Interim Response and Remediation Services Contract
Contract Number SAP#4000018577

SITE CHARACTERIZATION REPORT

for

NOCKAMIXON TCE SITE
NOCKAMIXON TOWNSHIP, BUCKS COUNTY, PENNSYLVANIA

Contract Requisition Number GTAC6-1-290

DECEMBER 2015

Pennsylvania Department of Environmental Protection
Southeast Regional Office
2 East Main Street
Norristown, Pennsylvania 19401

TETRA TECH

PHIL-26176

SITE CHARACTERIZATION REPORT

NOCKAMIXON TCE SITE
Nockamixon Township
Bucks County, Pennsylvania

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TABLE OF CONTENTS

SECTION **PAGE**

1.0 INTRODUCTION 1-1
1.1 SITE DESCRIPTION 1-1
1.2 SITE HISTORY AND PREVIOUS INVESTIGATIONS 1-2
1.3 GENERAL SITE HYDROGEOLOGY 1-3
1.4 SCOPE OF WORK 1-4
1.4.1 Initial Scope of Work 1-4
1.4.2 Change Order Scope of Work 1-4

2.0 FIELD INVESTIGATION 2-1
2.1 SOIL GAS SAMPLING – TASK 3016 2-1
2.1.1 Phase 1 Soil Gas Screening 2-1
2.1.2 Phase 2 Soil Gas Screening 2-2
2.2 SITE SURVEY 2-3
2.3 SELECTION OF AREAS FOR FURTHER INVESTIGATION – SOIL BORING LOCATIONS .. 2-3
2.4 GEOPHYSICAL INVESTIGATION – TASK 3040 2-3
2.5 SOIL SAMPLING – TASK 3011 2-4
2.5.1 Drilling Procedures 2-4
2.5.2 Sampling Procedures 2-5
2.6 GROUNDWATER SAMPLING – TASK 3012 2-6
2.7 IDW DISPOSAL – TASK 3080 2-6

3.0 RESULTS AND CONCLUSIONS 3-1
3.1 VOLATILE ORGANIC COMPOUNDS (VOCs) 3-1
3.2 SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs) 3-2
3.3 PESTICIDES AND POLYCHLORINATED BIPHENYLS (PCBs) 3-2
3.4 INORGANICS 3-2
3.5 CONCLUSIONS 3-2
3.6 DATA GAPS AND RECOMMENDATIONS FOR FURTHER INVESTIGATION 3-3

APPENDICES

A USDA REPORT
B BEACON REPORT OF RESULTS
C SOIL BORING LOGS
D SAMPLE LOG SHEETS

TABLES

NUMBER

3-1 Data Summary of Analytical Results, Soil Sampling - July 2015
3-2 Data Summary of Positive Analytical Results, Soil Sampling - July 2015

FIGURES

NUMBER

1-1 Site Location Map
1-2 Suspected Source Area
1-3 Historic Aerial - 1970

TABLE OF CONTENTS (Continued)

FIGURES (Continued)

NUMBER

1-4 Historic Aerial - 1975
1-5 Soil Map
2-1 Soil Gas Locations, Phase 1 - PID Screening
2-2 Phase 1 - Screening Results Soil Gas Investigation
2-3 Soil Gas Locations, Phase 2 -Passive Soil Gas Sample
2-4 Passive Soil-Gas Survey - 1,1-Dichloroethene
2-5 Passive Soil-Gas Survey - cis-1,2-Dichloroethene
2-6 Passive Soil-Gas Survey - 1,1,1-Trichloroethane
2-7 Passive Soil-Gas Survey - Trichloroethene
2-8 Passive Soil-Gas Survey - Tetrachloroethene
2-9 Soil Boring Locations
2-10 EM31 Reconnaissance Survey, Northern Area
2-11 EM31 Reconnaissance Survey, Northern Area
2-12 Precipitation, June 2015
3-1 PADEP MSC Exceedances, Soil Borings

1.0 INTRODUCTION

This report documents the results of a source investigation conducted for the Pennsylvania Department of Environmental Protection (DEP) at the Nockamixon Trichloroethene (TCE) site located in Nockamixon Township, Bucks County, Pennsylvania. The work was performed under the General Technical Assistance Contract (GTAC) SAP#4000018577, contract requisition number GTAC6-1-290. Tetra Tech performed this work in response to the Scope of Work (SOW) dated September 12, 2014, and in accordance with the approved site Work Plan dated January 16, 2015.

1.1 SITE DESCRIPTION

The Nockamixon TCE site is located in Nockamixon Township, Bucks County, Pennsylvania (Figure 1-1). The site consists of an extensive groundwater plume that is suspected to originate from the former Schulberger Farm located on Brennan Road, based on the site's hydrogeological interpretation, aerial photography analyses, and the results of previous investigations.

DEP currently samples, or has previously sampled, more than 60 private residential and commercial wells in the vicinity of the site. More than thirty private drinking wells contain or have contained TCE at levels that exceed the Maximum Contaminant Level (MCL) of 5 µg/L, as defined by the Pennsylvania Safe Water Drinking Act. Tetrachloroethene (PCE) and 1,1-Dichloroethene (1,1-DCE) have also been detected above drinking water criteria in at least one private well. DEP has installed point-of-entry treatment units (POETs) on the potable wells where MCLs have been exceeded.

The primary purposes of this current work are to characterize and quantify the nature and the lateral and vertical extent of contaminated soils on the former Schulberger Farm; to evaluate other potential exposure pathways (such as vapor intrusion (VI) into nearby residences, discharge to surface water, and ecological impacts); and to install any additional monitoring infrastructure needed to define and monitor site contamination until Act 2 standards can be obtained. The site hydrogeology and groundwater quality has been documented by the numerous bedrock borings and monitoring wells that have been installed during previous investigation (Leidos, March 2014; Leidos, June 2014), but the source location(s) of the contamination was not positively identified.

Leidos (2014) conducted a comprehensive file review and historical aerial photographic analysis of the site in an effort to identify potential source areas (Figure 1-2). This analysis, combined with the investigation work previously performed by EPA, identified the former open field (now moderately to heavily overgrown) just north of Brennan Road as a storage area and the location of numerous apparent soil disturbances in the 1970s; the contaminated soil located by EPA is within this area of disturbance. Consequently, DEP

instructed Leidos to prepare a passive soil gas survey as an initial step to delineating and quantifying the soil contamination in this field. However, this work was not performed before the Leidos contract ended. DEP subsequently assigned this work to Tetra Tech, which formed the basis for the present investigation.

1.2 SITE HISTORY AND PREVIOUS INVESTIGATIONS

TCE was initially detected in the site groundwater in July 1981 as a result of the sampling of a restaurant well located just south of the former farm. Follow-up sampling of additional potable wells by the Bucks County Health Department (BCHD), DEP, and others indicated the presence of a laterally extensive groundwater plume that was comprised predominantly of TCE but also contained other VOCs. Response actions by DEP to date have included the temporary provision of bottled water to affected homes, and ultimately the installation of point of entry treatment (POET) units in the homes impacted by concentrations above allowable State levels. There are no public water supplies within the project area. Groundwater is not a medium of concern for this current investigation, and the site's groundwater investigation history and response actions are discussed in detail in the recent project investigation report (Leidos, March 2014).

Source investigation in the vicinity of the plume began with EPA's performance of a Preliminary Assessment in 1989 and a Site Inspection in 1990. The site was reportedly used for the disposal of septic tank wastes and for the storage of 55 drums containing unknown materials in the 1970s. Aerial photographs from the 1970s also revealed nearby land disturbances suggestive of trenches or pits (Figure 1-3 and Figure 1-4). Local residents stated that the drums had been removed under DEP supervision, but a review of the DEP files did not contain any records of waste removal.

Soil samples taken by EPA in the vicinity of the former drum storage area contained TCE, PCE, and 1,1,1-trichloroethane (1,1,1-TCA) at concentrations as high as 44 mg/kg. These samples also contained several semivolatile organic compounds (SVOCs) (pyrene and chrysene), and one sample contained PCBs at a concentration of 5.2 mg/kg. Leidos (2014) noted that no further investigative or remedial work had occurred at the site post-EPA investigation.

The DEP groundwater investigation included the installation of monitoring wells at multiple locations (Leidos, 2014). Monitoring well cluster MW-1 was located in close proximity to the drum storage area previously investigated by EPA. During borehole drilling, a strong chemical odor was noted in the shallow overburden and a maximum photoionization detector (PID) response of 345 parts per million (ppm) was recorded from a depth of 4 feet. A soil sample from a depth of 4 to 5 feet detected TCE at a concentration of 5.14 mg/kg; PCE at a concentration of 55.6 mg/kg; and 1,1,1-TCA at a concentration of 2.34 mg/kg. Other VOCs detected at lesser concentrations included 1,2,4-trimethylbenzene, 1,3-5 trimethylbenzene, cis-1,2-dichloroethene, ethylbenzene, isopropylbenzene, n-propylbenzene, and total xylenes. The TCE

and PCE concentrations exceeded their respective DEP medium-specific concentration (MSC) for the soil-to-groundwater migration pathway. The remaining compounds did not exceed their MSCs for this pathway.

Groundwater investigations indicate that the most highly contaminated groundwater within the plume is encountered at and in the vicinity of the water table, which makes vapor intrusion a migration pathway of potential concern. Although water-bearing fractures were encountered at the MW-1 cluster at depths as shallow as approximately 25 feet, the static water level elevation (the water table) has been detected during several sampling rounds at a depth of between 90 to 100 feet below the ground surface, indicating a strong downward vertical gradient that may be in part natural and in part an effect of the constant dewatering of the nearby Hanson Quarry.

1.3 GENERAL SITE HYDROGEOLOGY

The unconsolidated soil overlying the bedrock is the medium of concern for the present project. Previous studies have identified six or more soil types within the project area that are predominantly classified as poorly drained silt loams. Standing water is not unusual during the spring thaw (DEP, site scoping visit, November 2014). An examination of the site drilling logs indicates that the typical depth to bedrock at the monitoring well locations ranges between about 5 to 15 feet.

A United States Department of Agriculture (USDA) soil survey indicates that the suspected source area is predominantly underlain by a single soil type (USDA, 2015). The results of the survey (Figure 1-5) indicate that Reaville channery silt loam (RIB) underlies all but a small area located immediately west of Brennan Road. The Reaville loam is classified as farmland of statewide importance, and is characterized as somewhat poorly drained with a very high potential for runoff. The typical depth to bedrock ranges between 32 inches to 42 inches. The USDA description agrees well with the site-specific conditions noted during the previous field investigations. The complete USDA report is included as Appendix A.

The entire project area is underlain by the Triassic to Jurassic - aged Brunswick Formation and Lockatong Formation. The Brunswick Formation dominantly consists of fine-grained shale, siltstone, and mudstone. The Lockatong Formation consists predominantly of argillite. The site bedrock conditions have been extensively discussed in the previous project reports, and were not the focus of this current project, which focused on the detection and delineation of source materials lying within the soil and overburden.

The results of the previous site investigations indicate that the depth to groundwater beneath the site is 50 feet or greater, so the water table is encountered well below the top of bedrock. The groundwater beneath the site flows in a generally west to southwest direction, or towards Lake Nockamixon. Regionally

within the Triassic Basin, a seasonal perched water table often forms at the soil/bedrock interface, but this feature was not encountered or identified during the previous site investigations.

1.4 SCOPE OF WORK

1.4.1 Initial Scope of Work

The SOW dated September 12, 2014 included the following items:

- Attend a site scoping meeting and site visit. The meeting and visit were conducted November 12, 2014.
- Collect and review existing site information which may be relevant to the scoping of the investigation.
- Perform an iterative source investigation of the former Schulberger property soils to determine the nature, extent, and location of sources of groundwater contamination. DEP suggested the use of various screening technologies to help focus the investigation of this large land parcel.
- Perform site preparation (chiefly vegetation clearing) as required, but attempt to minimize this clearing.
- Survey each new data point with a global positioning system (GPS) to produce a scaled base map to illustrate the sample locations and post the analytical results. The SOW included the preparation of a detailed site plan with topography, but further discussions held at the scoping meeting postponed this task until (or if) more detailed mapping is required for the evaluation or design of remedial options.
- Assist DEP, as needed, in evaluating historical site groundwater data and additional groundwater data collected by DEP during the performance of the source investigation. Incorporate these data into the evolving conceptual site model.

1.4.2 Change Order Scope of Work

DEP continued their regular sampling of residential wells during this investigation. The results indicated that three additional residential wells had been contaminated with VOCs at concentrations that required the installation of POETs as part of the DEP Response Action, and VOC breakthrough of the carbon units had occurred at one residence that was already supplied with a POET. Tetra Tech was tasked to install POETs at the three residences (Task 1092) and perform a carbon replacement of both carbon canisters for the existing unit (Task 1093) via Out-of-Scope Change Order No. 1 dated June 11, 2015. S&G Water Conditioning, Inc., of Warminster, Pennsylvania was subcontracted by Tetra Tech via a competitive bidding process to perform these tasks.

Task 1092 – Install Residential Water Filters

POETs were installed at the following addresses:

- 347 Park Drive West, Kintnersville, Pennsylvania.
- 331 Park Drive West, Kintnersville, Pennsylvania.
- 377 Park Drive West, Kintnersville, Pennsylvania.
- 8432 Easton Road, Ottsville, Pennsylvania.
- 8426 Easton Road, Ottsville, Pennsylvania.
- 8260 Easton Road, Ottsville, Pennsylvania.
- 10 Cord Way, Ottsville, Pennsylvania.
- 4032 Durham Road, Ottsville, Pennsylvania.
- 2473 Mountain View Drive, Ottsville, Pennsylvania.

This is an ongoing task, as DEP continues to sample residential wells in the vicinity of the site. Additional POETs have been added since this document was drafted, and it is possible that more POETs will be added in the future as a result of the DEP sampling program.

Task 1093 – Maintain Residential Systems

The carbon in the existing POET was replaced at 2526 Mountain View Drive, Ottsville, Pennsylvania.

This is an ongoing task. The new POET Systems will be monitored by DEP directly, and Tetra Tech will provide consulting services to maintain POETs, if requested by DEP.

2.0 FIELD INVESTIGATION

The source area investigation performed in response to the items outlined by the SOW consisted of the following field tasks, identified by the DEP Work Breakdown Structure (WBS) coding system.

Investigation Tasks:

3000 - Site Survey
3011 - Soil Sampling
3012 - Groundwater Sampling
3016 - Soil Gas Sampling
3040 - Geophysical Investigation
3080 - Investigation-Derived Waste (IDW) Disposal

In the following discussion, these tasks are presented in chronological order, rather than the numerical order per the WBS identification code.

2.1 SOIL GAS SAMPLING – TASK 3016

In response to the iterative approach recommended by the SOW, Tetra Tech performed a two-phase soil gas investigation designed to locate the source(s) of the VOC plume. The Phase I investigation covered the entire potential source area (Figure 1-2), and consisted of a high-density, semi-quantitative screening investigation intended to identify any hot-spots of VOC contamination in the soil. Phase 2 consisted of a quantitative investigation of the hot spot areas identified during the first phase, and delineate the nature and extent of soil gas VOCs in these hot spots.

A sampling grid with approximately 50-foot nodal spacing was initially established across the area of investigation (Figure 2-1). The grid was established with the use of a compass (for bearing) and a measuring tape (for distance). The soil gas sample locations were screened for the presence of buried metal through the use of a hand-held metal detector, and marked in the field with a stake or pin flag.

2.1.1 <u>Phase 1 Soil Gas Screening</u>

For the Phase 1 screening, a 1-inch-diameter soil boring was driven with a slide hammer to a subsurface depth of approximately 2 feet at each sampling node. The boring was screened with a photoionization detector (PID) for a period of approximately 30 seconds, and the maximum PID reading was recorded. The

PID was equipped with an 11.7-eV probe to account for the potential presence of 1,1,1-TCA, which was previously identified as a contaminant of concern.

The results of the Phase 1 screening are illustrated in Figure 2-2. The PID responses ranged from non-detect or no readings to approximately 85 ppm. Although PID responses are semi-quantitative and can be affected by outside variables, the elevated responses clustered together and identified the areas where additional investigation was warranted.

2.1.2 Phase 2 Soil Gas Screening

For the Phase 2 screening, Beacon Environmental Services, Inc. ("Beacon") was subcontracted to perform a passive soil gas (PSG) survey. Tetra Tech and DEP personnel performed the field work tasks of installing and retrieving the VOC-adsorbent sampling cartridges. Beacon supplied the cartridges, performed the subsequent laboratory analyses, and generated the VOC concentration contour maps. The Beacon report of results is included as Appendix B.

Based on the Phase 1 screening results, a total of 100 sample locations were chosen for the Phase 2 investigation. The Phase 2 sampling locations are illustrated on Figure 2-3. Most of the samples were chosen to delineate the nature and extent of VOC contamination at the PID hot spots, but additional samples were placed in areas of little to no PID readings as a quality control check of the sample selection process.

To install the adsorbent cartridges, a 1.5-inch diameter borehole was drilled to a depth of 3 feet with an electricity powered hammer drill equipped with a soil auger bit. The PSG cartridge was installed in the upper portion of the borehole, and the borehole was sealed with an aluminum foil plug and covered with soil. The cartridges remained in the subsurface for a total of 20 days, as recommended by Beacon. The cartridges were installed May 7 – 8, 2015 and were retrieved May 27 – 28, 2015.

All samples were successfully analyzed by Beacon using thermal desorption – gas chromatography and mass spectrometry (TD-GC/MS) instrumentation following EPA Method 8260C. The laboratory results were reported in units of mass (nanograms) of specific compound per sample collected at each location.

Tetra Tech and DEP reviewed the analytical results and concluded that the most prevalent VOCs in the soil gas included TCE; PCE; 1,1,1-TCA; 1,1-Dichloroethene (1,1-DCE); and cis-1,2-DCE. These results correlate well with the most prevalent VOCs in the site groundwater, supporting a conclusion that the sources of these VOCs had been located. The contaminant concentration contour maps for these VOCs are included as Figure 2-4 through Figure 2-8.

2.2 SITE SURVEY – TASK 3000

Most soil gas sampling points were spatially located with the use of a portable Trimble GeoXH GPS instrument that provided real-time, sub-foot accuracy. Because of the dense tree cover, GPS readings could not be obtained at each location. If the GPS data could not be obtained, the sample locations were estimated using the bearing and distance information used during the initial layout of the sampling grid and the features noted on the underlying aerial photograph base map. The sample location grid map (Figure 2-1) is coded by color to indicate which sample locations were surveyed through GPS and which sample locations were estimated. Elevation data was not obtained. Per discussion with DEP at the site scoping meeting, more detailed information may be needed (and will be requested by DEP) for design drawings for a response action, if the site progresses to the remediation stage.

2.3 SELECTION OF AREAS FOR FURTHER INVESTIGATION – SOIL BORING LOCATIONS

Eighteen potential soil boring locations were identified through the examination of the soil gas screening results and discussions between DEP and Tetra Tech. The locations are identified in Figure 2-9, and are classified as either primary (highest potential for source area) or secondary (source delineation) borings. The following locations were selected for further investigation.

PRIMARY BORING LOCATIONS	SECONDARY BORING LOCATIONS
D-0	MW_3-600
C-50	MW_3-600E
G-200	F-100S
A-50	F-100N
E-250	F-100W
B_rd-400	B_rd-400n
E-700	B-100
X-700	C-100
	D-100
	E-700W

2.4 GEOPHYSICAL INVESTIGATION – TASK 3040

Tetra Tech screened each selected soil boring location through a geophysical survey prior to mobilization of the drilling subcontractor. The purpose of the survey was to investigate whether utilities, drums, or buried

metallic debris exist at each location. Local residents have indicated to DEP that all debris was supposedly removed from the site, but evidence or documentation of the removal does not exist.

Tetra Tech screened a total of 17 of the 18 potential (primary and secondary) boring locations. Boring location MW3-600E was not accessible due to its position within an extensive and dense patch of forest undergrowth.

A 10-foot radius was cleared around each of the 17 locations using a magnetic locator and a pipe/cable locator on June 18, 2015. An electromagnetic (EM) resistivity survey was conducted for the northeastern portion of the site (east of the 77 Brennan Lane driveway) using an EM-31 tool on June 19, 2015 to support the previous day's work and to investigate potential areas of subsurface disturbance or buried metal in areas other than the boring locations. The EM survey located potential buried metallic debris around the perimeter of the property and in the vicinity of boring C-50. The results of the EM survey are illustrated on Figures 2-10 (for the in-phase EM component) and 2-11 (for the apparent conductivity).

2.5 SOIL SAMPLING – TASK 3011

The soil boring program was performed on July 7 and July 8, 2015 to obtain soil samples for quantitative laboratory analyses. The borehole drilling subcontract was awarded to Environmental Probing Investigations, Inc., of Cream Ridge, New Jersey, through a competitive bidding process. Sampling bottleware and all laboratory analyses were performed by the BOL.

The logistical goal of the field investigation was to drill all of the eight primary borings, and as many of the nine secondary borings as possible within the two subcontracted drilling field days. Ultimately, all primary borings and all secondary borings but one (E-700W) were drilled.

2.5.1 Drilling Procedures

The soil borings were advanced using a Geoprobe 6620DT direct-push technology (DPT) drilling rig. To drill the borings, a probe assembly fitted with 4-foot-long acetate sleeve was hydraulically advanced ("pushed") into the subsurface to obtain continuous soil cores that were 4 feet in length. The probe and sleeve were withdrawn, the sampling assembly was fitted with a new acetate sleeve, and reinserted into the borehole. The process was repeated until the top of bedrock was reached, as defined by DPT refusal. The depth of the borings ranged from 3.5 feet to 14.5 feet. All borings but one were less than 10 feet in depth, and there was not apparent pattern or trend to the areal distribution of the depth to top of bedrock. DPT borings produce very few drill cuttings. Those that were produced were placed back in the boring, and the remainder of the boring was sealed with granular bentonite chips and covered with local topsoil.

The DPT drive shoe was the only non-disposable piece of sampling equipment that contacted the soil. The drive shoe was decontaminated at the boring location at the conclusion of each boring by soaking the shoe in a bucket of Alconox and water, followed by brushing and rinsing the shoe in a bucket of potable water.

2.5.2 Sampling Procedures

Each acetate liner was cut open upon retrieval. The lithology was described by the site geologist, the core was visually examined for qualitative signs of contamination such as soil staining, and the soil interval was vertically screened for VOCs with a PID by disturbing the surface of the core approximately every 6 inches with a disposable trowel. The lithologies, PID readings, and other observations were recorded on the soil boring logs, which are included in Appendix C. The sampling log sheets are included in Appendix D.

Soil samples were obtained from each boring for quantitative laboratory analyses. All primary borings were sampled for VOCs, semivolatile compounds (SVOCs), target analyte list (TAL) metals, and polychlorinated biphenyls (PCBs). Several borings were sampled for VOCs from multiple horizons, based on the PID responses from the borings. The SVOC, metals, and PCB samples were taken from surface or near-surface soils, because when spilled at the surface these contaminants tend to be bound by either the organic carbon in the soils or the available cation exchange locations in the clay minerals.

The VOC samples were obtained with TerraCore field preservation sampling kits supplied by the BOL. Each kit contained a VOA sampling vial preserved with methanol and the tare weight recorded on the label, a jar for the soil moisture sample, and a sampling apparatus consisting of a sampling cartridge and a sampling handle. The soil sample was obtained by pushing the cartridge into the core by the handle until the cartridge was full, and then ejecting the soil from the cartridge directly into the VOA vial by rotating and pushing the sampling handle.

The SVOC, metals, and PCB samples were obtained from a two-foot interval in each boring in order to provide sufficient sampling material. The soil from each interval was sampled with a disposable trowel, placed in an aluminum-lined mixing bowl, and homogenized by stirring the soil with the trowel. The soil was then placed in the appropriate BOL-supplied bottleware.

For Quality Assurance and Quality Control (QA/QC) purposes, two field duplicate samples were obtained for VOC analysis and one field duplicate was obtained for SVOC, metals, and PCB analyses. Trip blanks were included with every sample shipment. Two equipment rinsate blanks were collected by pouring deionized blank water (supplied by the BOL) over the decontaminated drive shoe of the DPT rig, which is the only reusable sampling equipment that will contact h the soil to be sampled.

Samples were driven to the DEP Southeastern Regional Office under chain-of-custody protocol. A DEP-contracted courier transported the samples to BOL, where all laboratory analyses were performed.

2.6 GROUNDWATER SAMPLING – TASK 3012

Tetra Tech was prepared to sample any perched groundwater that could be encountered within the soil borings at the top of bedrock. The samples would be obtained with a disposable bailer, and submitted to the DEP BOL to investigate the nature of any VOCs partitioning from the soil into the infiltrating groundwater in the immediate vicinity of the boring. No aqueous samples were obtained during the investigation because no perched groundwater was encountered in any boring, despite more than five inches of precipitation (Figure 2-12) having been recorded during the month leading up to the drilling (National Weather Service, 2015).

2.7 IDW DISPOSAL – TASK 3080

Minimal IDW was generated during the execution of this task. Excess soil cuttings produced during drilling were returned to the borings. Used PPE and disposable sampling materials (acetate liners, plastic trowels, aluminum foil) were double-bagged and disposed as municipal trash. Approximately 8 to 10 gallons of decontamination water was generated each day that soil sampling was conducted. This water was disposed on the ground surface within the suspected waste area and allowed to infiltrate. No overland flow or migration to any surface water body was permitted.

3.0 RESULTS AND CONCLUSIONS

The complete set of analytical data is presented in Table 3-1. A data summary containing only the compounds that had at least one detection in one sample is presented in Table 3-2. This table also screens the detected soil concentrations against the DEP generic medium specific concentrations (MSCs) for the soil-to-groundwater migration pathway and the 100X Groundwater (MSC_{GW}) values.

3.1 VOLATILE ORGANIC COMPOUNDS (VOCs)

A total of 21 different VOCs were detected in the soil. The VOC exceedances of their MSCs are illustrated on Figure 3-1, and are superimposed over the TCE contours for the PSG investigation. In general, there is a strong correlation between the analytical soil concentrations and the PSG concentrations, and the integration of these two data sets indicate that the soil contamination is not widespread and homogeneous across the entire site, but rather is concentrated in several specific areas.

The VOC analytical data were not validated, but no VOCs were detected in any of the quality control (QC) samples, which consisted of daily equipment rinsate blanks and trip blanks (Table 3-1).

The following VOCs exceed their MSCs in at least one soil sample:

- Trichloroethene
- 1,1,1-Trichloroethane
- 1,3,5-Trimethylbenzene
- Tetrachloroethene
- 1,1-Dichloroethene
- cis-1,2-Dichloroethene
- 1,2,4-Trimethylbenzene

The VOCs with the most exceedances are TCE (13 exceedances, with a maximum concentration of 131,000 µg/kg), and PCE (7 exceedances, with a maximum concentration of 276,000 µg/kg).

The most highly contaminated soil and most of the VOC soil MSC exceedances are located near monitoring well location MW-1 and in the fields located to the east, and immediately west of the driveway for 77 Brennan Drive (Figure 3-1). This general area was identified as a former drum staging area and an area of ground disturbance on historic aerial photographs (Figure 1-2). Another concentrated area of soil contamination was detected near monitoring well location MW-3 (Figure 3-1), which is located generally near a second drum staging area identified by the aerial photographs (Figure 1-2). A third area of soil contamination was detected in the northwest portion of the project area near boring location E-700 (Figure 1-2), which does not correspond to any suspected source location.

The vertical distribution of the VOCs within the borings (Figure 3-1) indicates that the contamination is not restricted to the shallow soils, but rather extends to the deep soils and to the top of bedrock.

3.2 SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)

Only one SVOC, bis(2-ethylhexyl)phthalate, was detected in one sample at a concentration of 1.2 µg/kg, which is far below its MSC.

3.3 PESTICIDES AND POLYCHLORINATED BIPHENYLS (PCBs)

Only one PCB, Arachlor 1254, was detected in one sample at a concentration of 4.32 µg/kg, which is far below its MSC. No pesticides were detected in any samples.

3.4 INORGANICS

Metals were detected in all samples. Many of the metal concentrations exceeded their 100 MSC_{GW} screening criteria, but there were no exceedances of the respective MSCs for soil-to-groundwater migration. The concentrations of the respective metals occurred within a narrow range, were consistent across the project area, and were of a magnitude that can be considered normal for this area. These observations indicate that the metals are naturally occurring, and their detections are not a result of any unregulated disposal.

3.5 CONCLUSIONS

Significant VOC contamination exists in the site soils at concentrations that appear capable of creating a continuing source of groundwater contamination at concentrations well above state (MSC_{GW}) and federal (maximum contaminant levels, or MCLs) criteria.

The vertical distribution of VOCs indicate that the contamination is not limited to the shallow soil, but continues downward to the top of bedrock.

The VOC contamination is not distributed homogeneously across the site, but is concentrated in several specific areas that generally coincide with the suspected source areas identified during previous site investigation.

VOCs are the only site contaminants of concern for the soil medium.

The correlation between the areas of highest PSG concentrations and the areas of potential buried metal is inconclusive. Very high PSG concentrations were detected at potential buried metal location C-50 (although no metal was encountered within the subsequent soil boring), and also at station D-0, which is located just south of another area of potential buried metal. However, not all EM anomalies were near PSG sample points, and some elevated PSG samples were obtained in areas where no EM anomaly was detected.

3.6 DATA GAPS AND RECOMMENDATIONS FOR FURTHER INVESTIGATION

The lateral extent of VOC contamination in the soils has not been fully defined. Much of the highly contaminated soil (as identified by the PSG analysis and confirmed by the soil borings [Figure 3-1]) occurs along the border of the project area, as defined by either property boundary limits or the limits of suspected waste disposal areas. Specific examples of potentially contaminated soils that were not sampled include the area south of monitoring well MW-3, the area northeast of boring D-0, and the area north and west of borings F-100 and G-100.

The nature and extent of the soil contamination defined by this project should be integrated with the nature and extent of the site's groundwater plume to determine if the source(s) of all of the groundwater contamination has been adequately defined by this project.

Bedrock cores drilled into the shallow bedrock should be considered in the areas of highest soil contamination to determine if matrix diffusion into the bedrock has occurred, and the degree to which it has occurred. The existence of VOCs diffused into the bedrock matrix should be considered when the need for potential soil remedial options are considered; the back-diffusion of VOCs from the bedrock matrix could continue to source a groundwater plume even if the contaminated soil is remediated.

Test pits and additional soil sampling should be considered in the areas of potential buried metallic debris, especially in the vicinity of location C-50 and at the EM anomalies detected along the northeast and northwest boundaries of the project area.

The concentrations of VOCs detected in the PSG analysis suggest that potential VI effects into nearby residences should be discussed or considered. Although the most highly contaminated soils were not found immediately adjacent to any residence, it is likely that the groundwater plume emanating from this soil is of sufficient concentration to create a VI concern.

TABLES

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**A 50 @ 1.5 - 2.5 ft.**		**A 50 @ 4 ft.**		**B 100 @ 5 ft.**		**B 100 @ 7 ft.**		**B_Rd 400 @ 1 - 2.5 ft.**		**B_Rd 400 @ 4.5 ft.**		**B_Rd. 400N @ 2 ft.**		**B_Rd 400N @ 5.5 ft.**	
Sample Date:	**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Sequence No:	**002**		**001**		**033**		**034**		**016**		**015**		**018**		**017**	
Duplicate of:																
VOLATILES			**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1,2-Tetrachloroethane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,1,1-Trichloroethane	NA		3280	Q	401		62500		53	U	56.3	U	52.5	U	65	U
1,1,2,2-Tetrachloroethane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,1,2-Trichloroethane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,1-Dichloroethane	NA		50.4	U	60.3	U	89.3		53	U	56.3	U	52.5	U	65	U
1,1-Dichloroethene	NA		50.4	U	60.3	U	1360	Q	53	U	56.3	U	52.5	U	65	U
1,1-Dichloropropene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,2,3-Trichlorobenzene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,2,3-Trichloropropane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,2,4-Trichlorobenzene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,2,4-Trimethylbenzene	NA		2800	Q	83.4		17000	Q	53	U	56.3	U	52.5	U	65	U
1,2-Dibromo-3-chloropropane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,2-Dibromoethane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,2-Dichlorobenzene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,2-Dichloroethane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,2-Dichloroethene (cis)	NA		1260	Q	1830		13400	Q	71.2		66.1		52.5	U	66.2	
1,2-Dichloroethene (trans)	NA		50.4	U	60.3	U	177		53	U	56.3	U	52.5	U	65	U
1,2-Dichloropropane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,3,5-Trimethylbenzene	NA		465		60.3	U	11200	Q	53	U	56.3	U	52.5	U	65	U
1,3-Dichlorobenzene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,3-Dichloropropane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
1,4-Dichlorobenzene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
2,2-Dichloropropane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
2-Hexanone	NA		252	U	301	U	294	U	265	U	281	U	263	U	325	U
4-Isopropyltoluene	NA		50.4	U	60.3	U	334		53	U	56.3	U	52.5	U	65	U
Acetone	NA		252	U	301	U	294	U	265	U	281	U	263	U	325	U
Benzene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Bromobenzene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Bromodichloromethane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Bromoform	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Bromomethane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Carbon Disulfide	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Carbon Tetrachloride	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Chlorobenzene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Chloroethane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Chloroethene (vinyl Chloride)	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Chloroform	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Chloromethane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
cis-1,3-Dichloropropene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Dibromochloromethane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Dibromomethane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Dichlorodifluoromethane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Ethylbenzene	NA		214		60.3	U	10400	Q	53	U	56.3	U	52.5	U	65	U

