to 1,000 NTU). The metal iron was detected in one filtered groundwater sample (MW-04) at a concentration (20,000 µg/L) exceeding the TRG (11,000 µg/L). The metal thallium was detected in two filtered groundwater samples (MW-04 and MW-06) at concentrations (4.8 and 7.3 µg/L, respectively) exceeding the TRG (2 µg/L). No other metals were detected in filtered groundwater samples at concentrations greater than their respective TRGs.

One VOC (naphthalene) was detected in the groundwater sample collected from monitoring well MW-05S at a concentration (14 µg/L) exceeding the TRG (6.2 µg/L). Naphthalene was not detected in any other site monitoring wells and no other VOCs were detected in at concentrations greater than their respective TRGs.

Groundwater analytical results are summarized in Table 8 and complete results for detected analytes are included as Appendix G. A tag map depicting groundwater results greater than TRGs is included in Appendix F (F-5).

**Table 8: Groundwater Analytical Results Summary**

Parameter	MDEQ Tier 1 TRG (µg/L)	Frequency Greater than TRG	Maximum Concentration (µg/L)	Maximum Sample ID
<b>VOCS</b>				
Naphthalene	6.2	1/7	14	ANPCL-MW05S-GW@10'
<b>OC Pesticides</b>				
beta-BHC	0.0372	1/7	0.14	ANPCL-MW03-GW@8'
Dieldrin	0.00419	2/7	0.86	ANPCL-MW03-GW@8'
<b>Dissolved Metals</b>				
Iron	11,000	1/7	20,000	ANPCL-MW04-GW@11.2'
Thallium	2	2/7	7.3	ANPCL-MW05S-GW@10'
<b>Total Metals</b>				
Aluminum	36,500	2/7	230,000	ANPCL-MW05S-GW@10'
Arsenic	50	1/7	87	ANPCL-MW04-GW@11.2'
Beryllium	4	1/7	5.9	ANPCL-MW05S-GW@10'
Iron	11,000	6/7	130,000	ANPCL-MW04-GW@11.2'
Lead	15	3/7	150	ANPCL-MW05S-GW@10'
Manganese	730	1/7	830	ANPCL-MW04-GW@11.2'
Thallium	2	3/7	10	ANPCL-MW04-GW@11.2'
Vanadium	256	1/7	450	ANPCL-MW05S-GW@10'

The highest concentrations of OC pesticides (specifically dieldrin and beta-BHC) were detected in monitoring well MW-03 during the 2012 groundwater quality monitoring event. During previous site investigations, Site maximum concentrations of OC pesticides were also detected in monitoring well MW-03 (TtNUS, 2005, TtNUS, 2010, and BMT, 2011a). Based on the groundwater elevation contour map generated from January 2012 water levels (Section 2.4), groundwater flows to the southeast and monitoring well MW-03 is the most hydraulically downgradient monitoring well at the Site. Although OC

pesticide contamination in surface soils in the vicinity of monitoring well MW-03 may contribute to the OC pesticide contamination observed in MW-03, contamination in MW-03 is suspected to be originating from a hydraulically upgradient source (i.e., the Building 14 and 15 area).

#### **4.1 Potential Groundwater Receptors**

The population within a four-mile radius of the Facility relies on municipal water from the City of Gulfport Water Department. The City of Gulfport has over 65,000 domestic water connections in the Gulfport area. The Gulfport Water Department relies on groundwater resources as a source of public water supply and maintains approximately twenty-four (24) municipal supply wells. Four (4) municipal supply wells are located within four miles of the Site. According to an Environmental Data Resources (EDR) database search conducted as part of the 2005 PA/SI, two (2) supply wells are located within one mile of the Site. The nearest supply well is located approximately ½ mile north of the Site. The nearest hydraulically downgradient well is located just over ½ mile south-southeast of the Site and was installed in 1978 with a total depth of 935 ft bgs (TtNUS, 2005).

The EDR search identified thirteen (13) private groundwater withdrawal wells within one mile of the Site. Reportedly, seven (7) of the identified wells are used for domestic supply, five (5) are used for industrial supply, and one (1) is not in use. The nearest domestic supply well is located between 1/8 and ¼-mile west-southwest of the facility and is reportedly 482 feet deep. A second domestic supply well was identified between ¼ and ½-mile northeast of the facility. Three shallow domestic supply wells (total depths of approximately 30 ft bgs) were identified by the EDR search located between ½ and 1 mile east and northeast of the Site (TtNUS, 2005).

## **5. RECOMMENDATIONS**

Based on the results of the Supplemental Site Characterization activities, it is recommended that remedial alternatives to address OC pesticide contamination in soil are evaluated to meet both TRGs for restricted and unrestricted use. Further characterization of the horizontal extent of OC pesticide contamination in surface soil in four areas of the site may be considered to provide better estimates for the quantity of materials to be addressed, and can be conducted in concurrence with the selected remedy. If soil sample analytical results are necessary for the implementation of the selected remedy, the samples can be collected at the onset of the remedial action and submitted to the laboratory with an expedited turnaround.

The vertical extent of OC pesticide contamination at the Site has been delineated to the TRGs for restricted use; however, the vertical extent of OC pesticide contamination has not been completely delineated to TRGs for unrestricted use. There are four soil borings (ESI4-06, ESI6-17, ESI6-32, and ESI6-35) in which the vertical extent of dieldrin contamination has not been delineated to the TRG for unrestricted use (39.9 ppb). The concentrations of dieldrin in the deepest samples collected from each soil boring ranged from 40 to 120 ppb. Due to the magnitude of these TRG exceedances, it is not

recommended that additional soil samples are collected to complete the vertical delineation of the extent of dieldrin to TRGs for unrestricted use; however, it is recommended that these results are considered during the implementation of the selected remedy.

## 6. CONCLUSION

Sufficient data has been collected to date to evaluate potential remedial options for OC pesticide contaminated soil at the Site. Remedial alternatives will be evaluated in an Engineering Evaluation/Cost Analysis in accordance with 300.415(b)(4)(i) of the National Contingency Plan to address affected soil at the CPHST ANPCL.

Maximum on-site concentrations of dieldrin and beta-BHC in groundwater were observed in most hydraulically downgradient well located on-site, monitoring well MW-03. OC pesticide contamination observed in monitoring well MW-03 is suspected to be originating from a hydraulically upgradient source (i.e., the Building 14 and 15 area). Although groundwater contamination with OC pesticides is confirmed, the concentrations and extent does not suggest potential exposure or impacts to drinking water supplies.

## 7. REFERENCES

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- BMT, 2011. *Work Plan for Supplemental Site Characterization*. Final. October.
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- MDEQ, 2002. *Final Regulations Governing Brownfield Voluntary Cleanup and Redevelopment in Mississippi*. Retrieved online March 2012 at: [ww.deq.state.ms.us/MDEQ.nsf/pdf/GARD\\_brownfieldrisk](http://ww.deq.state.ms.us/MDEQ.nsf/pdf/GARD_brownfieldrisk)
- TtNUS, 2005. *Final Preliminary Assessment and Site Investigation for the United States Department of Agriculture Animal and Plant Health Inspection Service Facility*. Gulfport, Mississippi. March.
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- TtNUS, 2010. *Final Phase IV Expanded Site Investigation Report for the CPHST ANPCL*. Gulfport, Mississippi. February.

USDA, 2010. USDA APHIS Facility Description, CPHST Lab, Gulfport, Mississippi. Retrieved online  
March 2011: [www.aphis.usda.gov/plant\\_health/cphst/anpcl.shtml](http://www.aphis.usda.gov/plant_health/cphst/anpcl.shtml)

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## Figures

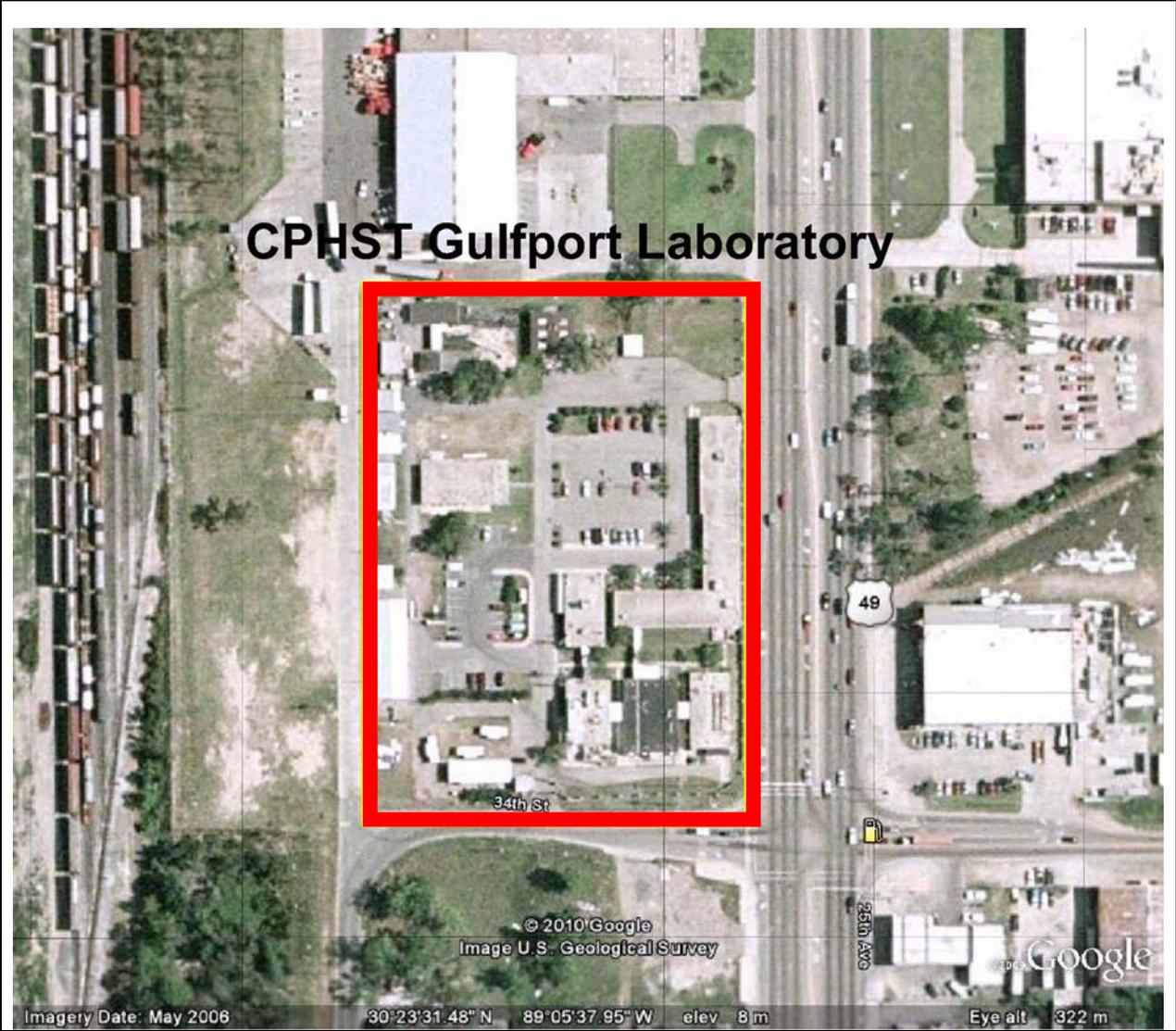
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Approximate Scale: 1" = 22 miles



Figure 1: Gulfport, Mississippi Location Map



Approximate Scale: 1" = 115'  
Google Earth, 2010



Figure 2: CPHST Gulfport Laboratory Site Location Map

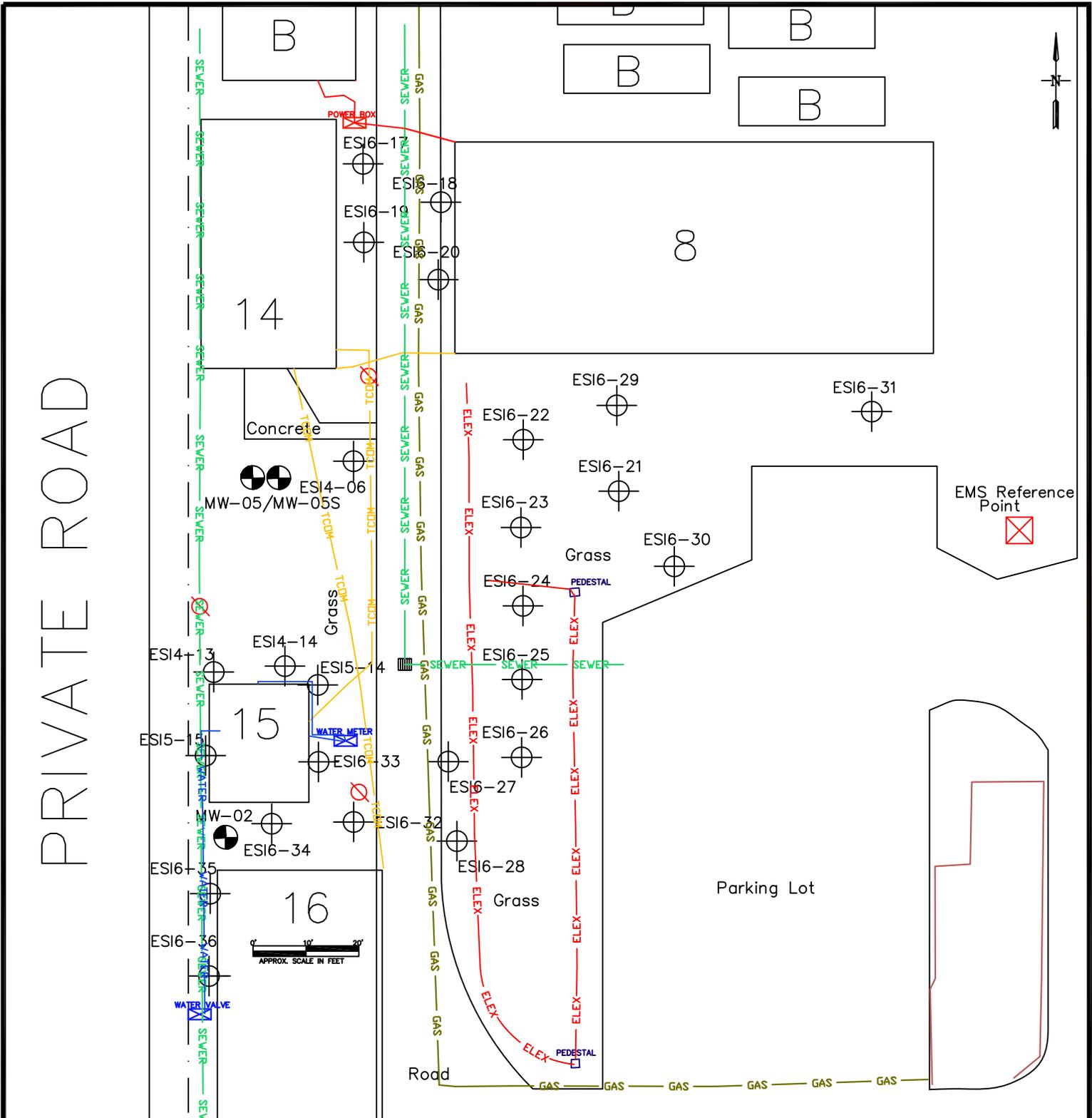
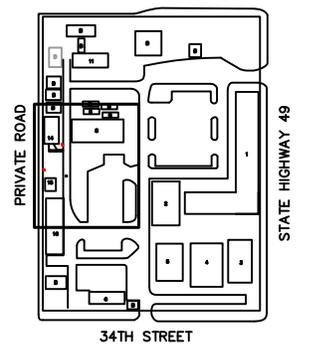


FIGURE 3

CPHST ANPCL  
 BUILDING 14 & 15 AREA  
 UTILITY LOCATION MAP  
 JANUARY 2012



LEGEND	
	BUILDING
	FENCE/PROPERTY BOUNDARY
	MONITORING WELL
	SOIL BORING LOCATION
	UNDERGROUND POWER
	UNDERGROUND GAS LINE
	UNDERGROUND FIBER LINE
	UNDERGROUND WATER LINE
	UNDERGROUND WATER LINE



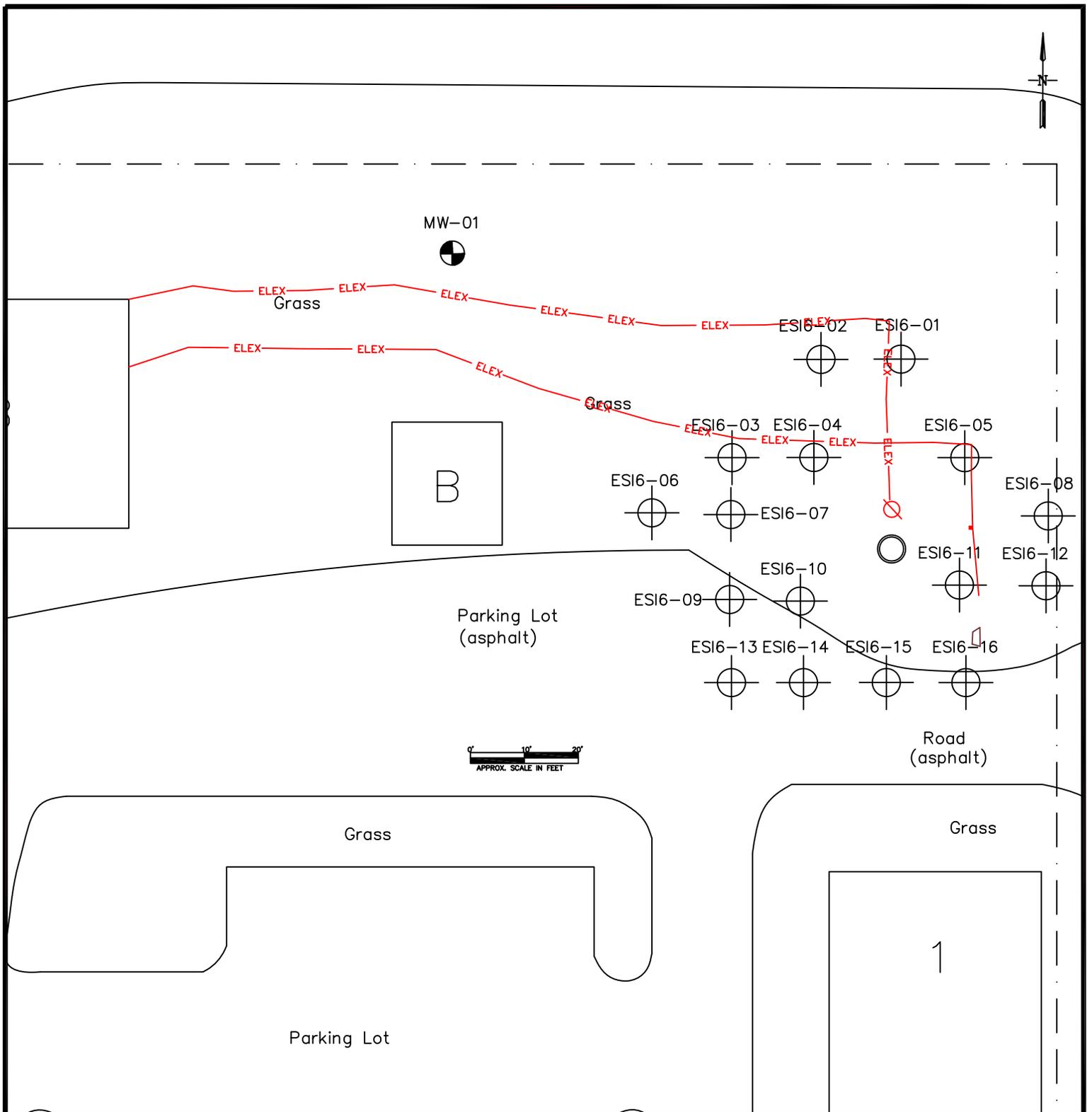


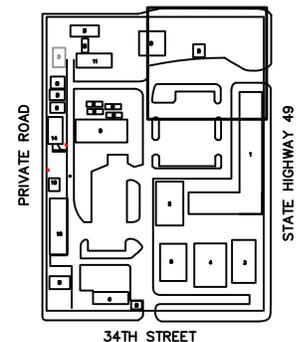
FIGURE 4

CPHST ANPCL  
ESI4-19 AREA  
UTILITY LOCATION MAP  
JANUARY 2012



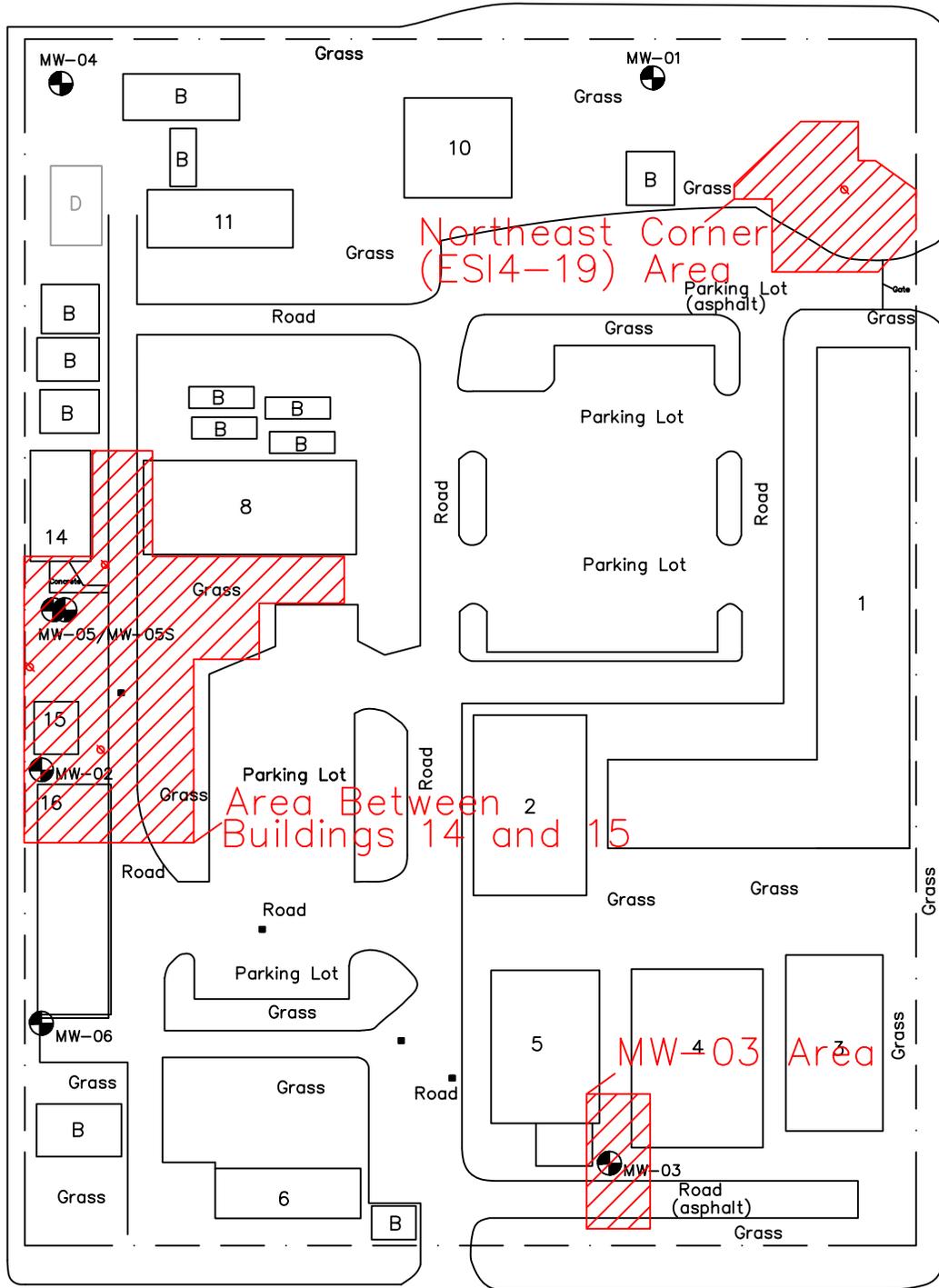
LEGEND

- BUILDING
- - - - FENCE/PROPERTY BOUNDARY
- ⊙ MONITORING WELL
- ⊕ SOIL BORING LOCATION
- ELEX — ELEX — UNDERGROUND POWER
- GAS — GAS — UNDERGROUND GAS LINE
- TCOM — TCOM — UNDERGROUND FIBER LINE
- WATER — WATER — UNDERGROUND WATER LINE
- SEWER — SEWER — UNDERGROUND WATER LINE



PRIVATE ROAD

STATE HIGHWAY 49



34TH STREET

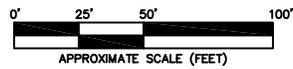


FIGURE 5

CPHST ANPCL  
SOIL INVESTIGATION AREAS MAP  
JANUARY 2012

LEGEND

- BUILDING/SITE FEATURE
- - - FENCE/PROPERTY BOUNDARY
- ⊕ MONITORING WELL
- ▨ STORM DRAIN
- ⊙ UTILITY POLE
- ▨ SOIL INVESTIGATION AREA



