Phase II Environmental Site Assessments

## **Project Identification:**

## HAM-75-0.22 PID 89068; Task Order No. 08-J Seven Sites Associated with the Brent Spence Bridge Project

Prepared for:

Ohio Department of Transportation District 8 505 South SR 741 Lebanon, Ohio 45036

April 2014

# **BURGESS & NIPLE**

#### PHASE II ENVIRONMENTAL SITE ASSESSMENTS

#### SEVEN SITES ASSOCIATED WITH THE BRENT SPENCE BRIDGE HAM-75-0.22 PID 89068 TASK ORDER NO. 08-J

#### PREPARED FOR OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 8 505 SOUTH SR 741 LEBANON, OHIO 45036

APRIL 2014

**PREPARED BY:** 

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## EXECUTIVE SUMMARY

Burgess & Niple, Inc. (B&N) was retained by the Ohio Department of Transportation (ODOT) to conduct a Phase II Environmental Site Assessment (ESA) for seven properties, portions of which will be included as part of the proposed right of way (ROW) for improvements associated with the Brent Smith Bridge over the Ohio River in Cincinnati, Hamilton County, Ohio. The findings of the Phase I ESA completed by Third Rock Consultants, LLC in 2010, indicated that potential environmental concerns existed on the seven sites. The sites are listed below and refer to sites identified in the Brent Spence Bridge Project. **Figure 1** shows the locations of the seven sites and surrounding area. All figures are included in **Appendix A**.

- <u>Site 17</u> Large Apartment Complex, 845 Ezzard Charles Drive
- <u>Site 29</u> City of Cincinnati ROW, 817 Mound Street
- <u>Site 49</u> ARTIMIS (ODOT)/Former Gas Station, 508 West 3<sup>rd</sup> Street
- <u>Site 51</u> City of Cincinnati-Vacant Site, 4<sup>th</sup> Street and Central Avenue
- <u>Site 53</u> Speedway SuperAmerica, 605 and 609 West 3<sup>rd</sup> Street
- <u>Site 58</u> City of Cincinnati Parking Lot, Block with West 3<sup>rd</sup> Street/Pete Rose Way/Central Avenue/Former Smith Street
- <u>Site 65</u> Valley Asphalt, 612 Mehring Way.

The Phase II ESA was conducted using guidelines established by ODOT (*Environmental Site Assessment Guidelines*, April 2009), which are similar to the American Society for Testing and Materials (ASTM) in its Practice E1903-97.

Prior to advancing soil borings, a geophysical survey, consisting of ground penetrating radar (GPR) and electromagnetic (EM) survey, was conducted by Mr. David Grumman, of Grumman Exploration, Inc. (Grumman), on March 13, 2014 at Sites 29, 49, and 53 to assist in the determination of whether or not underground storage tanks (USTs) or other subsurface structures were present. Preliminary results of the geophysical survey were

discussed in the field to aid in soil boring placement. The geophysical survey report, included in **Appendix B**, did not identify any anomaly at Site 29, a potential UST at Site 49, and the potential for USTs and Site 53.

Results from the geophysical survey helped identify the soil boring locations for all three sites. At Site 29, the EM response indicated that the roadway outside of the island, where soil borings were proposed, was constructed with rebar reinforced concrete. At Site 49, the EM survey, as well as the GPR, indicated a potential tank behind the ODOT building in the vicinity of the location of the soil borings advanced. The geophysical survey at Site 53 helped identify the area where previous USTs had been located on old mapping provided in the Phase I ESA Report. This site was previously a gasoline station. The survey was somewhat impacted by a pile of soil and other demolition-type of debris including reinforced concrete place on the site. The survey also provided information on a main water line that traversed the site. Grumman recommended that prior to construction activities at each of these three sites, an invasive exploration may be warranted to determine whether USTs exist.

From March 17 through March 19, 2014, B&N, assisted by EnviroCore, Inc. (EnviroCore), advanced soil probes at the pre-approved soil boring locations for each site during the Phase II ESA field operations. Direct push sampling techniques were utilized during soil sample collection. The Phase II ESA consisted of the advancement of soil probes at each of the seven sites until the intended depth was encountered. Groundwater was not encountered at any of the sites. Maximum depth of the soil borings was 20 feet. One soil sample from each soil probe was submitted to Pace Analytical Laboratories (Pace) for analysis for all or a combination of the following chemicals of concern (COCs):

- Volatile organic compounds (VOCs); benzene, toluene, ethylbenzene, xylene (BTEX) compounds; and methyl tert-butyl ether (MTBE) by U.S. Environmental Protection Agency (EPA) Method 8260;
- Semi-volatile organic compounds (SVOCs) by U.S. EPA Method 8270;
- Polynuclear aromatic hydrocarbons (PAHs) by U.S. EPA Method 8270; and

• Total petroleum hydrocarbons (TPH) (gasoline range organics [GRO], diesel range organics [DRO], and oil range organics [ORO]) by U.S. EPA Method 8260/8270.

Soil analytical results were compared to the Ohio Voluntary Action Program (VAP) generic direct contact standards for commercial/industrial land use and construction/excavation worker scenarios. In the case of whether soils were potentially impacted at Bureau of Underground Storage Tank Regulations (BUSTR) sites, the results were compared to the BUSTR Reuse Action Levels to determine if the site requires a plan note for petroleum-contaminated soil (PCS). To determine if an excavated material may be a waste, Ohio EPA's VAP residential land use levels were used. The latter assessment was used to determine whether the soil sampled might be considered a waste material, but actual waste characterization for disposal would have to be determined during the construction portion of the project.

Since groundwater was not encountered at the depths the soil borings were advanced, no groundwater samples were collected or analyzed.

The following summarizes the soil analytical results:

- Site 17 Large Apartment Complex, 845 Ezzard Charles Drive: This site is located on the southeastern corner of Ezzard Charles Drive and Winchel Avenue. It is a site of a former gasoline filling station. Results were compared to BUSTR standards. Two soil borings were advanced on the property and two samples analyzed. No parameter exceeded the laboratory reporting limit and all reporting limits were less than the BUSTR standard.
- Site 29 City of Cincinnati Right-of-Way, 817 Mound Street Avenue: This site is a former filling station and most of the site has become public roadway as a ramp to Interstate (I)-75 or part of 8<sup>th</sup> Street. Two soil borings were advanced in the small sliver of land between the ramp and 8<sup>th</sup> Street. The two samples collected at this site were compared to BUSTR standards. One parameter, TPH, diesel range, exceeded the laboratory reporting limit at 43.2 milligrams per kilogram (mg/kg) but was below the BUSTR standard of 2,000 mg/kg. No other parameter exceeded the laboratory reporting limit nor the BUSTR standard.

- Site 49 ARTIMIS (ODOT)/Former Gas Station, 508 West 3<sup>rd</sup> Street: This site was a former filling station and is currently an ODOT facility. Two soil borings were advanced near the loading dock area and two samples collected. All parameters analyzed for BUSTR standards were below the laboratory reporting limit as well as the BUSTR standard.
- Site 51 City of Cincinnati-Vacant Site, 4<sup>th</sup> Street and Central Avenue: Two soil borings were advanced in the sidewalk along Central Avenue in an area that used to be the southwestern corner of Central Avenue and 4<sup>th</sup> Street. Fourth Street no longer exists in this area west of Central Avenue. The two soil samples analyzed at this site had no parameters above the laboratory reporting limits and all were below BUSTR standards.
- Site 53 Speedway SuperAmerica, 605 and 609 West 3<sup>rd</sup> Street: This site was a former filling station. Four soil borings were drilled on this site and four soil samples collected for analysis. An expanded list of parameters was requested for this site to address hydrocarbons outside of standard fuel, such as used oil and volatile organics that are typically associated with cleaning products such as trichloroethene and perchloroethene. Because of this, the laboratory results were compared to both BUSTR standards, as well as VAP standards. All results from all four samples were below the laboratory reporting limits as well as the BUSTR and VAP standards.
- Site 58 City of Cincinnati Parking Lot, Block with West 3<sup>rd</sup> Street/Pete Rose Way/Central Avenue/Former Smith Street: This site was a large parking lot encompassed by the streets listed. There were six soil boring advanced and six soil samples collected for analysis. Historically, the property was used for warehousing; numerous railroad lines terminated on the property; and the Phase I ESA reported more than one UST was located on the property. The suite of chemicals for analyses included those chemicals associated with petroleum products for fuels, lubricating fluids, and used oils, as well as those associated with solvents. Results for the laboratory analysis were compared to the VAP standards. Samples collected from soil borings 58-SB-1 and 53-SB-2 had no positive results and all reporting limits were below the VAP standards. The samples from 58-SB-2 and 58-SB-3 at depths of 2 to 4 feet and 6 to 8 feet, respectively, had slight concentrations of TPH for the range C20-C34. No other parameters were reported above the reporting limit. The sample

collected from 2 to 4 feet below ground surface (bgs) at 58-SB-4, contained TPH as well as a total of 16 parameters under the SVOC suite of chemicals. Most of these are considered part of the PAH chemicals. One of these parameters, benzo(a)pyrene, exceeded the industrial standard under VAP. The concentration was 9.51 mg/kg and the standard is 7.70 mg/kg. One chemical, 1,2,4-trimethylbenzene, is listed in VAP as a SVOC but was analyzed as a VOC in the laboratory. This chemical had positive results, but below the VAP standard. Several of the parameters from the sample collected at 58-SB-4 also contained concentrations that exceeded the residential standards of VAP. The residential standards are used by ODOT to determine whether an excavated material should be treated as a solid waste or not. This was the only sample on Site 58 that had concentrations over the VAP residential standards.

Site 65 - Valley Asphalt, 612 Mehring Way: Six soil borings were advance at this site. One of them could not be advanced beyond 5 feet even after offsetting and trying again several times. No sample was collected from this location as any retrievable material was just gravel fill. The other soil borings were advance to 20 feet. The western portion of the site was beneath the Brent Spence Bridge, which was an empty plot of land. Three soil borings were advanced in this area. There were two of the six soil borings drilled on the eastern portion of the property which was an active asphalt manufacturing facility. The soil samples were analyzed for the suite of chemicals associated with industrial sites, including asphalt manufacturing. None of the samples analyzed had parameters above the VAP standards. Soil borings 65-SB-1, 2, and 5 had no positive values above the reporting limits. Samples collected at 4 to 6 feet bgs at 65-SB-4 and at 8 to 10 feet bgs at 65-SB-6, had positive values for all three ranges of TPH and several SVOCs. Some of the positive results were consistent with heavy ended oils, but the sample at SB-6 also contained 3 & 4 methylphenol (m&p cresol) as well as a minor hit of acetone. These parameters are consistent with the manufacturing of asphalt. Additionally, none of the positive values reported by the laboratory exceeded the VAP residential standards, which is used to determine whether a material, if excavated, would need to be disposed of as a solid waste.

## SIGNATURE PAGE

This Phase II ESA Report has been prepared by B&N. The primary author and reviewer information is listed below.

Preparer's Signature

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## 1.0 INTRODUCTION

Burgess & Niple, Inc. (B&N) was retained by the Ohio Department of Transportation (ODOT) to conduct a Phase II Environmental Site Assessment (ESA) for seven properties (sites), portions of which will be included as part of the proposed right of way (ROW) for improvements associated with the Brent Smith Bridge over the Ohio River in Cincinnati, Hamilton County, Ohio. The findings of the Phase I ESA completed by Third Rock Consultants, LLC in 2010 indicated that potential environmental concerns existed on the seven sites. The sites are listed below and refer to sites identified in the Brent Spence Bridge Project. **Figure 1** shows the locations of the seven sites and surrounding area. All figures are included in **Appendix A**.

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The Phase II ESA was conducted using guidelines established by ODOT (*Environmental Site Assessment Guidelines*, April 2009), which are similar to the American Society for Testing and Materials (ASTM) in its Practice E1903-97.

#### 2.0 BACKGROUND INFORMATION

This Phase II ESA was performed for seven sites, portions of which will be included as part of the proposed Brent Spence bridge project across the Ohio River in downtown Cincinnati, Ohio. A Phase II ESA was recommended at the various sites due to the historical uses or practices identified in the Phase I ESA. ODOT approved the recommended subsurface investigations to evaluate whether the historical uses had impacted the soils or groundwater. The work included both geophysical surveys on three of the sites and soil borings on all of the sites. If groundwater was encountered on Site 53, then groundwater monitoring wells were to have been installed and sampled. No groundwater was encountered. Sites 55 and 66 from the original Task Order were also removed by ODOT. It was determined by ODOT that sufficient environmental data was available for Site 55 and Site 66, as defined in the Phase I ESA, did not require soil borings.

**Table 1** (**Appendix E**) shows a listing of the sites, the number of soil borings advanced, number of soil samples collected, whether groundwater samples were recommended, whether a geophysical survey was conducted, and the reason for assessing the site. The goal of the project was to evaluate whether soils were impacted to approximately 10 feet below ground level at four of the sites and to 20 feet at three of the sites. Groundwater monitoring wells were to be installed at Site 53 if a saturated zone was encountered. No saturated zone capable of producing water was encountered at any of the sites at the depths drilled.

The study area is drained by Mill Creek that is the drainage basin for the central part of the City of Cincinnati. The sites are located in one of the best areas in Hamilton County for groundwater. Although not encountered during the Phase II ESAs, permeable sand and gravel deposits in ancient stream channels are present at depth in this area. The bedrock is the Upper Ordovician Point Pleasant comprised of approximately 60 percent limestone.

One soil sample was collected from each boring and submitted to Pace Analytical (Pace) for analysis of a combination of the following:

• Volatile organic compounds (VOCs); benzene, toluene, ethylbenzene, xylene (BTEX) compounds; and methyl tert-butyl ether (MTBE) by U.S. Environmental Protection Agency (EPA) Method 8260;

- Semi-volatile organic compounds (SVOCs) by U.S. EPA Method 8270;
- Polynuclear aromatic hydrocarbons (PAHs) by U.S. EPA Method 8270; and
- Total petroleum hydrocarbons (TPH) (gasoline range organics [GRO], diesel range organics [DRO], and oil range organics [ORO]) by U.S. EPA Method 8260/8270.

## 3.0 GEOLOGICAL INFORMATION, PHYSICAL SETTING, AND REGIONAL HYDROLOGY

#### 3.1 Geological Information

#### 3.1.1 Bedrock Geology

The bedrock in Hamilton County consists of interbedded limestones and shales of Late Ordovician age or Upper Ordovician. Rocks from the Ordovician System were formed between 438 and nearly 505 million years ago, representing the oldest rocks exposed at the surface in Ohio, specifically, southwestern Ohio. The Ordovician System is characterized by soft, calcareous shales, interbedded with thin, hard limestone layers. The Ordovician yields an incredible abundance and diversity of well-preserved fossils.

The bedrock beneath the Sites investigated in downtown Cincinnati was identified by the *Geological Survey of Ohio* (2004 and 2006) as the Point Pleasant Formation which is comprised of approximately 60 percent limestone and contains interbedded limestone and shale. The main bedrock structure in the area is the Cincinnati Arch, a north-south-oriented, structural feature in southwestern Ohio and adjacent areas to the south, which started in Late Ordovician. The axis of the arch is east of Cincinnati and continues northward until it splits into the Findlay Arch to the north and the Kankakee Arch to the west. The broad area formed at the three arches is called the Indiana-Ohio Platform.

#### 3.1.2 Glacial Geology

The glacial history of Hamilton County is complex and is not completely understood to date. Evidence for Pre-Illinoian glaciation has been recognized in southwestern Ohio near Cincinnati. These deposits of glacial material represent the oldest known glacial sediments in Ohio. Subsequent glacial advances covered most of the Pre-Illinoian deposits and represent deposits from Illinoian and Wisconsinan glaciers that followed (*Glacial Map of Ohio*, ODNR, Division of Geological Survey, 2005).

The uplands of Hamilton County are dissected by valley systems formed by glacial and fluvial processes. Current stream valley systems did not cut the larger valleys in which they lie. The glacial history of these began during the Pleistocene where there were at least three major glacial events identified above. Prior to this glaciation of the Pleistocene, the

major drainage system of the area was the Teays River, which flowed eastward north of Cincinnati, and its tributaries flowed northward from present day Hamilton County into the Teays River. Deep valleys were cut into the bedrock by the Teays River. With the beginning of the Pleistocene glaciation, flow in the Teays River came to a halt and changed the flow direction as water was dammed by the glacier and water flowed southward causing deep eroded channels into the bedrock. This period of deep cutting of the bedrock is commonly called the Deep Stage system. During subsequent periods of glaciation , Hamilton County was completely covered by ice. When the glaciers retreated northward, the major streams derived from the melting ice deposited large quantities of sand and gravel within the bedrock valleys eroded by the Teays tributaries and modified during Deep Stage time. Many of these deposits are below the present day water table and serve as aquifers for dozens of high capacity industrial and municipal wells (*Ground Water Pollution Potential of Hamilton County, Ohio*, University of Cincinnati Groundwater Research Center, 1989).

#### 3.2 Physical Setting

The extreme southern edge of Hamilton County where the Phase II ESA investigations were located is located in the Bluegrass Section of the Interior Low Plateaus Province of the Interior Plains physiographic region of Ohio. The basic geology is silt loam colluvium, over pre-Wisconsinan-age till, over Ordovician and Silurian age dolomities, limestones and calcareous shales. Moderately high relief (300 feet) dissected plateau of carbonate rocks exists. This physiographic region contains caves in the eastern portion and in the west, thin, early drift caps and narrow ridges. The elevation is 455 feet to 1,120 feet above mean sea level (amsl) (*Physiographic Regions of Ohio*, C S Brockman, ODNR, Division of Geological Survey, 1998).

## 3.3 Regional Hydrology

The primary aquifers within Hamilton County occur in the major buried valleys that contain varying deposits of sand and gravel, silts, and clays. These sands and gravels were deposited during the glacial meltwaters during the Pleistocene Epoch. The buried valleys beneath the Great Miami River, the Ohio River, and some areas of the Whitewater River contain coarse deposits of sand and gravel that are capable of producing yields of 1,000 gallons per minute (gpm).

Other valleys within the County are also capable of supplying significant quantities of groundwater. Well sorted sand and gravel deposits in both the Little Miami and Mill Creek valleys produce up to 500 gpm from properly developed wells. Lesser yields of 10 to 100 gpm may be obtained near the edges of these buried valleys from sand and gravel lenses interbedded with silts and clays. Domestic wells are often supplied from sand and gravel lenses from some of the tributaries and abandoned channels of the preglacial and interglacial drainage system.

Outside of the buried valley areas, limited groundwater supplies are available from the Odovician limestone-shale sequence. The bedrock consists of interbedded plastic shales and limestones that are only capable of supplying up to 3 gpm. Seasonal losses of water in these wells exist, some becoming dry. Groundwater from the bedrock generally occurs in the upper weathered material or in fractures and bedding planes with the bedrock. Glacial till over the bedrock is generally less than 50 feet in thickness.

## 3.4 Local Hydrology

All seven sites investigated during the Phase II ESAs fall within an area described by Walker (ODNR, 1986), as being within the best groundwater areas in Hamilton County. The water resource comes from permeable sand and gravel deposits in ancient stream channels and the source is suitable for large industrial well field development. Yields of up to 1,000 gpm have been developed in these areas. The 1986 *Ground-Water Resources of Hamilton County* map shows two wells near the area of investigation. One well is at a depth of 117 feet and produces 600 gpm. The other well was drilled to 108 feet and produces 1,000 gallons of water per minute. The area falls within the Mill Creek watershed. The thick sand and gravel deposits appear to be associated with the deep drainage system below this as well as the sand and gravel associated with the Ohio River.

## 4.0 GEOPHYSICAL SURVEY

#### 4.1 Geophysical Survey

Grumman Exploration, Inc. (Grumman) was contracted to perform a geophysical survey consisting of an electromagnetic (EM) survey, followed by a ground penetrating radar (GPR) survey for three sites, 605 West 3<sup>rd</sup> Street (Site 53), 508 West 3<sup>rd</sup> Street (Site 49), and 817 Mound Street (Site 29), on March 13, 2014 prior to advancing soil borings. The survey was performed over portions of each site, specifically where the soil borings were to be advanced, although at Site 53 a larger area was covered to determine whether underground storage tanks (USTs) could be located adjacent to the old service building that remains on site. Results were discussed in the field to determine if the proposed soil boring locations could be safely advanced. A letter report from Grumman, included as **Appendix B**, discusses the geophysical survey field procedures. Section 5.1 provides a description of the survey procedures and Section 6.0 discusses the survey results.

#### 5.0 FIELD ACTIVITIES AND SAMPLING PROCEDURES

#### 5.1 Geophysical Survey

Based on the historical use of Sites 29, 49, and 53, as former service stations, a geophysical survey was performed to determine whether or not USTs may be present in the subsurface. On March 13, 2014, prior to advancing soil borings, Grumman performed the geophysical surveys. A GPR and EM survey comprised the geophysical survey. Preliminary results of the geophysical survey were discussed in the field to aid in soil boring placement. The geophysical survey report, included in **Appendix B**, identified a few anomalous EM or GPR responses indicative of undocumented as well as documented USTs or excavations. These anomalies are discussed in Section 6.0 of this report.

Detailed discussions of the geophysical survey methods are discussed in **Appendix B**. Generally, the two surveys used can be described as follows:

- EM induction profiling have been used to non-destructively explore, map and characterize subsurface conditions on the basis of different electrical conductivity response that can occur between natural and man-made materials in the subsurface. Grumman used the Geophysical Survey Systems, Inc. (GSSI) GEM-300 multi-frequency EM induction profiling system. Vertical dipole quadrature-phase (proportional to conductivity) and in-phase (metal sensitive) measurements were observed using a single coil alignment at three frequencies (15,030 Hz, 9,810 Hz, and 4,410 Hz). Conductivity is a useful measurement for mapping spatial variations in soil and fill types based on contrasts in electrical conductivity. For instance, sands and gravels can often be distinguished between clays and silts. The in-phase measurement is highly sensitive to buried metallic objects and can be used to locate and map buried reinforced steel structures, USTs, barrels, utility lines, and other buried metallic structures or highly conductive debris.
- GPR Survey has been used as a site investigation tool since the 1970s. GPR operates by transmitting and receiving microwave EM impulses that are governed by the principles of EM wave propagation through the subsurface. Transmitted GPR impulses propagate downward through the subsurface, reflect off buried target boundaries, and return to the receiver antenna. This device is used, under favorable conditions, for locating and mapping buried underground tanks, pipes, waste fill

boundaries, and building foundations. The GPR survey does have some limitations in the presence of clay, silty clay, weathered shale, or other electrically conductive fill materials, such as slag, foundry sand, cinders, etc. These materials can attenuate the signals and thus reduce the signal penetration into the subsurface. Equipment specifics such as frequency measured in Hertz, are outlined in **Appendix B**.

Using the combined EM and GPR surveys, under favorable conditions, a sound subsurface profile can be obtained that can provide insight to whether there are soil type changes, such as you might observed in fill material in a former excavation, and whether an anomaly might be metallic, such as you would observe in a UST tank. A common scenario for a survey is walking the site with the EM device looking for small and large subsurface anomalies, such as a UST in a filled excavation. Then the same area would be walked using a GPR device to see what the profile of that initial anomaly is. The response for a UST made of steel would show a high EM response followed by a signature curved response from the radar indicating the curvature of the UST.

Conversely, if there is a strong EM response, indicating a metallic object, but the GPR signature does not show the typical UST curved profile and perhaps shows a flat surface, it could be a concrete vault with rebar where the flat surface represents the base of the vault. The GPR can provide an accurate depth of the metallic object the EM survey identifies. For instance, if the EM survey shows a high metallic response and the GPR shows that that response represents a structure only a couple feet below ground surface (bgs), then most likely it is not a tank but some other metallic object.

#### 5.2 Soil Sampling Methods

Between March 17 and March 19, 2014, B&N, assisted by EnviroCore, advanced soil probes at the seven sites investigated during this Phase II ESA. Direct push sampling techniques (Geoprobe®) were utilized during soil sample collection.

Direct-push soil samples were collected in a steel macrocore soil sampler (4-foot-long by 2-inch diameter) attached to 1-inch-outside-diameter (OD) steel rods. The soil core sampler was lined with a new, clean, disposable acetate liner before collection of each soil sample. The sampler was driven into the ground by the static weight of the carrier vehicle and

hydraulic hammer percussion. The soil was collected in 4-foot intervals until the desired termination depth was reached.

Upon opening the acetate liner, the soil was described by a B&N geologist and recorded on a soil probe log (**Appendix C**). In general, soil samples were collected in 2-foot or 4-foot intervals for both laboratory and headspace analysis. After recording the description, soil samples were collected in clean glass sample jars provided by the laboratory. Each sample was collected using clean chemical-resistant nitrile gloves that were discarded after collection of the sample. The sample jars were properly labeled and placed into coolers chilled to 4 degrees Celsius (°C) or less with ice.

A new acetate liner was inserted into the soil sampler for collection of each 4-foot interval. The soil sampler was cleaned between intervals, and the rods were cleaned after completion of each soil probe. The acetate liners were disposed of after each interval was collected.

Upon completion of the soil probes, the boreholes were properly abandoned following protocols in Ohio EPA's *Technical Guidance Manual for Hydrogeologic Investigations and Groundwater Monitoring, Chapter 9, Sealing Abandoned Monitoring Wells and Boreholes* (Ohio EPA, February 2005). Bentonite chips were poured into the borehole to the ground surface and hydrated. In paved areas, the blacktop or concrete was patched with similar material.

#### 5.3 Field Screening and Sample Selection Method

A representative portion of each 2-foot or 4-foot soil interval was placed into a plastic zippered bag, sealed, and allowed to warm to ambient temperature for headspace screening. If low sample recovery occurred, the entire 4-foot interval was collected into a single sample. A calibrated photoionization detector (PID) was used to screen the samples for VOCs. The relative response of the PID is the main method of determining which samples were submitted to the laboratory for analysis. Because very few samples showed a response using the PID, additional considerations made for sample submittal were based on the following:

• Zone that appeared anomalous to the other samples collected within the soil probe, i.e., discoloration of soil, unusual odor, a change in soil type, etc., or

• Random soils representing various depths from surface to immediately above the saturated zone. Most samples were selected from the upper 10 feet which would represent the soils that might be affected during construction. This last criteria for selecting a sample was used due to the fact that very few samples screened for VOCs showed any positive impacts for this category of chemicals nor were there any additional abnormal characteristics of the sample that would suggest that they had been impacted negatively.

Per ODOT standards for collecting soil samples during a Phase II ESA, one soil sample per boring was collected and submitted to the laboratory for analysis.

#### 5.4 Analytical Methods

One soil sample from each soil probe was submitted to the laboratory for analysis of all or a combination of the following chemicals of concern (COCs), which were determined by ODOT prior to the implementation of the Phase II ESA.

- VOCs; BTEX compounds; and MTBE by U.S. EPA Method 8260;
- SVOCs by U.S. EPA Method 8270;
- PAHs by U.S. EPA Method 8270; and
- TPH (GRO, DRO, and ORO) by U.S. EPA Method 8260/8270.

## 5.5 Quality Assurance and Quality Control (QA/QC)

QA/QC sampling is performed to provide information on the accuracy and precision of field sampling and the analytical data. The scope of work outlined by ODOT, and authorized on January 6, 2014, did not call for field duplicate samples or trip blank samples, therefore, no QA/QC samples were submitted for analysis. It should be noted, however, laboratories must adhere to stringent internal QA/QC procedures that ensure reliable data. The Pace laboratory reports for soil and groundwater analysis include the results of internal laboratory QA/QC to verify the precision and accuracy of the data

including the analysis of a laboratory blank, laboratory duplicate, and laboratory control sample (LCS)/LCS duplicate. Laboratory analytical reports are included in **Appendix D**.

For this project, the laboratory data for Sites 58 and 65 were certified that they met (with a couple of exceptions) the standards established for the Ohio VAP. The Affidavits of VAP Certified Laboratory results are included in **Appendix D**. For the rest of the sites, the laboratory analyzed the data per BUSTR requirements, as these sites historically were used as filling stations. Internal QA/QC procedures for these analyses were followed. Results for the QA/QC analyses are also included in **Appendix D**.

## 6.0 PHASE II ESA FINDINGS, DATA EVALUATION, AND REGULATORY INTERPRETATION

#### 6.1 Geophysical Survey Results

Preliminary results of the geophysical survey were discussed in the field to aid in soil boring placement. The detailed geophysical survey reports, including maps, are contained in **Appendix B**. Each of the three sites where a survey was conducted is summarized below.

- Site 29 Former Filling Station, 817 West Mound Street: No anomalous strong EM or GPR responses were observed within the limited sidewalk and grassy areas that could be scanned. Reinforced concrete made up the pavement on either side of the sidewalk and grassy areas. An interference effect from the reinforced pavement appears to have rendered both the EM and GPR instruments ineffective and consequently inconclusive within the roadway sections of the investigation. A region of deeper, more chaotic GPR reflections were observed along in the grassy area just west of the sidewalk. This response could be a fill area, former tank excavation, a backfilled basement of construction area since the original site has been reconstructed and is currently roadways or the small grassy area and sidewalk between the two roadways. Further invasive exploration may be desired in this area to observe actual soil or fill conditions. See Figure 5 in Appendix B for the area of investigation and geophysical profiles.
- Site 49 Former Filling Station, 508 West 3<sup>rd</sup> Street: This property is currently an ODOT facility, ARTIMIS, where a Service Building is located with a loading dock in the back. The geophysical survey was conducted behind the loading dock immediately north of a canopy area and south of the large outside generator. Anomalous strong EM responses were observed on the west side of the northwest corner of the building on site. The strength and lateral extent of the EM 'metal' response over this area is consistent with the anticipated response over metal tanks. Alternative explanations for the metal response in this area would be a more deeply buried reinforced concrete pavement sections, floor slab or loading dock ramp, large reinforced concrete vault, or concentration of buried metal debris.

No anomalous GPR responses were observed over the EM anomaly area. The local soils may not be favorable for a strong GPR signal but there were no indications of former excavation or fill zones. The GPR did indicate several shallow pipes and conduits. Invasive subsurface exploration at the EM anomaly location is advised to determine the source of the strong EM 'metal' response. **Figures 3** and **4** in **Appendix B**, show the area where the geophysical survey was conducted and the resulting profiles.

• Site 53 – Former Filling Station, 605 West 3<sup>rd</sup> Street: This property was a former gasoline station with a small operations building on site. To the west of the building, ODOT had piled soil and demolition debris (concrete, etc.) from smaller piles located over the site so the geophysical survey and soil sampling could be accomplished. Anomalous strong EM in-phase measurements were observed in the area of the new soil pile. The response is consistent with that which has been observed over USTs at similar sites throughout the United States. Historical maps contained in the Phase I ESA showed that USTs existed in the area west of the building where the demolition pile was located and the observed EM anomaly. Only the edges of the anomaly were observed where the demolition pile was located but the area of the EM anomaly also extended further west of the demolition pile. Grumman interpreted this response as possible USTs. Alternatives to this explanation would include buried metal debris or a more deeply buried reinforced concrete structure. No additional EM 'metal' responses were observed on the site.

No GPR reflections consistent with USTs were observed over or in close proximity to the EM 'metal' anomaly described above. Many interferences are possible that would affect the GPR data. These include wet clay, silt, weathered shale, etc.). The survey was also restricted by the demolition debris pile. No additional regions of deeper, more chaotic GPR reflections that would suggest other former tank excavations were observed elsewhere within the investigation area. A large, wide east-west trending pipe trench with a deeply buried pipe was visible on the GPR records north of the building on site and between the building and West 3<sup>rd</sup> Street. The low GPR signal suggests that the trench is filled with sand and gravel. This pipeline was present on the ODOT maps provided for the project. The use of the GPR in this area also provided information for placement of the soil borings that were in close proximity to the trench. Further invasive exploration at this location would be required to document the cause of the strong EM response and determine whether USTs still existed on the property. **Figures 1 and 2** in **Appendix B** show the results of the EM and GPR surveys on Site 53.

#### 6.2 Field Screening

In general, soil samples were collected in 2-foot or 4-foot intervals for both laboratory and headspace analysis. Since few elevated PID readings were observed, only results that exceed background concentrations are tabulated. The soil boring logs contained in **Appendix C** show the screening concentrations of total VOCs in the right column. There was a background concentration of VOCs of around 0.6 part per million (ppm) or less at several locations. Results were not considered elevated unless the PID readings were above this background concentration. Although, at Site 51, SB-1, Site 58, SB-1, and Site 58, SB-5 the PID readings were a consistent 1.3 ppm. This value may also be considered background for those specific borings. However, the readings are included in the table below. The few elevated results observed from any of the sites assessed are shown below:

Site No.	Soil Boring ID	Sample Interval In Feet	PID Reading (ppm)
Site 51	51-SB-1	0-2	1.3
		2-4	1.3
		4-6	1.3
		6-8	1.3
		8-10	1.3
Site 49	49-SB-1	0-3	2.7
Site 53	53-SB-1	2-4	4.0
Site 58	58-SB-1	0-2	1.3
		2-4	1.3
		4-6	1.3
		6-8	1.3
		16-20	1.3
	58-SB-4	0-2	1.3
		2-4	1.3
		4-6	1.3
		6-8	1.3
		16-20	1.3

Site No.	Soil Boring ID	Sample Interval In Feet	PID Reading (ppm)
Site 58	58-SB-5	0-2	1.3
(Cont.)		2-4	1.3
		4-6	1.3
		6-8	1.3
	58-SB-6	4-6	1.3
		6-8	1.3

#### 6.3 Boring Log Descriptions

The following summarizes the soils collected from each site. Soil boring logs provide additional detail **Appendix B**.

- Site 17 Large Apartment Complex, 845 Ezzard Charles Drive: This site is located on the southeastern corner of Ezzard Charles Drive and Winchel Avenue. It is a site of a former gasoline filling station. Two soil borings were advanced on the property to 10 feet bgs. Figure 2 in Appendix B shows the location of the soil borings. There were 5.0 feet of fill in 17-SB-1 located along Wenchel Avenue, south of Ezzard Charles Drive. Below this, the soil type was a brown silt with clay, hard, dry to moist. Screening results for each 2-foot interval of soil indicated showed no VOCs.
- Site 29 City of Cincinnati Right-of-Way, 817 Mound Street Avenue: This site is a former filling station and most of the site has become public roadway as a ramp to Interstate (I)-75 or as part of 8<sup>th</sup> Street. Two soil borings, as shown on Figure 3, Appendix B, were advanced in the small sliver of land between the ramp and 8<sup>th</sup> Street. There were 5 and 4 feet of fill material, respectively at 29-SB-1 and 29-SB-2. This material was made up of clay with sand and fine gravel, some discoloration of the soil and black cinders. Beneath the fill material to a depth of 10 feet, the soil at 29-SB-1 was brown and gray mottled clay with silt and very hard and moist. There were some very most and soft zones between 6 and 6.5 feet bgs. The soil at 29-SB-2 was very similar with very moist and soft zones from 6 to 8 feet bgs and at 9.5 feet. A background reading of 0.6 ppm was observed on all the samples during screening with a PID.

- Site 49 ARTIMIS (ODOT)/Former Gas Station, 508 West 3rd Street: This site was a former filling station and is currently an ODOT facility. Two soil borings were advanced near the loading dock area as shown on Figure 4, Appendix B. Each of the soil borings was advanced to 8 feet as the probe could not drill beyond this depth. 49-SB-1 was advanced near a drainage grate adjacent to the area identified by Grumman as potentially being a UST. Soil boring, 49-SB-2 was advanced adjacent to the emergency generator between a couple of utility conduits. The top 3 feet in each boring was comprised of brown clay that was moist. This material was most likely fill material. The clay from 2.5 to 3.0 feet in 49-SB-1 was an olive color with a septic odor. At 3.0 feet bgs, limestone was encountered in both borings. Two feet of recovery was obtained in the 4- to 8-foot interval in 49-SB-1 and none at 49-SB-2. In an attempt to obtain more sample volume, the soil boring at 49-SB-2 was offset twice but in each case limestone was encountered and the drill was unable to advance beyond 8 feet. The material removed from the sampler in 49-SB-1 from 4 to 8 feet was sand and gravel with broken limestone and was dry and loose. The PID readings were non-detect except for the 0- to 3-foot interval in 49-SB-1 which was 2.7 ppm.
- Site 51 City of Cincinnati-Vacant Site, 4<sup>th</sup> Street and Central Avenue: Two soil borings were advanced in the sidewalk along Central Avenue in an area that used to be the southwestern corner of Central Avenue and 4<sup>th</sup> Street. Fourth Street no longer exists in this area west of Central Avenue. The location of the soil borings are shown on Figure 5, Appendix B. It appears that both of these soil borings contain fill material from the surface to the total depth of 10 feet. Brick was observed at 7.2 feet bgs in 51-SB-1 and at 9 feet bgs in 51-SB-2. The fill material was comprised of sand and gravel, clay, from brown to a brown and olive mottling, and miscellaneous material such as the brick described above. PID readings of 1.3 ppm were recorded at each screened interval in 51-SB-1 and a background concentration of 0.6 ppm was observed in 51-SB-2 at each interval screened.
- Site 53 Speedway SuperAmerica, 605 and 609 West 3<sup>rd</sup> Street: This site was a former filling station. Four soil borings (shown on Figure 6, Appendix B) were drilled on this site near where the USTs and gasoline dispenser appeared on historical maps. All four soil borings were drilled to a depth of 20 feet. Fill material existed to a depth of 2.5 feet (53-SB-1) to up to 6.0 feet (53-SB-4). The fill material consisted of sand and gravel, crushed brick, and black cinders. The material was

generally dry and very loose. Beneath the fill material, the site soils were predominately silt to a minimum depth of 11 feet. A trace of sand was also present in these upper native soils. The soils became sandy at each location (11 feet at 53-SB-2, 12 feet at 53-SB-4, 14 feet at 53-SB-3, and 15 feet at 53-SB-1) from beneath the silt zones to the bottom of the soil boring. There were traces of silt and clay as well as some thin lenses of silt within the sand sequence. The soils were generally moist with several very moist zones. None of the VOC screening results were above zero.

Site 58 - City of Cincinnati Parking Lot, Block with West 3rd Street/Pete Rose Way/Central Avenue/Former Smith Street: This site was a large parking lot that stretched over an entire block. The six soil borings advanced to 20 feet on this site are shown on Figure 7, Appendix B. The amount of fill material varied quite a bit across this site. The parking lot slopes from north to south with a small portion of the parking lot, in the northwest corner being elevated by approximately 15 feet above the rest of the parking lot. The elevation of this portion of the parking lot is the same as West 3<sup>rd</sup> Street which bounds the site to the north. Soil boring 58-SB-3 was advance on this upper level. The thickness of the fill in 58-WB-2 was 2 feet, 4 feet in 58-SB-1, 2, and 6, 13 feet at 58-SB-3 and 16 feet at 58-SB-4. Much of the fill material was sand and gravel with clay. Some of the material was clay with varying amounts of sand and gravel. The upper portions were generally dry and loose. Below the fill material clay was the predominant soil type. The brown clay at SB-1 was slightly reddish in color with a trace of silt, and was soft. At SB-2, the clay was predominantly reddish brown from 8 to 12 feet bgs, and then changed to gray with a trace of brown mottling from 12 to 14 feet where it turned back to a more brown color to the total depth. The clay varied from soft to firm and from 16 to 20 feet bgs, the clay was very plastic.

At 58-SB-3, below the fill material at 16 feet, the soil was brown, slightly reddish colored fine sand with some clay. It was loose and dry to slightly moist to 20 feet. At 58-SB-4, the fill material contained some brick and black staining. At 15.8 feet bgs there was a black organic material that had a peat like texture but was not positively identified. The lower portion of SB-4 was a brown sand with gravel, trace of clay, firm, very moist, and contained limestone fragments. Soil at SB-5 from 8 to 20 feet was a reddish brown clay with a trace of silt, soft, 16 to 20 feet bgs, and was moist throughout. At 58-SB-6, there was black staining from 7.6 feet to 8.0 feet bgs. A black silty sand zone was present from 10 feet to 10. 5 feet bgs and 2 inches of

broken red brick was observed at 11.0 feet. Between 11 feet and 15 feet the soft clay soil was discolored black and had a slight septic odor. The discoloration did not appear to be related to a hydrocarbon and the PID was non-detect for this interval. From 15 to 16 feet at SB-6, the soil was a brown silt with clay which became a brown clay with a trace of silt from 16 to 20 feet. This material was soft and moist.

• Site 65 - Valley Asphalt, 612 Mehring Way: Six soil borings were advance at this site. One (65-SB-3) of them could not be advanced beyond 5 feet even after offsetting and trying again several times. No sample was collected from this location as any retrievable material was just gravel fill. The location of four of the soil borings was under the I-75 Brent Spence Bridge which was several tens of feet above the ground surface. Figure 8, Appendix A shows the location of all the soil borings on this site. In addition to 65-SB-3 being advanced to only 5 feet before refusal, 65-SB-1 hit refusal at 14 feet, was offset and hit refusal at 14 feet again. All of the other soil borings were advance to 20 feet.

The area of SB-1, 2, 3, and 4 contained sand and gravel fill of thicknesses ranging from 4 feet to 13 feet. Most of the fill also had various percentages of black cinders/soot, coal fragments, black discolored clay and silt. There were several wet lenses. The predominant soil type below the fill material was clay. The clay was typically gray in color and had silty zones but not in every soil boring. The clay varied from soft to hard and mostly moist. Two of the soil borings, 65-SB-4 and SB-5 were advanced at the active Valley Asphalt portion of the site. These borings were advance through the asphalt paved western portion of the property. There was 11 feet of fill at SB-4 and up to 12 feet at SB-5. The fill material contained very black sand with gravel, loose and dry to around 4 feet. There were very black wet zones between 4 to 5 feet, 7 to 8 feet, and 10 to 11 feet at SB-4 and similar wet zones in SB-5. Below the fill material, the soil was a gray clay with various amounts of silt and sand. The material ranges from soft to hard and in some sections very plastic. The soil water content was moist.

#### 6.4 Soil and Groundwater Analytical Test Results

**Tables 1** through **7** (tables are located in **Appendix E**) presents soil analytical results compared with applicable standards under Bureau of Underground Storage Tank Regulations (BUSTR) and Voluntary Action Program (VAP) for the seven sites

investigated. The tables list all the chemicals with positive values and some of the tables show that there were no positive values for all the chemicals analyses for every sample. This scenario with no positive values was true for Sites 17, 49, 51, and 53. Only one parameter had a positive value in one sample at Site 29, which was at a low value compared to the applicable standard. Positive laboratory results were observed at Site 65 but all were below the applicable standards. In addition, none of the soil results for these six sites had concentrations that exceeded the residential use standard under VAP which ODOT uses to determine whether excavated soils are considered a waste. At site 58, the large parking lot north of Pete Rose Way and south of West 3<sup>rd</sup> Street, four of the samples contained at least one positive value and one sample exceeded the commercial VAP standard for benzo(a)pyrene. This same sample (58-SB-4, 2 to 4 feet) also had parameters that exceeded VAP residential standards and some BUSTR standards.

The complete laboratory reports are located in **Appendix D.** Soil analytical results were compared to the Ohio VAP generic direct contact standards for commercial/industrial land use and residential worker scenarios. In the case of whether soils were potentially impacted at BUSTR sites, the results were compared to the BUSTR Reuse Action Levels to determine if the site requires a plan note for petroleum contaminated soil (PCS). To determine if an excavated material may be a waste, Oho EPA's VAP residential land use levels were used. The latter assessment was used to determine whether the soil sampled might be considered a waste material but actual waste characterization for disposal would have to be determined during the construction portion of the project.

General results for the whole project, when compared to commercial VAP direct contact standards, show that only one site, Site 58, has any parameter where the concentration exceeds the commercial standard. However, the more stringent assessment required by ODOT is whether the soils/material, if excavated, become a waste. Since only one sample was collected from each soil boring and the final plans for roadwork are not available, it is not possible to determine whether excavated soil would need to be handled as a waste or whether it could be used for any purpose. In some cases, the samples collected and analyzed were relatively shallow samples, in other cases, they might have been from depths approaching 10 feet or greater. ODOT will need to be handled as waste or whether the soils can be treated as clean soil. Based on the work to date, there was only one sample at one location that would require the excavated soil to be disposed as a solid waste. No groundwater samples were collected for this task order as no saturated zones were encountered at the Sites were wells were to have been constructed if groundwater was encountered.

The following summarizes the soil analytical results:

- Site 17 Large Apartment Complex, 845 Ezzard Charles Drive: This site is located on the southeastern corner of Ezzard Charles Drive and Winchel Avenue. It is a site of a former gasoline filling station. Two soil samples were collected and analyzed. No parameter exceeded the laboratory reporting limit and all reporting limits were less than the BUSTR standard for each parameter. Table 1 provides a summary of the parameters analyzed.
- Site 29 City of Cincinnati Right-of-Way, 817 Mound Street Avenue: This site is a former filling station and most of the site has become public roadway as a ramp to I-75 or part of 8<sup>th</sup> Street. Two soil two samples collected and analyzed at this site were compared to BUSTR standards. One parameter, TPH, diesel range, exceeded the laboratory reporting limit at 43.2 milligrams per kilogram (mg/kg) but was below the BUSTR standard of 2,000 mg/kg. No other parameter exceeded the laboratory reporting limit or the BUSTR standard. Results are summarized in Table 2.
- Site 49 ARTIMIS (ODOT)/Former Gas Station, 508 West 3<sup>rd</sup> Street: This site was a former filling station and is currently an ODOT facility. Two soil samples were collected and analyzed. All parameters analyzed for BUSTR standards were below the laboratory reporting limit as well as the BUSTR standard. Table 3 summarizes the results.
- Site 51 City of Cincinnati-Vacant Site, 4<sup>th</sup> Street and Central Avenue: Two soil borings were advanced in the sidewalk along Central Avenue in an area that used to be the southwestern corner of Central Avenue and 4<sup>th</sup> Street. The two soil samples analyzed at this site had no parameters above the laboratory reporting limits and all were below BUSTR standards. Results are summarized in Table 4.

- Site 53 Speedway SuperAmerica, 605 and 609 West 3<sup>rd</sup> Street: This site was a former filling station. Four soil samples were collected for analyzed. An expanded list of parameters was requested for this site to address hydrocarbons outside of standard fuel, such as used oil and volatile organics that are typically associated with cleaning products such as trichloroethene and perchloroethene. Because of this, the laboratory results were compared to both BUSTR standards as well as VAP standards. All results from all four samples were below the laboratory reporting limits as well as the BUSTR and VAP standards. Table 5 shows the suite of parameters analyzed for each of the samples and the laboratory reports for specific chemical results are located in Appendix D.
- Site 58 City of Cincinnati Parking Lot, Block with W. 3rd Street/Pete Rose Way/Central Avenue/Former Smith Street: This site was a large parking lot south of West 3<sup>rd</sup> Street and north of Pete Rose Way Drive. There were six soil boring advanced and six soil samples collected for analysis. Historically, the property was used for warehousing; numerous railroad lines terminated on the property; and the Phase I ESA reported more than one UST was located on the property. The suite of chemicals for analyses included those chemicals associated with petroleum products for fuels, lubricating fluids and used oils as well as those associated with solvents. Results for the laboratory analysis were compared to the VAP standards. Samples collected from soil borings 58-SB-1 and 53-SB-2 had no positive results and all reporting limits were below the VAP standards. The samples from 58-SB-2 and 58-SB-3 at depths of 2 to 4 feet and 6 to 8 feet, respectively, had slight concentrations of TPH for the range C20-C34. No other parameters were reported above the reporting limit. The sample collected from 2 to 4 feet bgs at 58-SB-4, contained TPH as well as a total of 16 parameters under the SVOC suite of chemicals. Most of these are considered part of the PAH chemicals. One of these parameters, benzo(a)pyrene, exceeded the industrial standard under VAP. The concentration was 9.51 mg/kg and the standard is 7.70 mg/kg. One chemical, 1,2,4-trimethylbenzene, is listed in VAP as a SVOC but was analyzed as a VOC in the laboratory. This chemical had a positive results but below the VAP standard. Several of the parameters from the sample collected at 58-SB-4 also contained concentrations that exceeded the residential standards of VAP. The residential standards are used by ODOT to determine whether an excavated material should be treated as a solid waste or not. This was the only sample on Site 58 that had concentrations over the VAP residential standards.

• Site 65 - Valley Asphalt, 612 Mehring Way: Five soil samples were analyzed at this site. The soil samples were analyzed for the suite of chemicals associated with industrial sites including asphalt manufacturing. None of the samples analyzed had parameters above the VAP standards. Soil borings 65-SB-1, 2, and 5 had no positive values above the reporting limits. Samples collected at 4 to 6 feet bgs at 65-SB-4 and at 8 to 10 feet bgs at 65-SB-6, had positive values for all three ranges of TPH and several SVOCs. Some of the positive results were consistent with heavy ended oils but the sample at SB-6 also contained 3 & 4 methylphenol (m&p cresol) as well as a minor hit of acetone. These parameters are consistent with the manufacturing of asphalt. Additionally, none of the positive values reported by the laboratory exceeded the VAP residential standards, which is used to determine whether a material, if excavated, would need to be disposed of as a solid waste.

#### 6.5 Quality Assurance/Quality Control (QA/QC) Evaluation

QA/QC sampling is performed to provide information on the accuracy and precision of field sampling and the analytical data. The scope of work outlined by the ODOT letter dated April 9, 2010 did not call for field duplicate samples or trip blank samples, therefore, no QA/QC samples were submitted for analysis. It should be noted, however, laboratories must adhere to stringent internal QA/QC procedures that ensure reliable data. In fact, for this project, the TestAmerica laboratory reports for soil and groundwater analysis included VAP certification of the results to verify the precision and accuracy of the data including the analysis of a laboratory blank, laboratory duplicate, and LCS duplicate. Laboratory analytical reports are included in **Appendix D**.

## 7.0 CONCLUSIONS AND RECOMMENDATIONS

There were seven Phase II ESAs conducted for this task order. Three of the sites required a geophysical survey. They included Sites 29, 49, and 53. All of these sites were formerly gasoline filling stations with potential USTs still remaining on site. Grumman performed an EM survey as well as a GPR survey to observe whether the survey's detected anomalies that could represent tanks or other similar structures still in the ground. There were anomalies associated with Sites 49 and 53 which may or may not have been representative of a UST. The results at Site 29 were also inclusive, due to reinforced concrete in the roadways on either side of the survey areas. Grumman's report, contained in **Appendix B**, shows the location of the anomalies. Grumman recommended that invasive exploration of these areas is warranted to determine whether these anomalies are actual tanks or other structures such as reinforced concrete prior to commencing construction activities.