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**A 50 @ 1.5 - 2.5 ft.**		**A 50 @ 4 ft.**		**B 100 @ 5 ft.**		**B 100 @ 7 ft.**		**B_Rd 400 @ 1 - 2.5 ft.**		**B_Rd 400 @ 4.5 ft.**		**B_Rd. 400N @ 2 ft.**		**B_Rd 400N @ 5.5 ft.**	
Sample Date:	**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Sequence No:	**002**		**001**		**033**		**034**		**016**		**015**		**018**		**017**	
Duplicate of:																
Hexachlorobutadiene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Isopropylbenzene	NA		840	Q	60.3	U	7880	Q	53	U	56.3	U	52.5	U	65	U
M/p-xylene	NA		1020	Q	120	U	79200	Q	106	U	112	U	105	U	130	U
MEK	NA		252	U	301	U	294	U	265	U	281	U	263	U	325	U
Methyl Tert-butyl Ether	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Methylene Chloride	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
MIBK	NA		252	U	301	U	294	U	265	U	281	U	263	U	325	U
N-Butylbenzene	NA		260		60.3	U	1140	Q	53	U	56.3	U	52.5	U	65	U
N-Propylbenzene	NA		1040	Q	60.3	U	8100	Q	53	U	56.3	U	52.5	U	65	U
Naphthalene	NA		98.8		60.3	U	752	Q	53	U	56.3	U	52.5	U	65	U
O-chlorotoluene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
O-xylene	NA		2040	Q	166		38400	Q	53	U	56.3	U	52.5	U	65	U
P-chlorotoluene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
PCTFB	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Sec-butylbenzene	NA		209		60.3	U	452		53	U	56.3	U	52.5	U	65	U
Styrene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
T-butyl Alcohol	NA		504	U	603	U	588	U	530	U	563	U	525	U	650	U
Tert-butyl Acetate	NA		252	U	301	U	294	U	265	U	281	U	263	U	325	U
Tert-butylbenzene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Tetrachloroethene	NA		21200		1340		276000		201		80.4		52.5	U	65	U
Tetrahydrofuran	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Toluene	NA		50.4	U	60.3	U	8520	Q	53	U	56.3	U	52.5	U	65	U
trans-1,3-Dichloropropene	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Trichloroethene	NA		10100		1580		131000		146		112		52.5	U	81.4	
Trichlorofluoromethane	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
Vinyl Acetate	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U
INORGANICS																
Aluminum	37959		NA		NA		NA		47204		NA		NA		NA	
Antimony	1.15	U	NA		NA		NA		1.17	U	NA		NA		NA	
Arsenic	8.23		NA		NA		NA		4.57		NA		NA		NA	
Barium	71.3		NA		NA		NA		103		NA		NA		NA	
Beryllium	1.04		NA		NA		NA		1.11		NA		NA		NA	
Boron	230	U	NA		NA		NA		234		NA		NA		NA	
Cadmium	0.58	U	NA		NA		NA		0.58	U	NA		NA		NA	
Calcium	670		NA		NA		NA		1846		NA		NA		NA	
Chromium	61.9		NA		NA		NA		68.8		NA		NA		NA	
Cobalt Compounds	18.2		NA		NA		NA		19.8		NA		NA		NA	
Copper	15.4		NA		NA		NA		14		NA		NA		NA	
Iron	50938		NA		NA		NA		54117		NA		NA		NA	
Lead	8.92		NA		NA		NA		20.3		NA		NA		NA	
Magnesium	15431		NA		NA		NA		16822		NA		NA		NA	
Manganese	728		NA		NA		NA		663		NA		NA		NA	
Mercury	0.115	U	NA		NA		NA		0.117	U	NA		NA		NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**A 50 @ 1.5 - 2.5 ft.**		**A 50 @ 4 ft.**		**B 100 @ 5 ft.**		**B 100 @ 7 ft.**		**B_Rd 400 @ 1 - 2.5 ft.**		**B_Rd 400 @ 4.5 ft.**		**B_Rd. 400N @ 2 ft.**		**B_Rd 400N @ 5.5 ft.**	
Sample Date:	**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Sequence No:	**002**		**001**		**033**		**034**		**016**		**015**		**018**		**017**	
Duplicate of:																
Moisture	13.13		NA		NA		NA		12.84		NA		NA		NA	
Nickel	37.1		NA		NA		NA		38.5		NA		NA		NA	
Potassium	1427		NA		NA		NA		1088		NA		NA		NA	
Selenium	4.03	U	NA		NA		NA		4.1	U	NA		NA		NA	
Silver	0.58	U	NA		NA		NA		0.58	U	NA		NA		NA	
Sodium	152		NA		NA		NA		189		NA		NA		NA	
Thallium	1.15	U	NA		NA		NA		1.17	U	NA		NA		NA	
Vanadium	91.3		NA		NA		NA		111		NA		NA		NA	
Zinc	70.1		NA		NA		NA		74.7		NA		NA		NA	
MISCELLANEOUS																
Solids	86.87		NA		NA		NA		87.16		NA		NA		NA	
Acidity			NA		NA		NA				NA		NA		NA	
Weight	0.5		NA		NA		NA		0.49		NA		NA		NA	
SEMIVOLATILES																
1,2,4,5-Tetrachlorobenzene	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
1,2,4-Trichlorobenzene	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
1,2-Dichlorobenzene	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
1,3-Dichlorobenzene	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
1,3-Dinitrobenzene	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
1,4-Dichlorobenzene	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
1,4-Naphthoquinone	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
1-Chloronaphthalene	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
1-Methylnaphthalene	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2,2'-Oxybis(1-chloropropane)	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2,3,4,6-Tetrachlorophenol	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2,4,5-Trichlorophenol	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2,4,6-Trichlorophenol	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2,4-Dichlorophenol	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2,4-Dimethylphenol	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2,4-Dinitrophenol	3	U	NA		NA		NA		3	U	NA		NA		NA	
2,4-Dinitrotoluene	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2,6-Dichlorophenol	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2,6-Dinitrotoluene	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2-Acetylaminofluorene	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2-Chloronaphthalene	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2-Chlorophenol	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2-Methylnaphthalene	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2-Methylphenol	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2-Nitroaniline	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2-Nitrophenol	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
2-Picoline (2-methylpyridine)	0.59	U	NA		NA		NA		0.6	U	NA		NA		NA	
3&4-Methylphenol	1.2	U	NA		NA		NA		1.2	U	NA		NA		NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**A 50 @ 1.5 - 2.5 ft.**		**A 50 @ 4 ft.**	**B 100 @ 5 ft.**	**B 100 @ 7 ft.**	**B_Rd 400 @ 1 - 2.5 ft.**		**B_Rd 400 @ 4.5 ft.**	**B_Rd. 400N @ 2 ft.**	**B_Rd 400N @ 5.5 ft.**
Sample Date:	**07/07/2015**		**07/07/2015**	**07/08/2015**	**07/08/2015**	**07/08/2015**		**07/08/2015**	**07/08/2015**	**07/08/2015**
Sequence No:	**002**		**001**	**033**	**034**	**016**		**015**	**018**	**017**
Duplicate of:										
3,3'-Dichlorobenzidine	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
3-Methylcholanthrene	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
3-Nitroaniline	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
4,6-Dinitro-2-methylphenol	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
4-Aminobiphenyl	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
4-Bromophenyl Phenyl Ether	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
4-Chloro-3-methylphenol	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
4-Chloroaniline	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
4-Chlorophenyl Phenyl Ether	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
4-Nitroaniline	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
4-Nitrophenol	3	U	NA	NA	NA	3	U	NA	NA	NA
5-Nitro-o-toluidine	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
7,12-Dimethylbenz(a)-anthracene	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
A-terpineol	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Acenaphthene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Acenaphthylene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Acetophenone	1.2	U	NA	NA	NA	1.2	U	NA	NA	NA
Aniline	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Anthracene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Aramite	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Benz(a)anthracene	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
Benzo(a)pyrene	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
Benzo(b)fluoranthene	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
Benzo(g,h,i)perylene	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
Benzo(k)fluoranthene	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
Benzyl Alcohol	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Bis(2-chloroethoxy)methane	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Bis(2-chloroethyl)ether	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Bis(2-ethylhexyl)phthalate	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
Butylbenzylphthalate	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
Chlorobenzilate	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Chrysene	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
Di-n-butylphthalate	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Di-n-octylphthalate	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
Diallate (cis Or trans)	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Dibenz(a,h)anthracene	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
Dibenzofuran	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Diethylphthalate	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Dimethoate	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Dimethylaminoazobenzene	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
Dimethylphthalate	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Dinoseb	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Diphenylamine	1.2	U	NA	NA	NA	1.2	U	NA	NA	NA
Disulfoton	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**A 50 @ 1.5 - 2.5 ft.**		**A 50 @ 4 ft.**	**B 100 @ 5 ft.**	**B 100 @ 7 ft.**	**B_Rd 400 @ 1 - 2.5 ft.**		**B_Rd 400 @ 4.5 ft.**	**B_Rd. 400N @ 2 ft.**	**B_Rd 400N @ 5.5 ft.**
Sample Date:	**07/07/2015**		**07/07/2015**	**07/08/2015**	**07/08/2015**	**07/08/2015**		**07/08/2015**	**07/08/2015**	**07/08/2015**
Sequence No:	**002**		**001**	**033**	**034**	**016**		**015**	**018**	**017**
Duplicate of:										
Ethyl Methanesulfonate	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Ethyl Parathion	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Fluoranthene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Fluorene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Hexachlorobenzene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Hexachlorobutadiene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Hexachlorocyclopentadiene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Hexachloroethane	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Hexachloropropene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Indeno-1,2,3-cd-pyrene	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
Isodrin	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Isophorone	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Isosafrole	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Methyl Methanesulfonate	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Methyl Parathion	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
N-Nitrosodibutylamine	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
N-Nitrosodiethylamine	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
N-Nitrosodimethylamine	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
N-Nitrosodipropylamine	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
N-Nitrosomethylethylamine	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
N-Nitrosomorpholine	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
N-Nitrosopiperidine	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
N-Nitrosopyrrolidine	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Naphthalene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Nitrobenzene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
O,o,o-triethylphosphorothioate	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
O-toluidine	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Pentachlorethane	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Pentachlorobenzene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Pentachloronitrobenzene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Pentachlorophenol	2.4	U	NA	NA	NA	2.4	U	NA	NA	NA
Phenanthrene	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Phenol	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Phorate	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Pronamide	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Pyrene	0.3	U	NA	NA	NA	0.3	U	NA	NA	NA
Pyridine	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Safrole	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Sulfotep	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
Thionazine	0.59	U	NA	NA	NA	0.6	U	NA	NA	NA
PESTICIDES/PCBS										
Arochlor 1016	0.05	U	NA	NA	NA	0.05	U	NA	NA	NA
Arochlor 1221	0.05	U	NA	NA	NA	0.05	U	NA	NA	NA

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**A 50 @ 1.5 - 2.5 ft.**		**A 50 @ 4 ft.**		**B 100 @ 5 ft.**		**B 100 @ 7 ft.**		**B_Rd 400 @ 1 - 2.5 ft.**		**B_Rd 400 @ 4.5 ft.**		**B_Rd. 400N @ 2 ft.**		**B_Rd 400N @ 5.5 ft.**	
Sample Date:	**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Sequence No:	**002**		**001**		**033**		**034**		**016**		**015**		**018**		**017**	
Duplicate of:																
Arochlor 1232	0.05	U	NA		NA		NA		0.05	U	NA		NA		NA	
Arochlor 1242	0.05	U	NA		NA		NA		0.05	U	NA		NA		NA	
Arochlor 1248	0.05	U	NA		NA		NA		0.05	U	NA		NA		NA	
Arochlor 1254	0.05	U	NA		NA		NA		0.05	U	NA		NA		NA	
Arochlor 1260	0.05	U	NA		NA		NA		0.05	U	NA		NA		NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	C 50 @ 0 - 2 ft.		C 50 @ 4 ft.		C 100 @ 3.5 ft.		D 0 @ 0 - 2 ft.		D 0 @ 4.5 ft.		D 100 @ 3.5 ft.		D 100 @ 6 ft.		E 250 @ 0 - 2 ft.		Duplicate #2		E 250 @ 4 ft.	
Sample Date:	07/07/2015		07/07/2015		07/08/2015		07/07/2015		07/07/2015		07/08/2015		07/08/2015		07/07/2015		07/07/2015		07/07/2015	
Sequence No:	006		005		032		004		003		030		031		011		102		009	
Duplicate of:																	E 250 @ 0 - 2 ft.			
VOLATILES			ug/kg		ug/kg				ug/kg		ug/kg		ug/kg		ug/kg				ug/kg	
1,1,1,2-Tetrachloroethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,1,1-Trichloroethane	NA		554	Q	53.9	U	NA		3710	Q	1640	Q	2540	Q	58.2	U	NA		57.6	U
1,1,2,2-Tetrachloroethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,1,2-Trichloroethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,1-Dichloroethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,1-Dichloroethene	NA		49.9	U	53.9	U	NA		113		51.9	U	225		58.2	U	NA		57.6	U
1,1-Dichloropropene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,2,3-Trichlorobenzene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,2,3-Trichloropropane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,2,4-Trichlorobenzene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,2,4-Trimethylbenzene	NA		6240		53.9	U	NA		29800	Q	9560		2010	Q	58.2	U	NA		57.6	U
1,2-Dibromo-3-chloropropane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,2-Dibromoethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,2-Dichlorobenzene	NA		49.9	U	53.9	U	NA		244		51.9	U	60.7	U	58.2	U	NA		57.6	U
1,2-Dichloroethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,2-Dichloroethene (cis)	NA		806	Q	58.6		NA		770	Q	3160	Q	5020	Q	58.2	U	NA		378	
1,2-Dichloroethene (trans)	NA		49.9	U	53.9	U	NA		57.9	U	58.8		60.7	U	58.2	U	NA		57.6	U
1,2-Dichloropropane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,3,5-Trimethylbenzene	NA		3790	Q	53.9	U	NA		15800	Q	1400	Q	1200	Q	58.2	U	NA		57.6	U
1,3-Dichlorobenzene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,3-Dichloropropane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
1,4-Dichlorobenzene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
2,2-Dichloropropane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
2-Hexanone	NA		250	U	269	U	NA		289	U	260	U	304	U	291	U	NA		288	U
4-Isopropyltoluene	NA		49.9	U	53.9	U	NA		3360	Q	966	Q	143		58.2	U	NA		57.6	U
Acetone	NA		250	U	269	U	NA		289	U	260	U	304	U	291	U	NA		288	U
Benzene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Bromobenzene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Bromodichloromethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Bromoform	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Bromomethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Carbon Disulfide	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Carbon Tetrachloride	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Chlorobenzene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Chloroethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Chloroethene (vinyl Chloride)	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Chloroform	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Chloromethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
cis-1,3-Dichloropropene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Dibromochloromethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Dibromomethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Dichlorodifluoromethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Ethylbenzene	NA		1760	Q	53.9	U	NA		104		1160	Q	1800	Q	58.2	U	NA		57.6	U

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**C 50 @ 0 - 2 ft.**		**C 50 @ 4 ft.**		**C 100 @ 3.5 ft.**		**D 0 @ 0 - 2 ft.**		**D 0 @ 4.5 ft.**		**D 100 @ 3.5 ft.**		**D 100 @ 6 ft.**		**E 250 @ 0 - 2 ft.**		**Duplicate #2**		**E 250 @ 4 ft.**	
Sample Date:	**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**	
Sequence No:	**006**		**005**		**032**		**004**		**003**		**030**		**031**		**011**		**102**		**009**	
Duplicate of:																	**E 250 @ 0 - 2 ft.**			
Hexachlorobutadiene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Isopropylbenzene	NA		888	Q	53.9	U	NA		628	Q	858	Q	247		58.2	U	NA		57.6	U
M/p-xylene	NA		19800		108	U	NA		992	Q	1540	Q	2120	Q	116	U	NA		115	U
MEK	NA		250	U	269	U	NA		289	U	260	U	304	U	291	U	NA		288	U
Methyl Tert-butyl Ether	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Methylene Chloride	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
MIBK	NA		250	U	269	U	NA		289	U	260	U	304	U	291	U	NA		288	U
N-Butylbenzene	NA		1660	Q	53.9	U	NA		20900	Q	5400	Q	869	Q	58.2	U	NA		57.6	U
N-Propylbenzene	NA		1440	Q	53.9	U	NA		1340	Q	1720	Q	463		58.2	U	NA		57.6	U
Naphthalene	NA		267		53.9	U	NA		496	Q	542	Q	118		58.2	U	NA		57.6	U
O-chlorotoluene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
O-xylene	NA		7450		53.9	U	NA		1820	Q	3770	Q	2400	Q	58.2	U	NA		57.6	U
P-chlorotoluene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
PCTFB	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Sec-butylbenzene	NA		49.9	U	53.9	U	NA		57.9	U	487		104		58.2	U	NA		57.6	U
Styrene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
T-butyl Alcohol	NA		499	U	539	U	NA		579	U	519	U	607	U	582	U	NA		576	U
Tert-butyl Acetate	NA		250	U	269	U	NA		289	U	260	U	304	U	291	U	NA		288	U
Tert-butylbenzene	NA		49.9	U	53.9	U	NA		683	Q	686	Q	116		58.2	U	NA		57.6	U
Tetrachloroethene	NA		57700		53.9	U	NA		181000		18200		5630	Q	58.2	U	NA		57.6	U
Tetrahydrofuran	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Toluene	NA		14300		53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
trans-1,3-Dichloropropene	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Trichloroethene	NA		20000		139		NA		22700	Q	3370	Q	7370		58.2	U	NA		798	
Trichlorofluoromethane	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
Vinyl Acetate	NA		49.9	U	53.9	U	NA		57.9	U	51.9	U	60.7	U	58.2	U	NA		57.6	U
INORGANICS																				
Aluminum	36124		NA		NA		28948		NA		NA		NA		36424		34577		NA	
Antimony	1.2	U	NA		NA		1.16	U	NA		NA		NA		1.2	U	1.2	U	NA	
Arsenic	7.78		NA		NA		7.8		NA		NA		NA		6.26		6.48		NA	
Barium	91.2		NA		NA		77.1		NA		NA		NA		78.4		80.9		NA	
Beryllium	0.9		NA		NA		1.05		NA		NA		NA		1.02		1.08		NA	
Boron	47.9	U	NA		NA		233	U	NA		NA		NA		48.1		24	U	NA	
Cadmium	0.6	U	NA		NA		0.58	U	NA		NA		NA		0.6	U	0.6	U	NA	
Calcium	304		NA		NA		745		NA		NA		NA		585		600		NA	
Chromium	54.1		NA		NA		48.9		NA		NA		NA		51		50.7		NA	
Cobalt Compounds	11.7		NA		NA		15.9		NA		NA		NA		21.8		17.6		NA	
Copper	145		NA		NA		15.8		NA		NA		NA		15.1		17.2		NA	
Iron	47593		NA		NA		39043		NA		NA		NA		44313		42382		NA	
Lead	37.1		NA		NA		7.51		NA		NA		NA		10.2		10.6		NA	
Magnesium	10395		NA		NA		9214		NA		NA		NA		10529		10518		NA	
Manganese	337		NA		NA		357		NA		NA		NA		709		684		NA	
Mercury	0.12	U	NA		NA		0.116	U	NA		NA		NA		0.12	U	0.12	U	NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**C 50 @ 0 - 2 ft.**		**C 50 @ 4 ft.**		**C 100 @ 3.5 ft.**		**D 0 @ 0 - 2 ft.**		**D 0 @ 4.5 ft.**		**D 100 @ 3.5 ft.**		**D 100 @ 6 ft.**		**E 250 @ 0 - 2 ft.**		**Duplicate #2**		**E 250 @ 4 ft.**
Sample Date:	**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**
Sequence No:	**006**		**005**		**032**		**004**		**003**		**030**		**031**		**011**		**102**		**009**
Duplicate of:																	**E 250 @ 0 - 2 ft.**		
Moisture	16.51		NA		NA		14.07		NA		NA		NA		16.91		16.65		NA
Nickel	29.4		NA		NA		24.7		NA		NA		NA		29.9		28.6		NA
Potassium	1371		NA		NA		1791		NA		NA		NA		1667		1580		NA
Selenium	4.19	U	NA		NA		4.07	U	NA		NA		NA		4.21	U	4.2	U	NA
Silver	0.6	U	NA		NA		0.58	U	NA		NA		NA		0.6	U	0.6	U	NA
Sodium	88.9		NA		NA		261		NA		NA		NA		192		201		NA
Thallium	1.2	U	NA		NA		1.16	U	NA		NA		NA		1.2	U	1.2	U	NA
Vanadium	74.9		NA		NA		69.6		NA		NA		NA		80.6		78.3		NA
Zinc	84.3		NA		NA		46.5		NA		NA		NA		54		58.7		NA
MISCELLANEOUS																			
Solids	83.49		NA		NA		85.93		NA		NA		NA		83.09		83.35		NA
Acidity			NA		NA				NA		NA		NA						NA
Weight	0.5		NA		NA		0.5		NA		NA		NA		0.5		0.5		NA
SEMIVOLATILES																			
1,2,4,5-Tetrachlorobenzene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
1,2,4-Trichlorobenzene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
1,2-Dichlorobenzene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
1,3-Dichlorobenzene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
1,3-Dinitrobenzene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
1,4-Dichlorobenzene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
1,4-Naphthoquinone	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
1-Chloronaphthalene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
1-Methylnaphthalene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2,2'-Oxybis(1-chloropropane)	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2,3,4,6-Tetrachlorophenol	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2,4,5-Trichlorophenol	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2,4,6-Trichlorophenol	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2,4-Dichlorophenol	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2,4-Dimethylphenol	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2,4-Dinitrophenol	3.1	U	NA		NA		3	U	NA		NA		NA		3.1	U	3	U	NA
2,4-Dinitrotoluene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2,6-Dichlorophenol	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2,6-Dinitrotoluene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2-Acetylaminofluorene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2-Chloronaphthalene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2-Chlorophenol	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2-Methylnaphthalene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2-Methylphenol	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2-Nitroaniline	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2-Nitrophenol	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
2-Picoline (2-methylpyridine)	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
3&4-Methylphenol	1.2	U	NA		NA		1.2	U	NA		NA		NA		1.2	U	1.2	U	NA

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**C 50 @ 0 - 2 ft.**		**C 50 @ 4 ft.**	**C 100 @ 3.5 ft.**	**D 0 @ 0 - 2 ft.**		**D 0 @ 4.5 ft.**	**D 100 @ 3.5 ft.**	**D 100 @ 6 ft.**	**E 250 @ 0 - 2 ft.**		**Duplicate #2**		**E 250 @ 4 ft.**
Sample Date:	**07/07/2015**		**07/07/2015**	**07/08/2015**	**07/07/2015**		**07/07/2015**	**07/08/2015**	**07/08/2015**	**07/07/2015**		**07/07/2015**		**07/07/2015**
Sequence No:	**006**		**005**	**032**	**004**		**003**	**030**	**031**	**011**		**102**		**009**
Duplicate of:												**E 250 @ 0 - 2 ft.**		
3,3'-Dichlorobenzidine	0.31	U	NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
3-Methylcholanthrene	0.31	U	NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
3-Nitroaniline	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
4,6-Dinitro-2-methylphenol	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
4-Aminobiphenyl	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
4-Bromophenyl Phenyl Ether	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
4-Chloro-3-methylphenol	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
4-Chloroaniline	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
4-Chlorophenyl Phenyl Ether	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
4-Nitroaniline	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
4-Nitrophenol	3.1	U	NA	NA	3	U	NA	NA	NA	3.1	U	3	U	NA
5-Nitro-o-toluidine	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
7,12-Dimethylbenz(a)-anthracene	0.31	U	NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
A-terpineol	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Acenaphthene	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Acenaphthylene	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Acetophenone	1.2	U	NA	NA	1.2	U	NA	NA	NA	1.2	U	1.2	U	NA
Aniline	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Anthracene	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Aramite	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Benz(a)anthracene	0.31	U	NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
Benzo(a)pyrene	0.31	U	NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
Benzo(b)fluoranthene	0.31	U	NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
Benzo(g,h,i)perylene	0.31	U	NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
Benzo(k)fluoranthene	0.31	U	NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
Benzyl Alcohol	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Bis(2-chloroethoxy)methane	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Bis(2-chloroethyl)ether	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Bis(2-ethylhexyl)phthalate	1.2		NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
Butylbenzylphthalate	0.31	U	NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
Chlorobenzilate	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Chrysene	0.31	U	NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
Di-n-butylphthalate	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Di-n-octylphthalate	0.31	U	NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
Diallate (cis Or trans)	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Dibenz(a,h)anthracene	0.31	U	NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
Dibenzofuran	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Diethylphthalate	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Dimethoate	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Dimethylaminoazobenzene	0.31	U	NA	NA	0.3	U	NA	NA	NA	0.31	U	0.3	U	NA
Dimethylphthalate	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Dinoseb	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA
Diphenylamine	1.2	U	NA	NA	1.2	U	NA	NA	NA	1.2	U	1.2	U	NA
Disulfoton	0.62	U	NA	NA	0.59	U	NA	NA	NA	0.61	U	0.6	U	NA

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**C 50 @ 0 - 2 ft.**		**C 50 @ 4 ft.**		**C 100 @ 3.5 ft.**		**D 0 @ 0 - 2 ft.**		**D 0 @ 4.5 ft.**		**D 100 @ 3.5 ft.**		**D 100 @ 6 ft.**		**E 250 @ 0 - 2 ft.**		**Duplicate #2**		**E 250 @ 4 ft.**
Sample Date:	**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**
Sequence No:	**006**		**005**		**032**		**004**		**003**		**030**		**031**		**011**		**102**		**009**
Duplicate of:																	**E 250 @ 0 - 2 ft.**		
Ethyl Methanesulfonate	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Ethyl Parathion	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Fluoranthene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Fluorene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Hexachlorobenzene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Hexachlorobutadiene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Hexachlorocyclopentadiene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Hexachloroethane	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Hexachloropropene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Indeno-1,2,3-cd-pyrene	0.31	U	NA		NA		0.3	U	NA		NA		NA		0.31	U	0.3	U	NA
Isodrin	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Isophorone	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Isosafrole	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Methyl Methanesulfonate	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Methyl Parathion	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
N-Nitrosodibutylamine	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
N-Nitrosodiethylamine	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
N-Nitrosodimethylamine	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
N-Nitrosodipropylamine	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
N-Nitrosomethylethylamine	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
N-Nitrosomorpholine	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
N-Nitrosopiperidine	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
N-Nitrosopyrrolidine	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Naphthalene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Nitrobenzene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
O,o,o-triethylphosphorothioate	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
O-toluidine	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Pentachlorethane	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Pentachlorobenzene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Pentachloronitrobenzene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Pentachlorophenol	2.5	U	NA		NA		2.4	U	NA		NA		NA		2.4	U	2.4	U	NA
Phenanthrene	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Phenol	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Phorate	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Pronamide	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Pyrene	0.31	U	NA		NA		0.3	U	NA		NA		NA		0.31	U	0.3	U	NA
Pyridine	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Safrole	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Sulfotep	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
Thionazine	0.62	U	NA		NA		0.59	U	NA		NA		NA		0.61	U	0.6	U	NA
PESTICIDES/PCBS																			
Arochlor 1016	0.05	U	NA		NA		0.05	U	NA		NA		NA		0.05	U	0.05	U	NA
Arochlor 1221	0.05	U	NA		NA		0.05	U	NA		NA		NA		0.05	U	0.05	U	NA

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**C 50 @ 0 - 2 ft.**		**C 50 @ 4 ft.**		**C 100 @ 3.5 ft.**		**D 0 @ 0 - 2 ft.**		**D 0 @ 4.5 ft.**		**D 100 @ 3.5 ft.**		**D 100 @ 6 ft.**		**E 250 @ 0 - 2 ft.**		**Duplicate #2**		**E 250 @ 4 ft.**	
Sample Date:	**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**	
Sequence No:	**006**		**005**		**032**		**004**		**003**		**030**		**031**		**011**		**102**		**009**	
Duplicate of:																	**E 250 @ 0 - 2 ft.**			
Arochlor 1232	0.05	U	NA		NA		0.05	U	NA		NA		NA		0.05	U	0.05	U	NA	
Arochlor 1242	0.05	U	NA		NA		0.05	U	NA		NA		NA		0.05	U	0.05	U	NA	
Arochlor 1248	0.05	U	NA		NA		0.05	U	NA		NA		NA		0.05	U	0.05	U	NA	
Arochlor 1254	4.32		NA		NA		1.15		NA		NA		NA		0.05	U	0.05	U	NA	
Arochlor 1260	0.05	U	NA		NA		0.05	U	NA		NA		NA		0.05	U	0.05	U	NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Duplicate #1**		**E 250 @ 5.5 ft.**		**E 700 @ 1 - 2.5 ft.**		**E 700 @ 5.5 ft.**		**E 700 @ 14.5 ft.**		**F 100N @ 4.5 ft.**		**F 100N @ 8 ft.**		**F 100S @ 4.5 ft.**		**F 100S @ 9.5 ft.**	
Sample Date:	**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Sequence No:	**101**		**010**		**014**		**012**		**013**		**025**		**024**		**029**		**028**	
Duplicate of:	**E 250 @ 4 ft.**																**F 100S @ 9.5 ft.**	
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1,2-Tetrachloroethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,1,1-Trichloroethane	75		47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	129	
1,1,2,2-Tetrachloroethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,1,2-Trichloroethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,1-Dichloroethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,1-Dichloroethene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	167	
1,1-Dichloropropene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,2,3-Trichlorobenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,2,3-Trichloropropane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,2,4-Trichlorobenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,2,4-Trimethylbenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,2-Dibromo-3-chloropropane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,2-Dibromoethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,2-Dichlorobenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,2-Dichloroethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,2-Dichloroethene (cis)	719		47.1	U	62.4	U	57.8	U	184		52.2	U	62.4	U	59.8	U	386	
1,2-Dichloroethene (trans)	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,2-Dichloropropane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,3,5-Trimethylbenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,3-Dichlorobenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,3-Dichloropropane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
1,4-Dichlorobenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
2,2-Dichloropropane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
2-Hexanone	283	U	235	U	312	U	289	U	338	U	261	U	312	U	299	U	356	U
4-Isopropyltoluene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Acetone	283	U	235	U	312	U	289	U	338	U	261	U	312	U	299	U	356	U
Benzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Bromobenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Bromodichloromethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Bromoform	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Bromomethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Carbon Disulfide	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Carbon Tetrachloride	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Chlorobenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Chloroethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Chloroethene (vinyl Chloride)	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Chloroform	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Chloromethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
cis-1,3-Dichloropropene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Dibromochloromethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Dibromomethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Dichlorodifluoromethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Ethylbenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Duplicate #1**		**E 250 @ 5.5 ft.**		**E 700 @ 1 - 2.5 ft.**		**E 700 @ 5.5 ft.**		**E 700 @ 14.5 ft.**		**F 100N @ 4.5 ft.**		**F 100N @ 8 ft.**		**F 100S @ 4.5 ft.**		**F 100S @ 9.5 ft.**	
Sample Date:	**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Sequence No:	**101**		**010**		**014**		**012**		**013**		**025**		**024**		**029**		**028**	
Duplicate of:	**E 250 @ 4 ft.**																**F 100S @ 9.5 ft.**	
Hexachlorobutadiene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Isopropylbenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
M/p-xylene	113	U	94.2	U	125	U	116	U	135	U	104	U	125	U	120	U	142	U
MEK	283	U	235	U	312	U	289	U	338	U	261	U	312	U	299	U	356	U
Methyl Tert-butyl Ether	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Methylene Chloride	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
MIBK	283	U	235	U	312	U	289	U	338	U	261	U	312	U	299	U	356	U
N-Butylbenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
N-Propylbenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Naphthalene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
O-chlorotoluene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
O-xylene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
P-chlorotoluene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
PCTFB	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Sec-butylbenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Styrene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
T-butyl Alcohol	567	U	471	U	624	U	578	U	676	U	522	U	624	U	598	U	712	U
Tert-butyl Acetate	283	U	235	U	312	U	289	U	338	U	261	U	312	U	299	U	356	U
Tert-butylbenzene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Tetrachloroethene	56.7	U	47.1	U	62.4	U	57.8	U	178		52.2	U	142		59.8	U	1540	
Tetrahydrofuran	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Toluene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
trans-1,3-Dichloropropene	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Trichloroethene	1780		86.3		62.4	U	112		312		69.8		332		59.8	U	3520	
Trichlorofluoromethane	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
Vinyl Acetate	56.7	U	47.1	U	62.4	U	57.8	U	67.6	U	52.2	U	62.4	U	59.8	U	71.2	U
INORGANICS																		
Aluminum	NA		NA		29853		NA		NA		NA		NA		NA		NA	
Antimony	NA		NA		1.25	U	NA		NA		NA		NA		NA		NA	
Arsenic	NA		NA		5.02		NA		NA		NA		NA		NA		NA	
Barium	NA		NA		87.9		NA		NA		NA		NA		NA		NA	
Beryllium	NA		NA		0.82		NA		NA		NA		NA		NA		NA	
Boron	NA		NA		25.1		NA		NA		NA		NA		NA		NA	
Cadmium	NA		NA		0.63	U	NA		NA		NA		NA		NA		NA	
Calcium	NA		NA		775		NA		NA		NA		NA		NA		NA	
Chromium	NA		NA		35.4		NA		NA		NA		NA		NA		NA	
Cobalt Compounds	NA		NA		8.9		NA		NA		NA		NA		NA		NA	
Copper	NA		NA		12.4		NA		NA		NA		NA		NA		NA	
Iron	NA		NA		30085		NA		NA		NA		NA		NA		NA	
Lead	NA		NA		10.5		NA		NA		NA		NA		NA		NA	
Magnesium	NA		NA		6150		NA		NA		NA		NA		NA		NA	
Manganese	NA		NA		310		NA		NA		NA		NA		NA		NA	
Mercury	NA		NA		0.125	U	NA		NA		NA		NA		NA		NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Duplicate #1**		**E 250 @ 5.5 ft.**		**E 700 @ 1 - 2.5 ft.**		**E 700 @ 5.5 ft.**		**E 700 @ 14.5 ft.**		**F 100N @ 4.5 ft.**		**F 100N @ 8 ft.**		**F 100S @ 4.5 ft.**		**F 100S @ 9.5 ft.**
Sample Date:	**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**
Sequence No:	**101**		**010**		**014**		**012**		**013**		**025**		**024**		**029**		**028**
Duplicate of:	**E 250 @ 4 ft.**																**F 100S @ 9.5 ft.**
Moisture	NA		NA		20.26		NA		NA		NA		NA		NA		NA
Nickel	NA		NA		18.8		NA		NA		NA		NA		NA		NA
Potassium	NA		NA		1706		NA		NA		NA		NA		NA		NA
Selenium	NA		NA		4.39	U	NA		NA		NA		NA		NA		NA
Silver	NA		NA		0.63	U	NA		NA		NA		NA		NA		NA
Sodium	NA		NA		103		NA		NA		NA		NA		NA		NA
Thallium	NA		NA		1.25	U	NA		NA		NA		NA		NA		NA
Vanadium	NA		NA		54.5		NA		NA		NA		NA		NA		NA
Zinc	NA		NA		53		NA		NA		NA		NA		NA		NA
MISCELLANEOUS																	
Solids	NA		NA		79.74		NA		NA		NA		NA		NA		NA
Acidity	NA		NA				NA		NA		NA		NA		NA		NA
Weight	NA		NA		0.5		NA		NA		NA		NA		NA		NA
SEMIVOLATILES																	
1,2,4,5-Tetrachlorobenzene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
1,2,4-Trichlorobenzene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
1,2-Dichlorobenzene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
1,3-Dichlorobenzene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
1,3-Dinitrobenzene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
1,4-Dichlorobenzene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
1,4-Naphthoquinone	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
1-Chloronaphthalene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
1-Methylnaphthalene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2,2'-Oxybis(1-chloropropane)	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2,3,4,6-Tetrachlorophenol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2,4,5-Trichlorophenol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2,4,6-Trichlorophenol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2,4-Dichlorophenol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2,4-Dimethylphenol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2,4-Dinitrophenol	NA		NA		3.2	U	NA		NA		NA		NA		NA		NA
2,4-Dinitrotoluene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2,6-Dichlorophenol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2,6-Dinitrotoluene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2-Acetylaminofluorene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2-Chloronaphthalene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2-Chlorophenol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2-Methylnaphthalene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2-Methylphenol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2-Nitroaniline	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2-Nitrophenol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
2-Picoline (2-methylpyridine)	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA
3&4-Methylphenol	NA		NA		1.3	U	NA		NA		NA		NA		NA		NA

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Duplicate #1**		**E 250 @ 5.5 ft.**		**E 700 @ 1 - 2.5 ft.**		**E 700 @ 5.5 ft.**		**E 700 @ 14.5 ft.**		**F 100N @ 4.5 ft.**		**F 100N @ 8 ft.**		**F 100S @ 4.5 ft.**		**F 100S @ 9.5 ft.**	
Sample Date:	**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Sequence No:	**101**		**010**		**014**		**012**		**013**		**025**		**024**		**029**		**028**	
Duplicate of:	**E 250 @ 4 ft.**																**F 100S @ 9.5 ft.**	
3,3'-Dichlorobenzidine	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
3-Methylcholanthrene	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
3-Nitroaniline	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
4,6-Dinitro-2-methylphenol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
4-Aminobiphenyl	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
4-Bromophenyl Phenyl Ether	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
4-Chloro-3-methylphenol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
4-Chloroaniline	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
4-Chlorophenyl Phenyl Ether	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
4-Nitroaniline	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
4-Nitrophenol	NA		NA		3.2	U	NA		NA		NA		NA		NA		NA	
5-Nitro-o-toluidine	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
7,12-Dimethylbenz(a)-anthracene	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
A-terpineol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Acenaphthene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Acenaphthylene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Acetophenone	NA		NA		1.3	U	NA		NA		NA		NA		NA		NA	
Aniline	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Anthracene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Aramite	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Benz(a)anthracene	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
Benzo(a)pyrene	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
Benzo(b)fluoranthene	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
Benzo(g,h,i)perylene	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
Benzo(k)fluoranthene	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
Benzyl Alcohol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Bis(2-chloroethoxy)methane	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Bis(2-chloroethyl)ether	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Bis(2-ethylhexyl)phthalate	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
Butylbenzylphthalate	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
Chlorobenzilate	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Chrysene	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
Di-n-butylphthalate	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Di-n-octylphthalate	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
Diallate (cis Or trans)	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Dibenz(a,h)anthracene	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
Dibenzofuran	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Diethylphthalate	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Dimethoate	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Dimethylaminoazobenzene	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
Dimethylphthalate	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Dinoseb	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Diphenylamine	NA		NA		1.3	U	NA		NA		NA		NA		NA		NA	
Disulfoton	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Duplicate #1**		**E 250 @ 5.5 ft.**		**E 700 @ 1 - 2.5 ft.**		**E 700 @ 5.5 ft.**		**E 700 @ 14.5 ft.**		**F 100N @ 4.5 ft.**		**F 100N @ 8 ft.**		**F 100S @ 4.5 ft.**		**F 100S @ 9.5 ft.**	
Sample Date:	**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Sequence No:	**101**		**010**		**014**		**012**		**013**		**025**		**024**		**029**		**028**	
Duplicate of:	**E 250 @ 4 ft.**																**F 100S @ 9.5 ft.**	
Ethyl Methanesulfonate	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Ethyl Parathion	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Fluoranthene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Fluorene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Hexachlorobenzene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Hexachlorobutadiene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Hexachlorocyclopentadiene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Hexachloroethane	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Hexachloropropene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Indeno-1,2,3-cd-pyrene	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
Isodrin	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Isophorone	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Isosafrole	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Methyl Methanesulfonate	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Methyl Parathion	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
N-Nitrosodibutylamine	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
N-Nitrosodiethylamine	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
N-Nitrosodimethylamine	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
N-Nitrosodipropylamine	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
N-Nitrosomethylethylamine	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
N-Nitrosomorpholine	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
N-Nitrosopiperidine	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
N-Nitrosopyrrolidine	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Naphthalene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Nitrobenzene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
O,o,o-triethylphosphorothioate	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
O-toluidine	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Pentachlorethane	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Pentachlorobenzene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Pentachloronitrobenzene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Pentachlorophenol	NA		NA		2.6	U	NA		NA		NA		NA		NA		NA	
Phenanthrene	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Phenol	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Phorate	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Pronamide	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Pyrene	NA		NA		0.32	U	NA		NA		NA		NA		NA		NA	
Pyridine	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Safrole	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Sulfotep	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
Thionazine	NA		NA		0.65	U	NA		NA		NA		NA		NA		NA	
PESTICIDES/PCBS																		
Arochlor 1016	NA		NA		0.05	U	NA		NA		NA		NA		NA		NA	
Arochlor 1221	NA		NA		0.05	U	NA		NA		NA		NA		NA		NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Duplicate #1**		**E 250 @ 5.5 ft.**		**E 700 @ 1 - 2.5 ft.**		**E 700 @ 5.5 ft.**		**E 700 @ 14.5 ft.**		**F 100N @ 4.5 ft.**		**F 100N @ 8 ft.**		**F 100S @ 4.5 ft.**		**F 100S @ 9.5 ft.**	
Sample Date:	**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Sequence No:	**101**		**010**		**014**		**012**		**013**		**025**		**024**		**029**		**028**	
Duplicate of:	**E 250 @ 4 ft.**																**F 100S @ 9.5 ft.**	
Arochlor 1232	NA		NA		0.05	U	NA		NA		NA		NA		NA		NA	
Arochlor 1242	NA		NA		0.05	U	NA		NA		NA		NA		NA		NA	
Arochlor 1248	NA		NA		0.05	U	NA		NA		NA		NA		NA		NA	
Arochlor 1254	NA		NA		0.05	U	NA		NA		NA		NA		NA		NA	
Arochlor 1260	NA		NA		0.05	U	NA		NA		NA		NA		NA		NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Duplicate #3**		**F 100W @ 2.5 ft.**		**F 100W @ 4 ft.**		**G 200 @ 1 - 2.5 ft.**		**G 200 @ 5.5 ft.**		**MW_3 600 @ 2.5 ft.**		**MW_3 600 @ 5 ft.**		**MW_3 600 @ 7 ft.**	
Sample Date:	**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Sequence No:	**105**		**027**		**026**		**008**		**007**		**023**		**021**		**022**	
Duplicate of:																
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1,2-Tetrachloroethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,1,1-Trichloroethane	100		55.9	U	57.1	U	53.6	U	87		192		5220	Q	198	
1,1,2,2-Tetrachloroethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,1,2-Trichloroethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,1-Dichloroethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,1-Dichloroethene	97.6		55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	154		54.5	U
1,1-Dichloropropene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,2,3-Trichlorobenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,2,3-Trichloropropane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,2,4-Trichlorobenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,2,4-Trimethylbenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	2550	Q	54.5	U
1,2-Dibromo-3-chloropropane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,2-Dibromoethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,2-Dichlorobenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,2-Dichloroethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,2-Dichloroethene (cis)	272		55.9	U	57.1	U	53.6	U	205		336		1740	Q	711	
1,2-Dichloroethene (trans)	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,2-Dichloropropane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,3,5-Trimethylbenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	841	Q	54.5	U
1,3-Dichlorobenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,3-Dichloropropane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
1,4-Dichlorobenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
2,2-Dichloropropane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
2-Hexanone	412	U	280	U	286	U	268	U	254	U	317	U	285	U	272	U
4-Isopropyltoluene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Acetone	412	U	280	U	286	U	268	U	254	U	317	U	285	U	272	U
Benzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Bromobenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Bromodichloromethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Bromoform	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Bromomethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Carbon Disulfide	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Carbon Tetrachloride	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Chlorobenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Chloroethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Chloroethene (vinyl Chloride)	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Chloroform	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Chloromethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
cis-1,3-Dichloropropene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Dibromochloromethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Dibromomethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Dichlorodifluoromethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Ethylbenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	3420	Q	54.5	U