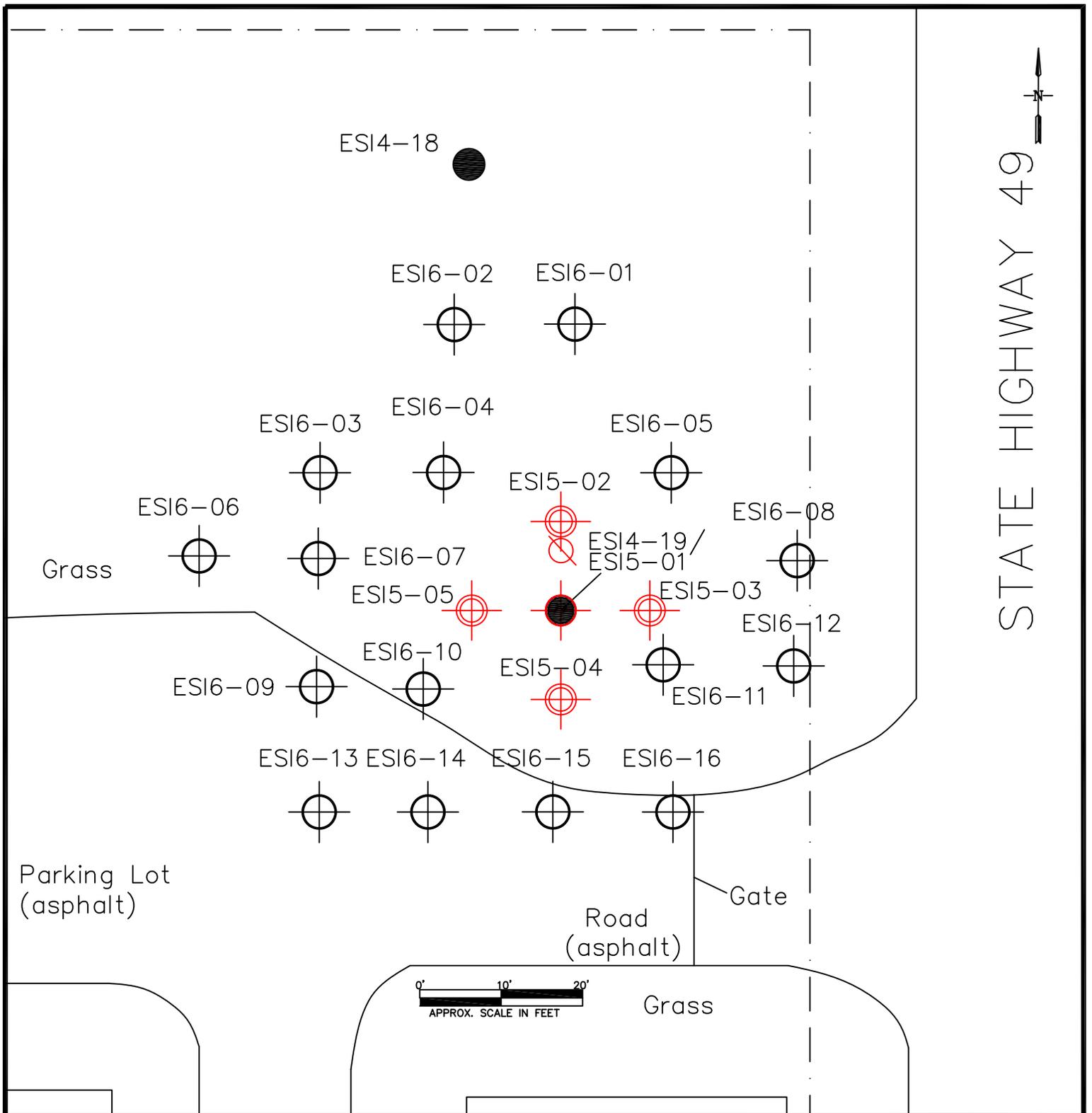
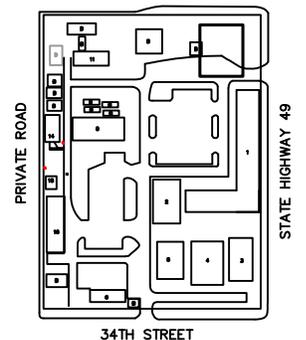


FIGURE 6

CPHST ANPCL NORTHEAST  
CORNER (ESI4-19) AREA  
SOIL BORING LOCATION MAP

LEGEND

- BUILDING/SITE FEATURE
- - - FENCE/PROPERTY BOUNDARY
- ESI4 SOIL SAMPLE LOCATION (2009)
- ⊕ ESI5 SOIL SAMPLE LOCATION (2011)
- ⊕ ESI6 SOIL SAMPLE LOCATION (2012)
- ⊕ MONITORING WELL
- ▤ STORM DRAIN
- ⊘ UTILITY POLE



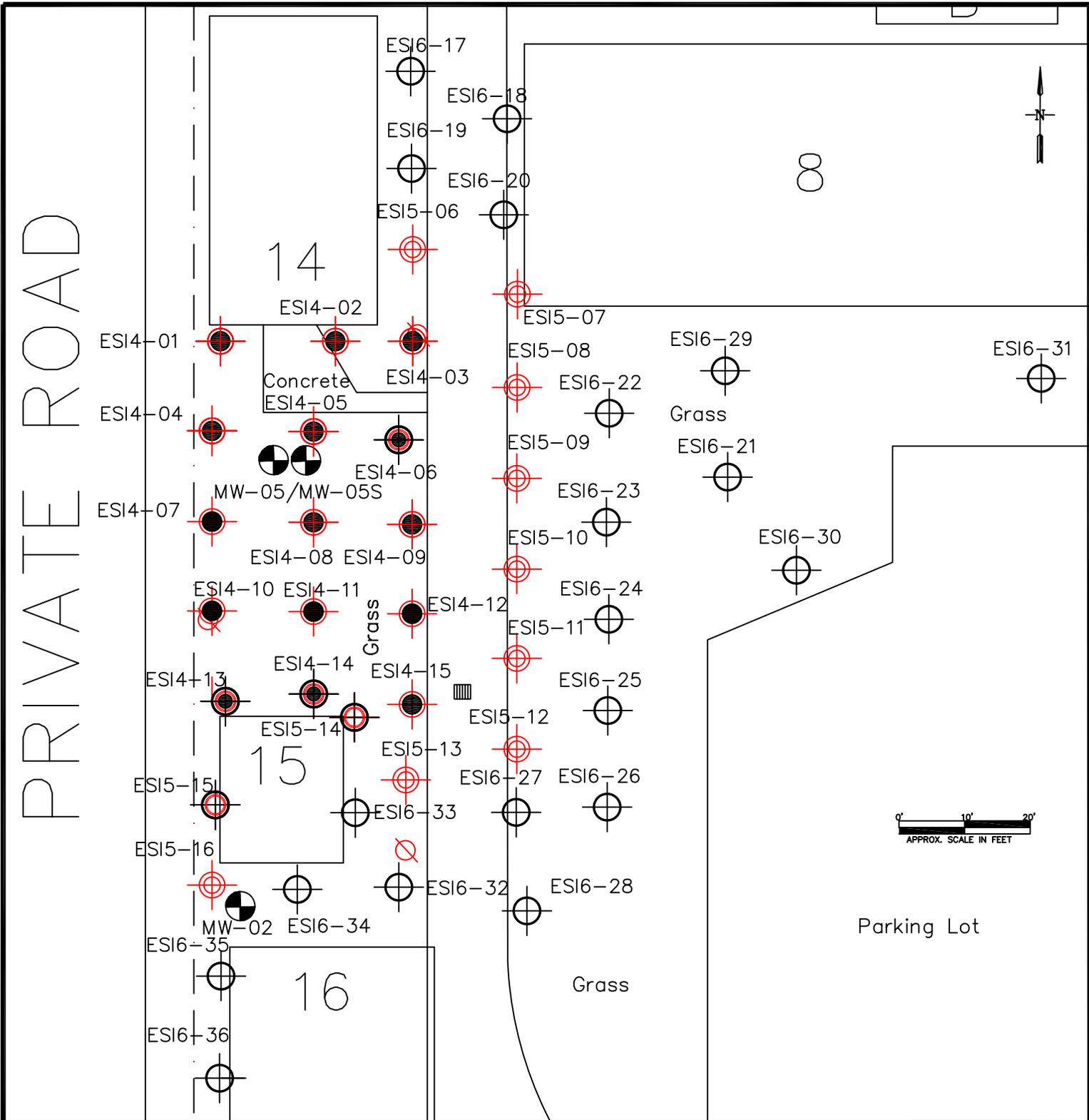
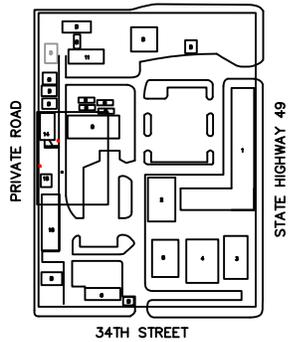


FIGURE 7

CPHST ANPCL BLDG. 14-15 AREA  
SOIL BORING LOCATION MAP

LEGEND

- BUILDING/SITE FEATURE
- — — FENCE/PROPERTY BOUNDARY
- ESI4 SOIL SAMPLE LOCATION (2009)
- ⊕ ESI5 SOIL SAMPLE LOCATION (2011)
- ⊕ ESI6 SOIL SAMPLE LOCATION (2012)
- ⊕ MONITORING WELL
- ▤ STORM DRAIN
- ⊗ UTILITY POLE



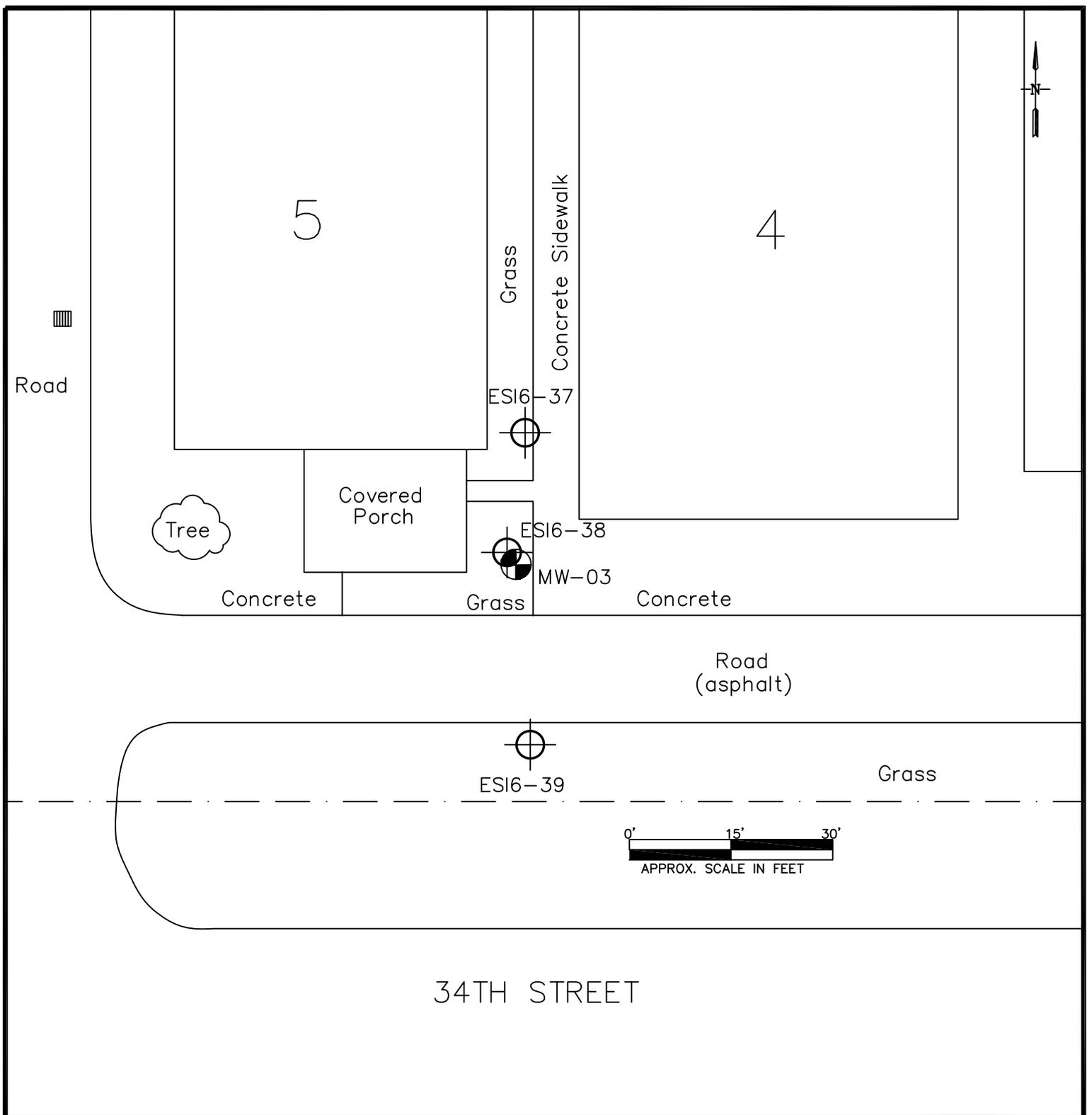
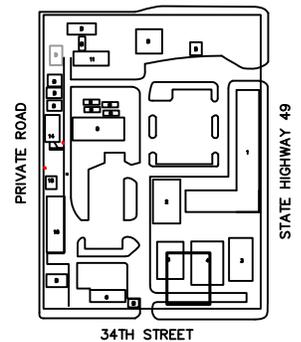


FIGURE 8

CPHST ANPCL MW-03 AREA  
SOIL BORING LOCATION MAP  
JANUARY 2012

LEGEND

- BUILDING/SITE FEATURE
- - - - FENCE/PROPERTY BOUNDARY
- ⊕ ESI6 SOIL SAMPLE LOCATION
- ⊗ MONITORING WELL
- ▨ STORM DRAIN
- ⊗ UTILITY POLE



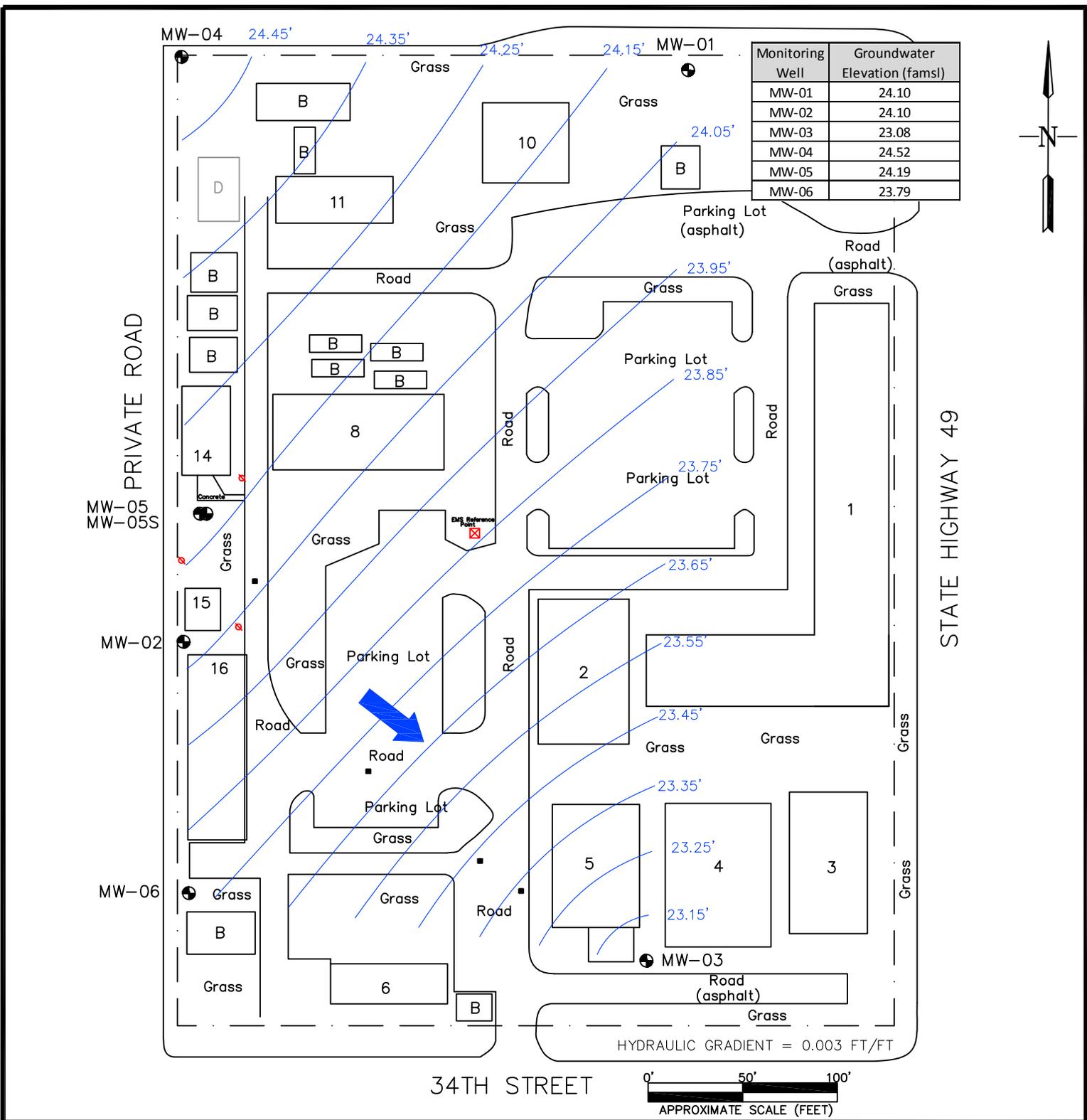


FIGURE 9

CPHST ANPCL  
Groundwater Elevation  
Contour Map  
January 9, 2012



LEGEND

- BUILDING
- - - FENCE/PROPERTY BOUNDARY
- ⊕ MONITORING WELL
- 23.15' GROUNDWATER ELEVATION (famsl)
- GROUNDWATER ELEVATION CONTOUR
- ➔ INFERRED GROUNDWATER FLOW DIRECTION



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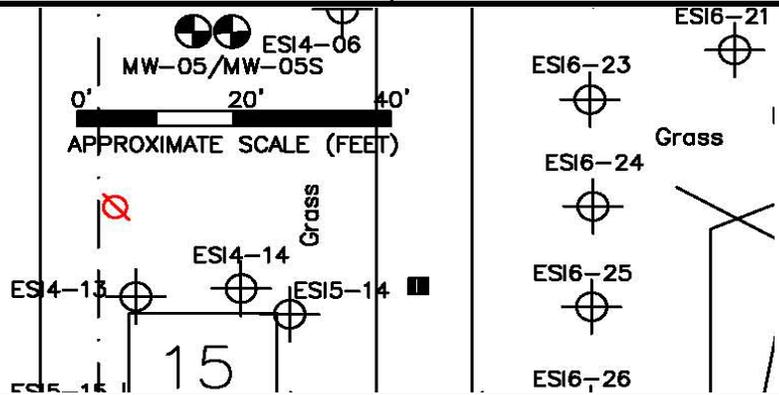
**Appendix A**  
**Soil Boring Logs**

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### SOIL BORING LOG

 CPHST ANPCL  
 GULFPORT, MS  
 BORING ID:  
**ESI5-14**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	8'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:** Hand dig 0-2' due to close proximity to PVC water line.

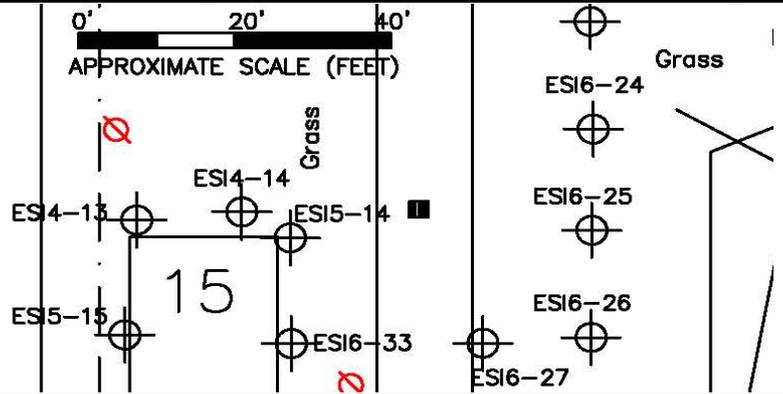
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'	Hand Auger	100	SM	0-6" Dark brown fine sand and silt.	[Dotted pattern]	▲ ANPCL-ESI5-14-42-48"@1110  ▲ ANPCL-ESI5-14-54-60"@1115
			GP	6-8" Gravel and shell fragments.		
2'	Direct Push	100	SM	8-60" Orange-brown fine sand with silt.	[Dotted pattern]	
3'				66-96" Light orange-brown fine sand with silt, wet.		
4'						
5'	Direct Push	100	SM	66-96" Light orange-brown fine sand with silt, wet.	[Dotted pattern]	
6'						
7'						
8'						

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI5-15**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	7'
<b>Boring Diameter:</b>	3"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Hand Auger
<b>Drill Rig:</b>	NA
<b>Inspector:</b>	P. Phillips



**Comments:** Soil boring location not accessible with Geoprobe.

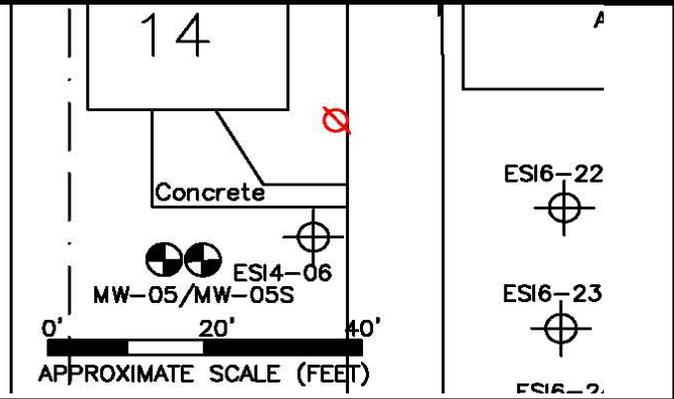
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-6"	Hand Auger	100	ML	0-6" Dark brown silt with fine sand and organics.		
6-48"			SM	6-48" Medium-brown fine sand with silt.		
48-84"				48-84" Very light brown fine sand with silt. Wet at 66".		
7'						<ul style="list-style-type: none"> <li>▲ ANPCL-ESI5-15-54-60"@1330</li> <li>▲ ANPCL-ESI5-15-54-60"DUP@1330</li> <li>▲ ANPCL-ESI5-15-66-72"@1340</li> <li>▲ ANPCL-ESI5-15-66-72"DUP@1340</li> <li>▲ ANPCL-ESI5-15-78-84"@1345</li> </ul>

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI4-06**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

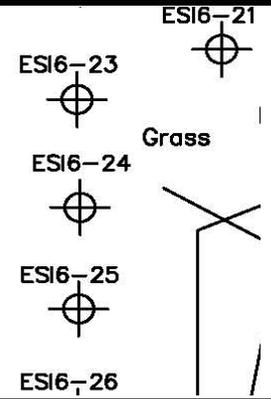
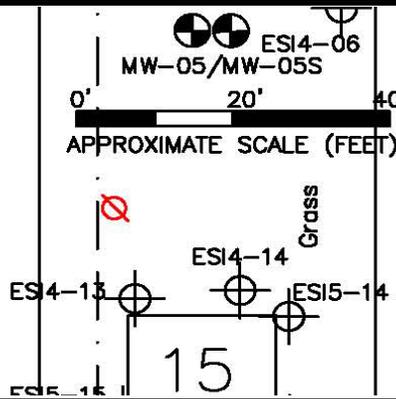
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-12"	Direct Push	100	SM	0-12" Dark brown fine sand and silt with some shell fragments and gravel.		▲ ANPCL-ESI4-06-42-48"@0840
12-48"				12-48" Fine sand with silt and some medium rounded quartz gravel, dry.		

END OF BORING

### SOIL BORING LOG

 CPHST ANPCL  
 GULFPORT, MS  
 BORING ID:  
**ESI4-13**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	8'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:** Hand dig 0-2' due to close proximity to PVC water line.

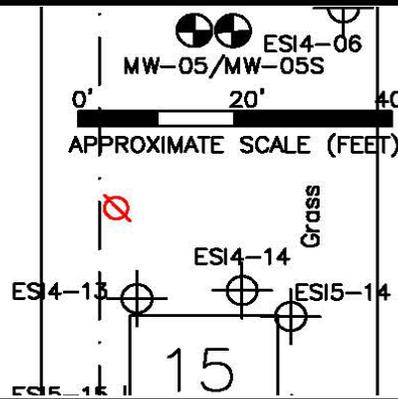
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-2'	Hand Auger	100	ML	0-4" Dark brown silt with fine sand. 4-24" Medium brown fine sand and silt.		
2-6'	Direct Push	100	SM	24-60" Orange-brown fine sand with silt, dry. 60-66" Light orange-brown fine sand with silt. Wet at 66". 66-74" Light brown fine sand with silt. Layer of orange-brown fine sand and silt at 74", wet.		▲ ANPCL-ESI4-13-66-72"@1045  ▲ ANPCL-ESI4-13-78-84"@1050 ▲ ANPCL-ESI4-13-78-84"DUP@1050 ▲ ANPCL-ESI4-13-90-96"@1055
6-8'	Direct Push	100		74-96" Light brown fine sand with silt, wet.		

END OF BORING

### SOIL BORING LOG

 CPHST ANPCL  
 GULFPORT, MS  
 BORING ID:  
**ESI4-14**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	8'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:** Hand dig 0-2' due to close proximity to PVC water line.

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-4"	Hand Auger	100	ML	0-4" Dark brown silt with fine sand.		
4-24"						
24-48"	Direct Push	70	SM	24-48" Orange-brown fine sand with silt, dry.		
48-66"				48-66" Light orange-brown fine sand with silt. Wet at 66".		
66-96"				66-96" Very light brown fine sand with silt, wet.		