Only one sample at Site 58 exceeded any standard used for evaluation. The sample, 2 to 4 feet at 58-SB-4, exceeded the commercial VAP single direct contact standard for benzo(a)pyrene. It also contained several parameters that exceed the standard for the BUSTR reused standard and the residential standards for VAP. The residential standard for VAP is used to determine whether the material, if excavated, would be considered as solid waste. No other sample at any of the sites, had values that exceeded the VAP commercial or residential standard or the BUSTR standards.

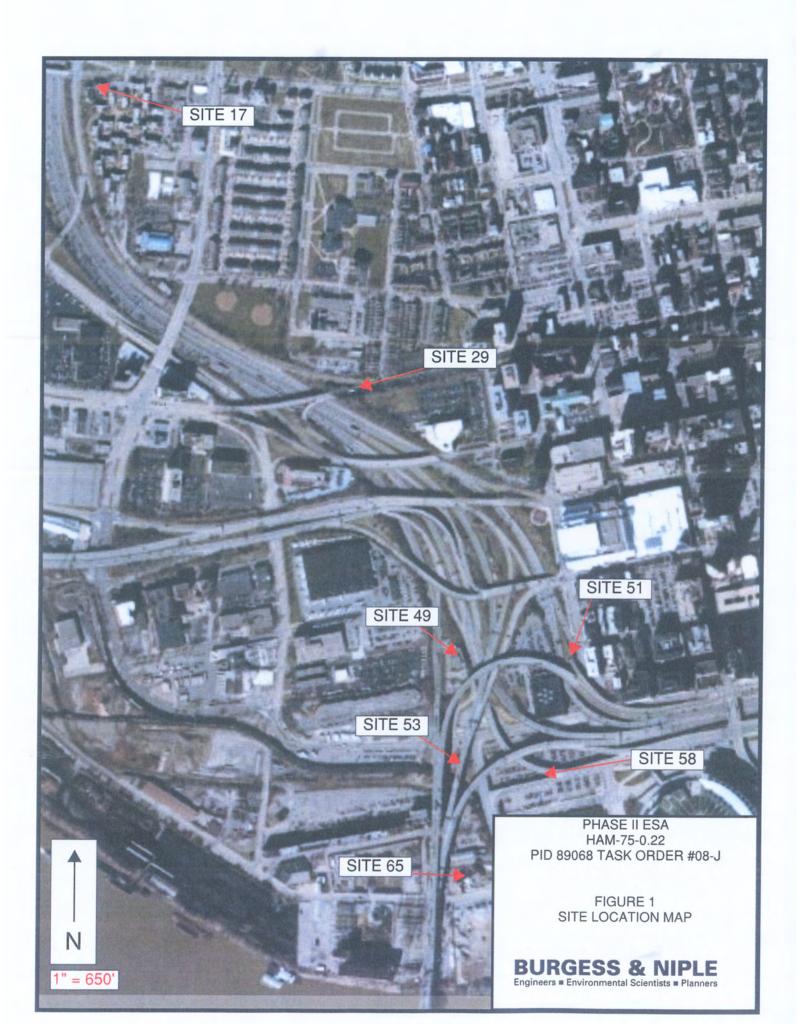
Since only one sample from each soil boring was analyzed, a complete vertical profile is not available to determine whether any excavated soils might be considered waste in lieu of material that could be reused as soil, assuming the technical requirements are met. ODOT should be aware that additional waste profiling may be required for some sites.

## 8.0 REFERENCES

- *Generalized Column of Bedrock Units in Ohio*, Ohio Department of Natural Resources, Division of Geological Survey. Revised 2004 and 2005.
- Alfred Walker. 1986. *Ground-Water Resources of Hamilton County,* Ohio Department of Natural Resources, Division of Water.
- *Ground-Water Pollution Potential of Hamilton County, Ohio, Report No. 7,* Ohio Department of Natural Resources, Division of Water. 1989.
- Phase I Environmental Site Assessment ODOT PID No. 75119, HAM-71/75-0.00/0.22, KYTC Project Item No. 6-17. Parsons Brinckerhoff, in Association with Third Rock Consultants. March 2010.

APPENDIX A

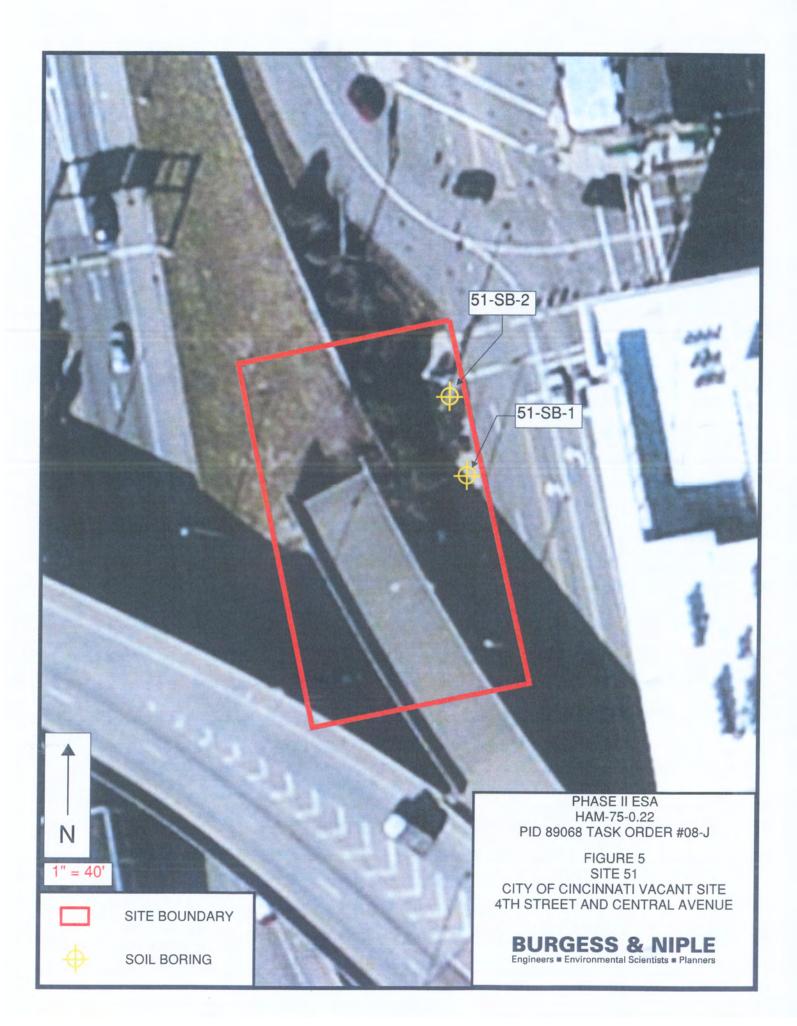
FIGURES

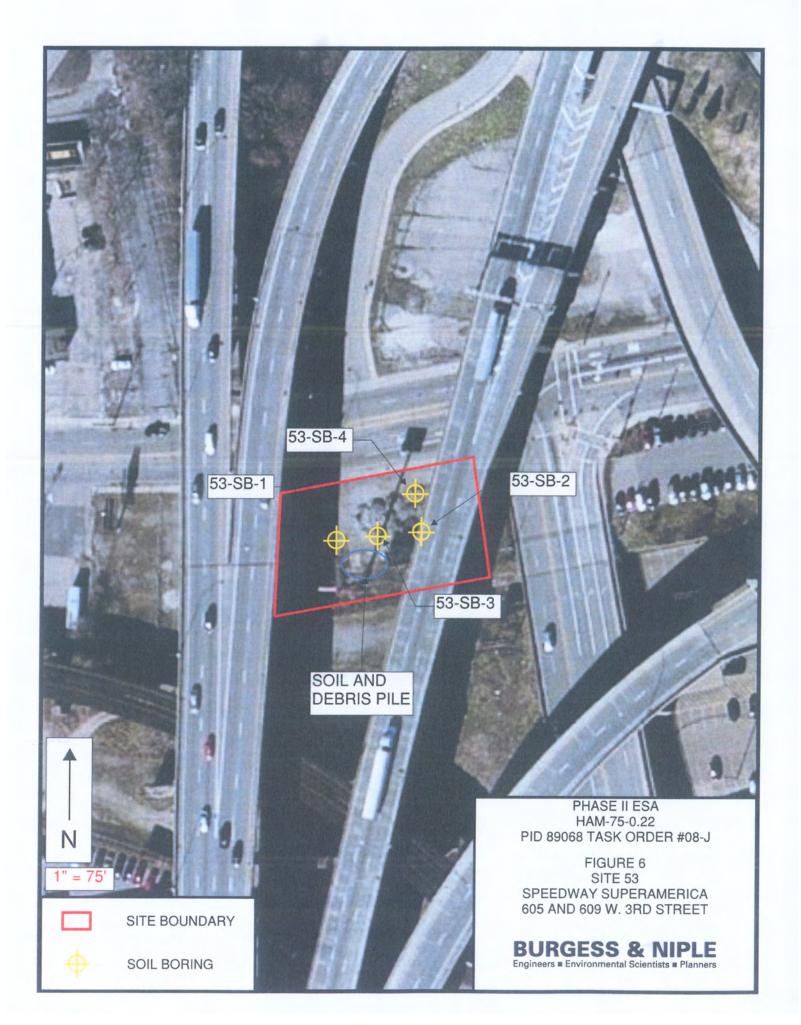


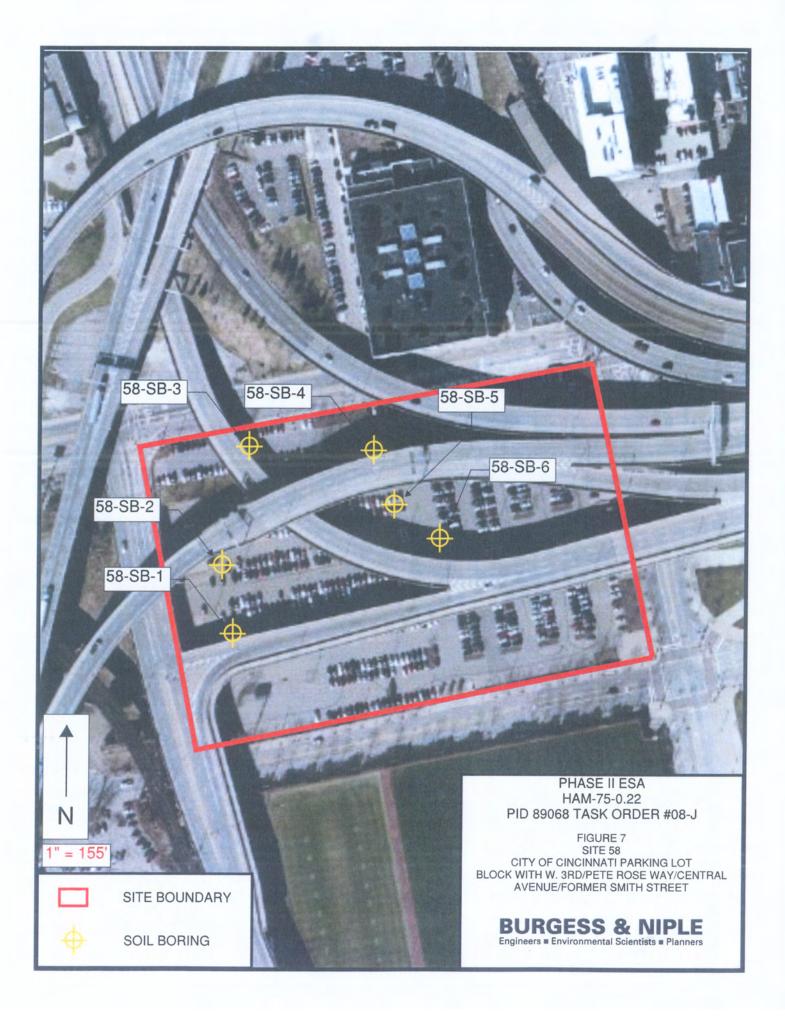


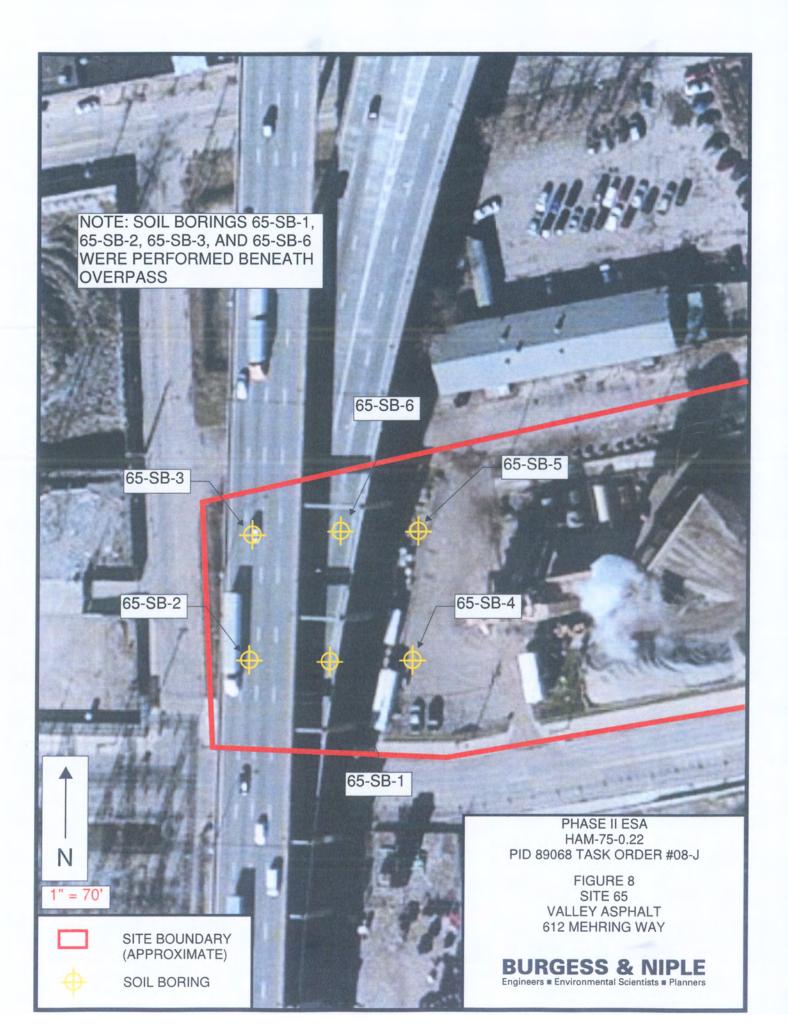












### APPENDIX B

GEOPHYSICAL SURVEY REPORT



**Grumman Exploration, Inc.** 2309 Dorset Road Columbus, Ohio 43221 (614) 488-7860 tel; (614) 488-8945 fax

Non-destructive Subsurface Exploration Near-surface Geophysics

April 10, 2014

Scott Dailey Burgess & Niple Ltd. 5085 Reed Road Columbus, Ohio 43220

RE: Report of Geophysical Surveys at Properties for the I-71/I-75 Interchange Improvement/ Redevelopment Project in Cincinnati, Hamilton County, Ohio; GEI Project No. 01-34008; ODOT Project ID: HAM 71/75 0.00/0.22 (PID 75119)

Dear Scott:

This letter-report briefly summarizes the results and interpretations regarding the geophysical surveys using electromagnetic (EM) induction profiling and Ground-penetrating radar (GPR) surveys at these sites. Indications of possible tanks were observed at two of the former gas station properties (#'s 53 and 49). At the third site (#29), no anomalous EM or GPR responses that would suggest undocumented underground storage tanks (USTs) were noted within the investigation area.

#### Project Overview

Grumman Exploration, Inc. conducted geophysical surveys on March 13, 2014 at the following three properties which are part of a planned I-71/I-75 Interchange Improvement/Redevelopment project in Cincinnati, Ohio:

- Site # 53: Former Gas/Service Station, 605 W. 3rd Street;
- Site # 49: Former Gas/Service Station, 508 W. 3rd Street; and
- Site # 29: Former Gas/Service Station, 817 W. Mound Street.

The target properties are part of the planned Interstates 71 and 75 (I-71 & I-75) interchange improvement project being conducted by the Ohio Department of Transportation (ODOT). According to information available to Burgess & Niple Ltd., three of the investigation properties were occupied by gas-service stations and consequently underground storage tanks may have been used at each site. Little or no documentation exists regarding the actual number of USTs, their locations, continued presence, closure and/or removal.

Geophysical surveys using EM and/or GPR were requested to non-destructively assess subsurface conditions within designated areas at these three properties. Ground surface conditions varied among the investigation areas. Conditions included gravel, asphalt and reinforced concrete pavement and grassy areas. The 605 W. 3<sup>rd</sup> Street site (#53) was complicated by the presence of a large demolition debris fill pile. A large commercial building was located over the hypothesized position of the former gas station at the 508 W. 3<sup>rd</sup> Street site (#49). Finally, access at the 817 Mound Street site (#29) was hampered by a busy highway on-ramp and side street located on either side of the narrow investigation area. Known EM interference sources and complications at these sites included: reinforced pavement and vehicle traffic (#29); nearby building, canopy, back-up generator and loading dock (#49); and a large demolition debris pile, building, highway overpass supports and fencing (#53).

### Field Procedures

Field survey grids were not established over the three investigation areas due to the limited, irregularly shaped working areas and other complications noted above. Reconnaissance-level EM scans were performed over all three investigation areas and the positions of GPR transects were referenced to fixed objects and structures at each site. Figures 1, 3 and 5 illustrate the interpreted geophysical survey results superimposed on generalized site diagrams for the investigation areas. The informal electromagnetic (EM) induction surveys were performed first followed by targeted GPR scans over EM anomalies or other locations of historical interest. The following table summarizes the survey areas and report figures.

Site ID	Investigation Targets	Location	Report Figure(s)
Site # 53:	USTs, Former Gas/Service Station	605 W. 3rd Street	1, 2
Site # 49:	USTs, Former Gas/Service Station	508 W. 3rd Street	3, 4
Site # 29:	USTs, Former Gas/Service Station	817 W. Mound Street	5

The GPR system used was a GSSI SIR-3000 in conjunction with a 400 MHz dipole antenna. The first field task involved equipment setup and the completion of several test scans to observe the GPR response and to adjust the system and survey parameters. The GPR survey was conducted using a series of regularly spaced transects based on the historical information provided and the initial EM survey findings. A survey wheel was used to acquire distance-based data at the density of approximately 10.0 GPR traces per foot (~1 trace every inch). The time window used was 80 nanoseconds (ns) and band-pass filters were applied to reduce extraneous interference. Preliminary interpretations regarding the presence of excavations,



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pipes and anomalous buried structures and objects were made as the GPR data were acquired. The data were recorded electronically on an internal hard disk in the field and later transferred to a desktop PC computer and a computer workstation for subsequent processing, display and analysis.

Although some of the significant GPR features were apparent on the raw GPR field records, supplemental data processing was performed to enhance the interpretation and presentation of these features. The data processing consisted of bandpass filtering and spatial filtering (f-k) to suppress horizontal banding (antenna coupling) within the GPR records.

The EM survey instrumentation consisted of a Geophysical Survey Systems, Inc. (GSSI) GEM-300 multi-frequency electromagnetic (EM) induction profiling system. Vertical dipole quadrature-phase (proportional to conductivity) and in-phase ('metal' sensitive) measurements were observed using a single coil alignment at three frequencies (15,030 Hz and 9,810 Hz [same as used by the Geonics, Ltd. EM-31] and 4,410 Hz). Reconnaissance-level EM scans were performed at the three investigation properties to help assess the presence and extent of anomalous metallic structures.

#### Results and Interpretations

The preceding table summarizes the investigation areas and their associated report figures. The following paragraphs summarize the results of the geophysical surveys at the three investigation locations:

#### Site 53: Former Gas Station, 605 W. 3rd Street (Figures 1 and 2)

Anomalous strong EM in-phase measurements were west of the former station building. The strength and lateral extent of the strong EM 'metal' anomaly is consistent with the type of response that has been observed over USTs at similar sites throughout the United States. Historical maps available to Burgess & Niple, Ltd. show several tanks located directly west of the station building in the same position as the observed EM anomaly. A large demolition debris pile is located directly over most of extent the EM anomaly, and only the edges of the EM 'metal' anomaly could be detected. The west end of the EM 'metal anomaly appears to extend several feet beyond the fence to the west of the large debris pile. The interpreted metal structures in this area could represent multiple USTs (2 to 3) that may have been used by the former service station. Alternative explanations for the anomalous EM 'metal' response include a concentration of buried metal debris or a more deeply buried reinforced concrete structure (e.g. basement or subgrade vault, septic tank, etc.). Further invasive exploration at this location would be required to document the cause of this strong EM response. No additional anomalous strong EM 'metal' responses were noted elsewhere on site in areas away from known interference sources or obstructions.



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No GPR reflections suggestive of UST(s) were noted over or in close proximity to the EM 'metal' anomaly noted above (Figures 2a and 2b). It is not uncommon for GPR to be inconclusive when various electrically conductive materials (e.g. wet clay, silt, weathered shale, etc.) are present in sufficient thickness over more deeply buried metal targets of interest including USTs. Additionally, few of the GPR scans were able to pass directly over the EM anomaly location because of the location of the debris pile. The presence of clayey soil/fill over the possible tank location decreases the likelihood that the GPR signal could detect a metallic target at this location. No additional regions of deeper, more chaotic GPR reflections that would suggest other former tank excavations was observed elsewhere within the investigation area. A large, wide pipe trench with a deeply buried pipe were visible on the GPR records in the north-central sector of the property. The east-west aligned trench appears to represent a large utility trench that crosses the entire site. The low GPR signal attenuation effects within the pipe trench suggest that the trench is backfilled with compacted sand and gravel.

### Site 49: Former Gas Station, 508 W. 3rd Street (Figures 3 and 4)

Anomalous strong EM responses were observed in the region directly west of the loading dock and north of the canopy on the west side of the northwest corner of the building on site. The anomaly area is located west of the hypothesized position of the former gas station. The strength and lateral extent of the EM 'metal' response over this area is consistent with the anticipated response over metal tanks and is similar to the response observed over tanks at similar sites throughout Ohio. Alternative explanations for the anomalous EM 'metal' response at this location include a more deeply buried reinforced concrete pavement section, floor slab or loading dock ramp, large reinforced concrete vault, or a concentration of buried metal debris. Invasive subsurface exploration at the EM anomaly location may be desired to determine the source of the strong EM 'metal' response.

No anomalous GPR responses were observed over the EM anomaly area, although the shallow soil conditions appear to be unfavorable for significant GPR signal penetration at this site. No indication of former excavation or fill zones was observed within the investigation area. Indications of several shallow pipes and conduits were observed on the GPR records.

#### Site 29: Former Gas Station, 817 Mound Street (Figure 5)

No anomalous strong EM or GPR responses that would suggest the presence of 'metal' tanks were observed within the limited sidewalk and grassy areas that could be scanned. The pavement areas adjacent to the corner parcel both appear to be underlain by heavily reinforced concrete. Interference effects from the reinforced pavement appears to have rendered both the EM and GPR instruments ineffective and consequently inconclusive within the roadway sections of the investigation area. A region of deeper, more chaotic GPR reflections was observed in the grassy area, just west of the sidewalk. The chaotic GPR



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reflections over this zone could indicate a former tank excavation, backfilled basement, construction related disturbance or general region of debris fill. No strong EM 'metal' responses were noted over this interpreted fill area. Further invasive exploration may be desired in this area to observe actual soil or fill conditions.

The overall GPR response showed moderate to strong signal attenuation effects at all three of the investigation properties. The strong GPR signal attenuation effects were probably caused by the presence of clayey silt and/or weathered shale in the shallow subsurface which is typical for region of Hamilton County, Ohio. The GPR signal penetration was probably on the order of 3-ft to 4-ft, and may have been less in areas with greater amounts of silt, clay, weathered shale or other complicating near surface conditions. GPR signal penetration was probably significantly deeper, possibly on the order of 6-ft to 8-ft, over the large pipe trench at Site #53. The depth of exploration for the GEM-300 instrumentation is on the order of 15-ft to 20-ft.

#### General Qualifications

The use of geophysical exploration methods, such as those described herein, should not be considered a substitute for invasive subsurface exploration such as drilling, digging or excavation. The GPR and EM data are interpreted. No warranty or statement of fact regarding actual subsurface conditions is contained herein. If questions or uncertainties exist regarding the interpreted presence or absence of subsurface conditions based on the geophysical data obtained from this site, it is recommended that supplemental subsurface explorations, such as drilling or test-pit explorations, be conducted if possible to further characterize and document actual subsurface conditions.

Grumman Exploration, Inc. has appreciated this opportunity to be of service again to Burgess & Niple, Ltd. If you have any questions or comments regarding this report, please feel free to contact us.

Sincerely,

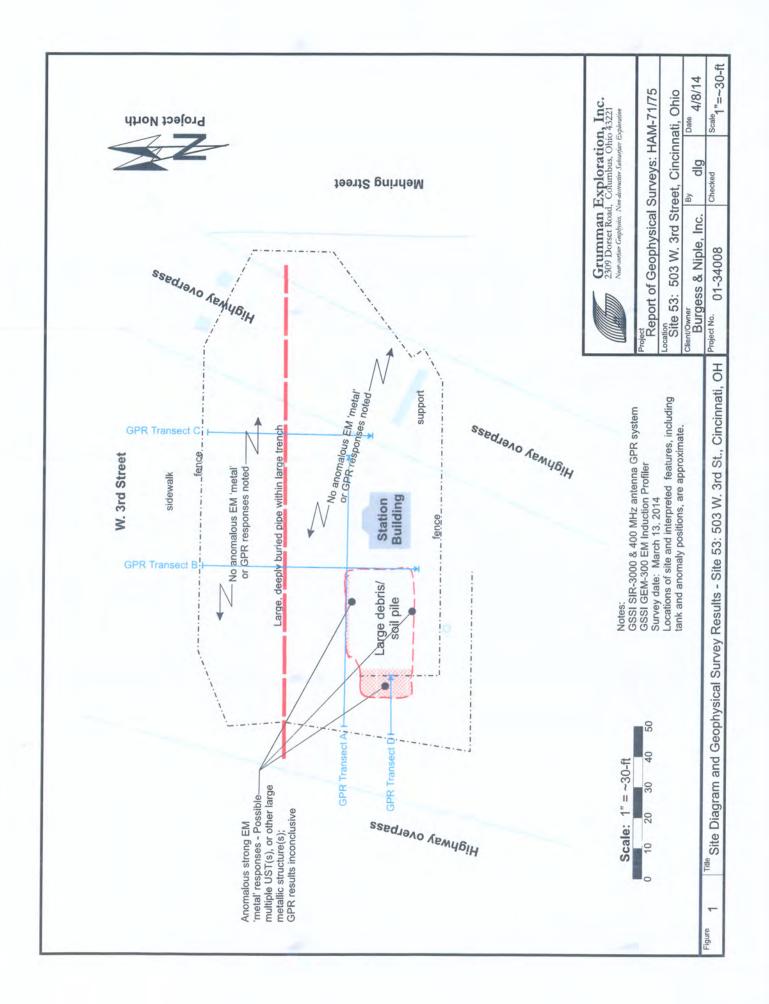
Grumman Exploration, Inc.

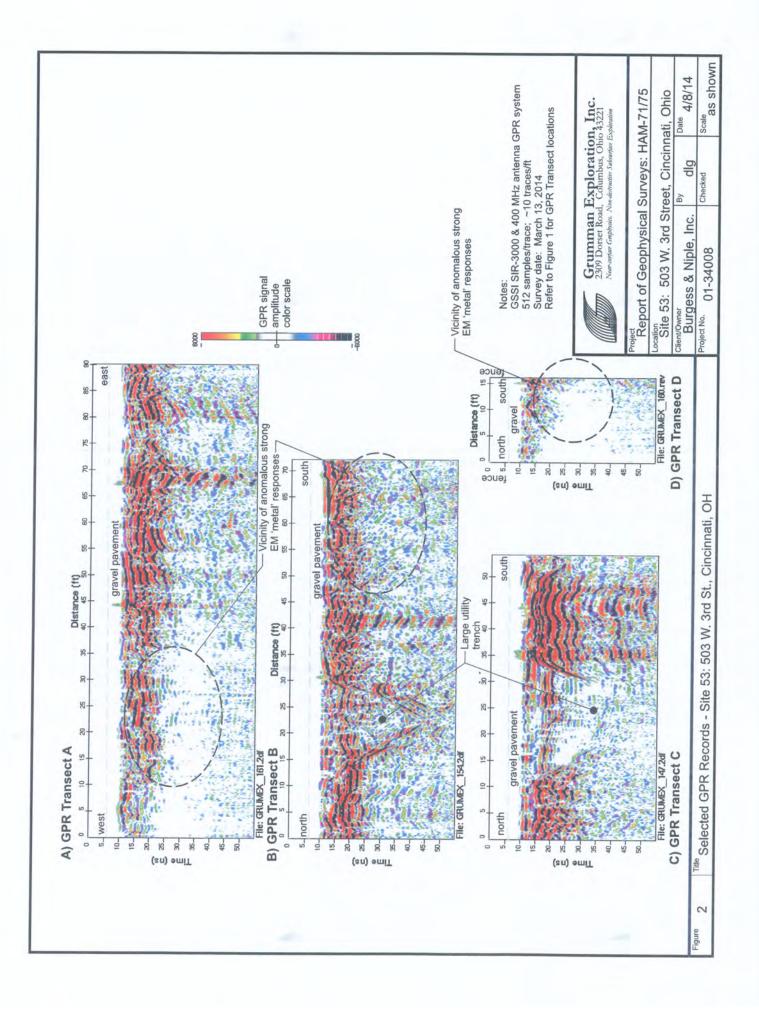
David L. Grumman, Jr. President/Geophysicist

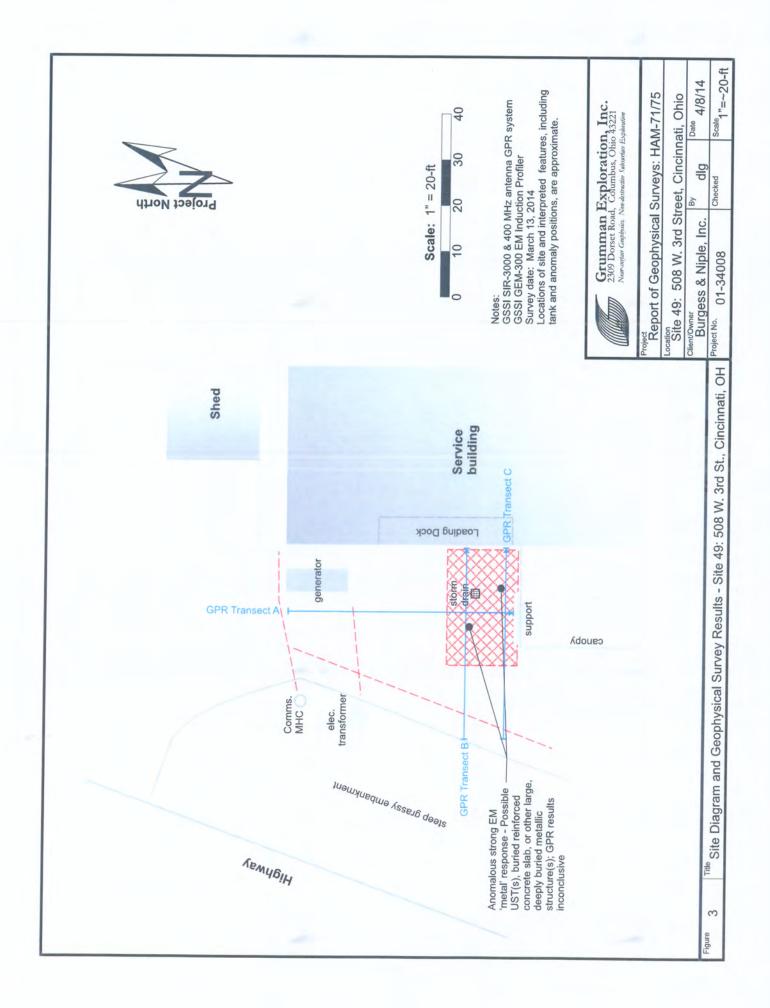
Attachments: Figures 1 – 5, Overview and Limitations of GPR

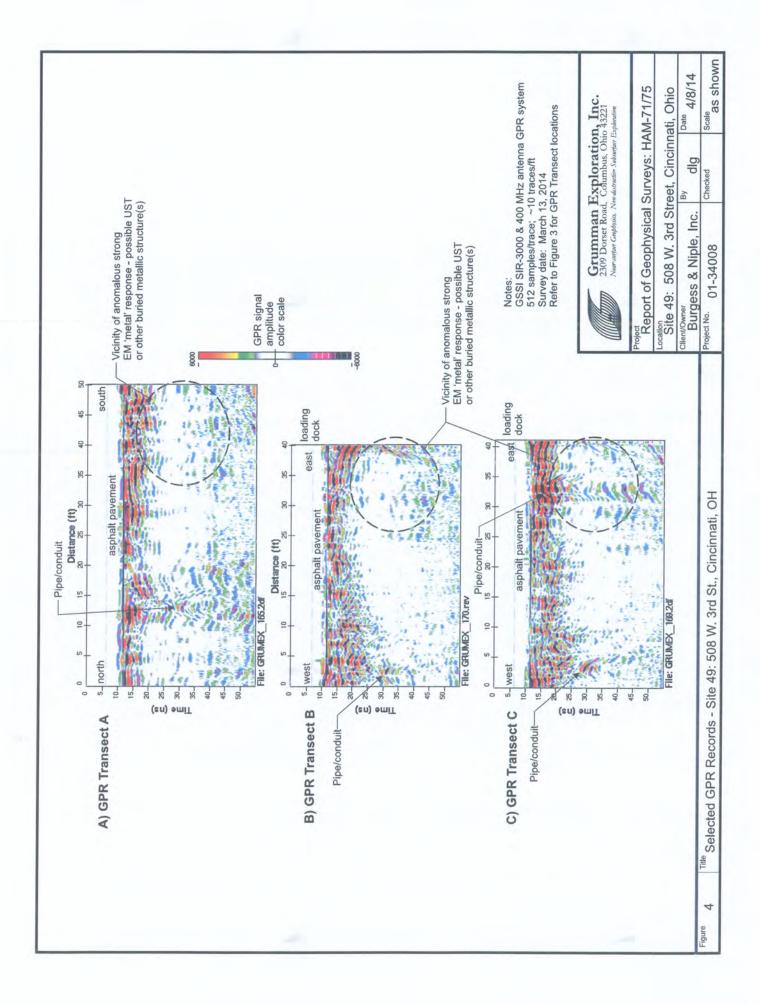


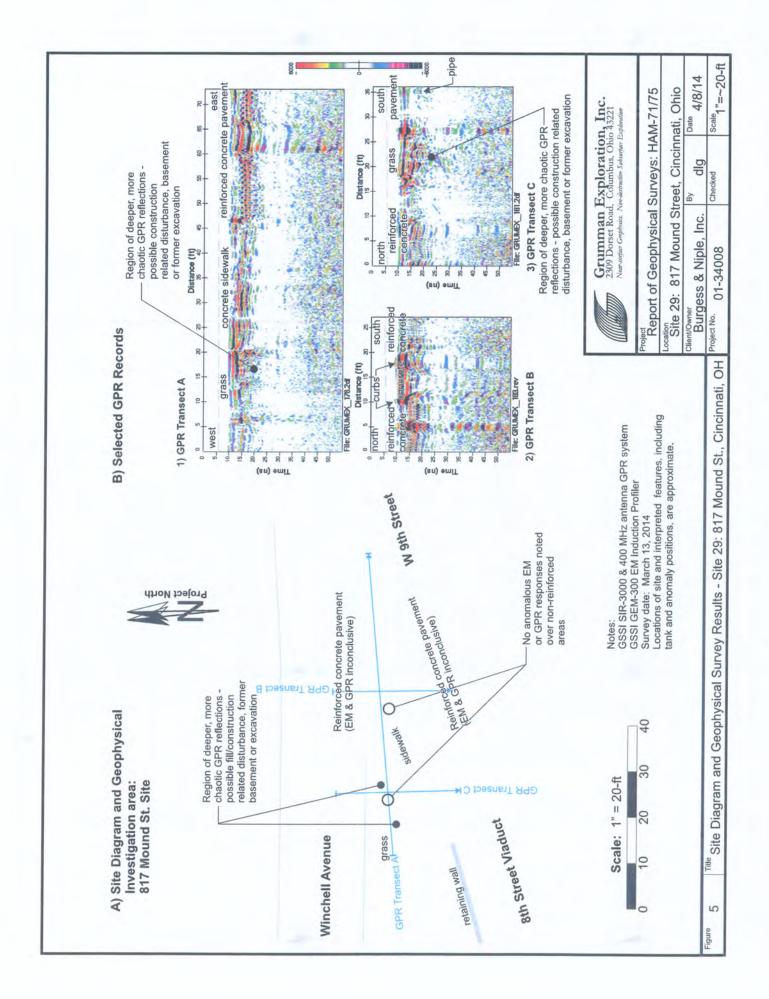
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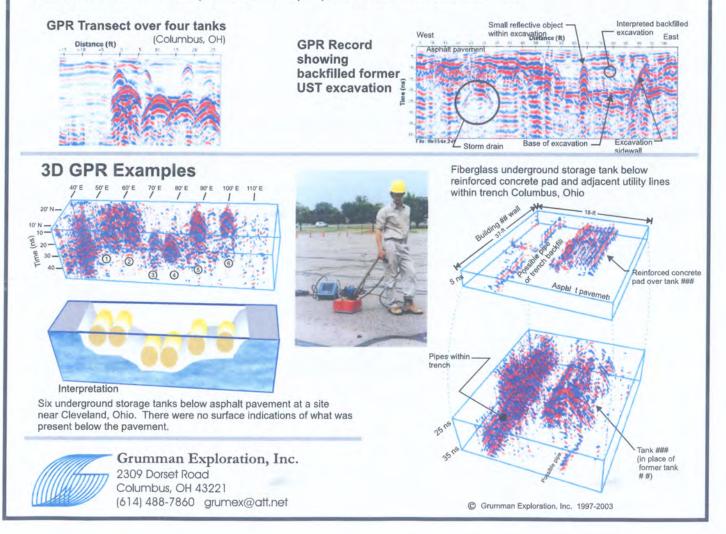
# **GRUMMAN EXPLORATION, INC.**

### Ground-Penetrating Radar for Underground Storage Tank Exploration

Ground-Penetrating Radar (GPR) operates by transmitting and receiving microwave electromagnetic impulses. By moving a broadband, dipole antenna across the ground surface, a kind of two-dimensional cross-section of the subsurface can be displayed on the GPR system unit. Transmitted GPR signals propagate downward through the subsurface, reflect off buried target boundaries and return to the receiver antenna. Contrasts in subsurface electric permittivity and permeability will cause some of the GPR signal to reflect back toward the ground surface. Interfaces between electrically different materials such as sand and clay, backfill and steel, concrete and soil, and the water table can be detected using GPR under favorable survey conditions. GPR has been used successfully for mapping a wide variety of buried objects for several decades. Some kinds of containers are reflective GPR targets. Steel UST and utility piping can appear as strong, arc shaped GPR reflections while disturbed soils, including backfilled trenches and excavations, tend to appear on the GPR record as zones of more chaotic and irregular reflections. Grumman Exploration is a pioneer in applications using both 2D and 3D GPR. Examples of GPR for geologic and environmental site exploration at several Midwestern sites are presented below. Be aware that there are important limitations to the performance of GPR, and some of these limitations are outlined below - a combined approach using GPR in conjunction with an electromagnetic tool is strongly recommended for UST exploration.

There exist several important limitations to the use of GPR. GPR signal penetration is strongly reduced by the presence of electrically conductive (lossy) subsurface materials such as clay, slag, cinder fill and materials with high water content. The detection of buried objects within the attainable depth of exploration depends in part on (1) the presence of significant electrical properties contrasts between the target object(s) and surrounding host material, (2) the signal attenuation properties of the overburden, and (3) the size, shape and depth of the target(s). Conditions that can limit and even preclude GPR data acquisition and interpretation include: surface obstructions, rough or uneven ground surface, difficult access, small or shallow buried objects, complicated overburden conditions, standing water, ambient microwave noise, and concrete slabs with dense reinforcing steel or wire mesh. The survey area must be large enough to accommodate the movement of a GPR antenna(s) across and in direct contact with the ground surface.

Please contact Grumman Exploration, Inc. at (614) 488-7860 for additional information.



APPENDIX C

SOIL BORING LOGS

### **Borehole Number: 17-SB-1**

Project: ODOT HAM-75-0.22 Project No: 52888 Client: ODOT Geologist: S. Dailey Location: 845 Ezzard Charles, Cincinnati, Ohio Drilling Contractor: Envirocore Sampling Method: Direct push Drill Rig Type: Geoprobe



Depth (feet)	Lithology	Sample Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes
		Ground Surface					
0.0- - - 2.0-		FILL (0.0-5.0) 0.0-0.3 - Topsoil 0.3-3.5 - Dark brown clayey fill, dry, very hard. small gravel, brick fragments.	0-4 ft	3.0 ft	0.0		Boring
4.0-		3.5-5.0 - Brown sand and fine gravel fill, dry, weak, trace brick fragments.			0.0		abandoned with bentonite chips.
- - 6.0-		CLAYEY SILT (ML) (5.0-10.0) Brown silt with clay, dry to moist, hard.	4-8 ft	3.2 ft	0.0		
- - - 8.0-					0.0		
-			8-10 ft	2.0 ft	0.0		
10.0		End of Boring					
12.0-							
14.0-							
		oordinate: Drill Date/Tin		4 9:00 ar	n		
	Easting Coordinate:     Total Depth: 10 ft       Ground Surface Elevation:     Sheet: 1 of 1						

### **Borehole Number: 17-SB-2**

Project: ODOT HAM-75-0.22 Project No: 52888 Client: ODOT Geologist: S. Dailey

Location: 845 Ezzard Charles, Cincinnati, Ohio Drilling Contractor: Envirocore Sampling Method: Direct push Drill Rig Type: Geoprobe



					J					
Depth (feet)	Lithology	Sample Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes			
0.0		Ground Surface								
- <del>0.0</del> - - 2.0-		<b>FILL (0.0-2.0)</b> 0.0-0.3 - Topsoil 0.3-2.0 - Brown clay, trace silt, small gravel, dry to moist, very hard, sporadic pulverized brick.	0-4 ft	3.0 ft	0.0		Boring			
4.0-		CLAY (CL) (2.0-4.0) Brown clay, trace silt, slightly moist, hard, trace gravel.		5.0 R	0.0		abandoned with bentonite chips.			
6.0-	HH	SILTY CLAY (CL) (4.0-7.0) Brown silty clay, hard.	4-8 ft	3.4 ft	0.0					
8.0-	Ħ	SILT (ML) (7.0-8.0) Brown silt, trace clay, moist to very moist, soft 7.0-7.2, to firm.		J.4 II	0.0					
		CLAYEY SAND (SC) (8.0-10.0) Brown fine to medium sand with clay, very moist, firm.	8-10 ft	2.0 ft	0.0					
-		End of Boring								
12.0- - - -										
14.0- - -										
	-	oordinate: Drill Date/Tin		4 9:20 ar	n					
Easti	ing Coo	rdinate: Total Depth: 1	Total Depth: 10 ft							
Grou	und Sur	face Elevation: Sheet: 1 of 1		<b>Sheet:</b> 1 of 1						

#### **Borehole Number: 29-SB-1 BURGESS & NIPLE** Project: ODOT HAM-75-0.22 Location: 817 Mound Street, Cincinnati, Ohio 5085 Reed Road Project No: 52888 Drilling Contractor: Envirocore Columbus, Ohio, 43220 **Client: ODOT** phone: (614)459-2050 Sampling Method: Direct push fax: (614)451-1385 Geologist: S. Dailey Drill Rig Type: Geoprobe Boring Completion Depth Lithology Field Screening (ppm) Abandonment Sample Recovery (feet) Sample Description Interval (feet) Notes Ground Surface 0.0 FILL (0.0-5.0.0) 2-3-inches concrete, brown clay, sand, and fine gravel fill, top portion soft. 0.0 2.0 0-4 ft 1.8 ft Boring abandoned with bentonite chips. 0.0 3.0-5.0 - Grayish (discolored) brown clay, firm, trace small to fine gravel, hydrocarbon odor. 4.00.0 5.0-5.5 - Fine gravel, sand, with pulverized brick. TILL (5.5-8.0) 6.0 4-8 ft 3.0 ft Brown gravel, some mottled clay silt, firm. 6.0-6.5 - SAA, very moist and soft. 0.0 8.0 8-10 ft 0.0 2.0 ft 10.0 End of Boring 12.0 14.0 Northing Coordinate: --Drill Date/Time: 3/18/14 10:30 am **Easting Coordinate: --**Total Depth: 10 ft Ground Surface Elevation: --Sheet: 1 of 1

## **Borehole Number: 29-SB-2**

Project: ODOT HAM-75-0.22 Project No: 52888 Client: ODOT Geologist: S. Dailey Location: 817 Mound Street, Cincinnati, Ohio Drilling Contractor: Envirocore Sampling Method: Direct push Drill Rig Type: Geoprobe BURGESS & NIPLE

Depth (feet)	Lithology	Sample Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes
		Ground Surface					
2.0-		FILL (0.0-4.0) 0.0-0.3 - Topsoil 0.3-3.8 - Brown clay with silt, trace gravel. 3.8-4.0 - Black gravel, possible cinders, dry.	0-4 ft	3.2 ft	0.0		Boring
4.0	×	CLAY (CL) (4.0-6.0)	-		0.0		abandoned with bentonite chips.
6.0		Brown and gray mottled clay with silt, moist, very hard.	4-8 ft	3.2 ft	0.0		
8.0-		<b>CLAYEY SILT (ML) (6.0-10.0)</b> Brown silt with clay, in general very hard with several very moist, soft zones between 6-8 ft and at 9.5 ft.			0.0		
			8-10 ft	2.0 ft	0.0		
-		End of Boring					
12.0							
14.0-							
	-	ordinate: Drill Date/Tim rdinate: Total Depth: 1		4 10:50 a	am		
		face Elevation: Sheet: 1 of 1					

Project: ODOT HAM-75-0.22Location: 508 West 3rdProject No: 52888Drilling Contractor: EClient: ODOTSampling Method: DirGeologist: S. DaileyDrill Rig Type: Geopro				nvirocore rect push			BURGESS & NIPL 5085 Reed Road Columbus, Ohio, 43220 phone: (614)459-2050 fax: (614)451-1385		
Depth feet)	Lithology	San	ple Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes	
0.0 		ASPHALT (0.0-0.5) Asphalt and base fill. CLAY (CL) (0.5-3.0)	noist, soft, medium plasticity. olored. 0)	0-4 ft	2.0 ft	2.7		Boring abandoned wit bentonite chips	
4.0		Refusal at 8.0 ft.		4-8 ft	2.0 ft	0.0			
8.0 - - -		E	nd of Boring						
- -0.0 - -									
- 2.0- - -									
4.0- - -									
Norti	hing Co	ordinate:	Drill Date	/Time: 3/17/1	4 1:45 pr	m			
Easti	ng Coo	rdinate:	Total Dep	<b>th:</b> 8 ft					

Project Project Client:	hole Number: :: ODOT HAM-75-0 : No: 52888 ODOT ist: S. Dailey	22 Location: 508 West 3rd Street Drilling Contractor: Envirocore Sampling Method: Direct push Drill Rig Type: Geoprobe				<b>BURGESS &amp; NIPLE</b> 5085 Reed Road Columbus, Ohio, 43220 phone: (614)459-2050 fax: (614)451-1385		
Depth (feet)	runoidy	Sample Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes	
0.0	ASPHALT (0 Asphalt and ba CLAY (CL) ( Brown and gra gravel.	se fill.		29.6	0.0		D	
	2.5-3.0 - SAA, LIMESTONE Pulverized lim		0-4 ft	2.8 ft	0.0		Boring abandoned with bentonite chips	
		as initial boring.	4-8 ft	0.0 ft				
8.0- - -		End of Boring						
-0.0								
2.0-								
4.0- - Northin	g Coordinate:	Drill Date/1	<b>`ime:</b> 3/17/1	.4 2:15 pr				
-	Coordinate: Surface Elevation:							

Project: ODOT HAM-75-0.22Location: 4th St. & CentraProject No: 52888Drilling Contractor: EnvClient: ODOTSampling Method: DirectGeologist: S. DaileyDrill Rig Type: Geoprobe					acinnati, O	hio	BURGESS & NIPLE 5085 Reed Road Columbus, Ohio, 43220 phone: (614)459-2050 fax: (614)451-1385		
Depth (feet)	Lithology	Sample	Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes	
<del>0.0</del> - - 2.0-		CONCRETE (0.0-0.3') Concrete sidewalk. FILL (0.3-10.0')	nd Surface	0-4 ft	3.0 ft	0.0		Boring	
- - 4.0-		5.0-7.0' - SAA, brown clay	/ soft			0.0		abandoned with bentonite chips.	
6.0-		<ul><li>7.0-7.2' - Brick.</li><li>7.2-8.0' - SAA, brown clay</li></ul>		4-8 ft	2.5 ft	0.0			
8.0			rown and olive, trace gravel.	8-10 ft	2.0 ft	0.0			
			n Doring						
- 14.0 - -									
	-	oordinate:	Drill Date/I		4 2:20 pr	m			
	_	rdinate: face Elevation:	<b>Total Depth</b> <b>Sheet:</b> 1 of 1						

Project: ODOT HAM-75-0.22 Project No: 52888 Client: ODOT Geologist: S. Dailey			<b>Drilling Contractor:</b> Envi Sampling Method: Direct	Location: 4th St. & Central Ave., Cincinnati, Ohio Drilling Contractor: Envirocore Sampling Method: Direct push Drill Rig Type: Geoprobe				5085 Reed Road Columbus, Ohio, 4322 phone: (614)459-2050 fax: (614)451-1385		
Depth (feet)	Lithology	Sampl	e Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonme Notes		
		CONCRETE (0.0-0.3') Concrete sidewalk. FILL (0.3-10.0') 1.3-3.3' - Fill - gravel, cla irm. Sand and gravel zo: .3-3.5' - SAA, black cin .5-4.5' - SAA, brick. .5-10' - SAA. brown cla		0-4 ft	2.5 ft	0.0		Boring abandoned v bentonite ch		
6.0- 8.0-		o soft, brick fragment at		4-8 ft	3.5 ft	0.0				
		End	of Boring	8-10 ft	2.0 ft	0.0				
- - - - - - - - - - - - - - - - - - -										
	hing Coor		Drill Date/Ti		4 2:35 pr	m				
Easti	ng Coordi	nate:	<b>Total Depth:</b> <b>Sheet:</b> 1 of 1	10 ft						