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Duplicate #3**		**F 100W @ 2.5 ft.**		**F 100W @ 4 ft.**		**G 200 @ 1 - 2.5 ft.**		**G 200 @ 5.5 ft.**		**MW_3 600 @ 2.5 ft.**		**MW_3 600 @ 5 ft.**		**MW_3 600 @ 7 ft.**	
Sample Date:	**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Sequence No:	**105**		**027**		**026**		**008**		**007**		**023**		**021**		**022**	
Duplicate of:																
Hexachlorobutadiene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Isopropylbenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	324		54.5	U
M/p-xylene	165	U	112	U	114	U	107	U	102	U	127	U	4300	Q	109	U
MEK	412	U	280	U	286	U	268	U	254	U	317	U	285	U	272	U
Methyl Tert-butyl Ether	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Methylene Chloride	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
MIBK	412	U	280	U	286	U	268	U	254	U	317	U	285	U	272	U
N-Butylbenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	1100	Q	81.8	
N-Propylbenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	493		54.5	U
Naphthalene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	166		54.5	U
O-chlorotoluene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
O-xylene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	4960	Q	54.5	U
P-chlorotoluene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
PCTFB	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Sec-butylbenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	224		100	
Styrene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
T-butyl Alcohol	825	U	559	U	571	U	536	U	508	U	635	U	570	U	545	U
Tert-butyl Acetate	412	U	280	U	286	U	268	U	254	U	317	U	285	U	272	U
Tert-butylbenzene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Tetrachloroethene	935		55.9	U	83.4		53.6	U	346		314		45000		108	
Tetrahydrofuran	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Toluene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
trans-1,3-Dichloropropene	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Trichloroethene	2320		55.9	U	259		53.6	U	498		807		15400		155	
Trichlorofluoromethane	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
Vinyl Acetate	82.5	U	55.9	U	57.1	U	53.6	U	50.8	U	63.5	U	57	U	54.5	U
INORGANICS																
Aluminum	NA		NA		NA		45368		NA		NA		NA		NA	
Antimony	NA		NA		NA		1.17	U	NA		NA		NA		NA	
Arsenic	NA		NA		NA		7.87		NA		NA		NA		NA	
Barium	NA		NA		NA		159		NA		NA		NA		NA	
Beryllium	NA		NA		NA		1.29		NA		NA		NA		NA	
Boron	NA		NA		NA		235	U	NA		NA		NA		NA	
Cadmium	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Calcium	NA		NA		NA		1291		NA		NA		NA		NA	
Chromium	NA		NA		NA		87.1		NA		NA		NA		NA	
Cobalt Compounds	NA		NA		NA		19.7		NA		NA		NA		NA	
Copper	NA		NA		NA		9.16		NA		NA		NA		NA	
Iron	NA		NA		NA		52871		NA		NA		NA		NA	
Lead	NA		NA		NA		7.34		NA		NA		NA		NA	
Magnesium	NA		NA		NA		13725		NA		NA		NA		NA	
Manganese	NA		NA		NA		787		NA		NA		NA		NA	
Mercury	NA		NA		NA		0.117	U	NA		NA		NA		NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Duplicate #3**		**F 100W @ 2.5 ft.**		**F 100W @ 4 ft.**		**G 200 @ 1 - 2.5 ft.**		**G 200 @ 5.5 ft.**		**MW_3 600 @ 2.5 ft.**		**MW_3 600 @ 5 ft.**		**MW_3 600 @ 7 ft.**
Sample Date:	**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**
Sequence No:	**105**		**027**		**026**		**008**		**007**		**023**		**021**		**022**
Duplicate of:															
Moisture	NA		NA		NA		35		NA		NA		NA		NA
Nickel	NA		NA		NA		1250		NA		NA		NA		NA
Potassium	NA		NA		NA		4.11	U	NA		NA		NA		NA
Selenium	NA		NA		NA		0.59	U	NA		NA		NA		NA
Silver	NA		NA		NA		816		NA		NA		NA		NA
Sodium	NA		NA		NA		85.17		NA		NA		NA		NA
Thallium	NA		NA		NA		1.17	U	NA		NA		NA		NA
Vanadium	NA		NA		NA		132		NA		NA		NA		NA
Zinc	NA		NA		NA		77.4		NA		NA		NA		NA
MISCELLANEOUS															
Solids	NA		NA		NA		85.17		NA		NA		NA		NA
Acidity	NA		NA		NA				NA		NA		NA		NA
Weight	NA		NA		NA		0.5		NA		NA		NA		NA
SEMIVOLATILES															
1,2,4,5-Tetrachlorobenzene	NA		NA		NA		0.59	U	NA		NA		NA		NA
1,2,4-Trichlorobenzene	NA		NA		NA		0.59	U	NA		NA		NA		NA
1,2-Dichlorobenzene	NA		NA		NA		0.59	U	NA		NA		NA		NA
1,3-Dichlorobenzene	NA		NA		NA		0.59	U	NA		NA		NA		NA
1,3-Dinitrobenzene	NA		NA		NA		0.59	U	NA		NA		NA		NA
1,4-Dichlorobenzene	NA		NA		NA		0.59	U	NA		NA		NA		NA
1,4-Naphthoquinone	NA		NA		NA		0.59	U	NA		NA		NA		NA
1-Chloronaphthalene	NA		NA		NA		0.59	U	NA		NA		NA		NA
1-Methylnaphthalene	NA		NA		NA		0.59	U	NA		NA		NA		NA
2,2'-Oxybis(1-chloropropane)	NA		NA		NA		0.59	U	NA		NA		NA		NA
2,3,4,6-Tetrachlorophenol	NA		NA		NA		0.59	U	NA		NA		NA		NA
2,4,5-Trichlorophenol	NA		NA		NA		0.59	U	NA		NA		NA		NA
2,4,6-Trichlorophenol	NA		NA		NA		0.59	U	NA		NA		NA		NA
2,4-Dichlorophenol	NA		NA		NA		0.59	U	NA		NA		NA		NA
2,4-Dimethylphenol	NA		NA		NA		0.59	U	NA		NA		NA		NA
2,4-Dinitrophenol	NA		NA		NA		2.9	U	NA		NA		NA		NA
2,4-Dinitrotoluene	NA		NA		NA		0.59	U	NA		NA		NA		NA
2,6-Dichlorophenol	NA		NA		NA		0.59	U	NA		NA		NA		NA
2,6-Dinitrotoluene	NA		NA		NA		0.59	U	NA		NA		NA		NA
2-Acetylaminofluorene	NA		NA		NA		0.59	U	NA		NA		NA		NA
2-Chloronaphthalene	NA		NA		NA		0.59	U	NA		NA		NA		NA
2-Chlorophenol	NA		NA		NA		0.59	U	NA		NA		NA		NA
2-Methylnaphthalene	NA		NA		NA		0.59	U	NA		NA		NA		NA
2-Methylphenol	NA		NA		NA		0.59	U	NA		NA		NA		NA
2-Nitroaniline	NA		NA		NA		0.59	U	NA		NA		NA		NA
2-Nitrophenol	NA		NA		NA		0.59	U	NA		NA		NA		NA
2-Picoline (2-methylpyridine)	NA		NA		NA		0.59	U	NA		NA		NA		NA
3&4-Methylphenol	NA		NA		NA		1.2	U	NA		NA		NA		NA

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Duplicate #3**		**F 100W @ 2.5 ft.**		**F 100W @ 4 ft.**		**G 200 @ 1 - 2.5 ft.**		**G 200 @ 5.5 ft.**		**MW_3 600 @ 2.5 ft.**		**MW_3 600 @ 5 ft.**		**MW_3 600 @ 7 ft.**
Sample Date:	**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**
Sequence No:	**105**		**027**		**026**		**008**		**007**		**023**		**021**		**022**
Duplicate of:															
3,3'-Dichlorobenzidine	NA		NA		NA		0.29	U	NA		NA		NA		NA
3-Methylcholanthrene	NA		NA		NA		0.29	U	NA		NA		NA		NA
3-Nitroaniline	NA		NA		NA		0.59	U	NA		NA		NA		NA
4,6-Dinitro-2-methylphenol	NA		NA		NA		0.59	U	NA		NA		NA		NA
4-Aminobiphenyl	NA		NA		NA		0.59	U	NA		NA		NA		NA
4-Bromophenyl Phenyl Ether	NA		NA		NA		0.59	U	NA		NA		NA		NA
4-Chloro-3-methylphenol	NA		NA		NA		0.59	U	NA		NA		NA		NA
4-Chloroaniline	NA		NA		NA		0.59	U	NA		NA		NA		NA
4-Chlorophenyl Phenyl Ether	NA		NA		NA		0.59	U	NA		NA		NA		NA
4-Nitroaniline	NA		NA		NA		0.59	U	NA		NA		NA		NA
4-Nitrophenol	NA		NA		NA		2.9	U	NA		NA		NA		NA
5-Nitro-o-toluidine	NA		NA		NA		0.59	U	NA		NA		NA		NA
7,12-Dimethylbenz(a)-anthracene	NA		NA		NA		0.29	U	NA		NA		NA		NA
A-terpineol	NA		NA		NA		0.59	U	NA		NA		NA		NA
Acenaphthene	NA		NA		NA		0.59	U	NA		NA		NA		NA
Acenaphthylene	NA		NA		NA		0.59	U	NA		NA		NA		NA
Acetophenone	NA		NA		NA		1.2	U	NA		NA		NA		NA
Aniline	NA		NA		NA		0.59	U	NA		NA		NA		NA
Anthracene	NA		NA		NA		0.59	U	NA		NA		NA		NA
Aramite	NA		NA		NA		0.59	U	NA		NA		NA		NA
Benz(a)anthracene	NA		NA		NA		0.29	U	NA		NA		NA		NA
Benzo(a)pyrene	NA		NA		NA		0.29	U	NA		NA		NA		NA
Benzo(b)fluoranthene	NA		NA		NA		0.29	U	NA		NA		NA		NA
Benzo(g,h,i)perylene	NA		NA		NA		0.29	U	NA		NA		NA		NA
Benzo(k)fluoranthene	NA		NA		NA		0.29	U	NA		NA		NA		NA
Benzyl Alcohol	NA		NA		NA		0.59	U	NA		NA		NA		NA
Bis(2-chloroethoxy)methane	NA		NA		NA		0.59	U	NA		NA		NA		NA
Bis(2-chloroethyl)ether	NA		NA		NA		0.59	U	NA		NA		NA		NA
Bis(2-ethylhexyl)phthalate	NA		NA		NA		0.29	U	NA		NA		NA		NA
Butylbenzylphthalate	NA		NA		NA		0.29	U	NA		NA		NA		NA
Chlorobenzilate	NA		NA		NA		0.59	U	NA		NA		NA		NA
Chrysene	NA		NA		NA		0.29	U	NA		NA		NA		NA
Di-n-butylphthalate	NA		NA		NA		0.59	U	NA		NA		NA		NA
Di-n-octylphthalate	NA		NA		NA		0.29	U	NA		NA		NA		NA
Diallate (cis Or trans)	NA		NA		NA		0.59	U	NA		NA		NA		NA
Dibenz(a,h)anthracene	NA		NA		NA		0.29	U	NA		NA		NA		NA
Dibenzofuran	NA		NA		NA		0.59	U	NA		NA		NA		NA
Diethylphthalate	NA		NA		NA		0.59	U	NA		NA		NA		NA
Dimethoate	NA		NA		NA		0.59	U	NA		NA		NA		NA
Dimethylaminoazobenzene	NA		NA		NA		0.29	U	NA		NA		NA		NA
Dimethylphthalate	NA		NA		NA		0.59	U	NA		NA		NA		NA
Dinoseb	NA		NA		NA		0.59	U	NA		NA		NA		NA
Diphenylamine	NA		NA		NA		1.2	U	NA		NA		NA		NA
Disulfoton	NA		NA		NA		0.59	U	NA		NA		NA		NA

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Duplicate #3**		**F 100W @ 2.5 ft.**		**F 100W @ 4 ft.**		**G 200 @ 1 - 2.5 ft.**		**G 200 @ 5.5 ft.**		**MW_3 600 @ 2.5 ft.**		**MW_3 600 @ 5 ft.**		**MW_3 600 @ 7 ft.**	
Sample Date:	**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Sequence No:	**105**		**027**		**026**		**008**		**007**		**023**		**021**		**022**	
Duplicate of:																
Ethyl Methanesulfonate	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Ethyl Parathion	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Fluoranthene	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Fluorene	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Hexachlorobenzene	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Hexachlorobutadiene	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Hexachlorocyclopentadiene	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Hexachloroethane	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Hexachloropropene	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Indeno-1,2,3-cd-pyrene	NA		NA		NA		0.29	U	NA		NA		NA		NA	
Isodrin	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Isophorone	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Isosafrole	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Methyl Methanesulfonate	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Methyl Parathion	NA		NA		NA		0.59	U	NA		NA		NA		NA	
N-Nitrosodibutylamine	NA		NA		NA		0.59	U	NA		NA		NA		NA	
N-Nitrosodiethylamine	NA		NA		NA		0.59	U	NA		NA		NA		NA	
N-Nitrosodimethylamine	NA		NA		NA		0.59	U	NA		NA		NA		NA	
N-Nitrosodipropylamine	NA		NA		NA		0.59	U	NA		NA		NA		NA	
N-Nitrosomethylethylamine	NA		NA		NA		0.59	U	NA		NA		NA		NA	
N-Nitrosomorpholine	NA		NA		NA		0.59	U	NA		NA		NA		NA	
N-Nitrosopiperidine	NA		NA		NA		0.59	U	NA		NA		NA		NA	
N-Nitrosopyrrolidine	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Naphthalene	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Nitrobenzene	NA		NA		NA		0.59	U	NA		NA		NA		NA	
O,o,o-triethylphosphorothioate	NA		NA		NA		0.59	U	NA		NA		NA		NA	
O-toluidine	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Pentachlorethane	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Pentachlorobenzene	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Pentachloronitrobenzene	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Pentachlorophenol	NA		NA		NA		2.4	U	NA		NA		NA		NA	
Phenanthrene	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Phenol	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Phorate	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Pronamide	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Pyrene	NA		NA		NA		0.29	U	NA		NA		NA		NA	
Pyridine	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Safrole	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Sulfotep	NA		NA		NA		0.59	U	NA		NA		NA		NA	
Thionazine	NA		NA		NA		0.59	U	NA		NA		NA		NA	
PESTICIDES/PCBS																
Arochlor 1016	NA		NA		NA		0.05	U	NA		NA		NA		NA	
Arochlor 1221	NA		NA		NA		0.05	U	NA		NA		NA		NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Duplicate #3**		**F 100W @ 2.5 ft.**		**F 100W @ 4 ft.**		**G 200 @ 1 - 2.5 ft.**		**G 200 @ 5.5 ft.**		**MW_3 600 @ 2.5 ft.**		**MW_3 600 @ 5 ft.**		**MW_3 600 @ 7 ft.**	
Sample Date:	**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Sequence No:	**105**		**027**		**026**		**008**		**007**		**023**		**021**		**022**	
Duplicate of:																
Arochlor 1232	NA		NA		NA		0.05	U	NA		NA		NA		NA	
Arochlor 1242	NA		NA		NA		0.05	U	NA		NA		NA		NA	
Arochlor 1248	NA		NA		NA		0.05	U	NA		NA		NA		NA	
Arochlor 1254	NA		NA		NA		0.05	U	NA		NA		NA		NA	
Arochlor 1260	NA		NA		NA		0.05	U	NA		NA		NA		NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**X 700 @ 1 - 2.5 ft.**		**X 700 @ 5 ft.**	
Sample Date:	**07/08/2015**		**07/08/2015**	
Sequence No:	**020**		**019**	
Duplicate of:				
VOLATILES	**ug/kg**		**ug/kg**	
1,1,1,2-Tetrachloroethane	54.8	U	50.6	U
1,1,1-Trichloroethane	66.1		262	
1,1,2,2-Tetrachloroethane	54.8	U	50.6	U
1,1,2-Trichloroethane	54.8	U	50.6	U
1,1-Dichloroethane	54.8	U	50.6	U
1,1-Dichloroethene	54.8	U	50.6	U
1,1-Dichloropropene	54.8	U	50.6	U
1,2,3-Trichlorobenzene	54.8	U	50.6	U
1,2,3-Trichloropropane	54.8	U	50.6	U
1,2,4-Trichlorobenzene	54.8	U	50.6	U
1,2,4-Trimethylbenzene	54.8	U	50.6	U
1,2-Dibromo-3-chloropropane	54.8	U	50.6	U
1,2-Dibromoethane	54.8	U	50.6	U
1,2-Dichlorobenzene	54.8	U	50.6	U
1,2-Dichloroethane	54.8	U	50.6	U
1,2-Dichloroethene (cis)	256		1400	
1,2-Dichloroethene (trans)	54.8	U	50.6	U
1,2-Dichloropropane	54.8	U	50.6	U
1,3,5-Trimethylbenzene	54.8	U	50.6	U
1,3-Dichlorobenzene	54.8	U	50.6	U
1,3-Dichloropropane	54.8	U	50.6	U
1,4-Dichlorobenzene	54.8	U	50.6	U
2,2-Dichloropropane	54.8	U	50.6	U
2-Hexanone	274	U	253	U
4-Isopropyltoluene	54.8	U	50.6	U
Acetone	274	U	253	U
Benzene	54.8	U	50.6	U
Bromobenzene	54.8	U	50.6	U
Bromodichloromethane	54.8	U	50.6	U
Bromoform	54.8	U	50.6	U
Bromomethane	54.8	U	50.6	U
Carbon Disulfide	54.8	U	50.6	U
Carbon Tetrachloride	54.8	U	50.6	U
Chlorobenzene	54.8	U	50.6	U
Chloroethane	54.8	U	50.6	U
Chloroethene (vinyl Chloride)	54.8	U	50.6	U
Chloroform	54.8	U	50.6	U
Chloromethane	54.8	U	50.6	U
cis-1,3-Dichloropropene	54.8	U	50.6	U
Dibromochloromethane	54.8	U	50.6	U
Dibromomethane	54.8	U	50.6	U
Dichlorodifluoromethane	54.8	U	50.6	U
Ethylbenzene	54.8	U	50.6	U

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**X 700 @ 1 - 2.5 ft.**		**X 700 @ 5 ft.**	
Sample Date:	**07/08/2015**		**07/08/2015**	
Sequence No:	**020**		**019**	
Duplicate of:				
Hexachlorobutadiene	54.8	U	50.6	U
Isopropylbenzene	54.8	U	50.6	U
M/p-xylene	110	U	101	U
MEK	274	U	253	U
Methyl Tert-butyl Ether	54.8	U	50.6	U
Methylene Chloride	54.8	U	50.6	U
MIBK	274	U	253	U
N-Butylbenzene	54.8	U	50.6	U
N-Propylbenzene	54.8	U	50.6	U
Naphthalene	54.8	U	50.6	U
O-chlorotoluene	54.8	U	50.6	U
O-xylene	54.8	U	50.6	U
P-chlorotoluene	54.8	U	50.6	U
PCTFB	54.8	U	50.6	U
Sec-butylbenzene	54.8	U	50.6	U
Styrene	54.8	U	50.6	U
T-butyl Alcohol	548	U	506	U
Tert-butyl Acetate	274	U	253	U
Tert-butylbenzene	54.8	U	50.6	U
Tetrachloroethene	109		286	
Tetrahydrofuran	54.8	U	50.6	U
Toluene	54.8	U	50.6	U
trans-1,3-Dichloropropene	54.8	U	50.6	U
Trichloroethene	147		744	
Trichlorofluoromethane	54.8	U	50.6	U
Vinyl Acetate	54.8	U	50.6	U
INORGANICS				
Aluminum	146513		NA	
Antimony	1.2	U	NA	
Arsenic	5.24		NA	
Barium	94.1		NA	
Beryllium	0.84		NA	
Boron	24.1	U	NA	
Cadmium	0.6	U	NA	
Calcium	1347		NA	
Chromium	44.3		NA	
Cobalt Compounds	18		NA	
Copper	10.8		NA	
Iron	190293		NA	
Lead	9.58		NA	
Magnesium	8337		NA	
Manganese	665		NA	
Mercury	0.12	U	NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**X 700 @ 1 - 2.5 ft.**		**X 700 @ 5 ft.**	
Sample Date:	**07/08/2015**		**07/08/2015**	
Sequence No:	**020**		**019**	
Duplicate of:				
Moisture	23.4		NA	
Nickel	1383		NA	
Potassium	4.22	U	NA	
Selenium	0.6	U	NA	
Silver	154		NA	
Sodium	83.03		NA	
Thallium	1.2	U	NA	
Vanadium	69.2		NA	
Zinc	46.7		NA	
MISCELLANEOUS				
Solids	83.03		NA	
Acidity			NA	
Weight	0.5		NA	
SEMIVOLATILES				
1,2,4,5-Tetrachlorobenzene	0.62	U	NA	
1,2,4-Trichlorobenzene	0.62	U	NA	
1,2-Dichlorobenzene	0.62	U	NA	
1,3-Dichlorobenzene	0.62	U	NA	
1,3-Dinitrobenzene	0.62	U	NA	
1,4-Dichlorobenzene	0.62	U	NA	
1,4-Naphthoquinone	0.62	U	NA	
1-Chloronaphthalene	0.62	U	NA	
1-Methylnaphthalene	0.62	U	NA	
2,2'-Oxybis(1-chloropropane)	0.62	U	NA	
2,3,4,6-Tetrachlorophenol	0.62	U	NA	
2,4,5-Trichlorophenol	0.62	U	NA	
2,4,6-Trichlorophenol	0.62	U	NA	
2,4-Dichlorophenol	0.62	U	NA	
2,4-Dimethylphenol	0.62	U	NA	
2,4-Dinitrophenol	3.1	U	NA	
2,4-Dinitrotoluene	0.62	U	NA	
2,6-Dichlorophenol	0.62	U	NA	
2,6-Dinitrotoluene	0.62	U	NA	
2-Acetylaminofluorene	0.62	U	NA	
2-Chloronaphthalene	0.62	U	NA	
2-Chlorophenol	0.62	U	NA	
2-Methylnaphthalene	0.62	U	NA	
2-Methylphenol	0.62	U	NA	
2-Nitroaniline	0.62	U	NA	
2-Nitrophenol	0.62	U	NA	
2-Picoline (2-methylpyridine)	0.62	U	NA	
3&4-Methylphenol	1.2	U	NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**X 700 @ 1 - 2.5 ft.**		**X 700 @ 5 ft.**	
Sample Date:	**07/08/2015**		**07/08/2015**	
Sequence No:	**020**		**019**	
Duplicate of:				
3,3'-Dichlorobenzidine	0.31	U	NA	
3-Methylcholanthrene	0.31	U	NA	
3-Nitroaniline	0.62	U	NA	
4,6-Dinitro-2-methylphenol	0.62	U	NA	
4-Aminobiphenyl	0.62	U	NA	
4-Bromophenyl Phenyl Ether	0.62	U	NA	
4-Chloro-3-methylphenol	0.62	U	NA	
4-Chloroaniline	0.62	U	NA	
4-Chlorophenyl Phenyl Ether	0.62	U	NA	
4-Nitroaniline	0.62	U	NA	
4-Nitrophenol	3.1	U	NA	
5-Nitro-o-toluidine	0.62	U	NA	
7,12-Dimethylbenz(a)-anthracene	0.31	U	NA	
A-terpineol	0.62	U	NA	
Acenaphthene	0.62	U	NA	
Acenaphthylene	0.62	U	NA	
Acetophenone	1.2	U	NA	
Aniline	0.62	U	NA	
Anthracene	0.62	U	NA	
Aramite	0.62	U	NA	
Benz(a)anthracene	0.31	U	NA	
Benzo(a)pyrene	0.31	U	NA	
Benzo(b)fluoranthene	0.31	U	NA	
Benzo(g,h,i)perylene	0.31	U	NA	
Benzo(k)fluoranthene	0.31	U	NA	
Benzyl Alcohol	0.62	U	NA	
Bis(2-chloroethoxy)methane	0.62	U	NA	
Bis(2-chloroethyl)ether	0.62	U	NA	
Bis(2-ethylhexyl)phthalate	0.31	U	NA	
Butylbenzylphthalate	0.31	U	NA	
Chlorobenzilate	0.62	U	NA	
Chrysene	0.31	U	NA	
Di-n-butylphthalate	0.62	U	NA	
Di-n-octylphthalate	0.31	U	NA	
Diallate (cis Or trans)	0.62	U	NA	
Dibenz(a,h)anthracene	0.31	U	NA	
Dibenzofuran	0.62	U	NA	
Diethylphthalate	0.62	U	NA	
Dimethoate	0.62	U	NA	
Dimethylaminoazobenzene	0.31	U	NA	
Dimethylphthalate	0.62	U	NA	
Dinoseb	0.62	U	NA	
Diphenylamine	1.2	U	NA	
Disulfoton	0.62	U	NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**X 700 @ 1 - 2.5 ft.**		**X 700 @ 5 ft.**	
Sample Date:	**07/08/2015**		**07/08/2015**	
Sequence No:	**020**		**019**	
Duplicate of:				
Ethyl Methanesulfonate	0.62	U	NA	
Ethyl Parathion	0.62	U	NA	
Fluoranthene	0.62	U	NA	
Fluorene	0.62	U	NA	
Hexachlorobenzene	0.62	U	NA	
Hexachlorobutadiene	0.62	U	NA	
Hexachlorocyclopentadiene	0.62	U	NA	
Hexachloroethane	0.62	U	NA	
Hexachloropropene	0.62	U	NA	
Indeno-1,2,3-cd-pyrene	0.31	U	NA	
Isodrin	0.62	U	NA	
Isophorone	0.62	U	NA	
Isosafrole	0.62	U	NA	
Methyl Methanesulfonate	0.62	U	NA	
Methyl Parathion	0.62	U	NA	
N-Nitrosodibutylamine	0.62	U	NA	
N-Nitrosodiethylamine	0.62	U	NA	
N-Nitrosodimethylamine	0.62	U	NA	
N-Nitrosodipropylamine	0.62	U	NA	
N-Nitrosomethylethylamine	0.62	U	NA	
N-Nitrosomorpholine	0.62	U	NA	
N-Nitrosopiperidine	0.62	U	NA	
N-Nitrosopyrrolidine	0.62	U	NA	
Naphthalene	0.62	U	NA	
Nitrobenzene	0.62	U	NA	
O,o,o-triethylphosphorothioate	0.62	U	NA	
O-toluidine	0.62	U	NA	
Pentachlorethane	0.62	U	NA	
Pentachlorobenzene	0.62	U	NA	
Pentachloronitrobenzene	0.62	U	NA	
Pentachlorophenol	2.5	U	NA	
Phenanthrene	0.62	U	NA	
Phenol	0.62	U	NA	
Phorate	0.62	U	NA	
Pronamide	0.62	U	NA	
Pyrene	0.31	U	NA	
Pyridine	0.62	U	NA	
Safrole	0.62	U	NA	
Sulfotep	0.62	U	NA	
Thionazine	0.62	U	NA	
PESTICIDES/PCBS				
Arochlor 1016	0.05	U	NA	
Arochlor 1221	0.05	U	NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**X 700 @ 1 - 2.5 ft.**		**X 700 @ 5 ft.**	
Sample Date:	**07/08/2015**		**07/08/2015**	
Sequence No:	**020**		**019**	
Duplicate of:				
Arochlor 1232	0.05	U	NA	
Arochlor 1242	0.05	U	NA	
Arochlor 1248	0.05	U	NA	
Arochlor 1254	0.05	U	NA	
Arochlor 1260	0.05	U	NA	

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Rinse Blank #1**		**Rinse Blank #2**		**Trip Blank #1**		**Trip Blank #2**		**Trip Blank #3**	
Sample Date:	**07/07/2015**		**07/08/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**	
Seq No:	**103**		**106**		**100**		**104**		**107**	
VOLATILES	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
1,1,1,2-Tetrachloroethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trimethylbenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromo-3-chloropropane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromoethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethene (cis)	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethene (trans)	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3,5-Trimethylbenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2,2-Dichloropropane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Hexanone	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
4-Isopropyltoluene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Acetone	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Benzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromobenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon Disulfide	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon Tetrachloride	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethene (vinyl Chloride)	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloromethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
cis-1,3-Dichloropropene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromomethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**Rinse Blank #1**		**Rinse Blank #2**		**Trip Blank #1**		**Trip Blank #2**		**Trip Blank #3**	
Sample Date:	**07/07/2015**		**07/08/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**	
Seq No:	**103**		**106**		**100**		**104**		**107**	
Isopropylbenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
M/p-xylene	1	U	1	U	1	U	1	U	1	U
MEK	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Methyl Tert-butyl Ether	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methylene Chloride	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
MIBK	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
N-Butylbenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N-Propylbenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	0.5	U	0.95	B	0.5	U	0.5	U	0.5	U
O-chlorotoluene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
O-xylene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
P-chlorotoluene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
PCTFB	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Sec-butylbenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
T-butyl Alcohol	5	U	5	U	5	U	5	U	5	U
Tert-butyl Acetate	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
Tert-butylbenzene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrahydrofuran	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
trans-1,3-Dichloropropene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl Acetate	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

TABLE 3-1
DATA SUMMARY OF ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Data Qualifiers:
Q -- Indicated the average of multiple results from multiple analyses.
U -- Value is a non-detected result as reported by the laboratory.
NA -- No result is available/applicable for this parameter in this sample.

Database source file: H:\NOCKAMIXON\NOCKSOIL EDD 7_15.DBF data retrieved on: 08/31/15

TABLE 3-2
DATA SUMMARY OF POSITIVE ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	PADEP	PADEP	A 50 @ 1.5 - 2.5 ft.		A 50 @ 4 ft		B 100 @ 5 ft.		B 100 @ 7 ft.		B_Rd 400 @ 1 - 2.5 ft.		B_Rd 400 @ 4.5 ft.		B_Rd. 400N @ 2 ft.		B_Rd 400N @ 5.5 ft.		C 50 @ 0 - 2 ft.		C 50 @ 4 ft.	
Sample Date:	**Soil to GW**	**Soil to GW**	**07/07/2015**		**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/07/2015**		**07/07/2015**	
Duplicate of:	**Criteria**	**Criteria**																				
	100X MSC	**Generic**																				
VOLATILES					**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**				**ug/kg**	
1,1,1-Trichloroethane	20000	7200	NA		3280	Q	401		**62500**		53	U	56.3	U	52.5	U	65	U	NA		554	Q
1,1-Dichloroethane	3100	750	NA		50.4	U	60.3	U	89.3		53	U	56.3	U	52.5	U	65	U	NA		49.9	U
1,1-Dichloroethene	700	190	NA		50.4	U	60.3	U	**1360**	Q	53	U	56.3	U	52.5	U	65	U	NA		49.9	U
1,2,4-Trimethylbenzene	1500	8400	NA		2800	Q	83.4		**17000**	Q	53	U	56.3	U	52.5	U	65	U	NA		6240	
1,2-Dichlorobenzene	60000	59000	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U	NA		49.9	U
1,2-Dichloroethene (cis)	7000	1600	NA		1260	Q	**1830**		**13400**	Q	71.2		66.1		52.5	U	66.2		NA		806	Q
1,2-Dichloroethene (trans)	10000	2300	NA		50.4	U	60.3	U	177		53	U	56.3	U	52.5	U	65	U	NA		49.9	U
1,3,5-Trimethylbenzene	1300	2300	NA		465		60.3	U	**11200**	Q	53	U	56.3	U	52.5	U	65	U	NA		**3790**	Q
4-Isopropyltoluene	NA	NA	NA		50.4	U	60.3	U	334		53	U	56.3	U	52.5	U	65	U	NA		49.9	U
Ethylbenzene	70000	46000	NA		214		60.3	U	10400	Q	53	U	56.3	U	52.5	U	65	U	NA		1760	Q
Isopropylbenzene	NA	NA	NA		840	Q	60.3	U	7880	Q	53	U	56.3	U	52.5	U	65	U	NA		888	Q
M/p-xylene	1000000	990000	NA		1020	Q	120	U	79200	Q	106	U	112	U	105	U	130	U	NA		19800	
N-Butylbenzene	150000	950000	NA		260		60.3	U	1140	Q	53	U	56.3	U	52.5	U	65	U	NA		1660	Q
N-Propylbenzene	150000	290000	NA		1040	Q	60.3	U	8100	Q	53	U	56.3	U	52.5	U	65	U	NA		1440	Q
Naphthalene	10000	25000	NA		98.8		60.3	U	752	Q	53	U	56.3	U	52.5	U	65	U	NA		267	
O-xylene	1000000	990000	NA		2040	Q	166		38400	Q	53	U	56.3	U	52.5	U	65	U	NA		7450	
Sec-butylbenzene	150000	350000	NA		209		60.3	U	452		53	U	56.3	U	52.5	U	65	U	NA		49.9	U
Tert-butylbenzene	150000	270000	NA		50.4	U	60.3	U	58.8	U	53	U	56.3	U	52.5	U	65	U	NA		49.9	U
Tetrachloroethene	500	430	NA		**21200**		**1340**		**276000**		201		80.4		52.5	U	65	U	NA		**57700**	
Toluene	100000	44000	NA		50.4	U	60.3	U	8520	Q	53	U	56.3	U	52.5	U	65	U	NA		14300	
Trichloroethene	500	170	NA		**10100**		**1580**		**131000**		146		112		52.5	U	81.4		NA		**20000**	
INORGANICS																						
Aluminum	NA	NA	37959		NA		NA		NA		47204		NA		NA		NA		36124		NA	
Arsenic	1	29	8.23		NA		NA		NA		4.57		NA		NA		NA		7.78		NA	
Barium	200	8200	71.3		NA		NA		NA		103		NA		NA		NA		91.2		NA	
Beryllium	0.4	320	1.04		NA		NA		NA		1.11		NA		NA		NA		0.9		NA	
Boron	600	1900	230	U	NA		NA		NA		234		NA		NA		NA		47.9	U	NA	
Calcium	NA	NA	670		NA		NA		NA		1846		NA		NA		NA		304		NA	
Chromium	10	190	61.9		NA		NA		NA		68.8		NA		NA		NA		54.1		NA	
Cobalt Compounds	1.1	50	18.2		NA		NA		NA		19.8		NA		NA		NA		11.7		NA	
Copper	100	43000	15.4		NA		NA		NA		14		NA		NA		NA		145		NA	
Iron	NA	NA	50938		NA		NA		NA		54117		NA		NA		NA		47593		NA	
Lead	0.5	450	8.92		NA		NA		NA		20.3		NA		NA		NA		37.1		NA	
Magnesium	NA	NA	15431		NA		NA		NA		16822		NA		NA		NA		10395		NA	
Manganese	30	2000	728		NA		NA		NA		663		NA		NA		NA		337		NA	
Nickel	10	650	37.1		NA		NA		NA		38.5		NA		NA		NA		29.4		NA	
Potassium	NA	NA	1427		NA		NA		NA		1088		NA		NA		NA		1371		NA	
Sodium	NA	NA	152		NA		NA		NA		189		NA		NA		NA		88.9		NA	
Vanadium	26	26000	91.3		NA		NA		NA		111		NA		NA		NA		74.9		NA	
Zinc	200	12000	70.1		NA		NA		NA		74.7		NA		NA		NA		84.3		NA	
SEMIVOLATILES																						
Bis(2-ethylhexyl)phthalate	500	170	0.3	U	NA		NA		NA		0.3	U	NA		NA		NA		1.2		NA	
PESTICIDES/PCBS																						
Arochlor 1254	33	67000	0.05	U	NA		NA		NA		0.05	U	NA		NA		NA		4.32		NA	