▲ ANPCL-ESI4-14-54-60"@1025

▲ ANPCL-ESI4-14-66-72"@1030

END OF BORING



# SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-01**

**Client:** USDA, APHIS  
**Project Number:** 3205-001  
**Location:** Gulfport, MS ANPCL  
**Date Started - Completed:** 1/10/2012  
**Top of Pad Elevation:** NA  
**Top of Well Elevation:** NA  
**Total Depth:** 4'  
**Boring Diameter:** 2.25"  
**Driller:** Environmental Management Services, Inc.  
**Drill Method:** Direct Push  
**Drill Rig:** 6600 Geoprobe  
**Inspector:** P. Phillips

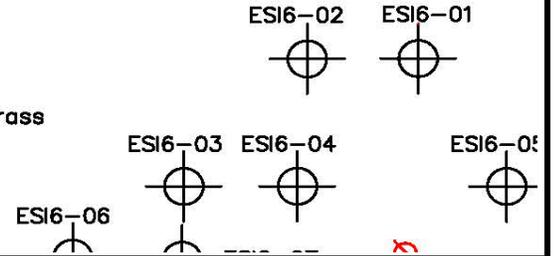
MW-01



0' 20' 40'  
APPROXIMATE SCALE (FEET)

B

Grass



**Comments:**

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0' - 6"	Direct Push	100	ML	0-6" Dark brown silt with fine sand and organics.		▲ ANPCL-ESI6-01-0-6"@1640
6" - 48"			SM	6-48" Medium-brown fine sand with silt.		▲ ANPCL-ESI6-01-18-24"@1645
4' - 4' 0"	END OF BORING					



# SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-02**

**Client:** USDA, APHIS  
**Project Number:** 3205-001  
**Location:** Gulfport, MS ANPCL  
**Date Started - Completed:** 1/10/2012  
**Top of Pad Elevation:** NA  
**Top of Well Elevation:** NA  
**Total Depth:** 4'  
**Boring Diameter:** 2.25"  
**Driller:** Environmental Management Services, Inc.  
**Drill Method:** Direct Push  
**Drill Rig:** 6600 Geoprobe  
**Inspector:** P. Phillips

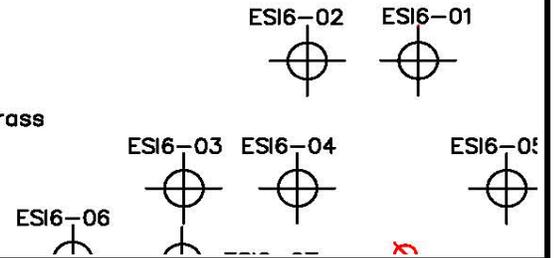
MW-01



0' 20' 40'  
APPROXIMATE SCALE (FEET)

B

Grass



**Comments:**

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'	Direct Push	100	SM	0-6" Dark brown fine sand with silt and organics.	[Stippled pattern]	▲ ANPCL-ESI6-02-0-6"@1540
				6-12" Dark orange-brown fine sand with silt.		
			GP	12-14" Shells and some fine sand.	[Horizontal line pattern]	▲ ANPCL-ESI6-02-18-24"@1545
			SM	14-48" Orange-brown fine sand with silt.	[Stippled pattern]	
2'	Direct Push	100		SM	[Stippled pattern]	
3'						
4'	Direct Push	100	SM		[Stippled pattern]	

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-03**

**Client:** USDA, APHIS  
**Project Number:** 3205-001  
**Location:** Gulfport, MS ANPCL  
**Date Started - Completed:** 1/10/2012  
**Top of Pad Elevation:** NA  
**Top of Well Elevation:** NA  
**Total Depth:** 4'  
**Boring Diameter:** 2.25"  
**Driller:** Environmental Management Services, Inc.  
**Drill Method:** Direct Push  
**Drill Rig:** 6600 Geoprobe  
**Inspector:** P. Phillips

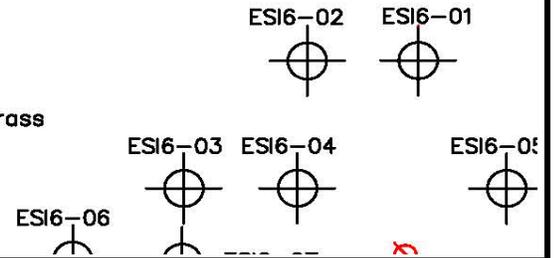
MW-01



0' 20' 40'  
APPROXIMATE SCALE (FEET)

B

Grass



**Comments:**

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'	Direct Push	100	ML	0-2" Dark brown silt with fine sand and organics.		▲ ANPCL-ESI6-03-0-6"@1520  ▲ ANPCL-ESI6-03-18-24"@1525
			SM	2-8" Medium brown fine sand with trace silt. Shell fragments at 4".		
				8-9" Dark brown fine sand with silt.		
				9-18" Medium brown fine to medium sand with trace silt.		
				18-48" Medium brown fine to medium sand and trace silt.		
2'	Direct Push	100	SM			
3'						
4'						

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-04**

**Client:** USDA, APHIS  
**Project Number:** 3205-001  
**Location:** Gulfport, MS ANPCL  
**Date Started - Completed:** 1/10/2012  
**Top of Pad Elevation:** NA  
**Top of Well Elevation:** NA  
**Total Depth:** 4'  
**Boring Diameter:** 2.25"  
**Driller:** Environmental Management Services, Inc.  
**Drill Method:** Direct Push  
**Drill Rig:** 6600 Geoprobe  
**Inspector:** P. Phillips

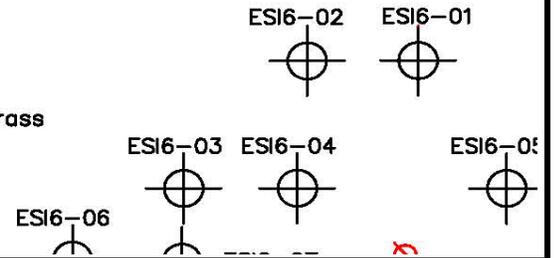
MW-01



0' 20' 40'  
APPROXIMATE SCALE (FEET)

B

Grass



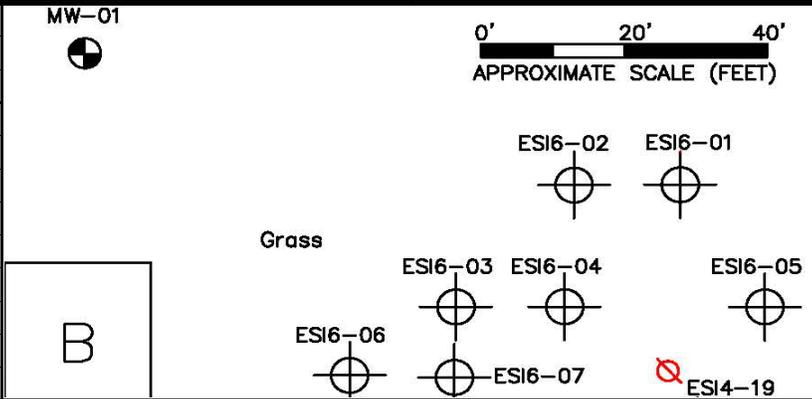
**Comments:**

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-8"	Direct Push	100	ML	0-8" Dark brown silt with fine sand and organics. Some fine to medium rounded quartz gravel.		▲ ANPCL-ESI6-04-0-6"@1330
8-36"			SM	8-36" Orange-brown fine sand with silt.		▲ ANPCL-ESI6-04-18-24"@1335 ▲ ANPCL-ESI6-04-18-24"-DUP@1335
36-48"				36-48" Light orange-brown fine sand with silt.		
4'	END OF BORING					

## SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-05**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:** ESI4-19 area

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'  2'  3'  4'	Direct Push	100	SM	0-4" Dark brown fine sand and silt. 4-8" Medium-brown fine sand. 8-48" Light orange-brown fine sand and silt.		▲ ANPCL-ESI6-05-0-6"@1320  ▲ ANPCL-ESI6-05-18-24"@1325

END OF BORING

### SOIL BORING LOG

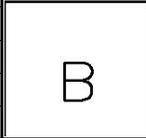
CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-06**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips

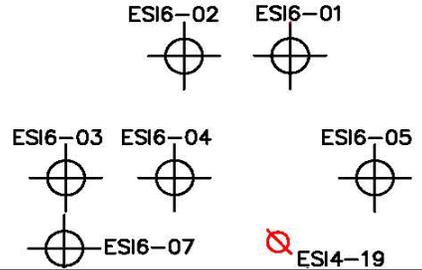
MW-01



0' 20' 40'  
APPROXIMATE SCALE (FEET)



Grass



**Comments:**

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'	Direct Push	100	SM	0-4" Dark brown fine sand with silt and organics.		▲ ANPCL-ESI6-06-0-6"@1450  ▲ ANPCL-ESI6-06-18-24"@1455 ▲ ANPCL-ESI6-06-18-24"MS/MSD@1455
				4-10" Orange-brown fine sand and silt with fine to medium gravel.		
				10-48" Orange-brown fine sand with silt.		
2'						
3'						
4'						

END OF BORING

### SOIL BORING LOG

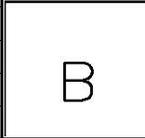
CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-07**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips

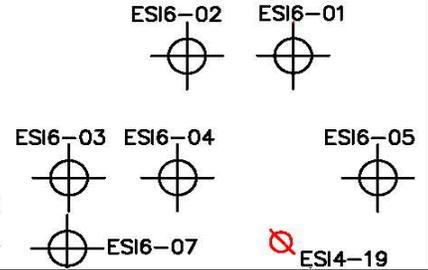
MW-01



0' 20' 40'  
APPROXIMATE SCALE (FEET)



Grass



**Comments:**

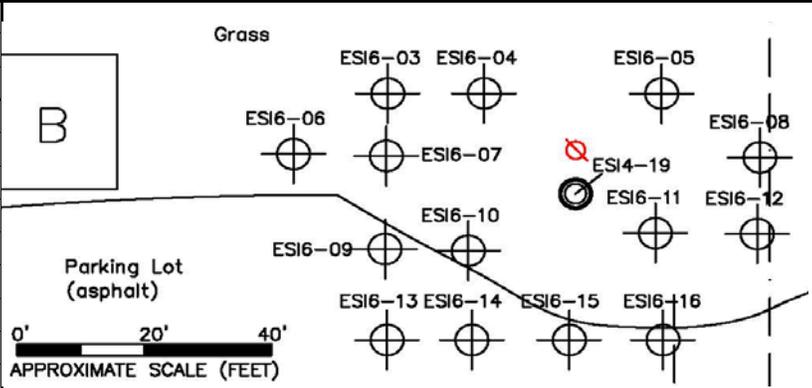
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'	Direct Push	100	ML	0-2" Dark brown silt with fine sand and organics.		▲ ANPCL-ESI6-07-0-6"@1510  ▲ ANPCL-ESI6-07-18-24"@1515 ▲ ANPCL-ESI6-07-18-24"DUP@1515
			SM	2-8" Medium brown fine sand with trace silt. Shell fragments at 4".		
				8-9" Dark brown fine sand with silt.		
				9-48" Medium brown fine to medium sand with trace silt.		
2'						
3'						
4'						

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-08**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

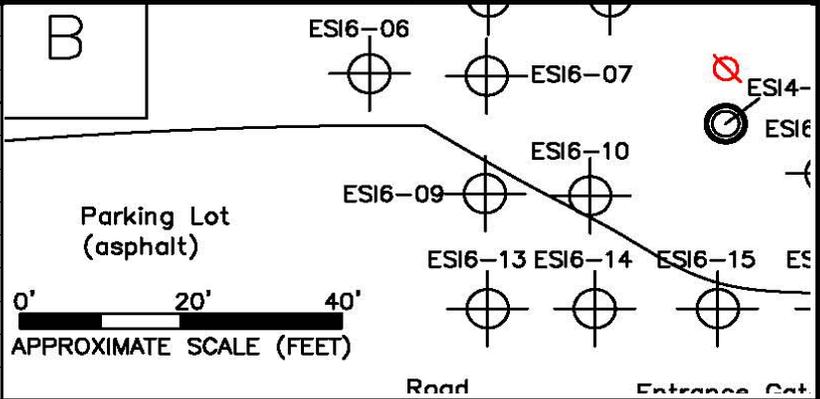
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-10"	Direct Push	100	SM	0-10" Dark brown fine sand and silt with organics. Brick fragment at 5".	[Hatched pattern]	▲ ANPCL-ESI6-08-0-6"@1505
10-48"				10-48" Orange-brown fine sand with silt.		▲ ANPCL-ESI6-08-18-24"@1508

END OF BORING

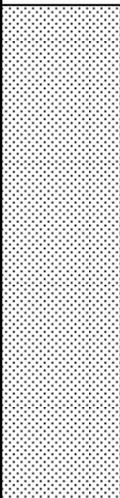
### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-09**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:** Soil boring located in asphalt parking lot. 0-6" sample taken from below asphalt.

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-4"			NA	Asphalt. Not included in sample.		
4-8"	Direct Push	80	SM	4-8" Black fine sand with silt.		▲ ANPCL-ESI6-09-0-6"@1550
8-12"				8-12" Medium-orange-brown fine sand with silt and fine to coarse gravel.		
12-16"				12-16" Dark brown fine sand with silt.		
16-22"				16-22" Greenish-brown fine sand with silt.		
22-24"				22-24" Greenish-brown fine sand with black silt inclusions.		
24-48"				24-48" Greenish-brown fine sand with silt.		▲ ANPCL-ESI6-09-18-24"@1555

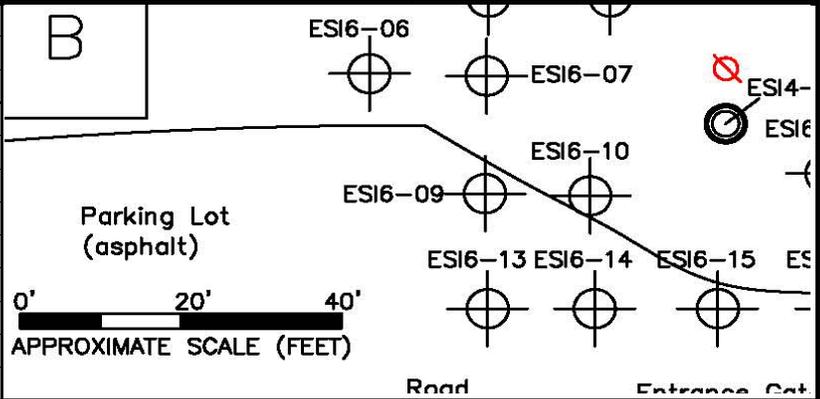
END OF BORING



## SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-10**

Client:	USDA, APHIS
Project Number:	3205-001
Location:	Gulfport, MS ANPCL
Date Started - Completed:	1/10/2012
Top of Pad Elevation:	NA
Top of Well Elevation:	NA
Total Depth:	4'
Boring Diameter:	2.25"
Driller:	Environmental Management Services, Inc.
Drill Method:	Direct Push
Drill Rig:	6600 Geoprobe
Inspector:	P. Phillips



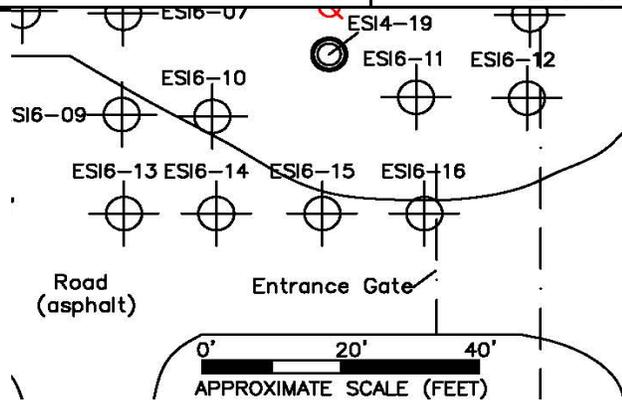
**Comments:** Soil boring located in asphalt parking lot. 0-6" sample taken from below asphalt.

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'	Direct Push	60	NA	0-4" Asphalt. Not included in sample.		▲ ANPCL-ESI6-10-0-6"@1400
2'			SM	4-10" Dark brown fine sand with silt and fine to coarse angular gravel.		
3'				10-48" Orange-brown sand with silt.		
4'				END OF BORING		▲ ANPCL-ESI6-10-18-24"@1405

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-11**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

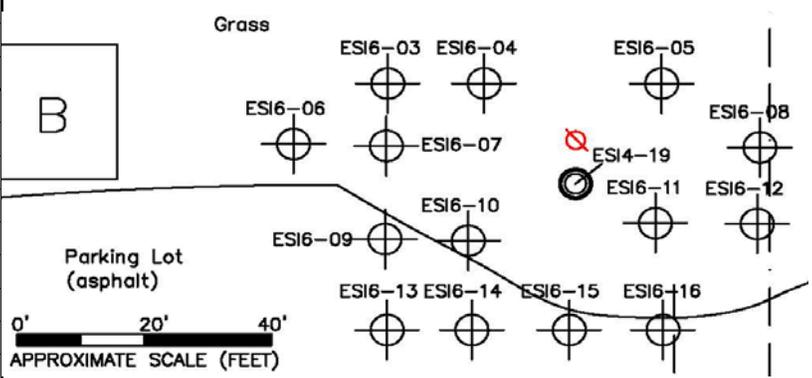
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-8"	Direct Push	100	SM	Dark brown fine sand.		▲ ANPCL-ESI6-11-0-6"@1610
8-48"				Orange-brown fine sand with silt.		▲ ANPCL-ESI6-11-0-6"DUP@1610
18-24"						▲ ANPCL-ESI6-11-18-24"@1615

END OF BORING

## SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-12**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

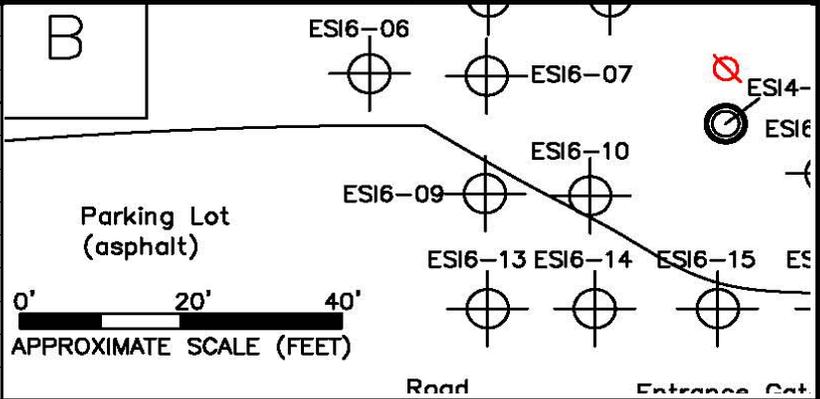
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'  2'  3'  4'	Direct Push	100	SM	0-6" Medium-brown fine sand with silt and organics. 6-48" Orange-brown fine sand with silt and organics.		▲ ANPCL-ESI6-12-0-6"@1630  ▲ ANPCL-ESI6-12-18-24"@1635

END OF BORING

## SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-13**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:** Soil boring located in asphalt parking lot. 0-6" sample taken from below asphalt.

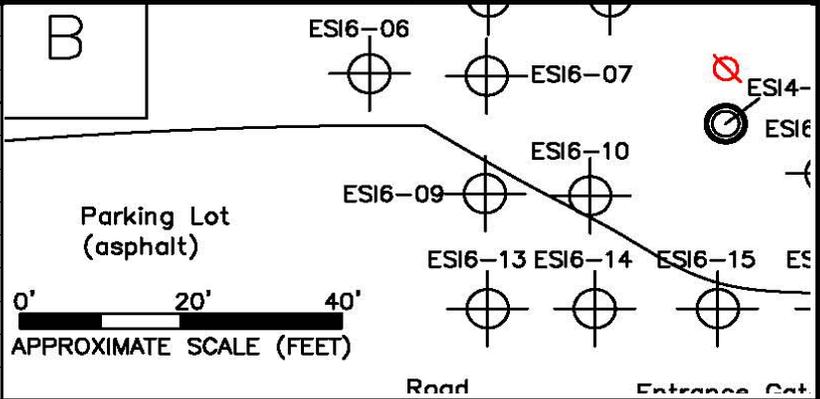
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'	Direct Push	100	NA	0-4" Asphalt. Not included in sample.		▲ ANPCL-ESI6-13-0-6"@1600
2'			SM	4-8" Orange-brown and reddish-brown fine and coarse sand and silt with fine to coarse gravel and trace light orange-brown clay.		▲ ANPCL-ESI6-13-18-24"@1605
3'				8-24" Medium-brown fine sand with silt.		
4'			24-48" Orange-brown fine sand with silt.			

END OF BORING

## SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-14**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



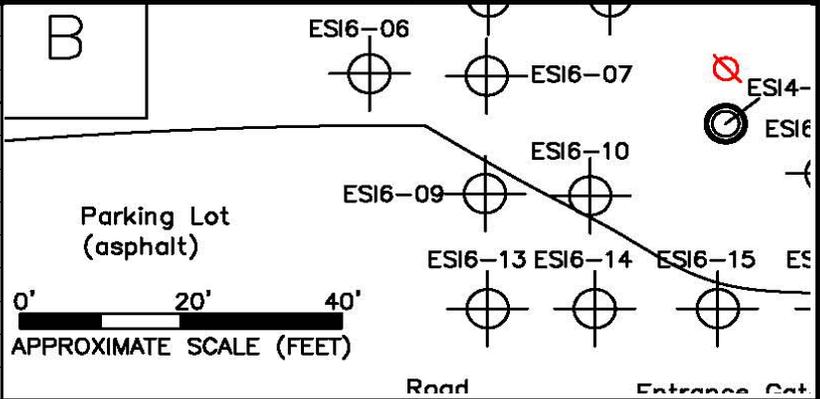
**Comments:** Soil boring located in asphalt parking lot. 0-6" sample taken from below asphalt.

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'	Direct Push	60	NA	0-4" Asphalt. Not included in sample.		▲ ANPCL-ESI6-14-0-6"@1415  ▲ ANPCL-ESI6-14-18-24"@1420
2'			SM	4-8" Very dark brown fine sand and silt.	[Stippled Pattern]	
3'				8-12" Reddish-brown and orange-brown fine sand with silt and fine to medium angular gravel, dry.		
4'				12-20" Dark brown fine sand and silt, moist.		
4'				20-28" Dark brown and gray fine sand and fine to medium gravel, dry.		
END OF BORING						

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-15**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:** Soil boring located in asphalt parking lot. 0-6" sample taken from below asphalt.

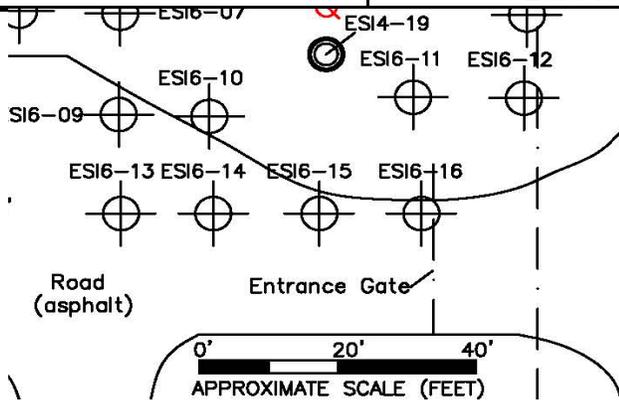
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-4"			NA	Asphalt. Not included in sample.		▲ ANPCL-ESI6-15-0-6"@1530
4-6"			SM	Very dark brown fine sand with silt and fine gravel.		▲ ANPCL-ESI6-15-18-24"@1535
6-10"				Reddish-brown and orange-brown fine to coarse sand with fine to medium gravel.		
10-16"				Very dark brown fine sand with silt.		
16-48"				Orange-brown fine sand with silt.		
0-4'	Direct Push	80				

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-16**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:** Soil boring located in asphalt parking lot. 0-6" sample taken from below asphalt.

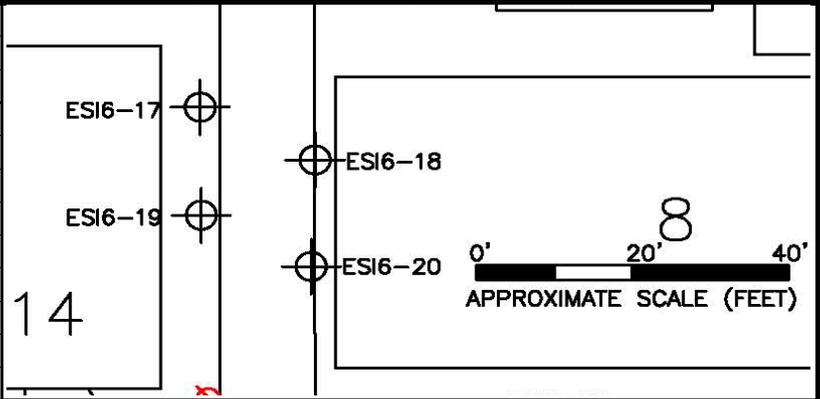
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-4"			NA	Asphalt. Not included in sample.		
4-6"			SM	Very dark brown fine sand and silt.	[Hatched pattern]	▲ ANPCL-ESI6-16-0-6" @1430
6-10"				Medium-brown fine sand with some silt and fine angular gravel.		
10-15"				Reddish-brown and orange-brown fine to medium sand intermixed with some fine to medium angular gravel.		
15-27"				Dark gray and dark brown fine sand and silt intermixed.		
27-34"				Orange-brown fine sand and silt.		
1'	Direct Push	75				▲ ANPCL-ESI6-16-18-24" @1435
2'						
3'						
4'						

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-17**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

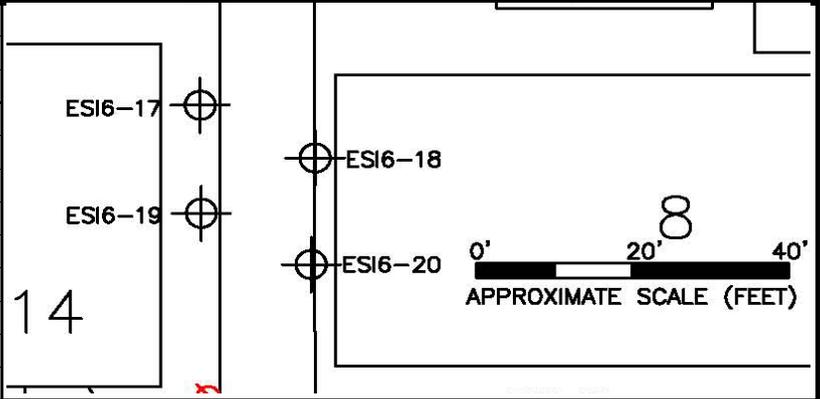
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'	Direct Push	100	SM	0-2" Brown fine sand and silt with some medium to coarse rounded and angular gravel and trace organics.		▲ ANPCL-ESI6-17-0-6"@0820
				2-4" Light brown fine sand with silt.		
				4-6" Orange-brown fine sand with silt and trace medium rounded quartzite gravel.		
				6-36" Orange-brown sand with silt.		
2'						▲ ANPCL-ESI6-17-18-24"@0822
3'						
4'				36-48" Dark orange-brown sand with silt.		