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### **Borehole Number: 53-SB-1**

Project: ODOT HAM-75-0.22 Project No: 52888 Client: ODOT Geologist: S. Dailey Location: 605 West 3rd Street, Cincinnati, Ohio Drilling Contractor: Envirocore Sampling Method: Direct push Drill Rig Type: Geoprobe BURGESS & NIPLE

Depth (feet) & Sg Ulticological Sg Sg Sg Sg Sg Sg Sg Sg Sg Sg Sg Sg Sg S	Sample Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes		
0.0	Ground Surface							
2.0-	<b>FILL (0.0-2.5')</b> Fill - black cinders, fractured red brick, gravel, dry, loose.	0-4 ft	2.5 ft	0.0		Boring		
4.0	SILT (ML) (2.5-8.0') 2.5-4.0' - Light brown silt, moist, soft, trace clay.	-		4.0		abandoned with bentonite chips.		
	4.0-8.0' - SAA, firm, no clay, trace fine sand at 7.9'.	4.0.0	2.5.0	0.0				
		4-8 ft	3.5 ft	0.0				
8.0	SANDY SILT (ML) (8.0-15.0') 8.0-10.0' - Brown sandy silt, fine sand, very moist, soft.			0.0				
10.0-	10.0-15.0' - SAA, very moist to moist in zones.	8-12 ft	3.5 ft	0.0				
12.0-				0.0				
14.0	SAND (SW) (15.0-19.9')	12-16 ft	3.5 ft	0.0				
16.0-	<ul><li>15.0-16.0' - Brown fine sand, dry to slightly moist.</li><li>16.0-19.9' - SAA, firm, moist to dry, fine gravel at 19.5'.</li></ul>	16-20 ft	3.5 ft	0.0				
-		10-20 R	5.5 II	0.0				
20.0	CLAYEY SAND (SC) (19.9-20.0') Gray clayey sand, moist.							
22.0-	End of Boring							
Northing Coordinate: Drill Date/Time: 3/17/14 10:25 am								
Easting Ca	ordinate: Total Donth.	20 <del>fi</del>						
Easting Coordinate:Total Depth: 20 ftGround Surface Elevation:Sheet: 1 of 1								

#### **Borehole Number: 53-SB-2 BURGESS & NIPLE** Project: ODOT HAM-75-0.22 Location: 605 West 3rd Street, Cincinnati, Ohio 5085 Reed Road Project No: 52888 Drilling Contractor: Envirocore Columbus, Ohio, 43220 **Client: ODOT** Sampling Method: Direct push phone: (614)459-2050 fax: (614)451-1385 Geologist: S. Dailey Drill Rig Type: Geoprobe Boring Completion Lithology Field Screening (ppm) Depth Sample Recovery (feet) Abandonment Sample Description Interval (feet) Notes Ground Surface 0.0 ASPHALT (0.0-0.3') 0.0 FILL (0.3-4.0') Fill - black cinders, soot, and gravel, dry, loose, brick 2.0 0-4 ft 2.5 ft Boring fragment at 3.81'. abandoned with 4.0 bentonite chips. 4.0 SILT (ML) (4.0-11.0') 4.0-9.5' - Brown silt, moist, soft, trace clay. 0.0 6.0-9.5-11.0' - SAA, very moist. 4-8 ft 3.5 ft 0.0 8.0 0.0 10.0 8-12 ft 3.5 ft 0.0 SAND (SW) (11.0-20.0') Brown fine sand, moist, soft, trace silt/clay. 12.0 0.0 14.0 12-16 ft 2.5 ft 0.0 16.0 0.0

16-20 ft

3.5 ft

0.0

 End of Boring

 22.0

 Northing Coordinate: - 

 Drill Date/Time: 3/17/14 11:15 am

 Easting Coordinate: - 

 Total Depth: 20 ft

 Ground Surface Elevation: - 

18.0

20.0

### **Borehole Number: 53-SB-3**

Project: ODOT HAM-75-0.22 Project No: 52888 Client: ODOT Geologist: S. Dailey Location: 605 West 3rd Street, Cincinnati, Ohio Drilling Contractor: Envirocore Sampling Method: Direct push Drill Rig Type: Geoprobe



Depth (feet)         B         Sample Description         I         I         I         I         I         I         I         I         I         Abandonment Notes           0.0         Ground Surface         0.0         0.0         I         I         0.0         I         0.0         I         0.0         I         I         0.0         I         0.0         I <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>								
0.0       FTL1 (0-7.0°)         0.0.2.0° - Fill - black cinders, gravel, dry, loose, trace       0.4 ft       2.0 ft         2.0       2.0-4.0° - No recovery.       0.4 ft       2.0 ft         4.0       2.0-4.0° - No recovery.       4.0-7.0° - SAA, red brick, trace sand and gravel, dry, loose.       0.4 ft       2.0 ft         6.0       4.8 ft       2.0 ft       0.0         6.0       SILT (ML) (7.0-14.0°)       0.0         8.0       Brown silt, very moist, soft, trace clay.       0.0         10.0       Brown silt, very moist, soft, trace clay.       0.0         12.0       Brown sand, fine, moist to dry, firm, trace silt.       0.0         16.0       Image: SAND (SW) (14.0-20.0°)       12-16 ft       3.5 ft         16.0       Image: SAND (SW) (14.0-20.0°)       10.0       0.0         18.0       Image: Sand fine, moist to dry, firm, trace silt.       0.0       0.0         16.0       Image: Sand fine, moist to dry, firm, trace silt.       0.0       0.0         18.0       Image: Sand fine, moist to dry, firm, trace silt.       0.0       0.0         18.0       Image: Sand fine, moist to dry, firm, trace silt.       0.0       0.0         18.0       Image: Sand fine, moist to dry, firm, trace silt.       0.0       0.0		Lithology	Sample Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	
0.0       FTL1 (0-7.0°)         0.0.2.0° - Fill - black cinders, gravel, dry, loose, trace       0.4 ft       2.0 ft         2.0       2.0-4.0° - No recovery.       0.4 ft       2.0 ft         4.0       2.0-4.0° - No recovery.       4.0-7.0° - SAA, red brick, trace sand and gravel, dry, loose.       0.4 ft       2.0 ft         6.0       4.8 ft       2.0 ft       0.0         6.0       SILT (ML) (7.0-14.0°)       0.0         8.0       Brown silt, very moist, soft, trace clay.       0.0         10.0       Brown silt, very moist, soft, trace clay.       0.0         12.0       Brown sand, fine, moist to dry, firm, trace silt.       0.0         16.0       Image: SAND (SW) (14.0-20.0°)       12-16 ft       3.5 ft         16.0       Image: SAND (SW) (14.0-20.0°)       10.0       0.0         18.0       Image: Sand fine, moist to dry, firm, trace silt.       0.0       0.0         16.0       Image: Sand fine, moist to dry, firm, trace silt.       0.0       0.0         18.0       Image: Sand fine, moist to dry, firm, trace silt.       0.0       0.0         18.0       Image: Sand fine, moist to dry, firm, trace silt.       0.0       0.0         18.0       Image: Sand fine, moist to dry, firm, trace silt.       0.0       0.0			Ground Surface					
4.0-7.0' - SAA, red brick, trace sand and gravel, dry, losse.       -       -       bentonite chips.         6.0       4.8 ft       2.0 ft       0.0         8.0       -       0.0       0.0         10.0       SILT (ML) (7.0-14.0') Brown silt, very moist, soft, trace clay.       0.0       0.0         12.0       -       0.0       0.0         14.0       SAND (SW) (14.0-20.0') Brown sand, fine, moist to dry, firm, trace silt.       12-16 ft       3.5 ft       0.0         14.0       -       SAND (SW) (14.0-20.0') Brown sand, fine, moist to dry, firm, trace silt.       0.0       0.0       0.0         16.0       -       0.0       0.0       0.0       0.0         18.0       -       -       0.0       0.0       0.0         20.0       End of Boring       -       0.0       0.0       0.0         20.0       End of Boring       -       0.0       0.0       0.0         22.0       -       Drill Date/Time: 3/17/14       11:40 am       -         Easting Coordinate:       Total Depth: 20 ft       -       -       -	-		<b>FILL (0.0-7.0')</b> 0.0-2.0' - Fill - black cinders, gravel, dry, loose, trace crushed red brick.	0-4 ft	2.0 ft	0.0		
6.0       4-8 ft       2.0 ft       0.0         8.0       Brown silt, very moist, soft, trace clay.       0.0       0.0         10.0       Brown silt, very moist, soft, trace clay.       0.0       0.0         11.0       Brown silt, very moist, soft, trace clay.       0.0       0.0         12.0       Brown silt, very moist, soft, trace clay.       0.0       0.0         14.0       SAND (SW) (14.0-20.0') Brown sand, fine, moist to dry, firm, trace silt.       12-16 ft       3.5 ft       0.0         16.0       Brown sand, fine, moist to dry, firm, trace silt.       16-20 ft       3.0 ft       0.0         18.0       End of Boring       0.0       0.0       0.0         20.0       End of Boring       0.0       0.0       0.0         20.0 <t< td=""><td>4.0-</td><td></td><td>4.0-7.0' - SAA, red brick, trace sand and gravel, dry,</td><td></td><td></td><td></td><td></td><td></td></t<>	4.0-		4.0-7.0' - SAA, red brick, trace sand and gravel, dry,					
SILT (ML) (7.0-14.0') Brown silt, very moist, soft, trace clay.       0.0         10.0       8-12 ft       3.5 ft         12.0       0.0         14.0       8-12 ft       3.5 ft         0.0       0.0         14.0       12-16 ft       3.5 ft         0.0       0.0         18.0       0.0         20.0       End of Boring       0.0         22.0       End of Boring       0.0         Northing Coordinate:       Drill Date/Time: 3/17/14       11:40 am         Easting Coordinate:       Total Depth: 20 ft	6.0		loose.	4.0.0		0.0		
10.0       0.0         12.0       8-12 ft       3.5 ft         14.0       8-12 ft       3.5 ft         14.0       12-16 ft       3.5 ft         16.0       12-16 ft       3.5 ft         16.0       0.0         18.0       16-20 ft         20.0       End of Boring         22.0       Image: Coordinate:         Drill Date/Time: 3/17/14       11:40 am         Easting Coordinate:       Total Depth: 20 ft	-			4-8 π -	2.0 ft	0.0		
12.0       0.0         14.0       SAND (SW) (14.0-20.0')         Brown sand, fine, moist to dry, firm, trace silt.       12-16 ft         16.0       0.0         18.0       0.0         20.0       End of Boring         22.0       Image: Coordinate:         Northing Coordinate:       Drill Date/Time: 3/17/14         11:0       0.0			Brown silt, very moist, son, trace clay.	0.12.0	2.5.0	0.0		
14.0       SAND (SW) (14.0-20.0')         Brown sand, fine, moist to dry, firm, trace silt.       12-16 ft         16.0       0.0         18.0       0.0         20.0       End of Boring         22.0       End of Boring         22.0       Image: Simple state st	-			8-12 π	3.5 π	0.0		
SAND (SW) (14.0-20.0')       0.0         Brown sand, fine, moist to dry, firm, trace silt.       0.0         16.0       16-20 ft         20.0       End of Boring         22.0       End of Boring         Northing Coordinate:       Drill Date/Time: 3/17/14         Total Depth: 20 ft	-			10.16.0	25.0	0.0		
18.0       16-20 ft       0.0         20.0       End of Boring       0.0         22.0       End of Boring       0.0         Northing Coordinate:       Drill Date/Time: 3/17/14       11:40 am         Easting Coordinate:       Total Depth: 20 ft	-			12-10 II	3.5 п	0.0		
20.0     End of Boring       22.0     End of Boring       22.0     Image: Coordinate:       Northing Coordinate:     Drill Date/Time: 3/17/14 11:40 am       Easting Coordinate:     Total Depth: 20 ft	-			16 20 8	20.6	0.0		
End of Boring       22.0-       Northing Coordinate:       Drill Date/Time: 3/17/14       Easting Coordinate:       Total Depth: 20 ft	-			10-20 ft	5.0 1	0.0		
Northing Coordinate:       Drill Date/Time: 3/17/14 11:40 am         Easting Coordinate:       Total Depth: 20 ft	20.0		End of Boring					
Easting Coordinate: Total Depth: 20 ft	22.0-							
•	Nort	thing C	Coordinate: Drill Date/Tin	ne: 3/17/1	4 11:40 :	am	<b></b>	
•	East	ing Co	ordinate: Total Depth: 2	20 ft				
		-	-					

### **Borehole Number: 53-SB-4**

Project: ODOT HAM-75-0.22 Project No: 52888 Client: ODOT Geologist: S. Dailey Location: 605 West 3rd Street, Cincinnati, Ohio Drilling Contractor: Envirocore Sampling Method: Direct push Drill Rig Type: Geoprobe **BURGESS & NIPLE** 

5085 Reed Road Columbus, Ohio, 43220 phone: (614)459-2050 fax: (614)451-1385

· · · · · · · · · · · · · · · · · · ·						
Depth (feet)	Sample Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes
-0.0	Ground Surface					
2.0-	<ul> <li>FILL (0.0-6.0')</li> <li>0.0-0.3' - Fill - gravel.</li> <li>0.3-3.5' - SAA, black soot/cinders with gravel, dry, loose.</li> </ul>	0-4 ft	3.0 ft	0.0		Boring abandoned with bentonite chips.
4.0	3.5-6.0' - SAA, red crushed brick, dry, loose, trace gravel.			0.0		oentointe omps.
6.0-	CLAYEY SILT (CL/ML) (6.0-8.0') Brown clayey silt, moist, firm.	4-8 ft	3.0 ft	0.0		
10.0	SILT (ML) (8.0-12.0') Brown silt, moist, firm, 1/4" of black discoloration/organic material at 11.5'.	8-12 ft	3.0 ft	0.0		
12.0	SILTY SAND (SM) (12.0-19.5')			0.0		
14.0-	Brown sand, fine, some silt, several silt zones, moist, firm.	12-16 ft	3.0 ft	0.0		
16.0-				0.0		
18.0		16-20 ft	3.5 ft	0.0		
20.0	CLAY, SAND AND GRAVEL (SC) (19.5-20.0') Brown clay with coarse sand and gravel, moist, firm to			0.0		2
- - 22.0-	hard. End of Boring	/				
I.	thing Coordinate: Drill Date	/Time: 3/17/1	4 12:55	pm		
Easti	ing Coordinate: Total Dep	<b>th:</b> 20 ft				
Grou	und Surface Elevation: Sheet: 1 o					

Proj Proj Clie	ject: O ject No nt: OD	le Number: 58-SB-1DOT HAM-75-0.22Location: West 3rd St./Petec: 52888Drilling Contractor: EnviroOTSampling Method: Direct pS. DaileyDrill Rig Type: Geoprobe	ocore	ay/Central		Columba phone:	BURGESS & NIPLI Reed Road us, Ohio, 43220 (614)459-2050 514)451-1385
Depth (feet)	Lithology	Sample Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes
- 0.0 - - -		Ground Surface FILL (0.0-4.0') 0.0-0.2' - Asphalt. 0.2-2.8' - Fill - sand and gravel base material, dry,			0.0		
2.0- - - 4.0-		week. 2.8-4.0' - SAA, brown clay with gravel, moist, firm.	0-4 ft	2.0 ft	0.0		Boring abandoned with bentonite chips.
6.0		CLAY (CL) (4.0-17.0') 4.0-9.5' - Gray clay, moist, soft, trace silt, black organic nodule throughout.	4-8 ft	2.0 ft	0.0		
-  8.0 					0.0		
- 10.0- - -		9.5-14.0' - SAA, brown and gray mottled, moist, soft, trace silty organic material throughout.	8-12 ft	3.5 ft	0.0		
12.0- 					0.0		
14.0- - - 16.0-		14.0-17.0' - SAA, brown with slight red tint, moist, soft, trace silt, no organic material observed.	12-16 ft	3.5 ft	0.0		
10.0 	H	CLAYEY SILT (ML) (17.0-20.0') Brown clayey silt, moist, soft, trace fine sand.	16-20 ft	3.0 ft	0.0		
20.0	$\mathbb{H}$				0.0		
22.0		End of Boring					
Nortl	hing Co	oordinate: Drill Date/Tin	ne: 3/19/1	4 10:30 a	am		

Easting Coordinate: --

Total Depth: 20 ft

Sheet: 1 of 1

Ground Surface Elevation: --

Project: ODOT HAM-75-0.22Location: West 3rd St.Project No: 52888Drilling Contractor: HClient: ODOTSampling Method: DiGeologist: S. DaileyDrill Rig Type: Geopre			ect push			BURGESS & NIPLI Smith St. 5005 Reed Road Columbus, Ohio, 43220 phone: (614)459-2050 fax: (614)451-1385		
Depth (feet)	Lithology	Sampl	e Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes
<del>- 0.0</del> - - 2.0-		ASPHALT (0.0-0.3') FILL (0.3-8.0') 0.3-2.0' - Fill - sand and	gravel subgrade material, dry.	0-4 ft	3.0 ft	0.0		Boring abandoned with
4.0- - - 6.0-		some gray to black disco	nd, gravel, and clay, low	4-8 ft	0.8 ft	0.0		bentonite chips.
- - 8.0- - - -		CLAY (CL) (8.0-20.0') 8.0-12.0' - Red brown cla mottling, trace silt.	ay, soft to firm, trace gray			0.0		
10.0			race brown mottling, trace silt.	8-12 ft	4.0 ft	0.0		
14.0 		13.0-14.0' - SAA, soft. 14.0-18.0' - SAA, more b	rown than gray.	12-16 ft	4.0 ft	0.0		
16.0- - - - 18.0-		18.0-20.0' - SAA, plastic		16-20 ft	3.8 ft	0.0		
20.0 		End	of Boring			0.0		
22.0-	hing Co	oordinate:	Drill Date/	<b>Time:</b> 3/19/1	4 11:07 a	am		

Project: ODOT HAM-75-0.22Location: West 3rd St./PProject No: 52888Drilling Contractor: EmClient: ODOTSampling Method: DirectGeologist: S. DaileyDrill Rig Type: Geoprob			nvirocore ect push	push			BURGESS & NIPL mith St. 5085 Reed Road Columbus, Ohio, 43220 phone: (614)459-2050 fax: (614)451-1385		
Depth (feet)	Lithology	Sample	Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes	
0.0		Grou	nd Surface						
		ASPHALT (0.0-0.2') FILL (0.2-13.0') 0.2-0.4' - Fill - gravel subg	grade.	0-4 ft	4.0 ft	0.0		Boring	
4.0-		0.4-7.0' - SAA, brown mea dry, weak to moderate.	dium sand and fine gravel,	0-4 1		0.0	abandoned	abandoned with bentonite chips	
				4-8 ft	2.2 ft	0.0			
- 8.0		7.0-13.0' - SAA, clay with tradiscolored black throughout,				0.0			
- - 10.0-				8-12 ft	3.8 ft	0.0			
- - 12.0-						0.0			
- - 14.0-	×××	CLAYEY SAND (SC) (1) Brown and slightly red cla		 12-16 ft	3.2 ft	0.0			
- - 16.0-		soft, some clay.	· · · · · · · · · · · · · · · · · · ·			0.0			
		SAND (SP) (16.0-20.0') Brown and slightly red san	ıd, fine, dry, weak, trace clay	16-20 ft	3.0 ft	0.0			
20.0				10 20 1		0.0			
22.0		End o	f Boring				-		
I	hing C	oordinate:	Drill Date	/Time: 3/19/1	4 11:35	I			
	-	ordinate:	Total Dep						

Pro Clie	ject No: ent: OD(		Location: West 3rd St./ Drilling Contractor: E Sampling Method: Dir Drill Rig Type: Geopre	nvirocore ect push	y/Central	Ave./\$mit	Columb phone:	Reed Road us, Ohio, 43220 (614)459-2050 614)451-1385
Depth (feet)	Lithology	Sam	ple Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes
<del>0.0</del> - -		ASPHALT (0.0-0.3') FILL (0.3-16.0')	ound Surface	/		1.3		
2.0		brick, moist to dry, son	d gravel subgrade. re of sand and gravel, clay, and ne black staining. At 15.8' blac r to peat in texture was observe	k	3.0 ft	1.3		Boring abandoned with bentonite chips.
4.0 - - 6.0-			rods drove down on coarse	4-8 ft	3.0 ft	1.3		
- - 8.0-						1.3		
10.0				8-12 ft	1.5 ft	0.0		
12.0				12-16 ft	1.8 ft	0.0		
16.0		<b>GRAVELLY SAND</b> (3 Brown gravelly sand, v fragments, trace clay.	SW) (16.0-20.0') ery moist, moderate, limestone	16-20 ft	2.5 ft	0.0		
20.0 - - - 22.0		En	d of Boring					
Nort	hing Co	ordinate:	Drill Date	/ <b>Time: 3</b> /19/1	4 12:25	om		
Easti	ing Coo	rdinate:	Total Dep	<b>th:</b> 20 ft				

		e Number: 58-SB-5						BURGESS & NIPL
Proj Clie	ect No: nt: OD	: 52888 OT	Location: West 3rd St./Pe Drilling Contractor: Envir Sampling Method: Direct Drill Rig Type: Geoprobe	irocore push	ay/Central	Ave./\$mi	Columb phone:	<sup>54</sup> Reed Road us, Ohio, 43220 (614)459-2050 614)451-1385
Depth (feet)	Lithology	Sample Des	scription	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes
0.0		Ground S	urface					
2.0-		ASPHALT (0.0-0.3') FILL (0.3-2.0') Fill - sand and gravel subgrad	e.	0-4 ft	3.0 ft	1.3		<b>D</b> 1
-		<b>GRAVELLY SAND (SW) (</b> 2 Brown gravelly sand, moist, s			5.0 II	1.3		Boring abandoned with bentonite chips.
4.0		CLAY (CL) (3.5-20.0') 3.5-4.5' - Dark gray clay with material throughout.	some natural organic			1.3		
6.0- - - -		4.5-8.0' - SAA, red brown, slig gray mottling, trace silt.	ghtly moist, firm, trace	4-8 ft	4.0 ft	1.3		
8.0		8.0-16.0' - SAA, red brown.				0.0		
10.0- - - - 12.0-				8-12 ft	4.0 ft	0.0		
12.0 - - - 14.0				12-16 ft	10.6	0.0		
14.0 - - - - 16.0-				12-10 11	4.0 ft	0.0		
18.0		16.0-20.0' - SAA, moist, soft.		16-20 ft	4.0 ft	0.0		
20.0				10-20 R	4.0 1	0.0		
20.0		End of Bo	oring					
22.0-								
Nortl	ning Co	ordinate:	Drill Date/Ti	<b>me:</b> 3/19/1	4 12:50	pm		
	-	rdinate: face Elevation:	<b>Total Depth:</b> <b>Sheet:</b> 1 of 1	20 ft				

#### **Borehole Number: 58-SB-6 BURGESS & NIPLE** Location: West 3rd St./Pete Rose Way/Central Ave./\$mith St. 5005 Reed Road Project: ODOT HAM-75-0.22 Project No: 52888 Drilling Contractor: Envirocore Columbus, Ohio, 43220 **Client: ODOT** Sampling Method: Direct push phone: (614)459-2050 fax: (614)451-1385 Geologist: S. Dailey Drill Rig Type: Geoprobe Boring Completion Field Screening (ppm) Depth Lithology Abandonment Sample Recovery (feet) Sample Description Interval (feet) Notes Ground Surface <del>0.0</del> ASPHALT (0.0-0.3') 0.0 FILL (0.3-15.0') 0.3-1.5' - Fill - sand and gravel subgrade, dry, weak. 2.00-4 ft 2.5 ft Boring Hit refusal at 3.5' during two previous attempts at this abandoned with location. 0.0 bentonite chips. 1.5-4.0' - SAA, sand and gravel, weak. 4.04.0-7.6' - SAA, sand with gravel and clay, moist, 1.3 strong/hard. 6.0 4-8 ft 3.0 ft 7.6-8.0' - SAA, black staining. 1.3 8.0-10.0' - SAA, no staining. 8.0 10.0-10.5' - SAA, black silty sand, very moist. 0.0 10.0 8-12 ft 2.5 ft 10.5-11.0' - SAA, sand with gravel and clay. 0.0 11.0-11.2' - SAA, brick. 12.0 11.2-12.0' - SAA, black sand with gravel and clay. 0.0 12.0-15.0' - SAA, black discolored clay, moist, soft, 14.0 12-16 ft 3.5 ft slight septic odor. 0.0 CLAYEY SILT (CL/ML) (15.0-16.0') Brown clayey silt, moist, soft. 16.0 CLAY (CL) (16.0-20.0') 0.0 Brown clay, moist, soft, trace silt. 18.0 16-20 ft 3.5 ft 0.0 20.0 End of Boring 22.0

Northing Coordinate: --

**Drill Date/Time:** 3/19/14 1:08 pm

Easting Coordinate: --

Ground Surface Elevation: --

Total Depth: 20 ft

Sheet: 1 of 1

# **Borehole Number: 65-SB-1**

Project: ODOT HAM-75-0.22 Project No: 52888 Client: ODOT Geologist: S. Dailey

Location: 612 Mehring Way Drilling Contractor: Envirocore Sampling Method: Direct push Drill Rig Type: Geoprobe



5085 Reed Road Columbus, Ohio, 43220 phone: (614)459-2050 fax: (614)451-1385

Depth (feet)	Lithology	Sample Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes
0.0-		Ground Surface					
2.0-		<b>FILL (0.0-4.5')</b> 0.0-3.5' - Fill - sand with gravel, dry, weak.	0-4 ft	2.5 ft	0.0		Boring
4.0-		3.5-4.5' - SAA, black soot/cinders, coal fragments, dry, weak.		2.5 II	0.0		abandoned with bentonite chips.
6.0-		CLAYEY SILT (CL/ML) (4.5-6.0') Black clayey silt, discolored, wet.	4-8 ft	2.5 ft	0.0		
8.0-		SANDY SILT (ML) (6.0-8.0') Brown sandy silt, moist, soft.	T O R	2.5 ft	0.0		
	Ħ	SILTY CLAY (CL) (8.0-11.0') Brown silty clay, hard, two sand lenses approximatley 2" thick that were discolored black and wet.	0.10.0	200	0.0		
		SILTY SAND AND GRAVEL (SM) (11.0-14.0') Black sand and gravel with silt, wet, fluid.	8-12 ft	2.0 ft	0.0		
		Probe refusal at 14'.	12-14 ft	2.0 ft	0.0		
14.0		End of Boring					
16.0-							
18.0 - -							
20.0-							
Nort	hing Co	pordinate: Drill Date/Tim	ne: 3/18/1	4 1:08 pr	m		
Easti	ing Coo	rdinate: Total Depth: 1	4 ft				
Grou	und Sur	face Elevation: Sheet: 1 of 1					

Proj Proj Clie	ject: OI ject No: nt: OD(		Location: 612 Mehring V Drilling Contractor: Env Sampling Method: Direc Drill Rig Type: Geoprob	virocore t push			Columbo phone:	BURGESS & NIPL Reed Road us, Ohio, 43220 (614)459-2050 614)451-1385
Depth (feet)	Lithology	Sample D	Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes
- <del>0.0</del> - -		Ground FILL (0.0-4.0') 0.0-2.0' - Fill - brown sand a moist.	Surface and gravel with some clay,			0.0		
2.0- - - 4.0-		2.0-4.0' - SAA, black soot/c weak.	inders and gravel, dry,	0-4 ft	2.0 ft	0.0		Boring abandoned with bentonite chips.
6.0		No Recovery (4.0-8.0')		4-8 ft	0.0 ft			
8.0	HHHH	SILTY CLAY (8.0-20.0') 8.0-10.0' - Rock inside shoe 10.0-17.0' - Gray silty clay v moist, firm to soft, plastic.		8-12 ft	1.5 ft	0.0		
12.0-	Ħ			12.16.0		0.0		
14.0 - - 16.0	Ħ			12-16 ft	3.5 ft	0.0		
18.0		17.0-19.0' - SAA, some silt.		16-20 ft	4.0 ft	0.0		
20.0	Ħ	19.0-20.0' - SAA, brown and to hard, plastic, trace iron dis				0.0		
22.0		End of	Boring					
	hing Co	ordinate:	Drill Date/T	ime: 3/18/1	4 1:45 pi	m		
Easti	ng Coo	rdinate:	Total Depth	: 20 ft				

Proje Clien	ect No: nt: OD(		Location: 612 Mehring V Drilling Contractor: Env Sampling Method: Direc Drill Rig Type: Geoprob	virocore ct push			Columb phone:	BURGESS & NIPI 5 Reed Road us, Ohio, 43220 (614)459-2050 614)451-1385
Depth (feet)	Lithology	Sample	Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes
-0.0 		<b>FILL (0.0-5.0')</b> 0.0-5.0' - Fill - sand and gr weak.	nd Surface ravel and black cinders, dry, two additional times and hit	0-5 ft				Boring abandoned with bentonite chips
4.0-		End c	of Boring					
- 8.0- - -								
- 								
- 2.0- - -								
4.0- - -								
	-	ordinate:	Drill Date/1		4 2:40 pr	m		
		rdinate: Face Elevation:	<b>Total Depth</b> <b>Sheet:</b> 1 of					

Projec Client:	et: ODOT HAM-75-0.22 et No: 52888 : ODOT gist: S. Dailey	Location: 612 Mehring V Drilling Contractor: En Sampling Method: Dire Drill Rig Type: Geoprob	virocore ct push			Columbu phone: (	BURGESS & NIPL Reed Road as, Ohio, 43220 (614)459-2050 (514)451-1385
Depth (feet)	Sampl	le Description	Interval	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes
0.0	AA	und Surface					
×	<b>FILL (0.0-11.0')</b> 0.0-2.0' - Fill.				0.0	I	
2.0	weak.	nd with gravel, very moist,	0-4 ft	3.5 ft	0.0		Boring abandoned with bentonite chips.
4.0-	2000 2000 2000 2000 2000 2000 2000 200			2.0.0	0.0		
6.0-X			4-8 ft	3.0 ft	0.0		
10.0-			8-12 ft	2.0 ft	0.0		
×	SILTY CLAY (ML/CL	) (11.0-16.0')			0.0	:	
12.0	11.0-12.0' - Gray silty cla		12.16.0	2.5.5	0.0		
16.0	Ŧ		12-16 ft	3.5 ft	0.0		
	SANDY CLAY (SC) (10 Gray clay with sand, moi with clay.	6.0-20.0') st, firm, some sandy zones	16-20 ft	3.2 ft	0.0		
					0.0		
20.0	End	of Boring					
22.0-	ng Coordinate:	Drill Data/	<b>Fime:</b> 3/18/1	4 3.15 m	 m		
	coordinate:	Total Dept		. <i>5.15</i> pi	**		

epth feet)       Sample Description         0.0       Ground Surface         0.0       FILL (0.0-12.0')         0.0-3.0' - Fill - black sand, gravel, and cinders, dry, weak.         2.0       3.0-5.0' - SAA, red brick fragments, dry, weak.         4.0       5.0-12.0' - SAA, brown gray clay with zones of sand and gravel, dense/firm to soft in zones, moist to very maint.	Interval	tect)	0.0 Field Screening (ppm)	Boring Completion	Abandonment Notes
<ul> <li>FILL (0.0-12.0')</li> <li>0.0-3.0' - Fill - black sand, gravel, and cinders, dry, weak.</li> <li>3.0-5.0' - SAA, red brick fragments, dry, weak.</li> <li>5.0-12.0' - SAA, brown gray clay with zones of sand and gravel, dense/firm to soft in zones, moist to very</li> </ul>		2.0 ft			
<ul> <li>0.0-3.0' - Fill - black sand, gravel, and cinders, dry, weak.</li> <li>3.0-5.0' - SAA, red brick fragments, dry, weak.</li> <li>5.0-12.0' - SAA, brown gray clay with zones of sand and gravel, dense/firm to soft in zones, moist to very</li> </ul>		2.0 ft			
4.0 5.0-12.0' - SAA, brown gray clay with zones of sand and gravel, dense/firm to soft in zones, moist to very			0.0		Boring
5.0-12.0' - SAA, brown gray clay with zones of sand and gravel, dense/firm to soft in zones, moist to very					abandoned with bentonite chips
moist. From 7.0-7.5' the fill was black, wet, sand and gravel.	4-8 ft	2.5 ft	0.0		
			0.0		
	8-12 ft	2.0 ft	0.0		
2.0 CLAY (CL) (12.0-20.0') 12.0-14.0' - Gray clay, moist, soft to firm, trace silt.			0.0		
4.0 14.0-20.0' - SAA, moist, hard, plastic.	12-16 ft	3.5 ft	0.0		
5.0			0.0		
8.0	16-20 ft	4.0 ft	0.0		
0.0 End of Boring					
2.0– Northing Coordinate: Drill Date/T	Time: 3/18/1	4 3.35 m			
Easting Coordinate: Total Depth					

Interval			1	
Inte	Sample Recovery (feet)	Field Screening (ppm)	Boring Completion	Abandonment Notes
s. 10' to 0-4 ft	1.5 ft	0.0		Boring
		0.0		abandoned with bentonite chips
4-8 ft	3.0 ft	0.0		
		0.0		
n gray 8-12 ft	3.2 ft	0.0		
	200	0.0		
12-16 ft	3.0 ft	0.0		
16-20 ft	4.0 ft	0.0		
		0.0		
	4 4:10 p	m	_	
	10' to 0-4 ft 4-8 ft 4-8 ft 12-16 ft 16-20 ft 1	10' to 0-4 ft 1.5 ft 4-8 ft 3.0 ft в з.2 ft 12-16 ft 3.0 ft 16-20 ft 4.0 ft 16-20 ft 4.0 ft 16-20 ft 4.0 ft 10 рtt: 3/18/14 4:10 рт	10' to 0-4 ft 1.5 ft 0.0 4-8 ft 3.0 ft 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	10' to 0-4 ft 1.5 ft 0.0 4-8 ft 3.0 ft 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.

# APPENDIX D

LABORATORY REPORTS CHAIN-OF-CUSTODY FORMS, AND CERTIFICATION REPORTS



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

March 28, 2014

Mr. Scott Dailey Burgess & Niple (OH) 5085 Reed Road Columbus, OH 43220

RE: Project: ODOT HAM-75-0.22 / 52888 Pace Project No.: 5095059

Dear Mr. Dailey:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

hant -Leunth

Kenneth Hunt kenneth.hunt@pacelabs.com Project Manager

Enclosures



#### **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### CERTIFICATIONS

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095059

#### Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268 Illinois Certification #: 200074 Indiana Certification #: C-49-06 Kansas Certification #: E-10247 Kentucky UST Certification #: 0042 Louisiana/NELAP Certification #: 04076 Ohio VAP Certification #: CL-0065 Pennsylvania Certification #: 68-04991 West Virginia Certification #: 330

**REPORT OF LABORATORY ANALYSIS** 



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

# SAMPLE SUMMARY

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095059

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5095059001	53-SB-1 2-4'	Solid	03/17/14 10:25	03/21/14 12:35
5095059002	53-SB-2 6-8'	Solid	03/17/14 11:15	03/21/14 12:35
5095059003	53-SB-3 8-10'	Solid	03/17/14 11:40	03/21/14 12:35
5095059004	53-SB-4 6-8'	Solid	03/17/14 12:55	03/21/14 12:35
5095059005	49-SB-1 0-3'	Solid	03/17/14 13:45	03/21/14 12:35
5095059006	49-SB-2 2-4'	Solid	03/17/14 14:15	03/21/14 12:35
5095059007	17-SB-1 4-6'	Solid	03/18/14 09:00	03/21/14 12:35
5095059008	17-SB-2 8-10'	Solid	03/18/14 09:20	03/21/14 12:35
5095059009	29-SB-1 2-4'	Solid	03/18/14 10:30	03/21/14 12:35
5095059010	29-SB-2 4-6'	Solid	03/18/14 10:50	03/21/14 12:35
5095059011	51-SB-1 8-10'	Solid	03/19/14 14:20	03/21/14 12:35
5095059012	51-SB-2 2-4'	Solid	03/19/14 14:35	03/21/14 12:35

**REPORT OF LABORATORY ANALYSIS** 



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### SAMPLE ANALYTE COUNT

Project: ODOT HAM-75-0.22 / 52888 Pace Project No.: 5095059

Lab ID	Sample ID	Method	Analysts	Analytes Reported	
5095059001	53-SB-1 2-4'	EPA 8015 Mod Ext	CEM	4	
		EPA 8015 Mod Pur	PTH	2	
		EPA 8270 by SIM	CEM	18	
		EPA 8260	BJG	73	
		ASTM D2974-87	ZM	1	
5095059002	53-SB-2 6-8'	EPA 8015 Mod Ext	CEM	4	
		EPA 8015 Mod Pur	PTH	2	
		EPA 8270 by SIM	CEM	18	
		EPA 8260	BJG	73	
		ASTM D2974-87	ZM	1	
5095059003	53-SB-3 8-10'	EPA 8015 Mod Ext	CEM	4	
		EPA 8015 Mod Pur	PTH	2	
		EPA 8270 by SIM	CEM	18	
		EPA 8260	BJG	73	
		ASTM D2974-87	ZM	1	
5095059004	53-SB-4 6-8'	EPA 8015 Mod Ext	CEM	4	
		EPA 8015 Mod Pur	РТН	2	
		EPA 8270 by SIM	CEM	18	
		EPA 8260	BJG	73	
		ASTM D2974-87	ZM	1	
5095059005	49-SB-1 0-3'	EPA 8015 Mod Ext	CEM	3	
		EPA 8015 Mod Pur	PTH	2	
		EPA 8260	BJG	8	
		ASTM D2974-87	ZM	1	
5095059006	49-SB-2 2-4'	EPA 8015 Mod Ext	CEM	3	
		EPA 8015 Mod Pur	PTH	2	
		EPA 8260	BJG	8	
		ASTM D2974-87	ZM	1	
5095059007	17-SB-1 4-6'	EPA 8015 Mod Ext	CEM	3	
		EPA 8015 Mod Pur	PTH	2	
		EPA 8260	BJG	8	
		ASTM D2974-87	ZM	1	
095059008	17-SB-2 8-10'	EPA 8015 Mod Ext	CEM	3	
		EPA 8015 Mod Pur	РТН	2	
		EPA 8260	BJG	8	
		ASTM D2974-87	ZM	1	
095059009	29-SB-1 2-4'	EPA 8015 Mod Ext	CEM	3	

#### **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### SAMPLE ANALYTE COUNT

Project:	ODOT HAM-75-0.22 /
Pace Project No .:	5095059

52888

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 8015 Mod Pur	PTH	2
		EPA 8260	BJG	8
		ASTM D2974-87	ZM	1
5095059010	29-SB-2 4-6'	EPA 8015 Mod Ext	CEM	3
		EPA 8015 Mod Pur	PTH	2
		EPA 8260	BJG	8
		ASTM D2974-87	ZM	1
5095059011	51-SB-1 8-10'	EPA 8015 Mod Ext	CEM	3
		EPA 8015 Mod Pur	PTH	2
		EPA 8260	BJG	8
		ASTM D2974-87	ZM	1
5095059012	51-SB-2 2-4'	EPA 8015 Mod Ext	CEM	3
		EPA 8015 Mod Pur	PTH	2
		EPA 8260	BJG	8
		ASTM D2974-87	ZM	1

**REPORT OF LABORATORY ANALYSIS** 



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 53-SB-1 2-4'	Lab ID: 5	095059001	Collected: 03/17/1	14 10:25	Received: 03	3/21/14 12:35 N	Aatrix: Solid	
Results reported on a "dry-weight	" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical N	iethod: EPA 80	)15 Mod Ext Prepara	ation Met	thod: EPA 3546			·
Total Petroleum Hydrocarbons	<23.5	mg/kg	23.5	1	03/25/14 09:25	03/27/14 12:17		
TPH (C10-C20)	<11.7	mg/kg	11.7	1	03/25/14 09:25	03/27/14 12:17		
TPH (C20-C34)	<11.7	mg/kg	11.7	1	03/25/14 09:25	03/27/14 12:17		
Surrogates								
n-Pentacosane (S)	55	%.	30-153	1	03/25/14 09:25	03/27/14 12:17	629-99-2	
8015 Gasoline Range Organics	Analytical M	lethod: EPA 80	15 Mod Pur					
TPH (C06-C12)	<1.2	mg/kg	1.2	1		03/25/14 20:05		
Surrogates								
4-Bromofluorobenzene (S)	102	%.	38-163	1		03/25/14 20:05	460-00-4	
8270 MSSV PAH by SIM	Analytical M	lethod: EPA 82	70 by SIM Preparati	ion Meth	od: EPA 3546			
Acenaphthene	<0.0058	mg/kg	0.0058	1	03/24/14 10:55	03/26/14 04:45	83-32-9	
Acenaphthylene	<0.0058	mg/kg	0.0058	1	03/24/14 10:55	03/26/14 04:45	208-96-8	
Anthracene	<0.0058	mg/kg	0.0058	1	03/24/14 10:55	03/26/14 04:45	120-12-7	
Benzo(a)anthracene	<0.0058	mg/kg	0.0058	1	03/24/14 10:55	03/26/14 04:45	56-55-3	
Benzo(a)pyrene	<0.0058	mg/kg	0.0058	1	03/24/14 10:55	03/26/14 04:45	50-32-8	
Benzo(b)fluoranthene	<0.0058		0.0058	1	03/24/14 10:55	03/26/14 04:45	205-99-2	
Benzo(g,h,i)perylene	<0.0058	mg/kg	0.0058	1	03/24/14 10:55	03/26/14 04:45	191-24-2	
Benzo(k)fluoranthene	<0.0058		0.0058	1	03/24/14 10:55	03/26/14 04:45	207-08-9	
Chrysene	<0.0058		0.0058	1	03/24/14 10:55	03/26/14 04:45	218-01-9	
Dibenz(a,h)anthracene	<0.0058		0.0058	1		03/26/14 04:45		
Fluoranthene	<0.0058		0.0058	1	03/24/14 10:55	03/26/14 04:45	206-44-0	
Fluorene	<0.0058	•••	0.0058	1		03/26/14 04:45		
Indeno(1,2,3-cd)pyrene	<0.0058		0.0058	1		03/26/14 04:45		
Naphthalene	<0.0058		0.0058	1		03/26/14 04:45		
Phenanthrene	<0.0058		0.0058	1		03/26/14 04:45		
Pyrene	<0.0058		0.0058	1		03/26/14 04:45		
Surrogates			0.0000	•	00/24/14 10:00	00/20/14 04.45	123-00-0	
2-Fluorobiphenyl (S)	85	%.	38-110	1	03/24/14 10:55	03/26/14 04:45	321-60-8	
p-Terphenyl-d14 (S)	91		32-111	1		03/26/14 04:45		
8260 MSV 5030 Low Level	Analytical M	ethod: EPA 82	60					
Acetone	<0.12	ma/ka	0.12	1		03/27/14 06:14	67-64-1	
Acrolein	<0.12		0.12	1		03/27/14 06:14		
Acrylonitrile	<0.12		0.12	1		03/27/14 06:14		
Benzene	<0.0059		0.0059	1		03/27/14 06:14		
Bromobenzene	<0.0059		0.0059	1		03/27/14 06:14		
Bromochloromethane	<0.0059		0.0059	1		03/27/14 06:14		
Bromodichloromethane	<0.0059		0.0059	1		03/27/14 06:14		
Bromoform	<0.0059		0.0059					
				1		03/27/14 06:14		
	<0.0059		0.0059	1		03/27/14 06:14		
2-Butanone (MEK)	<0.029		0.029	1		03/27/14 06:14		
n-Butylbenzene	<0.0059		0.0059	1		03/27/14 06:14		
sec-Butylbenzene	<0.0059	• •	0.0059	1		03/27/14 06:14		
ert-Butylbenzene	<0.0059 i	ng/kg	0.0059	1		03/27/14 06:14	98-06-6	

#### **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 53-SB-1 2-4'	Lab ID: 509	95059001	Collected: 03/17/1	4 10:25	Received: 0	3/21/14 12:35 N	Aatrix: Solid	
Results reported on a "dry-weigh	nt" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV 5030 Low Level	Analytical Met	thod: EPA 826	0					
Carbon disulfide	<b>&lt;0.012</b> m	g/kg	0.012	1		03/27/14 06:14	75-15-0	
Carbon tetrachloride	<0.0059 m	g/kg	0.0059	1		03/27/14 06:14	56-23-5	
Chlorobenzene	<0.0059 m	g/kg	0.0059	1		03/27/14 06:14	108-90-7	
Chloroethane	<0.0059 m	g/kg	0.0059	1		03/27/14 06:14	75-00-3	
Chloroform	<0.0059 m	g/kg	0.0059	1		03/27/14 06:14	67-66-3	
Chloromethane	<0.0059 m	g/kg	0.0059	1		03/27/14 06:14	74-87-3	
2-Chlorotoluene	<0.0059 m	g/kg	0.0059	1		03/27/14 06:14	95-49-8	
1-Chlorotoluene	<0.0059 m	g/kg	0.0059	1		03/27/14 06:14	106-43-4	
Dibromochloromethane	<0.0059 m	g/kg	0.0059	1		03/27/14 06:14	124-48-1	
1,2-Dibromoethane (EDB)	<0.0059 m	g/kg	0.0059	1		03/27/14 06:14		
Dibromomethane	<0.0059 m	g/kg	0.0059	1		03/27/14 06:14	74-95-3	
1,2-Dichlorobenzene	<0.0059 m		0.0059	1		03/27/14 06:14	95-50-1	
,3-Dichlorobenzene	<0.0059 m		0.0059	1		03/27/14 06:14	-	
I,4-Dichlorobenzene	<0.0059 m		0.0059	1		03/27/14 06:14		
raris-1,4-Dichloro-2-butene	<0.12 m		0.12	1		03/27/14 06:14	110-57-6	
Dichlorodifluoromethane	<0.0059 m		0.0059	1		03/27/14 06:14		
,1-Dichloroethane	<0.0059 m		0.0059	1		03/27/14 06:14		
,2-Dichloroethane	<0.0059 m		0.0059	1		03/27/14 06:14		
,1-Dichloroethene	<0.0059 m		0.0059	1		03/27/14 06:14		
is-1,2-Dichloroethene	<0.0059 mg		0.0059	1		03/27/14 06:14		
rans-1,2-Dichloroethene	<0.0059 m		0.0059	1		03/27/14 06:14		
,2-Dichloropropane	<0.0059 m		0.0059	1		03/27/14 06:14		
,3-Dichloropropane	<0.0059 m		0.0059	1		03/27/14 06:14		
2,2-Dichloropropane	<0.0059 mg		0.0059	1		03/27/14 06:14		
,1-Dichloropropene	<0.0059 mg		0.0059	1		03/27/14 06:14		
is-1,3-Dichloropropene	<0.0059 mg		0.0059	1		03/27/14 06:14		
ans-1,3-Dichloropropene	<0.0059 mg		0.0059	1		03/27/14 06:14		
thylbenzene	<0.0059 mg		0.0059	1		03/27/14 06:14		
thyl methacrylate	<0.12 mg		0.12	1		03/27/14 06:14		
lexachloro-1,3-butadiene	<0.0059 mg		0.0059	1		03/27/14 06:14		
-Hexane	<0.0059 mg		0.0059	1		03/27/14 06:14		N2
-Hexanone	<0.12 mg		0.12	1		03/27/14 06:14		112
odomethane	<0.12 mg		0.12	1		03/27/14 06:14		
sopropylbenzene (Cumene)	<0.0059 mg		0.0059	1		03/27/14 06:14		
-Isopropyltoluene	<0.0059 mg		0.0059	1		03/27/14 06:14		
lethylene Chloride	<0.024 mg		0.024	1		03/27/14 06:14		
-Methyl-2-pentanone (MIBK)	<0.029 mg		0.029	1		03/27/14 06:14		
fethyl-tert-butyl ether	<0.0059 mg		0.0059	1		03/27/14 06:14		
aphthalene	<0.0059 mg		0.0059	1		03/27/14 06:14		
-Propylbenzene	<0.0059 mg		0.0059	1		03/27/14 06:14		
tyrene	<0.0059 mg		0.0059	1		03/27/14 06:14		
,1,1,2-Tetrachloroethane	<0.0059 mg	-	0.0059	1		03/27/14 06:14		
,1,2,2-Tetrachloroethane	<0.0059 mg		0.0059	1		03/27/14 06:14		
etrachloroethene	<0.0059 mg							
oluene	<0.0059 mg <0.0059 mg	-	0.0059 0.0059	1 1		03/27/14 06:14		
	SU.UU39 MO	1/K()	0.0059			03/27/14 06:14	108-88-3	

#### **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 53-SB-1 2-4'	Lab ID: 509505	9001 Collected: 03/17/	14 10:25	Received: 0	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weig	ht" basis						
Parameters	Results	Units Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method:	EPA 8260					
1,2,4-Trichlorobenzene	<0.0059 mg/kg	0.0059	1		03/27/14 06:14	120-82-1	
1,1,1-Trichloroethane	<0.0059 mg/kg	0.0059	1		03/27/14 06:14	71-55-6	
1,1,2-Trichloroethane	<0.0059 mg/kg	0.0059	1		03/27/14 06:14	79-00-5	
Trichloroethene	<0.0059 mg/kg	0.0059	1		03/27/14 06:14	79-01-6	
Trichlorofluoromethane	<0.0059 mg/kg	0.0059	1		03/27/14 06:14	75-69-4	
1,2,3-Trichloropropane	<0.0059 mg/kg		1		03/27/14 06:14	96-18-4	
1,2,4-Trimethylbenzene	<0.0059 mg/kg		1		03/27/14 06:14	95-63-6	
1,3,5-Trimethylbenzene	<0.0059 mg/kg		1		03/27/14 06:14	108-67-8	
Vinyl acetate	<0.12 mg/kg		1		03/27/14 06:14	108-05-4	
Vinyl chloride	<0.0059 mg/kg		1		03/27/14 06:14		
Xylene (Total)	<0.012 mg/kg		1		03/27/14 06:14	1330-20-7	
Surrogates							
Dibromofluoromethane (S)	104 %.	85-118	1		03/27/14 06:14	1868-53-7	
Toluene-d8 (S)	<b>94</b> %.	71-128	1		03/27/14 06:14	2037-26-5	
4-Bromofluorobenzene (S)	<b>94</b> %.	56-144	1		03/27/14 06:14	460-00-4	
Percent Moisture	Analytical Method:	ASTM D2974-87					
Percent Moisture	15.0 %	0.10	1		03/24/14 16:02		