TABLE 3-2
DATA SUMMARY OF POSITIVE ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	PADEP	PADEP	C 100 @ 3.5 ft.	D 0 @ 0 - 2 ft.	D 0 @ 4.5 ft.	D 100 @ 3.5 ft.	D 100 @ 6 ft.	E 250 @ 0 - 2 ft.	Duplicate #2	E 250 @ 4 ft.	Duplicate #1	E 250 @ 5.5 ft.	E 700 @ 1 - 2.5 ft.
Sample Date:	Soil to GW	Soil to GW	07/08/2015	07/07/2015	07/07/2015	07/08/2015	07/08/2015	07/07/2015	07/07/2015	07/07/2015	07/07/2015	07/07/2015	07/07/2015
Duplicate of:	Criteria	Criteria							E 250 @ 0 - 2 ft.		E 250 @ 4 ft.		
	100X MSC	Generic											
VOLATILES			ug/kg		ug/kg	ug/kg	ug/kg	ug/kg		ug/kg	ug/kg	ug/kg	ug/kg
1,1,1-Trichloroethane	20000	7200	53.9 U	NA	3710 Q	1640 Q	2540 Q	58.2 U	NA	57.6 U	75	47.1 U	62.4 U
1,1-Dichloroethane	3100	750	53.9 U	NA	57.9 U	51.9 U	60.7 U	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
1,1-Dichloroethene	700	190	53.9 U	NA	113	51.9 U	**225**	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
1,2,4-Trimethylbenzene	1500	8400	53.9 U	NA	**29800** Q	**9560**	2010 Q	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
1,2-Dichlorobenzene	60000	59000	53.9 U	NA	244	51.9 U	60.7 U	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
1,2-Dichloroethene (cis)	7000	1600	58.6	NA	770 Q	**3160** Q	**5020** Q	58.2 U	NA	378	719	47.1 U	62.4 U
1,2-Dichloroethene (trans)	10000	2300	53.9 U	NA	57.9 U	58.8	60.7 U	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
1,3,5-Trimethylbenzene	1300	2300	53.9 U	NA	**15800** Q	1400 Q	1200 Q	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
4-Isopropyltoluene	NA	NA	53.9 U	NA	3360 Q	966 Q	143	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
Ethylbenzene	70000	46000	53.9 U	NA	104	1160 Q	1800 Q	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
Isopropylbenzene	NA	NA	53.9 U	NA	628 Q	858 Q	247	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
M/p-xylene	1000000	990000	108 U	NA	992 Q	1540 Q	2120 Q	116 U	NA	115 U	113 U	94.2 U	125 U
N-Butylbenzene	150000	950000	53.9 U	NA	20900 Q	5400 Q	869 Q	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
N-Propylbenzene	150000	290000	53.9 U	NA	1340 Q	1720 Q	463	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
Naphthalene	10000	25000	53.9 U	NA	496 Q	542 Q	118	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
O-xylene	1000000	990000	53.9 U	NA	1820 Q	3770 Q	2400 Q	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
Sec-butylbenzene	150000	350000	53.9 U	NA	57.9 U	487	104	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
Tert-butylbenzene	150000	270000	53.9 U	NA	683 Q	686 Q	116	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
Tetrachloroethene	500	430	53.9 U	NA	**181000**	**18200**	**5630** Q	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
Toluene	100000	44000	53.9 U	NA	57.9 U	51.9 U	60.7 U	58.2 U	NA	57.6 U	56.7 U	47.1 U	62.4 U
Trichloroethene	500	170	139	NA	**22700** Q	**3370** Q	**7370**	58.2 U	NA	**798**	**1780**	86.3	62.4 U
INORGANICS													
Aluminum	NA	NA	NA	28948	NA	NA	NA	36424	34577	NA	NA	NA	29853
Arsenic	1	29	NA	7.8	NA	NA	NA	6.26	6.48	NA	NA	NA	5.02
Barium	200	8200	NA	77.1	NA	NA	NA	78.4	80.9	NA	NA	NA	87.9
Beryllium	0.4	320	NA	1.05	NA	NA	NA	1.02	1.08	NA	NA	NA	0.82
Boron	600	1900	NA	233 U	NA	NA	NA	48.1	24 U	NA	NA	NA	25.1
Calcium	NA	NA	NA	745	NA	NA	NA	585	600	NA	NA	NA	775
Chromium	10	190	NA	48.9	NA	NA	NA	51	50.7	NA	NA	NA	35.4
Cobalt Compounds	1.1	50	NA	15.9	NA	NA	NA	21.8	17.6	NA	NA	NA	8.9
Copper	100	43000	NA	15.8	NA	NA	NA	15.1	17.2	NA	NA	NA	12.4
Iron	NA	NA	NA	39043	NA	NA	NA	44313	42382	NA	NA	NA	30085
Lead	0.5	450	NA	7.51	NA	NA	NA	10.2	10.6	NA	NA	NA	10.5
Magnesium	NA	NA	NA	9214	NA	NA	NA	10529	10518	NA	NA	NA	6150
Manganese	30	2000	NA	357	NA	NA	NA	709	684	NA	NA	NA	310
Nickel	10	650	NA	24.7	NA	NA	NA	29.9	28.6	NA	NA	NA	18.8
Potassium	NA	NA	NA	1791	NA	NA	NA	1667	1580	NA	NA	NA	1706
Sodium	NA	NA	NA	261	NA	NA	NA	192	201	NA	NA	NA	103
Vanadium	26	26000	NA	69.6	NA	NA	NA	80.6	78.3	NA	NA	NA	54.5
Zinc	200	12000	NA	46.5	NA	NA	NA	54	58.7	NA	NA	NA	53
SEMIVOLATILES													
Bis(2-ethylhexyl)phthalate	500	170	NA	0.3 U	NA	NA	NA	0.31 U	0.3 U	NA	NA	NA	0.32 U
PESTICIDES/PCBS													
Arochlor 1254	33	67000	NA	1.15	NA	NA	NA	0.05 U	0.05 U	NA	NA	NA	0.05 U

TABLE 3-2
DATA SUMMARY OF POSITIVE ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	PADEP	PADEP	E 700 @ 14.5 ft.		E 700 @ 5.5 ft.		F 100N @ 4.5 ft.		F 100N @ 8 ft.		F 100S @ 4.5 ft.		F 100S @ 9.5 ft.		Duplicate #3		F 100W @ 2.5 ft.		F 100W @ 4 ft.		G 200 @ 1 - 2.5 ft.	
Sample Date:	Soil to GW	Soil to GW	07/07/2015		07/07/2015		07/08/2015		07/08/2015		07/08/2015		07/08/2015		07/08/2015		07/08/2015		07/08/2015		07/07/2015	
Duplicate of:	Criteria	Criteria													F 100S @ 9.5 ft.							
	100X MSC	Generic																				
VOLATILES			ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,1,1-Trichloroethane	20000	7200	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	129		100		55.9	U	57.1	U	53.6	U
1,1-Dichloroethane	3100	750	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
1,1-Dichloroethene	700	190	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	167		97.6		55.9	U	57.1	U	53.6	U
1,2,4-Trimethylbenzene	1500	8400	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
1,2-Dichlorobenzene	60000	59000	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
1,2-Dichloroethene (cis)	7000	1600	184		57.8	U	52.2	U	62.4	U	59.8	U	386		272		55.9	U	57.1	U	53.6	U
1,2-Dichloroethene (trans)	10000	2300	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
1,3,5-Trimethylbenzene	1300	2300	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
4-Isopropyltoluene	NA	NA	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
Ethylbenzene	70000	46000	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
Isopropylbenzene	NA	NA	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
M/p-xylene	1000000	990000	135	U	116	U	104	U	125	U	120	U	142	U	165	U	112	U	114	U	107	U
N-Butylbenzene	150000	950000	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
N-Propylbenzene	150000	290000	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
Naphthalene	10000	25000	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
O-xylene	1000000	990000	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
Sec-butylbenzene	150000	350000	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
Tert-butylbenzene	150000	270000	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
Tetrachloroethene	500	430	178		57.8	U	52.2	U	142		59.8	U	**1540**		**935**		55.9	U	83.4		53.6	U
Toluene	100000	44000	67.6	U	57.8	U	52.2	U	62.4	U	59.8	U	71.2	U	82.5	U	55.9	U	57.1	U	53.6	U
Trichloroethene	500	170	**312**		112		69.8		**332**		59.8	U	**3520**		**2320**		55.9	U	**259**		53.6	U
INORGANICS																						
Aluminum	NA	NA	NA		NA		NA		NA		NA		NA		NA		NA		NA		45368	
Arsenic	1	29	NA		NA		NA		NA		NA		NA		NA		NA		NA		7.87	
Barium	200	8200	NA		NA		NA		NA		NA		NA		NA		NA		NA		159	
Beryllium	0.4	320	NA		NA		NA		NA		NA		NA		NA		NA		NA		1.29	
Boron	600	1900	NA		NA		NA		NA		NA		NA		NA		NA		NA		235	U
Calcium	NA	NA	NA		NA		NA		NA		NA		NA		NA		NA		NA		1291	
Chromium	10	190	NA		NA		NA		NA		NA		NA		NA		NA		NA		87.1	
Cobalt Compounds	1.1	50	NA		NA		NA		NA		NA		NA		NA		NA		NA		19.7	
Copper	100	43000	NA		NA		NA		NA		NA		NA		NA		NA		NA		9.16	
Iron	NA	NA	NA		NA		NA		NA		NA		NA		NA		NA		NA		52871	
Lead	0.5	450	NA		NA		NA		NA		NA		NA		NA		NA		NA		7.34	
Magnesium	NA	NA	NA		NA		NA		NA		NA		NA		NA		NA		NA		13725	
Manganese	30	2000	NA		NA		NA		NA		NA		NA		NA		NA		NA		787	
Nickel	10	650	NA		NA		NA		NA		NA		NA		NA		NA		NA		35	
Potassium	NA	NA	NA		NA		NA		NA		NA		NA		NA		NA		NA		1250	
Sodium	NA	NA	NA		NA		NA		NA		NA		NA		NA		NA		NA		816	
Vanadium	26	26000	NA		NA		NA		NA		NA		NA		NA		NA		NA		132	
Zinc	200	12000	NA		NA		NA		NA		NA		NA		NA		NA		NA		77.4	
SEMIVOLATILES																						
Bis(2-ethylhexyl)phthalate	500	170	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.29	U
PESTICIDES/PCBS																						
Arochlor 1254	33	67000	NA		NA		NA		NA		NA		NA		NA		NA		NA		0.05	U

TABLE 3-2
DATA SUMMARY OF POSITIVE ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

Sample ID:	**PADEP**	**PADEP**	**G 200 @ 5.5 ft.**		**MW_3 600 @ 2.5 ft.**		**MW_3 600 @ 5 ft.**		**MW_3 600 @ 7 ft.**		**X 700 @ 1 - 2.5 ft.**		**X 700 @ 5 ft.**	
Sample Date:	**Soil to GW**	**Soil to GW**	**07/07/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**		**07/08/2015**	
Duplicate of:	**Criteria**	**Criteria**												
	100X MSC	**Generic**												
VOLATILES			**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	20000	7200	87		192		5220	Q	198		66.1		262	
1,1-Dichloroethane	3100	750	50.8	U	63.5	U	57	U	54.5	U	54.8	U	50.6	U
1,1-Dichloroethene	700	190	50.8	U	63.5	U	154		54.5	U	54.8	U	50.6	U
1,2,4-Trimethylbenzene	1500	8400	50.8	U	63.5	U	2550	Q	54.5	U	54.8	U	50.6	U
1,2-Dichlorobenzene	60000	59000	50.8	U	63.5	U	57	U	54.5	U	54.8	U	50.6	U
1,2-Dichloroethene (cis)	7000	1600	205		336		**1740**	Q	711		256		1400	
1,2-Dichloroethene (trans)	10000	2300	50.8	U	63.5	U	57	U	54.5	U	54.8	U	50.6	U
1,3,5-Trimethylbenzene	1300	2300	50.8	U	63.5	U	841	Q	54.5	U	54.8	U	50.6	U
4-Isopropyltoluene	NA	NA	50.8	U	63.5	U	57	U	54.5	U	54.8	U	50.6	U
Ethylbenzene	70000	46000	50.8	U	63.5	U	3420	Q	54.5	U	54.8	U	50.6	U
Isopropylbenzene	NA	NA	50.8	U	63.5	U	324		54.5	U	54.8	U	50.6	U
M/p-xylene	1000000	990000	102	U	127	U	4300	Q	109	U	110	U	101	U
N-Butylbenzene	150000	950000	50.8	U	63.5	U	1100	Q	81.8		54.8	U	50.6	U
N-Propylbenzene	150000	290000	50.8	U	63.5	U	493		54.5	U	54.8	U	50.6	U
Naphthalene	10000	25000	50.8	U	63.5	U	166		54.5	U	54.8	U	50.6	U
O-xylene	1000000	990000	50.8	U	63.5	U	4960	Q	54.5	U	54.8	U	50.6	U
Sec-butylbenzene	150000	350000	50.8	U	63.5	U	224		100		54.8	U	50.6	U
Tert-butylbenzene	150000	270000	50.8	U	63.5	U	57	U	54.5	U	54.8	U	50.6	U
Tetrachloroethene	500	430	346		314		**45000**		108		109		286	
Toluene	100000	44000	50.8	U	63.5	U	57	U	54.5	U	54.8	U	50.6	U
Trichloroethene	500	170	**498**		**807**		**15400**		155		147		**744**	
INORGANICS														
Aluminum	NA	NA	NA		NA		NA		NA		146513		NA	
Arsenic	1	29	NA		NA		NA		NA		5.24		NA	
Barium	200	8200	NA		NA		NA		NA		94.1		NA	
Beryllium	0.4	320	NA		NA		NA		NA		0.84		NA	
Boron	600	1900	NA		NA		NA		NA		24.1	U	NA	
Calcium	NA	NA	NA		NA		NA		NA		1347		NA	
Chromium	10	190	NA		NA		NA		NA		44.3		NA	
Cobalt Compounds	1.1	50	NA		NA		NA		NA		18		NA	
Copper	100	43000	NA		NA		NA		NA		10.8		NA	
Iron	NA	NA	NA		NA		NA		NA		190293		NA	
Lead	0.5	450	NA		NA		NA		NA		9.58		NA	
Magnesium	NA	NA	NA		NA		NA		NA		8337		NA	
Manganese	30	2000	NA		NA		NA		NA		665		NA	
Nickel	10	650	NA		NA		NA		NA		23.4		NA	
Potassium	NA	NA	NA		NA		NA		NA		1383		NA	
Sodium	NA	NA	NA		NA		NA		NA		154		NA	
Vanadium	26	26000	NA		NA		NA		NA		69.2		NA	
Zinc	200	12000	NA		NA		NA		NA		46.7		NA	
SEMIVOLATILES														
Bis(2-ethylhexyl)phthalate	500	170	NA		NA		NA		NA		0.31	U	NA	
PESTICIDES/PCBS														
Arochlor 1254	33	67000	NA		NA		NA		NA		0.05	U	NA	

TABLE 3-2
DATA SUMMARY OF POSITIVE ANALYTICAL RESULTS
SOIL SAMPLING - JULY 2015
NOCKAMIXON STATE PARK, BUCKS COUNTY, PENNSYLVANIA

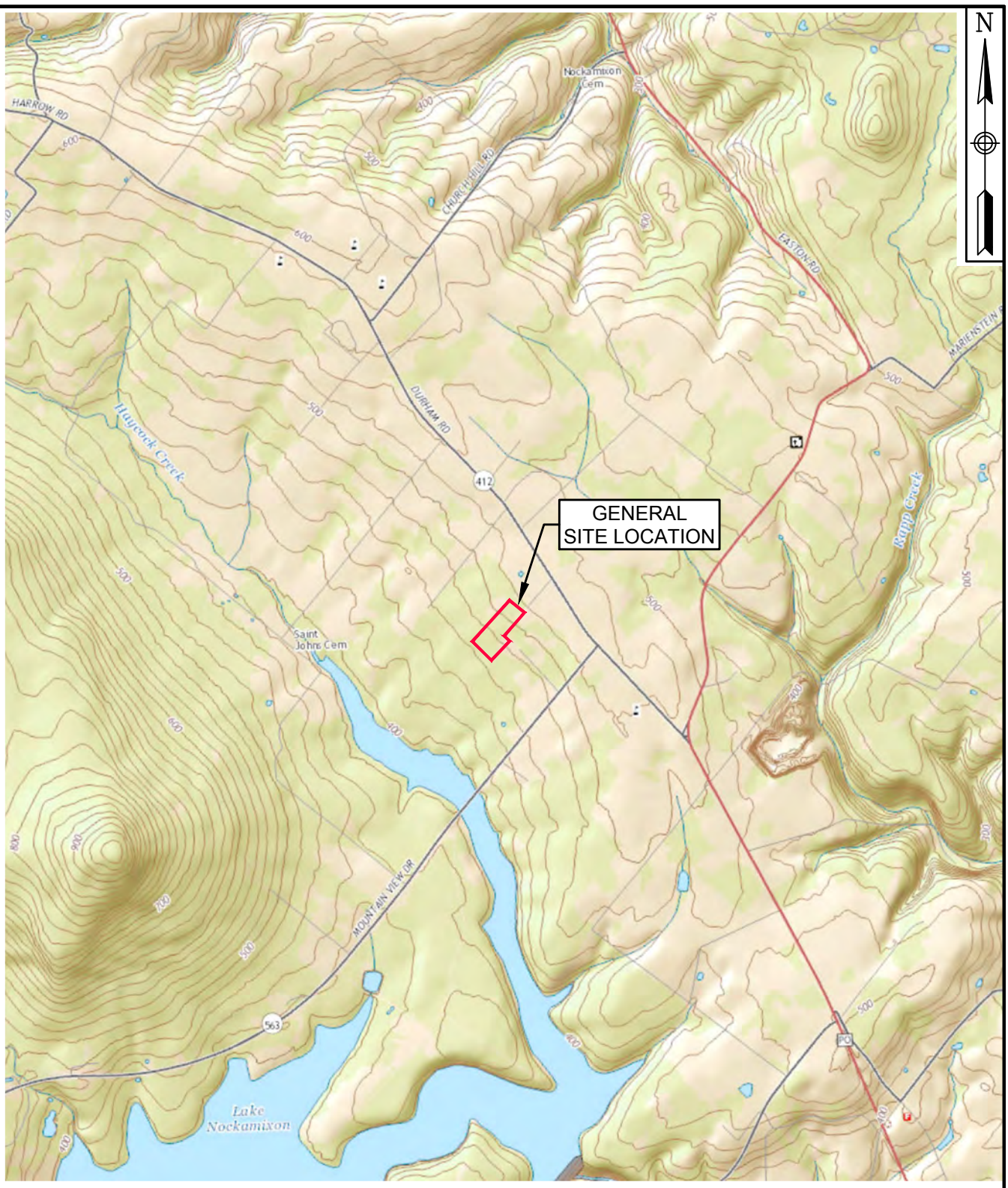
Data Qualifiers:
Q -- Indicated the average of multiple results from multiple analyses.
U -- Value is a non-detected result as reported by the laboratory.
NA -- No result is available/applicable for this parameter in this sample.

Shaded values exceed the PADEP Generic MSC for Soil to Groundwater.
Bolded values exceed the PADEP 100X MSC for Soil to Groundwater.

Database source file: H:\NOCKAMIXON\NOCKSOIL EDD 7_15.DBF data retrieved on: 08/31/15

FIGURES

C:\All_Projects\112C07285\2070\112C07285GM01.dwg MKB 9/8/15



SOURCES:
ESRI, i-CUBED, USDA, USGS, AEX, GEOEYE, GETMAPPING, AEROGRID, IGN, IGP, UPR-EGP, AND THE GIS USER COMMUNITY

0 3,000 6,000
SCALE IN FEET

TETRA TECH

SITE LOCATION MAP
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C07285GM01
REV 0	DATE 9/8/15
FIGURE NUMBER	FIGURE 1-1

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N

LEGEND

- MONITORING □ ELL
- FORMER ROAD□ AY
- FORMER PATH
- GROUND SURFACE DISTURBANCE ON AERIAL PHOTO

0 1□0 300

SCALE IN FEET

REFERENCE:
"FIGURE 11□SUSPECTED SOURCE AREA FEATURES MAP□" LEIDOS□01□13□201□

TETRA TECH

SUSPECTED SOURCE AREA
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

FILE	SCALE
112C07285GM01.dwg	AS NOTED
FIGURE NUMBER 1–2	REV 0 / DATE 8/4/15

C:\All_Projects\112C07285\2070\112C07285GM02.dwg MKB 11/18/15

N

REFERENCE:
AERIAL PHOTO LINK: PHILAGEOHISTORY.ORG/
RDIC-IMAGES/VIEW-IMAGE.CFM/DVRPC1970.
PHILAMETROAERIALS.0632.A32_B61 GRID ID: A32/B

NOT TO SCALE

TETRA TECH

HISTORIC AERIAL – 1970
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C07285GM02
REV	0
DATE	11/18/15
FIGURE NUMBER	1–3

C:\All_Projects\112C07285\2070\112C07285GM02.dwg MKB 11/18/15

REFERENCE:
AERIAL PHOTO LINK: PHILAGEOHISTORY.ORG/
RDIC-IMAGES/VIEW-IMAGE.CFM/DVRPC1975.
PHILAMETROAERIALS.0632.A32_B61 GRID ID: A32/B

NOT TO SCALE

TETRA TECH

HISTORIC AERIAL – 1975
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C07285GM02
REV	0
DATE	11/18/15
FIGURE NUMBER	1–4

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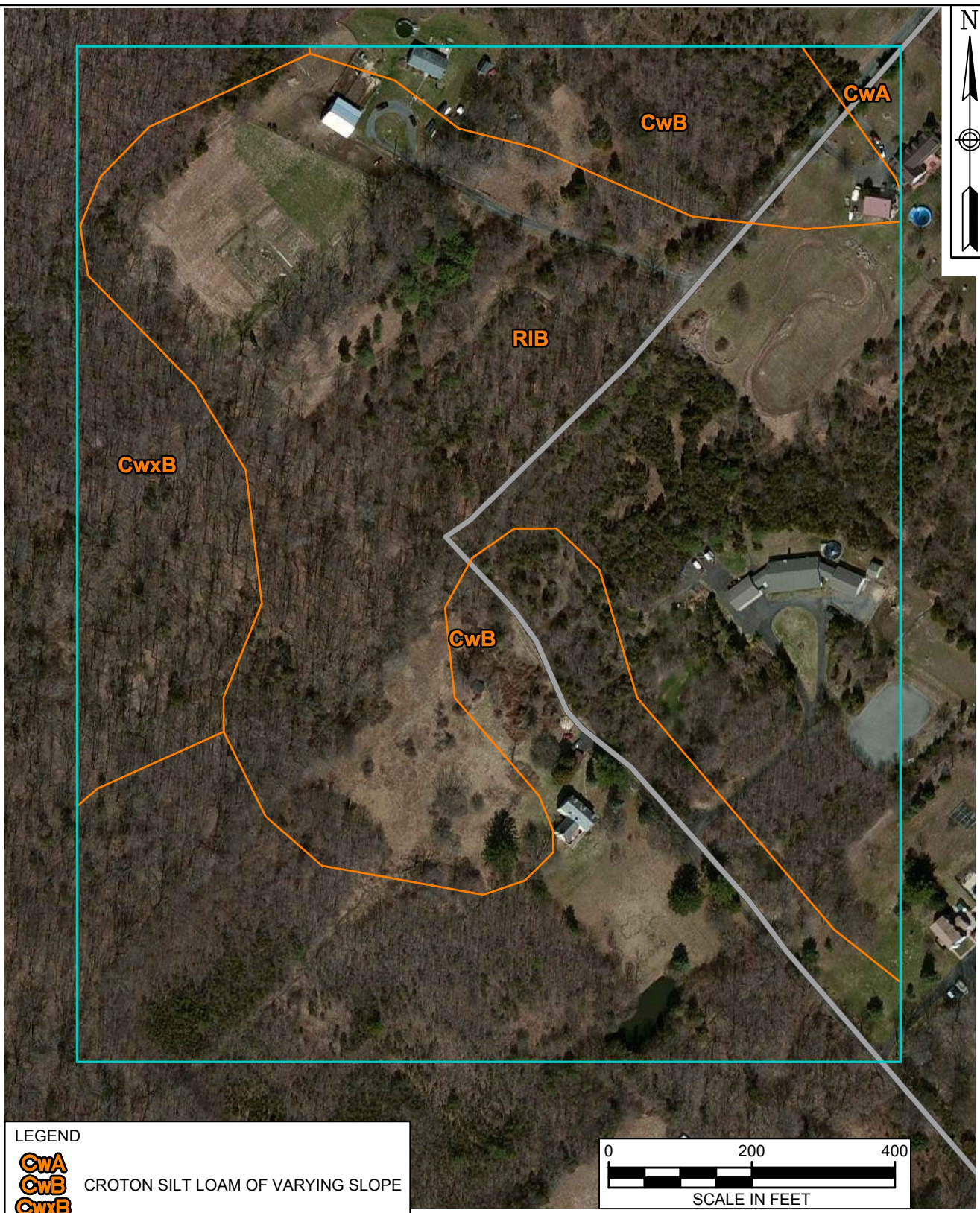

LEGEND

CwA
CwB
CwxB — CROTON SILT LOAM OF VARYING SLOPE

RIB — REAVILLE CHANNERY SILT LOAM

REFERENCE:
"SOIL MAP, CUSTOM SOIL RESOURCE REPORT FOR BUCKS COUNTY, PENNSYLVANIA NOCKAMIXON SITE," PREPARED BY USDA & NRCS, JULY 9, 2015.

TETRA TECH

SOIL MAP
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C07285GM01
REV	0
DATE	10/5/15
FIGURE NUMBER	1–5

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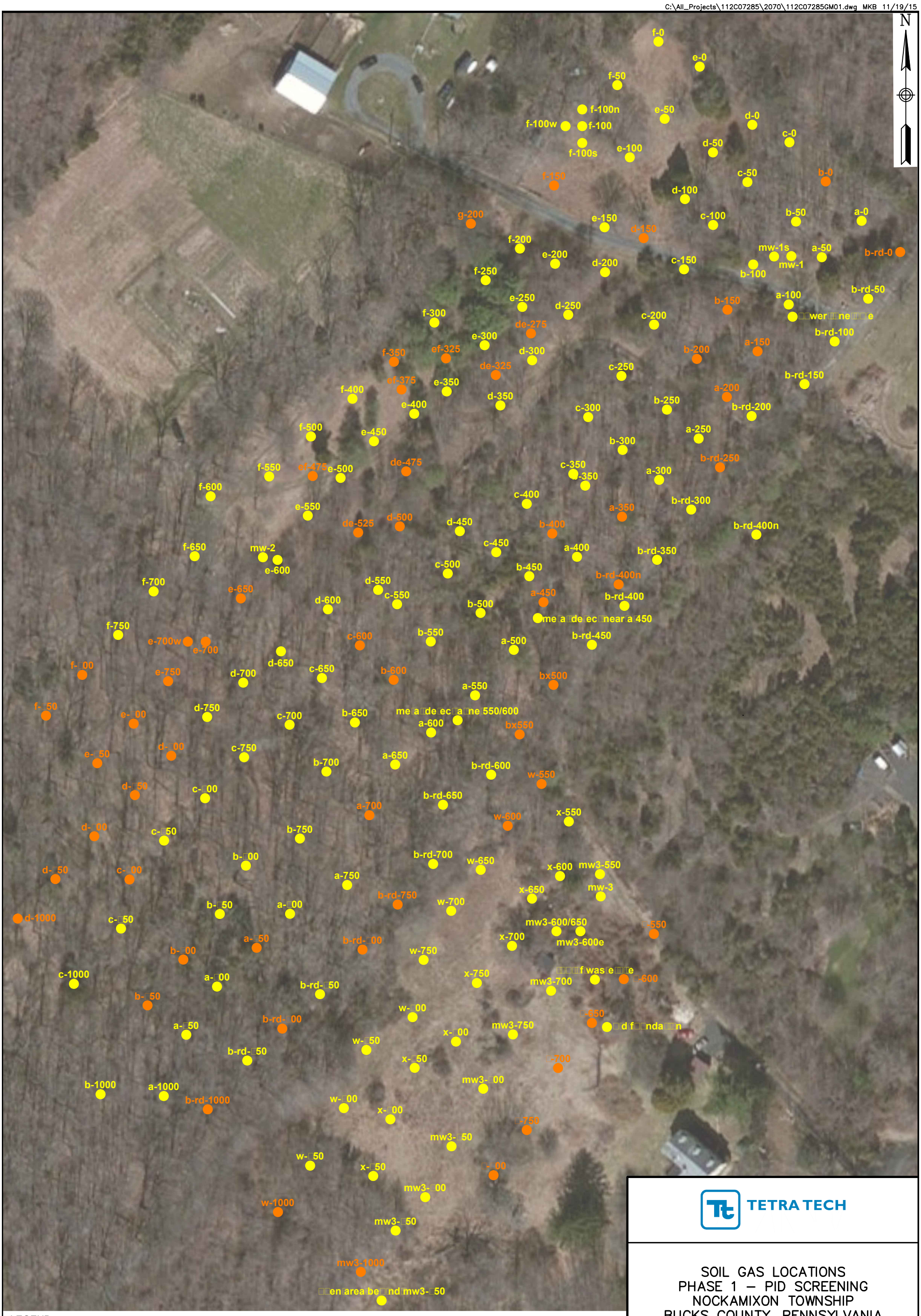

LEGEND

- SOIL GAS SAMPLE LOCATION GPS COORDINATES AVAILABLE
- APPRO IMATE SOIL GAS SAMPLE LOCATION NO GPS SIGNAL

COORDINATE SYSTEM:
NAD 1983 STATE PLANE PENNSYLVANIA SOUTH FIPS 3702 FEET

0 80 160
SCALE IN FEET

TETRA TECH

SOIL GAS LOCATIONS
PHASE 1 – PID SCREENING
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

FILE	SCALE
112C07285GM01.dwg	AS NOTED
FIGURE NUMBER 2–1	REV 0 / DATE 11/19/15

C:\All_Projects\112C07285\2070\112C07285GM01.dwg MKB 8/4/15

	G	F	E	D	C	B	A	B_RD	W	X	MW-3	Y
000		9.7	0.1	7.7	0.2	0.2	0.1	0.3				
050		5.1	0.3	0.1	11.7	0.1	0.6	0.2				
100		5.7	0.2	6	0.1	1	0.3	0.2				
150		0.2	0.2	6.5	5.2	0.2	0.6	0.1				
200	0.0	11.7	10.8	9.2	0.1	0.2	0.2	0.2				
250	9.3	9.5	12.4	15.8	0.1	0.25	0.1	0.2				
300	0.0	11.1	27.5	26.1	0.1	0.3	0.3	0.1				
350	0.0	15.9	27.9	26.9	10.3	0.2	0.2	0.1				
400	0.0	21.2	35.1	house	9.4	0.2	0.1	0.2				
450			25	20.8	12.3	0.2	0.4	0				
500	0.0	26.1	31.7	12.4	8.8	0.2	0.5	0				
550	0.0	24.3	15	10.2	13.3	0.2	0.2	10.7	0	4.7	17.0	9.6
600	0.0	28.8	9.5	10.4	10.1	7.2	0.3	0	0	0	0.5	0
650	0.0	25.3	36.5	10-85	16.2	5.9	6.6	12.1	0	0	0.5	0
700	0.0	2.6	3.4	10.1	7	4.2	54.7	0	0	0.4	0.1	0
750	0.0	3.5	8.3	8.1	9.1	9.2	0.1	0	3.3	0.1	0.1	0
800	0.0	4.9	5.4	12.2	9.2	6.3	0.3	0	0.6	1.6	0.3	0.1
850	0.0	4.1	4.6	13.1	7.5	6.2	0	15.1	0.2	0.3	1.7	
900				17-69	11.8	7.1	0.1	2.4	0	0.1	0.8	
950				7.9	16.3	7.4	0	0	0.1	0.1	0.3	
1000				7.4	5	5.4	0	0	0		0.0	
									0			

N

Not Measured

Note: PID Results presented in Parts per Million (PPM)

TETRA TECH

PHASE 1
SCREENING RESULTS SOIL GAS INVESTIGATION
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C07285GM01
REV	0
DATE	8/4/15
FIGURE NUMBER	2-2

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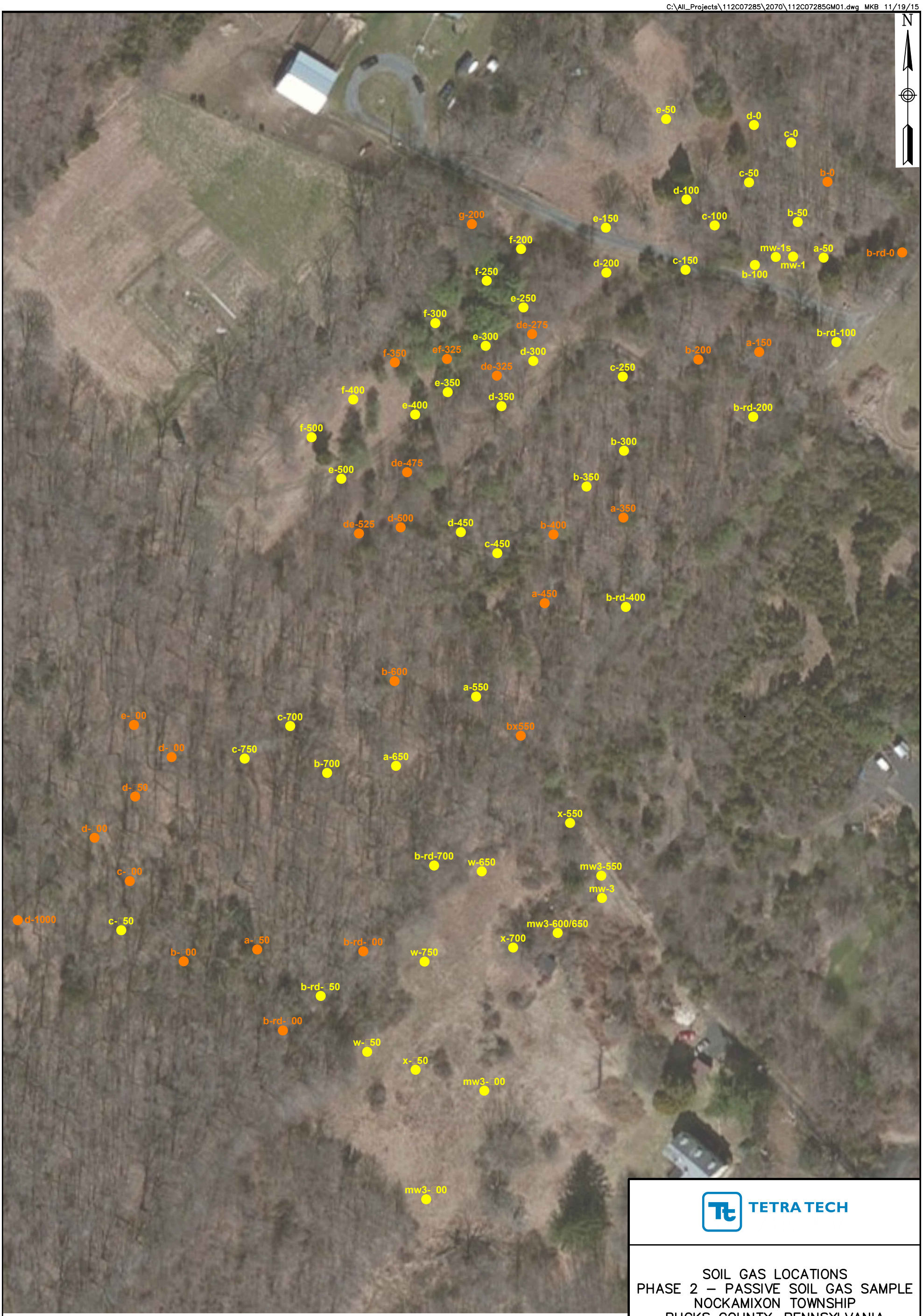

LEGEND

- SOIL GAS SAMPLE LOCATION □GPS COORDINATES AVAILABLE□
- APPRO□IMATE SOIL GAS SAMPLE LOCATION □NO GPS SIGNAL□

COORDINATE SYSTEM:
NAD 1983 STATE PLANE PENNSYLVANIA SOUTH FIPS 3702 FEET

0 80 160
SCALE IN FEET

TETRA TECH

SOIL GAS LOCATIONS
PHASE 2 – PASSIVE SOIL GAS SAMPLE
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

FILE	SCALE
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FIGURE NUMBER 2–3	REV 0 / DATE 11/19/15

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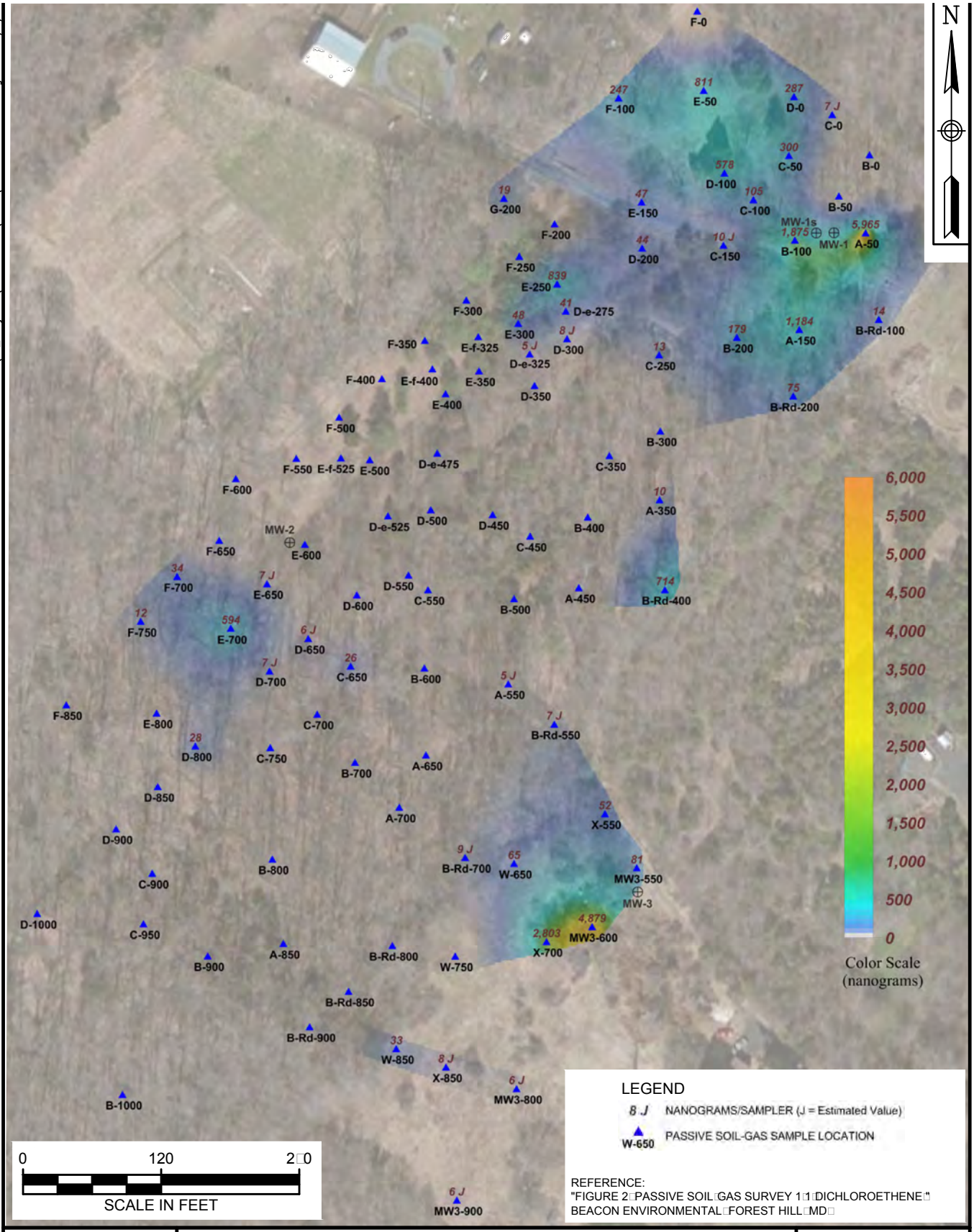