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-18**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-4'	Direct Push	100	SM	0-4" Medium-brown fine sand with silt and some gravel. 4-14" Reddish-brown and orange-brown fine to medium sand with silt, gravel and shell fragments. 14-18" Dark brown fine sand with silt. 18-48" Orange-brown fine sand with silt.		▲ ANPCL-ESI6-18-0-6"@1130  ▲ ANPCL-ESI6-18-18-24"@1135

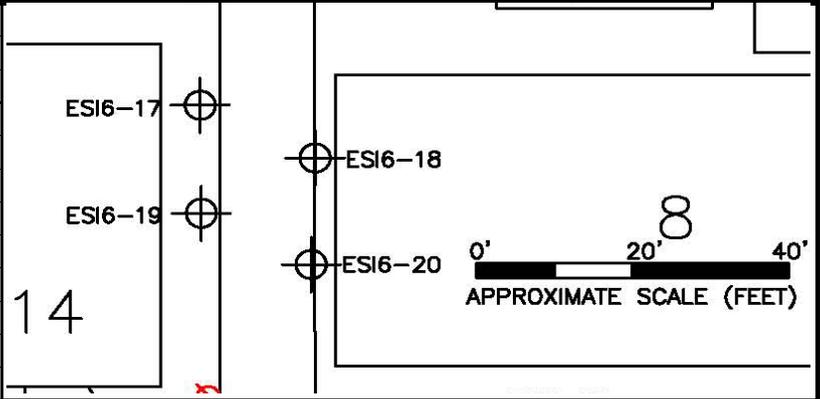
END OF BORING



## SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-19**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

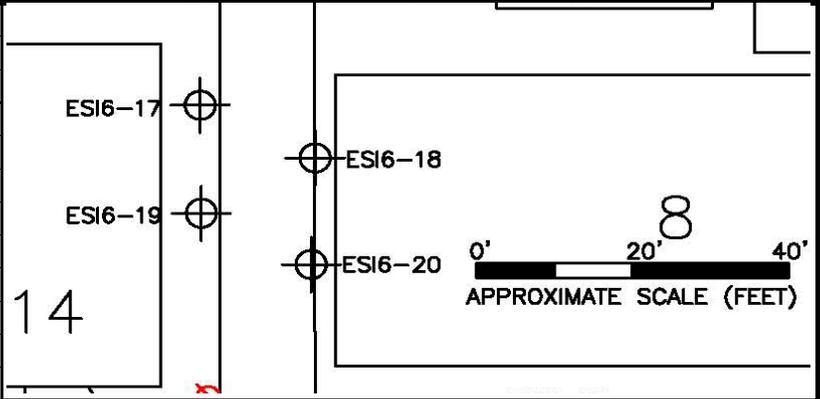
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'  2'  3'  4'	Direct Push	75	SM	0-4" Medium-brown fine sand and silt with organics. 4-8" Dark orange-brown fine sand with silt. 8-48" Orange-brown fine sand with silt.		▲ ANPCL-ESI6-19-0-6"@1105  ▲ ANPCL-ESI6-19-18-24"@1110

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-20**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

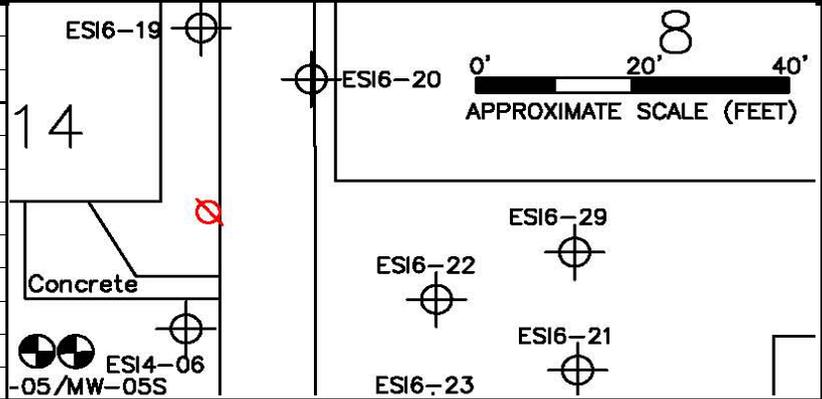
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'	Direct Push	100	SM	0-4" Medium-brown fine sand and silt with gravel, shell fragments and organics.		▲ ANPCL-ESI6-20-0-6"@1115
				4-9" Reddish-brown fine to medium sand with gravel, shell fragments and silt.		
				9-13" Light gray fine sand with silt.		
				13-16" Dark brown fine sand with silt.		
				16-17" Light gray fine sand with silt.		
2'				17-20" Dark brown and reddish-brown fine sand with silt intermixed.		
3'				20-48" Orange-brown fine sand with silt. Looser at 38".		
4'	END OF BORING					



## SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-21**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1' 2' 3' 4'	Direct Push	100	SM	0-12" Dark brown fine sand and silt with organics and trace orange-brown fine sand at 7".  12-48" Orange-brown fine sand with silt.		▲ ANPCL-ESI6-21-0-6"@0850  ▲ ANPCL-ESI6-21-18-24"@0855

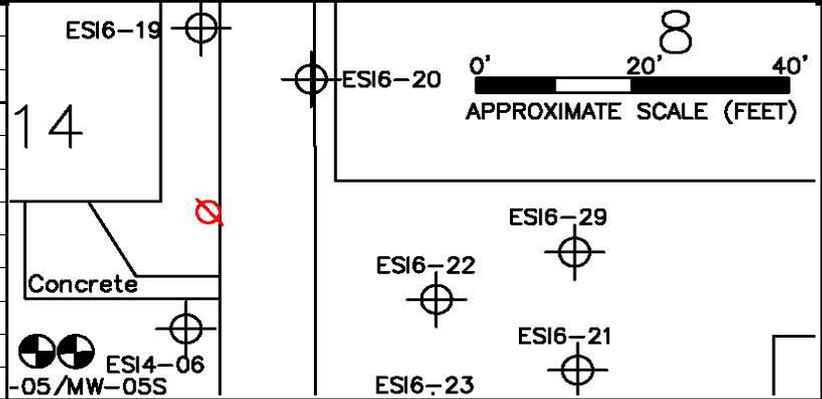
END OF BORING



# SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-22**

Client:	USDA, APHIS
Project Number:	3205-001
Location:	Gulfport, MS ANPCL
Date Started - Completed:	1/11/2012
Top of Pad Elevation:	NA
Top of Well Elevation:	NA
Total Depth:	4'
Boring Diameter:	2.25"
Driller:	Environmental Management Services, Inc.
Drill Method:	Direct Push
Drill Rig:	6600 Geoprobe
Inspector:	P. Phillips



**Comments:**

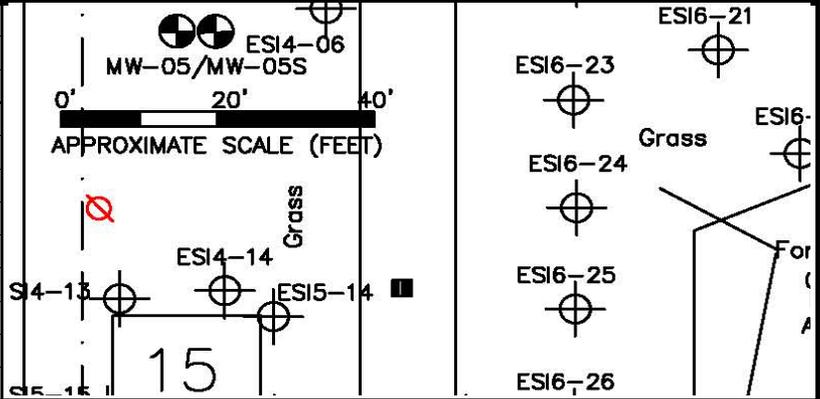
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-6"	Direct Push	100	SM	0-6" Medium-brown fine sand with silt and organics.		▲ ANPCL-ESI6-22-0-6"@0915
6-10"				6-10" Medium-brown and light gray fine sand with silt and shell fragments.		
10-15"				10-15" Orange-brown and light brown fine sand intermixed.		
15-26"				15-26" Dark brown fine sand and orange-brown fine sand with silt intermixed.		
26-48"				26-48" Orange-brown fine sand and silt.		▲ ANPCL-ESI6-22-18-24"@0920

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-23**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



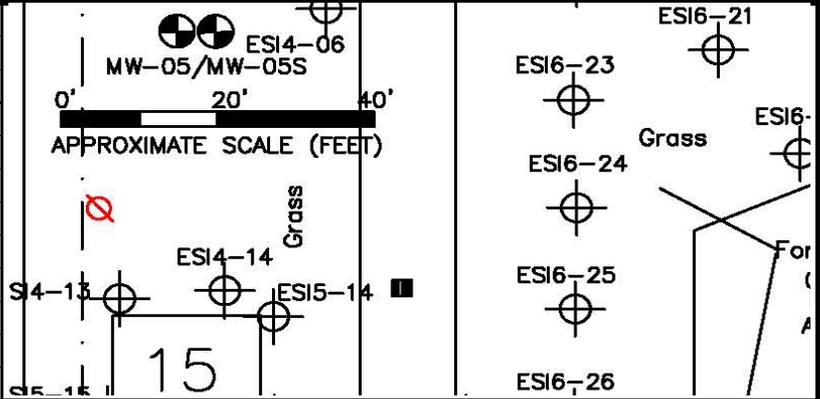
**Comments:** Grass

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-1'	Direct Push	100	SM	0-14" Medium-brown fine sand and silt with trace gravel.		▲ ANPCL-ESI6-23-0-6"@0810
1'-14"				14-15" Light brown fine sand and silt with shell fragments intermixed.		▲ ANPCL-ESI6-23-18-24"@0815
15'-20"				15-20" Dark brown fine sand and silt with trace light brown fine sand.		▲ ANPCL-ESI6-23-18-24"MS/MSD@0815
20'-46"				20-48" Medium-brown to orange-brown fine sand and silt. Dark orange-brown fine sand at 46".		▲ ANPCL-ESI6-23-30-36"@0820
END OF BORING						

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-24**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

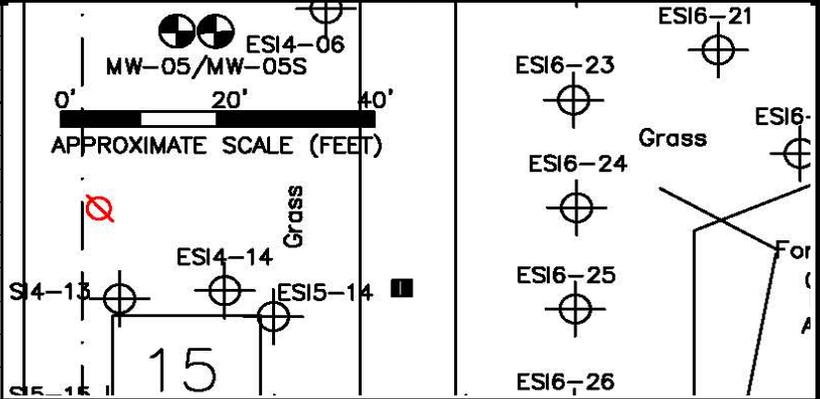
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-8"	Direct Push	100	SM	0-8" Dark brown fine sand and silt with organics.		▲ ANPCL-ESI6-24-0-6"@0900  ▲ ANPCL-ESI6-24-18-24"@0905 ▲ ANPCL-ESI6-24-18-24"DUP@0905 ▲ ANPCL-ESI6-24-30-36"@0910
8-12"				8-12" Light gray and brown fine sand and silt with shell fragments.		
12-16"				12-16" Dark brown fine sand and silt.		
16-48"				16-48" Orange-brown fine sand with silt, dry. Looser and moist at 39".		

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-25**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

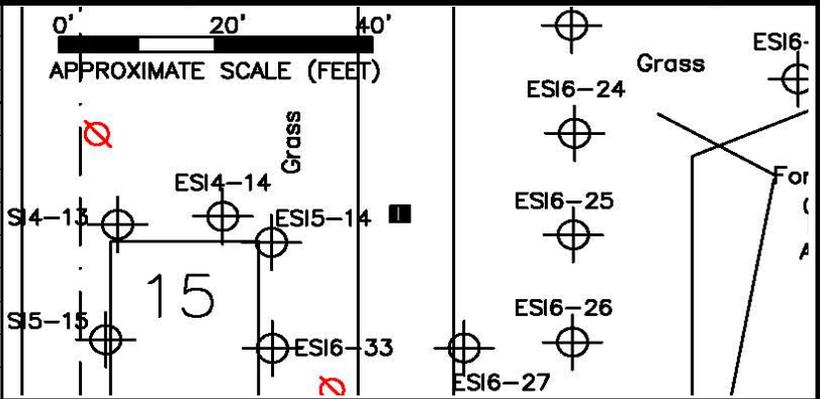
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-7"	Direct Push	100	SM	0-7" Dark brown fine sand and silt with organics.		▲ ANPCL-ESI6-25-0-6"@1145
7-9"				7-9" Orange-brown and light gray fine sand with gravel, shell fragments and silt.		
9-13"				9-13" Very dark brown fine sand with silt.		
13-16"				13-16" Reddish-brown fine sand with silt.		
16-48"				16-48" Orange-brown fine sand with silt.		

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-26**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

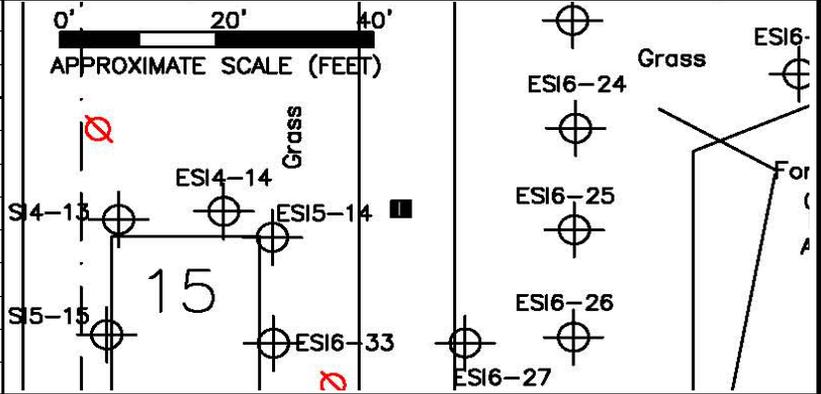
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-9"	Direct Push	100	SM	0-9" Medium-brown fine sand and silt with organics.		▲ ANPCL-ESI6-26-0-6"@1055
9-15"				9-15" Medium-brown and light gray fine sand and silt intermixed, with some fine to medium rounded quartz gravel.		▲ ANPCL-ESI6-26-18-24"@1100
15-48"				15-48" Orange-brown fine sand and silt, looser at 40".		

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-27**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-6"	Direct Push	90	SM	0-6" Medium-brown fine sand with silt, organics, some gravel and shell fragments.		▲ ANPCL-ESI6-27-0-6"@1045
6-8"				6-8" Light gray fine sand with silt.		
8-12"				8-12" Very dark brown fine sand with silt.		
12-48"				12-48" Orange-brown fine sand with silt. Looser at 34".		

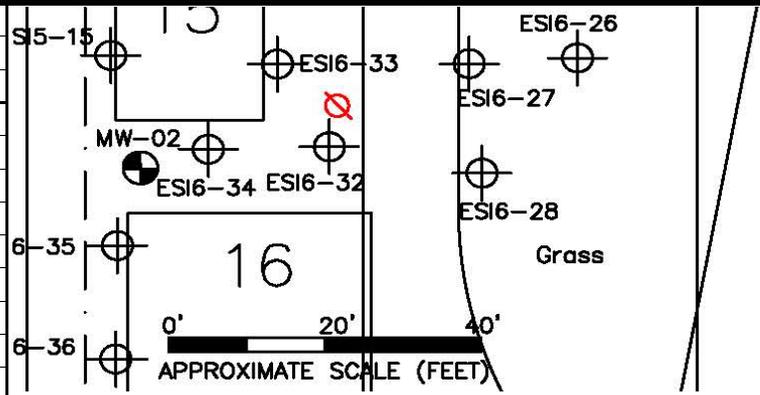
▲ ANPCL-ESI6-27-18-24"@1050  
▲ ANPCL-ESI6-27-18-24"DUP@1050

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-28**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-12"	Direct Push	100	SM	0-12" Dark brown fine sand and silt with organics and trace gravel. Shell fragments at 5".		▲ ANPCL-ESI6-28-0-6"@1020
12-48"				12-48" Orange-brown fine sand with silt. Looser at 34".		▲ ANPCL-ESI6-28-18-24"@1025

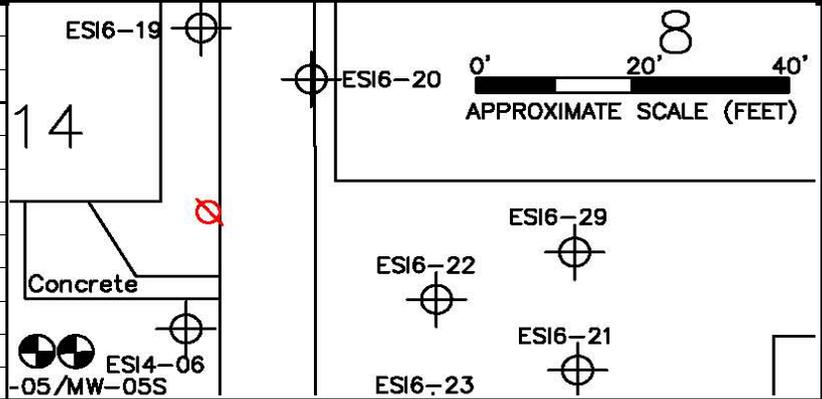
END OF BORING



## SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-29**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

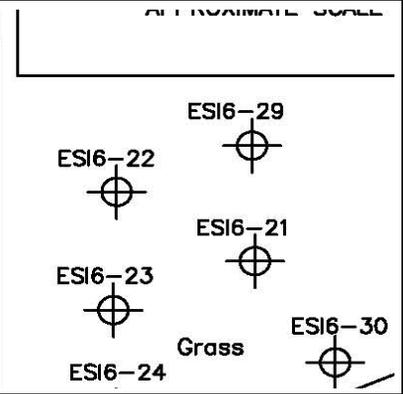
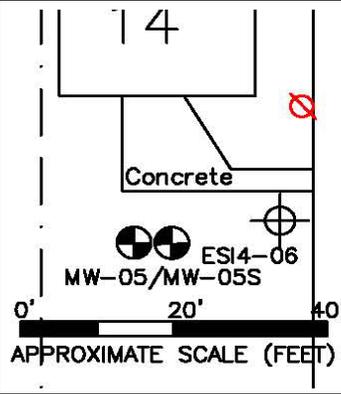
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'   2'   3'   4'	Direct Push	100	SM	0-14" Medium-brown fine sand with silt.  14-48" Orange-brown fine sand with silt.		▲ ANPCL-ESI6-29-0-6"@0950 ▲ ANPCL-ESI6-29-0-6"MS/MSD@0950  ▲ ANPCL-ESI6-29-18-24"@0955

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-30**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

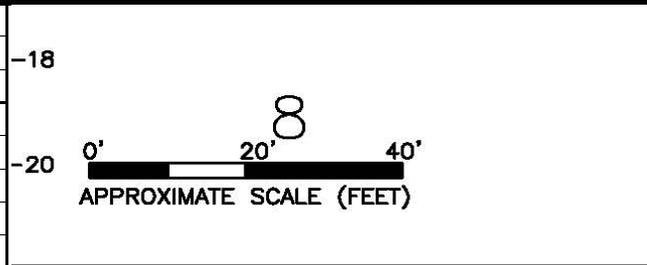
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-12"	Direct Push	100	SM	0-12" Dark brown fine sand and silt with organics.		▲ ANPCL-ESI6-30-0-6"@0835
12-14"				12-14" Dark brown fine sand and silt with organics and shell fragments.		▲ ANPCL-ESI6-30-18-24"@0840
14-48"				14-48" Medium-brown to orange-brown fine sand and silt. Organics (roots) to 24".		
4'	END OF BORING					



## SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-31**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:**

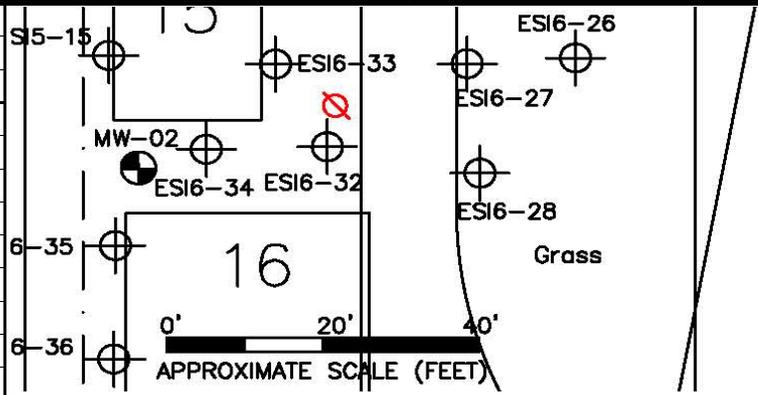
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'  2'  3'  4'	Direct Push	100	SM	0-6" Dark brown fine sand with silt and organics. Shell fragments at 0-1". 6-48" Orange-brown fine sand with silt. Looser at 42".		▲ ANPCL-ESI6-31-0-6"@1030  ▲ ANPCL-ESI6-31-18-24"@1035

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-32**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:** Soil boring located in asphalt parking lot. 0-6" sample taken from below asphalt.

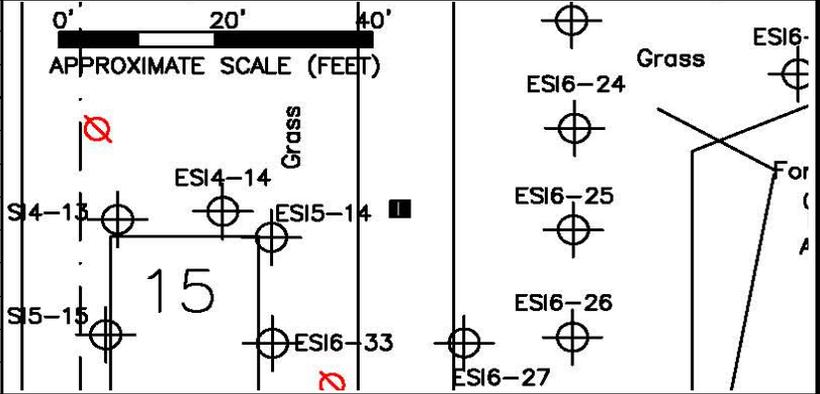
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1' 2' 3' 4'	Direct Push	100	NA	0-2" Asphalt. Not included in sample.		▲ ANPCL-ESI6-32-0-6"@1005
			SM	2-5" Orange-brown fine sand with silt and trace gravel.		
			GP	5-6" Shell fragments.		
			SM	6-13" Dark brown fine sand with silt.		▲ ANPCL-ESI6-32-18-24"@1010
			SM	13-48" Orange-brown fine sand with silt. Looser at 37".		▲ ANPCL-ESI6-32-30-36"@1015 ▲ ANPCL-ESI6-32-30-36"DUP@1015

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-33**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:** Soil boring located in asphalt parking lot. 0-6" sample taken from below asphalt.

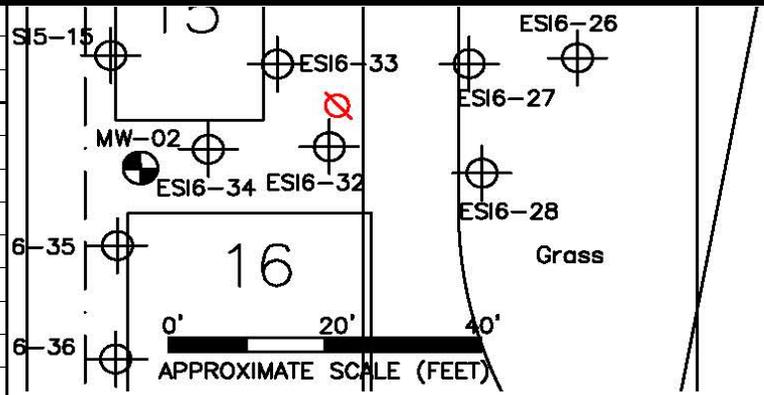
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1' 2' 3' 4'	Direct Push	100	NA	0-2" Asphalt. Not included in sample.		▲ ANPCL-ESI6-33-0-6"@0925
			SM	2-4" Reddish-brown fine sand with fine to medium rounded quartzite gravel and some silt.		
			GP	4-5" Shell fragments with light gray fine to medium sand and some silt.		
			SM	5-10" Dark brown fine sand with silt. 10-48" Orange-brown fine sand with silt.		▲ ANPCL-ESI6-33-18-24"@0930 ▲ ANPCL-ESI6-33-30-36"@0935

END OF BORING

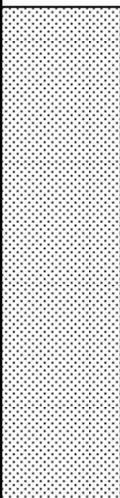
### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-34**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/10/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	4'
<b>Boring Diameter:</b>	2.25"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Direct Push
<b>Drill Rig:</b>	6600 Geoprobe
<b>Inspector:</b>	P. Phillips



**Comments:** Soil boring located in asphalt parking lot. 0-6" sample taken from below asphalt.

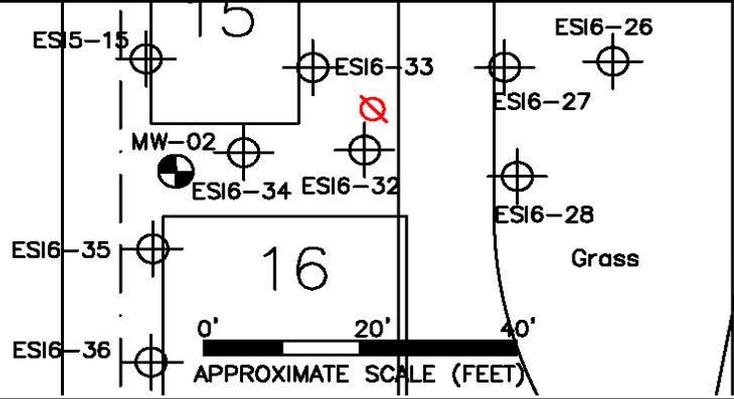
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-2"			NA	0-2" Asphalt. Not included in sample.		▲ ANPCL-ESI6-34-0-6"@1130
2-6"			SM	2-6" Light gray fine sand with silt and fine to medium rounded quartzite gravel.		▲ ANPCL-ESI6-34-18-24"@1135 ▲ ANPCL-ESI6-34-30-36"@1140
6-12"				6-12" Dark brown fine sand with silt.		
12-48"				12-48" Orange-brown fine sand with silt.		
4'	Direct Push	100		END OF BORING		



## SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-35**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	2'
<b>Boring Diameter:</b>	3"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Hand Auger
<b>Drill Rig:</b>	NA
<b>Inspector:</b>	P. Phillips



**Comments:** Soil boring location not accessible with Geoprobe.

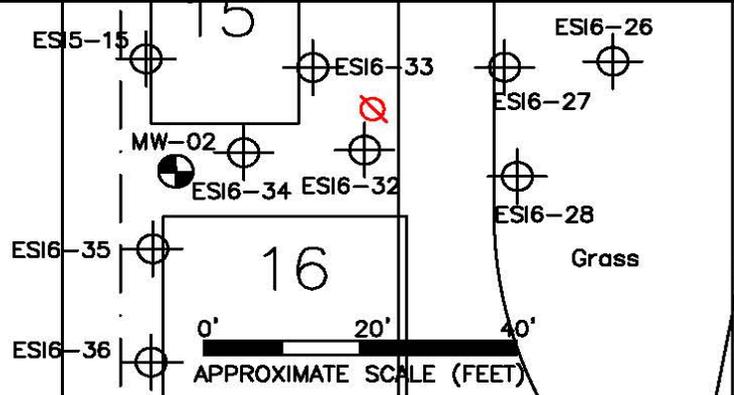
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'	Hand Auger	100	SM	0-8" Medium-brown fine sand with silt. Hard black silty sand layer approximately 0.25" thick at 8".		▲ ANPCL-ESI6-35-0-6"@1420
2'				8-24" Orange-brown fine sand with silt.		▲ ANPCL-ESI6-35-0-6"DUP@1420
END OF BORING						

END OF BORING

### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-36**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	2'
<b>Boring Diameter:</b>	3"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Hand Auger
<b>Drill Rig:</b>	NA
<b>Inspector:</b>	P. Phillips



**Comments:** Soil boring location not accessible with Geoprobe.

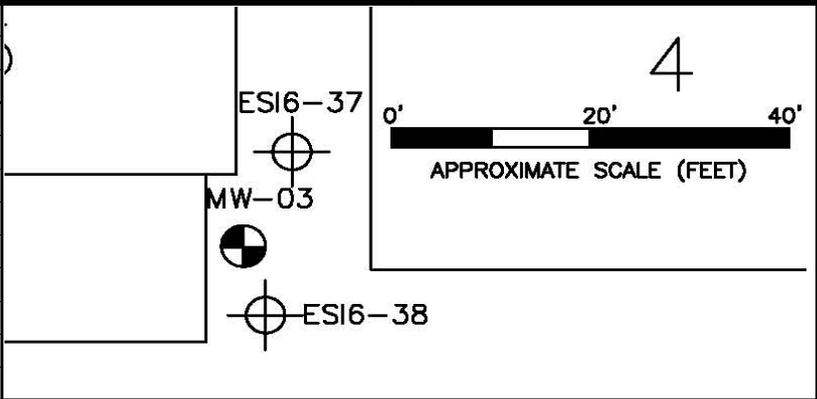
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'	Hand Auger	100	SM	0-8" Medium-brown fine sand with silt.		▲ ANPCL-ESI6-36-0-6"@1440
				8-24" Orange-brown fine sand with silt.		▲ ANPCL-ESI6-36-0-6"DUP@1440
2'						▲ ANPCL-ESI6-36-18-24"@1450

END OF BORING

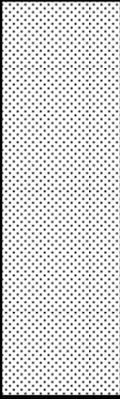
### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-37**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/9/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	3'
<b>Boring Diameter:</b>	3"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Hand Auger
<b>Drill Rig:</b>	NA
<b>Inspector:</b>	P. Phillips



**Comments:** Soil boring located in the southeast portion of the site, near MW-03.

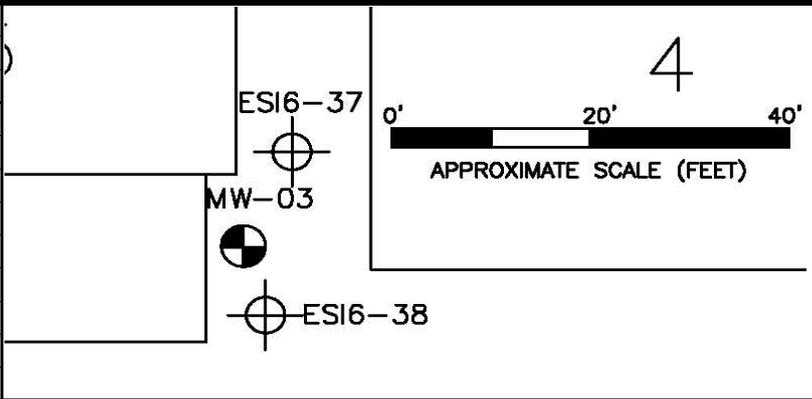
Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-8"	Hand Auger	100	SM	0-8" Dark brown fine sand and silt.		▲ ANPCL-ESI6-37-0-6"@1310
8-10"				8-10" Reddish-orange-brown fine sand with silt, gravel and trace shell fragments.		▲ ANPCL-ESI6-37-18-24"@1320
10-16"				10-16" Dark brown fine sand with silt.		▲ ANPCL-ESI6-37-30-36"@1330
16-36"				16-36" Orange-brown fine sand with silt.		