Pace Analytical Services, Inc. 7726 Molier Road Indianapolis, IN 46268 (317)228-3100

#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 53-SB-2 6-8'	Lab ID:	5095059002	Collected: 03/17/1	4 11:15	Received: 03	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight	t" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical I	Method: EPA 80	015 Mod Ext Prepara	ition Me	thod: EPA 3546			
Total Petroleum Hydrocarbons		mg/kg	23.9	1	03/25/14 09:25	03/27/14 12:39	)	
TPH (C10-C20)	<12.(	) mg/kg	12.0	1	03/25/14 09:25	03/27/14 12:39	•	
TPH (C20-C34)	<12.0	) mg/kg	12.0	1	03/25/14 09:25	03/27/14 12:39	)	
Surrogates								
n-Pentacosane (S)	55	<b>%</b> .	30-153	1	03/25/14 09:25	03/27/14 12:39	9 629-99-2	
3015 Gasoline Range Organics	Analytical I	Method: EPA 80	015 Mod Pur					
TPH (C06-C12)	<1.2	mg/kg	1.2	1		03/25/14 20:31	l	
Surrogates								
4-Bromofluorobenzene (S)	102	%.	38-163	1		03/25/14 20:31	460-00-4	
3270 MSSV PAH by SIM	Analytical I	Method: EPA 82	270 by SIM Preparati	on Meth	od: EPA 3546			
Acenaphthene	<0.0060	mg/kg	0.0060	1	03/24/14 10:55	03/26/14 05:38	83-32-9	
Acenaphthylene	<0.0060		0.0060	1	03/24/14 10:55	03/26/14 05:38	3 208-96-8	
Anthracene	<0.0060	mg/kg	0.0060	1	03/24/14 10:55	03/26/14 05:38	3 120-12-7	
Benzo(a)anthracene	<0.0060	mg/kg	0.0060	1	03/24/14 10:55	03/26/14 05:38	56-55-3	
lenzo(a)pyrene	<0.0060		0.0060	1		03/26/14 05:38		
Benzo(b)fluoranthene	<0.0060	mg/kg	0.0060	1	03/24/14 10:55	03/26/14 05:38	205-99-2	
Benzo(g,h,i)perylene	<0.0060		0.0060	1	03/24/14 10:55	03/26/14 05:38	191-24-2	
Benzo(k)fluoranthene	<0.0060	mg/kg	0.0060	1	03/24/14 10:55	03/26/14 05:38	207-08-9	
Chrysene	<0.0060	mg/kg	0.0060	1	03/24/14 10:55	03/26/14 05:38	218-01-9	
ibenz(a,h)anthracene	<0.0060	mg/kg	0.0060	1	03/24/14 10:55	03/26/14 05:38	53-70-3	
luoranthene	<0.0060	mg/kg	0.0060	1	03/24/14 10:55	03/26/14 05:38	206-44-0	
luorene	<0.0060	mg/kg	0.0060	1	03/24/14 10:55	03/26/14 05:38	86-73-7	
ndeno(1,2,3-cd)pyrene	<0.0060	mg/kg	0.0060	1	03/24/14 10:55	03/26/14 05:38	193-39-5	
laphthalene	<0.0060		0.0060	1	03/24/14 10:55			
Phenanthrene	<0.0060	mg/kg	0.0060	1	03/24/14 10:55	03/26/14 05:38	85-01-8	
yrene	<0.0060		0.0060	1	03/24/14 10:55			
Surrogates				-				
-Fluorobiphenyl (S)	75	%.	38-110	1	03/24/14 10:55	03/26/14 05:38	321-60-8	
-Terphenyl-d14 (S)	83	%.	32-111	1	03/24/14 10:55	03/26/14 05:38	1718-51-0	
260 MSV 5030 Low Level	Analytical N	lethod: EPA 82	60					
cetone	<0.12	mg/kg	0.12	1		03/27/14 08:12	67-64-1	
crolein	<0.12	mg/kg	0.12	1		03/27/14 08:12		
crylonitrile		mg/kg	0.12	1		03/27/14 08:12		
enzene	<0.0061		0.0061	1		03/27/14 08:12		
romobenzene	<0.0061		0.0061	1		03/27/14 08:12		
romochloromethane	<0.0061		0.0061	1		03/27/14 08:12		
romodichloromethane	<0.0061		0.0061	1		03/27/14 08:12		
romoform	<0.0061		0.0061	1		03/27/14 08:12		
romomethane	<0.0061		0.0061	1		03/27/14 08:12		
-Butanone (MEK)	<0.030	•••	0.030	1		03/27/14 08:12		
-Butylbenzene	<0.030	00	0.0061	1				
ec-Butylbenzene	<0.0061	•••				03/27/14 08:12		
-			0.0061	1		03/27/14 08:12		
ert-Butylbenzene	<0.0061	mg/kg	0.0061	1		03/27/14 08:12	98-06-6	

#### **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 53-SB-2 6-8'	Lab ID: 50950	5 <b>9002</b> (	Collected: 03/17/1	14 11:15	Received: 0	3/21/14 12:35 N	Matrix: Solid	
Results reported on a "dry-weigl	nt" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Metho	d: EPA 8260	)					
Carbon disulfide	<0.012 mg/k	g	0.012	1		03/27/14 08:12	75-15-0	
Carbon tetrachloride	<0.0061 mg/k	g	0.0061	1		03/27/14 08:12	56-23-5	
Chlorobenzene	<0.0061 mg/k	g	0.0061	1		03/27/14 08:12	108- <del>9</del> 0-7	
Chloroethane	<b>&lt;0.0061</b> mg/k	g	0.0061	1		03/27/14 08:12	75-00-3	
Chloroform	<0.0061 mg/k	g	0.0061	1		03/27/14 08:12	67-66-3	
Chloromethane	<0.0061 mg/k	g	0.0061	1		03/27/14 08:12	74-87-3	
2-Chlorotoluene	<0.0061 mg/k	g	0.0061	1		03/27/14 08:12	95-49-8	
4-Chlorotoluene	<0.0061 mg/k	g	0.0061	1		03/27/14 08:12	106-43-4	
Dibromochloromethane	<0.0061 mg/k	g	0.0061	1		03/27/14 08:12	124-48-1	
1,2-Dibromoethane (EDB)	<0.0061 mg/k	g	0.0061	1		03/27/14 08:12	106-93-4	
Dibromomethane	<0.0061 mg/k	g	0.0061	1		03/27/14 08:12	74-95-3	
1,2-Dichlorobenzene	<0.0061 mg/k	g	0.0061	1		03/27/14 08:12	95-50-1	
1,3-Dichlorobenzene	<0.0061 mg/k	g	0.0061	1		03/27/14 08:12	541-73-1	
1,4-Dichlorobenzene	<0.0061 mg/k	g	0.0061	1		03/27/14 08:12	106-46-7	
rans-1,4-Dichloro-2-butene	<0.12 mg/k	-	0.12	1		03/27/14 08:12		
Dichlorodifluoromethane	<0.0061 mg/k	-	0.0061	1		03/27/14 08:12	75-71-8	
,1-Dichloroethane	<0.0061 mg/k	g	0.0061	1		03/27/14 08:12		
,2-Dichloroethane	<0.0061 mg/k	a	0.0061	1		03/27/14 08:12		
,1-Dichloroethene	<0.0061 mg/k	•	0.0061	1		03/27/14 08:12		
is-1,2-Dichloroethene	<0.0061 mg/k		0.0061	1		03/27/14 08:12		
rans-1,2-Dichloroethene	<0.0061 mg/k	-	0.0061	1		03/27/14 08:12		
,2-Dichloropropane	<0.0061 mg/k	•	0.0061	1		03/27/14 08:12		
,3-Dichloropropane	<0.0061 mg/k		0.0061	1		03/27/14 08:12		
2,2-Dichloropropane	<0.0061 mg/k		0.0061	1		03/27/14 08:12		
,1-Dichloropropene	<0.0061 mg/kg	-	0.0061	1		03/27/14 08:12		
sis-1,3-Dichloropropene	<0.0061 mg/kg	•	0.0061	1		03/27/14 08:12		
rans-1,3-Dichloropropene	<0.0061 mg/kg		0.0061	1		03/27/14 08:12		
thylbenzene	<0.0061 mg/k		0.0061	1		03/27/14 08:12		
thyl methacrylate	<0.12 mg/kg	-	0.12	1		03/27/14 08:12		
lexachloro-1,3-butadiene	<0.0061 mg/kg		0.0061	1		03/27/14 08:12		
-Hexane	<0.0061 mg/kg		0.0061	1		03/27/14 08:12		N2
-Hexanone	<0.12 mg/kg		0.12	1		03/27/14 08:12		112
odomethane	<0.12 mg/kg		0.12	1		03/27/14 08:12		
sopropylbenzene (Cumene)	<0.0061 mg/kg		0.0061	1		03/27/14 08:12		
-isopropyltoluene	<0.0061 mg/kg		0.0061	1		03/27/14 08:12		
lethylene Chloride	<0.024 mg/kg		0.024	1		03/27/14 08:12		
-Methyl-2-pentanone (MIBK)	<0.030 mg/kg		0.030	1		03/27/14 08:12		
lethyl-tert-butyl ether	<0.0061 mg/kg		0.0061	1		03/27/14 08:12		
laphthalene	<0.0061 mg/kg		0.0061	1		03/27/14 08:12		
-Propylbenzene	<0.0061 mg/kg		0.0061	1		03/27/14 08:12		
ityrene	<0.0061 mg/kg		0.0061	1		03/27/14 08:12		
,1,1,2-Tetrachioroethane	<0.0061 mg/kg	-	0.0061					
,1,2,2-Tetrachloroethane	<0.0061 mg/kg	•		1		03/27/14 08:12		
etrachloroethene			0.0061	1		03/27/14 08:12		
	<0.0061 mg/kg		0.0061	1		03/27/14 08:12		
	<0.0061 mg/kg		0.0061	1		03/27/14 08:12		
,2,3-Trichlorobenzene	<b>&lt;0.0061</b> mg/kg	)	0.0061	1		03/27/14 08:12	87-61-6	

#### **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Lab ID: 5095059002	Collected: 03/17/1	4 11:15	Received:	03/21/14 12:35	Matrix: Solid	
ht" basis						
Results Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Analytical Method: EPA 826	60					
<0.0061 mg/kg	0.0061	1		03/27/14 08:1	2 120-82-1	
<0.0061 mg/kg	0.0061	1		03/27/14 08:1	2 71-55-6	
<0.0061 mg/kg	0.0061	1		03/27/14 08:1	2 79-00-5	
<0.0061 mg/kg	0.0061	1		03/27/14 08:1	2 7 <del>9</del> -01-6	
<0.0061 mg/kg	0.0061	1		03/27/14 08:1	2 75-69-4	
<0.0061 mg/kg	0.0061	1		03/27/14 08:1	2 96-18-4	
<0.0061 mg/kg	0.0061	1		03/27/14 08:1	2 95-63-6	
<0.0061 mg/kg	0.0061	1		03/27/14 08:1	2 108-67-8	
<0.12 mg/kg	0.12	1		03/27/14 08:1	2 108-05-4	
<0.0061 mg/kg	0.0061	1		03/27/14 08:1	2 75-01-4	
<0.012 mg/kg	0.012	1		03/27/14 08:1	2 1330-20-7	
101 %.	85-118	1		03/27/14 08:1	2 1868-53-7	
<b>95 %</b> .	71-128	1		03/27/14 08:1	2 2037-26-5	
<b>98 %</b> .	56-144	1		03/27/14 08:1	2 460-00-4	
Analytical Method: ASTM D	2974-87					
17.6 %	0.10	1		03/24/14 16:0	2	
	Results         Units           Analytical Method: EPA 826         <0.0061 mg/kg	Results         Units         Report Limit           Analytical Method: EPA 8260         <0.0061 mg/kg	Results         Units         Report Limit         DF           Analytical Method: EPA 8260	Results         Units         Report Limit         DF         Prepared           Analytical Method: EPA 8260               Prepared            Analytical Method: EPA 8260               Prepared           Analytical Method: EPA 8260 <td< td=""><td>Results         Units         Report Limit         DF         Prepared         Analyzed           Analytical Method: EPA 8260           0.0061 mg/kg         0.0061 1         03/27/14 08:1           &lt;0.0061 mg/kg</td>         0.0061 1         03/27/14 08:1          03/27/14 08:1           &lt;0.0061 mg/kg</td<>	Results         Units         Report Limit         DF         Prepared         Analyzed           Analytical Method: EPA 8260           0.0061 mg/kg         0.0061 1         03/27/14 08:1           <0.0061 mg/kg	Results         Units         Report Limit         DF         Prepared         Analyzed         CAS No.           Analytical Method: EPA 8260           03/27/14 08:12         120-82-1            <0.0061



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 53-SB-3 8-10'	Lab ID:	5095059003	Collected: 03/17/1	14 11:40	Received: 03	B/21/14 12:35 N	Aatrix: Solid	
Results reported on a "dry-weight	" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
3015 TPH Ohio Microwave	Analytical I	Method: EPA 80	015 Mod Ext Prepara	ation Me	thod: EPA 3546			
Total Petroleum Hydrocarbons		' mg/kg	24.7	1	03/25/14 09:25	03/27/14 12:46		
TPH (C10-C20)		mg/kg	12.4	1	03/25/14 09:25	03/27/14 12:46		
TPH (C20-C34)	<12.4	mg/kg	12.4	1	03/25/14 09:25	03/27/14 12:46		
Surrogates								
n-Pentacosane (S)	48	%.	30-153	1	03/25/14 09:25	03/27/14 12:46	629-99-2	
8015 Gasoline Range Organics	Analytical M	Method: EPA 80	)15 Mod Pur					
TPH (C06-C12)	<1.2	mg/kg	1.2	1		03/25/14 20:56		
Surrogates								
I-Bromofluorobenzene (S)	97	%.	38-163	1		03/25/14 20:56	460-00-4	
270 MSSV PAH by SIM	Analytical M	Method: EPA 82	270 by SIM Preparati	ion Meth	od: EPA 3546			
Acenaphthene	<0.0061	mg/kg	0.0061	1	03/24/14 10:55	03/26/14 05:56	83-32-9	
Acenaphthylene	<0.0061	mg/kg	0.0061	1		03/26/14 05:56		
Anthracene	<0.0061	mg/kg	0.0061	1	03/24/14 10:55	03/26/14 05:56	120-12-7	
Benzo(a)anthracene	<0.0061	mg/kg	0.0061	1	03/24/14 10:55	03/26/14 05:56	56-55-3	
Senzo(a)pyrene	<0.0061	mg/kg	0.0061	1	03/24/14 10:55	03/26/14 05:56	50-32-8	
Senzo(b)fluoranthene	<0.0061	mg/kg	0.0061	1	03/24/14 10:55	03/26/14 05:56	205-99-2	
Benzo(g,h,i)perylene	<0.0061	mg/kg	0.0061	1	03/24/14 10:55	03/26/14 05:56	191-24-2	
enzo(k)fluoranthene	<0.0061	mg/kg	0.0061	1		03/26/14 05:56		
Chrysene	<0.0061	mg/kg	0.0061	1	03/24/14 10:55	03/26/14 05:56	218-01-9	
Dibenz(a,h)anthracene	<0.0061		0.0061	1		03/26/14 05:56		
luoranthene	<0.0061	mg/kg	0.0061	1		03/26/14 05:56		
luorene	<0.0061		0.0061	1		03/26/14 05:56		
ndeno(1,2,3-cd)pyrene	<0.0061		0.0061	1		03/26/14 05:56		
laphthalene	<0.0061		0.0061	1		03/26/14 05:56		
Phenanthrene	<0.0061		0.0061	1		03/26/14 05:56		
Pyrene	<0.0061		0.0061	1		03/26/14 05:56		
Surrogates	-0.0001	ilig/kg	0.0001	•	03/24/14 10.33	03/20/14 03.30	129-00-0	
-Fluorobiphenyl (S)	74	%.	38-110	1	03/24/14 10:55	03/26/14 05:56	321-60-8	
-Terphenyl-d14 (S)		%.	32-111	1		03/26/14 05:56		
260 MSV 5030 Low Level	Analytical M	lethod: EPA 82	60					
cetone	<0.12	mg/kg	0.12	1		03/27/14 08:51	67-64-1	
crolein		mg/kg	0.12	1		03/27/14 08:51		
crylonitrile		mg/kg	0.12	1		03/27/14 08:51		
enzene	<0.0062		0.0062	1		03/27/14 08:51		
romobenzene	<0.0062		0.0062	1		03/27/14 08:51		
romochloromethane	<0.0062		0.0062	1		03/27/14 08:51		
romodichloromethane	<0.0062		0.0062	1		03/27/14 08:51		
romoform	<0.0062		0.0062	1		03/27/14 08:51		
romomethane	<0.0062	00	0.0062	1				
		0 0				03/27/14 08:51		
Butanone (MEK)	<0.031		0.031	1		03/27/14 08:51		
Butylbenzene	<0.0062	00	0.0062	1		03/27/14 08:51		
ec-Butylbenzene	<0.0062		0.0062	1		03/27/14 08:51		
ert-Butylbenzene	<0.0062	mg/kg	0.0062	1		03/27/14 08:51	98-06-6	

## **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 53-SB-3 8-10'	Lab ID: 509	5059003	Collected: 03/17/	14 11:40	Received: 0	)3/21/14 12:35 N	Aatrix: Solid	
Results reported on a "dry-weigh	ıt" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV 5030 Low Level	Analytical Met	hod: EPA 82	60					
Carbon disulfide	<0.012 mg	g/kg	0.012	1		03/27/14 08:51	75-15-0	
Carbon tetrachloride	<0.0062 mg		0.0062	1		03/27/14 08:51	56-23-5	
Chlorobenzene	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	108-90-7	
Chloroethane	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	75-00-3	
Chloroform	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	67-66-3	
Chloromethane	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	74-87-3	
2-Chlorotoluene	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	95-49-8	
1-Chlorotoluene	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	106-43-4	
Dibromochloromethane	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	124-48-1	
1,2-Dibromoethane (EDB)	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	106-93-4	
Dibromomethane	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	74-95-3	
,2-Dichlorobenzene	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	95-50-1	
I,3-Dichlorobenzene	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	541-73-1	
I,4-Dichlorobenzene	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	106-46-7	
rans-1,4-Dichloro-2-butene	<0.12 mg	j/kg	0.12	1		03/27/14 08:51	110-57-6	
Dichlorodifluoromethane	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	75-71-8	
,1-Dichloroethane	<0.0062 mg	g/kg	0.0062	1		03/27/14 08:51	75-34-3	
,2-Dichloroethane	<0.0062 mg		0.0062	1		03/27/14 08:51	107-06-2	
,1-Dichloroethene	<0.0062 mg	j/kg	0.0062	1		03/27/14 08:51	75-35-4	
is-1,2-Dichloroethene	<0.0062 mg		0.0062	1		03/27/14 08:51	156-59-2	
rans-1,2-Dichloroethene	<0.0062 mg	-	0.0062	1		03/27/14 08:51	156-60-5	
,2-Dichloropropane	<0.0062 mg	/kg	0.0062	1		03/27/14 08:51	78-87-5	
,3-Dichloropropane	<0.0062 mg		0.0062	1		03/27/14 08:51	142-28-9	
,2-Dichloropropane	<0.0062 mg		0.0062	1		03/27/14 08:51	594-20-7	
,1-Dichloropropene	<0.0062 mg	/kg	0.0062	1		03/27/14 08:51		
is-1,3-Dichloropropene	<0.0062 mg		0.0062	1		03/27/14 08:51		
rans-1,3-Dichloropropene	<0.0062 mg		0.0062	1		03/27/14 08:51		
thylbenzene	<0.0062 mg		0.0062	1		03/27/14 08:51		
thyl methacrylate	<0.12 mg		0.12	1		03/27/14 08:51		
lexachloro-1,3-butadiene	<0.0062 mg		0.0062	1		03/27/14 08:51		
-Hexane	<0.0062 mg		0.0062	1		03/27/14 08:51		N2
-Hexanone	<0.12 mg		0.12	1		03/27/14 08:51		
odomethane	<0.12 mg		0.12	1		03/27/14 08:51		
opropylbenzene (Cumene)	<0.0062 mg		0.0062	1		03/27/14 08:51		
-Isopropyltoluene	<0.0062 mg	-	0.0062	1		03/27/14 08:51		
lethylene Chloride	<0.025 mg	-	0.025	1		03/27/14 08:51		
-Methyl-2-pentanone (MIBK)	<0.031 mg	•	0.031	1		03/27/14 08:51		
lethyl-tert-butyl ether	<0.0062 mg		0.0062	1		03/27/14 08:51		
aphthalene	<0.0062 mg		0.0062	1		03/27/14 08:51		
-Propylbenzene	<0.0062 mg		0.0062	1		03/27/14 08:51		
tyrene	<0.0062 mg		0.0062	1		03/27/14 08:51		
,1,1,2-Tetrachloroethane	<0.0062 mg	-	0.0062	1		03/27/14 08:51		
1,2,2-Tetrachloroethane	<0.0062 mg	•	0.0062	1		03/27/14 08:51		
etrachloroethene	<0.0062 mg	•	0.0062	1		03/27/14 08:51		
oluene	<0.0062 mg		0.0062	1		03/27/14 08:51		
,2,3-Trichlorobenzene	<0.0062 mg		0.0062	1		03/27/14 08:51		



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 53-SB-3 8-10'	Lab ID: 509505900	3 Collected: 03/17/1	14 11:40	Received: 0	3/21/14 12:35 I	Matrix: Solid	
Results reported on a "dry-weig	ht" basis						
Parameters	Results Un	its Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method: EP	A 8260					
1,2,4-Trichlorobenzene	<0.0062 mg/kg	0.0062	1		03/27/14 08:51	120-82-1	
1,1,1-Trichloroethane	<0.0062 mg/kg	0.0062	1		03/27/14 08:51	71-55-6	
1,1,2-Trichloroethane	<0.0062 mg/kg	0.0062	1		03/27/14 08:51	79-00-5	
Trichloroethene	<0.0062 mg/kg	0.0062	1		03/27/14 08:51	7 <b>9-</b> 01-6	
Trichlorofluoromethane	<0.0062 mg/kg	0.0062	1		03/27/14 08:51	75-69-4	
1,2,3-Trichloropropane	<0.0062 mg/kg	0.0062	1		03/27/14 08:51	96-18-4	
1,2,4-Trimethylbenzene	<0.0062 mg/kg	0.0062	1		03/27/14 08:51	95-63-6	
1,3,5-Trimethylbenzene	<b>&lt;0.0062</b> mg/kg	0.0062	1		03/27/14 08:51	108-67-8	
Vinyl acetate	<0.12 mg/kg	0.12	1		03/27/14 08:51	108-05-4	
Vinyl chloride	<0.0062 mg/kg	0.0062	1		03/27/14 08:51	75-01-4	
Xylene (Total) <i>Surrogates</i>	<0.012 mg/kg	0.012	1		03/27/14 08:51	1330-20-7	
Dibromofluoromethane (S)	102 %.	85-118	1		03/27/14 08:51	1868-53-7	
Toluene-d8 (S)	97 %.	71-128	1		03/27/14 08:51	2037-26-5	
4-Bromofluorobenzene (S)	94 %.	56-144	1		03/27/14 08:51	460-00-4	
Percent Moisture	Analytical Method: AS	TM D2974-87					
Percent Moisture	19.3 %	0.10	1		03/24/14 16:02		



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#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 53-SB-4 6-8'	Lab ID: 509	95059004	Collected: 03/17/	14 12:55	Received: 03	3/21/14 12:35 I	Matrix: Solid	
Results reported on a "dry-weight	" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015 TPH Ohio Microwave	Analytical Met	hod: EPA 80	015 Mod Ext Prepara	ation Me	thod: EPA 3546			
Total Petroleum Hydrocarbons	< <b>24.0</b> m	g/kg	24.0	1	03/25/14 09:25	03/27/14 12:53	i	
TPH (C10-C20)	<12.0 m	g/kg	12.0	1	03/25/14 09:25	03/27/14 12:53	i	
TPH (C20-C34)	<12.0 m	g/kg	12.0	1	03/25/14 09:25	03/27/14 12:53		
Surrogates								
n-Pentacosane (S)	54 %	-	30-153	1	03/25/14 09:25	03/27/14 12:53	629-99-2	
8015 Gasoline Range Organics	Analytical Met	hod: EPA 80	015 Mod Pur					
TPH (C06-C12)	<1.2 m	g/kg	1.2	1		03/25/14 21:22		
Surrogates								
4-Bromofluorobenzene (S)	98 %		38-163	1		03/25/14 21:22	460-00-4	
8270 MSSV PAH by SIM	Analytical Met	hod: EPA 82	270 by SIM Preparat	ion Meth	od: EPA 3546			
Acenaphthene	<b>&lt;0.0061</b> m		0.0061	1	03/24/14 10:55	03/26/14 06:13	83-32-9	
Acenaphthylene	<b>&lt;0.0061</b> m		0.0061	1	03/24/14 10:55	03/26/14 06:13	208-96-8	
Anthracene	<0.0061 m	g/kg	0.0061	1	03/24/14 10:55	03/26/14 06:13	120-12-7	
Benzo(a)anthracene	<0.0061 m	g/kg	0.0061	1	03/24/14 10:55	03/26/14 06:13	56-55-3	
Benzo(a)pyrene	<0.0061 m	g/kg	0.0061	1	03/24/14 10:55	03/26/14 06:13	50-32-8	
Benzo(b)fluoranthene	<0.0061 m	g/kg	0.0061	1	03/24/14 10:55	03/26/14 06:13	205-99-2	
Benzo(g,h,i)perylene	<0.0061 m		0.0061	1		03/26/14 06:13		
Benzo(k)fluoranthene	<0.0061 m		0.0061	1	03/24/14 10:55	03/26/14 06:13	207-08-9	
Chrysene	<b>&lt;0.0061</b> m		0.0061	1		03/26/14 06:13		
Dibenz(a,h)anthracene	<0.0061 m		0.0061	1		03/26/14 06:13		
luoranthene	<0.0061 m		0.0061	1		03/26/14 06:13		
luorene	<0.0061 m		0.0061	1		03/26/14 06:13		
ndeno(1,2,3-cd)pyrene	<0.0061 m		0.0061	1		03/26/14 06:13		
laphthalene	<0.0061 m		0.0061	1		03/26/14 06:13		
Phenanthrene	<0.0061 m		0.0061	1		03/26/14 06:13		
Pyrene	<0.0061 mg		0.0061	1		03/26/14 06:13		
Surrogates	40.0001 mg	y/ng	0.0001		03/24/14 10.33	03/20/14 00.13	129-00-0	
P-Fluorobiphenyl (S)	76 %		38-110	1	03/24/14 10:55	03/26/14 06:13	321-60-8	
-Terphenyl-d14 (S)	69 %		32-111	1		03/26/14 06:13		
260 MSV 5030 Low Level	Analytical Metl	nod: EPA 82	60					
cetone	<b>&lt;0.12</b> mg	ı/ka	0.12	1		03/27/14 09:31	67-64-1	
Acrolein	<0.12 mg		0.12	1		03/27/14 09:31		
Acrylonitrile	<0.12 mg		0.12	1		03/27/14 09:31		
lenzene	<0.0061 mg		0.0061	1		03/27/14 09:31		
romobenzene	<0.0061 mg		0.0061	1		03/27/14 09:31		
romochloromethane	<0.0061 mg		0.0061	1		03/27/14 09:31		
romodichloromethane	<0.0061 mg		0.0061	1		03/27/14 09:31		
romoform	<0.0061 mg		0.0061	1				
romomethane	<0.0061 mg					03/27/14 09:31		
		-	0.0061	1		03/27/14 09:31		
-Butanone (MEK)	<0.030 mg	- <b>-</b>	0.030	1		03/27/14 09:31		
-Butylbenzene	<0.0061 mg		0.0061	1		03/27/14 09:31		
ec-Butylbenzene	<0.0061 mg		0.0061	1		03/27/14 09:31		
ert-Butylbenzene	<0.0061 mg	ı/kg	0.0061	1		03/27/14 09:31	98-06-6	



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#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 53-SB-4 6-8'	Lab ID: 509505900	4 Collected: 03/17/14 1	2:55	Received: 03/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weigl	ht" basis					
Parameters	Results Uni	ts Report Limit	DF	Prepared Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method: EP	A 8260				
Carbon disulfide	<0.012 mg/kg	0.012	1	03/27/14 09:	31 75-15-0	
Carbon tetrachloride	<0.0061 mg/kg	0.0061	1	03/27/14 09:	31 56-23-5	
Chlorobenzene	<0.0061 mg/kg	0.0061	1	03/27/14 09:	31 108-90-7	
Chloroethane	<0.0061 mg/kg	0.0061	1	03/27/14 09::	31 75-00-3	
Chloroform	<0.0061 mg/kg	0.0061	1	03/27/14 09::	31 67-66-3	
Chloromethane	<0.0061 mg/kg	0.0061	1	03/27/14 09::	31 74-87-3	
2-Chlorotoluene	<0.0061 mg/kg	0.0061	1	03/27/14 09:3	31 95-49-8	
4-Chlorotoluene	<0.0061 mg/kg	0.0061	1	03/27/14 09::	31 106-43-4	
Dibromochloromethane	<0.0061 mg/kg	0.0061	1	03/27/14 09:3		
1,2-Dibromoethane (EDB)	<0.0061 mg/kg		1	03/27/14 09:3		
Dibromomethane	<0.0061 mg/kg	0.0061	1	03/27/14 09:3		
1,2-Dichlorobenzene	<0.0061 mg/kg		1	03/27/14 09:3		
1,3-Dichlorobenzene	<0.0061 mg/kg		1	03/27/14 09:3		
1.4-Dichlorobenzene	<0.0061 mg/kg		1	03/27/14 09:3		
trans-1,4-Dichloro-2-butene	<0.12 mg/kg		1	03/27/14 09:3		
Dichlorodifluoromethane	<0.0061 mg/kg		1	03/27/14 09:3		
1,1-Dichloroethane	<0.0061 mg/kg		1	03/27/14 09:3		
1,2-Dichloroethane	<0.0061 mg/kg		1	03/27/14 09:3		
1,1-Dichloroethene	<0.0061 mg/kg		1	03/27/14 09:3		
cis-1,2-Dichloroethene	<0.0061 mg/kg		1	03/27/14 09:3		
trans-1,2-Dichloroethene	<0.0061 mg/kg		1	03/27/14 09:3		
1,2-Dichloropropane	<0.0061 mg/kg		1	03/27/14 09:3		
1,3-Dichloropropane	<0.0061 mg/kg		1	03/27/14 09:3		
2,2-Dichloropropane	<0.0061 mg/kg		1	03/27/14 09:3		
1,1-Dichloropropene	<0.0061 mg/kg		1	03/27/14 09:3		
cis-1,3-Dichloropropene	<0.0061 mg/kg		1		1 10061-01-5	
trans-1,3-Dichloropropene	<0.0061 mg/kg		1		1 10061-01-5	
Ethylbenzene	<0.0061 mg/kg		1	03/27/14 09:3		
Ethyl methacrylate	<0.12 mg/kg		1	03/27/14 09:3		
Hexachloro-1,3-butadiene	<0.12 mg/kg		1	03/27/14 09:3		
n-Hexane	<0.0061 mg/kg		1	03/27/14 09:3		N2
2-Hexanone	<0.001 mg/kg	0.12		03/27/14 09:3		INZ
lodomethane	<0.12 mg/kg	0.12		03/27/14 09:3		
Isopropylbenzene (Cumene)	<0.12 mg/kg	0.0061 1				
p-lsopropyltoluene	<0.0061 mg/kg	0.0061 1		03/27/14 09:3		
Methylene Chloride	<0.024 mg/kg	0.024 1		03/27/14 09:3 03/27/14 09:3		
4-Methyl-2-pentanone (MIBK)	<0.024 mg/kg	0.024		03/27/14 09:3		
Methyl-tert-butyl ether	<0.0061 mg/kg		-			
		0.0061 1		03/27/14 09:3		
Naphthalene n-Propylbenzene	<0.0061 mg/kg <0.0061 mg/kg	0.0061 1 0.0061 1		03/27/14 09:3		
Styrene	•••			03/27/14 09:3		
1,1,1,2-Tetrachloroethane	<0.0061 mg/kg	0.0061 1		03/27/14 09:3		
	<0.0061 mg/kg	0.0061 1		03/27/14 09:3		
1,1,2,2-Tetrachloroethane	<0.0061 mg/kg	0.0061 1		03/27/14 09:3		
Tetrachloroethene	<0.0061 mg/kg	0.0061 1		03/27/14 09:3		
Toluene	<0.0061 mg/kg	0.0061 1		03/27/14 09:3		
1,2,3-Trichlorobenzene	<b>&lt;0.0061</b> mg/kg	0.0061 1		03/27/14 09:3	1 87-61-6	

#### **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 53-SB-4 6-8'	Lab ID: 5095059004	Collected: 03/17/1	4 12:55	Received:	03/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weig	ht" basis						
Parameters	Results Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method: EPA 8	260					
1,2,4-Trichlorobenzene	<0.0061 mg/kg	0.0061	1		03/27/14 09:3	31 120-82-1	
1,1,1-Trichloroethane	<0.0061 mg/kg	0.0061	1		03/27/14 09:3	31 71-55-6	
1,1,2-Trichloroethane	<0.0061 mg/kg	0.0061	1		03/27/14 09:3	31 79-00-5	
Trichloroethene	<0.0061 mg/kg	0.0061	1		03/27/14 09:3	31 7 <b>9-01-6</b>	
Trichlorofluoromethane	<0.0061 mg/kg	0.0061	1		03/27/14 09:3	31 75-69-4	
1,2,3-Trichloropropane	<0.0061 mg/kg	0.0061	1		03/27/14 09:3	96-18-4	
1,2,4-Trimethylbenzerie	<0.0061 mg/kg	0.0061	1		03/27/14 09:3	1 95-63-6	
1,3,5-Trimethylbenzene	<0.0061 mg/kg	0.0061	1		03/27/14 09:3	1 108-67-8	
Vinyl acetate	<0.12 mg/kg	0.12	1		03/27/14 09:3	1 108-05-4	
Vinyl chloride	<0.0061 mg/kg	0.0061	1		03/27/14 09:3	1 75-01-4	
Xylene (Total)	<0.012 mg/kg	0.012	1		03/27/14 09:3	1 1330-20-7	
Surrogates							
Dibromofluoromethane (S)	107 %.	85-118	1		03/27/14 09:3	1 1868-53-7	
Toluene-d8 (S)	<b>96 %</b> .	71-128	1		03/27/14 09:3	1 2037-26-5	
4-Bromofluorobenzene (S)	<b>93</b> %.	56-144	1		03/27/14 09:3	1 460-00-4	
Percent Moisture	Analytical Method: ASTM	D2974-87					
Percent Moisture	17.6 %	0.10	1		03/24/14 16:0	2	



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#### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 49-SB-1 0-3'	Lab ID: 50950	59005 Collected:	03/17/14	13:45	Received: 0	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight"	" basis							
Parameters	Results	Units Report	Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Method	I: EPA 8015 Mod Ext	Preparati	on Met	hod: EPA 3546			
Total Petroleum Hydrocarbons	<23.4 mg/kg	3	23.4	1	03/25/14 09:25	03/27/14 13:00	)	
TPH (C10-C20) <i>Surrogates</i>	<11.7 mg/kg		11.7	1	03/25/14 09:25	03/27/14 13:00	)	
n-Pentacosane (S)	71 %.	3	80-153	1	03/25/14 09:25	03/27/14 13:00	) 629-99-2	
8015 Gasoline Range Organics	Analytical Method	EPA 8015 Mod Pur						
TPH (C06-C12) Surrogates	<1.2 mg/kg	)	1.2	1		03/25/14 21:48	3	
4-Bromofluorobenzene (S)	97 %.	3	8-163	1		03/25/14 21:48	460-00-4	
8260 MSV UST Low Level	Analytical Method	: EPA 8260						
Benzene	<0.0059 mg/kg	<b>)</b> (	0.0059	1		03/27/14 05:15	71-43-2	
Ethylbenzene	<0.0059 mg/kg	, С	0.0059	1		03/27/14 05:15	i 100-41-4	
Methyl-tert-butyl ether	<0.0059 mg/kg	j C	0.0059	1		03/27/14 05:15	1634-04-4	
Toluene	<0.0059 mg/kg	j C	.0059	1		03/27/14 05:15	108-88-3	
Xylene (Total)	<0.012 mg/kg	1	0.012	1		03/27/14 05:15	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	115 %.	8	5-118	1		03/27/14 05:15	1868-53-7	
Toluene-d8 (S)	92 %.	7	1-128	1		03/27/14 05:15	2037-26-5	
4-Bromofluorobenzene (S)	98 %.	5	6-144	1		03/27/14 05:15	460-00-4	
Percent Moisture	Analytical Method	: ASTM D2974-87						
Percent Moisture	14.7 %		0.10	1		03/24/14 16:02		



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 49-SB-2 2-4'	Lab ID: 509	5059006	Collected: 03/	7/14 14:1	5 Received: 0	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight"	" basis							
Parameters	Results	Units	Report Lim	it DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Meth	nod: EPA 80	)15 Mod Ext Prep	aration Me	ethod: EPA 3546			
Total Petroleum Hydrocarbons	<b>&lt;24.3</b> mg	g/kg	24	.3 1	03/25/14 09:25	5 03/27/14 13:07	7	
TPH (C10-C20) Surrogates	<12.2 mg		12	.21	03/25/14 09:25	5 03/27/14 13:07	7	
n-Pentacosane (S)	63 %.		30-1	53 1	03/25/14 09:25	5 03/27/14 13:07	7 629-99-2	
8015 Gasoline Range Organics	Analytical Meth	nod: EPA 80	15 Mod Pur					
TPH (C06-C12) Surrogates	<b>&lt;1.2</b> mg	j/kg	1	.2 1		03/25/14 22:14	4	
4-Bromofluorobenzene (S)	92 %.		38-16	63 1		03/25/14 22:14	460-00-4	
8260 MSV UST Low Level	Analytical Meth	od: EPA 82	260					
Benzene	<b>&lt;0.0061</b> mg	ı/kg	0.006	51 1		03/27/14 05:54	1 71-43-2	
Ethylbenzene	<0.0061 mg	ı/kg	0.006	51 1		03/27/14 05:54	100-41-4	
Methyl-tert-butyl ether	<0.0061 mg	ı/kg	0.006	51 1		03/27/14 05:54	1634-04-4	
Toluene	<0.0061 mg	ı/kg	0.006	51 1		03/27/14 05:54	108-88-3	
Xylene (Total) <b>Surrogates</b>	<0.012 mg	/kg	0.01	2 1		03/27/14 05:54	1330-20-7	
Dibromofluoromethane (S)	116 %.		85-11	8 1		03/27/14 05:54	1868-53-7	
Toluene-d8 (S)	111 %.		71-12	8 1		03/27/14 05:54	2037-26-5	
4-Bromofluorobenzene (S)	81 %.		56-14	4 1		03/27/14 05:54	460-00-4	
Percent Moisture	Analytical Meth	od: ASTM [	02974-87					
Percent Moisture	18.3 %		0.1	01		03/24/14 16:03	3	



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#### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 17-SB-1 4-6'	Lab ID: 509	5059007	Collected: 0	)3/18/1	4 09:00	Received: 03	/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight"	" basis								
Parameters	Results	Units	Report L	_imit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Met	hod: EPA 80	015 Mod Ext P	repara	tion Met	hod: EPA 3546			
Total Petroleum Hydrocarbons	<28.4 m	g/kg		28.4	1	03/25/14 09:25	03/27/14 13:14		
TPH (C10-C20) Surrogates	<14.2 m	g/kg		14.2	1	03/25/14 09:25	03/27/14 13:14		
n-Pentacosane (S)	46 %		30	)-153	1	03/25/14 09:25	03/27/14 13:14	629-99-2	
8015 Gasoline Range Organics	Analytical Met	hod: EPA 80	15 Mod Pur						
TPH (C06-C12) <b>Surrogates</b>	< <b>1.4</b> mg	g/kg		1.4	1		03/25/14 23:32		
4-Bromofluorobenzene (S)	96 %		38	<b>⊢16</b> 3	1		03/25/14 23:32	460-00-4	
8260 MSV UST Low Level	Analytical Met	hod: EPA 82	260						
Benzene	<0.0072 mg	g/kg	0.0	0072	1		03/27/14 06:34	71-43-2	
Ethylbenzene	<0.0072 mg	g/kg	0.0	0072	1		03/27/14 06:34	100-41-4	
Methyl-tert-butyl ether	<0.0072 mg	g/kg	0.0	0072	1		03/27/14 06:34	1634-04-4	
Toluene	<0.0072 mg	g/kg	0.0	0072	1		03/27/14 06:34	108-88-3	
Xylene (Total) <b>Surrogates</b>	<b>&lt;0.014</b> mg	g/kg	0	.014	1		03/27/14 06:34	1330-20-7	
Dibromofluoromethane (S)	112 %		85	-118	1		03/27/14 06:34	1868-53-7	
Toluene-d8 (S)	94 %.		71	-128	1		03/27/14 06:34	2037-26-5	
4-Bromofluorobenzene (S)	101 %.		56	-144	1		03/27/14 06:34	460-00-4	
Percent Moisture	Analytical Meth	nod: ASTM [	D2974-87						
Percent Moisture	30.3 %			0.10	1		03/24/14 16:03		



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## ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 17-SB-2 8-10'	Lab ID: 509	5059008	Collected:	03/18/1	4 09:20	Received: 03	/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight"	" basis								
Parameters	Results	Units	Report	Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Meth	nod: EPA 80	015 Mod Ext F	Prepara	tion Met	hod: EPA 3546			
Total Petroleum Hydrocarbons	<24.3 mg	g/kg		24.3	1	03/25/14 09:25	03/27/14 13:22	2	
TPH (C10-C20) Surrogates	<12.1 mg			12.1	1	03/25/14 09:25	03/27/14 13:22	2	
n-Pentacosane (S)	58 %.		30	0-153	1	03/25/14 09:25	03/27/14 13:22	2 629-99-2	
8015 Gasoline Range Organics	Analytical Meth	nod: EPA 80	015 Mod Pur						
TPH (C06-C12) Surrogates	<b>&lt;1.2</b> mg	g/kg		1.2	1		03/25/14 22:40	)	
4-Bromofluorobenzene (S)	101 %.		38	8-163	1		03/25/14 22:40	460-00-4	
8260 MSV UST Low Level	Analytical Meth	nod: EPA 82	260						
Benzene	<0.0061 mg	j/kg	0.	.0061	1		03/27/14 07:13	71-43-2	
Ethylbenzene	<0.0061 mg	j/kg	0.	.0061	1		03/27/14 07:13	100-41-4	
Methyl-tert-butyl ether	<0.0061 mg	j/kg	0.	.0061	1		03/27/14 07:13	1634-04-4	
Toluene	<0.0061 mg	j/kg	0.	.0061	1		03/27/14 07:13	108-88-3	
Xylene (Total) <b>Surrogates</b>	<b>&lt;0.012</b> mg	/kg	(	0.012	1		03/27/14 07:13	1330-20-7	
Dibromofluoromethane (S)	115 %.		85	5-118	1		03/27/14 07:13	1868-53-7	
Toluene-d8 (S)	97 %.		71	1-128	1		03/27/14 07:13	2037-26-5	
4-Bromofluorobenzene (S)	98 %.		56	6-144	1		03/27/14 07:13	460-00-4	
Percent Moisture	Analytical Meth	od: ASTM I	D2974-87						
Percent Moisture	18.2 %			0.10	1		03/24/14 16:03		



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## ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 29-SB-1 2-4'	Lab ID: 509	5059009	Collected:	03/18/1	4 10:30	Received: 03	/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight"	" basis								
Parameters	Results	Units	Report	Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Met	hod: EPA 80	015 Mod Ext F	Prepara	tion Met	thod: EPA 3546			
Total Petroleum Hydrocarbons	<b>43.2</b> mg	g/kg		24. <del>9</del>	1	03/25/14 09:25	03/27/14 13:29	)	
TPH (C10-C20) Surrogates	<b>43.2</b> mg			12.5	1	03/25/14 09:25	03/27/14 13:29	)	
n-Pentacosane (S)	90 %		3	0-153	1	03/25/14 09:25	03/27/14 13:29	9 629-99-2	
8015 Gasoline Range Organics	Analytical Meth	nod: EPA 80	015 Mod Pur						
TPH (C06-C12) <b>Surrogates</b>	<1.3 mg	g/kg		1.3	1		03/26/14 00:49	)	
4-Bromofluorobenzene (S)	<b>96 %</b> .		3	8-163	1		03/26/14 00:49	460-00-4	
8260 MSV UST Low Level	Analytical Meth	nod: EPA 82	260						
Benzene	<0.0063 mg	g/kg	0	.0063	1		03/27/14 07:52	71-43-2	
Ethylbenzene	<b>&lt;0.0063</b> mg	g/kg	0	.0063	1		03/27/14 07:52	100-41-4	
Methyl-tert-butyl ether	<0.0063 mg	g/kg	0	.0063	1		03/27/14 07:52	1634-04-4	
Toluene	<0.0063 mg	g/kg	0	.0063	1		03/27/14 07:52	108-88-3	
Xylene (Total) <b>Surrogates</b>	<b>&lt;0.013</b> mg	g/kg	(	0.013	1		03/27/14 07:52	1330-20-7	
Dibromofluoromethane (S)	109 %.		8	5-118	1		03/27/14 07:52	1868-53-7	
Toluene-d8 (S)	<b>96</b> %.		7'	1-128	1		03/27/14 07:52	2037-26-5	
4-Bromofluorobenzene (S)	<b>9</b> 5 %.		56	6-144	1		03/27/14 07:52	460-00-4	
Percent Moisture	Analytical Meth	nod: ASTM I	D2974-87						
Percent Moisture	20.0 %			0.10	1		03/24/14 16:03		



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#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Sample: 29-SB-2 4-6' Res <i>ults reported on a "dry-weight</i> '	Lab ID: 509	5059010	Collected:	03/18/1	4 10:50	Received: 03	3/21/14 12:35 I	Matrix: Solid	
Parameters	Results	Units	Report	Limit	DF	Prepared	Analyzed	CAS No.	Qua
8015 TPH Ohio Microwave	Analytical Meth	hod: EPA 80'	15 Mod Ext	Prepara	ition Met	hod: EPA 3546			
Total Petroleum Hydrocarbons	<24.2 mg	g/kg		24.2	1	03/25/14 09:25	03/27/14 13:36		
TPH (C10-C20) Surrogates	<b>&lt;12.1</b> mg	g/kg		12.1	1	03/25/14 09:25	03/27/14 13:36		
n-Pentacosane (S)	<b>59 %</b> .		3	80-153	1	03/25/14 09:25	03/27/14 13:36	629-99-2	
3015 Gasoline Range Organics	Analytical Meth	nod: EPA 80 <sup>4</sup>	15 Mod Pur						
ГРН (C06-C12) Surrogates	<b>&lt;1.2</b> mg	g/kg		1.2	1		03/26/14 01:15		
I-Bromofluorobenzene (S)	100 %.		3	8-163	1		03/26/14 01:15	460-00-4	
260 MSV UST Low Level	Analytical Meth	nod: EPA 826	50						
Benzene	<b>&lt;0.0061</b> mg	j/kg	C	).0061	1		03/27/14 08:32	71-43-2	
Ethylbenzene	<b>&lt;0.0061</b> mg	g/kg	0	).0061	1		03/27/14 08:32	100-41-4	
Methyl-tert-butyl ether	<b>&lt;0.0061</b> mg	j/kg	0	).0061	1		03/27/14 08:32	1634-04-4	
<b>Foluene</b>	<0.0061 mg	g/kg	0	0.0061	1		03/27/14 08:32	108-88-3	
(ylene (Total)	<0.012 mg	g/kg		0.012	1		03/27/14 08:32	1330-20-7	
Surrogates									
Dibromofluoromethane (S)	105 %.		-	85-118	1		03/27/14 08:32	1868-53-7	
oluene-d8 (S)	<b>95 %</b> .		7	1-128	1		03/27/14 08:32	2037-26-5	
-Bromofluorobenzene (S)	100 %.		5	6-144	1		03/27/14 08:32	460-00-4	
Percent Moisture	Analytical Meth	od: ASTM D	2974-87						
Percent Moisture	18.5 %			0.10	1		03/24/14 16:03		



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#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Sample: 51-SB-1 8-10'	Lab ID: 5095059	0011 Collected: 03/19/	14 14:20	Received: 03	/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight"	' basis						
Parameters	Results	Units Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Method:	EPA 8015 Mod Ext Prepar	ation Me	thod: EPA 3546			
Total Petroleum Hydrocarbons	<23.6 mg/kg	23.6	1	03/25/14 09:25	03/27/14 13:4:	3	
TPH (C10-C20) <i>Surrogates</i>	<11.8 mg/kg	11.8	1	03/25/14 09:25	03/27/14 13:43	3	
n-Pentacosane (S)	<b>60 %</b> .	30-153	1	03/25/14 09:25	03/27/14 13:4:	3 629-99-2	
8015 Gasoline Range Organics	Analytical Method:	EPA 8015 Mod Pur					
TPH (C06-C12) Surrogates	<1.2 mg/kg	1.2	1		03/26/14 01:4	1	
4-Bromofluorobenzene (S)	93 %.	38-163	1		03/26/14 01:4	1 460-00-4	
8260 MSV UST Low Level	Analytical Method:	EPA 8260					
Benzene	<0.0059 mg/kg	0.0059	1		03/27/14 09:11	71-43-2	
Ethylbenzene	<0.0059 mg/kg	0.0059	1		03/27/14 09:11	100-41-4	
Methyl-tert-butyl ether	<0.0059 mg/kg	0.0059	1		03/27/14 09:11	1634-04-4	
Toluene	<b>&lt;0.0059</b> mg/kg	0.0059	1		03/27/14 09:11	108-88-3	
Xylene (Total) <b>Surrogates</b>	<b>&lt;0.012</b> mg/kg	0.012	1		03/27/14 09:11	1330-20-7	
Dibromofluoromethane (S)	110 %.	85-118	1		03/27/14 09:11	1868-53-7	
Toluene-d8 (S)	<b>95 %</b> .	71-128	1		03/27/14 09:11	2037-26-5	
4-Bromofluorobenzene (S)	<b>99 %</b> .	56-144	1		03/27/14 09:11	460-00-4	
Percent Moisture	Analytical Method:	ASTM D2974-87					
Percent Moisture	15.9 %	0.10	1		03/24/14 16:03	3	