TETRA TECH

PASSIVE SOIL–GAS SURVEY
1,1–DICHLOROETHENE
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C07285GM01
REV	0
DATE	8/4/15
FIGURE NUMBER	2–4

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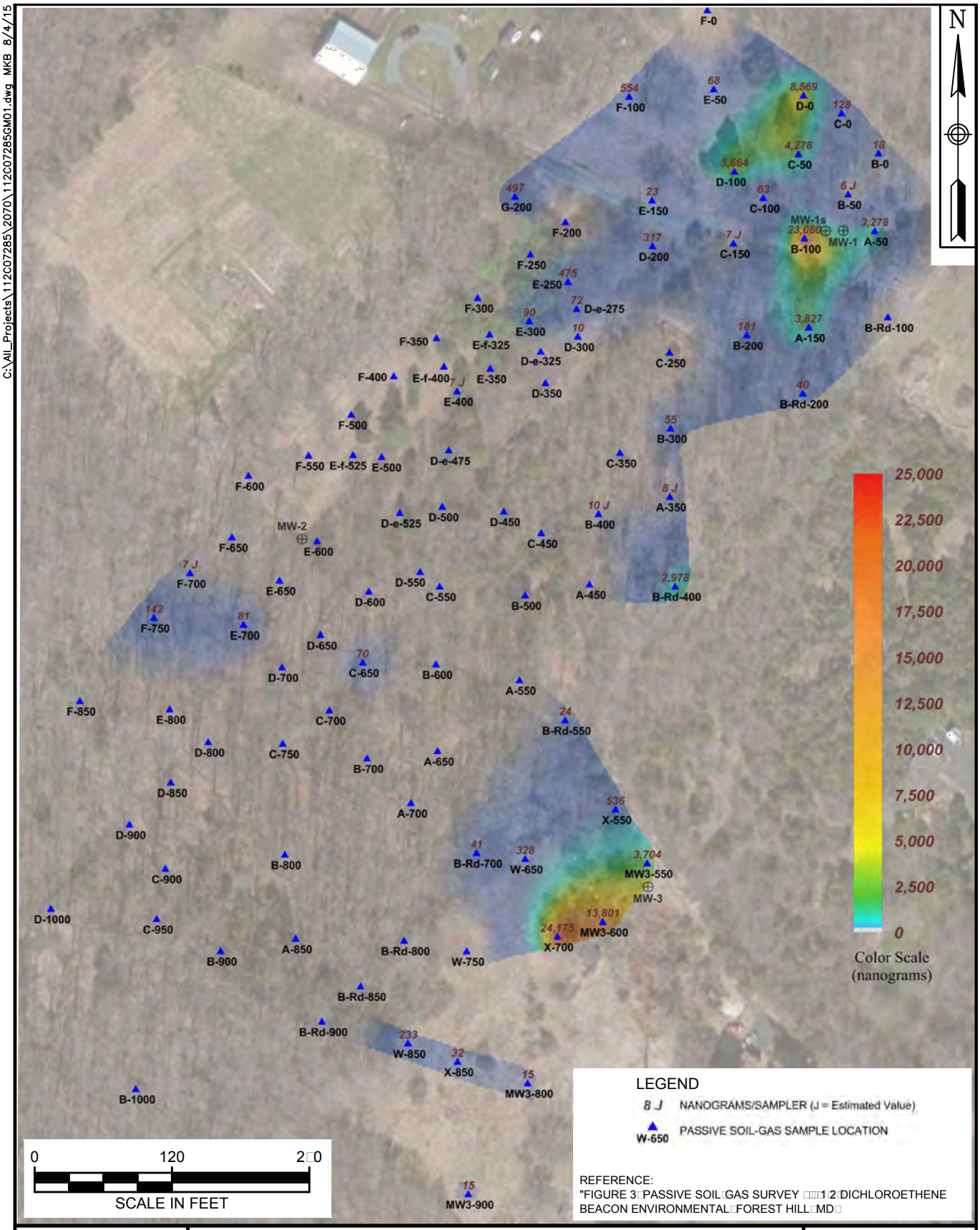

TETRA TECH

PASSIVE SOIL–GAS SURVEY
cis–1,2–DICHLOROETHENE
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C07285GM01
REV 0	DATE 8/4/15
FIGURE NUMBER	2–5

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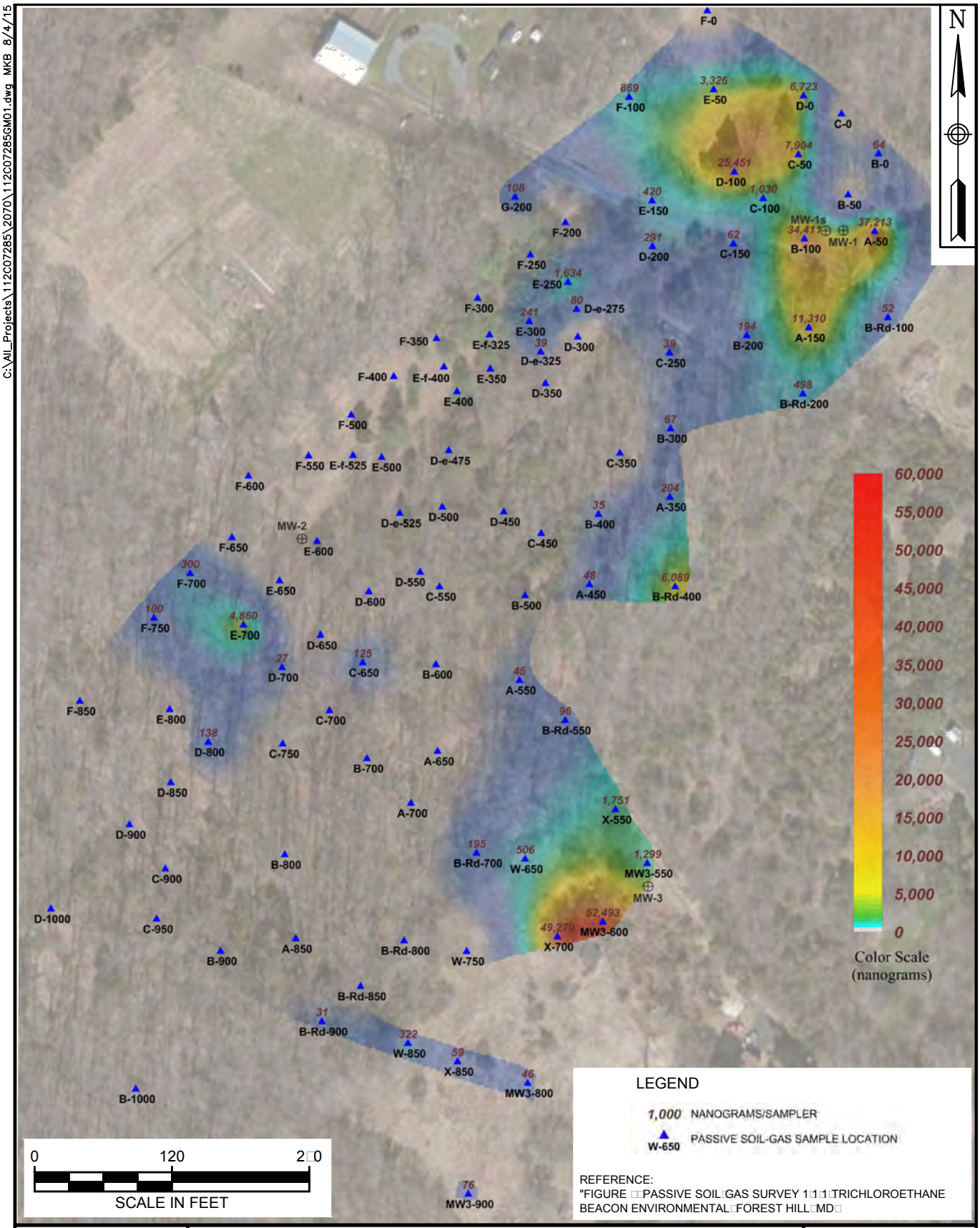

TETRA TECH

PASSIVE SOIL–GAS SURVEY
1,1,1–TRICHLOROETHANE
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C07285GM01
REV	0
DATE	8/4/15
FIGURE NUMBER	2–6

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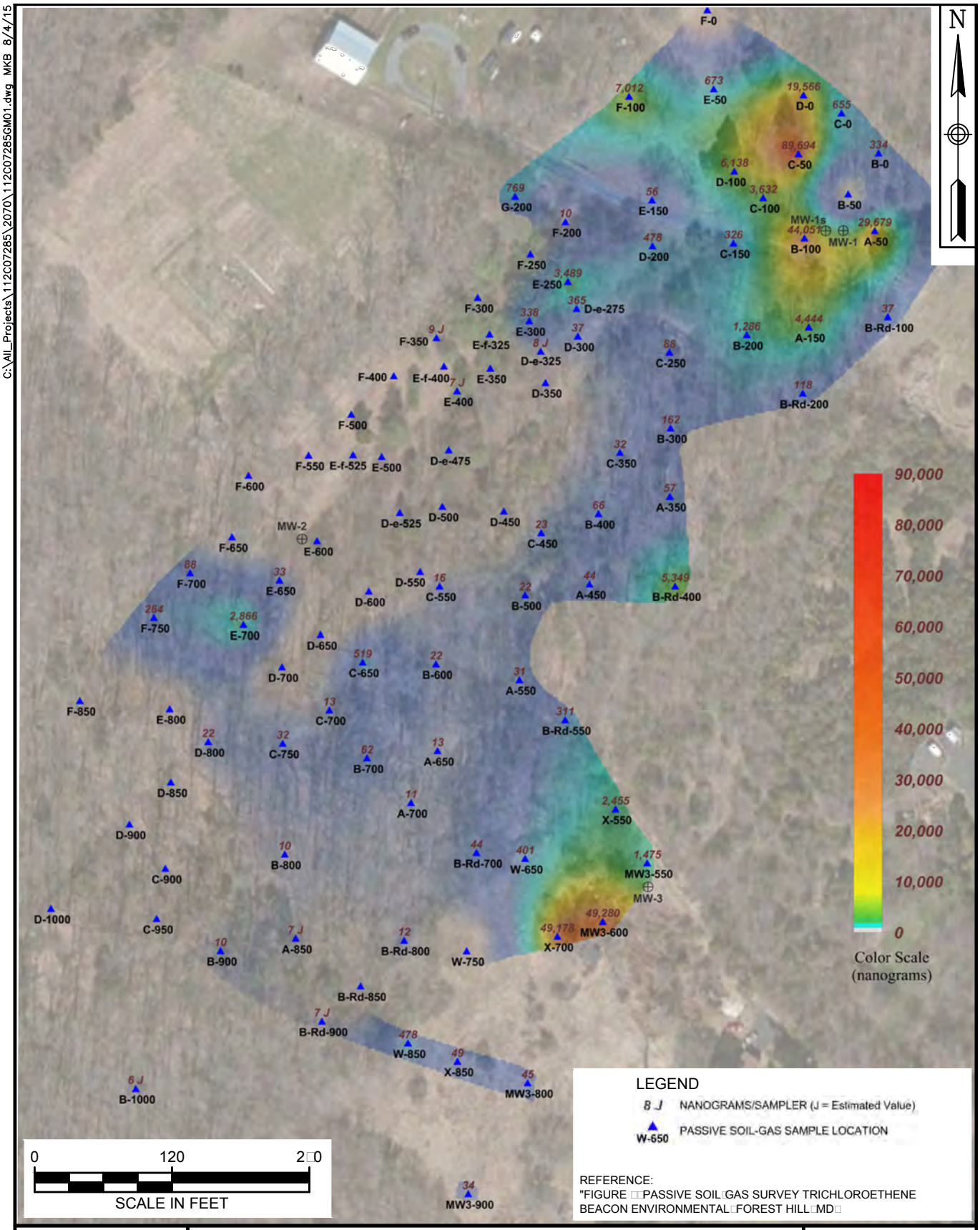

TETRA TECH

PASSIVE SOIL–GAS SURVEY
TRICHLOROETHENE
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C07285GM01
REV	0
DATE	8/4/15
FIGURE NUMBER	2–7

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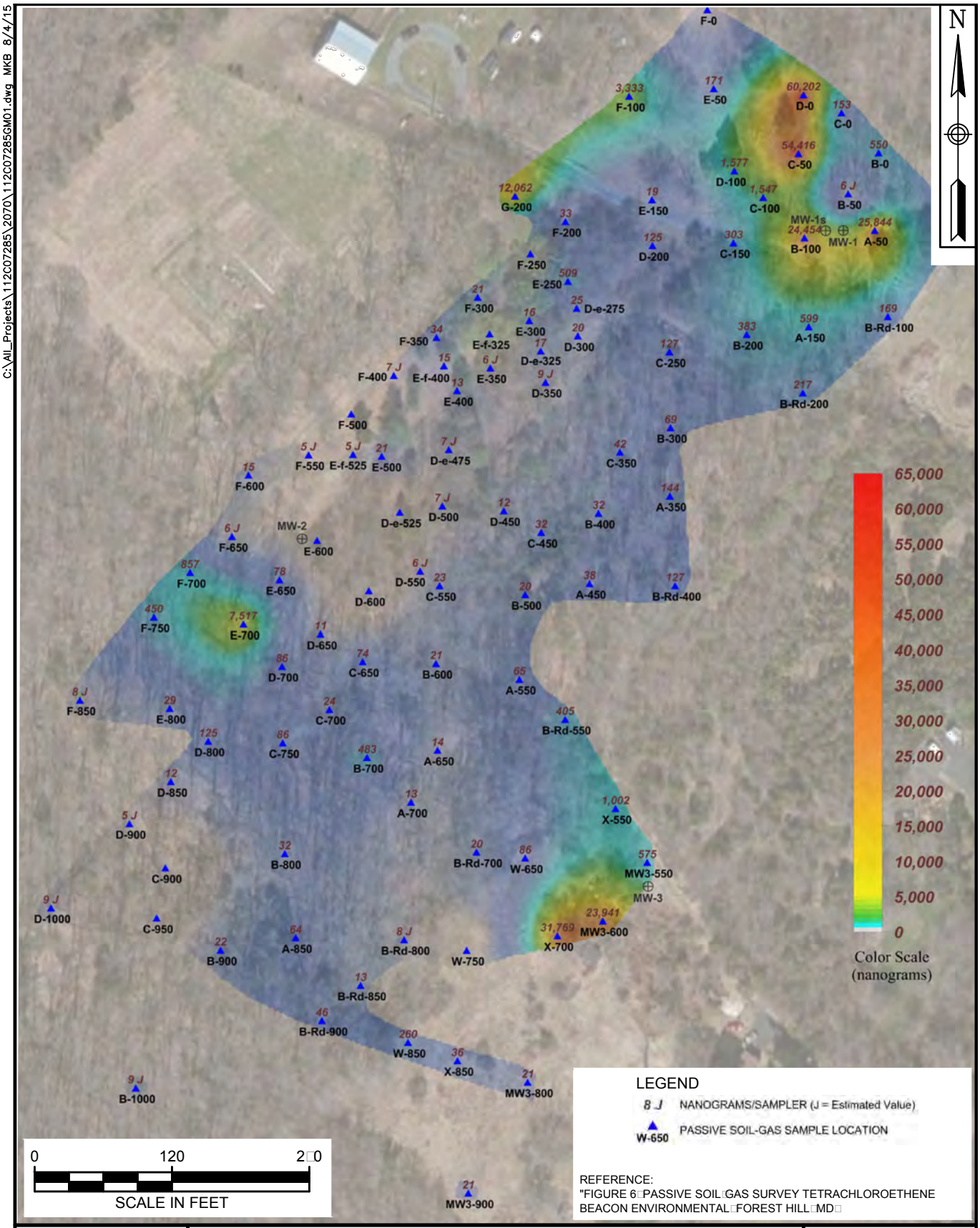

TETRA TECH

PASSIVE SOIL–GAS SURVEY
TETRACHLOROETHENE
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C07285GM01
REV	0
DATE	8/4/15
FIGURE NUMBER	2–8

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LEGEND

- PRIMARY BORING LOCATION
- SECONDARY BORING LOCATION

COORDINATE SYSTEM:
NAD 1983 STATE PLANE PENNSYLVANIA SOUTH FIPS 3702 FEET

0 80 160
SCALE IN FEET

TETRA TECH

SOIL BORING LOCATIONS
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

FILE	SCALE
112C07285GM01.dwg	AS NOTED

FIGURE NUMBER	REV	DATE
2–9	0	11/19/15

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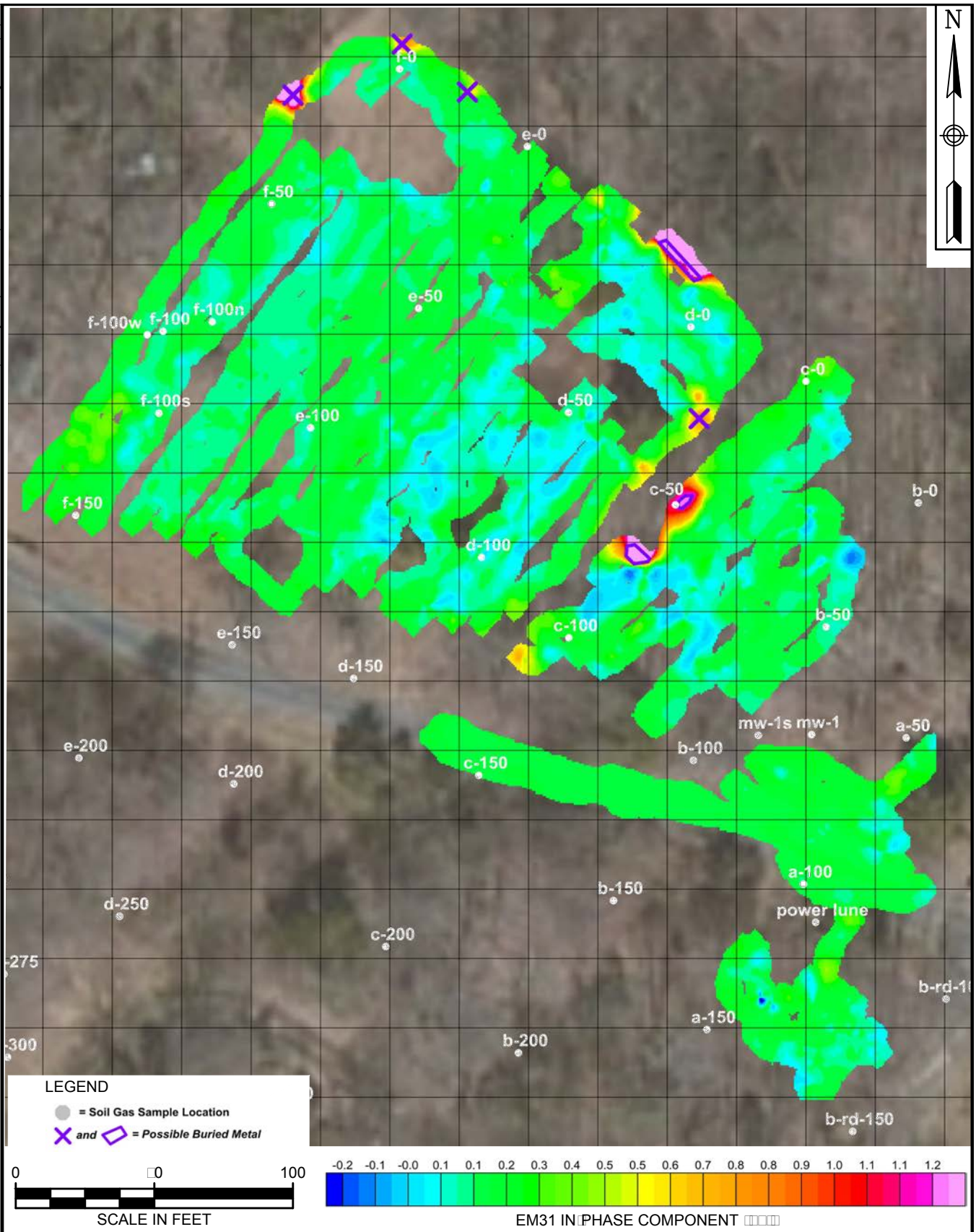

TETRA TECH

EM31 RECONNAISSANCE SURVEY
NORTHERN AREA
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C07285GM01
REV	0
DATE	8/4/15
FIGURE NUMBER	2–10

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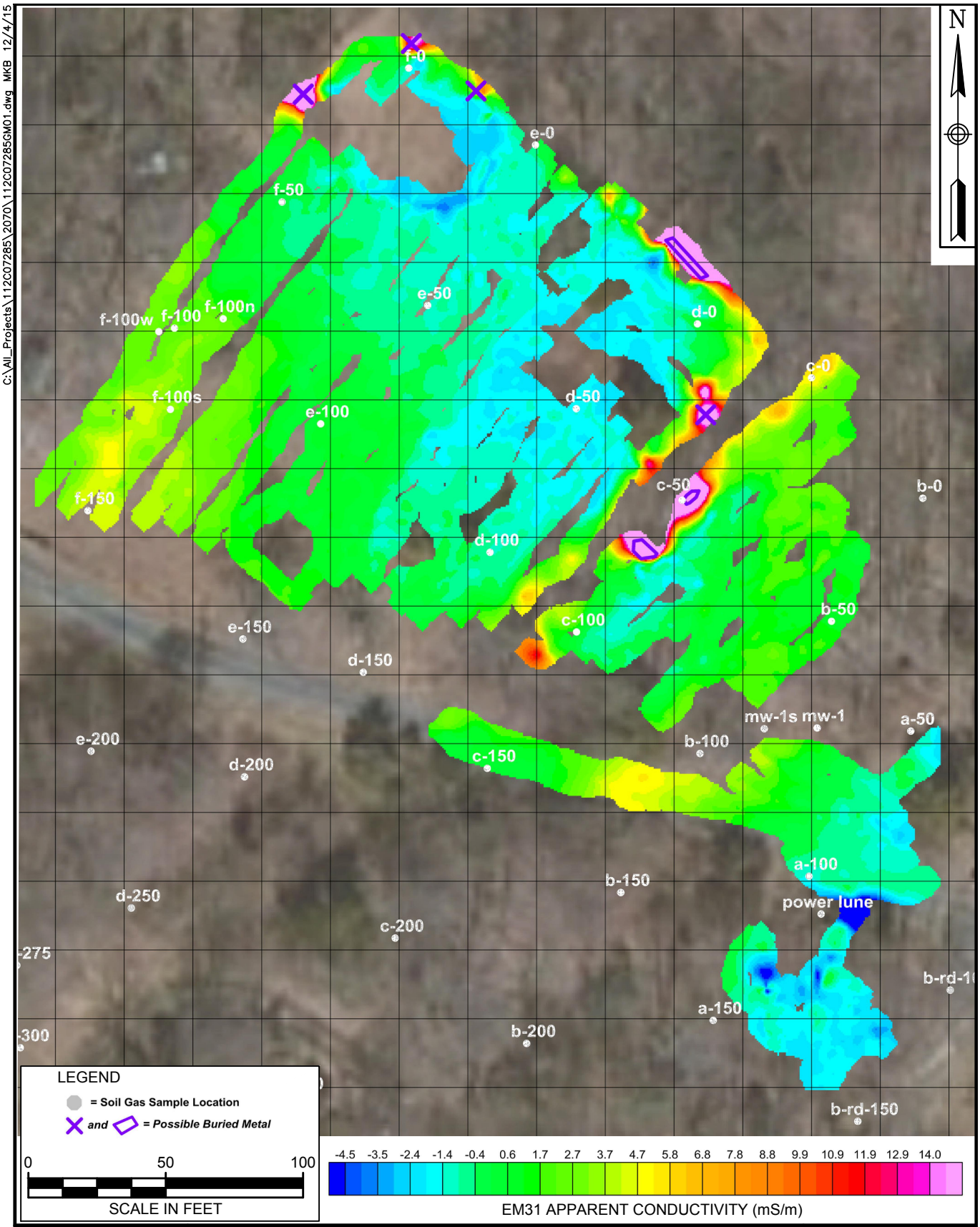

TETRA TECH

EM31 RECONNAISSANCE SURVEY
NORTHERN AREA
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C07285GM01
REV	0
DATE	12/4/15
FIGURE NUMBER	2–11

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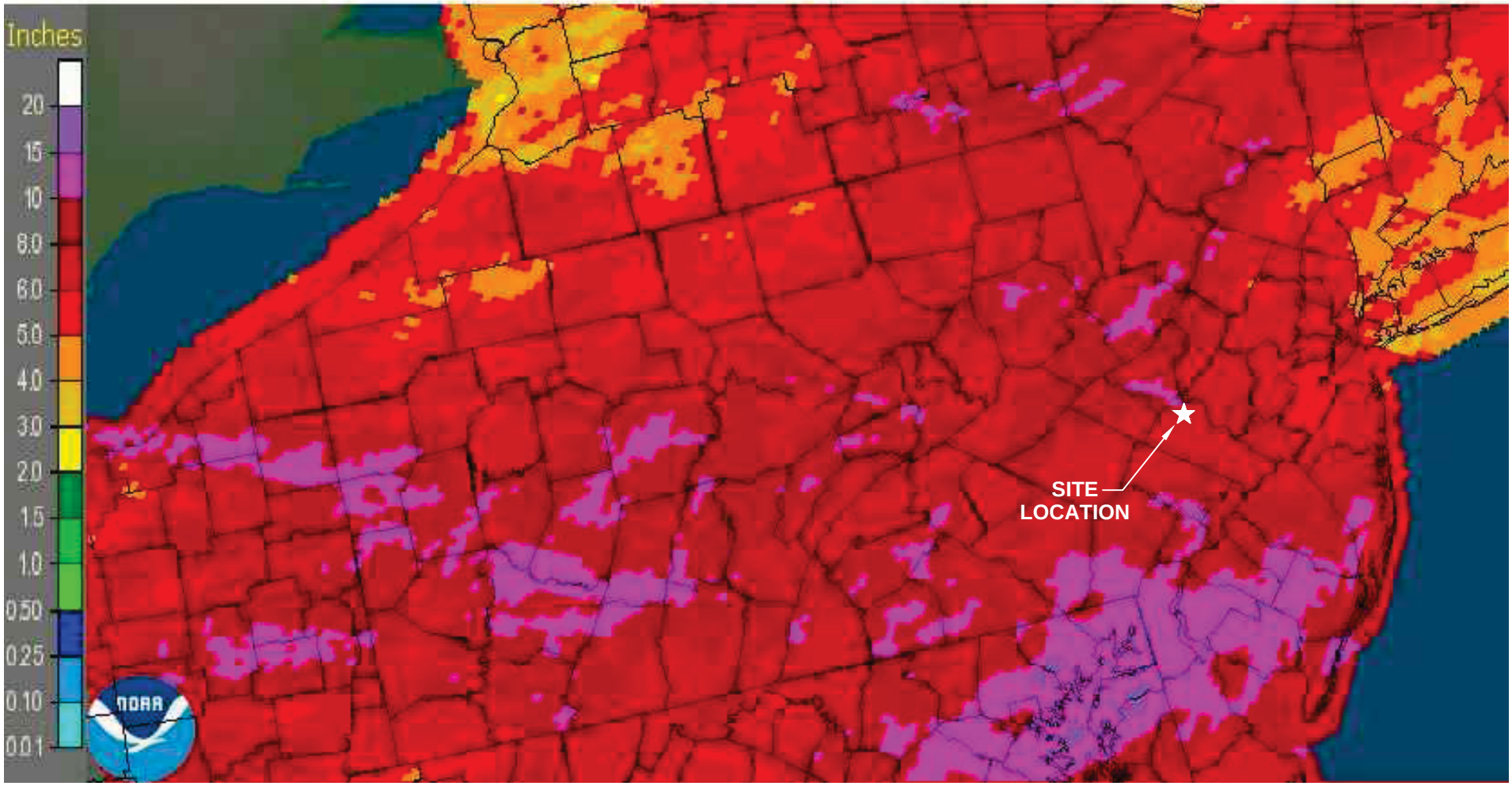
Pennsylvania: June, 2015 Monthly Observed Precipitation
Valid at 7/1/2015 1200 UTC- Created 7/3/15 22:04 UTC



TETRA TECH

PRECIPITATION, JUNE 2015
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

SCALE	AS NOTED
FILE	112C07285GM01
REV	0
DATE	9/2/15
FIGURE NUMBER	2–12

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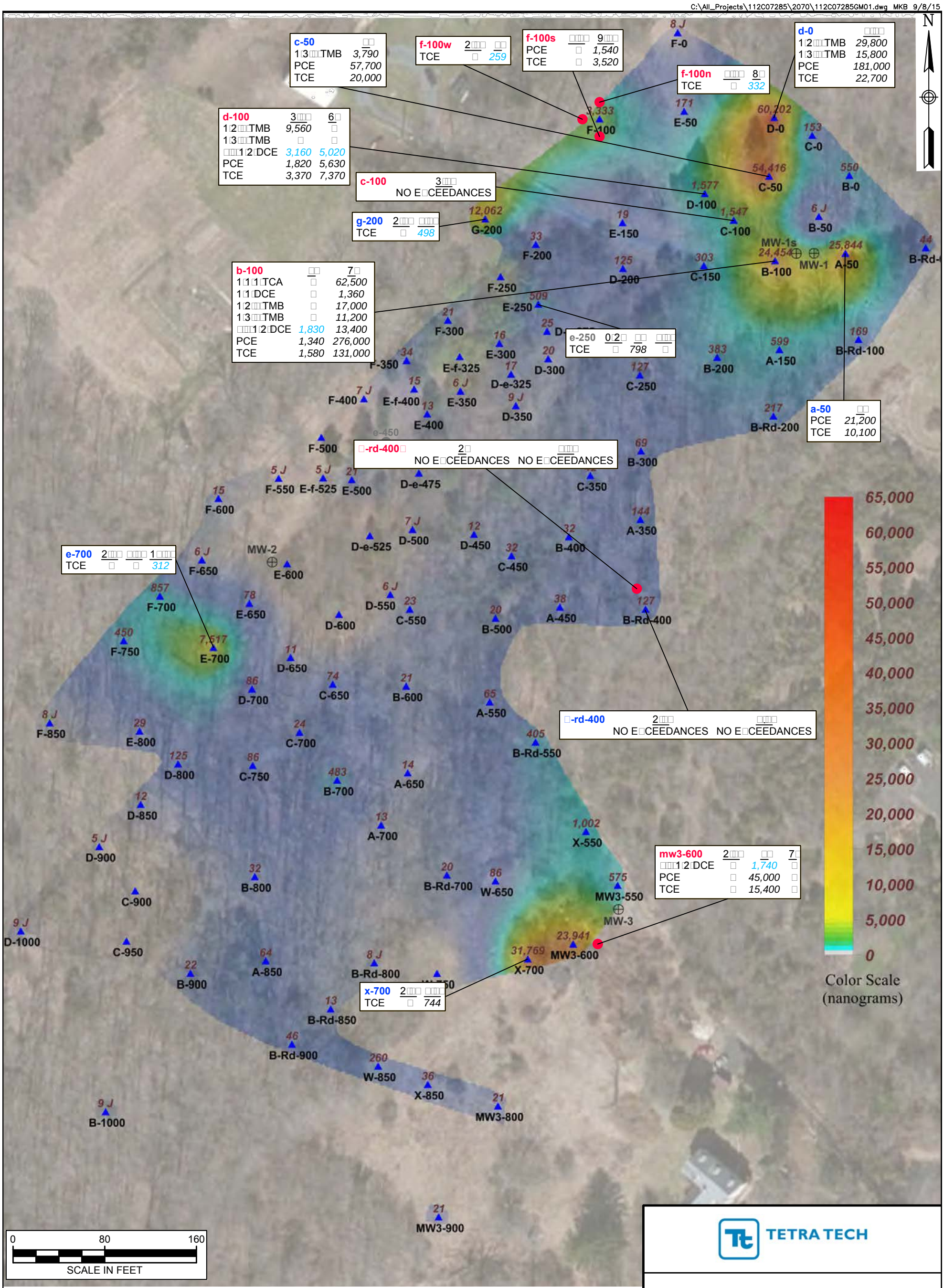


LEGEND

- PRIMARY BORING LOCATION
- SECONDARY BORING LOCATION

PADEP MSC EXCEEDANCES FOR SOIL TO GROUNDWATER PATHWAY GENERIC VALUES
3520 EXCEEDS BOTH SCREENING CRITERIA
1830 EXCEEDS ONLY GENERIC CRITERIA

W-650 PASSIVE SOIL GAS LOCATION

8 J SOIL GAS RESULT NANOGRAMS SAMPLER
ESTIMATED VALUE

REFERENCE:
"FIGURE PASSIVE SOIL GAS SURVEY TRICHLOROETHENE
BEACON ENVIRONMENTAL FOREST HILL MD

TETRA TECH

PADEP MSC EXCEEDANCES
SOIL BORINGS
NOCKAMIXON TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA

FILE	SCALE
112C07285GM01.dwg	AS NOTED
FIGURE NUMBER 3-1	REV 0 / DATE 9/8/15

APPENDIX A

USDA REPORT

United States Department of Agriculture

NRCS

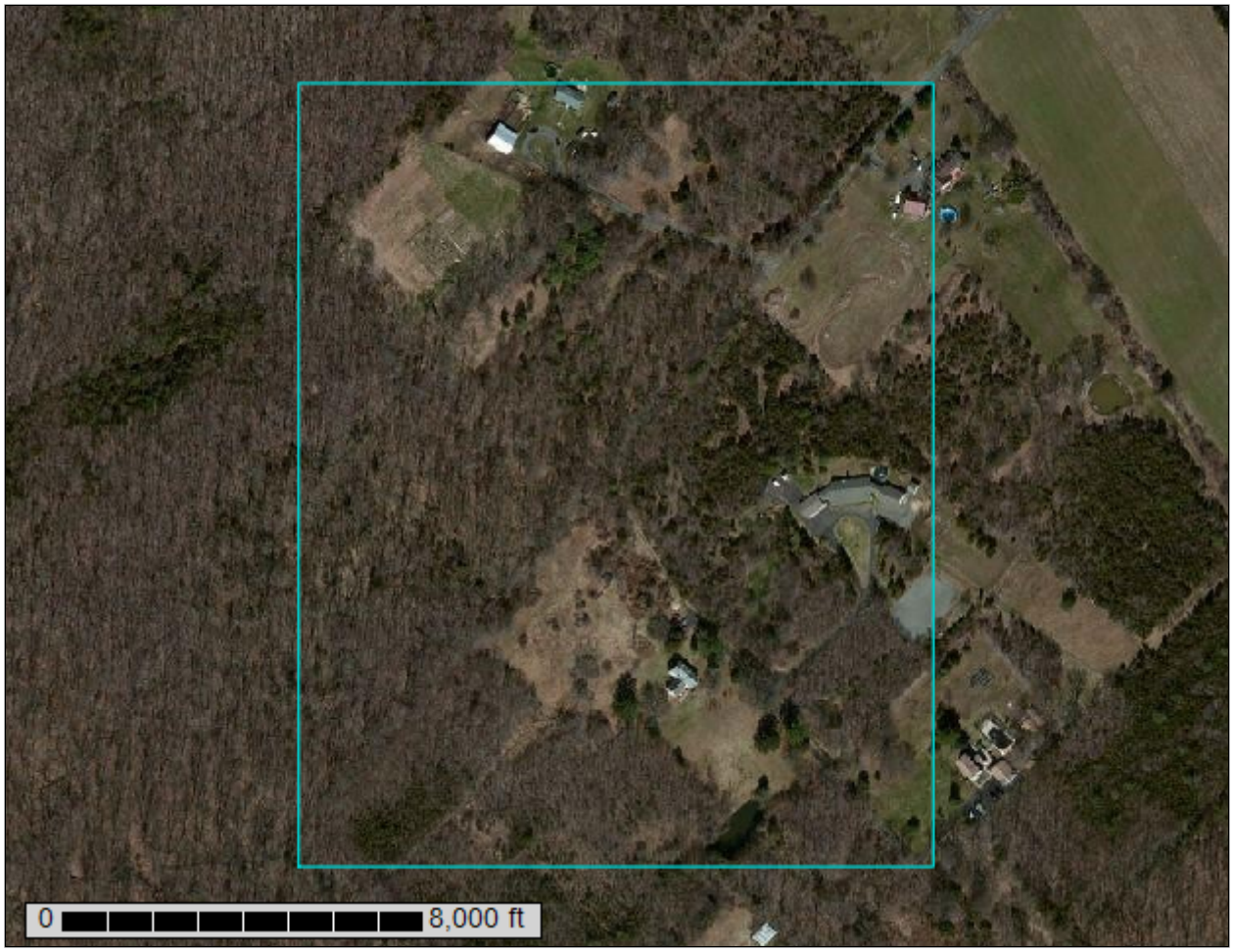
Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Bucks County, Pennsylvania