END OF BORING

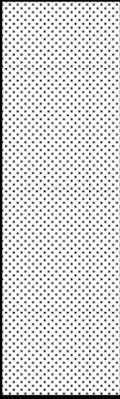
### SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-38**

<b>Client:</b>	USDA, APHIS
<b>Project Number:</b>	3205-001
<b>Location:</b>	Gulfport, MS ANPCL
<b>Date Started - Completed:</b>	1/11/2012
<b>Top of Pad Elevation:</b>	NA
<b>Top of Well Elevation:</b>	NA
<b>Total Depth:</b>	3'
<b>Boring Diameter:</b>	3"
<b>Driller:</b>	Environmental Management Services, Inc.
<b>Drill Method:</b>	Hand Auger
<b>Drill Rig:</b>	NA
<b>Inspector:</b>	P. Phillips



**Comments:** Soil boring located in the southeast portion of the site, near MW-03.

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
0-8"	Hand Auger	100	SM	0-8" Dark brown fine sand and silt.		▲ ANPCL-ESI6-38-0-6"@1535
8-10"				8-10" Reddish-orange-brown fine sand with silt, gravel and trace shell fragments.		▲ ANPCL-ESI6-38-0-6"DUP@1535
10-16"				10-16" Dark brown fine sand with silt.		
16-36"				16-36" Orange-brown fine sand with silt.		▲ ANPCL-ESI6-38-18-24"@1545
						▲ ANPCL-ESI6-38-30-36"@1555

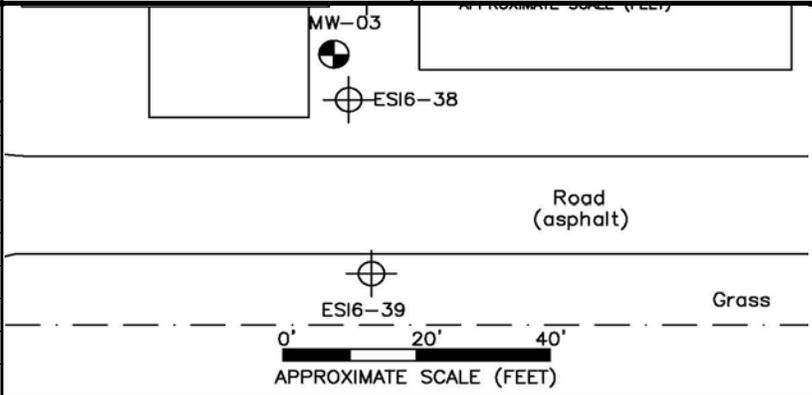
END OF BORING



## SOIL BORING LOG

CPHST ANPCL  
GULFPORT, MS  
BORING ID:  
**ESI6-39**

**Client:** USDA, APHIS  
**Project Number:** 3205-001  
**Location:** Gulfport, MS ANPCL  
**Date Started - Completed:** 1/11/2012  
**Top of Pad Elevation:** NA  
**Top of Well Elevation:** NA  
**Total Depth:** 3'  
**Boring Diameter:** 3"  
**Driller:** Environmental Management Services, Inc.  
**Drill Method:** Hand Auger  
**Drill Rig:** NA  
**Inspector:** P. Phillips

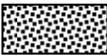
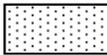
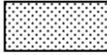
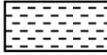
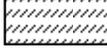


**Comments:** Soil boring located in the southeast portion of the site, near MW-03.

Depth (fbgs)	Method	Recovery (%)	USCS	Description	Lithology	Sample Collection Details
1'          2'          3'	Hand Auger	100	SM	0-6" Dark brown fine sand and silt with trace gravel and organics.		▲ ANPCL-ESI6-39-0-6"@1610
			GP	6-8" Gravel with very dark brown silt and sand.		▲ ANPCL-ESI6-39-0-6"MS/MSD@1610
			SM	8-16" Dark brown fine sand with silt.		▲ ANPCL-ESI6-39-18-24"@1615
				16-36" Orange-brown fine sand with silt.		▲ ANPCL-ESI6-39-30-36"@1620

END OF BORING

**Soil Boring Lithology (USCS):**

GW		SP		OL	
GP		SM		MH	
GM		SC		CH	
GC		ML		OH	
SW		CL		Pt	

**Notes:**

ANPCL - Analytical and Natural Products Chemistry Laboratory

APHIS - Animal and Plant Health Inspection Service

CPHST - Center for Plant Health Science and Technology

NA - Not Applicable

fbgs - Feet Below Ground Surface

USCS - Unified Soil Classification System

USDA - United States Department of Agriculture

MW - Monitoring Well

▲ - Sample Collection

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**Appendix B**  
**Monitoring Well MW-05S Soil Boring**  
**and Well Construction Log**

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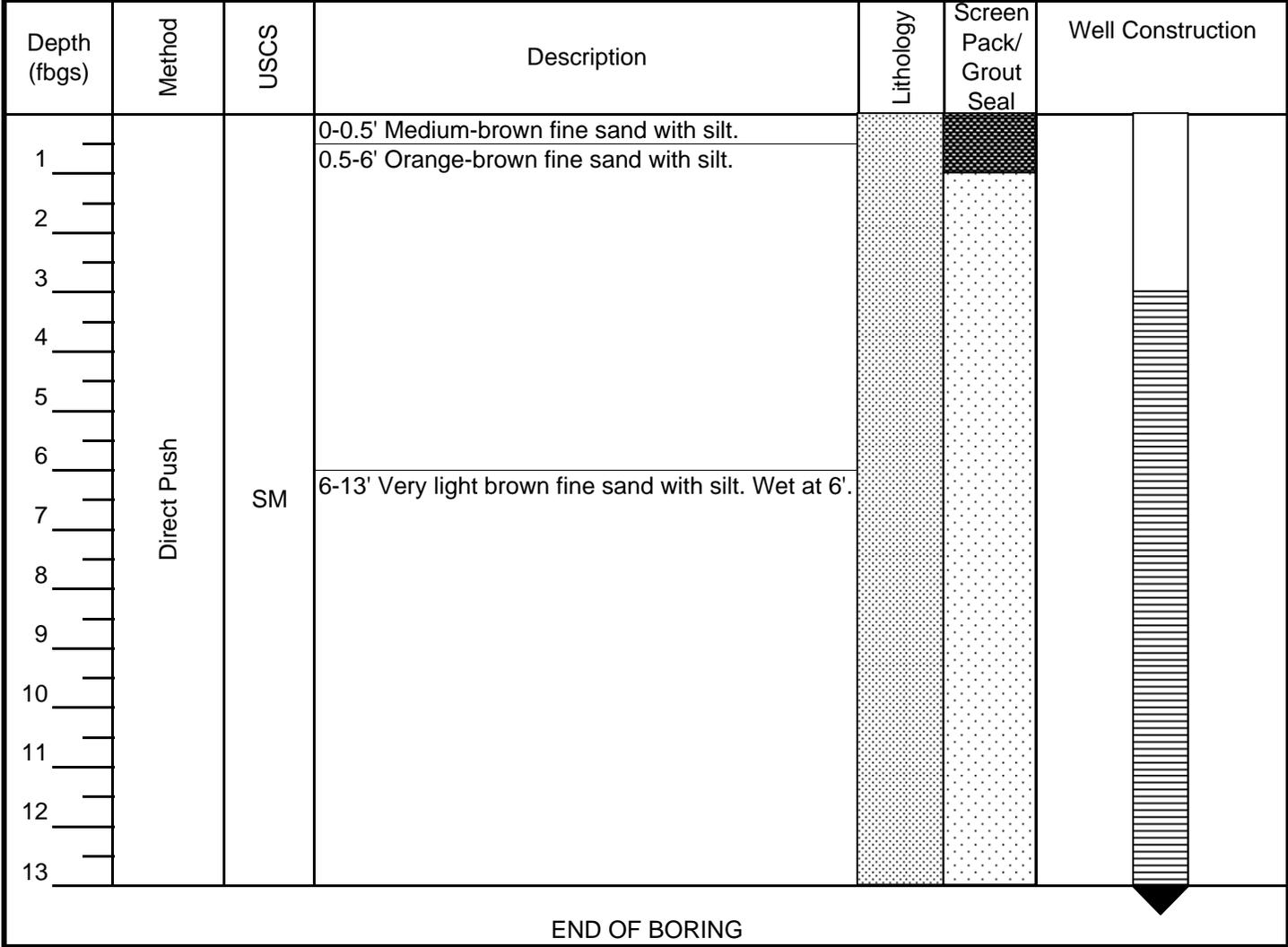


**Monitoring Well  
Construction Log**

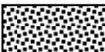
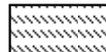
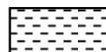
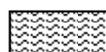
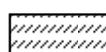
CPHST-ANPCL  
GULFPORT, MS  
BORING ID:  
**MW-05S**

<b>Client:</b>	USDA, APHIS	<b>Well Diameter:</b>	1"
<b>Project Number:</b>	3205-001	<b>Screened Interval:</b>	3-13'
<b>Location:</b>	Gulfport, MS ANPCL	<b>Slot Size:</b>	0.01"
<b>Date Started - Completed:</b>	1/10/2012	<b>Casing Interval:</b>	0-3'
<b>Top of Pad Elevation:</b>	31.01 famsl	<b>Screen Pack:</b>	DSI #1 Sieve Filtered Sand
<b>Top of Well Elevation:</b>	30.81 famsl	<b>Screen Pack Interval:</b>	1-13'
<b>Total Depth:</b>	13'	<b>Grout Interval:</b>	0-1'
<b>Boring Diameter:</b>	3"	<b>Grout Seal Material:</b>	Bentonite
<b>Driller:</b>	Environmental Management Services, Inc.	<b>Well Material:</b>	Sch. 40 PVC
<b>Drill Method:</b>	Direct Push	<b>Well Finishing:</b>	Flush Mount
<b>Drill Rig:</b>	6600 Geoprobe	<b>Depth to Water:</b>	6'
<b>Inspector:</b>	D. Schanzle	<b>Depth to Bedrock:</b>	NA

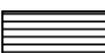
**Comments:**



**Soil Boring Lithology (USCS):**

GW		SP		OL	
GP		SM		MH	
GM		SC		CH	
GC		ML		OH	
SW		CL		Pt	

**Monitoring Well Construction:**

Casing		Bentonite Chip Grout (Shure-Plug 1/8" Bentonite Chips)	
Screen		Pellet Grout (TR-30 1/4" Pel Plug)	
Sand Pack		Well Plug	

**Notes:**

- ANPCL - Analytical and Natural Products Chemistry Laboratory
- APHIS - Animal and Plant Health Inspection Service
- CPHST - Center for Plant Health Science and Technology
- famsl - Feet Above Mean Sea Level
- fbgs - Feet Below Ground Surface
- USCS - Unified Soil Classification System
- MW - Monitoring Well

**Appendix C**  
**Waste Disposal Manifest**

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SC PPW 3/3/2011

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Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator ID Number MS9123430598	2. Page 1 of 1	3. Emergency Response Phone (800) 483-3718	4. Manifest Tracking Number 004960976 FLE		
5. Generator's Name and Mailing Address USDA 3505 25th Avenue Gulfport, MS 39501 Generator's Phone: (703) 920-7070				Generator's Site Address (if different than mailing address) SAME			
6. Transporter 1 Company Name Clean Harbors Environmental Services Inc				U.S. EPA ID Number MAD039322250			
7. Transporter 2 Company Name Robbie D Wood				U.S. EPA ID Number ALD067138891			
8. Designated Facility Name and Site Address Clean Harbors Deer Park, LLC 2027 Independence Parkway South La Porte, TX 77571 Facility's Phone: (281) 930-2300				U.S. EPA ID Number TXD055141378			
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes	
	1. NON D.O.T. REGULATED	No.	Type				
		1	DM	500	P	OUT51131	
14. Special Handling Instructions and Additional Information LCH474350							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name Kenneth Peterman				Signature Kenneth Peterman		Month Day Year 2 7 12	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name Dennis Williams				Signature Dennis Williams		Month Day Year 2 7 12	
Transporter 2 Printed/Typed Name Kenneth Davidson				Signature Kenneth Davidson		Month Day Year 02 08 12	
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection							
18b. Alternate Facility (or Generator) Manifest Reference Number: _____ U.S. EPA ID Number: _____							
18c. Signature of Alternate Facility (or Generator) _____ Month Day Year _____							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H040		2. _____		3. _____		4. _____	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name J Stoerner				Signature J Stoerner		Month Day Year 2 9 12	

GENERATOR

INTL

TRANSPORTER

DESIGNATED FACILITY

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)

21. Generator ID Number

22. Page

23. Manifest Tracking Number

MS 9123430598256 004560976FE

24. Generator's Name

USDA

25. Transporter Company Name

Clean Harbors

U.S. EPA ID Number

MA 003322280

26. Transporter Company Name

U.S. EPA ID Number

27a. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))

28. Containers

No.

Type

29. Total Quantity

30. Unit Wt./Vol.

31. Waste Codes

GENERATOR

32. Special Handling Instructions and Additional Information

TRANSPORTER

33. Transporter Acknowledgment of Receipt of Materials

Printed/Typed Name

Bethfalke

Signature

Bethfalke

Month Day Year

8 9 12

34. Transporter Acknowledgment of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

DESIGNATED FACILITY

35. Discrepancy

36. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

**Appendix D**  
**Survey Data**

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Appendix D - CPHST ANPCL Soil Boring and Monitoring Well Survey Data

Location ID	EMS Northing	EMS Easting	State Plane Northing (EMS)	State Plane Easting (EMS)	Elevation (NAVD88, GEOID09)
ESI4-06	5013.0725	4873.8845	902050.1425	324382.5645	30.6888
ESI4-13	4973.3974	4847.5408	902010.4674	324356.2208	30.6212
ESI4-14	4974.5741	4860.3657	902011.6441	324369.0457	31.1288
ESI5-14	4970.7625	4868.2388	902007.8325	324376.9188	31.1433
ESI5-15	4957.9035	4846.0793	901994.9735	324354.7593	30.6205
ESI6-01	5216.0066	5192.6917	902253.0766	324701.3717	29.8275
ESI6-02	5216.2517	5177.7459	902253.3217	324686.4259	29.8043
ESI6-03	5198.6322	5161.6814	902235.7022	324670.3614	30.252
ESI6-04	5197.994	5176.3294	902235.064	324685.0094	30.0448
ESI6-05	5203.6986	5204.6219	902240.7686	324713.3019	29.8048
ESI6-06	5188.0866	5147.0109	902225.1566	324655.6909	30.5123
ESI6-07	5187.3154	5161.7879	902224.3854	324670.4679	30.4206
ESI6-08	5187.5283	5220.1918	902224.5983	324728.8718	30.0391
ESI6-09	5172.1185	5161.7279	902209.1885	324670.4079	30.4251
ESI6-10	5171.5276	5174.1679	902208.5976	324682.8479	30.3588
ESI6-11	5174.6081	5203.5587	902211.6781	324712.2387	30.3386
ESI6-12	5174.7161	5220.1411	902211.7861	324728.8211	30.0959
ESI6-13	5157.1024	5162.0623	902194.1724	324670.7423	30.4943
ESI6-14	5156.2161	5174.3388	902193.2861	324683.0188	30.3994
ESI6-15	5156.2832	5189.9493	902193.3532	324698.6293	30.2856
ESI6-16	5156.5901	5204.9712	902193.6601	324713.6512	30.2885
ESI6-17	5069.3708	4876.1984	902106.4408	324384.8784	30.8568
ESI6-18	5062.6042	4890.5402	902099.6742	324399.2202	31.0011
ESI6-19	5054.548	4875.4742	902091.618	324384.1542	30.7652
ESI6-20	5047.1142	4890.0288	902084.1842	324398.7088	31.0185
ESI6-21	5007.5084	4924.2824	902044.5784	324432.9624	30.7919
ESI6-22	5017.454	4906.1634	902054.524	324414.8434	30.9286
ESI6-23	5000.8136	4905.7158	902037.8836	324414.3958	30.922
ESI6-24	4985.8625	4905.6684	902022.9325	324414.3484	30.9037
ESI6-25	4971.2436	4906.0049	902008.3136	324414.6849	30.8043
ESI6-26	4957.0222	4905.9135	901994.0922	324414.5935	30.9103
ESI6-27	4956.2393	4892.1638	901993.3093	324400.8438	30.5221
ESI6-28	4941.7922	4893.4443	901978.8622	324402.1243	30.5226
ESI6-29	5023.8572	4924.0589	902060.9272	324432.7389	30.8065
ESI6-30	4993.6452	4924.7733	902030.7152	324433.4533	30.5212
ESI6-31	5022.5995	4971.3811	902059.6695	324480.0611	30.1864
ESI6-32	4944.612	4874.2206	901981.682	324382.9006	30.7104
ESI6-33	4956.1869	4868.2446	901993.2569	324376.9246	31.0078
ESI6-34	4944.2758	4859.3024	901981.3458	324367.9824	30.9527
ESI6-35	4931.9244	4846.8423	901968.9944	324355.5223	30.4471
ESI6-36	4915.7867	4846.9304	901952.8567	324355.6104	30.1219
ESI6-37	4794.1111	5092.8832	901831.1811	324601.5632	29.8179
ESI6-38	4776.6978	5089.7879	901813.7678	324598.4679	29.6283
ESI6-39	4748.7508	5093.4904	901785.8208	324602.1704	28.9706
MW-01 GRD	5244.3113	5113.0963	902281.3813	324621.7763	29.9319
MW-01 TOC	5244.0404	5112.9767	902281.1104	324621.6567	29.6476
MW-02 GRD	4942.3402	4846.7898	901979.4102	324355.4698	30.793
MW-02 TOC	4942.0931	4846.7159	901979.1631	324355.3959	30.4604
MW-03 GRD	4774.5705	5091.4247	901811.6405	324600.1047	29.4822
MW-03 TOC	4774.5632	5091.2708	901811.6332	324599.9508	29.024
MW-04 GRD	5251.3161	4847.5969	902288.3861	324356.2769	31.0314
MW-04 TOC	5251.0969	4847.5374	902288.1669	324356.2174	30.9354
MW-06 GRD	4808.4785	4850.9456	901845.5485	324359.6256	30.2822
MW-06 TOC	4808.3036	4850.9801	901845.3736	324359.6601	30.1313
MW-05 GRD	5010.364	4855.1136	902047.434	324363.7936	30.9835
MW-05 TOC	5010.2992	4855.1325	902047.3692	324363.8125	30.7935
MW-05S GRD	5010.3154	4857.1703	902047.3854	324365.8503	31.0147
MW-05S TOC	5010.2087	4857.1946	902047.2787	324365.8746	30.8089

Note:

EMS - East Mississippi State Plane Coordinate System (no. 2301)

GRD - Ground Surface

TOC - Top of Well Casing

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**Appendix E**  
**Soil Analytical Data**

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Table E-1. CPHST ANPCL OC Pesticides in Surface and Subsurface Soils - January 2012

Parameter	TRG-UR	TRG-R	ESI4-06-42-48"	ESI4-13-66-72"	ESI4-13-78-84"	ESI4-13-78-84" DUP	ESI4-13-90-96"	ESI4-14-54-60"	ESI4-14-66-72"	ESI5-14-42-48"	ESI5-14-54-60"
4,4'-DDD	2,660	23,800	3U-D	240U-D	130U-D	130U-D	1.5J	2.9U-D	0.63U	2.9U-D	0.57U
4,4'-DDE	1,880	16,800	3U-D	240U-D	130U-D	130U-D	0.64U	2.9U-D	0.63U	9.7-D	0.57U
4,4'-DDT	1,880	16,800	3U-UJ,D	240U-UJ,D	130U-UJ,D	130U-UJ,D	0.64U	2.9U-UJ,D	0.63U	11-J,D	0.57U
ALDRIN	37.6	337	3U-D	240U-D	460-D	490-D	1.7J	2.9U-D	0.63U	2.9U-D	0.57U
ALPHA-BHC	101	908	3U-D	240U-D	130U-D	130U-D	0.64U	2.9U-D	0.63U	2.9U-D	0.57U
ALPHA-CHLORDANE	NA	NA	3U-D	890-D	130U-D	130U-D	0.7J	2.9U-D	0.63U	4.9J-D	0.57U
BETA-BHC	355	3,180	3U-D	240U-D	130U-D	130U-D	0.64U	2.9U-D	0.63U	8.7J-D	4.9
DELTA-BHC	NA	NA	3U-D	240U-D	130U-D	130U-D	0.64U	2.9U-D	0.63U	2.9U-D	0.57U
DIELDRIN	39.9	358	51-D	7,900-D	1,600-D	1,700-D	3.1	42-D	1.5J	60-D	5.3
ENDOSULFAN I	NA	NA	3U-D	240U-D	130U-D	130U-D	0.64U	2.9U-D	0.63U	2.9U-D	0.57U
ENDOSULFAN II	NA	NA	3U-D	240U-D	130U-D	130U-D	0.64U	2.9U-D	0.63U	2.9U-D	0.57U
ENDOSULFAN SULFATE	NA	NA	3U-D	240U-D	130U-D	130U-D	0.64U	2.9U-D	0.63U	2.9U-D	0.57U
ENDRIN	23,500	61,300	3U-D	240U-D	130U-D	130U-D	0.64U	2.9U-D	0.63U	2.9U-D	0.57U
ENDRIN ALDEHYDE	NA	NA	3U-D	240U-D	130U-D	130U-D	0.64U	2.9U-D	0.63U	2.9U-D	0.57U
ENDRIN KETONE	NA	NA	3U-D	240U-D	130U-D	130U-D	0.64U	2.9U-D	0.63U	2.9U-D	0.57U
GAMMA-BHC (LINDANE)	491	4,400	3U-D	240U-D	130U-D	130U-D	0.64U	2.9U-D	0.63U	2.9U-D	0.57U
GAMMA-CHLORDANE	NA	NA	3U-D	1,400-D	130U-D	130U-D	1.5J	2.9U-D	0.63U	9.7-D	0.57U
HEPTACHLOR	127	195	3U-D	240U-D	130U-D	130U-D	0.64U	2.9U-D	0.63U	2.9U-D	0.57U
HEPTACHLOR EPOXIDE	70.2	629	3U-D	240U-D	130U-D	130U-D	0.64U	2.9U-D	0.63U	2.9U-D	0.57U
METHOXYCHLOR	391,000	1,020,000	15U-D	1,200U-D	640U-D	630U-D	3.2U	15U-D	3.2U	15U-D	2.8U
TOXAPHENE	581	5,200	450U-D	36,000U-D	19,000U-D	19,000U-D	97U	440U-D	95U	440U-D	85U

**Notes**

All results reported in ug/kg  
 Detections in bold.  
 TRG exceedances in shaded cells.