## **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

5095059

Pace Project No .:

Sample: 51-SB-2 2-4'	Lab ID: 509	5059012	Collected: 03/	9/14 14:3	5 Received: 0	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight"	" basis							
Parameters	Results	Units	Report Lim	t DF	Prepared	Analyzed	CAS No.	Qua
8015 TPH Ohio Microwave	Analytical Met	hod: EPA 80	15 Mod Ext Prep	aration M	ethod: EPA 3546			
Total Petroleum Hydrocarbons	<b>&lt;109</b> m	g/kg	10	95	03/25/14 09:25	03/27/14 13:50	)	1d
TPH (C10-C20) <b>Surrogates</b>	<b>&lt;54.3</b> mg	g/kg	54	.3 5	03/25/14 09:25	03/27/14 13:50	)	
n-Pentacosane (S)	0 %		30-1	535	03/25/14 09:25	03/27/14 13:50	629-99-2	<b>S</b> 4
8015 Gasoline Range Organics	Analytical Met	hod: EPA 80	15 Mod Pur					
TPH (C06-C12) <b>Surrogates</b>	<b>&lt;1.1</b> mg	g/kg	1	.1 1		03/26/14 02:06	3	
4-Bromofluorobenzene (S)	88 %		38-10	31		03/26/14 02:06	6 460-00-4	
8260 MSV UST Low Level	Analytical Met	hod: EPA 82	60					
Benzene	<0.0055 mg	g/kg	0.00	5 1		03/27/14 09:50	71-43-2	
Ethylbenzene	<0.0055 mg	g/kg	0.00	5 1		03/27/14 09:50	) 100-41-4	
Methyl-tert-butyl ether	<0.0055 mg	g/kg	0.00	5 1		03/27/14 09:50	1634-04-4	
Toluene	<0.0055 mg	g/kg	0.00	51		03/27/14 09:50	108-88-3	
Xylene (Total) <b>Surrogates</b>	<b>&lt;0.011</b> mę	g/kg	0.0	1 1		03/27/14 09:50	1330-20-7	
Dibromofluoromethane (S)	111 %.		85-11	81		03/27/14 09:50	1868-53-7	
Toluene-d8 (S)	104 %.		71-12	81		03/27/14 09:50	2037-26-5	
4-Bromofluorobenzene (S)	83 %.		56-14	41		03/27/14 09:50	460-00-4	
Percent Moisture	Analytical Meth	nod: ASTM [	02974-87					
Percent Moisture	9.2 %		<b>0</b> .1	0 1		03/24/14 16:03	i	



## QUALITY CONTROL DATA

Project:	ODOT HAN	A-75-0.22 / 528	888										
Pace Project No.:	5095059												
QC Batch:	GCV/1783	38		Analys	sis Method:	E	PA 8015 Mo	d Pur					
QC Batch Method:	EPA 8015	Mod Pur		Analys	sis Descript	ion: 80	015 Solid G	cv					
Associated Lab Samp		95059001, 509 95059009, 509					59005, 509	5059006, 5	09505900	7, 5095059	9008,		
METHOD BLANK:	1067665			N	Matrix: Soli	d							
Associated Lab Samp		95059001, 509 95059009, 509					59005, 5095	5059006, 5	095059007	7, 5095059	9008,		
_				Blank		eporting							
Doroma	eter		Units	Resu	lt	Limit	Analyz	ed	Qualifiers	_			
Parame							00/05/44	10.10					
TPH (C06-C12)		mg/kg			<1.0	1.0	03/25/14	19:13					
	ne (S)	mg/kg %.			<1.0 94	1.0 38-163							
TPH (C06-C12)	ne (S)												
TPH (C06-C12) 4-Bromofluorobenzen		%.	66										
TPH (C06-C12)		%.	66	Spike		38-163							
TPH (C06-C12) 4-Bromofluorobenzen	TROL SAM	%. PLE: 10676	66 Units	Spike Conc.	94	38-163	03/25/14	19:13		ualifiers			
TPH (C06-C12) 4-Bromofluorobenzen LABORATORY CONT	TROL SAM	%. PLE: 10676		•	94 LCS Resu	38-163	03/25/14 LCS	19:13 % Rec Limits		ualifiers			
TPH (C06-C12) 4-Bromofluorobenzen LABORATORY CONT Parame	TROL SAMI	%. PLE: 10676		Conc.	94 LCS Resu	38-163	03/25/14 LCS % Rec	19:13 % Rec Limits 75	Q	ualifiers			
TPH (C06-C12) 4-Bromofluorobenzen LABORATORY CONT Parame TPH (C06-C12)	TROL SAMI	%. PLE: 10676 		Conc.	94 LCS Resu	38-163	03/25/14 LCS % Rec 95	19:13 % Rec Limits 75	-139 Q	ualifiers			
TPH (C06-C12) 4-Bromofluorobenzen LABORATORY CONT Parame TPH (C06-C12) 4-Bromofluorobenzen	TROL SAMI eter le (S)	%. PLE: 10676 	Units	Conc. 10	94 LCS Resu	38-163 It 9.5	03/25/14 LCS % Rec 95	19:13 % Rec Limits 75	-139 Q	ualifiers			
TPH (C06-C12) 4-Bromofluorobenzen LABORATORY CONT Parame TPH (C06-C12)	TROL SAMI eter le (S)	%. PLE: 10676 	Units	Conc. 10	94 LCS Resu	38-163	03/25/14 LCS % Rec 95	19:13 % Rec Limits 75	-139 Q	ualifiers			
TPH (C06-C12) 4-Bromofluorobenzen LABORATORY CONT Parame TPH (C06-C12) 4-Bromofluorobenzen	TROL SAMI eter le (S)	%. PLE: 10676 	Units	Conc. 10 67 MS	94 LCS Resu MSD	38-163 It 9.5	03/25/14 LCS % Rec 95	19:13 % Rec Limits 75 38	Q -139 -163			Мах	
TPH (C06-C12) 4-Bromofluorobenzen LABORATORY CONT Parame TPH (C06-C12) 4-Bromofluorobenzen	TROL SAMI eter e (S) TRIX SPIKI	%. PLE: 10676 	Units E: 10676	Conc. 10	94 LCS Resu	38-163 It 9.5 1067668	03/25/14 LCS % Rec 95 101	19:13 % Rec Limits 75	-139 Q	ualifiers % Rec Limits	RPD	Max RPD	Qual
TPH (C06-C12) 4-Bromofluorobenzen LABORATORY CONT Parame TPH (C06-C12) 4-Bromofluorobenzen MATRIX SPIKE & MA	TROL SAMI eter e (S) TRIX SPIKI	%. PLE: 10676 mg/kg %. E DUPLICATE	Units E: 10676	Conc. 10 67 MS Spike	94 LCS Resu MSD Spike	38-163 It 9.5 1067668 MS	03/25/14 LCS % Rec 95 101 MSD	19:13 % Rec Limits 75 38 MS	Q1 -139 -163 MSD	% Rec	RPD 5	RPD	Qual



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#### **QUALITY CONTROL DATA**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

QC Batch: MSV/62938 EPA 8260 Analysis Method: QC Batch Method: EPA 8260 8260 MSV 5030 Low Analysis Description: Associated Lab Samples: 5095059001, 5095059002, 5095059003, 5095059004 METHOD BLANK: 1068542 Matrix: Solid Associated Lab Samples: 5095059001, 5095059002, 5095059003, 5095059004 Blank Reporting Parameter Units Result Limit Analyzed Qualifiers 1,1,1,2-Tetrachloroethane 0.0050 03/27/14 01:38 mg/kg <0.0050 1,1,1-Trichloroethane mg/kg <0.0050 0.0050 03/27/14 01:38 1,1,2,2-Tetrachloroethane < 0.0050 0.0050 03/27/14 01:38 mg/kg 1,1,2-Trichloroethane mg/kg < 0.0050 0.0050 03/27/14 01:38 1,1-Dichloroethane mg/kg < 0.0050 0.0050 03/27/14 01:38 1,1-Dichloroethene mg/kg < 0.0050 0.0050 03/27/14 01:38 1,1-Dichloropropene mg/kg < 0.0050 0.0050 03/27/14 01:38 1,2,3-Trichlorobenzene mg/kg < 0.0050 0.0050 03/27/14 01:38 1,2,3-Trichloropropane < 0.0050 mg/kg 0.0050 03/27/14 01:38 1,2,4-Trichlorobenzene mg/kg < 0.0050 0.0050 03/27/14 01:38 1,2,4-Trimethylbenzene mg/kg <0.0050 0.0050 03/27/14 01:38 1.2-Dibromoethane (EDB) mg/kg < 0.0050 0.0050 03/27/14 01:38 1.2-Dichlorobenzene mg/kg < 0.0050 0.0050 03/27/14 01:38 1,2-Dichloroethane mg/kg < 0.0050 0.0050 03/27/14 01:38 1,2-Dichloropropane mg/kg < 0.0050 0.0050 03/27/14 01:38 1,3,5-Trimethylbenzene mg/kg < 0.0050 0.0050 03/27/14 01:38 1,3-Dichlorobenzene mg/kg < 0.0050 0.0050 03/27/14 01:38 1,3-Dichloropropane <0.0050 0.0050 mg/kg 03/27/14 01:38 1,4-Dichlorobenzene mg/kg <0.0050 0.0050 03/27/14 01:38 2,2-Dichloropropane mg/kg < 0.0050 0.0050 03/27/14 01:38 2-Butanone (MEK) mg/kg <0.025 0.025 03/27/14 01:38 2-Chlorotoluene mg/kg <0.0050 0.0050 03/27/14 01:38 2-Hexanone mg/kg <0.10 0.10 03/27/14 01:38 4-Chlorotoluene 0.0050 03/27/14 01:38 mg/kg < 0.0050 4-Methyl-2-pentanone (MIBK) 0.025 03/27/14 01:38 mg/kg <0.025 Acetone mg/kg <0.10 0.10 03/27/14 01:38 Acrolein <0 10 0.10 03/27/14 01:38 mg/kg Acrylonitrile mg/kg <0.10 0.10 03/27/14 01:38 Benzene < 0.0050 0.0050 03/27/14 01:38 mg/kg Bromobenzene < 0.0050 0.0050 03/27/14 01:38 mg/kg Bromochloromethane mg/kg < 0.0050 0.0050 03/27/14 01:38 Bromodichloromethane mg/kg < 0.0050 0.0050 03/27/14 01:38 Bromoform mg/kg < 0.0050 0.0050 03/27/14 01:38 03/27/14 01:38 Bromomethane < 0.0050 0.0050 mg/kg Carbon disulfide mg/kg <0.010 0.010 03/27/14 01:38 Carbon tetrachloride mg/kg < 0.0050 0.0050 03/27/14 01:38 Chlorobenzene mg/kg <0.0050 0.0050 03/27/14 01:38 Chloroethane mg/kg <0.0050 0.0050 03/27/14 01:38 Chloroform 0.0050 mg/kg <0.0050 03/27/14 01:38 Chloromethane mg/kg <0.0050 0.0050 03/27/14 01:38 cis-1.2-Dichloroethene mg/kg <0.0050 0.0050 03/27/14 01:38 cis-1.3-Dichloropropene mg/kg < 0.0050 0.0050 03/27/14 01:38

## **REPORT OF LABORATORY ANALYSIS**

0.0050

03/27/14 01:38

< 0.0050

Dibromochloromethane

mg/kg



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### **QUALITY CONTROL DATA**

Project:	ODOT HAM-75-0.22 / 52888
Pace Project No.:	5095059

#### METHOD BLANK: 1068542

Matrix: Solid

Associated Lab Samples:	5095059001, 5095059002, 5095059003, 509505900	)4

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromomethane	mg/kg	<0.0050	0.0050	03/27/14 01:38	
Dichlorodifluoromethane	mg/kg	<0.0050	0.0050	03/27/14 01:38	
Ethyl methacrylate	mg/kg	<0.10	0.10	03/27/14 01:38	
Ethylbenzene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
Hexachloro-1,3-butadiene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
lodomethane	mg/kg	<0.10	0.10	03/27/14 01:38	
lsopropylbenzene (Cumene)	mg/kg	<0.0050	0.0050	03/27/14 01:38	
Methyl-tert-butyl ether	mg/kg	<0.0050	0.0050	03/27/14 01:38	
Methylene Chloride	mg/kg	<0.020	0.020	03/27/14 01:38	
n-Butylbenzene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
n-Hexane	mg/kg	<0.0050	0.0050	03/27/14 01:38	N2
n-Propylbenzene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
Naphthalene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
p-Isopropyltoluene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
sec-Butylbenzene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
Styrene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
tert-Butylbenzene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
Tetrachloroethene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
Toluene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
trans-1,2-Dichloroethene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
trans-1,3-Dichloropropene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
trans-1,4-Dichloro-2-butene	mg/kg	<0.10	0.10	03/27/14 01:38	
Trichloroethene	mg/kg	<0.0050	0.0050	03/27/14 01:38	
Trichlorofluoromethane	mg/kg	<0.0050	0.0050	03/27/14 01:38	
Vinyl acetate	mg/kg	<0.10	0.10	03/27/14 01:38	
Vinyl chloride	mg/kg	<0.0050	0.0050	03/27/14 01:38	
Xylene (Total)	mg/kg	<0.010	0.010	03/27/14 01:38	
4-Bromofluorobenzene (S)	%.	97	56-144	03/27/14 01:38	
Dibromofluoromethane (S)	%.	102	85-118	03/27/14 01:38	
Toluene-d8 (S)	%.	97	71-128	03/27/14 01:38	

#### LABORATORY CONTROL SAMPLE: 1068543

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	mg/kg	.05	0.043	86	62-123	
1,1,1-Trichloroethane	mg/kg	.05	0.048	96	70-123	
1,1,2,2-Tetrachloroethane	mg/kg	.05	0.043	86	65-124	
1,1,2-Trichloroethane	mg/kg	.05	0.044	87	74-129	
1,1-Dichloroethane	mg/kg	.05	0.046	91	73-130	
1,1-Dichloroethene	mg/kg	.05	0.043	87	66-126	
1,1-Dichloropropene	mg/kg	.05	0.044	88	78-125	
1,2,3-Trichlorobenzene	mg/kg	.05	0.035	69	66-131	
1,2,3-Trichloropropane	mg/kg	.05	0.043	87	44-157	
1,2,4-Trichlorobenzene	mg/kg	.05	0.033	66	68-129 L	0
1,2,4-Trimethylbenzene	mg/kg	.05	0.040	81	67-126	

## **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## QUALITY CONTROL DATA

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095059

#### LABORATORY CONTROL SAMPLE: 1068543

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	mg/kg	.05	0.043	87	74-120	
1,2-Dichlorobenzene	mg/kg	.05	0.038	77	73-122	
1,2-Dichloroethane	mg/kg	.05	0.044	89	73-127	
1,2-Dichloropropane	mg/kg	.05	0.045	90	75-118	
1,3,5-Trimethylbenzene	mg/kg	.05	0.039	78	65-127	
1,3-Dichlorobenzene	mg/kg	.05	0.038	75	73-121	
1,3-Dichloropropane	mg/kg	.05	0.043	86	72-121	
1,4-Dichlorobenzene	mg/kg	.05	0.038	76	75-119	
2,2-Dichloropropane	mg/kg	.05	0.049	98	63-122	
2-Butanone (MEK)	mg/kg	.25	0.25	101	5 <del>9</del> -139	
2-Chlorotoluene	mg/kg	.05	0.038	77	72-121	
2-Hexanone	mg/kg	.25	0.26	103	56-139	
4-Chlorotoluene	mg/kg	.05	0.039	77	75-123	
4-Methyl-2-pentanone (MIBK)	mg/kg	.25	0.24	97	63-136	
Acetone	mg/kg	.25	0.24	97	46-156	
Acrolein	mg/kg	1	0.61	61	47-200	
Acrylonitrile	mg/kg	1	0.83	83	67-130	
Benzene	mg/kg	.05	0.045	90	74-119	
Bromobenzene	mg/kg	.05	0.040	81	69-129	
Bromochloromethane	mg/kg	.05	0.044	88	67-129	
Bromodichloromethane	mg/kg	.05	0.045	90	68-121	
Bromoform	mg/kg	.05	0.044	89	49-124	
Bromomethane	mg/kg	.00	0.047	95	44-142	
Carbon disulfide	mg/kg	.00	0.083	83	61-129	
Carbon tetrachloride	mg/kg	.05	0.048	96	58-127	
Chlorobenzene	mg/kg	.05	0.040	80	77-122	
Chloroethane	mg/kg	.05	0.049	98	59-141	
Chloroform	mg/kg	.05	0.045	91	75-124	
Chloromethane	mg/kg	.05	0.050	100	46-133	
is-1,2-Dichloroethene	mg/kg	.05	0.046	92	72-122	
is-1,3-Dichloropropene	mg/kg	.05	0.040	82	68-115	
Dibromochloromethane	mg/kg	.05	0.045	90	60-121	
ibromomethane	mg/kg	.05	0.045	92	72-124	
Dichlorodifluoromethane	mg/kg	.05	0.056	113	26-186	
thyl methacrylate	mg/kg	.03	0.030	93	63-130	
thylbenzene	mg/kg	.05	0.043	85	72-123	
exachloro-1,3-butadiene	mg/kg	.05	0.035	70	55-139	
odomethane	mg/kg	.00	<0.10	78	38-149	
opropylbenzene (Cumene)	mg/kg	.05	0.043	86	65-123	
lethyl-tert-butyl ether	mg/kg	.03	0.090	90	68-120	
lethylene Chloride	mg/kg	.05	0.090	90 87	57-142	
Butylbenzene						
-Bulybenzene -Hexane	mg/kg mg/kg	.05	0.037	74	68-125 57 117 N	0
	mg/kg mg/kg	.05	0.038	76	57-117 N	2
-Propylbenzene	mg/kg	.05	0.040	80 74	68-122	
laphthalene	mg/kg	.05	0.037	74	67-131	
-Isopropyltoluene	mg/kg	.05	0.040	79	66-133	
ec-Butylbenzene	mg/kg	.05	0.038	77	64-131	
ityrene	mg/kg	.05	0.043	86	70-126	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## **QUALITY CONTROL DATA**

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095059

#### LABORATORY CONTROL SAMPLE: 1068543

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
tert-Butylbenzene	mg/kg	.05	0.037	75	46-124	
Tetrachloroethene	mg/kg	.05	0.041	82	72-126	
Toluene	mg/kg	.05	0.043	86	71-121	
trans-1,2-Dichloroethene	mg/kg	.05	0.041	83	69-123	
trans-1,3-Dichloropropene	mg/kg	.05	0.040	81	66-114	
trans-1,4-Dichloro-2-butene	mg/kg	.2	0.16	79	61-124	
Trichloroethene	mg/kg	.05	0.045	90	74-123	
Trichlorofluoromethane	mg/kg	.05	0.053	106	72-146	
Vinyl acetate	mg/kg	.2	0.20	98	57-131	
Vinyl chloride	mg/kg	.05	0.051	102	55-128	
Xylene (Total)	mg/kg	.15	0.13	87	66-124	
4-Bromofluorobenzene (S)	%.			103	56-144	
Dibromofluoromethane (S)	%.			100	85-118	
Toluene-d8 (S)	%.			96	71-128	

MATRIX SPIKE & MATRIX SPI	KE DUPLICAT	E: 10685			1068545							
Parameter	5 Units	095059001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qua
1,1,1,2-Tetrachloroethane	mg/kg	<0.0059	.059	.059	0.046	0.038	78	65	10-129	18	20	
1,1,1-Trichloroethane	mg/kg	<0.0059	.059	.059	0.054	0.052	91	88	26-143	4	20	
1,1,2,2-Tetrachloroethane	mg/kg	<0.0059	.059	.059	0.041	0.044	70	74	10-156	6	20	
1,1,2-Trichloroethane	mg/kg	<0.0059	.059	.059	0.044	0.046	74	78	13-156	6	20	
1,1-Dichloroethane	mg/kg	<0.0059	.059	.059	0.050	0.047	86	80	36-150	7	20	
1,1-Dichloroethene	mg/kg	<0.0059	.059	.059	0.050	0.050	85	84	31-146	1	20	
1,1-Dichloropropene	mg/kg	<0.0059	.059	.059	0.050	0.042	85	72	26-145	17	20	
1,2,3-Trichlorobenzene	mg/kg	<0.0059	.059	.059	0.034	0.018	58	31	10-119	62	20	
1,2,3-Trichloropropane	mg/kg	<0.0059	.059	.059	0.042	0.047	72	79	10-168	10	20	
1,2,4-Trichlorobenzene	mg/kg	<0.0059	.059	.059	0.034	0.016	57	27	10-122	71	20	
1,2,4-Trimethylbenzene	mg/kg	<0.0059	.059	.059	0.044	0.017	74	29	10-139	89	20	
1,2-Dibromoethane (EDB)	mg/kg	<0.0059	.059	.059	0.042	0.042	72	72	15-136	0	20	
1,2-Dichlorobenzene	mg/kg	<0.0059	.059	.059	0.040	0.021	68	36	10-132	60	20	
1,2-Dichloroethane	mg/kg	<0.0059	.059	.059	0.046	0.049	78	83	30-140	6	20	
1,2-Dichloropropane	mg/kg	<0.0059	.059	.059	0.048	0.046	81	78	29-135	4	20	
1,3,5-Trimethylbenzene	mg/kg	<0.0059	.059	.059	0.043	0.017	74	30	10-143	85	20	
1,3-Dichlorobenzene	mg/kg	<0.0059	.059	.059	0.040	0.018	68	31	10-130	74	20	
1,3-Dichloropropane	mg/kg	<0.0059	.059	.059	0.043	0.044	72	75	17-139	3	20	
1,4-Dichlorobenzene	mg/kg	<0.0059	.059	.059	0.041	0.018	69	31	10-128	77	20	
2,2-Dichloropropane	mg/kg	<0.0059	.059	.059	0.048	0.053	82	90	29-136	9	20	
2-Butanone (MEK)	mg/kg	<0.029	.29	.29	0.24	0.28	82	94	22-176	14	20	
2-Chlorotoluene	mg/kg	<0.0059	.059	.059	0.042	0.020	72	34	10-146	71	20	
2-Hexanone	mg/kg	<0.12	.29	.29	0.24	0.27	81	92	12-165	12	20	
4-Chlorotoluene	mg/kg	<0.0059	.059	.059	0.042	0.018	72	31	10-138	79	20	
4-Methyl-2-pentanone (MIBK)	mg/kg	<0.029	.29	.29	0.22	0.27	76	92	22-155	20	20	
Acetorie	mg/kg	<0.12	.29	.29	0.26	0.28	88	95	11-200	8	20	
Acrolein	mg/kg	<0.12	1.2	1.2	0.45	0.53	38	45	10-200	17	20	
Acrylonitrile	mg/kg	<0.12	1.2	1.2	0.80	0.96	68	81	20-150	18	20	

# **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## **QUALITY CONTROL DATA**

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095059

Benzene         mg/kg         <0.0059	MATRIX SPIKE & MATRIX SP	IKE DUPLICAT	E: 10685			1068545							
Parameter         Units         Result         Conc.         Conc.         Result         Result         %, Rec         Limits         RPD         RPD         Quas           Benzene         mg/kg         <0.0059         .059         .059         0.047         0.047         72         45         10-133         46         20           Bromochizomethane         mg/kg         <0.0059         .059         0.059         0.047         0.047         70         40         23         12         20           Bromochizomethane         mg/kg         <0.0059         .059         0.044         0.043         70         13         13         12         00           Bromochizomethane         mg/kg         <0.0059         .059         0.044         0.043         70         73         10         121         12         0.066         0.089         0.82         75         20.142         8         00         141         20         10         133         14         10         133         120         10         134         120         10         141         20         10         141         20         10         141         20         10         141         20         10		5(	05050001			MS	MSD	MS	MSD	% Rec		Mov	
Bromochoromethane         mg/kg         <0.0059	Parameter			•	•						RPD		Qual
Bromochloromethane         mg/kg         <0.0059         0.059         0.054         0.044         76         80         22.12         5         20           Bromochloromethane         mg/kg         <0.0059	Benzene	mg/kg	<0.0059	.059	.059	0.051	0.047	87	80	27-140	9	20	
Bromodicilationomethane         mg/kg         <0.0059         0.559         0.563         0.043         7.0         7.8         1.3         1         20           Bromoform         mg/kg         <0.0059	Bromobenzene	mg/kg	<0.0059	.059	.059	0.042	0.026	72	45	10-133	46	20	
Bromoferm         mg/kg         <0.0059         0.59         0.59         0.043         0.043         73         73         10-122         1         20           Bromomethane         mg/kg         <0.0059	Bromochloromethane	mg/kg	<0.0059	.059	.059	0.045	0.047	76	80	28-142	5	20	
Bromonethane         mg/kg         <0.059         0.059         0.051         0.053         87         90         10-154         3         20           Carbon disulifide         mg/kg         <0.012	Bromodichloromethane	mg/kg	<0.0059	.059	.059	0.047	0.046	79	78	13-139	1	20	
Carbon disulfide         mg/kg         <0.012         1.12         1.12         0.096         0.089         62         75         20-142         8         20           Carbon disulfide         mg/kg         <0.0059	Bromoform	mg/kg	<0.0059	.059	.059	0.043	0.043	73	73	10-122	1	20	
Carbon tetrachloride         mg/kg         <0.0059         .059         .059         0.054         0.049         93         84         19-135         10         20           Chiorobenzene         mg/kg         <0.0059	Bromomethane	mg/kg	<0.0059	.059	.059	0.051	0.053	87	90	10-154	3	20	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Carbon disulfide	mg/kg	<0.012	.12	.12	0.096	0.089	82	75	20-142	8	20	
Chloroethane         mg/kg         <0.059         .059         .057         0.058         96         99         24.18         3         20           Chloroftm         mg/kg         <0.0059	Carbon tetrachloride	mg/kg	<0.0059	.059	.059	0.054	0.049	93	84	19-135	10	20	
Chloroform         mg/kg         <0.059         .059         .059         0.048         .060         .99         102         28.143         3         2           Chloromethane         mg/kg         <0.0059	Chlorobenzene	mg/kg	<0.0059	.059	.059	0.044	0.029	74	49	10-136	41	20	
Chloromethane         mg/kg         <0.0059         .059         .059         0.060         99         102         28-143         3         20           cis-1,2-Dichloreethene         mg/kg         <0.0059	Chloroethane	mg/kg	<0.0059	.059	.059	0.057	0.058	96	99	24-161	3	20	
cis-1,2-Dichloroethene         mg/kg         <0.0059         .059         .0.48         0.047         82         81         29-136         1         20           cis-1,3-Dichloropropene         mg/kg         <0.0059	Chloroform	mg/kg	<0.0059	.059	.059	0.049	0.048	84	82	36-138	2	20	
cis-1,2-Dichloroethene         mg/kg         <0.0059         .059         .059         .0.041         .0.038         70         65         1         20           cis-1,3-Dichloropropene         mg/kg         <0.0059	Chloromethane	mg/kg	<0.0059	.059	.059	0.058	0.060	99	102	28-143	3	20	
Dibromochloromethane         mg/kg         <0.0059         .059         .059         0.044         0.043         76         73         10-124         3         20           Dibromomethane         mg/kg         <0.0059	cis-1,2-Dichloroethene	mg/kg	<0.0059	.059	.059	0.048	0.047	82	81	2 <del>9</del> -136	1		
Dibromomethane         mg/kg         <0.0059         .059         .059         0.048         0.048         78         82         24.136         5         20           Dichlorodiffuoromethane         mg/kg         <0.0059	cis-1,3-Dichloropropene	mg/kg	<0.0059	.059	.059	0.041	0.038	70	65	10-130	7	20	
Dibromore thane         mg/kg         <0.0059         .059         .059         0.046         0.048         78         82         24.136         5         20           Dichlorodiffuoromethane         mg/kg         <0.0059	Dibromochloromethane	mg/kg	<0.0059	.059	.059	0.044	0.043	76	73	10-124	3	20	
Dichlorodiffuoromethane         mg/kg         <0.059         .059         0.068         0.069         116         118         15-187         2         20           Ethyl methacrylate         mg/kg         <0.12	Dibromomethane		<0.0059	.059	.059	0.046	0.048	78	82				
Ethyl methacrylate         mg/kg         <0.12         .24         .24         0.17         0.18         71         75         10-147         55         20           Ethyl methacrylate         mg/kg         <0.0059	Dichlorodifluoromethane	mg/kg	<0.0059	.059	.059	0.068	0.069	116	118				
Ethylbenzene         mg/kg         <0.0059         .059         .059         0.047         0.026         80         44         10-144         58         20           Hexachloro-1,3-butadiene         mg/kg         <0.0059	Ethyl methacrylate	mg/kg	<0.12	.24	.24	0.17	0.18	71	75	10-147			
Hexachloro-1,3-butadiene       mg/kg       <0.0059       .0.59       .0.038       0.0063       64       11       10-136       143       20         lodomethane       mg/kg       <0.0059	Ethylbenzene		<0.0059	.059	.059	0.047					-		
Iodomethane         mg/kg         <0.12         .12         .12         <0.12         <0.12         <0.12         69         73         10-155         20           Isopropylbenzene (Cumene)         mg/kg         <0.0059	Hexachloro-1,3-butadiene		< 0.0059										
Isopropylbenzene (Cumene)       mg/kg       <0.0059	lodomethane												
Methyl-tert-butyl ether       mg/kg       <0.0059       .12       .12       0.091       0.11       78       91       30-147       16       20         Methylene Chloride       mg/kg       <0.024	Isopropylbenzene (Cumene)										73		
Methylene Chloride         mg/kg         <0.024         .059         .059         0.047         0.051         76         83         23-150         9         20           n-Butylbenzene         mg/kg         <0.0059	• • • • •												
m-Butylbenzene       mg/kg       <0.0059       .059       .059       0.042       0.0089       72       15       10.141       131       20         n-Hexane       mg/kg       <0.0059													
n-Hexane         mg/kg         <0.0059         .059         .059         .0.046         0.044         78         75         10.140         4         20         N2           n-Propylbenzene         mg/kg         <0.0059	•										-		
m-Propylbenzene       mg/kg       <0.0059       .059       .0.45       0.017       76       29       10-143       89       20         Naphthalene       mg/kg       <0.0059	•	• •											12
Naphthalene         mg/kg         <0.0059         .059         .059         0.033         0.025         57         42         10.130         29         20           p-Isopropyltoluene         mg/kg         <0.0059													12
p-isopropyltoluene         mg/kg         <0.059         .059         .0.044         0.013         75         22         10-146         11         20           sec-Butylbenzene         mg/kg         <0.0059	••											-	
sec-Butylbenzene       mg/kg       <0.0059       .059       .059       0.043       0.014       73       24       10-150       100       20         Styrene       mg/kg       <0.0059       .059       .059       0.043       0.014       73       24       10-150       100       20         Styrene       mg/kg       <0.0059       .059       .059       0.045       0.027       76       45       10-138       51       20         tert-Butylbenzene       mg/kg       <0.0059       .059       .059       0.042       0.017       72       29       10-135       86       20         Tetrachloroethene       mg/kg       <0.0059       .059       .059       0.048       0.030       82       51       10-153       48       20         Toluene       mg/kg       <0.0059       .059       .059       0.044       83       74       28-139       10       20         trans-1,2-Dichloroethene       mg/kg       <0.0059       .059       .059       0.040       0.037       68       64       10-126       6       20         trans-1,3-Dichloropropene       mg/kg       <0.059       .059       .059       .062       .063	•	•••											
Styrene       mg/kg       <0.0059       .059       .059       0.045       0.027       76       45       10-138       51       20         tert-Butylbenzene       mg/kg       <0.0059       .059       .059       0.042       0.017       72       29       10-138       86       20         Tetrachloroethene       mg/kg       <0.0059       .059       .059       0.048       0.030       82       51       10-138       86       20         Toluene       mg/kg       <0.0059       .059       .059       0.047       0.036       80       62       10-140       26       20         trans-1,2-Dichloroethene       mg/kg       <0.0059       .059       .059       0.040       0.037       68       64       10-126       6       20         trans-1,3-Dichloroptopene       mg/kg       <0.012       .24       .24       0.14       0.14       59       58       10-132       2       20         Trichloroethene       mg/kg       <0.012       .24       .24       0.14       0.14       59       58       10-132       2       20         Trichloroethene       mg/kg       <0.059       .059       .059       .062       <		•••											
tert-Butylbenzene       mg/kg       <0.0059       .059       .059       0.042       0.017       72       29       10-135       86       20         Tetrachloroethene       mg/kg       <0.0059													
Tetrachloroethene         mg/kg         <0.0059         .059         .059         0.048         0.030         82         51         10-153         48         20           Toluene         mg/kg         <0.0059	•										-		
Toluene         mg/kg         <0.0059         .059         .059         0.047         0.036         80         62         10-140         26         20           trans-1,2-Dichloroethene         mg/kg         <0.0059	•												
trans-1,2-Dichloroethene       mg/kg       <0.0059       .059       .059       0.044       83       74       28-139       10       20         trans-1,3-Dichloropropene       mg/kg       <0.0059       .059       .059       0.040       0.037       68       64       10-126       6       20         trans-1,3-Dichloropropene       mg/kg       <0.012       .24       .24       0.14       0.14       59       58       10-122       2       20         trans-1,4-Dichloro-2-butene       mg/kg       <0.0059       .059       .059       0.040       0.043       90       72       17-148       21       20         Trichloroethene       mg/kg       <0.0059       .059       .059       0.062       0.063       105       107       31-177       2       20         Vinyl acetate       mg/kg       <0.12       .24       .24       <0.12       <0.12       11       4       10-131       20       M0         Vinyl acetate       mg/kg       <0.012       .18       .18       0.15       0.078       82       44       10-143       60       20         Vinyl chloride       mg/kg       <0.012       .18       .18       0.15													
trans-1,3-Dichloropropene       mg/kg       <0.0059       .059       .059       0.040       0.037       68       64       10-126       6       20         trans-1,4-Dichloro-2-butene       mg/kg       <0.12       .24       .24       0.14       0.14       59       58       10-132       2       20         Trichloroethene       mg/kg       <0.0059       .059       .059       0.062       0.063       105       107       31-177       2       20         Trichlorofluoromethane       mg/kg       <0.012       .24       .24       <0.14       0.14       59       58       10-132       2       20         Trichlorofluoromethane       mg/kg       <0.0059       .059       0.059       0.062       0.063       105       107       31-177       2       20         Vinyl acetate       mg/kg       <0.12       .24       .24       <0.12       <0.12       11       4       10-131       20       M0         Vinyl acetate       mg/kg       <0.012       .18       .18       0.15       0.078       82       44       10-143       60       20         Vinyl chloride       mg/kg       <0.012       .18       .18       0													
rans-1,4-Dichloro-2-butenemg/kg<0.12.24.240.140.14595810-132220Trichloroethenemg/kg<0.0059													
Trichloroethene       mg/kg       <0.0059       .059       .059       0.053       0.043       90       72       17-148       21       20         Trichlorofluoromethane       mg/kg       <0.0059													
Trichlorofluoromethane         mg/kg         <0.0059         .059         .059         0.062         0.063         105         107         31-177         2         20           Vinyl acetate         mg/kg         <0.12													
Vinyl acetate         mg/kg         <0.12         .24         .24         <0.12         <0.12         11         4         10-131         20         M0           /inyl chloride         mg/kg         <0.0059													
vinyl chloride         mg/kg         <0.0059         .059         0.060         0.059         102         100         30-145         1         20           Kylene (Total)         mg/kg         <0.012											2		10
Kylene (Total)         mg/kg         <0.012         .18         .18         0.15         0.078         82         44         10-143         60         20           4-Bromofluorobenzene (S)         %.         105         103         56-144         100         103         85-118         3d	•										4		ΝU
4-Bromofluorobenzene (S)         %.         105         103         56-144           Dibromofluoromethane (S)         %.         100         103         85-118         3d	•												
Dibromofluoromethane (S) %. 100 103 85-118 3d	• • •		SU.012	.18	.18	0.15	0.078				60	20	
	( )											-	
ioiuene-uo (3) %. 97 99 71-128										-		3	d
	Ioluene-do (S)	%.						97	99	/1-128			



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### QUALITY CONTROL DATA

Project:	ODOT HAM-75-0.22 / 52888	

Pace Project No.: 5095059

QC Batch:	MSV/62939	Analysis Method:	EPA 8260	
QC Batch Method:	EPA 8260	Analysis Description:	8260 MSV UST Low Level	
Associated Lab Sam		06 5005050007 5005050009		5005

Associated Lab Samples: 5095059005, 5095059006, 5095059007, 5095059008, 5095059009, 5095059010, 5095059011, 5095059012

#### METHOD BLANK: 1068546

Matrix: Solid

Associated Lab Samples: 5095059005, 5095059006, 5095059007, 5095059008, 5095059009, 5095059010, 5095059011, 5095059012

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Benzene	mg/kg	<0.0050	0.0050	03/27/14 00:39	
Ethylbenzene	mg/kg	<0.0050	0.0050	03/27/14 00:39	
Methyl-tert-butyl ether	mg/kg	<0.0050	0.0050	03/27/14 00:39	
Toluene	mg/kg	<0.0050	0.0050	03/27/14 00:39	
(ylene (Total)	mg/kg	<0.010	0.010	03/27/14 00:39	
-Bromofluorobenzene (S)	%.	101	56-144	03/27/14 00:39	
Dibromofluoromethane (S)	%.	106	85-118	03/27/14 00:39	
Toluene-d8 (S)	%.	96	71-128	03/27/14 00:39	

#### LABORATORY CONTROL SAMPLE: 1068547

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	mg/kg	.05	0.052	104	74-119	
Ethylbenzene	mg/kg	.05	0.050	99	72-123	
Methyl-tert-butyl ether	mg/kg	.1	0.11	107	68-120	
Toluene	mg/kg	.05	0.050	100	71-121	
Xylene (Total)	mg/kg	.15	0.15	99	66-124	
4-Bromofluorobenzene (S)	%.			101	56-144	
Dibromofluoromethane (S)	%.			99	85-118	
Toluene-d8 (S)	%.			100	71-128	

MATRIX SPIKE & MATRIX SP	IKE DUPLICAT	E: 10685	48		1068549							
2	-	094903004	MS Spike	MSD Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Benzene	mg/kg	ND	.064	.064	0.053	0.059	83	92	27-140	11	20	
Ethylbenzene	mg/kg	ND	.064	.064	0.036	0.052	57	82	10-144	36	20	
Methyl-tert-butyl ether	mg/kg	ND	.13	.13	0.11	0.12	87	97	30-147	10	20	
Toluene	mg/kg	ND	.064	.064	0.044	0.056	69	88	10-140	24	20	
Xylene (Total)	mg/kg	ND	.19	.19	0.10	0.16	54	82	10-143	40	20	
4-Bromofluorobenzene (S)	%.						100	98	56-144		20	
Dibromofluoromethane (S)	%.						98	98	85-118		20 2	2d
Toluene-d8 (S)	%.						97	99	71-128		20	



## QUALITY CONTROL DATA

	ODOT HAM- 5095059	75-0.22 / 528	888										
QC Batch:	OEXT/3536	<u>}4</u>		Analysis Method: EPA 8015 Mod Ext									
QC Batch Method:	EPA 3546				sis Descrip		PA 8015 TF	PH Ohio					
Associated Lab Sam		059001, 509 059009, 509					59005, 509	5059006, 5	5095059007	7, 5095059	9008,		
METHOD BLANK:	1067208				Matrix: Sol	lid							<u> </u>
Associated Lab Sam		059001, 509 059009, 509				•	59005, 509	5059006, 5	5095059007	7, 5095059	9008,		
Param	eter		Units	Blan Resu		leporting Limit	Analyz	zed	Qualifiers				
Total Petroleum Hydrocarbons mg/kg				<20.0	20.0	03/27/14	12:03						
TPH (C10-C20)	oourbond	mg/kg			<10.0	10.0							
TPH (C20-C34)			mg/kg		<10.0	10.0 03/27/14 1		12:03					
n-Pentacosane (S)		%.			64	30-153	03/27/14	12:03					
LABORATORY CON	TROL SAMP	LE: 10672	09	<u></u>									
_				Spike	LCS	-	LCS	% Re	-				
Paramo	eter		Units	Conc.	Resu	uit	% Rec	Limits	s Qu	ualifiers	-		
Total Petroleum Hydr n-Pentacosane (S)	ocarbons	mg/kg %.		83.3	3	43.5	52 58		43-88 )-153				
MATRIX SPIKE & MA		DUPLICATE	E: 10672	10		1067211							
				MS	MSD								
_			95059001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Total Petroleum Hydr n-Pentacosane (S)	ocarbons	mg/kg %.	<23.5	97.8	96.8	49.9	53.4	49 61	53 65	10-136 30-153	-	20	



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## **QUALITY CONTROL DATA**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No .: 5095059

QC Batch: OEXT/35351 Analysis Method: QC Batch Method: EPA 3546 Analysis Description: Associated Lab Samples: 5095059001, 5095059002, 5095059003, 5095059004

EPA 8270 by SIM 8270 MSSV PAH by SIM

METHOD BLANK:	1066668
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METHOD BLANK:	1066668	Matrix: Solid
Associated Lab Sam	ples: 5095059001, 509	5059002, 5095059003, 5095059004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acenaphthene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
•					
Acenaphthylene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Anthracene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Benzo(a)anthracene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Benzo(a)pyrene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Benzo(b)fluoranthene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Benzo(k)fluoranthene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Chrysene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Dibenz(a,h)anthracene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Fluoranthene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Fluorene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Naphthalene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Phenanthrene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
Pyrene	mg/kg	<0.0050	0.0050	03/26/14 02:40	
2-Fluorobiphenyl (S)	%.	62	38-110	03/26/14 02:40	
p-Terphenyl-d14 (S)	%.	83	32-111	03/26/14 02:40	

#### LABORATORY CONTROL SAMPLE: 1066669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	mg/kg	.33	0.26	77	43-108	
Acenaphthylene	mg/kg	.33	0.27	80	44-110	
Anthracene	mg/kg	.33	0.28	84	44-112	
Benzo(a)anthracene	mg/kg	.33	0.28	85	43-124	
Benzo(a)pyrene	mg/kg	.33	0.30	89	44-124	
Benzo(b)fluoranthene	mg/kg	.33	0.30	89	44-123	
Benzo(g,h,i)perylene	mg/kg	.33	0.32	95	44-118	
Benzo(k)fluoranthene	mg/kg	.33	0.29	87	42-122	
Chrysene	mg/kg	.33	0.29	86	44-124	
Dibenz(a,h)anthracene	mg/kg	.33	0.33	100	44-119	
Fluoranthene	mg/kg	.33	0.28	85	45-119	
luorene	mg/kg	.33	0.27	80	44-113	
ndeno(1,2,3-cd)pyrene	mg/kg	.33	0.32	97	44-119	
Naphthalene	mg/kg	.33	0.25	75	42-103	
Phenanthrene	mg/kg	.33	0.27	80	44-113	
<sup>o</sup> yrene	mg/kg	.33	0.27	82	45-123	
P-Fluorobiphenyl (S)	%.			76	38-110	
p-Terphenyl-d14 (S)	%.			86	32-111	



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### QUALITY CONTROL DATA

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095059

MATRIX SPIKE & MATRIX S	PIKE DUPLICAT	E: 10666	70		1066671							
			MS	MSD								
	50	095052002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Acenaphthene	mg/kg	ND	.39	.39	0.30	0.29	75	73	25-117	3	20	
Acenaphthylene	mg/kg	ND	.39	.39	0.30	0.29	76	74	27-123	2	20	
Anthracene	mg/kg	ND	.39	.39	0.30	0.29	77	74	20-123	3	20	
Benzo(a)anthracene	mg/kg	ND	.39	.39	0.28	0.27	71	69	23-124	3	20	
Benzo(a)pyrene	mg/kg	ND	.39	.39	0.28	0.28	72	69	23-120	3	20	
Benzo(b)fluoranthene	mg/kg	ND	.39	.39	0.28	0.28	70	69	24-117	2	20	
Benzo(g,h,i)perylene	mg/kg	ND	.39	.39	0.29	0.28	73	71	12-122	2	20	
Benzo(k)fluoranthene	mg/kg	ND	.39	.39	0.28	0.27	70	67	14-123	4	20	
Chrysene	mg/kg	6.1 ug/kg	.39	.39	0.29	0.28	73	69	22-124	5	20	
Dibenz(a,h)anthracene	mg/kg	ND	.39	.39	0.31	0.30	80	77	26-113	3	20	
Fluoranthene	mg/kg	9.8 ug/kg	.39	.39	0.29	0.28	71	70	21-125	2	20	
Fluorene	mg/kg	ND	.39	.39	0.30	0.30	76	75	1 <del>9</del> -127	1	20	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	.39	.39	0.30	0.29	75	73	15-121	2	20	
Naphthalene	mg/kg	6.7 ug/kg	.39	.39	0.31	0.30	79	75	15-125	3	20	
Phenanthrene	mg/kg	10.1 ug/kg	.39	.39	0.30	0.30	75	74	10-139	1	20	
Pyrene	mg/kg	7.0 ug/kg	.39	.39	0.28	0.28	70	68	17-132	2	20	
2-Fluorobiphenyl (S)	%.						63	61	38-110			
p-Terphenyl-d14 (S)	%.						48	45	32-111			



## QUALITY CONTROL DATA

Project:	ODOT HAM-75-	0.22 / 52888					
Pace Project No.:	5095059						
QC Batch:	PMST/9266		Analysis Meth	od:	ASTM D2974-87	7	· · · · · · · · · · · · · · · · · · ·
QC Batch Method:	QC Batch Method: ASTM D2974-87		Analysis Description: D		Dry Weight/Perc		
Associated Lab Sar			, 5095059003, 50950 , 5095059011, 50950		059005, 509505	59006, 50950	59007, 5095059008,
SAMPLE DUPLICA	TE: 1067022						
			5095059008	Dup		Max	
Parar	meter	Units	Result	Result	RPD	RPD	Qualifiers
Percent Moisture		%	18.2	19.:	3	6	5 R1
Percent Moisture SAMPLE DUPLICA	TE: 1067023	%	18.2	19.	3	6	5 R1
	TE: 1067023	%	5095059010	19. Dup	3	6 Max	5 R1
SAMPLE DUPLICA	NTE: 1067023				3 RPD		5 R1 Qualifiers



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### QUALIFIERS

Project:	ODOT HAM-75-0.22 / 52888
Pace Project No .:	5095059

#### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

**RPD** - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

#### ANALYTE QUALIFIERS

- 1d Due to the extract's physical characteristics, the analysis was performed at dilution. CEM 03/28/14
- 2d Multiple compounds have a RPD greater than the RPD max refer to the LCS for system control. BJG 03-27-14.
- 3d Multiple compounds have a RPD outside of the RPD max refer to the LCS for system control. BJG 03-27-14.
- L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
- M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
- N2 The lab does not hold TNI accreditation for this parameter.
- R1 RPD value was outside control limits.
- S4 Surrogate recovery not evaluated against control limits due to sample dilution.