Nockamixon Site



July 9, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....7
Soil Map.....8
Legend.....9
Map Unit Legend.....10
Map Unit Descriptions.....10
Bucks County, Pennsylvania.....12
CwA—Croton silt loam, 0 to 3 percent slopes.....12
CwB—Croton silt loam, 3 to 8 percent slopes.....13
CwxB—Croton silt loam, 0 to 8 percent slopes, extremely stony.....14
RlB—Reaville channery silt loam, 3 to 8 percent slopes.....15
References.....18

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

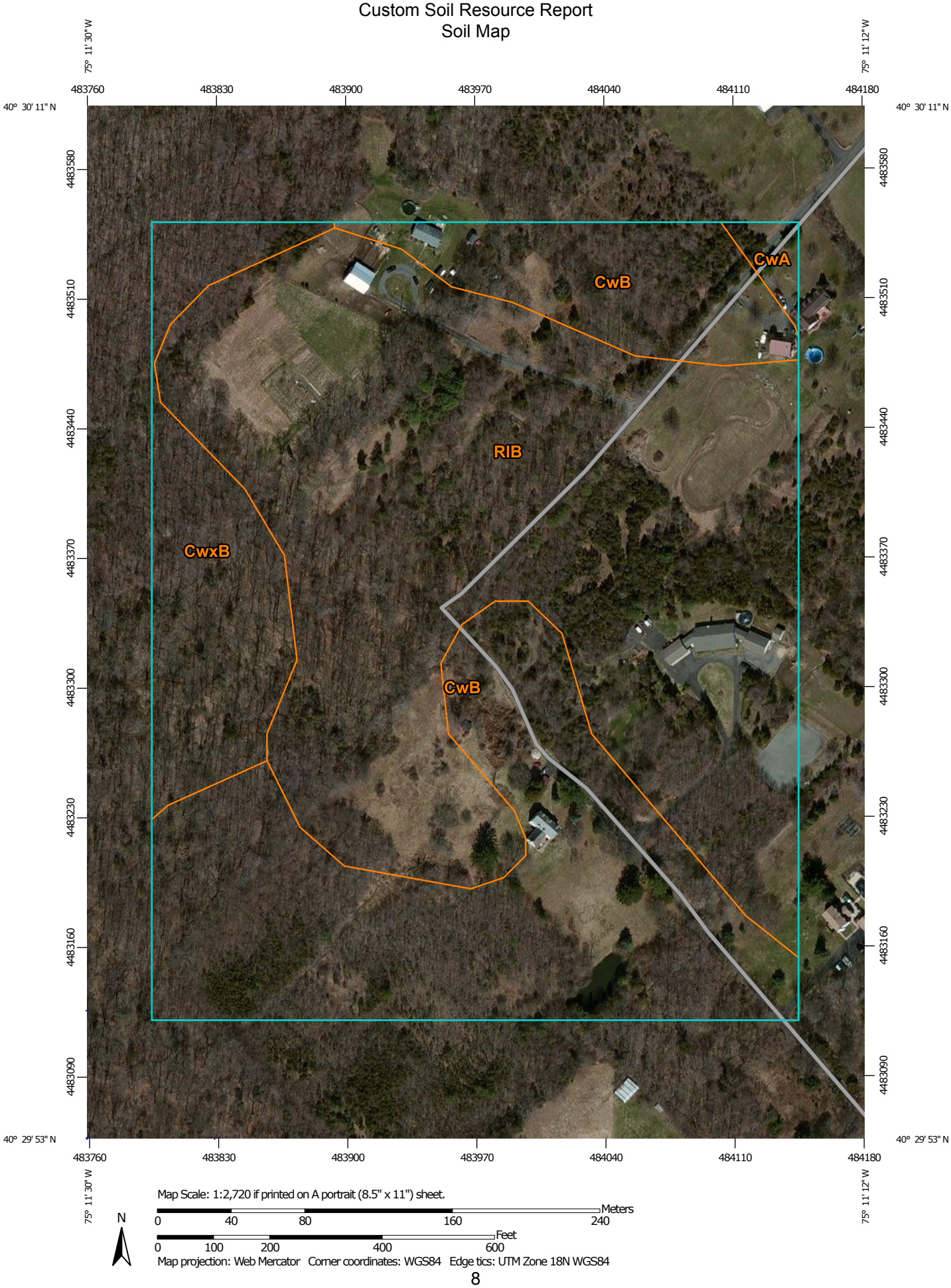
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bucks County, Pennsylvania
Survey Area Data: Version 9, Sep 19, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 20, 2011—May 10, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Bucks County, Pennsylvania (PA017)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
CwA	Croton silt loam, 0 to 3 percent slopes	0.3	0.8%
CwB	Croton silt loam, 3 to 8 percent slopes	13.1	34.9%
CwxB	Croton silt loam, 0 to 8 percent slopes, extremely stony	3.8	10.1%
RlB	Reaville channery silt loam, 3 to 8 percent slopes	20.3	54.2%
Totals for Area of Interest		**37.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic

classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Bucks County, Pennsylvania

CwA—Croton silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: l7p2
Elevation: 200 to 900 feet
Mean annual precipitation: 36 to 50 inches
Mean annual air temperature: 46 to 57 degrees F
Frost-free period: 160 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Croton and similar soils: 90 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Croton

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Parent material: Residuum weathered from sandstone and shale

Typical profile

Ap - 0 to 6 inches: silt loam
Btg - 6 to 19 inches: silty clay loam
Bx - 19 to 49 inches: silt loam
Cx - 49 to 78 inches: silt loam
C - 78 to 90 inches: extremely channery loam
R - 90 to 99 inches: bedrock

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 15 to 25 inches to fragipan; 42 to 99 inches to lithic bedrock
Natural drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D

Minor Components

Readington

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Base slope, head slope, side slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear

CwB—Croton silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: l7p3
Elevation: 200 to 900 feet
Mean annual precipitation: 36 to 50 inches
Mean annual air temperature: 46 to 57 degrees F
Frost-free period: 160 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Croton and similar soils: 90 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Croton

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Parent material: Residuum weathered from sandstone and shale

Typical profile

Ap - 0 to 6 inches: silt loam
Btg - 6 to 19 inches: silty clay loam
Bx - 19 to 49 inches: silt loam
Cx - 49 to 78 inches: silt loam
C - 78 to 90 inches: extremely channery loam
R - 90 to 99 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 15 to 25 inches to fragipan; 42 to 99 inches to lithic bedrock
Natural drainage class: Poorly drained
Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D

Minor Components

Readington

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Base slope, head slope, side slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear

CwxB—Croton silt loam, 0 to 8 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: l7p4
Elevation: 10 to 900 feet
Mean annual precipitation: 36 to 50 inches
Mean annual air temperature: 46 to 57 degrees F
Frost-free period: 150 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Croton, extremely stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Croton, Extremely Stony

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Parent material: Residuum weathered from sandstone and shale

Typical profile

Ap - 0 to 6 inches: silt loam
Btg - 6 to 19 inches: silty clay loam
Btxg - 19 to 49 inches: silt loam

Cx - 49 to 78 inches: channery silt loam
C - 78 to 90 inches: extremely channery loam

Properties and qualities

Slope: 0 to 8 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 15 to 20 inches to fragipan
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D

Minor Components

Readington

Percent of map unit: 8 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Base slope, head slope, side slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear

Knauers

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave

Fluvaquents

Percent of map unit: 2 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave

RlB—Reaville channery silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: l7s7

Elevation: 150 to 1,300 feet
Mean annual precipitation: 36 to 55 inches
Mean annual air temperature: 45 to 57 degrees F
Frost-free period: 130 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Reaville and similar soils: 90 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Reaville

Setting

Landform: Hillslopes, drainageways
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Red triassic residuum weathered from sandstone and shale

Typical profile

Ap - 0 to 8 inches: channery silt loam
Bt - 8 to 19 inches: channery silty clay loam
C - 19 to 32 inches: very channery silt loam
R - 32 to 42 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D

Minor Components

Penn

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear

Knauers

Percent of map unit: 1 percent
Landform: Flood plains

Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave

Joanna

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear

Croton

Percent of map unit: 1 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave

Bowmansville

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave

Abbottstown

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear

Klinesville

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve, nose slope
Down-slope shape: Convex
Across-slope shape: Convex

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APPENDIX B

BEACON REPORT OF RESULTS

Tetra Tech
234 Mall Blvd., Suite 260
King of Prussia, PA 19406
Attn: Mr. Kevin Kilmartin

Passive Soil Gas Survey – Analytical Report
Date: June 18, 2015

Beacon Project No. 2962 Rev1

Project Reference:	Nockamixon Township TCE Site, Bucks County, PA
Samplers Installed:	May 7 and 8, 2015
Samplers Retrieved:	May 27 and 28, 2015
Samples Received:	May 29, 2015
Analyses Completed:	June 3, 2015
Laboratory Data Issued:	June 5, 2015

EPA Method 8260C
All samples were successfully analyzed using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation to target a custom compound list following EPA Method 8260C. Laboratory results are reported in nanograms (ng) of specific compound per sample.

Laboratory QA/QC procedures included internal standards, surrogates, and blanks based on EPA Method 8260C. Analyses and reporting were in accordance with BEACON's Quality Assurance Project Plan.

Reporting limits
The reporting limit (RL) is 10 nanograms (ng) for vinyl chloride, 1,1-dichloroethene, trans-1,2-dichloroethene, cis-1,2-dichloroethene, trichloroethene, and tetrachloroethene; 25 ng for the remaining individual compounds; and 5,000 ng for Total Petroleum Hydrocarbons (TPH). **Table 1** provides survey results in nanograms per sampler by sample-point number and compound name. For the six (6) compounds listed above, measurements below the limit of quantitation (10 ng) but above the limit of detection (5 ng) are flagged with a "J." The RLs represent a baseline above which results exceed laboratory-determined limits of precision and accuracy. Any field sample measurements above the upper calibration standard are estimated; however, these values are reported without qualifiers because all reported measurements are relative to each other and are appropriate to meet the survey objectives of locating source areas and vapor intrusion pathways and defining the lateral extent of contamination.

Calibration Verification
The continuing calibration verification (CCV) values for the calibration check compounds were all within ±20% of the true values as defined by the initial five-point calibration and met the requirements specified in Beacon Environmental's Quality Assurance Project Plan.

Method Blanks/Trip Blanks
Laboratory method blanks are run with each sample batch to identify contamination present in the laboratory. If contamination is detected on a method blank, measurements of identical compounds in that sample batch are flagged in the laboratory report. The laboratory method blanks analyzed in connection with the present samples revealed no contamination.

The trip blank is a sampler prepared, transported, and analyzed with other samples but intentionally not exposed. Any target compounds identified on the trip blanks are reported in the laboratory data. The analyses of the trip blanks (labeled Trip-1, Trip-2, and Trip-3 in **Table 1**) reported none of the targeted compounds.

Passive Soil-Gas Survey Notes

When sample locations are covered with or near the edge of an artificial surface (*e.g.*, asphalt or concrete), the concentrations of compounds in soil gas are often significantly higher than the concentrations would be if the surfacing were not present. Thus, a reading taken below or near an impermeable surface is much higher than it would be in the absence of such a cap. Therefore, the sample location conditions should be evaluated when comparing results between locations.

Survey findings are exclusive to this project and when the spatial relationships are compared with results of other BEACON Surveys it is necessary to incorporate survey and site information from both investigations (*e.g.*, depth to sources, soil types, porosity, soil moisture, presence of impervious surfacing, sample collection times). BEACON recommends the guidelines stated in **Attachment 1** to establish a relationship between reported soil-gas measurements and actual subsurface contaminant concentrations, which will indicate those measurements representing significant subsurface contamination.

BEACON's passive soil-gas samplers are prepared with two sets of adsorbent cartridges for subsequent duplicate or confirmatory sample analysis. At Tetra Tech's request, duplicate analysis was performed for four (4) field samples. The field sample duplicates were designated "Dup" following the sample number. When comparing quantitative results, a duplicate correspondence should be considered when the relative percent difference (RPD) between the two samples is less than or equal to 100%. For the purpose of calculating correspondences, all non-detections should be assigned, as a baseline value, the RL for the specific contaminant. Based on these assumptions, a 100% correlation was found between the field sample duplicates and their base samples.

Project Details

Samplers were deployed on May 7 and 8, 2015, and were retrieved on May 27 and 28, 2015. **Attachment 2** describes standard field procedures. Individual deployment and retrieval times will be found in the Chain of Custody Form (**Attachment 3**).

One hundred (100) field samples, four (4) field sample duplicates, and three (3) trip blanks were received by BEACON on May 29, 2015. Adsorbent cartridges from the passive samplers were thermally desorbed, then analyzed using gas chromatography/mass spectrometry (GC/MS) equipment, in accordance with EPA Method 8260C, as described in **Attachment 4**. BEACON's laboratory analyzed each sample for the targeted compounds; analyses were completed on June 3, 2015. Following a laboratory review, results were provided to Tetra Tech on June 5, 2015.

Sample locations are shown on **Figure 1**. The following table lists frequency of detections based on the number of field samples analyzed, the reporting limit, and the maximum value for each mapped compound. The table also includes the transformation and interpolation method for the compound distribution maps provided.

Figure No.	Compound	Frequency	Reporting Limit (nanograms)	Max Value (nanograms)	Transformation Method	Interpolation Method
2	1,1-Dichloroethene	45	10	5,965	Log	Kriging
3	Cis-1,2-Dichloroethene	42	10	24,175	Log	Kriging
4	1,1,1-Trichloroethane	46	25	52,493	Log	Kriging
5	Trichloroethene	67	10	89,694	Log	Kriging
6	Tetrachloroethene	91	10	60,202	Log	Kriging

Attachments:

-1- Applying Results From Passive Soil-Gas Surveys
-2- Field Procedures
-3- Chain-of-Custody Form
-4- Laboratory Procedures

ALL DATA MEET REQUIREMENTS AS SPECIFIED IN THE BEACON ENVIRONMENTAL SERVICES, INC. QUALITY ASSURANCE PROJECT PLAN AND THE RESULTS RELATE ONLY TO THE SAMPLES REPORTED. BEACON ENVIRONMENTAL SERVICES IS ACCREDITED TO ISO/IEC 17025:2005, AND THE WORK PERFORMED WAS IN ACCORDANCE WITH ISO/IEC 17025:2005 REQUIREMENTS, WITH THE EXCEPTION THAT SAMPLES WERE ANALYZED WITHIN A 24-HOUR TUNE WINDOW AND FREON 113, 2-METHYLNAPHTHALENE AND TPH C_5-C_9 AND TPH C_{10}-C_{15} ARE NOT INCLUDED IN BEACON'S SCOPE OF ACCREDITION. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY. RELEASE OF THE DATA CONTAINED IN THIS HARDCOPY DATA PACKAGE HAS BEEN AUTHORIZED BY THE LABORATORY DIRECTOR OR HIS SIGNEE, AS VERIFIED BY THE FOLLOWING SIGNATURES:

Steven C. Thornley
Laboratory Director

Patti J. Riggs
Quality Manager

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	Trip-1	Trip-2	Trip-3	A-50	A-150	A-350
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	C15060119	C15060120	C15060121	C15060122	C15060123	C15060124
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015
Analysis Time:	9:13	9:35	9:57	10:19	10:41	11:03
Matrix:				Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	**400**	**178**	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	<10	<10	**5,965**	**1,184**	**10**
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<10	<10	<10	**595**	**445**	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	**546**	**1,466**	<25
cis-1,2-Dichloroethene	<10	<10	<10	**3,278**	**3,827**	**8 J**
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	**37,213**	**11,310**	**204**
Carbon Tetrachloride	<25	<25	<25	**50**	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	<10	<10	<10	**29,679**	**4,444**	**57**
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<10	<10	<10	**25,844**	**599**	**144**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	A-450	A-550	A-650	A-700	A-850	B-0
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	C15060125	C15060126	C15060127	C15060128	C15060129	C15060205
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015
Analysis Time:	11:25	11:47	12:09	12:31	12:53	14:53
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	**5 J**	<10	<10	<10	<10
1,1,2-Trichlorotrifluoroethane (Fr.113)	**26**	<25	<25	<25	<25	**27**
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<10	<10	<10	<10	<10	**18**
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	**48**	**45**	<25	<25	<25	**64**
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	**44**	**31**	**13**	**11**	**7 J**	**334**
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**38**	**65**	**14**	**13**	**64**	**550**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	B-50	B-100	B-100 Dup	B-200	B-300	B-400
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	C15060206	C15060207	C15060208	C15060209	C15060210	C15060211
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015
Analysis Time:	15:15	15:37	15:59	16:21	16:44	17:05
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	**61**	**57**	<10	<10	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	**28**	<25
1,1-Dichloroethene	<10	**1,875**	**2,401**	**179**	<10	<10
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	**113**	**125**	<25	<25	<25
trans-1,2-Dichloroethene	<10	**2,053**	**2,042**	**7 J**	<10	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	**496**	**613**	<25	<25	<25
cis-1,2-Dichloroethene	**6 J**	**23,080**	**26,594**	**181**	**55**	**10 J**
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	**34,411**	**37,746**	**194**	**67**	**35**
Carbon Tetrachloride	<25	**52**	**45**	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	<10	**44,051**	**48,623**	**1,286**	**162**	**66**
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**6 J**	**24,454**	**21,824**	**383**	**69**	**32**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	B-500	B-600	B-700	B-800	B-900	B-1000
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	C15060212	C15060213	C15060214	C15060215	C15060216	C15060217
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015
Analysis Time:	17:27	17:49	18:11	18:33	18:55	19:16
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	<10	<10	<10	<10	<10
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	**22**	**22**	**62**	**10**	**10**	**6 J**
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**20**	**21**	**483**	**32**	**22**	**9 J**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	B-Rd-0	B-Rd-100	B-Rd-200	B-Rd-400	B-Rd-550	B-Rd-700
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	C15060218	C15060219	C15060220	C15060221	C15060222	C15060223
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015
Analysis Time:	19:38	20:00	20:23	20:45	21:07	21:29
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	**408**	<10	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	**30**
1,1-Dichloroethene	<10	**14**	**75**	**714**	**7 J**	**9 J**
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<10	<10	**15**	**346**	<10	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	**1,399**	<25	**30**
cis-1,2-Dichloroethene	<10	<10	**40**	**2,978**	**24**	**41**
Chloroform	<25	<25	<25	<25	<25	**28**
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	**52**	**498**	**6,089**	**96**	**195**
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	**12**	**37**	**118**	**5,349**	**311**	**44**
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	**201**	**1,726**	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**44**	**169**	**217**	**127**	**405**	**20**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	B-Rd-800	B-Rd-850	B-Rd-900	C-0	C-50	C-100
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	C15060224	C15060225	C15060226	C15060227	C15060228	C15060229
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015
Analysis Time:	21:51	22:12	22:34	22:56	23:18	23:40
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	<10	**9 J**	**13**
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	<10	<10	**7 J**	**300**	**105**
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	**60**	**37**
trans-1,2-Dichloroethene	<10	<10	<10	<10	**279**	**11**
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	**28**	<25	<25
cis-1,2-Dichloroethene	<10	<10	<10	**128**	**4,276**	**63**
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	**31**	<25	**7,904**	**1,030**
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	**12**	<10	**7 J**	**655**	**89,694**	**3,632**
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**8 J**	**13**	**46**	**153**	**54,416**	**1,547**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	C-150	C-250	C-350	C-450	C-550	C-650
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	C15060230	C15060231	C15060232	C15060233	C15060234	C15060235
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/3/2015	6/3/2015	6/3/2015	6/3/2015	6/3/2015	6/3/2015
Analysis Time:	0:02	0:24	0:46	1:08	1:30	1:52
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane (Freon 11)	<25	**25**	<25	<25	<25	<25
1,1-Dichloroethene	**10 J**	**13**	<10	<10	<10	**26**
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	**7 J**	<10	<10	<10	<10	**70**
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	**62**	**39**	<25	<25	<25	**125**
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	**326**	**88**	**32**	**23**	**16**	**519**
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**303**	**127**	**42**	**32**	**23**	**74**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	C-700	C-750	C-900	C-900 Dup	C-950	D-0
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	C15060236	C15060237	A15060105	A15060106	A15060107	A15060108
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/3/2015	6/3/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015
Analysis Time:	2:17	2:39	13:41	14:12	14:41	15:17
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	<10	<10	**12**
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	<10	<10	<10	<10	**287**
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	**194**
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	**75**
cis-1,2-Dichloroethene	<10	<10	<10	<10	<10	**8,569**
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	**6,723**
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	**13**	**32**	<10	<10	<10	**19,566**
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**24**	**86**	<10	<10	<10	**60,202**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	**63**
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	D-100	D-200	D-300	D-350	D-450	D-500
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	A15060109	A15060110	A15060111	A15060112	A15060113	A15060114
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015
Analysis Time:	15:45	16:16	16:48	17:20	17:53	18:21
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	**14**	<10	<10	<10	<10	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	**578**	**44**	**8 J**	<10	<10	<10
1,1,2-Trichlorotrifluoroethane (Fr.113)	**26**	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	**532**	**16**	<10	<10	<10	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	**265**	**28**	<25	<25	<25	<25
cis-1,2-Dichloroethene	**5,664**	**317**	**10**	<10	<10	<10
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	**25,451**	**291**	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	**6,138**	**478**	**37**	<10	<10	<10
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**1,577**	**125**	**20**	**9 J**	**12**	**7 J**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	D-550	D-600	D-650	D-700	D-800	D-850
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	A15060115	A15060116	A15060117	A15060118	A15060119	A15060120
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/1/2015
Analysis Time:	18:50	19:22	19:53	20:26	20:57	21:29
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	<10	**9 J**	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	<10	**6 J**	**7 J**	**28**	<10
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	**27**	**138**	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	<10	<10	<10	<10	**22**	<10
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**6 J**	<10	**11**	**86**	**125**	**12**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	D-900	D-1000	D-e-275	D-e-325	D-e-475	D-e-525
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	A15060121	A15060122	A15060123	A15060124	A15060125	A15060126
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/1/2015	6/1/2015	6/1/2015	6/1/2015	6/2/2015	6/2/2015
Analysis Time:	22:01	22:30	23:03	23:31	9:05	9:33
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	<10	**41**	**5 J**	<10	<10
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<10	<10	**72**	<10	<10	<10
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	**80**	**39**	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	<10	<10	**365**	**8 J**	<10	<10
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**5 J**	**9 J**	**25**	**17**	**7 J**	<10
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	E-50	E-150	E-250	E-300	E-350	E-400
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	A15060127	A15060128	A15060129	A15060205	A15060206	A15060207
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015
Analysis Time:	10:02	10:30	11:00	13:29	13:58	14:26
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	**129**	**14**	**13**	<10	<10	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	**811**	**47**	**839**	**48**	<10	<10
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	**20**	**8 J**	**34**	<10	<10	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	**79**	**185**	**54**	<25	<25	<25
cis-1,2-Dichloroethene	**68**	**23**	**475**	**90**	<10	**7 J**
Chloroform	<25	<25	**42**	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	**3,326**	**420**	**1,634**	**241**	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	**673**	**56**	**3,489**	**338**	<10	**7 J**
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**171**	**19**	**509**	**16**	**6 J**	**13**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	E-400 Dup	E-500	E-600	E-650	E-700	E-800
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	A15060208	A15060209	A15060210	A15060211	A15060212	A15060213
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015
Analysis Time:	14:55	15:23	15:52	16:22	16:53	17:26
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	<10	**29**	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	<10	<10	**7 J**	**594**	<10
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<10	<10	<10	<10	**16**	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	**105**	<25
cis-1,2-Dichloroethene	<10	<10	<10	<10	**81**	<10
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	**4,860**	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	**6 J**	<10	<10	**33**	**2,866**	<10
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**13**	**21**	<10	**78**	**7,517**	**29**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	E-f-325	E-f-400	E-f-525	F-0	F-100	F-200
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	A15060214	A15060215	A15060216	A15060217	A15060218	A15060219
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015
Analysis Time:	17:54	18:24	18:52	19:21	19:53	20:24
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	<10	**8 J**	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	<10	<10	<10	**247**	<10
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<10	<10	<10	<10	**14**	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	**65**	<25
cis-1,2-Dichloroethene	<10	<10	<10	<10	**554**	<10
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	**869**	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	<10	<10	<10	<10	**7,012**	**10**
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<10	**15**	**5 J**	**8 J**	**3,333**	**33**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	F-250	F-300	F-350	F-400	F-500	F-550
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	A15060220	A15060221	A15060222	A15060223	A15060224	A15060225
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015	6/2/2015
Analysis Time:	20:58	21:26	21:58	22:30	22:59	23:28
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	<10	<10	<10	<10	<10
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<10	<10	<10	<10	<10	<10
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	<10	<10	**9 J**	<10	<10	<10
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	**25**	**286**	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<10	**21**	**34**	**7 J**	<10	**5 J**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	F-600	F-650	F-700	F-750	F-850	G-200
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	A15060226	A15060227	A15060228	A15060229	A15060230	A15060231
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/2/2015	6/3/2015	6/3/2015	6/3/2015	6/3/2015	6/3/2015
Analysis Time:	23:56	0:29	1:00	1:29	1:57	2:25
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	<10	<10	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	<10	**34**	**12**	<10	**19**
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<10	<10	<10	**7 J**	<10	**11**
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	**28**	<25	**42**
cis-1,2-Dichloroethene	<10	<10	**7 J**	**142**	<10	**497**
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	**300**	**100**	<25	**108**
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	<10	<10	**88**	**264**	<10	**769**
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**15**	**6 J**	**857**	**450**	**8 J**	**12,062**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	MW3-550	MW3-600	MW3-800	MW3-800 Dup	MW3-900	W-650
Project Number:	2962	2962	2962	2962	2962	2962
Lab File ID:	A15060232	A15060233	A15060234	A15060235	A15060236	A15060237
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015
Analysis Date:	6/3/2015	6/3/2015	6/3/2015	6/3/2015	6/3/2015	6/3/2015
Analysis Time:	2:58	3:30	3:59	4:29	4:58	5:32
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	**18**	**219**	<10	<10	<10	**5 J**
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	**81**	**4,879**	**6 J**	<10	**6 J**	**65**
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	**98**	**225**	<10	<10	<10	**13**
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	**156**	**135**	<25	<25	<25	**76**
cis-1,2-Dichloroethene	**3,704**	**13,801**	**15**	**7 J**	**15**	**328**
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	**1,299**	**52,493**	**46**	<25	**76**	**506**
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	**1,475**	**49,280**	**45**	**19**	**34**	**401**
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	**35**	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	**575**	**23,941**	**21**	**9 J**	**21**	**86**
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	W-750	W-850	X-550	X-700	X-850	mb150601c
Project Number:	2962	2962	2962	2962	2962	
Lab File ID:	A15060238	A15060239	A15060240	A15060241	A15060242	C15060103
Received Date:	5/29/2015	5/29/2015	5/29/2015	5/29/2015	5/29/2015	
Analysis Date:	6/3/2015	6/3/2015	6/3/2015	6/3/2015	6/3/2015	6/1/2015
Analysis Time:	6:04	6:34	7:03	7:31	7:59	13:26
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<10	<10	<10	**41**	<10	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<10	**33**	**52**	**2,803**	**8 J**	<10
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<10	**6 J**	**18**	**541**	<10	<10
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	**26**	**150**	<25	<25
cis-1,2-Dichloroethene	<10	**233**	**536**	**24,175**	**32**	<10
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	**322**	**1,751**	**49,279**	**59**	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	<10	**478**	**2,455**	**49,178**	**49**	<10
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<10	**260**	**1,002**	**31,769**	**36**	<10
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.

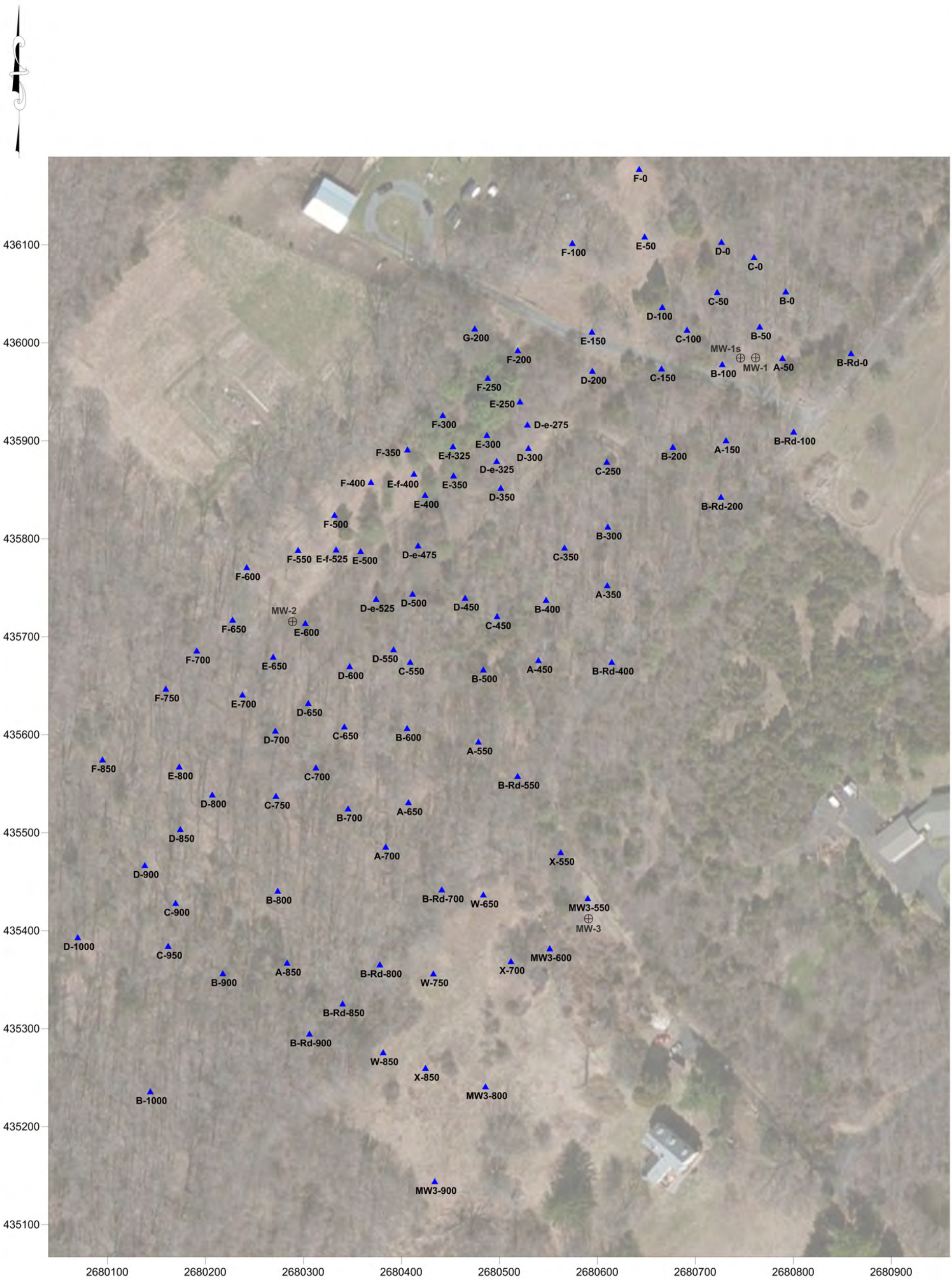
Table 1

Beacon Environmental Services, Inc.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA

Analysis by EPA Method 8260C

Client Sample ID:	mb150601a	mb150602c	mb150602a
Project Number:			
Lab File ID:	A15060103	C15060203	A15060203
Received Date:			
Analysis Date:	6/1/2015	6/2/2015	6/2/2015
Analysis Time:	12:42	14:09	12:32
Matrix:			
Units:	ng	ng	ng
COMPOUNDS			
Vinyl Chloride	<10	<10	<10
Trichlorofluoromethane (Freon 11)	<25	<25	<25
1,1-Dichloroethene	<10	<10	<10
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25
trans-1,2-Dichloroethene	<10	<10	<10
Methyl-t-butyl ether	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25
cis-1,2-Dichloroethene	<10	<10	<10
Chloroform	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25
Benzene	<25	<25	<25
Trichloroethene	<10	<10	<10
1,4-Dioxane	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25
Toluene	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25
Tetrachloroethene	<10	<10	<10
1,1,1,2-Tetrachloroethane	<25	<25	<25
Chlorobenzene	<25	<25	<25
Ethylbenzene	<25	<25	<25
p & m-Xylene	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25
o-Xylene	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25
Isopropylbenzene	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25
Naphthalene	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25
TPH C_4-C_9	<5,000	<5,000	<5,000
TPH C_{10}-C_{15}	<5,000	<5,000	<5,000

Results in nanograms (ng). J = Values below limit of quantitation (LOQ) but above limit of detection (LOD). B = Detected in method blank.