**Definitions**

MDL - Method Detection Limit  
 RL - Reporting Limit  
 TRG - Target Remediation Goal  
 UR - Unrestricted Use  
 R - Restricted Use

**Lab Qualifiers**

U - Analyte not detected  
 J - Estimated value. Analyte detected below the RL, but above the MDL  
 E - The reported value is estimated because of the presence of interference

**Data Validation Qualifiers**

D - Result detected in sample with laboratory dilution

Table E-1. CPHST ANPCL OC Pesticides in Surface and Subsurface Soils - January 2012

Parameter	TRG-UR	TRG-R	ESI5-15-54-60"	ESI5-15-54-60" DUP	ESI5-15-66-72"	ESI5-15-66-72" DUP	ESI5-15-78-84"	ESI6-01-0-6"	ESI6-01-18-24"	ESI6-02-0-6"	ESI6-02-18-24"
4,4'-DDD	2,660	23,800	5.6U-D	5.7U-D	0.64U	0.64U	0.72U	<b>13-D</b>	2.3U-D	<b>33-D</b>	0.59U
4,4'-DDE	1,880	16,800	<b>6.4J-D</b>	<b>6.7J-D</b>	<b>3.5</b>	<b>3.7</b>	<b>1.6J</b>	<b>100-D</b>	2.3U-D	<b>190-D</b>	<b>1.2J</b>
4,4'-DDT	1,880	16,800	0.57U-UJ,D	5.7U-D	<b>1.2J</b>	<b>1.5J</b>	<b>3.4</b>	<b>97-D</b>	<b>5.4J-D</b>	<b>220-D</b>	<b>0.84J</b>
ALDRIN	37.6	337	5.6U-D	5.7U-D	0.64U	0.64U	<b>3.2</b>	3.5U-D	2.3U-D	8.9U-D	0.59U
ALPHA-BHC	101	908	5.6U-D	5.7U-D	<b>2</b>	<b>2</b>	0.72U	3.5U-D	2.3U-D	8.9U-D	0.59U
ALPHA-CHLORDANE	NA	NA	<b>1,200-D</b>	<b>1,200-D</b>	<b>240-D</b>	<b>240-D</b>	<b>67J-D</b>	<b>13-D</b>	2.3U-D	8.9U-D	0.59U
BETA-BHC	355	3,180	5.6U-D	5.7U-D	<b>1.5J</b>	<b>1.3J</b>	0.72U	3.5U-D	2.3U-D	8.9U-D	0.59U
DELTA-BHC	NA	NA	<b>7.3J-D</b>	5.7U-D	<b>1.8J</b>	<b>1.8J</b>	0.72U	3.5U-D	2.3U-D	8.9U-D	0.59U
DIELDRIN	39.9	358	<b>20-D</b>	<b>19-D</b>	<b>13</b>	<b>15</b>	<b>5.4</b>	<b>100-D</b>	2.3U-D	<b>83-D</b>	0.59U
ENDOSULFAN I	NA	NA	5.6U-D	5.7U-D	0.64U	0.64U	0.72U	3.5U-D	2.3U-D	8.9U-D	0.59U
ENDOSULFAN II	NA	NA	<b>19-D</b>	<b>19-D</b>	0.64U	0.64U	0.72U	3.5U-D	2.3U-D	8.9U-D	0.59U
ENDOSULFAN SULFATE	NA	NA	5.6U-D	5.7U-D	0.64U	0.64U	0.72U	3.5U-D	2.3U-D	8.9U-D	0.59U
ENDRIN	23,500	61,300	<b>8.7J-D</b>	<b>8.6J-D</b>	<b>2.2</b>	<b>2.2</b>	<b>1.1J</b>	3.5U-D	2.3U-D	8.9U-D	0.59U
ENDRIN ALDEHYDE	NA	NA	5.6U-D	5.7U-D	0.64U	0.64U	0.72U	3.5U-D	2.3U-D	8.9U-D	0.59U
ENDRIN KETONE	NA	NA	<b>170-D</b>	<b>180-D</b>	<b>6.1</b>	<b>8.4</b>	<b>8.1</b>	3.5U-D	2.3U-D	8.9U-D	0.59U
GAMMA-BHC (LINDANE)	491	4,400	5.6U-D	5.7U-D	<b>4.5</b>	<b>4.5</b>	0.72U	3.5U-D	2.3U-D	8.9U-D	0.59U
GAMMA-CHLORDANE	NA	NA	<b>5,200E-D</b>	<b>4,100-D</b>	<b>680-D</b>	<b>700-D</b>	<b>1,100-D</b>	<b>11-D</b>	2.3U-D	8.9U-D	0.59U
HEPTACHLOR	127	195	<b>110-D</b>	<b>110-D</b>	<b>17</b>	<b>17</b>	<b>15</b>	3.5U-D	2.3U-D	8.9U-D	0.59U
HEPTACHLOR EPOXIDE	70.2	629	<b>140-D</b>	<b>140-D</b>	<b>27</b>	<b>28</b>	<b>7.8</b>	3.5U-D	2.3U-D	8.9U-D	0.59U
METHOXYCHLOR	391,000	1,020,000	28U-D	28U-D	3.2U	3.2U	3.6U	18U-D	12U-D	44U-D	3U
TOXAPHENE	581	5,200	850U-D	850U-D	96U	96U	110U	530U-D	350U-D	1,300U-D	89U

**Notes**

All results reported in ug/kg  
 Detections in bold.  
 TRG exceedances in shaded cells.

**Definitions**

MDL - Method Detection Limit  
 RL - Reporting Limit  
 TRG - Target Remediation Goal  
 UR - Unrestricted Use  
 R - Restricted Use

**Lab Qualifiers**

U - Analyte not detected  
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**Data Validation Qualifiers**

D - Result detected in sample with laboratory dilution

Table E-1. CPHST ANPCL OC Pesticides in Surface and Subsurface Soils - January 2012

Parameter	TRG-UR	TRG-R	ESI6-03-0-6"	ESI6-03-18-24"	ESI6-04-0-6"	ESI6-04-18-24"	ESI6-04-18-24" DUP	ESI6-05-0-6"	ESI6-05-18-24"	ESI6-06-0-6"	ESI6-06-18-24"
4,4'-DDD	2,660	23,800	<b>7.3J-D</b>	0.61U	<b>8.7J-J,D</b>	0.61U	0.61U	<b>8.9J-J,D</b>	0.6U	130U-D	0.6U
4,4'-DDE	1,880	16,800	<b>59-D</b>	0.61U	<b>70-D</b>	0.61U	0.61U	<b>36-D</b>	0.6U	130U-D	0.6U
4,4'-DDT	1,880	16,800	<b>59-D</b>	0.61U	<b>80-D</b>	<b>1.1J</b>	<b>0.77J</b>	<b>41-D</b>	<b>0.64J</b>	130U-D	0.6U
ALDRIN	37.6	337	3U-D	0.61U	3U-D	0.61U	0.61U	3U-D	0.6U	130U-D	0.6U
ALPHA-BHC	101	908	3U-D	0.61U	3U-D	0.61U	0.61U	3U-D	0.6U	130U-D	0.6U
ALPHA-CHLORDANE	NA	NA	3U-D	0.61U	<b>3.5J-D</b>	0.61U	0.61U	<b>5.6J-D</b>	0.6U	130U-D	0.6U
BETA-BHC	355	3,180	3U-D	0.61U	3U-D	0.61U	0.61U	3U-D	0.6U	130U-D	0.6U
DELTA-BHC	NA	NA	3U-D	0.61U	3U-D	0.61U	0.61U	3U-D	0.6U	130U-D	0.6U
DIELDRIN	39.9	358	<b>47-D</b>	0.61U	<b>66-D</b>	0.61U	0.61U	<b>54-D</b>	<b>0.82J</b>	<b>1,600-D</b>	0.6U
ENDOSULFAN I	NA	NA	3U-D	0.61U	3U-D	0.61U	0.61U	3U-D	0.6U	130U-D	0.6U
ENDOSULFAN II	NA	NA	3U-D	0.61U	3U-D	0.61U	0.61U	3U-D	0.6U	130U-D	0.6U
ENDOSULFAN SULFATE	NA	NA	3U-D	0.61U	3U-D	0.61U	0.61U	3U-D	0.6U	130U-D	0.6U
ENDRIN	23,500	61,300	3U-D	0.61U	3U-D	0.61U	0.61U	3U-D	0.6U	130U-D	0.6U
ENDRIN ALDEHYDE	NA	NA	3U-D	0.61U	3U-D	0.61U	0.61U	3U-D	0.6U	130U-D	0.6U
ENDRIN KETONE	NA	NA	3U-D	0.61U	3U-D	0.61U	0.61U	3U-D	0.6U	130U-D	0.6U
GAMMA-BHC (LINDANE)	491	4,400	3U-D	0.61U	3U-D	0.61U	0.61U	3U-D	0.6U	130U-D	0.6U
GAMMA-CHLORDANE	NA	NA	3U-D	0.61U	<b>4.5J-D</b>	0.61U	0.61U	<b>6.7J-D</b>	0.6U	130U-D	0.6U
HEPTACHLOR	127	195	3U-D	0.61U	3U-D	0.61U	0.61U	3U-D	0.6U	130U-D	0.6U
HEPTACHLOR EPOXIDE	70.2	629	3U-D	0.61U	3U-D	0.61U	0.61U	3U-D	0.6U	130U-D	0.6U
METHOXYCHLOR	391,000	1,020,000	15U-D	3.1U	15U-D	3U	3U	15U-D	3U	660U-D	3U
TOXAPHENE	581	5,200	450U-D	92U	450U-D	91U	92U	450U-D	89U	20,000U-D	90U

**Notes**

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 Detections in bold.  
 TRG exceedances in shaded cells.

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Table E-1. CPHST ANPCL OC Pesticides in Surface and Subsurface Soils - January 2012

Parameter	TRG-UR	TRG-R	ESI6-07-0-6"	ESI6-07-18-24"	ESI6-07-18-24" DUP	ESI6-08-0-6"	ESI6-08-18-24"	ESI6-09-0-6"	ESI6-09-18-24"	ESI6-10-0-6"	ESI6-10-18-24"
4,4'-DDD	2,660	23,800	<b>160J-D</b>	0.61U	0.62U	61U-D	0.61U	<b>6J-J,D</b>	3.1U-D	<b>14J-D</b>	3.1U-D
4,4'-DDE	1,880	16,800	<b>1,100-D</b>	0.61U	0.62U	<b>440-D</b>	<b>1.5J</b>	<b>32-D</b>	3.1U-D	<b>140-D</b>	3.1U-D
4,4'-DDT	1,880	16,800	<b>490-D</b>	0.61U	0.62U	<b>210-D</b>	<b>0.71J</b>	<b>74-D</b>	3.1U-D	<b>160-D</b>	3.1U-D
ALDRIN	37.6	337	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
ALPHA-BHC	101	908	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
ALPHA-CHLORDANE	NA	NA	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
BETA-BHC	355	3,180	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
DELTA-BHC	NA	NA	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
DIELDRIN	39.9	358	<b>2,700-D</b>	0.61U	0.62U	<b>840-D</b>	<b>4.4</b>	4.7U-D	3.1U-D	6.2U-D	3.1U-D
ENDOSULFAN I	NA	NA	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
ENDOSULFAN II	NA	NA	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
ENDOSULFAN SULFATE	NA	NA	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
ENDRIN	23,500	61,300	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
ENDRIN ALDEHYDE	NA	NA	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	<b>4.6J-D</b>	6.2U-D	3.1U-D
ENDRIN KETONE	NA	NA	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
GAMMA-BHC (LINDANE)	491	4,400	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
GAMMA-CHLORDANE	NA	NA	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
HEPTACHLOR	127	195	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
HEPTACHLOR EPOXIDE	70.2	629	120U-D	0.61U	0.62U	61U-D	0.61U	4.7U-D	3.1U-D	6.2U-D	3.1U-D
METHOXYCHLOR	391,000	1,020,000	620U-D	3.1U	3.1U	300U-D	3.1U	23U-D	15U-D	31U-D	15U-D
TOXAPHENE	581	5,200	19,000U-D	92U	93U	9,100U-D	92U	700U-D	460U-D	930U-D	460U-D

**Notes**

All results reported in ug/kg  
 Detections in bold.  
 TRG exceedances in shaded cells.

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Table E-1. CPHST ANPCL OC Pesticides in Surface and Subsurface Soils - January 2012

Parameter	TRG-UR	TRG-R	ESI6-11-0-6"	ESI6-11-0-6" DUP	ESI6-11-18-24"	ESI6-12-0-6"	ESI6-12-18-24"	ESI6-13-0-6"	ESI6-13-18-24"	ESI6-14-0-6"	ESI6-14-18-24"
4,4'-DDD	2,660	23,800	240U-D	120U-D	0.59U	<b>16J-D</b>	0.61U	<b>100-D</b>	0.62U	<b>190-J,D</b>	3.2U-D
4,4'-DDE	1,880	16,800	<b>420J-D</b>	<b>360J-D</b>	<b>1.9</b>	<b>180-D</b>	0.61U	<b>960-D</b>	<b>0.85J</b>	<b>420-D</b>	3.2U-D
4,4'-DDT	1,880	16,800	240U-D	<b>250J-D</b>	<b>1.5J</b>	<b>110-D</b>	0.61U	<b>1,000-D</b>	<b>1.2J</b>	<b>1,200-D</b>	3.2U-D
ALDRIN	37.6	337	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	5.9U-D	<b>5.1J-D</b>
ALPHA-BHC	101	908	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	5.9U-D	3.2U-D
ALPHA-CHLORDANE	NA	NA	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	<b>9.6J-D</b>	3.2U-D
BETA-BHC	355	3,180	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	5.9U-D	3.2U-D
DELTA-BHC	NA	NA	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	5.9U-D	3.2U-D
DIELDRIN	39.9	358	<b>3,100-D</b>	<b>2,900-D</b>	<b>11</b>	<b>230-D</b>	0.61U	3U-D	0.62U	5.9U-D	3.2U-D
ENDOSULFAN I	NA	NA	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	5.9U-D	3.2U-D
ENDOSULFAN II	NA	NA	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	5.9U-D	3.2U-D
ENDOSULFAN SULFATE	NA	NA	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	5.9U-D	3.2U-D
ENDRIN	23,500	61,300	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	5.9U-D	3.2U-D
ENDRIN ALDEHYDE	NA	NA	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	5.9U-D	3.2U-D
ENDRIN KETONE	NA	NA	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	5.9U-D	3.2U-D
GAMMA-BHC (LINDANE)	491	4,400	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	5.9U-D	3.2U-D
GAMMA-CHLORDANE	NA	NA	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	<b>19-D</b>	3.2U-D
HEPTACHLOR	127	195	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	5.9U-D	3.2U-D
HEPTACHLOR EPOXIDE	70.2	629	240U-D	120U-D	0.59U	9.2U-D	0.61U	3U-D	0.62U	5.9U-D	3.2U-D
METHOXYCHLOR	391,000	1,020,000	1,200U-D	600U-D	3U	46U-D	3U	15U-D	3.1U	29U-D	16U-D
TOXAPHENE	581	5,200	36,000U-D	18,000U-D	89U	1,400U-D	92U	460U-D	93U	880U-D	480U-D

**Notes**

All results reported in ug/kg  
 Detections in bold.  
 TRG exceedances in shaded cells.

**Definitions**

MDL - Method Detection Limit  
 RL - Reporting Limit  
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**Lab Qualifiers**

U - Analyte not detected  
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**Data Validation Qualifiers**

D - Result detected in sample with laboratory dilution

Table E-1. CPHST ANPCL OC Pesticides in Surface and Subsurface Soils - January 2012

Parameter	TRG-UR	TRG-R	ESI6-15-0-6"	ESI6-15-18-24"	ESI6-16-0-6"	ESI6-16-18-24"	ESI6-17-0-6"	ESI6-17-18-24"	ESI6-18-0-6"	ESI6-18-18-24"	ESI6-19-0-6"
4,4'-DDD	2,660	23,800	<b>42-D</b>	3U-D	<b>82-D</b>	0.61U	<b>640-D</b>	<b>7.3-J,D</b>	6U-D	2.4U-D	3.1U-D
4,4'-DDE	1,880	16,800	<b>160-D</b>	3U-D	<b>520-D</b>	0.61U	<b>490-D</b>	<b>6.5J-D</b>	<b>110-D</b>	<b>9.5-D</b>	<b>23-D</b>
4,4'-DDT	1,880	16,800	<b>390-D</b>	3U-D	<b>590-D</b>	0.61U	<b>4,300-D</b>	<b>45-D</b>	<b>62-D</b>	<b>3J-D</b>	<b>19-D</b>
ALDRIN	37.6	337	12U-D	3U-D	12U-D	0.61U	120U-D	2.4U-D	6U-D	2.4U-D	3.1U-D
ALPHA-BHC	101	908	12U-D	3U-D	12U-D	0.61U	120U-D	2.4U-D	6U-D	2.4U-D	3.1U-D
ALPHA-CHLORDANE	NA	NA	12U-D	3U-D	12U-D	0.61U	<b>1,500-D</b>	<b>9.8-D</b>	6U-D	<b>15-D</b>	<b>5.1J-D</b>
BETA-BHC	355	3,180	12U-D	3U-D	12U-D	0.61U	120U-D	2.4U-D	6U-D	2.4U-D	3.1U-D
DELTA-BHC	NA	NA	12U-D	3U-D	12U-D	0.61U	120U-D	2.4U-D	6U-D	2.4U-D	3.1U-D
DIELDRIN	39.9	358	12U-D	3U-D	12U-D	0.61U	<b>1,700-D</b>	<b>40-D</b>	<b>76-D</b>	<b>35-D</b>	<b>28-D</b>
ENDOSULFAN I	NA	NA	12U-D	3U-D	12U-D	0.61U	120U-D	2.4U-D	6U-D	2.4U-D	3.1U-D
ENDOSULFAN II	NA	NA	12U-D	3U-D	12U-D	0.61U	120U-D	2.4U-D	6U-D	2.4U-D	3.1U-D
ENDOSULFAN SULFATE	NA	NA	12U-D	3U-D	12U-D	0.61U	120U-D	2.4U-D	6U-D	2.4U-D	3.1U-D
ENDRIN	23,500	61,300	12U-D	3U-D	12U-D	0.61U	120U-D	2.4U-D	6U-D	<b>9.9-D</b>	3.1U-D
ENDRIN ALDEHYDE	NA	NA	12U-D	3U-D	12U-D	0.61U	120U-D	2.4U-D	6U-D	2.4U-D	3.1U-D
ENDRIN KETONE	NA	NA	12U-D	3U-D	12U-D	0.61U	120U-D	2.4U-D	6U-D	<b>14-D</b>	3.1U-D
GAMMA-BHC (LINDANE)	491	4,400	12U-D	3U-D	12U-D	0.61U	120U-D	2.4U-D	6U-D	2.4U-D	3.1U-D
GAMMA-CHLORDANE	NA	NA	12U-D	3U-D	<b>19J-D</b>	0.61U	<b>3,900-D</b>	<b>28-D</b>	<b>18-D</b>	<b>17-D</b>	<b>12-D</b>
HEPTACHLOR	127	195	12U-D	3U-D	12U-D	0.61U	120U-D	<b>8.2-D</b>	6U-D	2.4U-D	3.1U-D
HEPTACHLOR EPOXIDE	70.2	629	12U-D	3U-D	12U-D	0.61U	<b>350J-D</b>	<b>9.2-D</b>	6U-D	2.4U-D	3.1U-D
METHOXYCHLOR	391,000	1,020,000	58U-D	15U-D	59U-D	3.1U	590U-D	12U-D	30U-D	12U-D	15U-D
TOXAPHENE	581	5,200	1,800U-D	450U-D	1,800U-D	92U	18,000U-D	370U-D	890U-D	360U-D	460U-D

**Notes**

All results reported in ug/kg  
 Detections in bold.  
 TRG exceedances in shaded cells.

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D - Result detected in sample with laboratory dilution

Table E-1. CPHST ANPCL OC Pesticides in Surface and Subsurface Soils - January 2012

Parameter	TRG-UR	TRG-R	ESI6-19-18-24"	ESI6-20-0-6"	ESI6-20-18-24"	ESI6-21-0-6"	ESI6-21-18-24"	ESI6-22-0-6"	ESI6-22-18-24"	ESI6-23-0-6"	ESI6-23-18-24"
4,4'-DDD	2,660	23,800	3U-D	11J-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
4,4'-DDE	1,880	16,800	15-D	160-D	17-D	14-D	3.1U-D	5.9J-D	3U-D	4.8J-D	1.8J-D
4,4'-DDT	1,880	16,800	3.1J-D	96-D	2.4U-D	6.8J-D	3.1U-D	4.3J-D	3U-D	7.7-D	1.2U-D
ALDRIN	37.6	337	3U-D	6U-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
ALPHA-BHC	101	908	3U-D	6U-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
ALPHA-CHLORDANE	NA	NA	3U-D	27-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
BETA-BHC	355	3,180	3U-D	6U-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
DELTA-BHC	NA	NA	3U-D	6U-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
DIELDRIN	39.9	358	27-D	51-D	3.4J-D	7.3J-D	3.1U-D	3U-D	8.1J-D	2.4U-D	1.2U-D
ENDOSULFAN I	NA	NA	3U-D	6U-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
ENDOSULFAN II	NA	NA	3U-D	6U-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
ENDOSULFAN SULFATE	NA	NA	3U-D	6U-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
ENDRIN	23,500	61,300	3U-D	6U-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
ENDRIN ALDEHYDE	NA	NA	3U-D	6U-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
ENDRIN KETONE	NA	NA	3U-D	6U-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
GAMMA-BHC (LINDANE)	491	4,400	3U-D	6U-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
GAMMA-CHLORDANE	NA	NA	7.6J-D	84-D	2.4U-D	3U-D	3.1U-D	3U-D	5.2J-D	12-D	1.2U-D
HEPTACHLOR	127	195	3U-D	6U-D	2.4U-D	3U-D	3.1U-D	3U-D	3U-D	2.4U-D	1.2U-D
HEPTACHLOR EPOXIDE	70.2	629	3U-D	9.9J-D	2.4U-D	3U-D	3.1U-D	3U-D	3.9J-D	2.4U-D	1.2U-D
METHOXYCHLOR	391,000	1,020,000	15U-D	30U-D	12U-D	15U-D	15U-D	15U-D	15U-D	12U-D	6U-D
TOXAPHENE	581	5,200	450U-D	900U-D	370U-D	450U-D	470U-D	440U-D	450U-D	360U-D	180U-D

**Notes**

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 TRG exceedances in shaded cells.

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D - Result detected in sample with laboratory dilution

Table E-1. CPHST ANPCL OC Pesticides in Surface and Subsurface Soils - January 2012

Parameter	TRG-UR	TRG-R	ESI6-23-30-36"	ESI6-24-0-6"	ESI6-24-18-24"	ESI6-24-18-24" DUP	ESI6-24-30-36"	ESI6-25-0-6"	ESI6-25-18-24"	ESI6-26-0-6"	ESI6-26-18-24"
4,4'-DDD	2,660	23,800	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
4,4'-DDE	1,880	16,800	0.61U	<b>11-D</b>	<b>4.4-D</b>	<b>5.6J-D</b>	<b>5.1</b>	<b>61-D</b>	<b>10-D</b>	<b>27-D</b>	2.4U-D
4,4'-DDT	1,880	16,800	<b>1.1J</b>	<b>6.2J-D</b>	<b>1.6J-D</b>	3U-D	<b>2.2</b>	<b>22-D</b>	<b>6-D</b>	<b>12-D</b>	2.4U-D
ALDRIN	37.6	337	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
ALPHA-BHC	101	908	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
ALPHA-CHLORDANE	NA	NA	0.61U	3U-D	1.2U-D	3U-D	<b>1.8J</b>	<b>5.5J-D</b>	1.2U-D	2.4U-D	2.4U-D
BETA-BHC	355	3,180	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
DELTA-BHC	NA	NA	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
DIELDRIN	39.9	358	0.61U	3U-D	<b>6.2-D</b>	<b>7J-D</b>	<b>5.2</b>	<b>23-D</b>	<b>9.7-D</b>	<b>6.5J-D</b>	<b>8.3-D</b>
ENDOSULFAN I	NA	NA	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
ENDOSULFAN II	NA	NA	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
ENDOSULFAN SULFATE	NA	NA	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
ENDRIN	23,500	61,300	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
ENDRIN ALDEHYDE	NA	NA	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
ENDRIN KETONE	NA	NA	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
GAMMA-BHC (LINDANE)	491	4,400	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
GAMMA-CHLORDANE	NA	NA	0.61U	3U-D	<b>5.3-D</b>	<b>6.1J-D</b>	<b>8.1</b>	<b>12-D</b>	<b>2.6J-D</b>	<b>3.9J-D</b>	2.4U-D
HEPTACHLOR	127	195	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
HEPTACHLOR EPOXIDE	70.2	629	0.61U	3U-D	1.2U-D	3U-D	0.62U	2.4U-D	1.2U-D	2.4U-D	2.4U-D
METHOXYCHLOR	391,000	1,020,000	3U	15U-D	6U-D	15U-D	3.1U	12U-D	6U-D	12U-D	12U-D
TOXAPHENE	581	5,200	92U	440U-D	180U-D	450U-D	93U	360U-D	180U-D	360U-D	360U-D

**Notes**

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 TRG exceedances in shaded cells.