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# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095059

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5095059001	53-SB-1 2-4'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	
5095059002	53-SB-2 6-8'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095059003	53-SB-3 8-10'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095059004	53-SB-4 6-8'	EPA 3546		EPA 8015 Mod Ext	GCSV/12271
5095059005	49-SB-1 0-3'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095059006	49-SB-2 2-4'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095059007	17-SB-1 4-6'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095059008	17-SB-2 8-10'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095059009	29-SB-1 2-4'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095059010	29-SB-2 4-6'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095059011	51-SB-1 8-10'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095059012	51-SB-2 2-4'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095059001	53-SB-1 2-4'	EPA 8015 Mod Pur	GCV/17838		
5095059002	53-SB-2 6-8'	EPA 8015 Mod Pur	GCV/17838		
5095059003	53-SB-3 8-10'	EPA 8015 Mod Pur	GCV/17838		
5095059004	53-SB-4 6-8'	EPA 8015 Mod Pur	GCV/17838		
5095059005	49-SB-1 0-3'	EPA 8015 Mod Pur	GCV/17838		
5095059006	49-SB-2 2-4'	EPA 8015 Mod Pur	GCV/17838		
5095059007	17-SB-1 4-6'	EPA 8015 Mod Pur	GCV/17838		
5095059008	17-SB-2 8-10'	EPA 8015 Mod Pur	GCV/17838		
509505 <del>9</del> 00 <del>9</del>	29-SB-1 2-4'	EPA 8015 Mod Pur	GCV/17838		
5095059010	29-SB-2 4-6'	EPA 8015 Mod Pur	GCV/17838		
5095059011	51-SB-1 8-10'	EPA 8015 Mod Pur	GCV/17838		
5095059012	51-SB-2 2-4'	EPA 8015 Mod Pur	GCV/17838		
5095059001	53-SB-1 2-4'	EPA 3546	OEXT/35351	EPA 8270 by SIM	MSSV/14855
5095059002	53-SB-2 6-8'	EPA 3546	OEXT/35351	EPA 8270 by SIM	MSSV/14855
5095059003	53-SB-3 8-10'	EPA 3546	OEXT/35351	EPA 8270 by SIM	MSSV/14855
5095059004	53-SB-4 6-8'	EPA 3546	OEXT/35351	EPA 8270 by SIM	MSSV/14855
5095059001	53-SB-1 2-4'	EPA 8260	MSV/62938		
5095059002	53-SB-2 6-8'	EPA 8260	MSV/62938		
5095059003	53-SB-3 8-10'	EPA 8260	MSV/62938		
5095059004	53-SB-4 6-8'	EPA 8260	MSV/62938		
5095059005	49-SB-1 0-3'	EPA 8260	MSV/62939		
5095059006	49-SB-2 2-4'	EPA 8260	MSV/62939		
5095059007	17-SB-1 4-6'	EPA 8260	MSV/62939		
5095059008	17-SB-2 8-10'	EPA 8260	MSV/62939		
5095059009	29-SB-1 2-4'	EPA 8260	MSV/62939		
5095059010	29-SB-2 4-6'	EPA 8260	MSV/62939		
5095059011	51-SB-1 8-10'	EPA 8260	MSV/62939		
5095059012	51-SB-2 2-4'	EPA 8260	MSV/62939		
5095059001	53-SB-1 2-4'	ASTM D2974-87	PMST/9266		
5095059002	53-SB-2 6-8'	ASTM D2974-87	PMST/9266		
5095059003	53-SB-3 8-10'	ASTM D2974-87	PMST/9266		
5095059004	53-SB-4 6-8'	ASTM D2974-87	PMST/9266		
095059005	49-SB-1 0-3'	ASTM D2974-87	PMST/9266		
6095059006	49-SB-2 2-4'	ASTM D2974-87	PMST/9266		



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

# QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project:	ODOT HAM-75-0.22 / 52888
Pace Project No .:	5095059

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5095059007	17-SB-1 4-6'	ASTM D2974-87	PMST/9266		
5095059008	17-SB-2 8-10'	ASTM D2974-87	PMST/9266		
5095059009	29-SB-1 2-4'	ASTM D2974-87	PMST/9266		
5095059010	29-SB-2 4-6'	ASTM D2974-87	PMST/9266		
5095059011	51-SB-1 8-10'	ASTM D2974-87	PMST/9266		
5095059012	51-SB-2 2-4'	ASTM D2974-87	PMST/9266		

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Custody Seal on Cooler/Box Present:	no 🗌 no	)	Seala	intact: Tyes	Dino	Date/Time 5035A kits
Packing Material: DBubble Wrap	e Bags	⊡No	ne	Diether Zip/	ac-	placed in freezer
Thermometer Used $12346ABCD $	Туре с	of ice:		Blue None	I Samples on ice.	pooling process has begun
Cooler Temperature <u>1, PC</u> (Corrected, if applicable)	ice V	/isibie	in Sa	mple Containers: [	yes no	
Temp should be above freezing to 6°C	/			Comments:	Date and init	als of person examining
Chain of Custody Present:	Drigh			1.		
Chain of Custody Filled Out:	Elvis			2.		
Chain of Custody Relinquished:	E /es			3.		
Sampler Name & Signature on COC:	Elyes	<b>No</b>		4		
Short Hold Time Analysis (<72hr):	□Yes	<b>DNp</b>		5.		
Rush Turn Around Time Requested:		No		6. 328/14		
Containers Intact:	L'Yes			7.		
Sample Labels match COC:	DYes'	LIN0		8. Ivials recu		ysed but
-Includes date/time/ID/Analysis All containers needing acid/base pres. have been checked?	··· <u>·</u> ·····		-	no sample	-ID-MB	
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exceptions: VOA, collions, TOC, O&G All containers needing preservation are found to be in cor	molience uit	H EDA				
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Headspace in VOA Viais ( >6mm):		No		10.		
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Sample Container Count	5295759	BP3N BP3U BP3S AG3S AG1H BP3C BP1U SPST <b>2.02</b> nH <2 nH212	5 5 													BP1S 1 liter H2SO4 plastic		BP1Z 1 itter NaOH, Zh, Ac	BP2A 500mL NaOH, Asc Acid plastic	BP2Z 500mi NaOH Zh Ac	AF Air Fitter	BP3C 250mL NaOH plastic	BP3Z 250mL NaOH, Zn Ac plastic	C Air Cassettes	DG9B 40mL Na Bisulfate amber viai	plastic DG9M 40mL MeOH clear vial	
	Project #	4/6 BP2N BP2U BP2S													AGOU 100mL unpreserved amber gi	1 litter HCL amber glass	1 liter H2SO4 amber glass	1 litter Na Thiosultate amber	AG2N 500mL HNU3 amber glass	AG2U 500mL unpreserved amber o	250miL unpreserved amber g	BG1H 1 litter HCL clear glass	BG1S 1 litter H2SO4 clear glass	BG1T 1 ther Na Thiosulfate clear gl	BG1U 1 litter unpreserved glass	BP1A  1 liter NaOH, Asc Acid	
CLIENT: BUILDRES & N'DIE	20C PAGE 1 여 김 20C ID# 1705835	Sample Line Item DG9H AG1U WGFU AG0U R		5	3	4	2	9	7	 	10	1	12	Container Codes		-					BP3N 250mL HNO3 plastic						Page 43 o

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F-IN-Q-270-rev. 04, 13Mar2014

of 44

F-IN-Q-270-rev.04,13Mar2014



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

March 31, 2014

Mr. Scott Dailey Burgess & Niple (OH) 5085 Reed Road Columbus, OH 43220

RE: Project: ODOT HAM-75-0.22 / 52888 Pace Project No.: 5095061

Dear Mr. Dailey:

Enclosed are the analytical results for sample(s) received by the laboratory on March 21, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kelly M gmis

Kelly Jones for Kenneth Hunt kenneth.hunt@pacelabs.com Project Manager

Enclosures





Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### CERTIFICATIONS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

#### **Indiana Certification IDs**

7726 Moller Road, Indianapolis, IN 46268 Illinois Certification #: 200074 Indiana Certification #: C-49-06 Kansas Certification #: E-10247 Kentucky UST Certification #: 0042 Louisiana/NELAP Certification #: 04076 Ohio VAP Certification #: CL-0065 Pennsylvania Certification #: 68-04991 West Virginia Certification #: 330

# **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### SAMPLE SUMMARY

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095061

**Date Collected Date Received** Lab ID Sample ID Matrix 5095061001 65-SB-1 10-12' 03/18/14 13:08 03/21/14 12:35 Solid 5095061002 65-SB-2 8-12' Solid 03/18/14 13:45 03/21/14 12:35 5095061003 65-SB-4 4-6' Solid 03/18/14 15:15 03/21/14 12:35 03/18/14 15:35 03/21/14 12:35 5095061004 65-SB-5 4-8' Solid 5095061005 65-SB-6 8-10' 03/18/14 16:10 03/21/14 12:35 Solid 5095061006 58-SB-1 2-4' Solid 03/19/14 10:30 03/21/14 12:35 5095061007 03/19/14 11:07 03/21/14 12:35 58-SB-2 2-4' Solid 5095061008 58-SB-3 6-8' Solid 03/19/14 11:35 03/21/14 12:35 5095061009 58-SB-4 2-4' Solid 03/19/14 12:25 03/21/14 12:35 5095061010 58-SB-5 4-6' Solid 03/19/14 12:50 03/21/14 12:35 5095061011 03/19/14 13:08 03/21/14 12:35 58-SB-6 6-8' Solid

**REPORT OF LABORATORY ANALYSIS** 



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## SAMPLE ANALYTE COUNT

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
5095061001	65-SB-1 10-12'	EPA 8015 Mod Ext	CEM	4	PASI-I
		EPA 8015 Mod Pur	PTH	2	PASI-I
		EPA 8270	NAJ	62	PASI-I
		EPA 8260	GRM	67	PASI-I
		ASTM D2974-87	ZM	1	PASI-I
5095061002	65-SB-2 8-12'	EPA 8015 Mod Ext	CEM	4	PASI-I
		EPA 8015 Mod Pur	PTH	2	PASI-I
		EPA 8270	NAJ	62	PASI-I
		EPA 8260	GRM	67	PASI-I
		ASTM D2974-87	ZM	1	PASI-I
5095061003	65-SB-4 4-6'	EPA 8015 Mod Ext	CEM	4	PASI-I
		EPA 8015 Mod Pur	PTH	2	PASI-I
		EPA 8270	NAJ	62	PASI-I
		EPA 8260	GRM	67	PASI-I
		ASTM D2974-87	ZM	1	PASI-I
5095061004	65-SB-5 4-8'	EPA 8015 Mod Ext	CEM	4	PASI-I
		EPA 8015 Mod Pur	PTH	2	PASI-I
		EPA 8270	NAJ	62	PASI-I
		EPA 8260	GRM	67	PASI-I
		ASTM D2974-87	ZM	1	PASI-I
5095061005	65-SB-6 8-10'	EPA 8015 Mod Ext	CEM	4	PASI-I
		EPA 8015 Mod Pur	PTH	2	PASI-I
		EPA 8270	NAJ	62	PASI-I
		EPA 8260	ALA, GRM	67	PASI-I
		ASTM D2974-87	ZM	1	PASI-I
5095061006	58-SB-1 2-4'	EPA 8015 Mod Ext	CEM	4	PASI-I
		EPA 8015 Mod Pur	PTH	2	PASI-I
		EPA 8270	NAJ	62	PASI-I
		EPA 8260	GRM	67	PASI-I
		ASTM D2974-87	ZM	1	PASI-I
5095061007	58-SB-2 2-4'	EPA 8015 Mod Ext	CEM	4	PASI-I
		EPA 8015 Mod Pur	PTH	2	PASI-I
		EPA 8270	NAJ	62	PASI-I
		EPA 8260	GRM	67	PASI-I
		ASTM D2974-87	ZM	1	PASI-I
5095061008	58-SB-3 6-8'	EPA 8015 Mod Ext	CEM	4	PASI-I
		EPA 8015 Mod Pur	PTH	2	PASI-I

# **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## SAMPLE ANALYTE COUNT

Project:	ODOT HAM-75-0.22 / 52888
Pace Project No .:	5095061

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8270	NAJ	62	PASI-I
		EPA 8260	GRM	67	PASI-I
		ASTM D2974-87	ZM	1	PASI-I
5095061009	58-SB-4 2-4'	EPA 8015 Mod Ext	CEM	4	PASI-I
		EPA 8015 Mod Pur	PTH	2	PASI-I
		EPA 8270	NAJ	62	PASI-I
		EPA 8260	GRM	67	PASI-I
		ASTM D2974-87	ZM	1	PASI-I
095061010	58-SB-5 4-6'	EPA 8015 Mod Ext	CEM	4	PASI-I
		EPA 8015 Mod Pur	PTH	2	PASI-I
		EPA 8270	NAJ	62	PASI-I
		EPA 8260	GRM	67	PASI-I
		ASTM D2974-87	ZM	1	PASI-I
095061011	58-SB-6 6-8'	EPA 8015 Mod Ext	CEM	4	PASI-I
		EPA 8015 Mod Pur	PTH	2	PASI-I
		EPA 8270	NAJ	62	PASI-I
		EPA 8260	GRM	67	PASI-I
		ASTM D2974-87	ZM	1	PASI-I

**REPORT OF LABORATORY ANALYSIS** 



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 65-SB-1 10-12'	Lab ID: 509506	1001 Collected:	03/18/1	4 13:08	Received:	03/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight	" basis							
Parameters	Results	Units Report	t Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Method:	EPA 8015 Mod Ext	Prepara	tion Met	hod: EPA 3546	;		
Total Petroleum Hydrocarbons	ND mg/kg		26.0	1	03/25/14 09:2	5 03/27/14 13:5	57	
TPH (C10-C20)	ND mg/kg		13.0	1	03/25/14 09:2	5 03/27/14 13:5	57	
TPH (C20-C34)	ND mg/kg		13.0	1	03/25/14 09:2	5 03/27/14 13:5	7	
Surrogates								
n-Pentacosane (S)	59 %.	:	30-153	1	03/25/14 09:2	5 03/27/14 13:5	629-99-2	
8015 Gasoline Range Organics	Analytical Method:	EPA 8015 Mod Pur						
TPH (C06-C12)	ND mg/kg		1.3	1		03/26/14 02:3	2	
Surrogates								
4-Bromofluorobenzene (S)	95 %.	:	38-163	1		03/26/14 02:3	2 460-00-4	
8270 MSSV SHORT LIST MICROWAVE	Analytical Method:	EPA 8270 Preparat	ion Meth	nod: EPA	3546			
Acenaphthene	ND ug/kg		430	1	03/25/14 10:1	0 03/25/14 18:1	7 83-32-9	
Acenaphthylene	ND ug/kg		430	1	03/25/14 10:1	0 03/25/14 18:1	7 208-96-8	
Anthracene	ND ug/kg		430	1	03/25/14 10:1	0 03/25/14 18:1	7 120-12-7	
Benzo(a)anthracene	ND ug/kg		430	1	03/25/14 10:1	0 03/25/14 18:1	7 56-55-3	
Benzo(a)pyrene	ND ug/kg		222	1	03/25/14 10:1	0 03/25/14 18:1	7 50-32-8	
Benzo(b)fluoranthene	ND ug/kg		430	1	03/25/14 10:1	0 03/25/14 18:1	7 205-99-2	
Benzo(g,h,i)perylene	ND ug/kg		430	1	03/25/14 10:1	0 03/25/14 18:1	7 191-24-2	
Benzo(k)fluoranthene	ND ug/kg		430	1	03/25/14 10:1	0 03/25/14 18:1	7 207-08-9	
Benzyl alcohol	ND ug/kg		861	1	03/25/14 10:1	0 03/25/14 18:1	7 100-51-6	
4-Bromophenylphenyl ether	ND ug/kg		430	1	03/25/14 10:1	0 03/25/14 18:1	7 101-55-3	
Butylbenzylphthalate	ND ug/kg		430	1	03/25/14 10:1	0 03/25/14 18:1	7 85-68-7	
4-Chloro-3-methylphenol	ND ug/kg		861	1	03/25/14 10:1	0 03/25/14 18:1	7 59-50-7	
4-Chloroaniline	ND ug/kg		861	1	03/25/14 10:1	0 03/25/14 18:1	7 106-47-8	
bis(2-Chloroethoxy)methane	ND ug/kg		430	1	03/25/14 10:1	0 03/25/14 18:1	7 111-91-1	
bis(2-Chloroethyl) ether	ND ug/kg		430	1	03/25/14 10:1	0 03/25/14 18:1	7 111-44-4	
bis(2-Chloroisopropyl) ether	ND ug/kg		430	1	03/25/14 10:1	0 03/25/14 18:1	7 108-60-1	
2-Chloronaphthalene	ND ug/kg		430	1	03/25/14 10:10	0 03/25/14 18:1	7 91-58-7	
2-Chlorophenol	ND ug/kg		430	1	03/25/14 10:10	0 03/25/14 18:1	7 95-57-8	
4-Chlorophenylphenyl ether	ND ug/kg		430	1	03/25/14 10:10	0 03/25/14 18:1	7 7005-72-3	
Chrysene	ND ug/kg		430	1	03/25/14 10:10	0 03/25/14 18:1	7 218-01-9	
Dibenz(a,h)anthracene	ND ug/kg		222	1	03/25/14 10:10	0 03/25/14 18:1	7 53-70-3	
Dibenzofuran	ND ug/kg		430	1	03/25/14 10:10	0 03/25/14 18:1	7 132-64-9	
2,4-Dichlorophenol	ND ug/kg		430	1	03/25/14 10:10	03/25/14 18:1	7 120-83-2	
Diethylphthalate	ND ug/kg		430	1	03/25/14 10:10	03/25/14 18:1	7 84-66-2	
2,4-Dimethylphenol	ND ug/kg		430	1	03/25/14 10:10	03/25/14 18:1	7 105-67-9	
Dimethylphthalate	ND ug/kg		430	1	03/25/14 10:10	03/25/14 18:1	7 131-11-3	
Di-n-butylphthalate	ND ug/kg		430	1	03/25/14 10:10	0 03/25/14 18:1	7 84-74-2	
4,6-Dinitro-2-methylphenol	ND ug/kg		2090	1	03/25/14 10:10	03/25/14 18:1	7 534-52-1	
2,4-Dinitrophenol	ND ug/kg		2090			03/25/14 18:1		
2,4-Dinitrotoluene	ND ug/kg		430	1	03/25/14 10:10	03/25/14 18:1	7 121-14-2	
2,6-Dinitrotoluene	ND ug/kg		430			03/25/14 18:1		
Di-n-octylphthalate	ND ug/kg		430			03/25/14 18:1		
bis(2-Ethylhexyl)phthalate	ND ug/kg		430	1	03/25/14 10:10	03/25/14 18:1	7 117-81-7	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 65-SB-1 10-12'	Lab ID: 50950610	01 Collected: 03/18/	14 13:08	Received: 0	3/21/14 12:35 N	Aatrix: Solid	
Results reported on a "dry-weigh	t" basis						
Parameters	Results Ur	nits Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV SHORT LIST MICROWAVE	Analytical Method: El	PA 8270 Preparation Met	hod: EP	A 3546			
Fluoranthene	ND ug/kg	430	1	03/25/14 10:10	03/25/14 18:17	206-44-0	
Fluorene	ND ug/kg	430	1	03/25/14 10:10	03/25/14 18:17	86-73-7	
Hexachlorocyclopentadiene	ND ug/kg	430	1	03/25/14 10:10	03/25/14 18:17	77-47-4	
Hexachloroethane	ND ug/kg	430	1	03/25/14 10:10	03/25/14 18:17	67-72-1	
ndeno(1,2,3-cd)pyrene	ND ug/kg	430	1	03/25/14 10:10	03/25/14 18:17	193-3 <del>9-</del> 5	
sophorone	ND ug/kg	430	1		03/25/14 18:17		
2-Methylnaphthalene	ND ug/kg	430	1		03/25/14 18:17		
2-Methylphenol(o-Cresol)	ND ug/kg	430	1		03/25/14 18:17		
3&4-Methylphenol(m&p Cresol)	ND ug/kg	861	1		03/25/14 18:17	00-40-7	
Naphthalene	ND ug/kg	430	1		03/25/14 18:17	01 20 2	
2-Nitroaniline							
	ND ug/kg	2090	1		03/25/14 18:17		
B-Nitroaniline	ND ug/kg	2090	1		03/25/14 18:17		
-Nitroaniline	ND ug/kg	2090	1		03/25/14 18:17		
litrobenzene	ND ug/kg	430	1		03/25/14 18:17		
l-Nitrophenol	ND ug/kg	430	1		03/25/14 18:17		
-Nitrophenol	ND ug/kg	2090	1	03/25/14 10:10	03/25/14 18:17	100-02-7	
I-Nitroso-di-n-propylamine	ND ug/kg	430	1	03/25/14 10:10	03/25/14 18:17	621-64-7	
I-Nitrosodiphenylamine	ND ug/kg	430	1	03/25/14 10:10	03/25/14 18:17	86-30-6	
Phenanthrene	ND ug/kg	430	1	03/25/14 10:10	03/25/14 18:17	85-01-8	
Phenol	ND ug/kg	430	1	03/25/14 10:10	03/25/14 18:17	108-95-2	
yrene	ND ug/kg	430	1	03/25/14 10:10	03/25/14 18:17	129-00-0	
,4,5-Trichlorophenol	ND ug/kg	430	1		03/25/14 18:17		
4,6-Trichlorophenol	ND ug/kg	430	1		03/25/14 18:17		
Surrogates			•			00 00 2	
litrobenzene-d5 (S)	46 %.	28-101	1	03/25/14 10:10	03/25/14 18:17	4165-60-0	
-Fluorobiphenyl (S)	61 %.	31-94	1		03/25/14 18:17		
-Terphenyl-d14 (S)	56 %.	26-110	1		03/25/14 18:17		
henol-d5 (S)	61 %.	28-101	1		03/25/14 18:17		
-Fluorophenol (S)	62 %.	24-104	1		03/25/14 18:17		
,4,6-Tribromophenol (S)	55 %.	16-122	1		03/25/14 18:17		
260 MSV 5030 Low Level	Analytical Method: EF	PA 8260					
cetone	ND mg/kg	0.13	1		03/27/14 15:29	67-64-1	
crolein	ND mg/kg	0.13	1		03/27/14 15:29		
enzene	ND mg/kg	0.0065	1		03/27/14 15:29		
romobenzene	ND mg/kg	0.0065	1		03/27/14 15:29		
romochloromethane	ND mg/kg	0.0065	1		03/27/14 15:29		
romodichloromethane	ND mg/kg	0.0065	1		03/27/14 15:29		
romoform	ND mg/kg	0.0065	1		03/27/14 15:29		
romomethane	ND mg/kg	0.0065	1				
					03/27/14 15:29		
-Butanone (MEK)	ND mg/kg	0.033	1		03/27/14 15:29		
	ND mg/kg	0.0065	1	,	03/27/14 15:29		
ec-Butylbenzene	ND mg/kg	0.0065	1		03/27/14 15:29		
ert-Butylbenzerie	ND mg/kg	0.0065	1		03/27/14 15:29		
arbon disulfide	ND mg/kg	0.013	1		03/27/14 15:29	75-15-0	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Results         Parameters         Results         Units         Report Limit         DF         Prepared         Analyzed         C.AS No.           2820 MSV 5030 Low Level         Analytical Method: EPA 8260         C         C         C         C         C         S <t< th=""><th>Sample: 65-SB-1 10-12'</th><th>Lab ID: 50950610</th><th>01 Collected: 03/18/14</th><th>13:08</th><th>Received: 03/21/14 12:3</th><th>5 Matrix: Solid</th><th></th></t<>	Sample: 65-SB-1 10-12'	Lab ID: 50950610	01 Collected: 03/18/14	13:08	Received: 03/21/14 12:3	5 Matrix: Solid	
Bits         Analytical Method: EPA 8260           B260 MSV 5030 Low Level         Analytical Method: EPA 8260           Chirobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         56-23-5           Chirobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         75-00-3           Chirobentane         ND mg/kg         0.0065         1         0.327/14 15:29         75-00-3           Chirobentane         ND mg/kg         0.0065         1         0.327/14 15:29         75-49-3           Chirobentane         ND mg/kg         0.0065         1         0.327/14 15:29         15-49-3           2-Chirobentene         ND mg/kg         0.0065         1         0.327/14 15:29         15-49-3           1-Dioromochionee         ND mg/kg         0.0065         1         0.327/14 15:29         15-0-1           1.3-Dichorobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         15-0-1           1.3-Dichorobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         15-0-1           1.3-Dichorobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         15-0-1           1.3-Dichoroponenethane         ND mg/kg	Results reported on a "dry-weigh	nt" basis					
Carbon tetrachloride         ND mg/kg         0.0065         1         0.327/14 15:29         56-23-5           Chlorobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         75-00-3           Chlorobertane         ND mg/kg         0.0065         1         0.327/14 15:29         75-00-3           Chlorobertane         ND mg/kg         0.0065         1         0.327/14 15:29         75-66-3           Chlorobertane         ND mg/kg         0.0065         1         0.327/14 15:29         74-87-3           Z-Chlorobluene         ND mg/kg         0.0065         1         0.327/14 15:29         16-43-4           Dibromochloromethane         ND mg/kg         0.0065         1         0.327/14 15:29         174-81-32           J.2-Dichlorobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         174-81-32           J.2-Dichlorobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         170-67-6           J.2-Dichlorobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         170-67-2           J.2-Dichlorobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         175-34-3           J.2-Dichlorobenzene         ND m	Parameters	Results U	nits Report Limit	DF	Prepared Analyze	ed CAS No.	Qual
Chiorobenzene         ND mg/kg         0.0665         1         0.327/14 15:29         75-00-3           Chiorobern         ND mg/kg         0.0065         1         0.327/14 15:29         76-80-3           Chiorobern         ND mg/kg         0.0065         1         0.327/14 15:29         76-80-3           Chiorobern         ND mg/kg         0.0065         1         0.327/14 15:29         76-80-3           Chiorobernethane         ND mg/kg         0.0065         1         0.327/14 15:29         76-80-3           Dibromochioromethane         ND mg/kg         0.0065         1         0.327/14 15:29         76-95-3           1,3-Dichlorobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         76-95-3           1,3-Dichlorobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         75-74-3           1,4-Dichlorobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         75-73-3           1,4-Dichlorobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         75-73-3           1,1-Dichlorobenzene         ND mg/kg         0.0065         1         0.327/14 15:29         75-73-3           1,1-Dichlorobenzene         ND mg/kg	8260 MSV 5030 Low Level	Analytical Method: E	PA 8260				
Chioroshane         ND mg/kg         0.0065         1         0.327/14         15:29         75-06-3           Chioroform         ND mg/kg         0.0065         1         0.327/14         15:29         67-66-3           Chiorontoluene         ND mg/kg         0.0065         1         0.327/14         15:29         95-48-3           4-Chiorotoluene         ND mg/kg         0.0065         1         0.327/14         15:29         108-43-4           Chioronethane         ND mg/kg         0.0065         1         0.327/14         15:29         124-48-1           Dibromochioromethane         ND mg/kg         0.0065         1         0.327/14         15:29         95-50-1           1,3-Dichioroberzene         ND mg/kg         0.0065         1         0.327/14         15:29         17-6-7           Dichioroffitoromethane         ND mg/kg         0.0065         1         0.327/14         15:29         17-7-6           Dichioroffitoromethane         ND mg/kg         0.0065         1         0.327/14         15:29         17-7-6           Dichioroffitoromethane         ND mg/kg         0.0065         1         0.327/14         15:29         17-7-6           Dichioroprone         ND mg/kg	Carbon tetrachloride	ND mg/kg	0.0065	1	03/27/14 1	5:29 56-23-5	
Chicorobm         ND mg/kg         0.0065         1         0.3277/14         15:29         7.487-3           Chicorobulene         ND mg/kg         0.0065         1         0.3277/14         15:29         7.487-3           Chicorobulene         ND mg/kg         0.0065         1         0.3277/14         15:29         7.487-3           A-Chiorobulene         ND mg/kg         0.0065         1         0.3277/14         15:29         7.487-3           Dibromochioromethane         ND mg/kg         0.0065         1         0.3277/14         15:29         74-95-3           1,2-Dichlorobenzene         ND mg/kg         0.0065         1         0.3277/14         15:29         95-60-1           1,3-Dichlorobenzene         ND mg/kg         0.0065         1         0.3277/14         15:29         75-74-3           1,4-Dichlorobenzene         ND mg/kg         0.0065         1         0.3277/14         15:29         15-63-2           Dichlorodifluroromethane         ND mg/kg         0.0065         1         0.3277/14         15:29         15-63-2           1,1-Dichlorobethene         ND mg/kg         0.0065         1         0.3277/14         15:29         16-63-2           1,2-Dichloropropane         ND mg/k	Chlorobenzene	ND mg/kg	0.0065	1	03/27/14 1	5:29 108-90-7	
Chicromethane         ND mg/kg         0.0065         1         0.327/14         15:29         74-87-3           2-Chiorotobuene         ND mg/kg         0.0065         1         0.327/14         15:29         95-49-8           4-Chiorotobuene         ND mg/kg         0.0065         1         0.327/14         15:29         124-48-1           Dibromochioromethane         ND mg/kg         0.0065         1         0.327/14         15:29         95-50-1           1,2-Dichiorobenzane         ND mg/kg         0.0065         1         0.327/14         15:29         16-46-7           1,3-Dichiorobenzane         ND mg/kg         0.0065         1         0.327/14         15:29         16-46-7           1,1-Dichiorobenzane         ND mg/kg         0.0065         1         0.327/14         15:29         16-46-7           1,1-Dichioroethane         ND mg/kg         0.0065         1         0.327/14         15:29         16-46-7           1,1-Dichioroethane         ND mg/kg         0.0065         1         0.327/14         15:29         16-60-5           1,1-Dichioroethane         ND mg/kg         0.0065         1         0.327/14         15:29         16-69-2           1,2-Dichioroethane         ND mg/kg <td>Chloroethane</td> <td>ND mg/kg</td> <td>0.0065</td> <td>1</td> <td>03/27/14 1</td> <td>5:29 75-00-3</td> <td></td>	Chloroethane	ND mg/kg	0.0065	1	03/27/14 1	5:29 75-00-3	
2-Chlorobluene         ND mg/kg         0.0055         1         0327/14 15:29         95-49-8           4-Chlorobluene         ND mg/kg         0.0065         1         0327/14 15:29         106-43-4           Dibromochlaromethane         ND mg/kg         0.0065         1         0327/14 15:29         12-48-1           Dibromochlarene         ND mg/kg         0.0065         1         0327/14 15:29         95-50-1           1.3-Dichlorobenzene         ND mg/kg         0.0065         1         0327/14 15:29         106-67           Tamas 1.4-Dichloro-2-butene         ND mg/kg         0.0065         1         0327/14 15:29         75-76-7           Dichlorodflucromethane         ND mg/kg         0.0065         1         0327/14 15:29         75-37-8           1.1-Dichloroethane         ND mg/kg         0.0065         1         0327/14 15:29         75-35-4           1.1-Dichloroethane         ND mg/kg         0.0065         1         0327/14 15:29         75-35-4           1.2-Dichloropropane         ND mg/kg         0.0065         1         0327/14 15:29         75-35-4           1.2-Dichloropropane         ND mg/kg         0.0065         1         0327/14 15:29         75-35-4           1.2-Dichloropropane <td< td=""><td>Chloroform</td><td>ND mg/kg</td><td>0.0065</td><td>1</td><td>03/27/14 1</td><td>5:29 67-66-3</td><td></td></td<>	Chloroform	ND mg/kg	0.0065	1	03/27/14 1	5:29 67-66-3	
4-Chlorotoluene         ND mg/kg         0.0065         1         0327/14 15:29         164-3-4           Dibromochioromethane         ND mg/kg         0.0065         1         0327/14 15:29         74-45-3           1,2-Dichlorobenzene         ND mg/kg         0.0065         1         0327/14 15:29         54-5-3           1,2-Dichlorobenzene         ND mg/kg         0.0065         1         0327/14 15:29         54-7-3-1           1,4-Dichlorobenzene         ND mg/kg         0.0065         1         0327/14 15:29         54-7-3-1           1,4-Dichlorobenzene         ND mg/kg         0.0065         1         0327/14 15:29         75-71-8           1,1-Dichloromethane         ND mg/kg         0.0065         1         0327/14 15:29         75-73-8           1,1-Dichloroethane         ND mg/kg         0.0065         1         0327/14 15:29         75-35-4           1,1-Dichloroethane         ND mg/kg         0.0065         1         0327/14 15:29         158-9-2           1,1-Dichloroethane         ND mg/kg         0.0065         1         0327/14 15:29         158-9-2           1,2-Dichloroethane         ND mg/kg         0.0065         1         0327/14 15:29         168-9-2           1,2-Dichloroethane         ND	Chloromethane	ND mg/kg	0.0065	1	03/27/14 1	5:29 74-87-3	
Dbromochloromethane         ND mg/kg         0.065         1         03/27/14 15:29         12-44-8-1           Dibromomethane         ND mg/kg         0.0065         1         03/27/14 15:29         95-50-1           1,3-Dichlorobenzene         ND mg/kg         0.0065         1         03/27/14 15:29         95-50-1           1,3-Dichlorobenzene         ND mg/kg         0.0065         1         03/27/14 15:29         16-6-7           trans-1,4-Dichloro-2-butene         ND mg/kg         0.0065         1         03/27/14 15:29         17-5-6           Dichlorodifluoromethane         ND mg/kg         0.0065         1         03/27/14 15:29         75-34-3           1,1-Dichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         17-5-82           1,1-Dichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         15-8-2           1,1-Dichloroptonen         ND mg/kg         0.0065         1         03/27/14 15:29         16-8-9-2           1,2-Dichloroptonen         ND mg/kg         0.0065         1         03/27/14 15:29         16-8-9-2           1,3-Dichloroptopane         ND mg/kg         0.0065         1         03/27/14 15:29         16-8-9-2           1,3-Dichloroptopa	2-Chlorotoluene	ND mg/kg	0.0065	1	03/27/14 1	5:29 95-49-8	
Dibromochloromethane         ND mg/kg         0.065         1         0.3271/4 15:29         12-44-8-1           Dibromomethane         ND mg/kg         0.0065         1         0.3271/4 15:29         95-50-1           1,3-Dichlorobenzene         ND mg/kg         0.0065         1         0.3271/4 15:29         95-50-1           1,3-Dichlorobenzene         ND mg/kg         0.0065         1         0.3271/4 15:29         16-6-7           trans-1,4-Dichloro-2-butene         ND mg/kg         0.0065         1         0.3271/4 15:29         17-5-6           Dichlorodifluoromethane         ND mg/kg         0.0065         1         0.3271/4 15:29         75-34-3           1,-Dichloroethane         ND mg/kg         0.0065         1         0.3271/4 15:29         15-35-4           1,-Dichloroethane         ND mg/kg         0.0065         1         0.3271/4 15:29         15-8-2           1,1-Dichloroethane         ND mg/kg         0.0065         1         0.3271/4 15:29         16-8-9-2           1,2-Dichloropropane         ND mg/kg         0.0065         1         0.3271/4 15:29         16-8-9-2           1,3-Dichloropropane         ND mg/kg         0.0065         1         0.3271/4 15:29         76-32-3           1,3-Dichloropropan	4-Chlorotoluene	ND mg/kg	0.0065	1	03/27/14 1	5:29 106-43-4	
1,2-Dichlorobenzene       ND mg/kg       0.0065       1       03/27/14 15:29       95-50-1         1,4-Dichlorobenzene       ND mg/kg       0.0065       1       03/27/14 15:29       166-64-7         trans-1,4-Dichloro-buttene       ND mg/kg       0.0065       1       03/27/14 15:29       166-64-7         trans-1,4-Dichloro-buttene       ND mg/kg       0.0065       1       03/27/14 15:29       176-74-8         1,1-Dichloro-ethane       ND mg/kg       0.0065       1       03/27/14 15:29       175-34-3         1,1-Dichloro-ethane       ND mg/kg       0.0065       1       03/27/14 15:29       176-34-3         1,1-Dichloro-ethane       ND mg/kg       0.0065       1       03/27/14 15:29       176-37-4         1,2-Dichloroethane       ND mg/kg       0.0065       1       03/27/14 15:29       156-59-2         trans.1,2-Dichloroethane       ND mg/kg       0.0065       1       03/27/14 15:29       168-05-5         1,2-Dichloropropane       ND mg/kg       0.0065       1       03/27/14 15:29       182-07         1,3-Dichloropropane       ND mg/kg       0.0065       1       03/27/14 15:29       182-07         1,3-Dichloropropane       ND mg/kg       0.0065       1       03/27/14 15:29	Dibromochloromethane		0.0065	1	03/27/14 1	5:29 124-48-1	
1.2-Dichlorobenzene         ND mg/kg         0.0065         1         03/27/14 15:29         96-50-1           1.3-Dichlorobenzene         ND mg/kg         0.0065         1         03/27/14 15:29         166-6-7           trans-1.4-Dichloro-buttene         ND mg/kg         0.0065         1         03/27/14 15:29         106-6-7           Dichlorodiftuoromethane         ND mg/kg         0.0065         1         03/27/14 15:29         17-8           1.1-Dichloro-buttene         ND mg/kg         0.0065         1         03/27/14 15:29         17-34-3           1.2-Dichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         16-54-6           1.1-Dichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         156-59-2           trans-1.2-Dichloroethene         ND mg/kg         0.0065         1         03/27/14 15:29         168-05-1           1.2-Dichloropropane         ND mg/kg         0.0065         1         03/27/14 15:29         168-05-2           1.3-Dichloropropane         ND mg/kg         0.0065         1         03/27/14 15:29         163-56-6           1.3-Dichloropropane         ND mg/kg         0.0065         1         03/27/14 15:29         163-56-6           cis1	Dibromomethane	ND mg/kg	0.0065	1	03/27/14 1	5:29 74-95-3	
1,3-Dichlorobenzene       ND mg/kg       0.0065       1       03/27/14 15:29       541-73-1         1,4-Dichlorobenzene       ND mg/kg       0.0065       1       03/27/14 15:29       106-46-7         Tunans 1,4-Dichloro2-buttene       ND mg/kg       0.0065       1       03/27/14 15:29       75-71-8         Dichlorodifluoromethane       ND mg/kg       0.0065       1       03/27/14 15:29       75-34-3         1,1-Dichloroethane       ND mg/kg       0.0065       1       03/27/14 15:29       75-35-4         1,2-Dichloroethane       ND mg/kg       0.0065       1       03/27/14 15:29       75-35-4         1,2-Dichloroethane       ND mg/kg       0.0065       1       03/27/14 15:29       76-87-5         1,2-Dichloroptopane       ND mg/kg       0.0065       1       03/27/14 15:29       78-87-5         1,2-Dichloroptopane       ND mg/kg       0.0065       1       03/27/14 15:29       842-20-7         2,2-Dichloroptopane       ND mg/kg       0.0065       1       03/27/14 15:29       842-20-7         1,1-Dichloroptopane       ND mg/kg       0.0065       1       03/27/14 15:29       843-50-7         1,2-Dichloroptopane       ND mg/kg       0.0065       1       03/27/14 15:29       84	1,2-Dichlorobenzene		0.0065	1	03/27/14 1	5:29 95-50-1	
1.4-Dichlorobenzene         ND mg/kg         0.0065         1         03/27/14 15:29         106-46-7           trans-1.4-Dichloro-2-butene         ND mg/kg         0.0065         1         03/27/14 15:29         75-71-8           Dichlorodiftuoromethane         ND mg/kg         0.0065         1         03/27/14 15:29         75-71-8           1,1-Dichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         75-34-3           1,2-Dichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         75-35-4           cis-1,2-Dichloroethene         ND mg/kg         0.0065         1         03/27/14 15:29         75-86-2           trans-1,2-Dichloroethene         ND mg/kg         0.0065         1         03/27/14 15:29         78-87-5           1,3-Dichloropropane         ND mg/kg         0.0065         1         03/27/14 15:29         78-87-5           1,3-Dichloropropane         ND mg/kg         0.0065         1         03/27/14 15:29         78-87-5           1,3-Dichloropropane         ND mg/kg         0.0065         1         03/27/14 15:29         78-87-5           1,3-Dichloropropene         ND mg/kg         0.0065         1         03/27/14 15:29         78-82-5           tr	1,3-Dichlorobenzene	•••	0.0065				
trans-1.4-Dichloro-2-butene         ND mg/kg         0.13         1         03/27/14 15:29         110-57-6           Dichlorodiffuoromethane         ND mg/kg         0.0065         1         03/27/14 15:29         75-71-8           1.1-Dichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         75-34-3           1.2-Dichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         75-35-4           cis-1.2-Dichloroethene         ND mg/kg         0.0065         1         03/27/14 15:29         75-85-2           trans-1.2-Dichloroethene         ND mg/kg         0.0065         1         03/27/14 15:29         78-75           1.2-Dichloropropane         ND mg/kg         0.0065         1         03/27/14 15:29         78-75           2.2-Dichloropropane         ND mg/kg         0.0065         1         03/27/14 15:29         78-32           2.4-Sotthopropop	1.4-Dichlorobenzene		0.0065	1	03/27/14 1	5:29 106-46-7	
Dickhorodifiuoromethane         ND mg/kg         0.0065         1         0.3/27/14 15:29         75-71-8           1,1-Dichhoroethane         ND mg/kg         0.0065         1         0.3/27/14 15:29         75-34-3           1,2-Dichhoroethane         ND mg/kg         0.0065         1         0.3/27/14 15:29         75-35-4           1,2-Dichhoroethane         ND mg/kg         0.0065         1         0.3/27/14 15:29         156-60-5           1,3-Dichhoroethane         ND mg/kg         0.0065         1         0.3/27/14 15:29         158-60-5           1,2-Dichhoroptopane         ND mg/kg         0.0065         1         0.3/27/14 15:29         158-75           1,3-Dichhoroptopane         ND mg/kg         0.0065         1         0.3/27/14 15:29         158-75           1,3-Dichhoroptopane         ND mg/kg         0.0065         1         0.3/27/14 15:29         563-58-6           1,3-Dichhoroptopene         ND mg/kg         0.0065         1         0.3/27/14 15:29         10061-02-6           Ethylbenzene         ND mg/kg         0.0065         1         0.3/27/14 15:29         10-64-12-6           Ethylbenzene         ND mg/kg         0.13         1         0.3/27/14 15:29         76-81-2           Lebrothoroptopene </td <td></td> <td>• •</td> <td>0.13</td> <td></td> <td></td> <td></td> <td></td>		• •	0.13				
1,1-Dichloroethane       ND mg/kg       0.0065       1       03/27/14       15:29       75-34-3         1,2-Dichloroethane       ND mg/kg       0.0065       1       03/27/14       15:29       75-34-3         1,1-Dichloroethene       ND mg/kg       0.0065       1       03/27/14       15:29       75-34-3         cis-1,2-Dichloroethene       ND mg/kg       0.0065       1       03/27/14       15:29       78-75-4         1,2-Dichloropopane       ND mg/kg       0.0065       1       03/27/14       15:29       78-75-34         1,3-Dichloropopane       ND mg/kg       0.0065       1       03/27/14       15:29       78-75-34         1,3-Dichloropopane       ND mg/kg       0.0065       1       03/27/14       15:29       58-75         1,3-Dichloropropane       ND mg/kg       0.0065       1       03/27/14       15:29       58-76         cis-1,3-Dichloropropene       ND mg/kg       0.0065       1       03/27/14       15:29       10061-01-5         trans-1,3-Dichloropropene       ND mg/kg       0.0065       1       03/27/14       15:29       10061-01-5         trans-1,3-Dichloropropene       ND mg/kg       0.013       1       03/27/14       15:29       10041-	Dichlorodifluoromethane		0.0065	1	03/27/14 1	5:29 75-71-8	
1,2-Dichloroethane       ND mg/kg       0.0065       1       03/27/14       15:29       107-06-2         1,1-Dichloroethene       ND mg/kg       0.0065       1       03/27/14       15:29       156-59-2         trans-1,2-Dichloroethene       ND mg/kg       0.0065       1       03/27/14       15:29       156-60-5         1,2-Dichloropropane       ND mg/kg       0.0065       1       03/27/14       15:29       158-87-5         2,2-Dichloropropane       ND mg/kg       0.0065       1       03/27/14       15:29       158-87-5         2,2-Dichloropropane       ND mg/kg       0.0065       1       03/27/14       15:29       158-87-5         2,2-Dichloropropane       ND mg/kg       0.0065       1       03/27/14       15:29       594-20-7         1,1-Dichloropropene       ND mg/kg       0.0065       1       03/27/14       15:29       10061-02-6         Ethylbenzene       ND mg/kg       0.0065       1       03/27/14       15:29       10061-02-6         Ethylbenzene       ND mg/kg       0.13       1       03/27/14       15:29       100-41-4         Ethylbenzene       ND mg/kg       0.13       1       03/27/14       15:29       98-87-6 <tr< td=""><td>1,1-Dichloroethane</td><td>• •</td><td>0.0065</td><td></td><td></td><td></td><td></td></tr<>	1,1-Dichloroethane	• •	0.0065				
1,1-Dichloroethene       ND mg/kg       0.0065       1       03/27/14       15:29       75-35-4         cis-1,2-Dichloroethene       ND mg/kg       0.0065       1       03/27/14       15:29       156-59-2         trans-1,2-Dichloroethene       ND mg/kg       0.0065       1       03/27/14       15:29       156-60-5         1,2-Dichloropropane       ND mg/kg       0.0065       1       03/27/14       15:29       142-28-9         2,2-Dichloropropane       ND mg/kg       0.0065       1       03/27/14       15:29       54-20-7         1,1-Dichloropropane       ND mg/kg       0.0065       1       03/27/14       15:29       10061-01-5         trans-1,3-Dichloropropene       ND mg/kg       0.0065       1       03/27/14       15:29       10061-01-5         trans-1,3-Dichloropropene       ND mg/kg       0.0065       1       03/27/14       15:29       10061-02-6         Ethyl methacrylate       ND mg/kg       0.0065       1       03/27/14       15:29       1004-1-4         Ethyl methacrylate       ND mg/kg       0.13       1       03/27/14       15:29       100-41-4         Ethyl methacrylate       ND mg/kg       0.13       1       03/27/14       15:29			0.0065				
cis-1,2-Dichloroethene         ND mg/kg         0.0065         1         03/27/14         15:29         156-59-2           trans-1,2-Dichloroethene         ND mg/kg         0.0065         1         03/27/14         15:29         156-60-5           1,2-Dichloropropane         ND mg/kg         0.0065         1         03/27/14         15:29         78-87-5           1,3-Dichloropropane         ND mg/kg         0.0065         1         03/27/14         15:29         594-20-7           1,1-Dichloropropane         ND mg/kg         0.0065         1         03/27/14         15:29         563-58-6           cis-1,3-Dichloropropene         ND mg/kg         0.0065         1         03/27/14         15:29         10061-02-6           Ethyl methacrylate         ND mg/kg         0.0065         1         03/27/14         15:29         10061-02-6           Ethyl methacrylate         ND mg/kg         0.013         1         03/27/14         15:29         10061-02-6           Ethyl methacrylate         ND mg/kg         0.013         1         03/27/14         15:29         1064-34           Isopropylbanzene (Cumene)         ND mg/kg         0.13         1         03/27/14         15:29         98-87-6           Isopropyl	•	••					
trans-1,2-Dichloropethene         ND mg/kg         0.0065         1         03/27/14         15:29         156-60-5           1,2-Dichloropropane         ND mg/kg         0.0065         1         03/27/14         15:29         142-28-9           2,2-Dichloropropane         ND mg/kg         0.0065         1         03/27/14         15:29         142-28-9           2,2-Dichloropropane         ND mg/kg         0.0065         1         03/27/14         15:29         10061-01-5           trans-1,3-Dichloropropene         ND mg/kg         0.0065         1         03/27/14         15:29         10061-01-5           trans-1,3-Dichloropropene         ND mg/kg         0.0065         1         03/27/14         15:29         1004-14-4           Ethylbenzene         ND mg/kg         0.0065         1         03/27/14         15:29         100-41-4           Ethyl methacrylate         ND mg/kg         0.13         1         03/27/14         15:29         100-41-4           Ethyl methacrylate         ND mg/kg         0.13         1         03/27/14         15:29         17-8-6           lodomethane         ND mg/kg         0.013         1         03/27/14         15:29         98-82-8           lopropylbenzene (Cumene)<	cis-1.2-Dichloroethene	•••					
1,2-Dichloropropane       ND mg/kg       0.0065       1       03/27/14 15:29       78-87-5         1,3-Dichloropropane       ND mg/kg       0.0065       1       03/27/14 15:29       142-28-9         2,2-Dichloropropane       ND mg/kg       0.0065       1       03/27/14 15:29       594-20-7         1,1-Dichloropropene       ND mg/kg       0.0065       1       03/27/14 15:29       10061-01-5         trans-1,3-Dichloropropene       ND mg/kg       0.0065       1       03/27/14 15:29       10061-02-6         Ethyl berzene       ND mg/kg       0.0065       1       03/27/14 15:29       10061-02-6         Ethyl methacrylate       ND mg/kg       0.013       1       03/27/14 15:29       97-63-2         2-Hexanone       ND mg/kg       0.13       1       03/27/14 15:29       97-63-2         2-Hexanone       ND mg/kg       0.013       1       03/27/14 15:29       97-63-2         2-Hexanone       ND mg/kg       0.0065       1       03/27/14 15:29       97-63-2         2-Hexanone       ND mg/kg       0.0065       1       03/27/14 15:29       98-87-6         Methylene Chioride       ND mg/kg       0.0065       1       03/27/14 15:29       108-10-1         Methy		•••					
1,3-Dichloropropane       ND mg/kg       0.0065       1       03/27/14       15:29       142-28-9         2,2-Dichloropropane       ND mg/kg       0.0065       1       03/27/14       15:29       563-58-6         cis-1,3-Dichloropropene       ND mg/kg       0.0065       1       03/27/14       15:29       10061-01-5         trans-1,3-Dichloropropene       ND mg/kg       0.0065       1       03/27/14       15:29       10061-02-6         Ethylbenzene       ND mg/kg       0.0065       1       03/27/14       15:29       100-41-4         Ethylbenzene       ND mg/kg       0.13       1       03/27/14       15:29       97-63-2         2-Hexanone       ND mg/kg       0.13       1       03/27/14       15:29       98-82-8         lodomethane       ND mg/kg       0.0065       1       03/27/14       15:29       98-76         Methylene Chloride       ND mg/kg       0.0065       1       03/27/14       15:29       98-76         4-Methyl-2-pentanone (MIBK)       ND mg/kg       0.0065       1       03/27/14       15:29       198-76         4-Methyl-2-pentanone (MIBK)       ND mg/kg       0.0065       1       03/27/14       15:29       108-65-1							
2,2-Dichloropropane         ND mg/kg         0.0065         1         0.3/27/14 15:29         594-20-7           1,1-Dichloropropene         ND mg/kg         0.0065         1         0.3/27/14 15:29         10061-01-5           trans-1,3-Dichloropropene         ND mg/kg         0.0065         1         0.3/27/14 15:29         10061-01-6           trans-1,3-Dichloropropene         ND mg/kg         0.0065         1         0.3/27/14 15:29         10061-02-6           Ethylenzene         ND mg/kg         0.013         1         0.3/27/14 15:29         97-63-2           2-Hexanone         ND mg/kg         0.13         1         0.3/27/14 15:29         97-63-2           2-Hexanone         ND mg/kg         0.0065         1         0.3/27/14 15:29         97-63-2           2-Hexanone         ND mg/kg         0.0065         1         0.3/27/14 15:29         94-86-4           lodomethane         ND mg/kg         0.0065         1         0.3/27/14 15:29         98-7-6           lodomethane         ND mg/kg         0.0065         1         0.3/27/14 15:29         99-87-6           lodomethane         ND mg/kg         0.0065         1         0.3/27/14 15:29         108-40-4           n-Propylbenzene (Clumene)         ND mg/k	• •						
1,1-Dichloropropene       ND mg/kg       0.0065       1       03/27/14 15:29       563-58-6         cis-1,3-Dichloropropene       ND mg/kg       0.0065       1       03/27/14 15:29       10061-01-5         trans-1,3-Dichloropropene       ND mg/kg       0.0065       1       03/27/14 15:29       10061-02-6         Ethylbenzene       ND mg/kg       0.013       1       03/27/14 15:29       97-63-2         2-Hexanone       ND mg/kg       0.13       1       03/27/14 15:29       97-83-2         2-Hexanone       ND mg/kg       0.13       1       03/27/14 15:29       97-83-2         2-Hexanone       ND mg/kg       0.0065       1       03/27/14 15:29       98-87-6         lodomethane       ND mg/kg       0.0065       1       03/27/14 15:29       98-87-6         lodomethane       ND mg/kg       0.0065       1       03/27/14 15:29       98-87-6         p-lsopropyltoluene       ND mg/kg       0.0065       1       03/27/14 15:29       98-87-6         Methyl-2-pentanone (MIBK)       ND mg/kg       0.0065       1       03/27/14 15:29       108-40-1         -Propylbenzene       ND mg/kg       0.0065       1       03/27/14 15:29       103-45-1         1,1,2-Zetra							
cis-1,3-Dichloropropene         ND mg/kg         0.0065         1         0.3/27/14 15:29         10061-01-5           trans-1,3-Dichloropropene         ND mg/kg         0.0065         1         0.3/27/14 15:29         10061-02-6           Ethylbenzene         ND mg/kg         0.0065         1         0.3/27/14 15:29         100-41-4           Ethyl methacrylate         ND mg/kg         0.13         1         0.3/27/14 15:29         97-63-2           2-Hexanone         ND mg/kg         0.13         1         0.3/27/14 15:29         97-178-6           lodomethane         ND mg/kg         0.13         1         0.3/27/14 15:29         98-82-8           p-lsopropylbenzene (Curnene)         ND mg/kg         0.0065         1         0.3/27/14 15:29         98-87-6           Methylene Chloride         ND mg/kg         0.0065         1         0.3/27/14 15:29         108-10-1           Methyl-2-pentanone (MIBK)         ND mg/kg         0.0065         1         0.3/27/14 15:29         108-40-4           n-Propylbenzene         ND mg/kg         0.0065         1         0.3/27/14 15:29         108-42-5           1,1,2-2-tetrachloroethane         ND mg/kg         0.0065         1         0.3/27/14 15:29         108-45-1           Sty							
trans-1,3-Dichloropropene         ND mg/kg         0.0065         1         03/27/14 15:29         10061-02-6           Ethylbenzene         ND mg/kg         0.0065         1         03/27/14 15:29         100-41-4           Ethyl methacrylate         ND mg/kg         0.13         1         03/27/14 15:29         97-63-2           2-Hexanone         ND mg/kg         0.13         1         03/27/14 15:29         97-63-2           2-Hexanone         ND mg/kg         0.13         1         03/27/14 15:29         97-63-2           2-Hexanone         ND mg/kg         0.0065         1         03/27/14 15:29         98-82-8           lodomethane         ND mg/kg         0.0065         1         03/27/14 15:29         98-82-8           p-isopropylboluene         ND mg/kg         0.0065         1         03/27/14 15:29         98-82-8           p-isopropyltoluene         ND mg/kg         0.026         1         03/27/14 15:29         108-10-1           Methyl-er-bentyl ether         ND mg/kg         0.0085         1         03/27/14 15:29         103-45-1           styrene         ND mg/kg         0.0065         1         03/27/14 15:29         104-45-5           1,1,1,2-Tetrachloroethane         ND mg/kg							
Ethylbenzene         ND mg/kg         0.0065         1         03/27/14         15:29         100-41-4           Ethyl methacrylate         ND mg/kg         0.13         1         03/27/14         15:29         97-63-2           2-Hexanone         ND mg/kg         0.13         1         03/27/14         15:29         97-63-2           2-Hexanone         ND mg/kg         0.13         1         03/27/14         15:29         97-8-6           lodomethane         ND mg/kg         0.0065         1         03/27/14         15:29         98-82-8           p-lsopropyltoluene         ND mg/kg         0.0065         1         03/27/14         15:29         98-82-8           p-lsopropyltoluene         ND mg/kg         0.026         1         03/27/14         15:29         98-76           Methyl-2-pentanone (MIBK)         ND mg/kg         0.026         1         03/27/14         15:29         108-10-1           Methyl-tert-butyl ether         ND mg/kg         0.0065         1         03/27/14         15:29         103-65-1           Styrene         ND mg/kg         0.0065         1         03/27/14         15:29         103-45-1           1,1,2-Z-Tetrachloroethane         ND mg/kg         0.0065 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
Ethyl methacrylateND mg/kg0.13103/27/14 15:2997-63-22-HexanoneND mg/kg0.13103/27/14 15:29591-78-6lodomethaneND mg/kg0.13103/27/14 15:2974-88-4lsopropylbenzene (Cumene)ND mg/kg0.0065103/27/14 15:2998-82-8p-lsopropylbenzene (Cumene)ND mg/kg0.0065103/27/14 15:2999-87-6Methylene ChlorideND mg/kg0.026103/27/14 15:2975-09-24-Methyl-2-pentanone (MIBK)ND mg/kg0.033103/27/14 15:29108-10-1Methyl-tert-butyl etherND mg/kg0.0065103/27/14 15:29108-40-4n-PropylbenzeneND mg/kg0.0065103/27/14 15:29103-45-1StyreneND mg/kg0.0065103/27/14 15:29100-42-51,1,2-TetrachloroethaneND mg/kg0.0065103/27/14 15:29100-42-51,1,2-TetrachloroethaneND mg/kg0.0065103/27/14 15:2975-08-21,1,2-TetrachloroethaneND mg/kg0.0065103/27/14 15:29127-18-4TolueneND mg/kg0.0065103/27/14 15:29127-18-41,2,3-TrichlorobenzeneND mg/kg0.0065103/27/14 15:29120-82-11,1,1-TrichlorobenzeneND mg/kg0.0065103/27/14 15:29120-82-11,1,1-TrichlorobenzeneND mg/kg0.0065103/27/14 15:2971-65-61,1,2-Trichlorobentane	· · ·	• •					
2-Hexanone         ND mg/kg         0.13         1         03/27/14 15:29         591-78-6           lodomethane         ND mg/kg         0.13         1         03/27/14 15:29         591-78-6           lodomethane         ND mg/kg         0.13         1         03/27/14 15:29         591-78-6           lodomethane         ND mg/kg         0.0065         1         03/27/14 15:29         98-82-8           p-lsopropylbenzene (Cumene)         ND mg/kg         0.0065         1         03/27/14 15:29         98-87-6           Methylene Chloride         ND mg/kg         0.026         1         03/27/14 15:29         108-10-1           Methyl-2-pentanone (MIBK)         ND mg/kg         0.0065         1         03/27/14 15:29         108-40-4           n-Propylbenzene         ND mg/kg         0.0065         1         03/27/14 15:29         103-65-1           Styrene         ND mg/kg         0.0065         1         03/27/14 15:29         103-42-5           1,1,2-Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         630-20-6           1,1,2,2-Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-34-5           Tetrachloroethane         ND mg/kg <td>•</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	•						
ND mg/kg         0.13         1         03/27/14 15:29         74-88-4           Isopropylbenzene (Cumene)         ND mg/kg         0.0065         1         03/27/14 15:29         98-82-8           p-Isopropylboluene         ND mg/kg         0.0065         1         03/27/14 15:29         99-87-6           Methylene Chloride         ND mg/kg         0.026         1         03/27/14 15:29         75-09-2           4-Methyl-2-pentanone (MIBK)         ND mg/kg         0.033         1         03/27/14 15:29         108-10-1           Methyl-tert-butyl ether         ND mg/kg         0.0065         1         03/27/14 15:29         108-10-1           Methyl-tert-butyl ether         ND mg/kg         0.0065         1         03/27/14 15:29         108-40-4           n-Propylbenzene         ND mg/kg         0.0065         1         03/27/14 15:29         103-65-1           Styrene         ND mg/kg         0.0065         1         03/27/14 15:29         100-42-5           1,1,2-Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-34-5           Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         72-18-4           Tobuene         ND mg/kg	• •						
Isopropylbenzene (Cumene)ND mg/kg0.0065103/27/14 15:2998-82-8p-lsopropyltolueneND mg/kg0.0065103/27/14 15:2999-87-6Methylene ChlorideND mg/kg0.026103/27/14 15:2975-09-24-Methyl-2-pentanone (MIBK)ND mg/kg0.033103/27/14 15:29108-10-1Methyl-tert-butyl etherND mg/kg0.0065103/27/14 15:29103-65-1Methyl-tert-butyl etherND mg/kg0.0065103/27/14 15:29103-65-1StyreneND mg/kg0.0065103/27/14 15:29100-42-51,1,2-TetrachloroethaneND mg/kg0.0065103/27/14 15:2993-85-5TetrachloroethaneND mg/kg0.0065103/27/14 15:29102-42-51,2,3-TrichloroethaneND mg/kg0.0065103/27/14 15:29127-18-4TolueneND mg/kg0.0065103/27/14 15:29108-88-31,2,3-TrichlorobenzeneND mg/kg0.0065103/27/14 15:29120-82-11,1,1-TrichloroethaneND mg/kg0.0065103/27/14 15:29120-82-11,1,2-TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-51,1,2-TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-51,1,2-TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-51,1,2-TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-51,1,							
p-Isopropyltoluene         ND mg/kg         0.0065         1         03/27/14 15:29         99-87-6           Methylene Chloride         ND mg/kg         0.026         1         03/27/14 15:29         75-09-2           4-Methyl-2-pentanone (MIBK)         ND mg/kg         0.033         1         03/27/14 15:29         108-10-1           Methyl-tert-butyl ether         ND mg/kg         0.0065         1         03/27/14 15:29         1634-04-4           n-Propylbenzene         ND mg/kg         0.0065         1         03/27/14 15:29         103-65-1           Styrene         ND mg/kg         0.0065         1         03/27/14 15:29         103-65-1           1,1,2-Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         100-42-5           1,1,2-Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-34-5           Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-34-5           Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-34-5           Toluene         ND mg/kg         0.0065         1         03/27/14 15:29         108-88-3           1,2,3-Trichlorobenzene							
Methylone ChlorideNDmg/kg0.026103/27/1415:2975-09-24-Methyl-2-pentanone (MIBK)NDmg/kg0.033103/27/1415:29108-10-1Methyl-tert-butyl etherNDmg/kg0.0065103/27/1415:291634-04-4n-PropylbenzeneNDmg/kg0.0065103/27/1415:29103-65-1StyreneNDmg/kg0.0065103/27/1415:29100-42-51,1,2-TetrachloroethaneNDmg/kg0.0065103/27/1415:29630-20-61,1,2-TetrachloroethaneNDmg/kg0.0065103/27/1415:2979-34-5TetrachloroethaneNDmg/kg0.0065103/27/1415:29127-18-4TolueneNDmg/kg0.0065103/27/1415:29108-88-31,2,3-TrichlorobenzeneNDmg/kg0.0065103/27/1415:29120-82-11,1,1-TrichloroethaneNDmg/kg0.0065103/27/1415:29120-82-11,1,2-TrichloroethaneNDmg/kg0.0065103/27/1415:2971-65-61,1,2-TrichloroethaneNDmg/kg0.0065103/27/1415:2979-00-5TrichloroethaneNDmg/kg0.0065103/27/1415:2979-00-5TrichloroethaneNDmg/kg0.0065103/27/1415:2979-00-5Trichloroethane <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
4-Methyl-2-pentanone (MIBK)       ND mg/kg       0.033       1       03/27/14 15:29       108-10-1         Methyl-tert-butyl ether       ND mg/kg       0.0065       1       03/27/14 15:29       1634-04-4         n-Propylbenzene       ND mg/kg       0.0065       1       03/27/14 15:29       103-65-1         Styrene       ND mg/kg       0.0065       1       03/27/14 15:29       100-42-5         1,1,2-Tetrachloroethane       ND mg/kg       0.0065       1       03/27/14 15:29       630-20-6         1,1,2-Tetrachloroethane       ND mg/kg       0.0065       1       03/27/14 15:29       99-34-5         Tetrachloroethane       ND mg/kg       0.0065       1       03/27/14 15:29       127-18-4         Toluene       ND mg/kg       0.0065       1       03/27/14 15:29       127-18-4         Toluene       ND mg/kg       0.0065       1       03/27/14 15:29       128-88-3         1,2,3-Trichlorobenzene       ND mg/kg       0.0065       1       03/27/14 15:29       87-61-6         1,2,4-Trichlorobenzene       ND mg/kg       0.0065       1       03/27/14 15:29       120-82-1         1,1,1-Trichloroethane       ND mg/kg       0.0065       1       03/27/14 15:29       71-55-6							
Methyl-tert-butyl ether         ND mg/kg         0.0065         1         03/27/14 15:29         1634-04-4           n-Propylbenzene         ND mg/kg         0.0065         1         03/27/14 15:29         103-65-1           Styrene         ND mg/kg         0.0065         1         03/27/14 15:29         100-42-5           1,1,2-Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         630-20-6           1,1,2-Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-34-5           Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         127-18-4           Toluene         ND mg/kg         0.0065         1         03/27/14 15:29         127-18-4           Toluene         ND mg/kg         0.0065         1         03/27/14 15:29         127-18-4           Toluene         ND mg/kg         0.0065         1         03/27/14 15:29         127-18-4           1,2,3-Trichlorobenzene         ND mg/kg         0.0065         1         03/27/14 15:29         120-82-1           1,1,1-Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         71-55-6           1,1,2-Trichloroethane         ND mg/kg<	•						
n-PropylbenzeneND mg/kg0.0065103/27/14 15:29103-65-1StyreneND mg/kg0.0065103/27/14 15:29100-42-51,1,2-TetrachloroethaneND mg/kg0.0065103/27/14 15:29630-20-61,1,2-TetrachloroethaneND mg/kg0.0065103/27/14 15:2979-34-5TetrachloroethaneND mg/kg0.0065103/27/14 15:29127-18-4TolueneND mg/kg0.0065103/27/14 15:29108-88-31,2,3-TichlorobenzeneND mg/kg0.0065103/27/14 15:2987-61-61,2,4-TichloroethaneND mg/kg0.0065103/27/14 15:29120-82-11,1,1-TrichloroethaneND mg/kg0.0065103/27/14 15:2971-55-61,1,2-TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-5TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-5TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-5TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-5TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-5							
Styrene         ND mg/kg         0.0065         1         03/27/14 15:29         100-42-5           1,1,1,2-Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         630-20-6           1,1,2,2-Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-34-5           Tetrachloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         127-18-4           Toluene         ND mg/kg         0.0065         1         03/27/14 15:29         108-88-3           1,2,3-Trichlorobenzene         ND mg/kg         0.0065         1         03/27/14 15:29         87-61-6           1,2,4-Trichlorobenzene         ND mg/kg         0.0065         1         03/27/14 15:29         120-82-1           1,1,1-Trichlorobenzene         ND mg/kg         0.0065         1         03/27/14 15:29         120-82-1           1,1,2-Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         71-55-6           1,1,2-Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-00-5           Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-00-5           Trichloroethane		•••					
NDmg/kg0.0065103/27/1415:29630-20-61,1,2,2-TetrachloroethaneNDmg/kg0.0065103/27/1415:2979-34-5TetrachloroethaneNDmg/kg0.0065103/27/1415:29127-18-4TolueneNDmg/kg0.0065103/27/1415:29127-18-4TolueneNDmg/kg0.0065103/27/1415:29108-88-31,2,3-TrichlorobenzeneNDmg/kg0.0065103/27/1415:2987-61-61,2,4-TrichlorobenzeneNDmg/kg0.0065103/27/1415:29120-82-11,1,1-TrichloroethaneNDmg/kg0.0065103/27/1415:2971-55-61,1,2-TrichloroethaneNDmg/kg0.0065103/27/1415:2979-00-5TrichloroethaneNDmg/kg0.0065103/27/1415:2979-00-5TrichloroethaneNDmg/kg0.0065103/27/1415:2979-01-6		•••					
1,1,2,2-TetrachloroethaneND mg/kg0.0065103/27/14 15:2979-34-5TetrachloroetheneND mg/kg0.0065103/27/14 15:29127-18-4TolueneND mg/kg0.0065103/27/14 15:29108-88-31,2,3-TrichlorobenzeneND mg/kg0.0065103/27/14 15:2987-61-61,2,4-TrichlorobenzeneND mg/kg0.0065103/27/14 15:29120-82-11,1,1-TrichloroethaneND mg/kg0.0065103/27/14 15:2971-55-61,1,2-TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-5TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-5TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-5	•						
Tetrachloroethene         ND mg/kg         0.0065         1         03/27/14 15:29         127-18-4           Toluene         ND mg/kg         0.0065         1         03/27/14 15:29         108-88-3           1,2,3-Trichlorobenzene         ND mg/kg         0.0065         1         03/27/14 15:29         87-61-6           1,2,4-Trichlorobenzene         ND mg/kg         0.0065         1         03/27/14 15:29         120-82-1           1,1,1-Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         71-55-6           1,1,2-Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-00-5           Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-00-5           Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-00-5           Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-00-5				•			
Toluene         ND mg/kg         0.0065         1         03/27/14 15:29         108-88-3           1,2,3-Trichlorobenzene         ND mg/kg         0.0065         1         03/27/14 15:29         87-61-6           1,2,4-Trichlorobenzene         ND mg/kg         0.0065         1         03/27/14 15:29         120-82-1           1,1,1-Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         71-55-6           1,1,2-Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-00-5           Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-00-5           Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-00-5		• •					
1,2,3-TrichlorobenzeneND mg/kg0.0065103/27/14 15:2987-61-61,2,4-TrichlorobenzeneND mg/kg0.0065103/27/14 15:29120-82-11,1,1-TrichloroethaneND mg/kg0.0065103/27/14 15:2971-55-61,1,2-TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-5IrichloroetheneND mg/kg0.0065103/27/14 15:2979-01-6							
ND mg/kg         0.0065         1         03/27/14 15:29         120-82-1           1,1,1-Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         71-55-6           1,1,2-Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         71-55-6           1,1,2-Trichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-00-5           Irichloroethane         ND mg/kg         0.0065         1         03/27/14 15:29         79-01-6							
ND mg/kg0.0065103/27/14 15:2971-55-61,1,2-TrichloroethaneND mg/kg0.0065103/27/14 15:2979-00-5IrichloroetheneND mg/kg0.0065103/27/14 15:2979-01-6	• •						
ND mg/kg         0.0065         1         03/27/14 15:29         79-00-5           Trichloroethene         ND mg/kg         0.0065         1         03/27/14 15:29         79-01-6							
Trichloroethene ND mg/kg 0.0065 1 03/27/14 15:29 79-01-6							
		•••					
Irichlorofluoromethane         ND mg/kg         0.0065         1         03/27/14 15:29         75-69-4	Trichlorofluoromethane	ND mg/kg	0.0065	1	03/27/14 18	5-69-4	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 65-SB-1 10-12'	Lab ID: 5095061001	Collected: 03/18/1	4 13:08	Received: 0	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weigh	nt" basis						
Parameters	Results Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method: EPA 82	260					
1,2,4-Trimethylbenzene	ND mg/kg	0.0065	1		03/27/14 15:29	95-63-6	
1,3,5-Trimethylbenzene	ND mg/kg	0.0065	1		03/27/14 15:29	108-67-8	
Vinyl acetate	ND mg/kg	0.13	1		03/27/14 15:29	108-05-4	
Vinyl chloride	ND mg/kg	0.0065	1		03/27/14 15:29	75-01-4	
Xylene (Total) <i>Surrogates</i>	ND mg/kg	0.013	1		03/27/14 15:29	1330-20-7	
Dibromofluoromethane (S)	100 %.	85-118	1		03/27/14 15:29	1868-53-7	
Toluene-d8 (S)	111 %.	71-128	1		03/27/14 15:29	2037-26-5	
4-Bromofluorobenzene (S)	88 %.	56-144	1		03/27/14 15:29	460-00-4	
Percent Moisture	Analytical Method: ASTM	D2974-87					
Percent Moisture	23.3 %	0.10	1		03/24/14 15:43		