System: US State Plane 1983
Zone: Pennsylvania South FIPS 3702
Datum: NAD 1983
Coordinate Units: Feet

LEGEND

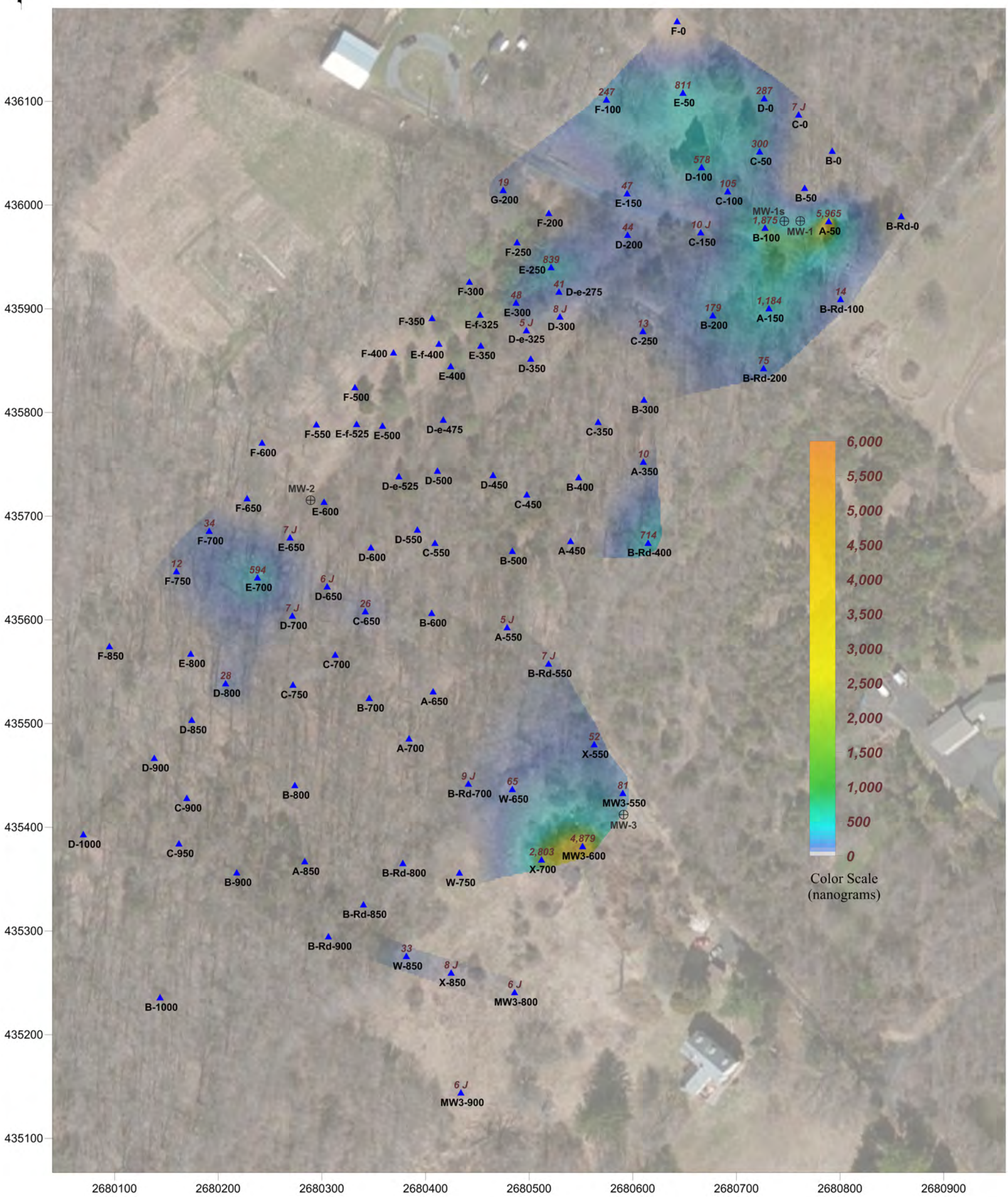
W-650 PASSIVE SOIL-GAS SAMPLE LOCATION

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road, Suite 1, Forest Hill, MD 21050 USA
www.Beacon-USA.com 1-410-838-8780
Beacon Project No. 2962, June 2015

Scale in Feet
0 100 200

Figure 1
Passive Soil-Gas Survey
Sample Locations

Nockamixon Township TCE Site
Nockamixon Township, PA



System: US State Plane 1983
Zone: Pennsylvania South FIPS 3702
Datum: NAD 1983
Coordinate Units: Feet

LEGEND

8 J NANOGRAMS/SAMPLER (J = Estimated Value)

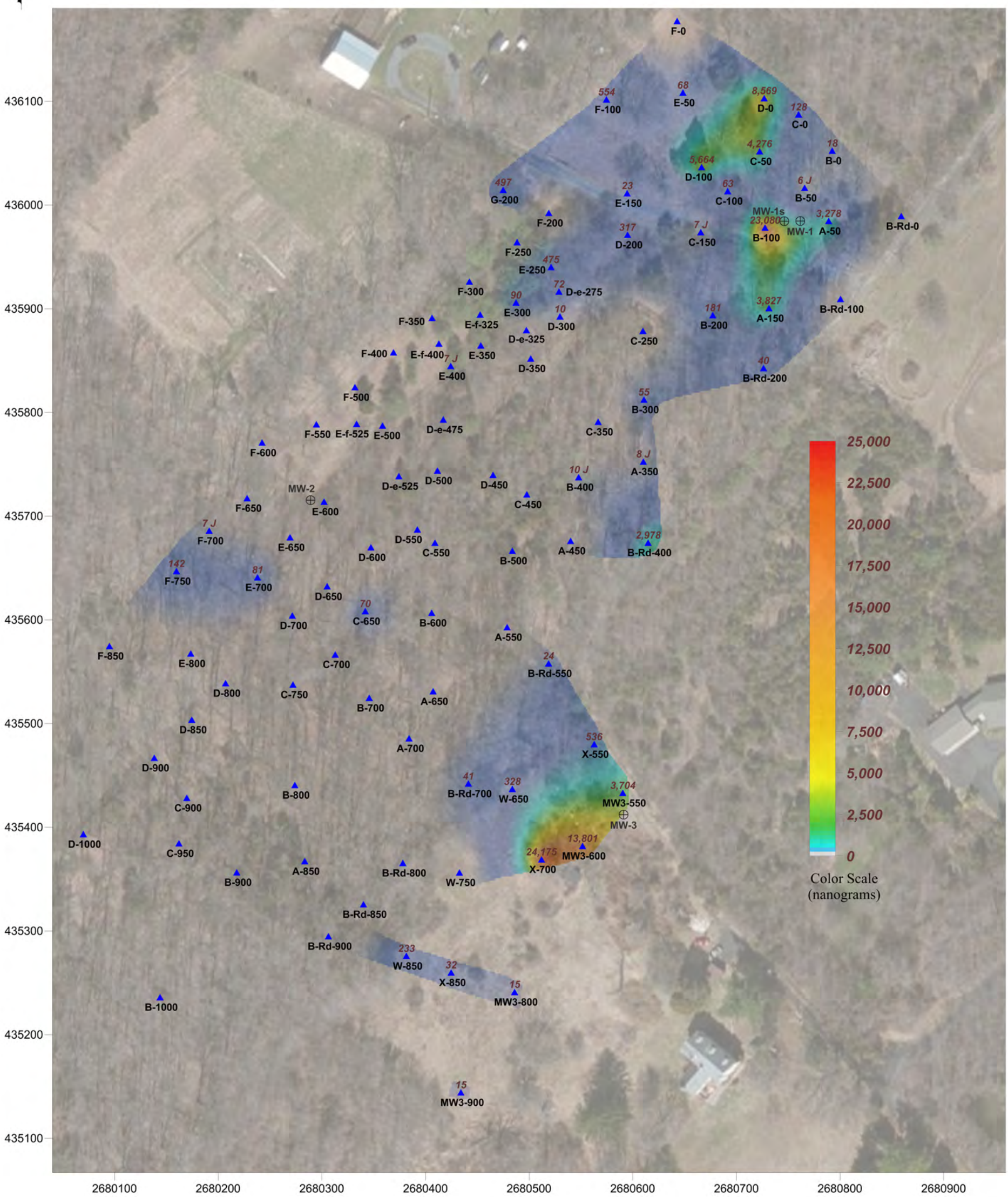
▲ W-650 PASSIVE SOIL-GAS SAMPLE LOCATION

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road, Suite 1, Forest Hill, MD 21050 USA
www.Beacon-USA.com 1-410-838-8780
Beacon Project No. 2962, June 2015

Scale in Feet
0 100 200

Figure 2
Passive Soil-Gas Survey
1,1-Dichloroethene

Nockamixon Township TCE Site
Nockamixon Township, PA



System: US State Plane 1983
Zone: Pennsylvania South FIPS 3702
Datum: NAD 1983
Coordinate Units: Feet

LEGEND

8 J NANOGRAMS/SAMPLER (J = Estimated Value)

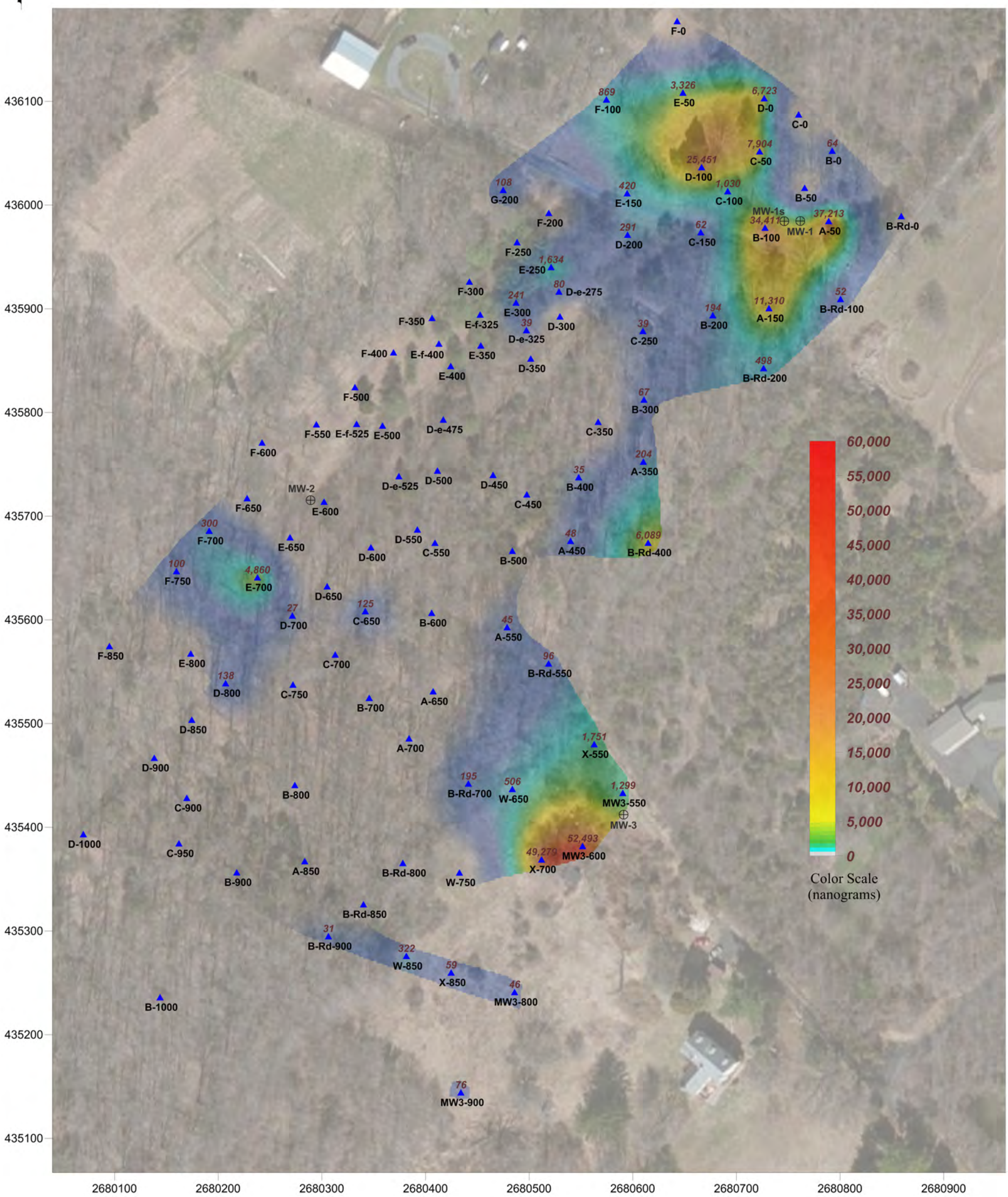
▲ W-650 PASSIVE SOIL-GAS SAMPLE LOCATION

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road, Suite 1, Forest Hill, MD 21050 USA
www.Beacon-USA.com 1-410-838-8780
Beacon Project No. 2962, June 2015

Scale in Feet
0 100 200

Figure 3
Passive Soil-Gas Survey
cis-1,2-Dichloroethene

Nockamixon Township TCE Site
Nockamixon Township, PA



System: US State Plane 1983
Zone: Pennsylvania South FIPS 3702
Datum: NAD 1983
Coordinate Units: Feet

LEGEND

1,000 NANOGRAMS/SAMPLER

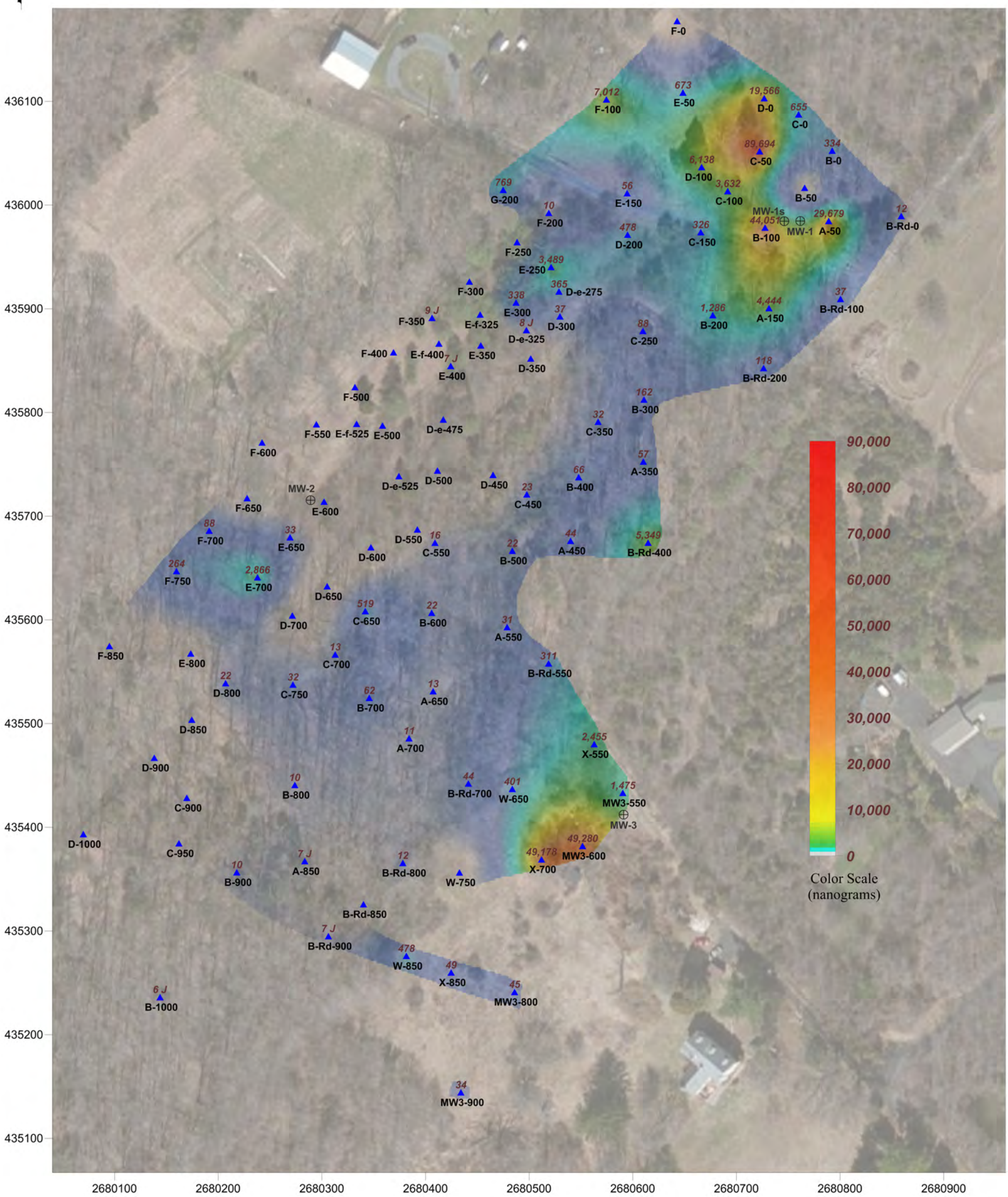
W-650 PASSIVE SOIL-GAS SAMPLE LOCATION

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road, Suite 1, Forest Hill, MD 21050 USA
www.Beacon-USA.com 1-410-838-8780
Beacon Project No. 2962, June 2015

Scale in Feet
0 100 200

Figure 4
Passive Soil-Gas Survey
1,1,1-Trichloroethane

Nockamixon Township TCE Site
Nockamixon Township, PA



System: US State Plane 1983
Zone: Pennsylvania South FIPS 3702
Datum: NAD 1983
Coordinate Units: Feet

LEGEND

8 J NANOGRAMS/SAMPLER (J = Estimated Value)

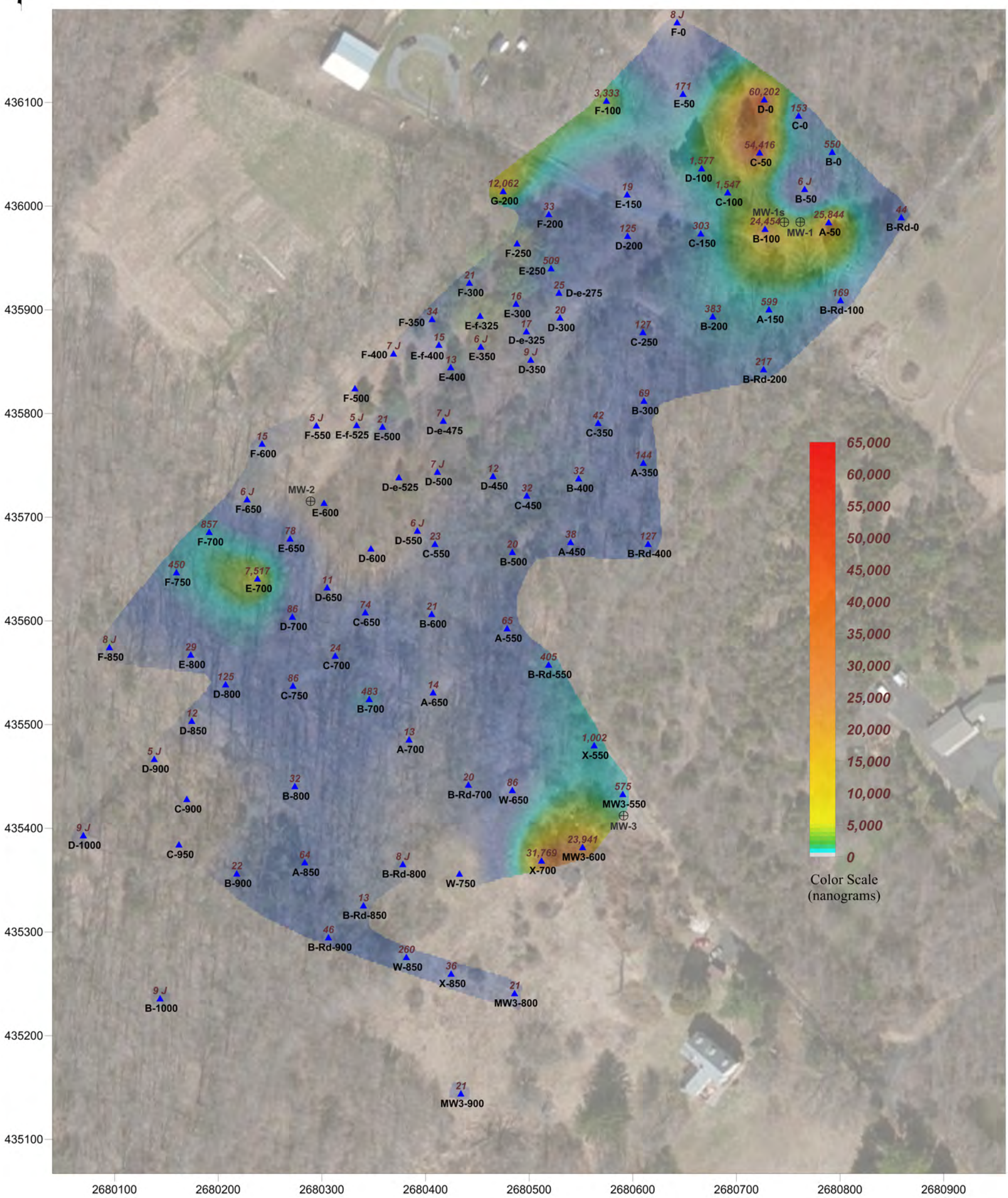
▲ W-650 PASSIVE SOIL-GAS SAMPLE LOCATION

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road, Suite 1, Forest Hill, MD 21050 USA
www.Beacon-USA.com 1-410-838-8780
Beacon Project No. 2962, June 2015

Scale in Feet
0 100 200

Figure 5
Passive Soil-Gas Survey
Trichloroethene

Nockamixon Township TCE Site
Nockamixon Township, PA



System: US State Plane 1983
Zone: Pennsylvania South FIPS 3702
Datum: NAD 1983
Coordinate Units: Feet

LEGEND

8 J NANOGRAMS/SAMPLER (J = Estimated Value)

▲ W-650 PASSIVE SOIL-GAS SAMPLE LOCATION

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road, Suite 1, Forest Hill, MD 21050 USA
www.Beacon-USA.com 1-410-838-8780
Beacon Project No. 2962, June 2015

Scale in Feet
0 100 200

Figure 6
Passive Soil-Gas Survey
Tetrachloroethene

Nockamixon Township TCE Site
Nockamixon Township, PA

Attachments

Attachment 1

APPLYING RESULTS FROM PASSIVE SOIL-GAS SURVEYS

The utility of soil-gas surveys is directly proportional to their accuracy in reflecting and representing changes in the subsurface concentrations of source compounds. Passive soil-gas survey results are the mass collected from the vapor-phase emanating from the source(s). The vapor-phase is merely a fractional trace of the source(s) and, as a matter of convenience, the units used in reporting detection values from passive soil-gas surveys are smaller than those employed for source-compound concentrations.

Passive soil gas data are reported in mass of compounds identified per sample location (e.g., nanograms (ng) or micrograms (µg) per sampler). Results from a passive soil gas survey typically are then used to guide where follow-on intrusive samples should be collected to obtain corresponding concentrations of the contaminants in soil, soil gas, and/or groundwater, as well as eliminate those areas where intrusive samples are not required. It is not practical to report passive soil gas data as concentration because the sampler's uptake rates of the compounds are often greater than the replenishment rates of the compounds around the sampler, which results in low bias measurements, and the replenishment rates will be dependent on several factors that include, at a minimum, soil gas concentrations, soil porosity and permeability, and soil moisture level.

Whatever the relative concentrations of source and associated soil gas, best results are realized when the ratio of soil-gas measurements to actual subsurface concentrations remains as close to constant as the real world permits. It is the reliability and consistency of this ratio, not the particular units of mass (*e.g.*, nanograms) that determine usefulness. Thus, BEACON emphasizes the necessity of conducting — at minimum — follow-on intrusive sampling in areas that show relatively high soil-gas measurements to obtain corresponding concentrations of soil and groundwater contaminants. These correspondent values furnish the basis for approximating a relationship. For extrapolating passive soil gas results to vapor intrusion evaluations, we recommend a minimum of three passive soil gas locations be converted to a shallow vapor well then sampled using an active soil gas method. Once a relationship is established, it can be used in conjunction with the remaining soil-gas measurements to estimate subsurface contaminant concentrations across the survey field. (See www.beacon-usa.com/passivesoilgas.html, Publication 1: *Mass to Concentration Tie-In for PSG Surveys* and Publication 4: *Groundwater and PSG Correlation*.) It is important to keep in mind, however, that specific conditions at individual sample points, including soil porosity and permeability, depth to contamination, and perched ground water, can have an impact on soil-gas measurements at those locations.

When passive soil-gas surveys are utilized as described above, the data provide information that can yield substantial savings in drilling costs and in time. They furnish, among other things, a checklist of compounds expected at each survey location and help to determine how and where drilling budgets can most effectively be spent. Passive soil-gas surveys can also be used as a remediation or general site monitoring tool that can be implemented on a quarterly, semi-annual or annual basis.

Attachment 2

FIELD PROCEDURES FOR PASSIVE SOIL-GAS SURVEYS

The following field procedures are routinely used during a BEACON Passive Soil-Gas Survey. Modifications can be and are incorporated from time to time in response to individual project requirements. In all instances, BEACON adheres to EPA-approved Quality Assurance and Quality Control practices.

A. Field personnel carry a BESURE Sample Collection Kit™ and support equipment to the site and deploy the passive samplers in a prearranged survey pattern. A passive sampler consists of a borosilicate glass vial containing hydrophobic adsorbent cartridges with a length of wire attached to the vial for retrieval. Although samplers require only one person for emplacement and retrieval, the specific number of field personnel required depends upon the scope and schedule of the project. Each Sampler emplacement generally takes less than two minutes.

B. At each survey point a field technician clears vegetation as needed and, using a hammer drill with a 1″- to 1½″-diameter bit, creates a hole 12 to 14 inches deep. [Note: For locations covered with asphalt, concrete, or gravel surfacing, the field technician drills a 1″- to 1½″-diameter hole through the surfacing to the soils beneath]. The technician then, using a hammer drill with a ½″ diameter bit, creates a hole three-feet deep. The hole is then sleeved with a 1″-diameter metal sleeve.

C. The technician then removes the solid plastic cap from a sampler and replaces it with a Sampling Cap (a plastic cap with a hole covered by screen meshing). The technician inserts the sampler, with the Sampling Cap end facing down, into the hole (**see attached figure**). The sampler is then covered with an aluminum foil plug and soils for uncapped locations or, for capped locations, an aluminum foil plug and a concrete patch. The sampler's location, time and date of emplacement, and other relevant information are recorded on the Field Deployment Form.

D. One or more trip blanks are included as part of the quality-control procedures.

E. Once all the samplers have been deployed, field personnel schedule sampler recovery and depart, taking all other equipment and materials with them.

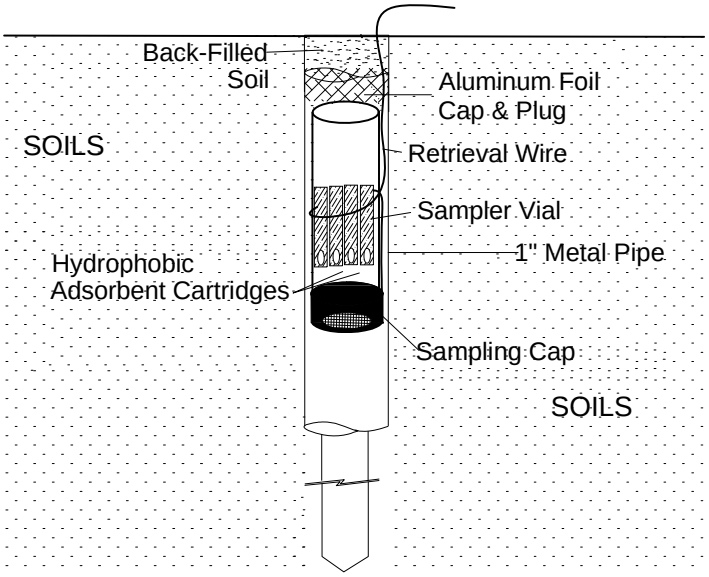
F. Field personnel retrieve the samplers at the end of the exposure period. At each location, a field technician withdraws the sampler from its hole, removes the retrieval wire, and wipes the outside of the vial clean using gauze cloth; following removal of the Sampling Cap, the threads of the vial are also cleaned. A solid plastic cap is screwed onto the vial and the sample location number is written on the label. The technician then records sample-point location, date, time, etc. on the Field Deployment Form.

G. Sampling holes are refilled with soil, sand, or other suitable material. If samplers have been installed through asphalt or concrete, the hole is filled to grade with a plug of cold patch or cement.

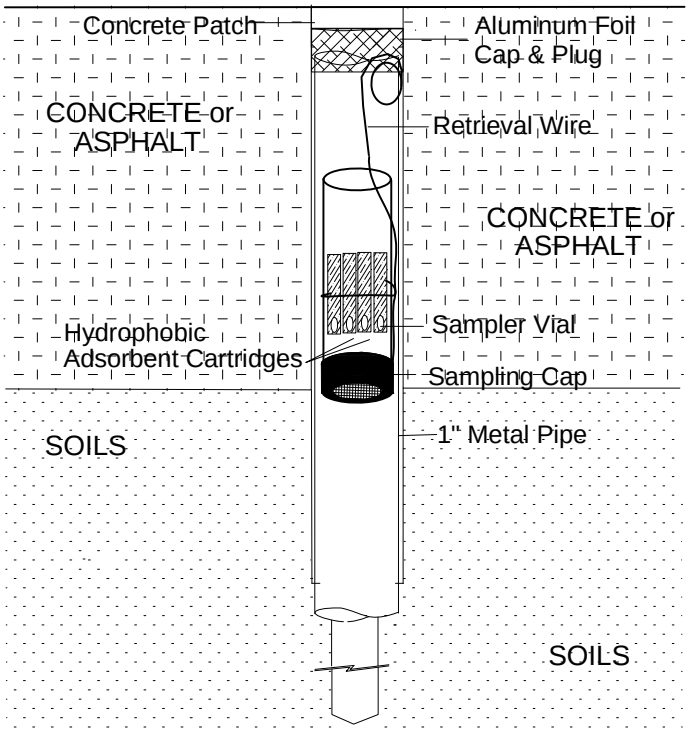
H. Following retrieval, field personnel ship or transport the passive samplers to BEACON's laboratory.

BEACON'S PASSIVE SOIL-GAS SAMPLER

DEPLOYMENT THROUGH SOILS



DEPLOYMENT THROUGH AN ASPHALT/CONCRETE CAP



Attachment 3

Chain of Custody Form

Shipped via FedEx overnight

BEACON ENVIRONMENTAL SERVICES, INC.

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

Project Information		Client Information		
Beacon Project No.:	2962	Company Name:	TETRA TECH, Inc.	Client PO No.:
Site Name:	Nockamixon TCE Site	Office Location:	King of Prussia, PA 19406	
Site Location:	Nockamixon Twp. Bucks Co, PA	Samples Submitted By:	N. Dolic	Expedited Turnaround Time
Analytical Method:	U.S. EPA Method 8260C	Contact Phone No.:	610 842-4756	☐ Rush (Specify): ____ days
Target Compounds:				

Field Sample ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	Sampling Hole Depth (inches)	Type of Surface (Soil/Asphalt/ Concrete/Gravel)	Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings)
	5-7-15				
Trip-1					
Trip-2					
Trip-3					
MW3-550	0945	0910	32	Soil	5-27-15
MW3-600	10:10	0950	36	↓	5-27-15
MW3-800	10:02	0945	36	↓	5-27-15 (DUP-PSG-02)
MW3-900	09:58	0940	36	↓	5-27-15
X-550	10:16	1000	32	↓	5-27-15
X-700	09:50	0930	36	↓	5-27-15
W-850	09:55	0917	36	↓	5-27-15
B_Rd-550	10:23	1005	30	↓	5-27-15
B_Rd-400	10:28	1020	32	↓	5-27-15
B_Rd-200	10:32	1037	30	↓	5-27-15
B_Rd-100	10:36	1033	30	↓	5-27-15
B_Rd-0	10:42	1040	30	↓	5-27-15

Special Notes/Instructions: Duplicate pair MW3-800 and DUP-PSG-02

Shipment of Field Kit to Laboratory — Custody Seal # 3850994 **Intact? Y N**

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
[illegible]	5-28-15 / 1630	FedEx	Kenny Ipencho	05-29-15 / 1134 hrs

BEACON ENVIRONMENTAL SERVICES, INC.

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

Project Information		Client Information		
Beacon Project No.:	2962	Company Name:	TETRA TECH, Inc.	Client PO No.:
Site Name:	Nockamixon TCE Site	Office Location:	King of Prussia PA 19406	
Site Location:	Nockamixon Twp.	Samples Submitted By:	N. Dedic	Expedited Turnaround Time
Analytical Method:	U.S. EPA Method 8260C	Contact Phone No.:	610-842-4756	☐ Rush (Specify): ____ days
Target Compounds:				

Field Sample ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	Sampling Hole Depth (inches)	Type of Surface (Soil/Asphalt/ Concrete/Gravel)	Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings)
	5-7-15				
A-50	10:45	1030	32	Soil	5-27-15
B-100	10:49	1055	32		5-27-15 (DUP-PSG-04)
C-0	10:52	1048	32		Bottom - wet 5-27-15
B-0	10:55	1044	32		Wet from 2' down 5-27-15
C-50	11:00	1052	36		Wet from 2.5' 5-27-15
D-0	11:08	0911	32		5-26-15
E-50	11:17	0907	36		5-28-15
F-0	11:20	0902	36		5-28-15
D-100	11:23	0915	30		5-28-15
F-100	11:28	0855	36		5-28-15
E-150	11:33	0918	36		5-28-15
F-200	11:38	0921	30		5-28-15
D-200	11:42	0925	30		5-28-15
C-150	11:46	1100	30		5-27-15
B-200	11:58	1105	30		5-27-15

Special Notes/Instructions: Duplicate pair B-100 and DUP-PSG-04

Shipment of Field Kit to Laboratory — Custody Seal # 3850994 **Intact? Y N**

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Neil Dedic	5-28-15 / 1630	FedEx	Kenny Ifeacho	05-29-15 / 1134 hrs

BEACON ENVIRONMENTAL SERVICES, INC.

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

Project Information		Client Information		
Beacon Project No.:	2962	Company Name:	TETRATECH, Inc.	Client PO No.:
Site Name:	NOCKAMIXON TCE Site	Office Location:	King of Prussia, PA 19406	
Site Location:	Nockamixon Twp. Bucks Co, PA	Samples Submitted By:	N. Dedic	Expedited Turnaround Time
Analytical Method:	U.S. EPA Method 8260C	Contact Phone No.:	610 842-4756	☐ Rush (Specify): ___ days
Target Compounds:				

Field Sample ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	Sampling Hole Depth (inches)	Type of Surface (Soil/Asphalt/ Concrete/Gravel)	Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings)
A-150	5-7-15 / 11:53	1027	36	Soil	5-27-15
B-300	12:02	1115	36	↓	5-27-15
A-350	12:07	1023	36	↓	5-27-15
E-250	14:16	0952	30	↓	5-28-17
D-300	14:20	0955	30	↓	5-28-17
D-250	14:24	0948	30	↓	5-28-15
D-350	14:28	1020	30	↓	5-28-15
E-300	14:32	0958	30	↓	5-28-15
D_e-275	14:35	1002	30	↓	5-28-15
D_e-325	14:38	1018	30	↓	5-28-15
E-350	14:41	1015	30	↓	5-28-15
E-400	14:50	1027	30	↓	5-28-15 (DUP-PSG-03)
~~E-450~~	14:53	NA	30	↓	5-28-15 PSG bottle missing
E-500	15:00	1058	30	↓	5-28-15
E-600	15:05	1102	32	↓	5-28-15

EMPTY Vial KAT

Not Received KAT

Special Notes/Instructions: Duplicate pair E-450 and DUP-PSG-03

Shipment of Field Kit to Laboratory — Custody Seal # 3850994 **Intact?** Ⓨ N

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Neil Dedic	5-28-15/1630	FedEx	Kenny Tipacho	05-29-15/1134 hrs

BEACON ENVIRONMENTAL SERVICES, INC.

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

Project Information		Client Information		
Beacon Project No.:	2962	Company Name:	TETRA TECH, INC	Client PO No.:
Site Name:	Nockamixon TCE Site	Office Location:	King of Prussia, PA 19406	
Site Location:	Nockamixon Twp, Bucks Co, PA	Samples Submitted By:	N. Dedic	Expedited Turnaround Time
Analytical Method:	U.S. EPA Method 8260C	Contact Phone No.:	610 842-4756	☐ Rush (Specify): ___ days
Target Compounds:				

Field Sample ID	Date Emplaced 5-7-15 / Time Emplaced	Date Retrieved / Time Retrieved	Sampling Hole Depth (inches)	Type of Surface (Soil/Asphalt/ Concrete/Gravel)	Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings)
E-550	15:10	NA	30	soil	
F-650	15:14	1445	32	↓	5-27-15
F-750	15:25	1425	32	↓	5-27-15
F-700	15:28	1435	32	↓	5-27-15
F-850	15:35	1420	36	↓	5-27-15 (PSG sample found at surface/Pull-out)
E-800	15:42	1410	32	↓	5-27-15
E-700	15:50	1430	36	↓	5-27-15
E-650	15:58	1448	32	↓	5-27-15
F-600	16:05	1105	34	↓	5-28-15
F-550	16:10	1110	30	↓	5-28-15
E-F-525	16:13	1115	30	↓	5-28-15
F-500	16:16	1042	30	↓	5-28-15
F-400	16:22	1120	24	↓	Rock/stone pcs ~2' 5-28-15
F-350	16:28	1125	24	✓	Rock/stone pcs ~2' 5-28-15

Special Notes/Instructions:

Shipment of Field Kit to Laboratory — Custody Seal # 3850994 **Intact? Y N**

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Nick Dedic	5-28-15 / 1630	Fed Ex	Kenny Ifeacho	05-29-15 / 1134am

BEACON ENVIRONMENTAL SERVICES, INC.
2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

Project Information		Client Information		
Beacon Project No.:	2962	Company Name:	TETRA TECH, Inc.	Client PO No.:
Site Name:	Nockamixon TCE Site	Office Location:	King of Prussia, PA 19406	
Site Location:	Nockamixon Twp., Bucks Co., PA	Samples Submitted By:	N. Dedic	Expedited Turnaround Time
Analytical Method:	U.S. EPA Method 8260C	Contact Phone No.:	610 842-4756	☐ Rush (Specify): ____ days
Target Compounds:				

Field Sample ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	Sampling Hole Depth (inches)	Type of Surface (Soil/Asphalt/ Concrete/Gravel)	Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings)
	5-8-2015				
G-200	09:40	0937	30	Soil	below 1.5' - wet 5-28-15
F-250	09:47	0930	34		2' - rock pieces 5-28-15
F-300	09:51	1130	30		5-28-15
E/F-325	09:54	1010	24		~~rock pieces~~ 5-28-15
E/F-400	10:00	1037	18		rock pieces 5-28-15
D/E-475	10:07	1045	30		5-28-15
D-450	10:11	1050	18		5-28-15
D-500	10:15	1053	30		5-28-15
D-550	10:19	1520	30		5-27-15
D/E-525	10:25	1512	30		5-27-15
D-600	10:30	1508	36		5-27-15
C-550	10:33	1140	30		5-27-15
C-650	10:37	1150	32		5-27-15
D-650	10:39	1453	36		5-27-15
C-700	10:43	1505	36		5-27-15 (little water in sample bottle)

Special Notes/Instructions:

Shipment of Field Kit to Laboratory — Custody Seal # 3850994 **Intact? Y N**

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
[illegible]	5-28-15 / 1630	FedEx	Kenny Dj[illegible]	05-29-15 / 1134 hrs

BEACON ENVIRONMENTAL SERVICES, INC.

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

Project Information		Client Information		
Beacon Project No.:	2962	Company Name:	TETRA TECH, Inc.	Client PO No.:
Site Name:	NOCKAMIXON TCE Site	Office Location:	King of Prussia, PA 19406	
Site Location:	Nockamixon Twp., Bucks Co, PA	Samples Submitted By:	N. Bedic	Expedited Turnaround Time
Analytical Method:	U.S. EPA Method 8260C	Contact Phone No.:	610 842-4756	☐ Rush (Specify): ____ days
Target Compounds:				

Field Sample ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	Sampling Hole Depth (inches)	Type of Surface (Soil/Asphalt/ Concrete/Gravel)	Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings)
	5-8-2015				
C-750	10:50	1205	36	Soil	5-27-15
D-700	10:53	1458	36		5-27-15
D-800	10:57	1415	36		1.5' below-wet 5-27-15
D-850	11:02	1405	36		1.5' below-wet 5-27-15
D-900	11:05	~~1230~~ 1400	36		5-27-15
C-900	11:10	1220	24		Rocky 5-27-15 (DUP-PSG-01)
~~D-1000~~	~~11:13~~				
C-950	11:13	1225	36	Soil	5-27-15
D-1000	11:18	1353	36		1.5' below-wet 5-27-15
B-1000	11:23	1230	36		very moist surface 5-27-15
B-900	11:30	1215	36		very moist surface <1.5' 5-27-15
A-850	11:35	1235	36		5-27-15
B-800	11:38	1210	36		5-27-15
B-700	11:42	1158	36		5-27-15
A-700	11:47	1245	36		5-27-15

Special Notes/Instructions: Duplicate pair C-900 and DUP-PSG-01

Shipment of Field Kit to Laboratory — Custody Seal # 3850994 **Intact? Y N**

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
[illegible]	5-28-15 / 1630	FedEx	Kenny Deacko	05-29-15 / 1134 ms

BEACON ENVIRONMENTAL SERVICES, INC.

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

Project Information		Client Information		
Beacon Project No.:	2962	Company Name:	TETRA TECH, INC.	Client PO No.:
Site Name:	NOCKAMIXON TCE Site	Office Location:	King of Prussia, PA 19406	
Site Location:	NOCKAMIXON Twp., Bucks Co., PA	Samples Submitted By:	N. Deckic	Expedited Turnaround Time
Analytical Method:	U.S. EPA Method 8260C	Contact Phone No.:	610 342-4756	☐ Rush (Specify): ___ days
Target Compounds:				

Field Sample ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	Sampling Hole Depth (inches)	Type of Surface (Soil/Asphalt/ Concrete/Gravel)	Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings)
	5-8-2015				
BRd-700	12:25	1327	36	Soil	* 5-27-15 (PSG sample found at surface/pull-out)
B Rd-800	12:30	1332	36		* 5-27-15 (PSG sample found at surface/pull-out)
BRd-850	12:33	1337	36		1' - water 5-27-15
BRd-900	12:36	1345	36		5-27-15
A-650	12:41	1250	36		5-27-15
A-550	12:45	1010	30		5-27-15
B-600	12:48	1143	30		5-27-15
B-500	13:00	1148	30		5-27-15
A-450	13:05	1013	36		5-27-15
B-400	13:08	1123	30		5-27-15
C-450	13:11	1127	30		5-27-15
C-350	13:15	1120	30		5-27-15
C-250	13:18	1110	24		2' - Rocks 5-27-15
B-50	13:30	1145	36		5-28-15
C-100	13:33	1525	30		30" - Rocks or Bedrock?, 15" - water 5-27-15

Special Notes/Instructions:

Shipment of Field Kit to Laboratory — Custody Seal # 3850994 **Intact? Y N**

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Neil Redick	5-28-15/1630	FedEx	Kenny Ifeacho	05-29-15/1134 hrs

BEACON ENVIRONMENTAL SERVICES, INC.