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Table E-1. CPHST ANPCL OC Pesticides in Surface and Subsurface Soils - January 2012

Parameter	TRG-UR	TRG-R	ESI6-27-0-6"	ESI6-27-18-24"	ESI6-27-18-24" DUP	ESI6-28-0-6"	ESI6-28-18-24"	ESI6-29-0-6"	ESI6-29-18-24"	ESI6-30-0-6"	ESI6-30-18-24"
4,4'-DDD	2,660	23,800	120U-D	2.4U-D	2.4U-D	<b>380-D</b>	2.4U-D	<b>3.7J-D</b>	3U-D	<b>8.8J-D</b>	3U-D
4,4'-DDE	1,880	16,800	<b>770-D</b>	<b>4.2J-D</b>	<b>3.9J-D</b>	<b>950-D</b>	<b>16-D</b>	<b>42-D</b>	3U-D	<b>58-D</b>	3U-D
4,4'-DDT	1,880	16,800	<b>620-D</b>	<b>3.3J-D</b>	<b>2.9J-D</b>	<b>2,200-D</b>	<b>9.8-D</b>	<b>52-D</b>	3U-D	<b>47-D</b>	<b>6J-D</b>
ALDRIN	37.6	337	120U-D	2.4U-D	2.4U-D	120U-D	2.4U-D	2.4U-D	3U-D	3U-D	3U-D
ALPHA-BHC	101	908	120U-D	2.4U-D	2.4U-D	120U-D	2.4U-D	2.4U-D	3U-D	3U-D	3U-D
ALPHA-CHLORDANE	NA	NA	120U-D	2.4U-D	2.4U-D	<b>170J-D</b>	2.4U-D	2.4U-D	3U-D	<b>8.5J-D</b>	3U-D
BETA-BHC	355	3,180	120U-D	2.4U-D	2.4U-D	120U-D	2.4U-D	2.4U-D	3U-D	<b>4.8J-D</b>	3U-D
DELTA-BHC	NA	NA	120U-D	2.4U-D	2.4U-D	120U-D	2.4U-D	2.4U-D	3U-D	3U-D	3U-D
DIELDRIN	39.9	358	<b>2,700-D</b>	<b>5.8J-D</b>	<b>6J-D</b>	<b>1,600-D</b>	<b>22-D</b>	<b>4.3J-D</b>	3U-D	<b>35-D</b>	<b>6.9J-D</b>
ENDOSULFAN I	NA	NA	120U-D	2.4U-D	2.4U-D	120U-D	2.4U-D	2.4U-D	3U-D	3U-D	3U-D
ENDOSULFAN II	NA	NA	120U-D	2.4U-D	2.4U-D	120U-D	2.4U-D	2.4U-D	3U-D	3U-D	3U-D
ENDOSULFAN SULFATE	NA	NA	120U-D	2.4U-D	2.4U-D	120U-D	2.4U-D	2.4U-D	3U-D	3U-D	3U-D
ENDRIN	23,500	61,300	120U-D	2.4U-D	2.4U-D	120U-D	2.4U-D	2.4U-D	3U-D	3U-D	3U-D
ENDRIN ALDEHYDE	NA	NA	120U-D	2.4U-D	2.4U-D	120U-D	2.4U-D	2.4U-D	3U-D	3U-D	3U-D
ENDRIN KETONE	NA	NA	120U-D	2.4U-D	2.4U-D	120U-D	2.4U-D	2.4U-D	3U-D	3U-D	3U-D
GAMMA-BHC (LINDANE)	491	4,400	120U-D	2.4U-D	2.4U-D	120U-D	2.4U-D	2.4U-D	<b>14-D</b>	3U-D	3U-D
GAMMA-CHLORDANE	NA	NA	<b>620-D</b>	2.4U-D	2.4U-D	<b>850-D</b>	<b>5.1J-D</b>	2.4U-D	3U-D	<b>24-D</b>	3U-D
HEPTACHLOR	127	195	120U-D	2.4U-D	2.4U-D	120U-D	2.4U-D	2.4U-D	3U-D	3U-D	3U-D
HEPTACHLOR EPOXIDE	70.2	629	<b>260J-D</b>	2.4U-D	2.4U-D	<b>200J-D</b>	2.4U-D	2.4U-D	3U-D	3U-D	3U-D
METHOXYCHLOR	391,000	1,020,000	590U-D	12U-D	12U-D	610U-D	12U-D	12U-D	15U-D	15U-D	15U-D
TOXAPHENE	581	5,200	18,000U-D	360U-D	360U-D	18,000U-D	360U-D	370U-D	460U-D	450U-D	440U-D

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D - Result detected in sample with laboratory dilution

Table E-1. CPHST ANPCL OC Pesticides in Surface and Subsurface Soils - January 2012

Parameter	TRG-UR	TRG-R	ESI6-31-0-6"	ESI6-31-18-24"	ESI6-32-0-6"	ESI6-32-18-24"	ESI6-32-30-36"	ESI6-32-30-36" DUP	ESI6-33-0-6"	ESI6-33-18-24"	ESI6-33-30-36"
4,4'-DDD	2,660	23,800	<b>92-D</b>	0.6U	<b>270J-D</b>	3.6U-D	6U-D	6.1U-D	12U-D	2.4U-D	0.6U
4,4'-DDE	1,880	16,800	<b>18-D</b>	0.6U	<b>960-D</b>	<b>5.8J-D</b>	<b>9.1J-D</b>	<b>12J-D</b>	<b>210-D</b>	2.4U-D	0.6U
4,4'-DDT	1,880	16,800	<b>1,100-D</b>	0.6U	<b>1,600-D</b>	3.6U-D	6U-D	6.1U-D	<b>50-D</b>	2.4U-D	0.6U
ALDRIN	37.6	337	3U-D	0.6U	120U-D	3.6U-D	6U-D	6.1U-D	12U-D	2.4U-D	0.6U
ALPHA-BHC	101	908	3U-D	0.6U	120U-D	3.6U-D	6U-D	6.1U-D	12U-D	2.4U-D	0.6U
ALPHA-CHLORDANE	NA	NA	3U-D	0.6U	<b>270J-D</b>	<b>4.7J-D</b>	<b>44-D</b>	<b>50-D</b>	<b>60-D</b>	2.4U-D	0.6U
BETA-BHC	355	3,180	3U-D	0.6U	120U-D	3.6U-D	6U-D	6.1U-D	12U-D	2.4U-D	0.6U
DELTA-BHC	NA	NA	3U-D	0.6U	120U-D	3.6U-D	6U-D	6.1U-D	12U-D	2.4U-D	0.6U
DIELDRIN	39.9	358	3U-D	0.6U	<b>1,200-D</b>	<b>23-D</b>	<b>110-D</b>	<b>120-D</b>	<b>440-D</b>	<b>3.4J-D</b>	<b>2.3</b>
ENDOSULFAN I	NA	NA	3U-D	0.6U	120U-D	3.6U-D	6U-D	6.1U-D	12U-D	2.4U-D	0.6U
ENDOSULFAN II	NA	NA	3U-D	0.6U	120U-D	3.6U-D	6U-D	6.1U-D	12U-D	2.4U-D	0.6U
ENDOSULFAN SULFATE	NA	NA	3U-D	0.6U	120U-D	3.6U-D	6U-D	6.1U-D	12U-D	2.4U-D	0.6U
ENDRIN	23,500	61,300	3U-D	0.6U	120U-D	3.6U-D	6U-D	6.1U-D	12U-D	2.4U-D	0.6U
ENDRIN ALDEHYDE	NA	NA	3U-D	0.6U	120U-D	3.6U-D	6U-D	6.1U-D	12U-D	2.4U-D	0.6U
ENDRIN KETONE	NA	NA	3U-D	0.6U	120U-D	3.6U-D	6U-D	6.1U-D	12U-D	2.4U-D	0.6U
GAMMA-BHC (LINDANE)	491	4,400	3U-D	0.6U	120U-D	3.6U-D	6U-D	6.1U-D	12U-D	2.4U-D	0.6U
GAMMA-CHLORDANE	NA	NA	3U-D	0.6U	<b>1,300-D</b>	<b>13-D</b>	<b>91-D</b>	<b>110-D</b>	120-D	2.4U-D	<b>1.2J</b>
HEPTACHLOR	127	195	3U-D	0.6U	120U-D	3.6U-D	6U-D	6.1U-D	12U-D	2.4U-D	0.6U
HEPTACHLOR EPOXIDE	70.2	629	3U-D	0.6U	<b>230J-D</b>	3.6U-D	<b>11J-D</b>	<b>13J-D</b>	<b>32J-D</b>	2.4U-D	0.6U
METHOXYCHLOR	391,000	1,020,000	15U-D	3U	580U-D	18U-D	30U-D	30U-D	60U-D	12U-D	3U
TOXAPHENE	581	5,200	450U-D	89U	18,000U-D	550U-D	900U-D	910U-D	1,800U-D	360U-D	91U

**Notes**

All results reported in ug/kg  
 Detections in bold.  
 TRG exceedances in shaded cells.

**Definitions**

MDL - Method Detection Limit  
 RL - Reporting Limit  
 TRG - Target Remediation Goal  
 UR - Unrestricted Use  
 R - Restricted Use

**Lab Qualifiers**

U - Analyte not detected  
 J - Estimated value. Analyte detected below the RL, but above the MDL  
 E - The reported value is estimated because of the presence of interference

**Data Validation Qualifiers**

D - Result detected in sample with laboratory dilution

Table E-1. CPHST ANPCL OC Pesticides in Surface and Subsurface Soils - January 2012

Parameter	TRG-UR	TRG-R	ESI6-34-0-6"	ESI6-34-18-24"	ESI6-34-30-36"	ESI6-35-0-6"	ESI6-35-0-6" DUP	ESI6-35-18-24"	ESI6-36-0-6"	ESI6-36-0-6" DUP	ESI6-36-18-24"
4,4'-DDD	2,660	23,800	2.4U-D	2.4U-D	0.62U	<b>8.2J-D</b>	<b>6.9J-D</b>	<b>7.5J-D</b>	<b>41-D</b>	<b>5.4J-D</b>	0.6U
4,4'-DDE	1,880	16,800	<b>37-D</b>	<b>43-D</b>	0.62U	<b>26-D</b>	<b>26-D</b>	<b>7.3J-D</b>	9U-D	<b>6.2J-D</b>	0.6U
4,4'-DDT	1,880	16,800	<b>19-D</b>	2.4U-D	0.62U	<b>68-D</b>	<b>44-D</b>	3.7U-D	<b>370-D</b>	<b>41-D</b>	0.6U
ALDRIN	37.6	337	2.4U-D	2.4U-D	0.62U	3U-D	3U-D	3.7U-D	9U-D	2.4U-D	0.6U
ALPHA-BHC	101	908	2.4U-D	2.4U-D	0.62U	3U-D	3U-D	3.7U-D	9U-D	2.4U-D	0.6U
ALPHA-CHLORDANE	NA	NA	<b>6.2J-D</b>	2.4U-D	0.62U	3U-D	<b>5.7J-D</b>	<b>6.5J-D</b>	9U-D	2.4U-D	0.6U
BETA-BHC	355	3,180	2.4U-D	2.4U-D	0.62U	3U-D	3U-D	3.7U-D	9U-D	2.4U-D	0.6U
DELTA-BHC	NA	NA	2.4U-D	2.4U-D	0.62U	<b>5.6J-D</b>	<b>5.4J-D</b>	3.7U-D	9U-D	2.4U-D	0.6U
DIELDRIN	39.9	358	<b>40-D</b>	<b>81-D</b>	<b>16</b>	<b>24-D</b>	<b>27-D</b>	<b>100-D</b>	<b>14J-D</b>	<b>6.2J-D</b>	0.6U
ENDOSULFAN I	NA	NA	2.4U-D	2.4U-D	0.62U	3U-D	3U-D	3.7U-D	9U-D	2.4U-D	0.6U
ENDOSULFAN II	NA	NA	2.4U-D	2.4U-D	0.62U	3U-D	3U-D	3.7U-D	9U-D	2.4U-D	0.6U
ENDOSULFAN SULFATE	NA	NA	2.4U-D	2.4U-D	0.62U	3U-D	3U-D	3.7U-D	9U-D	2.4U-D	0.6U
ENDRIN	23,500	61,300	2.4U-D	2.4U-D	0.62U	3U-D	3U-D	3.7U-D	9U-D	2.4U-D	0.6U
ENDRIN ALDEHYDE	NA	NA	2.4U-D	2.4U-D	0.62U	3U-D	3U-D	3.7U-D	9U-D	2.4U-D	0.6U
ENDRIN KETONE	NA	NA	2.4U-D	2.4U-D	0.62U	3U-D	3U-D	3.7U-D	9U-D	2.4U-D	0.6U
GAMMA-BHC (LINDANE)	491	4,400	2.4U-D	2.4U-D	0.62U	3U-D	3U-D	3.7U-D	9U-D	2.4U-D	0.6U
GAMMA-CHLORDANE	NA	NA	<b>22-D</b>	<b>6.1J-D</b>	0.62U	<b>8.4J-D</b>	<b>9.5-D</b>	<b>7.2J-D</b>	9U-D	2.4U-D	0.6U
HEPTACHLOR	127	195	2.4U-D	2.4U-D	0.62U	3U-D	3U-D	3.7U-D	9U-D	2.4U-D	0.6U
HEPTACHLOR EPOXIDE	70.2	629	2.4U-D	2.4U-D	0.62U	3U-D	3U-D	3.7U-D	9U-D	2.4U-D	0.6U
METHOXYCHLOR	391,000	1,020,000	12U-D	12U-D	3.1U	15U-D	15U-D	18U-D	45U-D	12U-D	3U
TOXAPHENE	581	5,200	360U-D	360U-D	92U	460U-D	460U-D	560U-D	1,300U-D	360U-D	91U

**Notes**

All results reported in ug/kg  
 Detections in bold.  
 TRG exceedances in shaded cells.

**Definitions**

MDL - Method Detection Limit  
 RL - Reporting Limit  
 TRG - Target Remediation Goal  
 UR - Unrestricted Use  
 R - Restricted Use

**Lab Qualifiers**

U - Analyte not detected  
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 E - The reported value is estimated because of the presence of interference

**Data Validation Qualifiers**

D - Result detected in sample with laboratory dilution

Table E-1. CPHST ANPCL OC Pesticides in Surface and Subsurface Soils - January 2012

Parameter	TRG-UR	TRG-R	ESI6-37-0-6"	ESI6-37-18-24"	ESI6-37-30-36"	ESI6-38-0-6"	ESI6-38-0-6" DUP	ESI6-38-18-24"	ESI6-38-30-36"	ESI6-39-0-6"	ESI6-39-18-24"	ESI6-39-30-36"
4,4'-DDD	2,660	23,800	2.5U-D	<b>21</b>	<b>13</b>	<b>24J-D</b>	<b>39-D</b>	0.61U	0.59U	<b>110-D</b>	3.1U-D	<b>9.2-D</b>
4,4'-DDE	1,880	16,800	<b>5J-D</b>	<b>7.3</b>	<b>2.4</b>	<b>240-D</b>	<b>300-D</b>	<b>1.6J</b>	0.59U	<b>1,100-D</b>	<b>4.6J-D</b>	<b>4.3J-D</b>
4,4'-DDT	1,880	16,800	<b>5.5J-D</b>	<b>180-D</b>	<b>130-D</b>	<b>290-D</b>	<b>490-D</b>	<b>1.5J</b>	0.59U	<b>2,100-D</b>	<b>5.3J-D</b>	<b>98-D</b>
ALDRIN	37.6	337	2.5U-D	0.6U	0.61U	8.8U-D	8.9U-D	0.61U	0.59U	9.3U-D	3.1U-D	3U-D
ALPHA-BHC	101	908	2.5U-D	0.6U	0.61U	8.8U-D	8.9U-D	0.61U	0.59U	9.3U-D	3.1U-D	3U-D
ALPHA-CHLORDANE	NA	NA	2.5U-D	<b>4.5</b>	<b>1.3J</b>	<b>11J-D</b>	<b>32-D</b>	<b>1.7J</b>	0.59U	<b>16J-D</b>	3.1U-D	3U-D
BETA-BHC	355	3,180	2.5U-D	0.6U	0.61U	8.8U-D	8.9U-D	0.61U	0.59U	9.3U-D	3.1U-D	3U-D
DELTA-BHC	NA	NA	2.5U-D	0.6U	0.61U	8.8U-D	8.9U-D	0.61U	0.59U	9.3U-D	3.1U-D	3U-D
DIELDRIN	39.9	358	2.5U-D	<b>18</b>	<b>4.5</b>	<b>57-D</b>	<b>120-D</b>	<b>9.7</b>	<b>3.1</b>	<b>190-D</b>	<b>22-D</b>	<b>11-D</b>
ENDOSULFAN I	NA	NA	2.5U-D	0.6U	0.61U	8.8U-D	8.9U-D	0.61U	0.59U	9.3U-D	3.1U-D	3U-D
ENDOSULFAN II	NA	NA	2.5U-D	0.6U	0.61U	8.8U-D	8.9U-D	0.61U	0.59U	9.3U-D	3.1U-D	3U-D
ENDOSULFAN SULFATE	NA	NA	2.5U-D	0.6U	0.61U	8.8U-D	8.9U-D	0.61U	0.59U	9.3U-D	3.1U-D	3U-D
ENDRIN	23,500	61,300	2.5U-D	0.6U	0.61U	8.8U-D	8.9U-D	0.61U	0.59U	9.3U-D	3.1U-D	3U-D
ENDRIN ALDEHYDE	NA	NA	2.5U-D	0.6U	0.61U	8.8U-D	8.9U-D	0.61U	0.59U	9.3U-D	3.1U-D	3U-D
ENDRIN KETONE	NA	NA	2.5U-D	0.6U	0.61U	8.8U-D	8.9U-D	0.61U	0.59U	9.3U-D	3.1U-D	3U-D
GAMMA-BHC (LINDANE)	491	4,400	2.5U-D	0.6U	0.61U	8.8U-D	8.9U-D	0.61U	0.59U	9.3U-D	3.1U-D	3U-D
GAMMA-CHLORDANE	NA	NA	2.5U-D	<b>12</b>	<b>2.6</b>	<b>31-D</b>	<b>61-D</b>	<b>1.7J</b>	0.59U	<b>50-D</b>	3.1U-D	<b>4.1J-D</b>
HEPTACHLOR	127	195	2.5U-D	0.6U	0.61U	8.8U-D	8.9U-D	0.61U	0.59U	9.3U-D	3.1U-D	3U-D
HEPTACHLOR EPOXIDE	70.2	629	2.5U-D	<b>5</b>	<b>1.1J</b>	<b>29-D</b>	<b>65-D</b>	<b>0.89J</b>	0.59U	<b>22J-D</b>	<b>4.5J-D</b>	3U-D
METHOXYCHLOR	391,000	1,020,000	13U-D	3U	3.1U	44U-D	44U-D	3U	3U	46U-D	15U-D	15U-D
TOXAPHENE	581	5,200	380U-D	91U	92U	1,300U-D	1,300U-D	91U	89U	1,400U-D	470U-D	450U-D

**Notes**

All results reported in ug/kg  
 Detections in bold.  
 TRG exceedances in shaded cells.

**Definitions**

MDL - Method Detection Limit  
 RL - Reporting Limit  
 TRG - Target Remediation Goal  
 UR - Unrestricted Use  
 R - Restricted Use

**Lab Qualifiers**

U - Analyte not detected  
 J - Estimated value. Analyte detected below the RL, but above the MDL  
 E - The reported value is estimated because of the presence of interference

**Data Validation Qualifiers**

D - Result detected in sample with laboratory dilution

**Appendix F**  
**Soil and Groundwater Tag Maps**

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MDEQ TRG (ppb)	UR	R
Dieldrin	39.9	358

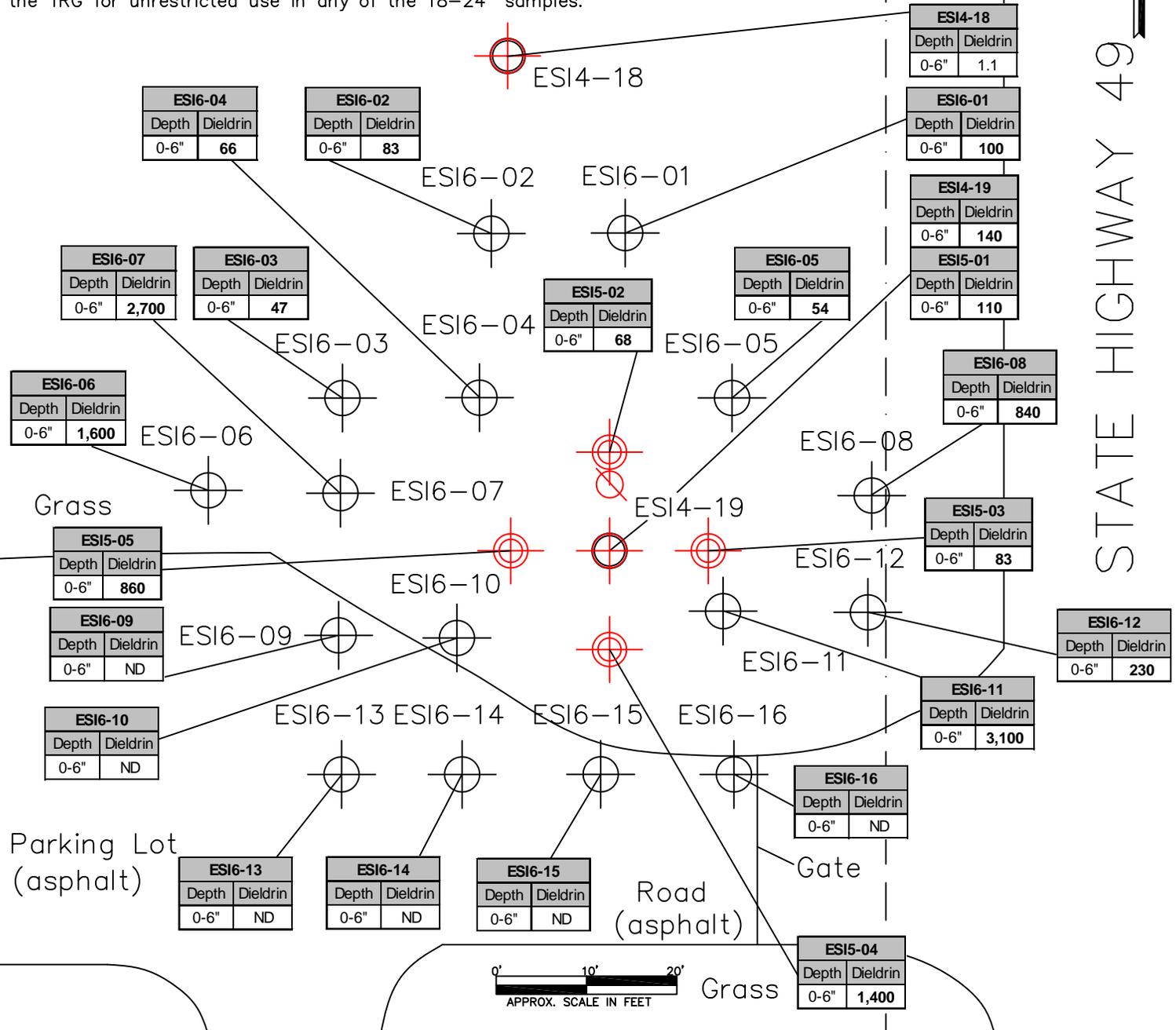
UR - MSDEQ TRG for Unrestricted Use  
R - MSDEQ TRG for Restricted Use

All concentrations are reported in parts per billion (ppb).

Bold concentrations denote TRG for UR exceedance.

Note: Samples were collected at two discrete depth intervals (0-6" and 18-24") at each sample location.

Dieldrin was not detected at concentrations greater than the TRG for unrestricted use in any of the 18-24" samples.

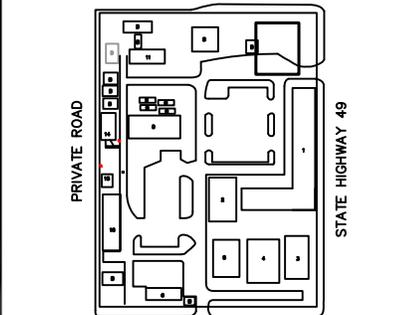


APPENDIX F-1  
CPHST ANPCL NORTHEAST  
CORNER (ESI4-19) AREA  
TAG MAP  
JANUARY 2012



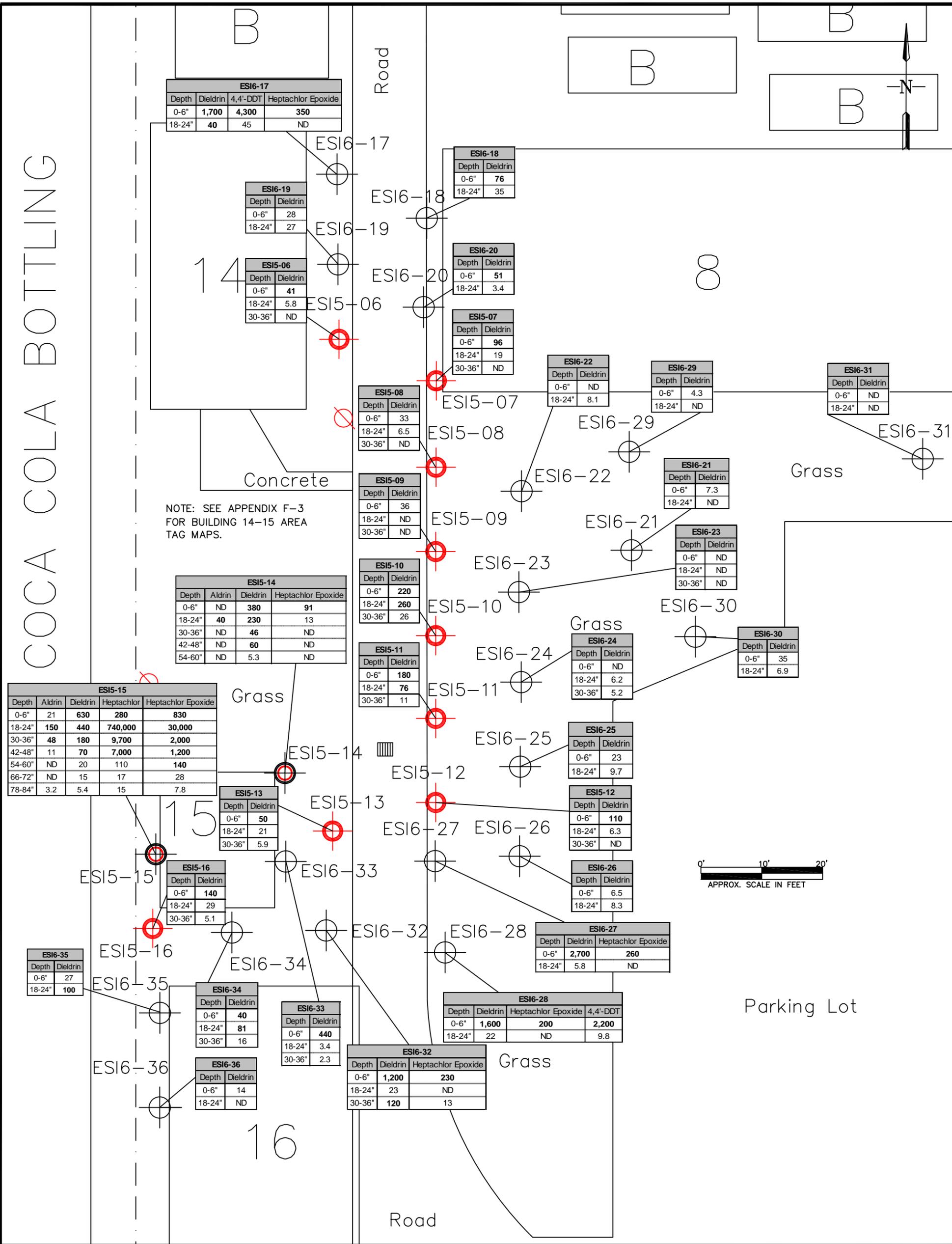
LEGEND

- BUILDING/SITE FEATURE
- - - FENCE/PROPERTY BOUNDARY
- ⊙ ESI4 SOIL SAMPLE LOCATION (2009)
- ⊙ ESI5 SOIL SAMPLE LOCATION (2011)
- ⊙ ESI6 SOIL SAMPLE LOCATION (2012)
- ▣ STORM DRAIN
- ⊗ UTILITY POLE