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## **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 65-SB-2 8-12'	Lab ID: 509506	Collected:	03/18/1	4 13:45	Received: 0	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight	" basis							
Parameters	Results	Units Repor	t Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Method	: EPA 8015 Mod Ext	Preparat	tion Met	hod: EPA 3546			
Total Petroleum Hydrocarbons	ND mg/kg	I	26.0	1	03/26/14 12:25	03/26/14 17:00	)	
TPH (C10-C20)	ND mg/kg	1	13.0	1	03/26/14 12:25	03/26/14 17:00	)	
TPH (C20-C34)	ND mg/kg	I	13.0	1	03/26/14 12:25	03/26/14 17:00	)	
Surrogates								
n-Pentacosane (S)	81 %.	:	30-153	1	03/26/14 12:25	03/26/14 17:00	) 629-99-2	
8015 Gasoline Range Organics	Analytical Method	EPA 8015 Mod Pur						
TPH (C06-C12)	ND mg/kg	I	1.3	1		03/26/14 02:58	3	
Surrogates								
4-Bromofluorobenzene (S)	100 %.	:	38-163	1		03/26/14 02:58	3 460-00-4	
8270 MSSV SHORT LIST MICROWAVE	Analytical Method	: EPA 8270 Preparat	ion Meth	od: EPA	3546			
Acenaphthene	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	83-32-9	
Acenaphthylene	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	208-96-8	
Anthracene	ND ug/kg		428	1		03/25/14 18:36		
Benzo(a)anthracene	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	56-55-3	
Benzo(a)pyrene	ND ug/kg		221	1	03/25/14 10:10	03/25/14 18:36	50-32-8	
Benzo(b)fluoranthene	ND ug/kg		428	1		03/25/14 18:36		
Benzo(g,h,i)perylene	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	191-24-2	
Benzo(k)fluoranthene	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	207-08-9	
Benzyl alcohol	ND ug/kg		857	1		03/25/14 18:36		
4-Bromophenylphenyl ether	ND ug/kg		428	1		03/25/14 18:36		
Butylbenzylphthalate	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	85-68-7	
4-Chloro-3-methylphenol	ND ug/kg		857	1	03/25/14 10:10	03/25/14 18:36	59-50-7	
4-Chloroaniline	ND ug/kg		857	1	03/25/14 10:10	03/25/14 18:36	106-47-8	
bis(2-Chloroethoxy)methane	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	111-91-1	
bis(2-Chloroethyl) ether	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	111-44-4	
bis(2-Chloroisopropyl) ether	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	108-60-1	
2-Chloronaphthalene	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	91-58-7	
2-Chlorophenol	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	95-57-8	
4-Chlorophenylphenyl ether	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	7005-72-3	
Chrysene	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	218-01-9	
Dibenz(a,h)anthracene	ND ug/kg		221	1	03/25/14 10:10	03/25/14 18:36	53-70-3	
Dibenzofuran	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	132 <b>-</b> 64-9	
2,4-Dichlorophenol	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	120-83-2	
Diethylphthalate	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	84-66-2	
2,4-Dimethylphenol	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	105-67-9	
Dimethylphthalate	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	131-11-3	
Di-n-butylphthalate	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	84-74-2	
4,6-Dinitro-2-methylphenol	ND ug/kg		2080	1	03/25/14 10:10	03/25/14 18:36	534-52-1	
2,4-Dinitrophenol	ND ug/kg		2080	1	03/25/14 10:10	03/25/14 18:36	51-28-5	
2,4-Dinitrotoluene	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	121-14-2	
2,6-Dinitrotoluene	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	606-20-2	
Di-n-octylphthalate	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	117-84-0	
bis(2-Ethylhexyl)phthalate	ND ug/kg		428	1	03/25/14 10:10	03/25/14 18:36	117-81-7	

## **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

	Results	/kg /kg /kg /kg /kg	Report Limit 270 Preparation Meth 428 428 428 428 428	1 1	03/25/14 10:10	Analyzed 03/25/14 18:36	CAS No.	Qua
8270 MSSV SHORT LIST       A         MICROWAVE       Fluoranthene         Fluoranthene       Fluorene         Hexachlorocyclopentadiene       Hexachlorocyclopentadiene         Hexachlorocyclopentadiene       Hexachlorocyclopentadiene         Hexachlorocyclopentadiene       Hexachlorocyclopentadiene         Hexachlorocyclopentadiene       Hexachlorocyclopentadiene         Hexachlorocyclopentadiene       Hexachlorocyclopentadiene         Hexachlorocyclopentadiene       Sophorone         Sophorone       Pace Methyliphenol(o-Cresol)         B&4-Methylphenol(o-Cresol)       B&4-Methylphenol(m&p Cresol)         B&4-Methylphenol(m&p Cresol)       B&4-Methylphenol         Naphthalene       Pace Methylphenol         Pace Methylphenol       Methylphenol         Naphthalene       Pace Methylphenol         Pace Methylphenol       Pace Methylphenol         Naphthalene       Pace Methylphenol         Pace Methylphenol       Pace Methylphenol         Pace Methy	Analytical Meth ND ug, ND ug, ND ug, ND ug, ND ug, ND ug, ND ug, ND ug, ND ug,	nod: EPA 82 /kg /kg /kg /kg /kg	270 Preparation Meth 428 428 428 428 428 428	nod: EP 1 1	A 3546 03/25/14 10:10	03/25/14 18:36	<u> </u>	Qua
MICROWAVE Fluoranthene Fluoranthene Fluorene Hexachlorocyclopentadiene Hexachlorocyclopentadiene Hexachlorocethane ndeno(1,2,3-cd)pyrene sophorone 2-Methylaphthalene 2-Methylaphthalene 2-Methylphenol(o-Cresol) 3&4-Methylphenol(o-Cresol) 3&4-Methylphenol(m&p Cresol) 3&4-Methylphenol(m&p Cresol) 3&4-Methylphenol 4-Nitrobenzene 2-Nitrobenzene 2-Nitrobenzene 3-Nitroso-di-n-propylamine 3-Nitroso-di-n-pro	ND ug ND ug ND ug ND ug ND ug ND ug ND ug ND ug	/kg /kg /kg /kg /kg	428 428 428 428 428	1 1	03/25/14 10:10		000.44.5	
Fluorene Hexachlorocyclopentadiene Hexachlorocyclopentadiene Hexachlorocyclopentadiene Hexachlorocyclopentadiene Sophorone 2-Methylnaphthalene 2-Methylphenol(o-Cresol) 3&4-Methylphenol(o-Cresol) 3&4-Methylphenol(m&p Cresol) Naphthalene 2-Methylphenol(m&p Cresol) Naphthalene 2-Nitroaniline 3-Nitroaniline 3-Nitrobenzene 2-Nitrophenol 4-Nitrophenol 4-Nitroso-di-n-propylamine N-Nitrosodiphenylamine Phenanthrene Phenol 2-yrene 2,4,5-Trichlorophenol	ND ug, ND ug, ND ug, ND ug, ND ug, ND ug, ND ug,	/kg /kg /kg /kg	428 428 428	1			000 4 4 5	
Hexachlorocyclopentadiene Hexachlorocyclopentadiene Hexachloroethane Indeno(1,2,3-cd)pyrene sophorone 2-Methylnaphthalene 2-Methylphenol(o-Cresol) 3&4-Methylphenol(o-Cresol) 3&4-Methylphenol(m&p Cresol) Naphthalene 2-Nitroaniline 3-Nitroaniline 3-Nitroaniline 4-Nitrobenzene 2-Nitrophenol 4-Nitrophenol 4-Nitroso-di-n-propylamine V-Nitrosodiphenylamine Phenanthrene Phenol 2-yrene 2,4,5-Trichlorophenol	ND ug ND ug ND ug ND ug ND ug ND ug	/kg /kg /kg	428 428		03/25/14 10:40		206-44-0	
Hexachloroethane Indeno(1,2,3-cd)pyrene Isophorone 2-Methylnaphthalene 2-Methylphenol(o-Cresol) 3&4-Methylphenol(m&p Cresol) Naphthalene 2-Nitroaniline 3-Nitroaniline 3-Nitroaniline 2-Nitrobenzene 2-Nitrophenol 4-Nitrophenol N-Nitroso-di-n-propylamine N-Nitrosodiphenylamine Phenanthrene Phenol 2-Yrene 2,4,5-Trichlorophenol	ND ug, ND ug, ND ug, ND ug, ND ug,	/kg /kg /kg	428	4	03/23/14 10.10	03/25/14 18:36	86-73-7	
Indeno(1,2,3-cd)pyrene Isophorone 2-Methylnaphthalene 2-Methylphenol(o-Cresol) 3&4-Methylphenol(m&p Cresol) Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitroaniline 2-Nitrophenol 4-Nitrophenol 4-Nitroso-di-n-propylamine N-Nitroso-di-n-propylamine N-Nitrosodiphenylamine Phenanthrene Phenol 2-yrene 2,4,5-Trichlorophenol	ND ug, ND ug, ND ug, ND ug,	/kg /kg		1		03/25/14 18:36		
sophorone 2-Methylnaphthalene 2-Methylphenol(o-Cresol) 3&4-Methylphenol(m&p Cresol) Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitrobenzene 2-Nitrophenol 4-Nitroso-di-n-propylamine 4-Nitroso-di-n-propylamine 4-Nitrosodiphenylamine Phenanthrene Phenol 2-Yrene 2,4,5-Trichlorophenol	ND ug, ND ug, ND ug, ND ug,	/kg /kg		1	03/25/14 10:10	03/25/14 18:36	67-72-1	
sophorone 2-Methylnaphthalene 2-Methylphenol(o-Cresol) 3&4-Methylphenol(m&p Cresol) Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitrobenzene 2-Nitrophenol 4-Nitroso-di-n-propylamine 4-Nitroso-di-n-propylamine 4-Nitrosodiphenylamine Phenanthrene Phenol 2-Yrene 2,4,5-Trichlorophenol	ND ug ND ug ND ug	/kg	428	1	03/25/14 10:10	03/25/14 18:36	193-39-5	
2-Methylnaphthalene 2-Methylphenol(o-Cresol) 3&4-Methylphenol(m&p Cresol) Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitrobenzene 2-Nitrophenol 4-Nitrophenol N-Nitroso-di-n-propylamine N-Nitrosodiphenylamine Phenanthrene Phenol 2-Yrene 2,4,5-Trichlorophenol	ND ug ND ug	-	428	1		03/25/14 18:36		
2-Methylphenol(o-Cresol) 3&4-Methylphenol(m&p Cresol) Naphthalene 2-Nitroaniline 3-Nitroaniline Nitrobenzene 2-Nitrophenol 4-Nitrophenol N-Nitroso-di-n-propylamine N-Nitrosodiphenylamine Phenanthrene Phenol 2-Yrene 2,4,5-Trichlorophenol	ND ug	ka	428	1		03/25/14 18:36		
3&4-Methylphenol(m&p Cresol) Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitroaniline 2-Nitrobenzene 2-Nitrophenol 4-Nitroso-di-n-propylamine 4-Nitroso-di-n-propylamine 9-Nitrosodiphenylamine 9-Nenanthrene 9-Nenol 9-Yrene 2,4,5-Trichlorophenol	-	•	428	1		03/25/14 18:36		
Naphthalene 2-Nitroaniline 3-Nitroaniline 4-Nitroaniline 2-Nitrobenzene 2-Nitrophenol 4-Nitroso-di-n-propylamine N-Nitrosodiphenylamine Phenanthrene Phenol 2yrene 2,4,5-Trichlorophenol	no ug	-	857	1		03/25/14 18:36	33-40-7	
2-Nitroaniline 3-Nitroaniline 4-Nitroaniline 4-Nitrobenzene 2-Nitrophenol 4-Nitroso-di-n-propylamine 4-Nitrosodiphenylamine Phenanthrene Phenol 2yrene 2,4,5-Trichlorophenol	ND ug	-	428	1		03/25/14 18:36	91-20-3	
3-Nitroaniline 4-Nitroaniline 2-Nitrobenzene 2-Nitrophenol 4-Nitroso-di-n-propylamine 4-Nitrosodiphenylamine Phenanthrene Phenol 2yrene 2,4,5-Trichlorophenol	ND ug/	-	2080	1		03/25/14 18:36		
4-Nitroaniline Nitrobenzene 2-Nitrophenol 4-Nitrophenol N-Nitroso-di-n-propylamine N-Nitrosodiphenylamine Phenanthrene Phenol Pyrene 2,4,5-Trichlorophenol	ND ug/		2080	1		03/25/14 18:36		
Nitrobenzene 2-Nitrophenol 4-Nitrophenol V-Nitroso-di-n-propylamine V-Nitrosodiphenylamine Phenanthrene Phenol Pyrene 2,4,5-Trichlorophenol								
2-Nitrophenol 4-Nitrophenol V-Nitroso-di-n-propylamine V-Nitrosodiphenylamine Phenanthrene Phenol Pyrene 2,4,5-Trichlorophenol	ND ug/ ND ug/	-	2080	1		03/25/14 18:36 03/25/14 18:36		
I-Nitrophenol N-Nitroso-di-n-propylamine N-Nitrosodiphenylamine Phenanthrene Phenol Pyrene 2,4,5-Trichlorophenol	•	•	428	1				
N-Nitroso-di-n-propylamine N-Nitrosodiphenylamine Phenanthrene Phenol Pyrene 2,4,5-Trichlorophenol	ND ug/	•	428	1		03/25/14 18:36		
N-Nitrosodiphenylamine Phenanthrene Phenol Pyrene 2,4,5-Trichlorophenol	ND ug/	-	2080	1		03/25/14 18:36		
Phenanthrene Phenol Pyrene 2,4,5-Trichlorophenol	ND ug/	•	428	1		03/25/14 18:36		
Phenol Pyrene 2,4,5-Trichlorophenol	ND ug/	-	428	1		03/25/14 18:36		
<sup>2</sup> yrene 2,4,5-Trichlorophenol	ND ug/	•	428	1		03/25/14 18:36		
,4,5-Trichlorophenol	ND ug/	-	428	1		03/25/14 18:36		
•	ND ug/	kg	428	1	03/25/14 10:10	03/25/14 18:36	129-00-0	
A 6-Trichlorophenol	ND ug/	kg	428	1	03/25/14 10:10	03/25/14 18:36	95-95-4	
Surrogates	ND ug/	kg	428	1	03/25/14 10:10	03/25/14 18:36	88-06-2	
Nitrobenzene-d5 (S)	63 %.		28-101	1	03/25/14 10.10	03/25/14 18:36	4165-60-0	
2-Fluorobiphenyl (S)	67 %.		31-94	1		03/25/14 18:36		
-Terphenyl-d14 (S)	83 %.		26-110	1		03/25/14 18:36		
Phenol-d5 (S)	73 %.		28-110	1				
	73 %. 71 %.					03/25/14 18:36		
P-Fluorophenol (S) 2,4,6-Tribromophenol (S)	71 %. 78 %.		24-104 16-122	1 1		03/25/14 18:36 03/25/14 18:36		
260 MSV 5030 Low Level A	Analytical Meth	od: EPA 82	60					
Acetone	ND mg	/kg	0.13	1		03/27/14 17:14	67-64-1	
crolein	ND mg	-	0.13	1		03/27/14 17:14	107-02-8	
Benzene	ND mg		0.0065	1		03/27/14 17:14		
Bromobenzene	ND mg		0.0065	1		03/27/14 17:14		
romochloromethane	ND mg		0.0065	1		03/27/14 17:14		
Iromodichloromethane	ND mg	-	0.0065	1		03/27/14 17:14		
romoform	ND mg	•	0.0065	1		03/27/14 17:14		
romomethane	ND mg	-	0.0065	1		03/27/14 17:14		
-Butanone (MEK)	ND mg		0.032	1		03/27/14 17:14		
-Butylbenzene	ND mg	•	0.0065	1		03/27/14 17:14		
ec-Butylbenzene	ND mg/	-	0.0065	1				
ec-Butylbenzene	ND mg/ ND mg/	-				03/27/14 17:14		
art-Butylbenzene Carbon disulfide		# 1 I	0.0065	1		03/27/14 17:14	90-00-0	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 65-SB-2 8-12'	Lab ID: 509	5061002	Collected: 03/18/1	14 13:45	Received: 03	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weigh	nt" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Meth	od: EPA 826	60					
Carbon tetrachloride	ND mg	/kg	0.0065	1		03/27/14 17:14	4 56-23-5	
Chlorobenzene	ND mg	/kg	0.0065	1		03/27/14 17:14	4 108-90-7	
Chloroethane	ND mg	/kg	0.0065	1		03/27/14 17:14	4 75-00-3	
Chloroform	ND mg	/kg	0.0065	1		03/27/14 17:14	4 67-66-3	
Chloromethane	ND mg	/kg	0.0065	1		03/27/14 17:14	1 74-87-3	
2-Chlorotoluene	ND mg	/kg	0.0065	1		03/27/14 17:14	1 95-49-8	
4-Chlorotoluene	ND mg	/kg	0.0065	1		03/27/14 17:14	106-43-4	
Dibromochloromethane	ND mg	/kg	0.0065	1		03/27/14 17:14	1 124-48-1	
Dibromomethane	ND mg	/kg	0.0065	1		03/27/14 17:14	1 74-95-3	
1,2-Dichlorobenzene	ND mg	/kg	0.0065	1		03/27/14 17:14	95-50-1	
1,3-Dichlorobenzene	ND mg	/kg	0.0065	1		03/27/14 17:14	541-73-1	
1,4-Dichlorobenzene	ND mg	/kg	0.0065	1		03/27/14 17:14	106-46-7	
trans-1,4-Dichloro-2-butene	ND mg	/kg	0.13	1		03/27/14 17:14	110-57-6	
Dichlorodifluoromethane	ND mg	/kg	0.0065	1		03/27/14 17:14	75-71-8	
1,1-Dichloroethane	ND mg	/kg	0.0065	1		03/27/14 17:14	75-34-3	
1,2-Dichloroethane	ND mg	-	0.0065	1		03/27/14 17:14	107-06-2	
1,1-Dichloroethene	ND mg	/kg	0.0065	1		03/27/14 17:14	75-35-4	
cis-1,2-Dichloroethene	ND mg	•	0.0065	1		03/27/14 17:14		
trans-1,2-Dichloroethene	ND mg	-	0.0065	1		03/27/14 17:14		
1,2-Dichloropropane	ND mg	-	0.0065	1		03/27/14 17:14		
1,3-Dichloropropane	ND mg	-	0.0065	1		03/27/14 17:14	142-28-9	
2,2-Dichloropropane	ND mg	-	0.0065	1		03/27/14 17:14		
1,1-Dichloropropene	ND mg	-	0.0065	1		03/27/14 17:14	563-58-6	
cis-1,3-Dichloropropene	ND mg	•	0.0065	1		03/27/14 17:14	10061-01-5	
trans-1,3-Dichloropropene	ND mg	-	0.0065	1		03/27/14 17:14	10061-02-6	
Ethylbenzene	ND mg	-	0.0065	1		03/27/14 17:14		
Ethyl methacrylate	ND mg	-	0.13	1		03/27/14 17:14	97-63-2	
2-Hexanone	ND mg	-	0.13	1		03/27/14 17:14		
lodomethane	ND mg	-	0.13	1		03/27/14 17:14		
isopropylbenzene (Cumene)	ND mg	•	0.0065	1		03/27/14 17:14		
p-Isopropyltoluene	ND mg	-	0.0065	1		03/27/14 17:14		
Methylene Chloride	ND mg/	-	0.026	1		03/27/14 17:14		
4-Methyl-2-pentanone (MIBK)	ND mg/	-	0.032	1		03/27/14 17:14		
Methyl-tert-butyl ether	ND mg	•	0.0065	1		03/27/14 17:14		
n-Propylbenzene	ND mg/	-	0.0065	1		03/27/14 17:14		
Styrene	ND mg/		0.0065	1		03/27/14 17:14		
1,1,1,2-Tetrachloroethane	ND mg/	•	0.0065	1		03/27/14 17:14		
1,1,2,2-Tetrachloroethane	ND mg/		0.0065	1		03/27/14 17:14		
Tetrachloroethene	ND mg/		0.0065	1		03/27/14 17:14		
Toluene	ND mg/		0.0065	1		03/27/14 17:14		
1,2,3-Trichlorobenzene	ND mg/		0.0065	1		03/27/14 17:14		
1,2,4-Trichlorobenzene	ND mg/		0.0065	1		03/27/14 17:14		
1,1,1-Trichloroethane	ND mg/	-	0.0065	1		03/27/14 17:14		
1,1,2-Trichloroethane	ND mg/	-	0.0065	1		03/27/14 17:14		
Trichloroethene	ND mg/	-	0.0065	1		03/27/14 17:14		
Trichlorofluoromethane	ND mg/		0.0065	1		03/27/14 17:14		



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 65-SB-2 8-12'	Lab ID: 5095061002	Collected: 03/18/1	4 13:45	Received: 03/2	21/14 12:35	Matrix: Solid	
Results reported on a "dry-weigh	ht" basis						
Parameters	Results Units	s Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method: EPA	8260					
1,2,4-Trimethylbenzene	ND mg/kg	0.0065	1	C	03/27/14 17:14	4 95-63-6	
1,3,5-Trimethylbenzene	ND mg/kg	0.0065	1	C	03/27/14 17:14	4 108-67-8	
Vinyl acetate	ND mg/kg	0.13	1	C	03/27/14 17:14	4 108-05-4	
Vinyl chloride	ND mg/kg	0.0065	1	C	03/27/14 17:14	4 75-01-4	
Xylene (Total)	ND mg/kg	0.013	1	C	03/27/14 17:14	4 1330-20-7	
Surrogates							
Dibromofluoromethane (S)	<b>96 %</b> .	85-118	1	C	03/27/14 17:14	4 1868-53-7	
Toluene-d8 (S)	106 %.	71-128	1	C	03/27/14 17:14	4 2037-26-5	
4-Bromofluorobenzene (S)	<b>95</b> %.	56-144	1	C	03/27/14 17:14	460-00-4	
Percent Moisture	Analytical Method: AST	M D2974-87					
Percent Moisture	23.0 %	0.10	1	C	03/24/14 15:43	3	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No .:

t No.: 5095061

Sample: 65-SB-4 4-6'	Lab ID: 50950610	03 Collected: 03/18/	14 15:15	Received: 0	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight"	" basis						
Parameters	ResultsUr	its Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Method: El	PA 8015 Mod Ext Prepara	ation Me	thod: EPA 3546			
Total Petroleum Hydrocarbons	77.1 mg/kg	33.3	1	03/25/14 09:25	5 03/27/14 14:0	)5	
TPH (C10-C20)	43.7 mg/kg	16.7	1	03/25/14 09:25	5 03/27/14 14:0	)5	
TPH (C20-C34)	33.4 mg/kg	16.7	1	03/25/14 09:25	5 03/27/14 14:0	)5	
Surrogates							
n-Pentacosane (S)	97 %.	30-153	1	03/25/14 09:25	5 03/27/14 14:0	05 629-99-2	
8015 Gasoline Range Organics	Analytical Method: El	PA 8015 Mod Pur					
TPH (C06-C12)	ND mg/kg	1.7	1		03/26/14 03:2	24	
Surrogates							
4-Bromofluorobenzene (S)	82 %.	38-163	1		03/26/14 03:2	4 460-00-4	
8270 MSSV SHORT LIST MICROWAVE	Analytical Method: EF	PA 8270 Preparation Met	hod: EPA	3546			
Acenaphthene	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 83-32-9	
Acenaphthylene	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 208-96-8	
Anthracene	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 120-12-7	
Benzo(a)anthracene	582 ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 56-55-3	
Benzo(a)pyrene	338 ug/kg	284	1	03/25/14 10:10	03/25/14 19:3	6 50-32-8	
Benzo(b)fluoranthene	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 205-99-2	
Benzo(g,h,i)perylene	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 191-24-2	
Benzo(k)fluoranthene	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 207-08-9	
Benzyl alcohol	ND ug/kg	1100	1		03/25/14 19:3		
4-Bromophenylphenyl ether	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 101-55-3	
Butylbenzylphthalate	ND ug/kg	552	1		03/25/14 19:3		
4-Chloro-3-methylphenol	ND ug/kg	1100	1		03/25/14 19:3		
4-Chloroaniline	ND ug/kg	1100	1		03/25/14 19:3		
bis(2-Chloroethoxy)methane	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 111-91-1	
bis(2-Chloroethyl) ether	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 111-44-4	
bis(2-Chloroisopropyl) ether	ND ug/kg	552	1		03/25/14 19:3		
2-Chloronaphthalene	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 91-58-7	
2-Chlorophenol	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 95-57-8	
4-Chlorophenylphenyl ether	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 7005-72-3	
Chrysene	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 218-01-9	
Dibenz(a,h)anthracene	ND ug/kg	284	1	03/25/14 10:10	03/25/14 19:3	6 53-70-3	
Dibenzofuran	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 132-64-9	
2,4-Dichlorophenol	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 120-83-2	
Diethylphthalate	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 84-66-2	
2,4-Dimethylphenol	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 105-67-9	
Dimethylphthalate	ND ug/kg	552	1	03/25/14 10:10	03/25/14 19:3	6 131-11-3	
Di-n-butylphthalate	ND ug/kg	552	1		03/25/14 19:3		
4,6-Dinitro-2-methylphenol	ND ug/kg	2670	1	03/25/14 10:10	03/25/14 19:3	6 534-52-1	
2,4-Dinitrophenol	ND ug/kg	2670	1		03/25/14 19:3		
2,4-Dinitrotoluene	ND ug/kg	552	1		03/25/14 19:3		
2,6-Dinitrotoluene	ND ug/kg	552	1		03/25/14 19:3		
Di-n-octylphthalate	ND ug/kg	552			03/25/14 19:3		
bis(2-Ethylhexyl)phthalate	ND ug/kg	552			03/25/14 19:3		



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## **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 65-SB-4 4-6'	Lab ID: 509	5061003	Collected: 03/18/1	14 15:15	Received: 03	3/21/14 12:35 N	Aatrix: Solid	
Results reported on a "dry-weight	" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV SHORT LIST MICROWAVE	Analytical Meth	od: EPA 82	70 Preparation Met	hod: EP/	3546			
Fluoranthene	<b>928</b> ug	′kg	552	1	03/25/14 10:10	03/25/14 19:36	206-44-0	
Fluorene	ND ug/	'kg	552	1	03/25/14 10:10	03/25/14 19:36	86-73-7	
Hexachlorocyclopentadiene	ND ug/	'kg	552	1	03/25/14 10:10	03/25/14 19:36	77-47-4	
Hexachloroethane	ND ug/	'kg	552	1	03/25/14 10:10	03/25/14 19:36	67-72-1	
ndeno(1,2,3-cd)pyrene	ND ug/	'kg	552	1	03/25/14 10:10	03/25/14 19:36	193-3 <del>9</del> -5	
sophorone	ND ug/	kg	552	1	03/25/14 10:10	03/25/14 19:36	78-59-1	
2-Methyinaphthalene	ND ug/	kg	552	1	03/25/14 10:10	03/25/14 19:36	91-57-6	
2-Methylphenol(o-Cresol)	ND ug/	kg	552	1	03/25/14 10:10	03/25/14 19:36	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND ug/	kg	1100	1		03/25/14 19:36		
Naphthalene	ND ug/	-	552	1	03/25/14 10:10	03/25/14 19:36	91-20-3	
2-Nitroaniline	ND ug/	-	2670	1	03/25/14 10:10	03/25/14 19:36	88-74-4	
3-Nitroaniline	ND ug/	•	2670	1		03/25/14 19:36		
1-Nitroaniline	ND ug/		2670	1		03/25/14 19:36		
Nitrobenzene	ND ug/		552	1		03/25/14 19:36		
2-Nitrophenol	ND ug/		552	1	03/25/14 10:10	03/25/14 19:36	88-75-5	
-Nitrophenol	ND ug/	•	2670	1		03/25/14 19:36		
I-Nitroso-di-n-propylamine	ND ug/		552	1		03/25/14 19:36		
I-Nitrosodiphenylamine	ND ug/	-	552	1		03/25/14 19:36		
Phenanthrene	1060 ug/		552	1		03/25/14 19:36		
Phenol	ND ug/	-	552	1		03/25/14 19:36		
Pyrene .	808 ug/	-	552	1		03/25/14 19:36		
4,5-Trichlorophenol	ND ug/	•	552	1		03/25/14 19:36		
2,4,6-Trichlorophenol	ND ug/	-	552	1		03/25/14 19:36		
Surrogates	ne ug		002	•	00/20/14 10:10	00/20/14 10:00	00-00-2	
litrobenzene-d5 (S)	47 %.		28-101	1	03/25/14 10:10	03/25/14 19:36	4165-60-0	
-Fluorobiphenyl (S)	44 %.		31-94	1		03/25/14 19:36		
-Terphenyl-d14 (S)	34 %.		26-110	1		03/25/14 19:36		
Phenol-d5 (S)	66 %.		28-101	1		03/25/14 19:36		
-Fluorophenol (S)	64 %.		24-104	1		03/25/14 19:36		
2,4,6-Tribromophenol (S)	68 %.		16-122	1		03/25/14 19:36		
260 MSV 5030 Low Level	Analytical Metho	od: EPA 826	60					
cetone	ND mg/	/kg	0.17	1		03/28/14 21:32	67-64-1	
crolein	ND mg	-	0.17	1		03/28/14 21:32		
enzene	ND mg/	-	0.0084	1		03/28/14 21:32		
romobenzene	ND mg/		0.0084	1		03/28/14 21:32		
romochloromethane	ND mg/		0.0084	1		03/28/14 21:32		
romodichloromethane	ND mg/	•	0.0084	1		03/28/14 21:32		
romoform	ND mg/	-	0.0084	1		03/28/14 21:32		
romomethane	ND mg/	-	0.0084	1		03/28/14 21:32		
-Butanone (MEK)	ND mg/	-	0.042	1		03/28/14 21:32		
-Butylbenzene	ND mg/	-	0.0084	1		03/28/14 21:32		
ec-Butylbenzene	ND mg/	-	0.0084	1		03/28/14 21:32		
ec-Butybenzene	ND mg/		0.0084	1		03/28/14 21:32		
AL DALYINGHLOHO	ND mg/	r.a	0.0004	•		03/20/14 21:32	90-00-0	