CHAIN-OF-CUSTODY
PASSIVE SOIL-GAS SAMPLES

2203A Commerce Road, Suite 1
Forest Hill, MD 21050 USA
P: 1-410-838-8780 | F: 1-410-838-8740

Project Information		Client Information		
Beacon Project No.:	2962	Company Name:	TETRA TECH, INC.	Client PO No.:
Site Name:	NOCKAMIXON TCE SITE	Office Location:	King of Prussia, PA 19406	
Site Location:	NOCKAMIXON TWP, BUCKS CO., PA	Samples Submitted By:		Expedited Turnaround Time
Analytical Method:	U.S. EPA Method 8260C	Contact Phone No.:		☐ Rush (Specify): ____ days
Target Compounds:				

Field Sample ID	Date Emplaced / Time Emplaced	Date Retrieved / Time Retrieved	Sampling Hole Depth (inches)	Type of Surface (Soil/Asphalt/ Concrete/Gravel)	Optional Sample Information (e.g., Description of Sample Location, Sample Condition, PID/FID Readings)
	5-8-2015				
X-850	13:45	0925	36	Soil	5-27-15
W-750	13:48	0934	36	↓	5-27-15
W-650	13:50	0915	36	↓	5-27-15

Special Notes/Instructions:

Shipment of Field Kit to Laboratory — Custody Seal # 3850994 **Intact? Y N**

Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Neil Redler	5-28-15 / 1630	FedEx	Kenny Tfeacho	05-29-15 / 1134 hrs

Attachment 4

LABORATORY PROCEDURES FOR PASSIVE SOIL-GAS SAMPLES

Following are laboratory procedures used with BEACON Passive Soil-Gas Surveys, a screening technology for expedited site investigation. After exposure, adsorbent cartridges from the passive samplers are analyzed using U.S. EPA Method 8260C as a guidance document, a capillary gas chromatographic/mass spectrometric method, modified to accommodate high temperature thermal desorption of the adsorbent cartridges and to meet the objectives of reporting semi-quantitative data. This procedure is summarized as follows:

A. The adsorbent cartridges are loaded with internal standards and surrogates prior to loading the autosampler with the cartridges. The loaded cartridges are purged in a helium flow. Then the cartridges are thermally desorbed in a helium flow onto a focusing trap. Any analytes in the helium stream are adsorbed onto a focusing trap.

B. Following trap focusing, the trap is thermally desorbed onto a Rxi-624Sil MS 20m, 0.18 mm ID, 1.00 micron filament thickness capillary column.

C. The GC/MS is scanned between 35 and 270 Atomic Mass Units (AMU) at 3.12 scans per second.

D. BFB tuning criteria and the initial five-point calibration procedures are those stated in method SW846-8260C. System performance and calibration check criteria are met prior to analysis of samples. A laboratory method blank is analyzed after the daily standard to determine that the system is contaminant-free.

E. The instrumentation used for these analyses includes:

- Agilent 6890-5973a Gas Chromatograph/Mass Spectrometer;
- Markes Unity thermal desorber;
- Markes UltrA autosampler; and
- Markes Mass Flow Controller Modules

- Agilent 7890-5975c Gas Chromatograph/Mass Spectrometer;
- Markes Unity2 thermal desorber;
- Markes UltrA2 autosampler; and
- Markes Mass Flow Controller Modules.

APPENDIX C

SOIL BORING LOGS

BORING NUMBER: A-50

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	7/7/2015	X Coordinate:	
Project Number:		Date Completed:	7/7/2015	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	5.5	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
1	1	3'/5'	0 - 01' M. brown; topsoil - silty loam 0.1' - 1.5' Brown; SILT, trace fine sand + clay + fine gravel (rock fragments, angular)	ML	_v_v	0.0	moist	
2			1.5' - 3' L. green-gray; GRAVEL (rock fragments) with brown silt	GM		0.0 0.0	damp	Collect sample Noc-A-50-0203 for SVOC PCB/Pest, Metals from 2.5'-3' @ 1015
3						0.0 1.5		
4			3' - 4' Brown; SILT, some fine sand	ML		5.5 423		Collect sample Noc-A-50-0304 for VOC from 3.5'-4' @ 1010
5			4' - 5.5' L. green-gray with brown; silty GRAVEL (rock fragments)	GM		240 180		Noticeable odor at bottom section of core sample
6	2		EOB @ 5.5'					
7								
8								
9								
10								

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: D-0

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	7/7/2015	X Coordinate:	
Project Number:		Date Completed:	7/7/2015	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	4.8	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 0.2' M. brown; topsoil - silty loam		_v_v			
			0.2' - 4.3' Brown; SILT, trace fine sand + clay			0.0		
							moist	
1						1.6		
						2.8		
2						2.5		
								Collect sample Noc-D-0-0002 for SVOC PCB/Pest, Metals from 0'-2' @ 1110
	1					4.0		
3				ML		7.0		
							damp	
						37.8		
4						180		Collect sample Noc-D-0-0405 for VOC from 4'-4.5' @ 1105
			4.3' - 4.8' L. green-gray; sandy SILT with gravel (rock fragments)			399		
						202		Noticeable odor at bottom section of core sample
5			EOB @ 4.8'					
6								
7								
8								
9								
10								

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: C-50

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	7/7/2015	X Coordinate:	
Project Number:		Date Completed:	7/7/2015	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	4.5	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 02' M. brown; topsoil - silty loam		_v_v			
			0.2' - 3' Brown; SILT, trace fine sand + clay + fine gravel (rock fragments, angular)			0.0	moist	
1						3.5		
						6.0		
2						18.3		Collect sample Noc-C-50-0002 for SVOC PCB/Pest, Metals from 0'-2' @ 1205
	1	3.5'/4.5'		ML		60.7	damp	
3						133		
			3' - 3.8' Green-gray with brown; rock fragments with sandy SILT			1051.0		Collect sample Noc-C-50-0304 for VOC from 3.5'-4' @ 1155
4			3.8' - 4.5' Brown; SILT, some rock fragments, trace fine sand + clay. Bottom all rock fragments (green-gray)					Noticeable odor at bottom section of core sample
5			EOB @ 4.5'					
6								
7								
8								
9								
10								

First hand augered at location as burried metals suspected from geophysical survey. No metals found and hit refusal @ 3' bgs. Just next to hand augered hole conduct DPT. Drilling performed with Geoprobe 6620DT rig. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: G-200

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	7/7/2015	X Coordinate:	
Project Number:		Date Completed:	7/7/2015	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	5.5	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 02' M. brown; topsoil - silty loam		v_v			
			0.2' - 2' Brown; SILT, trace fine sand + clay + fine gravel (rock fragments, angular)			0.0	moist	
1						0.0		
				ML				
						0.0		
2						0.0		
			2' - 2.5' L. green-gray with brown; GRAVEL (rock fragments) some silt (brown)	GM				Collect sample Noc-G-200-0103 for SVOC PCB/Pest, Metals from 1'-2.5' @ 1250
	1	5'/5'	2.5' - 3.5' Brown mottled gray; SILT, trace fine gravel (rock fragments)			0.0		
3				ML		0.0		
							damp	
			3.5' - 4.3' Green-gray; medium GRAVEL (rock fragments) some brown silt			0.0		
4				GM		0.0		
			4.3' - 5.5' Brown; SILT, trace fine gravel (rock fragments).			0.2		
5				ML		0.9		
		0.5'/0.5	Bottom rocky.			3.5		Collect sample Noc-G-200-0506 for VOC from 5'-5.5' @ 1245
6			EOB @ 5.5'					
7								
8	2							
9								
10								

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: E-250

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	7/7/2015	X Coordinate:	
Project Number:		Date Completed:	7/7/2015	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	5.5	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 02' M. brown; topsoil - silty loam		v_v			
			0.2' - 2.5' Brown; SILT, trace fine sand + clay gravel (rock fragments, angular)			0.0		
1						0.0		
				ML				
						1.5		
2						1.5	damp	Collect sample Noc-E-250-0002 for SVOC, PCB/Pest, Metals from 0'-2' at 1415
	1	5'/5'	2.5' - 3.2' Green-gray; medium GRAVEL (rock fragments)	GM		2.2		
3						5.9		
			3.2' - 4.5' Brown-reddish; SILT, trace fine sand + clay			6.8	moist	
4						11.1		
				ML				
			4.5' - 5.5' L. gray-tan; SILT and fine-medium gravel (rock fragments)			3.5		
5						1.8		
		0.5'/0.5	Bottom rocky.			4	damp	Collect sample Noc-E-250-0506 for VOC from 5.5' @ 1410
			EOB @ 5.5', Refusal					
6								
7								
	2							
8								
9								
10								

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: E-700

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	7/7/2015	X Coordinate:	
Project Number:		Date Completed:	7/7/2015	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	14.5	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 0.3' M. brown; topsoil - silty loam		v_v			
			0.3' - 2' M. brown; SILT, trace fine sand + clay + fine gravel (rock fragments, angular)			0.0		
1				ML		0.0		
						0.0	moist	
2						0.0		Collect sample Noc-E-700-0103 for VOC, SVOC, PCB/Pest, and Metals from 1' - 2.5' @ 1530
			2' - 3.5' Brown; sandy SILT					
	1	5'/5'				0.0		
3				SM		0.0		
			3.5' - 6.5' Brown; SILT, trace fine sand + clay			0.1		
4						0.2		
						0.1		
5						0.1		
							damp	Collect sample Noc-E-700-0506 for VOC from 5.5' @ 1520
						7.4		
6				ML		4.6		
			6.5' - 7' Brown; SILT and fine-medium gravel (rock fragments)			3.7		
7						5.7		
			7' - 14.5' L. brown mottled gray-green; SILT, trace fine sand + clay					
	2	5'/5'				2.6		
8						1.6		
						2.9		
9						3.1		
						4.1		
10						3.8		

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: E-700

FIELD BORING LOG SHEET

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			L. brown mottled gray-green; SILT, trace fine sand + clay			2.7		
11						1.9		
						4.2		
12						3.5		
	3	4.5'/4.5'		ML		0.8	damp	
13						1.5		
						5.1		
14						0.9		Collect sample Noc-E-700-1415 for VOC from 14.5' @ 1525
						1.7		
15			EOB @ 14.5' bgs					
16								
17								
18								
19								
20								

TETRA TECH INC

BORING NUMBER: B_Rd-400

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	7/8/2015	X Coordinate:	
Project Number:		Date Completed:	7/8/2015	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	4.5	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 02' D. brown; topsoil - silty loam with m. gravel (rocks)		v_v			
			0.2' - 1' D. brown; SILT, trace fine sand + clay + fine gravel (rock fragments, angular)	ML		0.0		
1						0.2		
			1' - 1.5' Brown; SILT					
			1.5' - 2.5' L. green-gray some brown; medium GRAVEL (rock fragments) and silt (brown)	GM		0.6		
2						2.0	damp	
	1	4'/4.5'	2.5' - 4' Brown mottled gray and tan; SILT, trace fine sand + clay + fine gravel (rock fragments)			0.8		Collect sample Noc-B_Rd-400-0103 for VOC, SVOC, PCB/Pest, Metals from 0 - 2' @ 0850
3						1		
				ML				
						1.7		
4						2.2		Collect sample Noc-B_Rd-400-0405 for VOC from 4.5' @ 0845
			4' - 4.5' Green-gray; medium GRAVEL (rock fragments) with sand/silt size weathered rock	GM				
5			EOB @ 4.5' bgs, Refusal					
6								
7								
8								
9								
10								

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: B_Rd-400N

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	7/8/2015	X Coordinate:	
Project Number:		Date Completed:	7/8/2015	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	5.5	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 0.2' D. brown; topsoil - silty loam		_v_v			
			0.2' - 0.5' D. brown; SILT			0.0		
			0.5' - 4' Brown; SILT trace fine sand + clay					
1						0.0		
						0.0		
2						0.0	damp	
	1	5'/5'		ML		0.0		Collect sample Noc-B_Rd-400N-0102 for VOC from 2' @ 0920
3						0.0		
						0.0		
4						0.1		
			4' - 5.5' Brown mottled gray; SILT with medium gravel (rock fragments)					
						0.2		
5						0.8		
		0.5'/0.5				0.9		Collect sample Noc-B_Rd-400N-0506 for VOC from 5.5' @ 0915
6			EOB @ 5.5' bgs, Refusal					
7								
8	2							
9								
10								

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: X-700

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	######	X Coordinate:	
Project Number:		Date Completed:	######	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	5.5	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 0.2' D. brown; topsoil - silty loam		v_v			
			0.2' - 1' Brown-gray; SILT			0.2	moist	
1						0.3		
			1' - 3' Brown mottled gray; SILT trace clay + fine gravel (rock fragments)			0.5		
2				ML		1.7		
	1	5'/5'				3		Collect sample Noc-X-700-0103 for VOC SVOC, PCB/pest, and Metals from 2.5' @ 1010
3						9.5		
			3' - 5.5' Brown mottled gray; SILT with fine-medium gravel (rock fragments)				damp	
						17.2		
4						40.8		
						28.3		
5						48.5		
		0.5'/0.5 -				39.1		Collect sample Noc-X-700-0405 for VOC from 5' @ 1005
6			EOB @ 5.5' bgs, Refusal					
7								
	2							
8								
9								
10								

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: MW-3-600

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	######	X Coordinate:	
Project Number:		Date Completed:	######	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	7	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 0.2' D. brown; topsoil - silty loam					
			0.2' - 1' D. brown; SILT, trace fine sand + medium gravel (rock fragments)			1.3		
1						2.8		
			1' - 1.5' Brown-gray; SILT, some clay				moist	
						4.2		
			1.5' - 6' Brown some gray mottled; SILT, trace fine gravel (rock fragments)					
2						4.9		
	1	5'/5'				10.8		Collect sample Noc-MW-3-600-0203 for VOC from 2.5' @ 1055
3						17		
				ML		78.5		
4						236.7		
							damp	
						329.5		~ 5' strong odor (petroleum)
5						1263		
								Collect sample Noc-MW-3-600-0405 for VOC from 5' @ 1045
						721		
6		2'/2'				89.5		
			6' - 7' Brown; SILT with sand + gravel (rock fragments)					
						102.8		Collect sample Noc-MW-3-600-0607 for VOC from 7' @ 1050
7						113.2		
			EOB @ 7' bgs, Refusal					
	2							
8								
9								
10								

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: F-100N

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	######	X Coordinate:	
Project Number:		Date Completed:	######	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	9.1	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 0.2' M. brown; topsoil - silty loam		_v_v			
			0.2' - 0.5' Brown-gray; SILT, trace clay + fine gravel (rock fragments)			0.0		
1			0.5' - 6' Brown; SILT, trace fine sand			0.0		
						0.0		
2						0.0		
	1	4.5'/5'				0.0		
3						0.2		
						0.7	moist	
4						0.7		
						3.2		
5			(4.5'-6' stained red-brown with fine gravel rocks)	ML		1.8		Collect sample Noc-F-100N-0405 for VOC from 4.5' @ 1140
6						3		
			6' - 9.1' L. brown-gray; SILT with sand + gravel (rock fragments)			2.5		
7						0.5		
	2	4.1'/4.1'				1.4	damp	
8						19.5		Collect sample Noc-F-100N-0708 for VOC from 8' @ 1135
						3.8		
9						10.5		
10			EOB @ 9.1" bgs, Refusal					

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: F-100W

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	7/8/2015	X Coordinate:	
Project Number:		Date Completed:	7/8/2015	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	5	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 0.2' M. brown; topsoil - silty loam		_v_v			
			0.2' - 0.8' Brown-gray; SILT, some clay, trace fine gravel (rock fragments)			0.0	moist	
1			0.8' - 4.5' Brown; SILT trace coarse sand/fine gravel (rock fragments)			0.0		
						0.0		
2				ML		0.0		
	1	5'/5'				0.0		Collect sample Noc-F-100-0203 for VOC from 2.5' @ 1205
3						0.6	damp	
						1.5		
4						6.9		Collect sample Noc-F-100-0304 for VOC from 4' @ 1200
			4.5' - 5' Brown and green-gray; SILT and sand/gravel (rock fragments, green-gray)			1.8		
5						0.2		
			EOB @ 5' bgs, Refusal					
						39.1		
6								
7								
8								
9								
10								

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: F-100S

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	7/8/2015	X Coordinate:	
Project Number:		Date Completed:	7/8/2015	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	9.5	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 0.2' D. brown; topsoil - silty loam		_v_v			
			0.2' - 1' Brown-gray; SILT, with fine sand + fine gravel (rock fragments)			0.0	moist	
1				ML		0.0		
			1' - 2' Brown; SAA					
						0.0		
2						0.0		
			2' - 8.5' L. brown; silty SAND, with fine gravel (rock fragments) in places mottled with brown silt					
	1	5'/5'				0.0		
3						0.2		
						0.4	damp	
4						1.2		
						2.5		
5						0.6		
				SM				Collect sample Noc-F-100S-0405 for VOC from 4.5' @ 1240
						4		
6						4.9		
						11.8		
7						20.3		
	2	4.5'/4.5'				19		
8						21		
			8.5' - 9.5' L. brown-gray; silty SAND, trace clay			11.6		
9						13.3		Collect sample Noc-F-100S-0910 for VOC from 9.5' @ 1235
			(bottom rock fragments)			32.5		
10			EOB @ 9.5" bgs, Refusal					

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: D-100

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	7/8/2015	X Coordinate:	
Project Number:		Date Completed:	7/8/2015	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	6	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 0.2' D. brown; topsoil - silty loam		_v_v			
			0.2' - 1' Brown; SILT, trace fine sand, some clay			0.0		
1						0.0		
			1' - 6'' Brown-gray; SILT, with coarse sand/fine gravel (rock fragments)					
						1.8	moist	
2						2.6		
	1	4'/5'		ML				
						6.8		Collect sample Noc-D-100-0304 for VOC from 3.5' @ 1330
3								
						33.5		
4						301.0		
						63.2	damp	
5						151		
		1'/1'				218		
6			(bottom rock/gravel fragments)			252		Collect sample Noc-D-100-0506 for VOC from 6' @ 1335
			EOB @ 6' bgs, Refusal					
7								
	2							
8								
9								
10								

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: C-100

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	7/7/2015	X Coordinate:	
Project Number:		Date Completed:	7/7/2015	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	3.5	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 02' D. brown; topsoil - silty loam		v_v			
			0.2' - 3.5' Brown and green-gray; SILT with sand + gravel (rock fragments, angular)			0.1		
1						0.2		
				ML		0.3	moist	
2		3.5'/4.5'				0.4		
	1					0.4		
3						0.4		
							damp	
						2		Collect sample Noc-C-100-0304 for VOC from 3.5' @ 1350
			EOB @ 3.5' bgs Refusal					
4								
5								
6								
7								
8								
9								
10								

First attempt at location hit refusal at 3' bgs, abandon. Couple feet of initiall spot drill second attempt and hit refusal at 3.5' bgs.
Drilling performed with Geoprobe 6620DT rig. Lithology described from visual observation during soil sampling.

TETRA TECH INC

BORING NUMBER: B-100

FIELD BORING LOG SHEET

Project Name:	Nockamixon TCE Site	Date Started:	7/8/2015	X Coordinate:	
Project Number:		Date Completed:	7/8/2015	Y Coordinate:	
Location:	Nockamixon Twp., Bucks Co., PA	Groundwater Depth:	NA	Elevation (ft):	
Geologist:	Neb Dedic (Tetra Tech, Inc.)	Total Drilled Depth (ft):	7	Datum:	
Driller:	Joe Abell (Environmental Probing Investigations, Inc.)	Borehole Diameter (in):	2		
Drilling Method:	Direct Push Technology	Sampling Method:	5 ft macrocore		

Depth (ft)	Interval	Recovery	Description	USCS	Lithology	PID (ppm)	Water Content	Comments
			0 - 0.2' D. brown; topsoil - silty loam		_v_v			
			0.2' - 0.5' Brown-gray; SILT, trace clay			0.1		
1			0.5' - 2.5' Brown; SILT, trace fine gravel (rock fragments)	ML		0.2	moist	
						0.4		
2						2.2		
	1	5'/5'	2.5' - 6' Brown some gray; silty SAND, trace fine gravel (rock fragments sand and gravel))			8.7		
3						10.6		
						13.0		
4				SM		13.8		
						16.2		~ 5' to EOB strong odor
5						267.6		
						1588	damp	Collect sample Noc-B-100-0405 for VOC from 5' @ 1420
6		2'/2'				1291		
			6' - 7' Green-gray and brown; fine to medium GRAVEL (rock fragments) with silt	GM		402		Collect sample Noc-B-100-0607 for VOC from 7' @ 1425
7						1675		
	2		EOB @ 7' bgs, Refusal					
8								
9								
10								

Rig Geoprobe 6620DT. Lithology described from visual observation during soil sampling.

TETRA TECH INC

APPENDIX D

SAMPLE LOG SHEETS

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-A-50-0304
Sample Location: A-50
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-7-15 Time: 1010 Method: Macrocore DPT Monitor Reading (ppm): 423	3.5 to 4.0'	Lt. Brn	Silt with Gravel

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	NA			
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml vials	2	
TCL SVOCs			
TAL Metals			
PCBs / Pesticides			
moisture	50 ml poly	1	

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP Sample Sequence # → 001

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-A-50-0203
Sample Location: A-50
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA			
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
7-7-15	1015	2.0 to 2.5'	LtGrn/Brn	Silt with Gravel
Method: Macrocore				
Monitor Readings (Range in ppm): 0.3				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	—	—	—
TCL SVOCs	500 ml Amber glass	1	—
TAL Metals	8 ounce poly	1	—
PCBs / Pesticides	500 ml Amber glass	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler

PADEP Sample Sequence # → 002

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

7

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-D-0-0405
Sample Location: D-0
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-7-15 Time: 1105 Method: Macrocore DPT Monitor Reading (ppm): 399	4.0-4.5'	Brn	Silt with gravel

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2X 40 ml vials	2	—
TCL SVOCs		—	—
TAL Metals		—	—
PCBs / Pesticides		—	—
Moisture	50 ml poly	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler

PADEP sample sequence # → 003

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-D-0-0002
Sample Location: D-0
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA			
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
7-7-15	1110	0' to 2.0'	Brn	Silty loam (damp)
Method: Macrocore				
Monitor Readings (Range in ppm): 2.5				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	—	—	—
TCL SVOCs	500 ml Amber glass	1	—
TAL Metals	8 ounce poly	1	—
PCBs / Pesticides	500 ml Amber glass	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample sequence # → 004

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s): [illegible]

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-C-50-0304
Sample Location:
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-7-15 Time: 1155 Method: Macrocore, DPT Monitor Reading (ppm): 1051	3.5 to 4.0'	Brn	Silt loam and gravel

COMPOSITE SAMPLE DATA:

Date: NA	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml vials	2	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–
Moisture	50 ml poly	1	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP Sample sequence # → 005

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
–	–

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-C-50-0002
Sample Location: C-50
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA			
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
7-7-15	1205	0' to 2.0'	Brn	Silty loam (damp)
Method: Macrocore				
Monitor Readings (Range in ppm): 18.3				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	—	—	—
TCL SVOCs	500 Ml Amber glass	1	—
TAL Metals	8ounce Poly	1	—
PCBs / Pesticides	500 Ml Amber glass	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample sequence # → 006

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-G-200-0506
Sample Location: G-200
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-7-15 Time: 1245 Method: Macrocore Monitor Reading (ppm): 3.5	5.0' to 5.5'	Brn	Silty Loam

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml vials	2	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP Sample Sequence # → 007

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-G-200-01'03
Sample Location: G-200
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA			
Time:			
Method:			
Monitor Reading (ppm):			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
7-7-15	1250	1.0' to 2.5'	Brn	Silt Loam (damp)
Method: Macrocore				
Monitor Readings (Range in ppm): 0.0				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ML Vials	2	—
TCL SVOCs	500 ML Amber	1	—
TAL Metals	8 ounce poly	1	—
PCBs / Pesticides	500 ML Amber	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample sequence # → 008
Composite for SVOC, PCB and metals only.

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-E-250-0002
Sample Location: E-250
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-7-15 Time: 1415 Method: Macrocore Monitor Reading (ppm):	0' to 2'		

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
7-7-15	1415	0' to 2'	Brn	Silty Loam (Temp)
Method: Macrocore				
Monitor Readings (Range in ppm): 1.5				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml vials	2	-
TCL SVOCs	500 ml Amber	2	-
TAL Metals	8 ounce Poly	2	-
PCBs / Pesticides	500 ml Amber	2	-
Moisture	50 ml poly	1	-

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample sequence # → 011
Composite for SVOC, PCB and metals only

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
	NOC-DUP-02 (for PCB, SVOC, metals) Time - 1605 hrs DEP sample # 102

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-E-250-0506
Sample Location: E-250
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-7-15 Time: 1410 Method: Macrocore DPT Monitor Reading (ppm): 1.8	5.5'	Gry-Brn	Silt - some rock Frags (damp)

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA				
Method: macrocore				
Monitor Readings (Range in ppm): 1.8				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 X 40 ml vials	2	—
TCL SVOCs	—	—	—
TAL Metals	—	—	—
PCBs / Pesticides	—	—	—
Moisture	50 ml poly	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP Sample sequence # → 010

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-E-250-0304
Sample Location: E-250
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-7-15 Time: 1405 Method: Macrocore DPT Monitor Reading (ppm): 11.1	4.0'	Brn	Silty loam and rock frags (damp

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA				
Method:				
Monitor Readings (Range in ppm): 11.1				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml vials	2x2	—
TCL SVOCs	—	—	—
TAL Metals	—	—	—
PCBs / Pesticides	—	—	—
Moisture	50 ml poly	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample sequence # → 009

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	NOC-DUP-01 (Time - 1600 hrs)

DEP Sample # 101

Signature(s):

Tetra Tech

QA SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project Number: 112C07285
Sample Location: MW-1
QA Sample Type:

Sample ID Number: NOC-RB-01
Sampled By: VAS
C.O.C. Number:

[] Trip Blank
[] Source Water Blank
[X] Rinsate Blank
[] Other Blank

SAMPLING DATA:

Date: 7-7-15
Time: 1608
Method: Grab (see below)

WATER SOURCE:

[X] Laboratory Prepared
[] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name:
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: Subsurface soil
Equipment Used: Macrocore Shoe
Equipment Type:
[] Dedicated
[X] Reusable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatiles	Cool 4°C & HCl	2 x 40 ml vials	YES / NO
Semivolatiles	Cool 4°C		YES / NO
Pesticide / PCB	Cool 4°C		YES / NO
Metals	Cool 4°C & HNO_3		YES / NO
Cyanide	Cool 4°C & NaOH		YES / NO

OBSERVATIONS / NOTES:

PADEP sample # → ~~OTS~~ VAS #103

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-E-700-0003
Sample Location: E-700
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-7-15 Time: 1530 Method: Macrocore DPT Monitor Reading (ppm): 0.0	2.5'	DK Brn	Silt with Trace sand, clay and fine gravel (moist)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
7-7-15	1530	1.0' to 2.5'		
Method: Macrocore				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 X 40 ml vials	2	—
TCL SVOCs	500 ml Amber	1	—
TAL Metals	8 ounce Poly	1	—
PCBs / Pesticides	500 ml Amber	1	—
moisture	50 ml poly	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample sequence # → 014
composite for svoc, PCB, metals only.

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-E-700-0506
Sample Location: E-700
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-7-15 Time: 1520 Method: Macrocore DPT Monitor Reading (ppm): 7.5	5.0 to 5.5'	Brn	Silt loam (damp)

COMPOSITE SAMPLE DATA:

Date: NA	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml vials	2	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–
moisture	50ml poly	1	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP Sample sequence # → 012

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
–	–

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: Noc-E-700-1415
Sample Location: E-700
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-7-15 Time: 1525 Method: Macrocore DPT Monitor Reading (ppm): 1.7	14.5'	Gry-Brn	Silt with trace sand + clay

COMPOSITE SAMPLE DATA:

Date: NA	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2X 40ml vials	2	—
TCL SVOCs	—	—	—
TAL Metals	—	—	—
PCBs / Pesticides	—	—	—
moisture	50ml poly	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample sequence # → 013

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-B-RD-400-0405
Sample Location: B-RD-400
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 0845 Method: Macrocore DPT Monitor Reading (ppm): 2.2	4.5'	Brn	Silt with rock frags (damp)

COMPOSITE SAMPLE DATA:

Date: NA	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2X 40 ml vials	2	—
TCL SVOCs	—	—	—
TAL Metals	—	—	—
PCBs / Pesticides	—	—	—
Moisture	50 ml poly	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample sequence # → 015

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: Noc-B-RD-400-0103
Sample Location: B-RD-400
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 7-8-15	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0850	2.5'	Brn	Silt with rock frags (moist)
Method: Macrocore DPT			
Monitor Reading (ppm): 2.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
7-8-15	0850	1.0' to 2.5'	Brn	Silt with rock frags (damp)
Method: Macrocore				
Monitor Readings (Range in ppm): 2.0				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 X 40ml Vials	2	-
TCL SVOCs	500 ml Amber	1	-
TAL Metals	8 ounce Poly	1	-
PCBs / Pesticides	500 ml Amber	1	
Moisture	50 ml poly	1	-

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample sequence # → 016
Composite for PCB, SVOC and metals only

MAP:

See Logbook

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-B-RD-400N-0506
Sample Location: B-RD-400N
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 0915 Method: Macrocore DPT Monitor Reading (ppm): 0.9	5.5'	Gry-Brn	Silt and rock frags (damp)

COMPOSITE SAMPLE DATA:

Date: NA	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml vials	2	—
TCL SVOCs	—	—	—
TAL Metals	—	—	—
PCBs / Pesticides	—	—	—
Moisture	50 ml poly	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler

PADEP sample sequence # → 017

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-B-RD-400N-0102
Sample Location: B-RD-400N
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 0920 Method: Macrocore DPT Monitor Reading (ppm): 0.0	2.0'	Brn	Silt with rock frags (damp)

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml Vials	2	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–
moisture	50 ml poly	1	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP Sample sequence # → 018

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
–	–

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: Noc-X-700-0103
Sample Location: X-700
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1010 Method: Macrocore DPT Monitor Reading (ppm): 3.0	2.5'	Brn	Silt with rock frags (moist)

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
7-8-15	1010	1.0' to 2.5'	Brn	Silt with rock frags
Method: Macrocore DPT				
Monitor Readings (Range in ppm): 3.0				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2X 40 ml vials	2	—
TCL SVOCs	500 ml Amber	1	—
TAL Metals	8 ounce poly	1	—
PCBs / Pesticides	500 ml Amber	1	—
moisture	50 ml poly	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler

PADEP sample # → 020
Composite for PCB, SVOC and metals only.

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-X-700-0405
Sample Location: X-700
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1005 Method: Macrocore DPT Monitor Reading (ppm): 48.5	5.0'	Brn	Silt with rock frags (damp)

COMPOSITE SAMPLE DATA:

Date: NA	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml vials	2	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–
Moisture	50 ml Poly	1	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP Sample # → 019

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
–	–

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-MW-3-600-0405
Sample Location: MW-3-600
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1045 Method: Macrocore DPT Monitor Reading (ppm): 1263	5.0'	Brn	Silt with some rock frags (damp)

COMPOSITE SAMPLE DATA:

Date: NA	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 X 40 ml vials	2	-
TCL SVOCs	-	-	-
TAL Metals	-	-	-
PCBs / Pesticides	-	-	-
moisture	50 ml poly	1	-

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample # → 021

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-MW-3-600-0667
Sample Location: MW-3-600
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1050 Method: Macrocore DPT Monitor Reading (ppm): 11.3.2	7.0	Brn-Gry	Silt with rock frags (damp)

COMPOSITE SAMPLE DATA:

Date: NA	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 X 40 ml vials	2	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–
moistore	50 ml poly	1	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP Sample # → 022

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
–	–

Signature(s): [signature]

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: Noc-MW-3-600-0203
Sample Location: MW-3-600
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1055 Method: macrocore DPT Monitor Reading (ppm): 10.8	2.5'	Brn	Silt with rock frags (moist)

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml vials	2	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–
moisture	50 ml poly	1	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler

PADEP sample # → 023

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
–	–

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-F-100N-0708
Sample Location: F-100N
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1135 Method: Macrocore DPT Monitor Reading (ppm): 19.5	8.0'	Brn-Gry	Silt and rock frags (damp)

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml vials	2	-
TCL SVOCs	-	-	-
TAL Metals	-	-	-
PCBs / Pesticides	-	-	-
moisture	50 ml poly	1	-

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample # → 024

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: Noc-F-100N-0405
Sample Location: F-100N
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1140 Method: Macrocore DPT Monitor Reading (ppm): 3.2	4.5'	Brn	Silt with rock frags (damp)

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 X 40 ml vials	2	-
TCL SVOCs	-	-	-
TAL Metals	-	-	-
PCBs / Pesticides	-	-	-
Moisture	50 ml Poly	1	-

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample # → 025

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-F-100W-0304
Sample Location: F-100W
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1200 Method: Macrocore DPT Monitor Reading (ppm): 6.9	4.0'	Brn	Silt with Rock Frags (damp)

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 X 40 ml vials	2	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–
moisture	50 ml poly	1	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP Sample # → 026

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
–	–

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-F-100W-0203
Sample Location: F-100W
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1205 Method: Macrocore DPT Monitor Reading (ppm):	2.5'	Brn	Silt with rock frags (damp)

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml vials	2	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–
Moisture	50 ml poly	1	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample# → 027

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-F-100S-0910
Sample Location: F-100S
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1235 Method: Macrocore DPT Monitor Reading (ppm): 32.5	9.5'	Lt. Brn	Silty Sand with rock Frags (damp)

COMPOSITE SAMPLE DATA:

Date: NA	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml vials	~~2~~	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–
Moisture	50 ml Poly	1	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler

PADEP sample # → 028

MAP:

See Logbook

Circle if Applicable:

MS/MSD

Duplicate ID No.: NOC-DOP-03 1600hrs

~~NOC-F-100S-0~~

DED sample # → 105

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-F-100S-0405
Sample Location: F-100S
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1240 Method: Macrocore DPT Monitor Reading (ppm): 2.5	4.5	Lt. Brn	Sandy Silt with rock frags (damp)

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 X 40 ml vials	2	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–
Moisture	50 ml Poly	1	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP Sample # → 029

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
–	–

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-D-100-0304
Sample Location: D-100
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1330 Method: Macrocore DPT Monitor Reading (ppm): 301	3.5'	Brn	Silt with some rock frags (moist)

COMPOSITE SAMPLE DATA:

Date: NA	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml vials	2	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–
moisture	50 ml poly	1	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP Sample # → 030

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
–	–

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-D-100-0506
Sample Location: D-100
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1335 Method: Macrocore DPT Monitor Reading (ppm): 252	6.0'	Brn-Gry	Siltwith rock frags (damp)

COMPOSITE SAMPLE DATA:

Date: NA	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2X 40 ml vials	2	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–
moisture	50 ml Poly	–	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler

PADEP Sample # → 031

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
–	–

Signature(s):

Tetra Tech

QA SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project Number: 112C07285
Sample Location: MW-2
QA Sample Type:

[] Trip Blank
[] Source Water Blank
[X] Rinsate Blank
[] Other Blank

Sample ID Number: NOC-RB-02
Sampled By: VAS / N.D
C.O.C. Number:

SAMPLING DATA:

Date: 7-8-15
Time: 1440
Method: Grab (see below)

WATER SOURCE:

[X] Laboratory Prepared
[] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name:
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: Subsurface Soil
Equipment Used: Macrocore shoe
Equipment Type:
[] Dedicated
[X] Reusable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
Volatiles	Cool 4°C & HCl	2 X 40 ml vials	YES / NO
Semivolatiles	Cool 4°C		YES / NO
Pesticide / PCB	Cool 4°C		YES / NO
Metals	Cool 4°C & HNO_3		YES / NO
Cyanide	Cool 4°C & NaOH		YES / NO

OBSERVATIONS / NOTES:

PADEP Sample # →
- water poured directly over cleaned macrocore shoe into bottleware

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-C-100-0304
Sample Location:
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1350 Method: Macrocore DPT Monitor Reading (ppm): 2.0	3.5'	Brn	Silt with Rock Frags (moist)

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 X 40 ml Vials	2	—
TCL SVOCs	—	—	—
TAL Metals	—	—	—
PCBs / Pesticides	—	—	—
Moisture	50 ml Poly	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample # → 032

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-B-100-0405
Sample Location: B-100
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1420 Method: Macrocore DPT Monitor Reading (ppm): 267.6	5.0'	Brn	Silty Clay with rock frags (moist)

COMPOSITE SAMPLE DATA:

	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: NA				
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 x 40 ml Vials	2	–
TCL SVOCs	–	–	–
TAL Metals	–	–	–
PCBs / Pesticides	–	–	–
Moisture	50ml Vial	1	–

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler

PADEP sample # → 033

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
–	–

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: Nockamixon TCE Site
Project No.: 112C07285

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: NOC-B-100-0607
Sample Location:
Sampled By: VINCE SHICKORA
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 7-8-15 Time: 1425 Method: Macrocore DPT Monitor Reading (ppm): 1675	7.0'	Brn-Gry	Silt with rock frags (moist)

COMPOSITE SAMPLE DATA:

Date: NA	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
VOCs	2 X 40 Ml vials	2	—
TCL SVOCs	—	—	—
TAL Metals	—	—	—
PCBs / Pesticides	—	—	—
Moisture	50 Ml poly	1	—

OBSERVATIONS / NOTES:

Sample collected from Acetate liner of Macrocore Sampler
PADEP sample # → 034

MAP:

See Logbook

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):