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# COCA COLA BOTTLING



ESI6-17			
Depth	Dieldrin	4,4'-DDT	Heptachlor Epoxide
0-6"	1,700	4,300	350
18-24"	40	45	ND

ESI6-19	
Depth	Dieldrin
0-6"	28
18-24"	27

ESI5-06	
Depth	Dieldrin
0-6"	41
18-24"	5.8
30-36"	ND

ESI6-18	
Depth	Dieldrin
0-6"	76
18-24"	35

ESI6-20	
Depth	Dieldrin
0-6"	51
18-24"	3.4

ESI5-07	
Depth	Dieldrin
0-6"	96
18-24"	19
30-36"	ND

ESI5-08	
Depth	Dieldrin
0-6"	33
18-24"	6.5
30-36"	ND

ESI5-09	
Depth	Dieldrin
0-6"	36
18-24"	ND
30-36"	ND

ESI5-10	
Depth	Dieldrin
0-6"	220
18-24"	260
30-36"	26

ESI5-11	
Depth	Dieldrin
0-6"	180
18-24"	76
30-36"	11

ESI5-14			
Depth	Aldrin	Dieldrin	Heptachlor Epoxide
0-6"	ND	380	91
18-24"	40	230	13
30-36"	ND	46	ND
42-48"	ND	60	ND
54-60"	ND	5.3	ND

ESI5-15				
Depth	Aldrin	Dieldrin	Heptachlor	Heptachlor Epoxide
0-6"	21	630	280	830
18-24"	150	440	740,000	30,000
30-36"	48	180	9,700	2,000
42-48"	11	70	7,000	1,200
54-60"	ND	20	110	140
66-72"	ND	15	17	28
78-84"	3.2	5.4	15	7.8

ESI5-13	
Depth	Dieldrin
0-6"	50
18-24"	21
30-36"	5.9

ESI5-16	
Depth	Dieldrin
0-6"	140
18-24"	29
30-36"	5.1

ESI6-35	
Depth	Dieldrin
0-6"	27
18-24"	100

ESI6-34	
Depth	Dieldrin
0-6"	40
18-24"	81
30-36"	16

ESI6-33	
Depth	Dieldrin
0-6"	440
18-24"	3.4
30-36"	2.3

ESI6-36	
Depth	Dieldrin
0-6"	14
18-24"	ND

ESI6-32		
Depth	Dieldrin	Heptachlor Epoxide
0-6"	1,200	230
18-24"	23	ND
30-36"	120	13

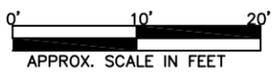
ESI6-28			
Depth	Dieldrin	Heptachlor Epoxide	4,4'-DDT
0-6"	1,600	200	2,200
18-24"	22	ND	9.8

ESI6-27		
Depth	Dieldrin	Heptachlor Epoxide
0-6"	2,700	260
18-24"	5.8	ND

ESI6-25	
Depth	Dieldrin
0-6"	23
18-24"	9.7

ESI5-12	
Depth	Dieldrin
0-6"	110
18-24"	6.3
30-36"	ND

ESI6-26	
Depth	Dieldrin
0-6"	6.5
18-24"	8.3



## APPENDIX F-2

CPHST ANPCL  
BUILDING 14-15 AREA  
SURFACE AND SUBSURFACE SOILS  
TAG MAP

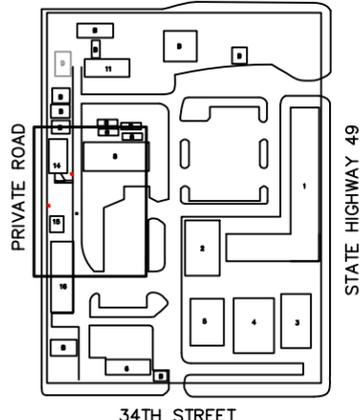


### LEGEND

- BUILDING/SITE FEATURE
- - - FENCE/PROPERTY BOUNDARY
- ⊕ ESI5 SOIL SAMPLE LOCATION (2011)
- ⊕ ESI6 SOIL SAMPLE LOCATION (2012)
- ▩ STORM DRAIN
- ⊗ UTILITY POLE

MDEQ TRG (ppb)	UR	R
Aldrin	37.6	337
Dieldrin	39.9	358
Heptachlor	127	195
Heptachlor Epoxide	70.2	629
4,4'-DDT	1,880	16,800

UR - MDEQ TRG for Unrestricted Use  
R - MDEQ TRG for Restricted Use  
ND - NOT DETECTED  
TRG - TARGET REMEDIATION GOAL  
MDEQ - MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY  
All concentrations are reported in parts per billion (ppb).  
Bold concentrations are greater than the MDEQ TRG for unrestricted use.



34TH STREET



MDEQ TRG (ppb)	UR	R
Aldrin	37.6	337
Dieldrin	39.9	358
Heptachlor	127	195
Heptachlor Epoxide	70.2	629
4,4'-DDT	1,880	16,800

UR - MDEQ TRG for Unrestricted Use  
 R - MDEQ TRG for Restricted Use

ESI4-01		
Depth	Dieldrin	Heptachlor Epoxide
0-6"	<b>7,900</b>	<b>78</b>
6-24"	<b>1,400</b>	41
30-36"	<b>100</b>	ND
42-48"	29	ND

ESI4-05		
Depth	Dieldrin	4,4'-DDT
0-6"	<b>51</b>	21
6-24"	<b>240</b>	<b>4,200</b>
30-36"	5.4	ND
42-48"	11	ND

ESI4-02		
Depth	Dieldrin	Heptachlor Epoxide
0-6"	<b>290</b>	<b>160</b>
6-24"	<b>430</b>	<b>400</b>
30-36"	4.3	12

ESI4-03	
Depth	Dieldrin
0-6"	<b>95</b>
6-24"	<b>190</b>
30-36"	3.5

Road

Road

COCA COLA BOTTLING

ESI4-01

ESI4-04	
Depth	Dieldrin
0-6"	<b>2,800</b>
6-24"	<b>1,000</b>
30-36"	<b>260</b>
42-48"	26

ESI4-02

ESI4-03

ESI4-06	
Depth	Dieldrin
0-6"	<b>280</b>
6-24"	<b>560</b>
30-36"	<b>84</b>
42-48"	<b>51</b>

ESI4-08	
Depth	Dieldrin
0-6"	<b>150</b>
6-24"	<b>480</b>
30-36"	7.4

ESI4-05

ESI4-06

ESI4-07

ESI4-07	
Depth	Dieldrin
0-6"	<b>270</b>
6-24"	24

ESI4-08

Grass

ESI4-09	
Depth	Dieldrin
0-6"	<b>140</b>
6-24"	<b>59</b>
30-36"	ND

ESI4-09

ESI4-10	
Depth	Dieldrin
0-6"	<b>820</b>
6-24"	36

ESI4-10

ESI4-11

ESI4-12

ESI4-12	
Depth	Dieldrin
0-6"	<b>61</b>
6-24"	<b>70</b>
24-36"	3.4

ESI4-11	
Depth	Dieldrin
0-6"	19
6-24"	<b>440</b>
24-36"	18

ESI4-13

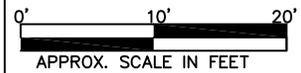
ESI4-14

ESI4-15

ESI4-15	
Depth	Dieldrin
0-6"	8.5
6-24"	<b>300</b>
24-36"	24
42-48"	5.8

ESI4-13				
Depth	Aldrin	Dieldrin	Heptachlor	Heptachlor Epoxide
0-6"	<b>9,300</b>	<b>160,000</b>	<550	<190
6-24"	<b>12,000</b>	<b>150,000</b>	<550	<190
30-36"	<b>1,500</b>	<b>24,000</b>	<8.7	27
42-48"	<b>4,000</b>	<b>29,000</b>	ND	ND
54-60"	<b>1,700</b>	<b>870</b>	ND	ND
66-72"	ND	<b>7,900</b>	ND	ND
78-84"	<b>490</b>	<b>1,700</b>	ND	ND
90-96"	1.7	3.1	ND	ND

ESI4-14		
Depth	Aldrin	Dieldrin
0-6"	ND	<b>2,100</b>
6-24"	ND	<b>420</b>
24-36"	ND	<b>44</b>
42-48"	ND	<b>94</b>
54-60"	ND	<b>42</b>
66-72"	ND	1.5



Road

Grass

Road

Grass

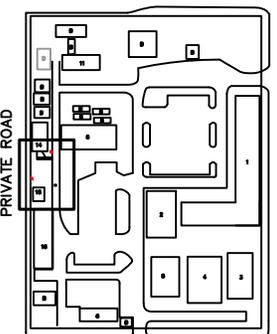
## APPENDIX F-3

CPHST ANPCL  
 BUILDING 14-15 AREA  
 VERTICAL DELINEATION  
 TAG MAP

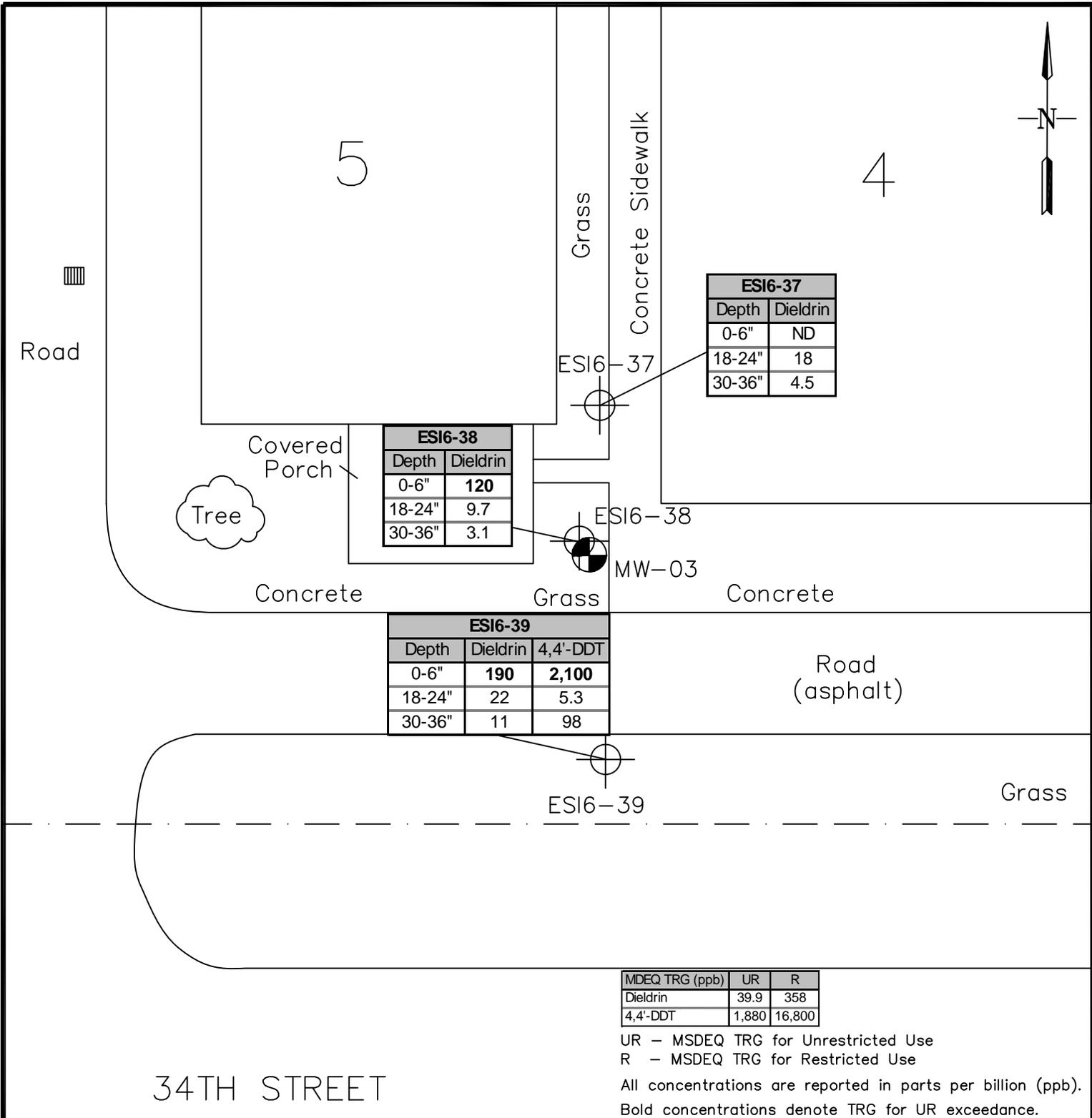


### LEGEND

- BUILDING/SITE FEATURE
- - - FENCE/PROPERTY BOUNDARY
- ESI4 SOIL SAMPLE LOCATION (2009)
- ⊕ ESI5 SOIL SAMPLE LOCATION (2011)
- ⊕ ESI6 SOIL SAMPLE LOCATION (2012)
- ND - Not Detected
- TRG - Target Remediation Goal
- MDEQ - Mississippi Dept. of Env. Quality
- All concentrations are reported in parts per billion (ppb).
- Bold concentrations are greater than the MDEQ TRG for unrestricted use.
- ▭ STORM DRAIN
- ⊗ UTILITY POLE



34TH STREET



APPENDIX F-4

CPHST ANPCL MW-03 AREA  
TAG MAP  
JANUARY 2012

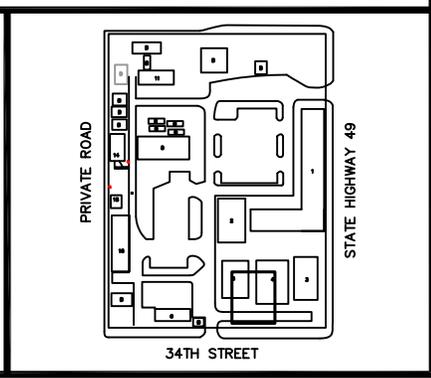
LEGEND

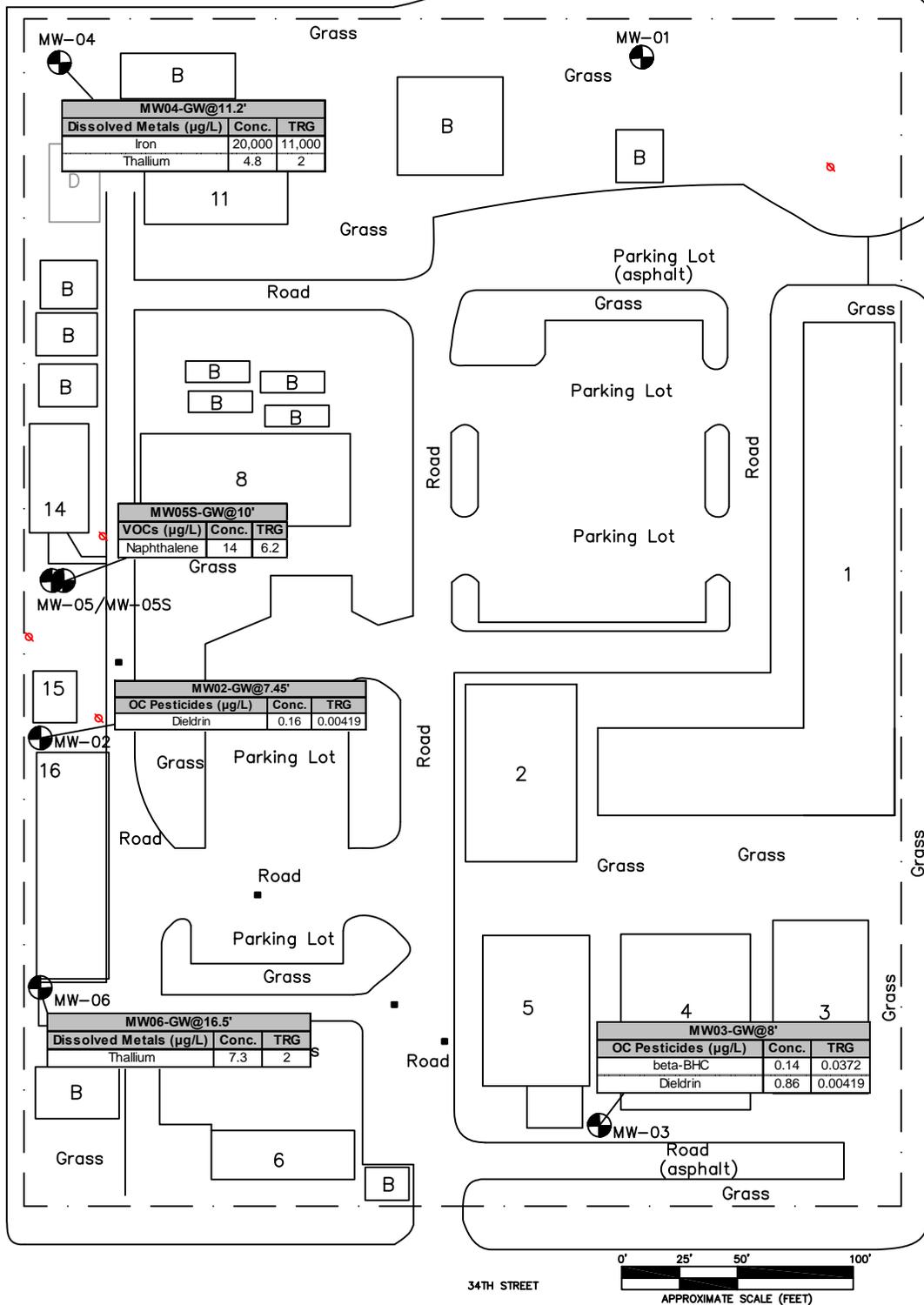
—— BUILDING/SITE FEATURE

- - - - FENCE/PROPERTY BOUNDARY

⊕ ESI6 SOIL SAMPLE LOCATION

▧ STORM DRAIN

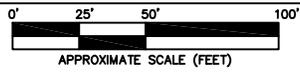




PRIVATE ROAD

STATE HIGHWAY 49

34TH STREET



APPENDIX F-5  
CPHST ANPCL  
GROUNDWATER  
TAG MAP  
JANUARY 2012



LEGEND

- BUILDING
- FENCE/PROPERTY BOUNDARY
- MONITORING WELL
- STORM DRAIN
- UTILITY POLE



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**Appendix G**  
**Groundwater Analytical Data**

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Table G-1. CPHST ANPCL VOCs Detected in Groundwater January 2012

Parameter	TRG	MW01-GW@8.38'	MW02-GW@7.45'	MW03-GW@8'	MW03-GW@8' DUP	MW04-GW@11.2'	MW05-GW@27.5'	MW05S-GW@10'	MW06-GW@16.5'
1,2,4-TRICHLOROBENZENE	70	0.33U	0.33U	0.33U	0.36J	0.33U	0.33U	0.33U	0.33U
NAPHTHALENE	6.2	0.33U	0.33U	0.33U	0.33U	0.33U	0.33U	14	0.33U

**Notes**

All results reported in ug/L.

TRG exceedances in shaded cells.

**Definitions**

MDL - Method Detection Limit

RL - Reporting Limit

TRG - Target Remediation Goal

**Data Qualifiers**

U - Analyte not detected

J - Estimated value. Analyte detected below the RL, but above the MDL

Table G-2. CPHST ANPCL OC Pesticides Detected in Groundwater January 2012

Parameter	TRG	MW01-GW@8.38'	MW02-GW@7.45'	MW03-GW@8'	MW03-GW@8' DUP	MW04-GW@11.2'	MW05-GW@27.5'	MW05S-GW@10'	MW06-GW@16.5'
4,4'-DDD	0.279	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
4,4'-DDE	0.197	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
4,4'-DDT	0.197	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
ALDRIN	0.00394	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
ALPHA-BHC	0.0106	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
ALPHA-CHLORDANE	NA	0.017U	0.029J	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
BETA-BHC	0.0372	0.017U	0.017U	0.12-D	0.14-D	0.017U	0.016U	0.017U	0.017U
DELTA-BHC	NA	0.017U	0.017U	0.1-D	0.12-D	0.017U	0.016U	0.017U	0.017U
DIELDRIN	0.00419	0.017U	0.16	0.81-D	0.86-D	0.017U	0.016U	0.017U	0.017U
ENDOSULFAN I	NA	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
ENDOSULFAN II	NA	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
ENDOSULFAN SULFATE	NA	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
ENDRIN	2	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
ENDRIN ALDEHYDE	NA	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
ENDRIN KETONE	NA	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
GAMMA-BHC (LINDANE)	0.20	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
GAMMA-CHLORDANE	NA	0.017U	0.032J	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
HEPTACHLOR	0.40	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
HEPTACHLOR EPOXIDE	0.20	0.017U	0.017U	0.033U-D	0.033U-D	0.017U	0.016U	0.017U	0.017U
METHOXYCHLOR	40	0.083U	0.083U	0.17U-D	0.16U-D	0.083U	0.082U	0.083U	0.083U
TOXAPHENE	3	2.5U	2.5U	5U-D	4.9U-D	2.5U	2.5U	2.5U	2.5U

**Notes**

All results reported in ug/L.

TRG Exceedances in shaded cells.

**Definitions**

MDL - Method Detection Limit

RL - Reporting Limit

TRG - Target Remediation Goal

**Data Qualifiers**

U - Analyte not detected

J - Estimated value. Analyte detected below the RL, but above the MDL

D - Result detected in sample with laboratory dilution

Table G-3. CPHST ANPCL Dissolved Metals Detected in Groundwater January 2012

Parameter	TRG	MW01-GW@8.38'	MW02-GW@7.45'	MW03-GW@8'	MW03-GW@8' DUP	MW04-GW@11.2'	MW05-GW@27.5'	MW05S-GW@10'	MW06-GW@16.5'
ALUMINUM	36,500	47B-B	410	31U	31U	47B-B	210	180B-B	76B-B
ARSENIC	50	2.6U	10U	2.6U	2.6U	2.6U	2.6U	2.7B	2.6U
BARIUM	2,000	26B	85B	17B	17B	27B	1.7U	28B	13B
BERYLLIUM	4	0.18U	0.23B	0.18U	0.18U	0.18U	0.18U	0.21B	0.25B
CALCIUM	NA	15,000	12,000	32,000	32,000	17,000	220B	9,000	7,800
COBALT	2,190	2.3B	13	1.4B	0.96B	5.6B	1.9B	5.4B	0.88U
COPPER	1,300	1.6U	1.6U	1.6U	1.6U	17	1.6U	1.6U	1.6U
IRON	11,000	3,200	310	730	660	20,000	55B	10,000	37U
MAGNESIUM	NA	1,500	1,200	1,400	1,400	1,400	120U	810B	890B
MANGANESE	730	93	120	190	200	680	12	240	20
NICKEL	730	1.5U	3.5B	1.5U	1.5U	1.5U	1.5U	3.8B	1.5U
POTASSIUM	NA	430B	1,000	360U	360U	1,400	360U	910B	1,600
SELENIUM	50	2.2U	2.2U	3.0B	2.2U	2.2U	2.2U	2.2U	2.2U
SODIUM	NA	4,800	3,100	5,400	5,500	18,000	36,000	3,100	9,700
THALLIUM	2	3.7U	3.7U	3.7U	3.7U	4.8B	3.7U	3.7U	7.3B
ZINC	11,000	28	45	3.7B	3.0B	18B	7.7B	5.1B	2.1U

**Notes**

All results reported in ug/L.

TRG exceedances in shaded cells.

**Definitions**

MDL - Method Detection Limit

RL - Reporting Limit

TRG - Target Remediation Goal

**Lab Qualifiers**

U - Analyte not detected

B - Estimated value. Analyte detected below the RL, but above the MDL

**Data Validation Qualifiers**

B - The reported concentration is determined to be attributable to contamination introduced during field sampling or laboratory analysis.

Table G-4. CPHST ANPCL Total Metals Detected in Groundwater January 2012

Parameter	TRG	MW01-GW@8.38'	MW02-GW@7.45'	MW03-GW@8'	MW03-GW@8' DUP	MW04-GW@11.2'	MW05-GW@27.5'	MW05S-GW@10'	MW06-GW@16.5'
ALUMINUM	36,500	15,000	32,000	3,900	3,200	130,000	6,600	230,000	9,900
ARSENIC	50	9.9B	13	7.9B	7.5B	87	32	47	2.7B
BARIUM	2,000	64B	150	29B	27B	180	17B	400	22B
BERYLLIUM	4	0.37B	1.3B	0.26B	0.18B	2.1B	0.44B	5.9	3.7B
CALCIUM	NA	16,000	13,000	32,000	32,000	20,000	840B	14,000	8,500
CHROMIUM	54,800	29	240	61	49	200	54	510	59
COBALT	2,190	2.1B	31	0.88U	1.1B	17	1.8B	52	3.4B
COPPER	1,300	11	34	8.2B	6.9B	59	7.6B	190	12
IRON	11,000	14,000-K	23,000	15,000-K	14,000-K	130,000-K	34,000-K	110,000-K	2,600N-K
LEAD	15	7.6	20	2.1U	2.1U	36	5.7	150	3.7
MAGNESIUM	NA	1,800	1,400	1,400	1,400	2,300	500B	2,200	1,000B
MANGANESE	730	96	260	220	220	830	77	420	23
MERCURY	11	0.06U	0.066B	0.06U	0.06U	0.56	0.06U	1.2	0.06U
NICKEL	730	6.7B	44	8.6B	9.4B	38	4.2B	130	9.2B
POTASSIUM	NA	560B	1,300	360U	360U	2,700	720B	3,100	1,800
SELENIUM	50	2.2U	3.2B	3.3B	2.2U	2.2U	4.9B	2.2U	2.2U
SODIUM	NA	4,800-J	3,400	5,600-J	5,500-J	20,000-J	36,000-J	4,200-J	10,000-J
THALLIUM	2	3.7U	3.7U	3.7U	3.7U	10	6.5B	8B	3.7U
VANADIUM	256	9.8B	53	8.7B	8.6B	99	47	450	8.9B
ZINC	11,000	89	160	20	24	84	5.1B	110	6.1B

**Notes**

All results reported in ug/L.

TRG exceedances in shaded cells.

**Definitions**

MDL - Method Detection Limit

RL - Reporting Limit

TRG - Target Remediation Goal

**Lab Qualifiers**

U - Analyte not detected

B - Estimated value. Analyte detected below the RL, but above the MDL

N - Spiked sample recovery not within control limits

**Data Validation Qualifiers**

J - Estimated value.

K - Indicates the reported value may be biased high