## **REPORT OF LABORATORY ANALYSIS**



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No .: 5095061

Sample: 65-SB-4 4-6'	Lab ID: 5095061003	Collected: 03/18/14 15:15	Received: 03/21/14 12:35	Matrix: Solid
Results reported on a "dry-weigl	ht" basis			
Parameters	Results Units	Report Limit DF	Prepared Analyzed	CAS No. Qu
8260 MSV 5030 Low Level	Analytical Method: EPA	8260		
Carbon tetrachloride	ND mg/kg	0.0084 1	03/28/14 21:32	56-23-5
Chlorobenzene	ND mg/kg	0.0084 1	03/28/14 21:32	108-90-7
Chloroethane	ND mg/kg	0.0084 1	03/28/14 21:32	75-00-3
Chloroform	ND mg/kg	0.0084 1	03/28/14 21:32	67-66-3
Chloromethane	ND mg/kg	0.0084 1	03/28/14 21:32	74-87-3
2-Chlorotoluene	ND mg/kg	0.0084 1	03/28/14 21:32	95-49-8
4-Chlorotoluene	ND mg/kg	0.0084 1	03/28/14 21:32	106-43-4
Dibromochloromethane	ND mg/kg	0.0084 1	03/28/14 21:32	124-48-1
Dibromomethane	ND mg/kg	0.0084 1	03/28/14 21:32	74-95-3
1,2-Dichlorobenzene	ND mg/kg	0.0084 1	03/28/14 21:32	95-50-1
1,3-Dichlorobenzene	ND mg/kg	0.0084 1	03/28/14 21:32	
1,4-Dichlorobenzene	ND mg/kg	0.0084 1	03/28/14 21:32	
trans-1,4-Dichloro-2-butene	ND mg/kg	0.17 1	03/28/14 21:32	
Dichlorodifluoromethane	ND mg/kg	0.0084 1	03/28/14 21:32	
1,1-Dichloroethane	ND mg/kg	0.0084 1	03/28/14 21:32	
1,2-Dichloroethane	ND mg/kg	0.0084 1	03/28/14 21:32	
1,1-Dichloroethene	ND mg/kg	0.0084 1	03/28/14 21:32	
cis-1,2-Dichloroethene	ND mg/kg	0.0084 1	03/28/14 21:32	
trans-1,2-Dichloroethene	ND mg/kg	0.0084 1	03/28/14 21:32	
1,2-Dichloropropane	ND mg/kg	0.0084 1	03/28/14 21:32	
1,3-Dichloropropane	ND mg/kg	0.0084 1	03/28/14 21:32	
2,2-Dichloropropane	ND mg/kg	0.0084 1	03/28/14 21:32	
1,1-Dichloropropene	ND mg/kg	0.0084 1	03/28/14 21:32	
cis-1,3-Dichloropropene	ND mg/kg	0.0084 1	03/28/14 21:32	
trans-1,3-Dichloropropene	ND mg/kg	0.0084 1	03/28/14 21:32	
Ethylbenzene	ND mg/kg	0.0084 1	03/28/14 21:32	
Ethyl methacrylate	ND mg/kg	0.17 1	03/28/14 21:32	
2-Hexanone	ND mg/kg	0.17 1	03/28/14 21:32	
lodomethane	ND mg/kg	0.17 1	03/28/14 21:32	
sopropylbenzene (Cumene)	ND mg/kg	0.0084 1	03/28/14 21:32	
p-IsopropyItoluene	ND mg/kg	0.0084 1	03/28/14 21:32	
Methylene Chloride	ND mg/kg	0.033 1	03/28/14 21:32	
4-Methyl-2-pentanone (MIBK)	ND mg/kg	0.042 1	03/28/14 21:32	
Methyl-tert-butyl ether	ND mg/kg	0.042 1		
n-Propylbenzene	ND mg/kg	0.0084 1	03/28/14 21:32 03/28/14 21:32	
Styrene	ND mg/kg	0.0084 1		
1,1,1,2-Tetrachloroethane		0.0084 1	03/28/14 21:32	
I,1,2,2-Tetrachloroethane	ND mg/kg		03/28/14 21:32	
Fetrachloroethene	ND mg/kg		03/28/14 21:32	
Foluene	ND mg/kg	0.0084 1	03/28/14 21:32	
	ND mg/kg	0.0084 1	03/28/14 21:32	
1,2,3-Trichlorobenzene	ND mg/kg	0.0084 1	03/28/14 21:32	
1,2,4-Trichlorobenzene	ND mg/kg	0.0084 1	03/28/14 21:32	
I,1,1-Trichloroethane	ND mg/kg	0.0084 1	03/28/14 21:32	
I,1,2-Trichloroethane	ND mg/kg	0.0084 1	03/28/14 21:32	
Trichloroethene	ND mg/kg	0.0084 1	03/28/14 21:32	
Trichlorofluoromethane	ND mg/kg	0.0084 1	03/28/14 21:32	75-69-4
			00/20/14 21.02	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Sample: 65-SB-4 4-6'	Lab ID: 509	5061003	Collected: 03/18/1	4 15:15	Received: 03	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weig	ht" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Met	hod: EPA 82	260					
1,2,4-Trimethylbenzene	ND mg	g/kg	0.0084	1		03/28/14 21:32	95-63-6	
1,3,5-Trimethylbenzene	ND mg	g/kg	0.0084	1		03/28/14 21:32	108-67-8	
Vinyl acetate	ND mg	g/kg	0.17	1		03/28/14 21:32	108-05-4	
Vinyl chloride	ND mg	g/kg	0.0084	1		03/28/14 21:32	75-01-4	
Xylene (Total) Surrogates	ND mg	g/kg	0.017	1		03/28/14 21:32	1330-20-7	
Dibromofluoromethane (S)	100 %.		85-118	1		03/28/14 21:32	1868-53-7	
Toluene-d8 (S)	136 %.		71-128	1		03/28/14 21:32	2037-26-5	S3
4-Bromofluorobenzene (S)	75 %.		56-144	1		03/28/14 21:32	460-00-4	
Percent Moisture	Analytical Mether	hod: ASTM I	D2974-87					

0.10 1

03/24/14 15:43

Percent Moisture	40.2 %	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 65-SB-5 4-8'	Lab ID: 50950610	04 Collected: 03/18/	14 15:35	Received: 0	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight	" basis						
Parameters	Results U	nits Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Method: E	PA 8015 Mod Ext Prepara	ation Me	thod: EPA 3546			
Total Petroleum Hydrocarbons	ND mg/kg	29.9	1	03/25/14 09:25	5 03/27/14 14:1	2	
TPH (C10-C20)	ND mg/kg	14.9	1	03/25/14 09:25	5 03/27/14 14:1	2	
TPH (C20-C34)	ND mg/kg	14.9	1	03/25/14 09:25	5 03/27/14 14:1	2	
Surrogates							
n-Pentacosane (S)	55 %.	30-153	1	03/25/14 09:25	5 03/27/14 14:1	2 629-99-2	
8015 Gasoline Range Organics	Analytical Method: E	PA 8015 Mod Pur					
TPH (C06-C12)	ND mg/kg	1.5	1		03/26/14 04:1	6	
Surrogates							
4-Bromofluorobenzene (S)	84 %.	38-163	1		03/26/14 04:1	6 460-00-4	
8270 MSSV SHORT LIST MICROWAVE	Analytical Method: E	PA 8270 Preparation Met	hod: EP/	A 3546			
Acenaphthene	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 83-32-9	
Acenaphthylene	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 208-96-8	
Anthracene	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 120-12-7	
Benzo(a)anthracene	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 56-55-3	
Benzo(a)pyrene	ND ug/kg	257	1	03/25/14 10:10	03/25/14 19:5	6 50-32-8	
Benzo(b)fluoranthene	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 205-99-2	
Benzo(g,h,i)perylene	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 191-24-2	
Benzo(k)fluoranthene	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 207-08-9	
Benzyl alcohol	ND ug/kg	996	1	03/25/14 10:10	03/25/14 19:5	6 100-51-6	
4-Bromophenylphenyl ether	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 101-55-3	
Butylbenzylphthalate	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 85-68-7	
4-Chloro-3-methylphenol	ND ug/kg	996	1	03/25/14 10:10	03/25/14 19:5	6 59-50-7	
4-Chloroaniline	ND ug/kg	996	1	03/25/14 10:10	03/25/14 19:5	6 106-47-8	
bis(2-Chloroethoxy)methane	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 111-91-1	
bis(2-Chloroethyl) ether	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 111-44-4	
bis(2-Chloroisopropyl) ether	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 108-60-1	
2-Chloronaphthalene	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 91-58-7	
2-Chlorophenol	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 95-57-8	
4-Chlorophenylphenyl ether	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 7005-72-3	
Chrysene	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 218-01-9	
Dibenz(a,h)anthracene	ND ug/kg	257	1	03/25/14 10:10	03/25/14 19:5	6 53-70-3	
Dibenzofuran	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 132-64-9	
2,4-Dichlorophenol	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 120-83-2	
Diethylphthalate	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 84-66-2	
2,4-Dimethylphenol	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:5	6 1 <b>05-67-9</b>	
Dimethylphthalate	ND ug/kg	498	1		03/25/14 19:5		
Di-n-butylphthalate	ND ug/kg	498	1		03/25/14 19:5		
4,6-Dinitro-2-methylphenol	ND ug/kg	2410	1	03/25/14 10:10	03/25/14 19:50	6 534-52-1	
2,4-Dinitrophenol	ND ug/kg	2410	1		03/25/14 19:50		
2,4-Dinitrotoluene	ND ug/kg	498	1		03/25/14 19:56		
2,6-Dinitrotoluene	ND ug/kg	498	1		03/25/14 19:56		
Di-n-octylphthalate	ND ug/kg	498	1		03/25/14 19:56		
bis(2-Ethylhexyl)phthalate	ND ug/kg	498	1	03/25/14 10:10	03/25/14 19:50	6 117-81-7	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888 5095061

Pace Project No .:

Sample: 65-SB-5 4-8'	Lab ID:	5095061004	Collected: 03/18/14	15:35	Received: 03	/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight	t" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV SHORT LIST MICROWAVE	Analytical N	/lethod: EPA 82	270 Preparation Metho	od: EPA	3546			
Fluoranthene	ND	ug/kg	498	1	03/25/14 10:10	03/25/14 19:56	206-44-0	
Fluorene	ND	ug/kg	498	1	03/25/14 10:10	03/25/14 19:56	86-73-7	
Hexachlorocyclopentadiene	ND	ug/kg	498	1	03/25/14 10:10	03/25/14 19:56	77-47-4	
Hexachloroethane	ND	ug/kg	498	1	03/25/14 10:10	03/25/14 19:56	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/kg	498	1	03/25/14 10:10	03/25/14 19:56	193-39-5	
Isophorone	ND	ug/kg	498	1	03/25/14 10:10	03/25/14 19:56	78-59-1	
2-Methylnaphthalene		ug/kg	498	1	03/25/14 10:10	03/25/14 19:56	91-57-6	
2-Methylphenol(o-Cresol)		ug/kg	498	1	03/25/14 10:10	03/25/14 19:56	95-48-7	
3&4-Methylphenol(m&p Cresol)		ug/kg	996	1	03/25/14 10:10	03/25/14 19:56		
Naphthalene		ug/kg	498	1		03/25/14 19:56		
2-Nitroaniline		ug/kg	2410	1		03/25/14 19:56		
3-Nitroaniline		ug/kg	2410	1	03/25/14 10:10	03/25/14 19:56	99-09-2	
4-Nitroaniline		ug/kg	2410	1	03/25/14 10:10	03/25/14 19:56	100-01-6	
Nitrobenzene		ug/kg	498	1		03/25/14 19:56		
2-Nitrophenol		ug/kg	498	1	03/25/14 10:10			
1-Nitrophenol		ug/kg	2410	1		03/25/14 19:56		
N-Nitroso-di-n-propylamine		ug/kg	498	1		03/25/14 19:56		
N-Nitrosodiphenylamine		ug/kg	498	1		03/25/14 19:56		
Phenanthrene		ug/kg	498	1		03/25/14 19:56		
Phenol		ug/kg	498	1		03/25/14 19:56		
Pyrene		ug/kg	498	1	03/25/14 10:10			
2,4,5-Trichlorophenol		ug/kg	498	1		03/25/14 19:56		
2,4,6-Trichlorophenol		ug/kg	498	1	03/25/14 10:10			
Surrogates		uging	400	•	00/20/14 10:10	00/20/14 10:00	00-00-2	
Nitrobenzene-d5 (S)	70	%.	28-101	1	03/25/14 10:10	03/25/14 19:56	4165-60-0	
2-Fluorobiphenyl (S)		%.	31-94	1	03/25/14 10:10			
o-Terphenyl-d14 (S)	81		26-110	1	03/25/14 10:10			
Phenol-d5 (S)		%.	28-101	1	03/25/14 10:10			
2-Fluorophenol (S)	73		24-104	1	03/25/14 10:10			
2,4,6-Tribromophenol (S)	74		16-122	1	03/25/14 10:10			
260 MSV 5030 Low Level	Analytical N	lethod: EPA 82	60					
Acetone	ND	mg/kg	0.15	1		03/27/14 18:25	67-64-1	
Acrolein		mg/kg	0.15	1		03/27/14 18:25		
Benzene		mg/kg	0.0075	1		03/27/14 18:25		
Bromobenzene		mg/kg	0.0075	1		03/27/14 18:25		
Bromochloromethane		mg/kg	0.0075	1		03/27/14 18:25		
Bromodichloromethane		mg/kg	0.0075	1		03/27/14 18:25		
Bromoform		mg/kg	0.0075	1		03/27/14 18:25		
Bromomethane		mg/kg	0.0075	1		03/27/14 18:25		
P-Butanone (MEK)		mg/kg	0.038	1		03/27/14 18:25		
Butylbenzene		mg/kg	0.0075	1		03/27/14 18:25		
ec-Butylbenzene		mg/kg	0.0075	1		03/27/14 18:25		
ert-Butylbenzene		mg/kg	0.0075	1		03/27/14 18:25		
Carbon disulfide		mg/kg mg/kg	0.0075			03/27/14 18:25		



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### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 65-SB-5 4-8'	Lab ID: 509506	i1004 Collected: 03/18/	14 15:35	Received:	03/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weigh	nt" basis						
Parameters	Results	Units Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method	: EPA 8260					
Carbon tetrachloride	ND mg/kg	0.0075	1		03/27/14 18:2	5 56-23-5	
Chlorobenzene	ND mg/kg	0.0075	1		03/27/14 18:2	25 108-90-7	
Chloroethane	ND mg/kg	0.0075	1		03/27/14 18:2	5 75-00-3	
Chloroform	ND mg/kg	0.0075	1		03/27/14 18:2	5 67-66-3	
Chloromethane	ND mg/kg	0.0075	1		03/27/14 18:2	5 74-87-3	
2-Chlorotoluene	ND mg/kg	0.0075	1		03/27/14 18:2	5 95-49-8	
4-Chlorotoluene	ND mg/kg	0.0075	1		03/27/14 18:2	5 106-43-4	
Dibromochloromethane	ND mg/kg	0.0075	1		03/27/14 18:2	5 124-48-1	
Dibromomethane	ND mg/kg	0.0075	1		03/27/14 18:2	5 74-95-3	
1,2-Dichlorobenzene	ND mg/kg	0.0075	1		03/27/14 18:2	5 95-50-1	
1,3-Dichlorobenzene	ND mg/kg	0.0075	1		03/27/14 18:2	5 541-73-1	
1,4-Dichlorobenzene	ND mg/kg		1		03/27/14 18:2	5 106-46-7	
trans-1,4-Dichloro-2-butene	ND mg/kg		1		03/27/14 18:2	5 110-57-6	
Dichlorodifluoromethane	ND mg/kg		1		03/27/14 18:2	5 75-71-8	
1,1-Dichloroethane	ND mg/kg		1		03/27/14 18:2	5 75-34-3	
1,2-Dichloroethane	ND mg/kg		1		03/27/14 18:2		
1,1-Dichloroethene	ND mg/kg		1		03/27/14 18:2		
cis-1,2-Dichloroethene	ND mg/kg		1		03/27/14 18:2		
trans-1,2-Dichloroethene	ND mg/kg		1		03/27/14 18:2		
1,2-Dichloropropane	ND mg/kg		1		03/27/14 18:2		
1,3-Dichloropropane	ND mg/kg		1		03/27/14 18:2		
2,2-Dichloropropane	ND mg/kg		1		03/27/14 18:2		
1,1-Dichloropropene	ND mg/kg		1		03/27/14 18:2		
cis-1,3-Dichloropropene	ND mg/kg		1			5 10061-01-5	
trans-1,3-Dichloropropene	ND mg/kg		1			5 10061-02-6	
Ethylbenzene	ND mg/kg		1		03/27/14 18:2		
Ethyl methacrylate	ND mg/kg		1		03/27/14 18:2		
2-Hexanone	ND mg/kg		1		03/27/14 18:2		
lodomethane	ND mg/kg		1		03/27/14 18:2		
Isopropylbenzene (Cumene)	ND mg/kg		1		03/27/14 18:2		
p-Isopropyltoluene	ND mg/kg		1		03/27/14 18:2		
Methylene Chloride	ND mg/kg		1		03/27/14 18:2		
4-Methyl-2-pentanone (MIBK)	ND mg/kg		1		03/27/14 18:2		
Methyl-tert-butyl ether	ND mg/kg		1		03/27/14 18:2		
n-Propylbenzene	ND mg/kg		1		03/27/14 18:2		
Styrene	ND mg/kg		1		03/27/14 18:2		
1,1,1,2-Tetrachloroethane	ND mg/kg		1		03/27/14 18:2		
1,1,2,2-Tetrachloroethane	ND mg/kg		1				
Tetrachloroethene	ND mg/kg		1		03/27/14 18:2 03/27/14 18:2		
Toluene	ND mg/kg		1		03/27/14 18:2		
1.2.3-Trichlorobenzene					03/27/14 18:2		
1.2.4-Trichlorobenzene	ND mg/kg ND mg/kg	0.0075	1 1				
1,2,4-Trichloroethane					03/27/14 18:2		
	ND mg/kg	0.0075	1		03/27/14 18:2		
1,1,2-Trichloroethane	ND mg/kg	0.0075	1		03/27/14 18:2		
Trichloroethene	ND mg/kg	0.0075	1		03/27/14 18:2		
Trichlorofluoromethane	ND mg/kg	0.0075	1		03/27/14 18:2	5 /5-69-4	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No .:

5095061

Sample: 65-SB-5 4-8'	Lab ID: 50950	61004	Collected: 03/18/1	4 15:35	Received: 03	3/21/14 12:35 N	Matrix: Solid	
Results reported on a "dry-weig	ht" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method	d: EPA 82	260					
1,2,4-Trimethylbenzene	ND mg/k	g	0.0075	1		03/27/14 18:25	95-63-6	
1,3,5-Trimethylbenzene	ND mg/k	g	0.0075	1		03/27/14 18:25	108-67-8	
Vinyl acetate	ND mg/k	g	0.15	1		03/27/14 18:25	108-05-4	
Vinyl chloride	ND mg/k	g	0.0075	1		03/27/14 18:25	75-01-4	
Xylene (Total)	ND mg/k	g	0.015	1		03/27/14 18:25	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	<b>98 %</b> .		85-118	1		03/27/14 18:25	1868-53-7	
Toluene-d8 (S)	106 %.		71-128	1		03/27/14 18:25	2037-26-5	
4-Bromofluorobenzene (S)	94 %.		56-144	1		03/27/14 18:25	460-00-4	
Percent Moisture	Analytical Method	: ASTM I	D2974-87					
Percent Moisture	33.7 %		0.10	1		03/24/14 15:44		



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#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888 5095061

Pace Project No.:

Sample: 65-SB-6 8-10' Lab ID: 5095061005 Collected: 03/18/14 16:10 Received: 03/21/14 12:35 Matrix: Solid Results reported on a "dry-weight" basis Parameters Results Report Limit DF CAS No. Units Prepared Analyzed Qual 8015 TPH Ohio Microwave Analytical Method: EPA 8015 Mod Ext Preparation Method: EPA 3546 Total Petroleum Hydrocarbons 31.4 94.1 mg/kg 1 03/25/14 09:25 03/27/14 14:19 TPH (C10-C20) 15.7 03/25/14 09:25 03/27/14 14:19 36.9 mg/kg 1 TPH (C20-C34) 57.2 mg/kg 15.7 1 03/25/14 09:25 03/27/14 14:19 Surrogates 88 %. n-Pentacosane (S) 30-153 1 03/25/14 09:25 03/27/14 14:19 629-99-2 8015 Gasoline Range Organics Analytical Method: EPA 8015 Mod Pur TPH (C06-C12) ND mg/kg 1.6 1 03/26/14 04:41 Surrogates 4-Bromofluorobenzene (S) 92 %. 38-163 1 03/26/14 04:41 460-00-4 8270 MSSV SHORT LIST Analytical Method: EPA 8270 Preparation Method: EPA 3546 MICROWAVE Acenaphthene ND ug/kg 519 1 03/25/14 10:10 03/25/14 20:15 83-32-9 Acenaphthylene ND ug/kg 519 1 03/25/14 10:10 03/25/14 20:15 208-96-8 ND ug/kg 519 03/25/14 10:10 03/25/14 20:15 120-12-7 Anthracene 1 Benzo(a)anthracene ND ug/kg 519 1 03/25/14 10:10 03/25/14 20:15 56-55-3 Benzo(a)pyrene ND ug/kg 268 1 03/25/14 10:10 03/25/14 20:15 50-32-8 Benzo(b)fluoranthene ND ug/kg 519 03/25/14 10:10 03/25/14 20:15 205-99-2 1 Benzo(g,h,i)perylene ND ug/kg 519 03/25/14 10:10 03/25/14 20:15 191-24-2 1 Benzo(k)fluoranthene ND ug/kg 519 1 03/25/14 10:10 03/25/14 20:15 207-08-9 Benzyl alcohol ND ug/kg 1040 1 03/25/14 10:10 03/25/14 20:15 100-51-6 4-Bromophenylphenyl ether ND ug/kg 519 1 03/25/14 10:10 03/25/14 20:15 101-55-3 Butylbenzylphthalate ND ug/kg 519 03/25/14 10:10 03/25/14 20:15 85-68-7 1 4-Chloro-3-methylphenol ND ug/kg 1040 03/25/14 10:10 03/25/14 20:15 59-50-7 1 4-Chloroaniline ND ug/kg 1040 03/25/14 10:10 03/25/14 20:15 106-47-8 1 bis(2-Chloroethoxy)methane ND ug/kg 519 1 03/25/14 10:10 03/25/14 20:15 111-91-1 bis(2-Chloroethyl) ether ND ug/kg 03/25/14 10:10 03/25/14 20:15 111-44-4 519 1 bis(2-Chloroisopropyl) ether ND ug/kg 519 03/25/14 10:10 03/25/14 20:15 108-60-1 1 2-Chloronaphthalene ND ug/kg 519 03/25/14 10:10 03/25/14 20:15 91-58-7 1 2-Chlorophenol ND ug/kg 519 03/25/14 10:10 03/25/14 20:15 95-57-8 1 03/25/14 10:10 03/25/14 20:15 7005-72-3 4-Chlorophenylphenyl ether ND ug/kg 519 1 Chrvsene ND ug/kg 03/25/14 10:10 03/25/14 20:15 218-01-9 519 1 Dibenz(a,h)anthracene ND ug/kg 268 03/25/14 10:10 03/25/14 20:15 53-70-3 1 Dibenzofuran ND ug/kg 519 03/25/14 10:10 03/25/14 20:15 132-64-9 1 2,4-Dichlorophenol ND ug/kg 519 1 03/25/14 10:10 03/25/14 20:15 120-83-2 Diethylphthalate ND ug/kg 03/25/14 10:10 03/25/14 20:15 84-66-2 519 1 2,4-Dimethylphenol ND ug/kg 03/25/14 10:10 03/25/14 20:15 105-67-9 519 1 Dimethylphthalate ND ug/kg 519 03/25/14 10:10 03/25/14 20:15 131-11-3 1 Di-n-butylphthalate ND ug/kg 519 1 03/25/14 10:10 03/25/14 20:15 84-74-2 4,6-Dinitro-2-methylphenol ND ug/kg 2520 1 03/25/14 10:10 03/25/14 20:15 534-52-1 2,4-Dinitrophenol ND ug/kg 2520 1 03/25/14 10:10 03/25/14 20:15 51-28-5 2,4-Dinitrotoluene ND ug/kg 03/25/14 10:10 03/25/14 20:15 121-14-2 519 1 2,6-Dinitrotoluene ND ug/kg 519 1 03/25/14 10:10 03/25/14 20:15 606-20-2 Di-n-octylphthalate 519 ND ug/kg 1 03/25/14 10:10 03/25/14 20:15 117-84-0 bis(2-Ethylhexyl)phthalate 519 03/25/14 10:10 03/25/14 20:15 117-81-7 ND ug/kg 1

#### **REPORT OF LABORATORY ANALYSIS**

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Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No .:

5095061

Sample: 65-SB-6 8-10'	Lab ID: 509	5061005	Collected: 03/18/1	4 16:10	Received: 03	W21/14 12:35 N	Matrix: Solid	
Results reported on a "dry-weight	t" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV SHORT LIST MICROWAVE	Analytical Meth	od: EPA 82	270 Preparation Met	hod: EP/	A 3546			
Fluoranthene	ND ug	′kg	519	1	03/25/14 10:10	03/25/14 20:15	206-44-0	
Fluorene	ND ug	′kg	519	1	03/25/14 10:10	03/25/14 20:15	86-73-7	
Hexachlorocyclopentadiene	ND ug	'kg	519	1	03/25/14 10:10	03/25/14 20:15	77-47-4	
Hexachloroethane	ND ug	′kg	519	1	03/25/14 10:10	03/25/14 20:15	67-72-1	
ndeno(1,2,3-cd)pyrene	ND ug	'kg	519	1	03/25/14 10:10	03/25/14 20:15	193-39-5	
sophorone	ND ug	-	519	1	03/25/14 10:10	03/25/14 20:15	78-59-1	
2-Methylnaphthalene	ND ug	-	519	1		03/25/14 20:15		
2-Methylphenol(o-Cresol)	ND ug	-	519	1		03/25/14 20:15		
3&4-Methylphenol(m&p Cresol)	1570 ug	-	1040	1		03/25/14 20:15		
Naphthalene	ND ug	-	519	1		03/25/14 20:15		
2-Nitroaniline	ND ug	-	2520	1		03/25/14 20:15		
3-Nitroaniline	ND ug	-	2520	1		03/25/14 20:15		
4-Nitroaniline	ND ug/	-	2520	1		03/25/14 20:15		
Nitrobenzene	ND ug/	•	519	1		03/25/14 20:15		
	ND ug/	+	519	1		03/25/14 20:15		
2-Nitrophenol	-	-		1				
l-Nitrophenol	ND ug/	-	2520			03/25/14 20:15		
Nitroso-di-n-propylamine	ND ug/	•	519	1		03/25/14 20:15		
N-Nitrosodiphenylamine	ND ug/	÷	519	1		03/25/14 20:15		
Phenanthrene	ND ug/	•	519	1		03/25/14 20:15		
Phenol	ND ug/	•	519	1		03/25/14 20:15		
Pyrene	ND ug/	-	519	1		03/25/14 20:15		
2,4,5-Trichlorophenol	ND ug/	-	519	1		03/25/14 20:15		
2,4,6-Trichlorophenol	ND ug/	kg	519	1	03/25/14 10:10	03/25/14 20:15	88-06-2	
S <i>urrogates</i> Nitrobenzene-d5 (S)	48 %.		28-101	1	03/25/14 10:10	03/25/14 20:15	4165-60-0	
2-Fluorobiphenyl (S)	40 %. 53 %.		31-94	1		03/25/14 20:15		
	33 %. 34 %.		26-110	1		03/25/14 20:15		
)-Terphenyl-d14 (S)	54 %. 62 %.		28-110	1				
Phenol-d5 (S)						03/25/14 20:15		
2-Fluorophenol (S) 2,4,6-Tribromophenol (S)	62 %. 62 %.		24-104 16-122	1 1		03/25/14 20:15 03/25/14 20:15		
260 MSV 5030 Low Level	Analytical Meth	od: EPA 82		•	00,20,1110.10	00,20,1120.10	110 10 0	
Acetone			0.16	1		03/28/14 19:15	67 64 1	
	0.29 mg	-	0.16	1		03/27/14 19:15		
Acrolein	ND mg	-	0.16	1				
Benzene	ND mg	-	0.0079	1		03/27/14 19:01		
Bromobenzene	ND mg			4		03/27/14 19:01		
Bromochloromethane	ND mg	-	0.0079	1		03/27/14 19:01		
Bromodichloromethane	ND mg	-	0.0079	1		03/27/14 19:01		
Bromoform	ND mg	-	0.0079	1		03/27/14 19:01		
Bromomethane	ND mg		0.0079	1		03/27/14 19:01		
P-Butanone (MEK)	ND mg	-	0.039	1		03/27/14 19:01		
-Butylbenzene	ND mg		0.0079	1		03/27/14 19:01		
ec-Butylbenzene	ND mg	-	0.0079	1		03/27/14 19:01		
ert-Butylbenzene	ND mg	/kg	0.0079	1		03/27/14 19:01	98-06-6	
Carbon disulfide	ND mg	/ka	0.016	1		03/27/14 19:01	75-15-0	

### **REPORT OF LABORATORY ANALYSIS**

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## **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 65-SB-6 8-10'	Lab ID: 509506100	5 Collected: 03/18/1	4 16:10	Received: 0	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weigh	ıt" basis						
Parameters	Results Unit	s Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV 5030 Low Level	Analytical Method: EP/	A 8260					
Carbon tetrachloride	ND mg/kg	0.0079	1		03/27/14 19:01	l 56-23-5	
Chlorobenzene	ND mg/kg	0.0079	1		03/27/14 19:01	l 108-90-7	
Chloroethane	ND mg/kg	0.0079	1		03/27/14 19:01	l 75-00-3	
Chloroform	ND mg/kg	0.0079	1		03/27/14 19:01	67-66-3	
Chloromethane	ND mg/kg	0.0079	1		03/27/14 19:01	74-87-3	
2-Chlorotoluene	ND mg/kg	0.0079	1		03/27/14 19:01	95-49-8	
4-Chlorotoluene	ND mg/kg	0.0079	1		03/27/14 19:01	106-43-4	
Dibromochloromethane	ND mg/kg	0.0079	1		03/27/14 19:01	124-48-1	
Dibromomethane	ND mg/kg	0.0079	1		03/27/14 19:01	74-95-3	
1,2-Dichlorobenzene	ND mg/kg	0.0079	1		03/27/14 19:01	95-50-1	
1,3-Dichlorobenzene	ND mg/kg	0.0079	1		03/27/14 19:01	541-73-1	
1,4-Dichlorobenzene	ND mg/kg	0.0079	1		03/27/14 19:01	106-46-7	
trans-1,4-Dichloro-2-butene	ND mg/kg	0.16	1		03/27/14 19:01	110-57-6	
Dichlorodifluoromethane	ND mg/kg	0.0079	1		03/27/14 19:01	75-71-8	
1,1-Dichloroethane	ND mg/kg	0.0079	1		03/27/14 19:01	75-34-3	
1,2-Dichloroethane	ND mg/kg	0.0079	1		03/27/14 19:01	107-06-2	
1,1-Dichloroethene	ND mg/kg	0.0079	1		03/27/14 19:01	75-35-4	
cis-1,2-Dichloroethene	ND mg/kg	0.0079	1		03/27/14 19:01	156-59-2	
trans-1,2-Dichloroethene	ND mg/kg	0.0079	1		03/27/14 19:01	156-60-5	
1,2-Dichloropropane	ND mg/kg	0.0079	1		03/27/14 19:01	78-87-5	
1,3-Dichloropropane	ND mg/kg	0.0079	1		03/27/14 19:01	142-28-9	
2,2-Dichloropropane	ND mg/kg	0.0079	1		03/27/14 19:01	594-20-7	
1,1-Dichloropropene	ND mg/kg	0.0079	1		03/27/14 19:01	563-58-6	
cis-1,3-Dichloropropene	ND mg/kg	0.0079	1		03/27/14 19:01	10061-01-5	
trans-1,3-Dichloropropene	ND mg/kg	0.0079	1		03/27/14 19:01	10061-02-6	
Ethylbenzene	ND mg/kg	0.0079	1		03/27/14 19:01	100-41-4	
Ethyl methacrylate	ND mg/kg	0.16	1		03/27/14 19:01	97-63-2	
2-Hexanone	ND mg/kg	0.16	1		03/27/14 19:01	591-78-6	
odomethane	ND mg/kg	0.16	1		03/27/14 19:01	74-88-4	
sopropylbenzene (Cumene)	ND mg/kg	0.0079	1		03/27/14 19:01	98-82-8	
p-Isopropyltoluene	ND mg/kg	0.0079	1		03/27/14 19:01	99-87-6	
Methylene Chloride	ND mg/kg	0.031	1		03/27/14 19:01	75-09-2	
1-Methyl-2-pentanone (MIBK)	ND mg/kg	0.039	1		03/27/14 19:01	108-10-1	
Methyl-tert-butyl ether	ND mg/kg	0.0079	1		03/27/14 19:01	1634-04-4	
n-Propylbenzene	ND mg/kg	0.0079	1		03/27/14 19:01	103-65-1	
Styrene	ND mg/kg	0.0079	1		03/27/14 19:01	100-42-5	
1,1,1,2-Tetrachloroethane	ND mg/kg	0.0079	1		03/27/14 19:01	630-20-6	
1,1,2,2-Tetrachloroethane	ND mg/kg	0.0079	1		03/27/14 19:01	79-34-5	
Fetrachloroethene	ND mg/kg	0.0079	1		03/27/14 19:01	127-18-4	
Toluene	ND mg/kg	0.0079	1		03/27/14 19:01	108-88-3	
,2,3-Trichlorobenzene	ND mg/kg	0.0079	1		03/27/14 19:01	87-61-6	
,2,4-Trichlorobenzene	ND mg/kg	0.0079	1		03/27/14 19:01		
,1,1-Trichloroethane	ND mg/kg	0.0079	1		03/27/14 19:01		
,1,2-Trichloroethane	ND mg/kg	0.0079	1		03/27/14 19:01		
Trichloroethene	ND mg/kg	0.0079	1		03/27/14 19:01		
Frichlorofluoromethane	ND mg/kg	0.0079	1		03/27/14 19:01		



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# **ANALYTICAL RESULTS**

.

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 65-SB-6 8-10'	Lab ID: 5095061005	Collected: 03/18/1	4 16:10	Received: 03/21/14 12	2:35 M	atrix: Solid	
Results reported on a "dry-weig	ht" basis						
Parameters	Results Units	Report Limit	DF	Prepared Anal	yzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method: EPA 8260	)					
1,2,4-Trimethylbenzene	ND mg/kg	0.0079	1	03/27/14	4 19:01	95-63-6	
1,3,5-Trimethylbenzene	ND mg/kg	0.0079	1	03/27/14	4 19:01	108-67-8	
Vinyl acetate	ND mg/kg	0.16	1	03/27/14	4 19:01	108-05-4	
Vinyl chloride	ND mg/kg	0.0079	1	03/27/14	4 19:01	75-01-4	
Xylene (Total)	ND mg/kg	0.016	1	03/27/14	4 19:01	1330-20-7	
Surrogates							
Dibromofluoromethane (S)	97 %.	85-118	1	03/27/14	4 19:01	1868-53-7	
Toluene-d8 (S)	116 %.	71-128	1	03/27/14	4 19:01	2037-26-5	
4-Bromofluorobenzene (S)	85 %.	56-144	1	03/27/14	4 19:01	460-00-4	
Percent Moisture	Analytical Method: ASTM D2	974-87					
Percent Moisture	<b>36.5</b> %	0.10	1	03/24/14	4 15:44		



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#### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-1 2-4'	Lab ID: 50950610	06 Collected: 03/19	9/14 10:30	Received: 0	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight"	basis						
Parameters	ResultsU	nits Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Method: E	PA 8015 Mod Ext Prepa	ration Me	thod: EPA 3546			
Total Petroleum Hydrocarbons	ND mg/kg	23.	) 1	03/25/14 09:25	03/27/14 14:2	6	
TPH (C10-C20)	ND mg/kg	11.	51	03/25/14 09:25	03/27/14 14:2	6	
TPH (C20-C34)	ND mg/kg	11.	51	03/25/14 09:25	03/27/14 14:2	6	
Surrogates							
n-Pentacosane (S)	59 %.	30-15	31	03/25/14 09:25	03/27/14 14:2	6 629-99-2	
8015 Gasoline Range Organics	Analytical Method: E	PA 8015 Mod Pur					
TPH (C06-C12)	ND mg/kg	1.:	2 1		03/26/14 05:0	7	
Surrogates							
4-Bromofluorobenzene (S)	101 %.	38-163	31		03/26/14 05:0	7 460-00-4	
8270 MSSV SHORT LIST MICROWAVE	Analytical Method: E	PA 8270 Preparation M	ethod: EP/	A 3546			
Acenaphthene	ND ug/kg	380	) 1	03/25/14 10:10	03/25/14 20:3	5 83-32-9	
Acenaphthylene	ND ug/kg	380	) 1	03/25/14 10:10	03/25/14 20:3	5 208-96-8	
Anthracene	ND ug/kg	380	) 1	03/25/14 10:10	03/25/14 20:3	5 120-12-7	
Benzo(a)anthracene	ND ug/kg	380	) 1	03/25/14 10:10	03/25/14 20:3	5 56-55-3	
Benzo(a)pyrene	ND ug/kg	196	5 1	03/25/14 10:10	03/25/14 20:3	5 50-32-8	
Benzo(b)fluoranthene	ND ug/kg	380	) 1	03/25/14 10:10	03/25/14 20:3	5 205-99-2	
Benzo(g,h,i)perylene	ND ug/kg	380	) 1	03/25/14 10:10	03/25/14 20:3	5 191-24-2	
Benzo(k)fluoranthene	ND ug/kg	380	) 1	03/25/14 10:10			
Benzyl alcohol	ND ug/kg	76 <sup>-</sup>	1	03/25/14 10:10	03/25/14 20:3	5 100-51-6	
4-Bromophenylphenyl ether	ND ug/kg	380	) 1	03/25/14 10:10	03/25/14 20:3	5 101-55-3	
Butylbenzylphthalate	ND ug/kg	380	) 1	03/25/14 10:10	03/25/14 20:3	5 85-68-7	
4-Chloro-3-methylphenol	ND ug/kg	76 <sup>,</sup>	1	03/25/14 10:10			
4-Chloroaniline	ND ug/kg	76 <sup>-</sup>	1	03/25/14 10:10			
bis(2-Chloroethoxy)methane	ND ug/kg	380	) 1	03/25/14 10:10			
bis(2-Chloroethyl) ether	ND ug/kg	380			03/25/14 20:3		
bis(2-Chloroisopropyl) ether	ND ug/kg	380			03/25/14 20:3		
2-Chloronaphthalene	ND ug/kg	380	1	03/25/14 10:10			
2-Chlorophenol	ND ug/kg	380			03/25/14 20:3		
4-Chlorophenylphenyl ether	ND ug/kg	380			03/25/14 20:3		
Chrysene	ND ug/kg	380	1	03/25/14 10:10	03/25/14 20:3	5 218-01-9	
Dibenz(a,h)anthracene	ND ug/kg	196		03/25/14 10:10			
Dibenzofuran	ND ug/kg	380		03/25/14 10:10			
2,4-Dichlorophenol	ND ug/kg	380		03/25/14 10:10			
Diethylphthalate	ND ug/kg	380			03/25/14 20:3		
2,4-Dimethylphenol	ND ug/kg	380		03/25/14 10:10			
Dimethylphthalate	ND ug/kg	380		03/25/14 10:10			
Di-n-butylphthalate	ND ug/kg	380		03/25/14 10:10			
4,6-Dinitro-2-methylphenol	ND ug/kg	1840		03/25/14 10:10			
2,4-Dinitrophenol	ND ug/kg	1840		03/25/14 10:10			
2,4-Dinitrotoluene	ND ug/kg	380		03/25/14 10:10			
2,6-Dinitrotoluene	ND ug/kg	380		03/25/14 10:10			
Di-n-octylphthalate	ND ug/kg	380		03/25/14 10:10			
	ND ug/kg	380		03/25/14 10:10			

#### **REPORT OF LABORATORY ANALYSIS**

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### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888 5095061

Pace Project No .:

Sample: 58-SB-1 2-4'	Lab ID:	5095061006	Collected: 03/19/1	4 10:30	Received: 03	/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight	" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8270 MSSV SHORT LIST MICROWAVE	Analytical	Method: EPA 82	270 Preparation Meth	od: EPA	3546			
Fluoranthene	NE	) ug/kg	380	1	03/25/14 10:10	03/25/14 20:35	206-44-0	
Fluorene	NE	) ug/kg	380	1	03/25/14 10:10	03/25/14 20:35	66-73-7	
Hexachlorocyclopentadiene	NE	) ug/kg	380	1	03/25/14 10:10	03/25/14 20:35	77-47-4	
Hexachloroethane	NE	) ug/kg	380	1	03/25/14 10:10	03/25/14 20:35	67-72-1	
Indeno(1,2,3-cd)pyrene	NE	) ug/kg	380	1	03/25/14 10:10	03/25/14 20:35	193-39-5	
Isophorone	NE	) ug/kg	380	1	03/25/14 10:10	03/25/14 20:35	78-59-1	
2-Methylnaphthalene	NE	) ug/kg	380	1	03/25/14 10:10	03/25/14 20:35	91-57-6	
2-Methylphenol(o-Cresol)	NE	) ug/kg	380	1	03/25/14 10:10	03/25/14 20:35	95-48-7	
3&4-Methylphenol(m&p Cresol)	NE	) ug/kg	761	1	03/25/14 10:10	03/25/14 20:35	i	
Naphthalene	NE	) ug/kg	380	1	03/25/14 10:10	03/25/14 20:35	91-20-3	
2-Nitroaniline		) ug/kg	1840	1	03/25/14 10:10	03/25/14 20:35	88-74-4	
3-Nitroaniline	NE	) ug/kg	1840	1	03/25/14 10:10	03/25/14 20:35	99-09-2	
4-Nitroaniline	NE	) ug/kg	1840	1	03/25/14 10:10	03/25/14 20:35	100-01-6	
Nitrobenzene	NE	) ug/kg	380	1	03/25/14 10:10			
2-Nitrophenol		) ug/kg	380	1	03/25/14 10:10	03/25/14 20:35	88-75-5	
I-Nitrophenol		) ug/kg	1840	1	03/25/14 10:10	03/25/14 20:35	100-02-7	
N-Nitroso-di-n-propylamine		) ug/kg	380	1	03/25/14 10:10	03/25/14 20:35	621-64-7	
N-Nitrosodiphenylamine		ug/kg	380	1	03/25/14 10:10	03/25/14 20:35	86-30-6	
Phenanthrene		ug/kg	380	1	03/25/14 10:10	03/25/14 20:35	85-01-8	
Phenol		ug/kg	380	1	03/25/14 10:10			
<sup>o</sup> yrene		ug/kg	380	1	03/25/14 10:10			
2,4,5-Trichlorophenol		ug/kg	380	1	03/25/14 10:10			
2,4,6-Trichlorophenol		ug/kg	380	1	03/25/14 10:10			
Nitrobenzene-d5 (S)	74	%.	28-101	1	03/25/14 10:10	03/25/14 20:35	4165-60-0	
2-Fluorobiphenyl (S)		%.	31-94	1	03/25/14 10:10			
-Terphenyl-d14 (S)	88	%.	26-110	1	03/25/14 10:10			
Phenol-d5 (S)		%.	28-101	1	03/25/14 10:10			
2-Fluorophenol (S)		%.	24-104	1	03/25/14 10:10			
2,4,6-Tribromophenol (S)		%.	16-122	1	03/25/14 10:10			
260 MSV 5030 Low Level	Analytical I	Method: EPA 82	60					
Acetone	ND	mg/kg	0.12	1		03/27/14 19:36	67-64-1	
Acrolein		mg/kg	0.12	1		03/27/14 19:36		
Benzene		mg/kg	0.0058	1		03/27/14 19:36		
Bromobenzene		mg/kg	0.0058	1		03/27/14 19:36		
Bromochloromethane		mg/kg	0.0058	1		03/27/14 19:36		
Bromodichloromethane		mg/kg	0.0058	1		03/27/14 19:36		
Bromoform		mg/kg	0.0058	1		03/27/14 19:36		
Bromomethane		mg/kg	0.0058	1		03/27/14 19:36		
-Butanone (MEK)		mg/kg	0.029	1		03/27/14 19:36		
-Butylbenzene		mg/kg	0.0058	1		03/27/14 19:36		
ec-Butylbenzene		mg/kg	0.0058	1		03/27/14 19:36		
ert-Butylbenzene		mg/kg	0.0058	1		03/27/14 19:36		
Carbon disulfide		mg/kg	0.0038	1		03/27/14 19:36		



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#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-1 2-4'	Lab ID: 509	5061006	Collected: 03/19/1	14 10:30	Received: 0	)3/21/14 12:35 I	Matrix: Solid	
Results reported on a "dry-weigh	t" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qua
8260 MSV 5030 Low Level	Analytical Meti	hod: EPA 82	60					
Carbon tetrachloride	ND mg	g/kg	0.0058	1		03/27/14 19:36	56-23-5	
Chlorobenzene	ND mg	g/kg	0.0058	1		03/27/14 19:36	108-90-7	
Chloroethane	ND mg	g/kg	0.0058	1		03/27/14 19:36	75-00-3	
Chloroform	ND mg	g/kg	0.0058	1		03/27/14 19:36	67-66-3	
Chloromethane	ND mg	g/kg	0.0058	1		03/27/14 19:36	74-87-3	
2-Chlorotoluene	ND mg	g/kg	0.0058	1		03/27/14 19:36	95-49-8	
4-Chlorotoluene	ND mg	g/kg	0.0058	1		03/27/14 19:36	106-43-4	
Dibromochloromethane	ND mg	g/kg	0.0058	1		03/27/14 19:36	124-48-1	
Dibromomethane	ND mg	g/kg	0.0058	1		03/27/14 19:36	74-95-3	
1,2-Dichlorobenzene	ND mg	g/kg	0.0058	1		03/27/14 19:36	95-50-1	
1,3-Dichlorobenzene	ND mg	g/kg	0.0058	1		03/27/14 19:36	541-73-1	
1,4-Dichlorobenzene	ND mg	g/kg	0.0058	1		03/27/14 19:36	106-46-7	
trans-1,4-Dichloro-2-butene	ND mg	g/kg	0.12	1		03/27/14 19:36	110-57-6	
Dichlorodifluoromethane	ND mg	g/kg	0.0058	1		03/27/14 19:36	75-71-8	
1,1-Dichloroethane	ND mg	g/kg	0.0058	1		03/27/14 19:36	75-34-3	
1,2-Dichloroethane	ND mg	g/kg	0.0058	1		03/27/14 19:36	107-06-2	
1,1-Dichloroethene	ND mg	g/kg	0.0058	1		03/27/14 19:36	75-35-4	
cis-1,2-Dichloroethene	ND mg	g/kg	0.0058	1		03/27/14 19:36	156-59-2	
rans-1,2-Dichloroethene	ND mg	g/kg	0.0058	1		03/27/14 19:36	156-60-5	
1,2-Dichloropropane	ND mg	j/kg	0.0058	1		03/27/14 19:36	78-87-5	
1,3-Dichloropropane	ND mg	g/kg	0.0058	1		03/27/14 19:36	142-28-9	
2,2-Dichloropropane	ND mg		0.0058	1		03/27/14 19:36	594-20-7	
1,1-Dichloropropene	ND mg	j/kg	0.0058	1		03/27/14 19:36	563-58-6	
cis-1,3-Dichloropropene	ND mg		0.0058	1		03/27/14 19:36	10061-01-5	
rans-1,3-Dichloropropene	ND mg	j/kg	0.0058	1		03/27/14 19:36	10061-02-6	
Ethylbenzene	ND mg		0.0058	1		03/27/14 19:36	100-41-4	
Ethyl methacrylate	ND mg		0.12	1		03/27/14 19:36	97-63-2	
2-Hexanone	ND mg	•	0.12	1		03/27/14 19:36	591-78-6	
odomethane	ND mg	-	0.12	1		03/27/14 19:36		
sopropylbenzene (Cumene)	ND mg	-	0.0058	1		03/27/14 19:36		
-Isopropyltoluene	ND mg	-	0.0058	1		03/27/14 19:36	99-87-6	
Methylene Chloride	ND mg	-	0.023	1		03/27/14 19:36		
I-Methyl-2-pentanone (MIBK)	ND mg	-	0.029	1		03/27/14 19:36	108-10-1	
Aethyl-tert-butyl ether	ND mg	•	0.0058	1		03/27/14 19:36		
-Propylbenzerie	ND mg	-	0.0058	1		03/27/14 19:36		
Styrene	ND mg	-	0.0058	1		03/27/14 19:36		
,1,1,2-Tetrachloroethane	ND mg	-	0.0058	1		03/27/14 19:36		
,1,2,2-Tetrachloroethane	ND mg		0.0058	1		03/27/14 19:36		
etrachloroethene	ND mg	-	0.0058	1		03/27/14 19:36		
oluene	ND mg		0.0058	1		03/27/14 19:36		
,2,3-Trichlorobenzene	ND mg	-	0.0058	1		03/27/14 19:36		
,2,4-Trichlorobenzene	ND mg	-	0.0058	1		03/27/14 19:36		
,1,1-Trichloroethane	ND mg	-	0.0058	1		03/27/14 19:36		
,1,2-Trichloroethane	ND mg	•	0.0058	1		03/27/14 19:36		
richloroethene	ND mg	-	0.0058	1		03/27/14 19:36		
Trichlorofluoromethane	ND mg	-	0.0000			03/27/14 19:36	19-01-0	

## **REPORT OF LABORATORY ANALYSIS**

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Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

# **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-1 2-4'	Lab ID: 509	5061006	Collected: 03/19	/14 10:30	Received: 03	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weigh	ht" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Met	hod: EPA 82	260					
1,2,4-Trimethylbenzene	ND m	g/kg	0.005	3 1		03/27/14 19:36	§ 95-63-6	
1,3,5-Trimethylbenzene	ND m	g/kg	0.005	3 1		03/27/14 19:36	6 108-67-8	
Vinyl acetate	ND m	g/kg	0.1	2 1		03/27/14 19:36	6 108-05-4	
Vinyl chloride	ND m	g/kg	0.005	3 1		03/27/14 19:36	3 75-01-4	
Xylene (Total)	ND m	g/kg	0.01	2 1		03/27/14 19:36	3 1330-20-7	
Surrogates								
Dibromofluoromethane (S)	98 %		85-11	3 1		03/27/14 19:36	3 <b>1868-53-7</b>	
Toluene-d8 (S)	102 %		71-12	3 1		03/27/14 19:36	3 2037-26-5	
4-Bromofluorobenzene (S)	98 %		56-14	1		03/27/14 19:36	6 460-00-4	
Percent Moisture	Analytical Met	hod: ASTM	D2974-87					
Percent Moisture	13.2 %		0.10	) 1		03/24/14 15:44	Ļ	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

basis							
NUSIS							
Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Analytical M	ethod: EPA 80	)15 Mod Ext Preparat	tion Me	thod: EPA 3546			
ND	mg/kg	23.6	1	03/25/14 09:25	03/27/14 14:33		
ND r	mg/kg	11.8	1	03/25/14 09:25	03/27/14 14:33	1	
14.9 r	mg/kg	11.8	1	03/25/14 09:25	03/27/14 14:33	ł	
75 9	%.	30-153	1	03/25/14 09:25	03/27/14 14:33	629-99-2	
Analytical Me	ethod: EPA 80	)15 Mod Pur					
ND r	mg/kg	1.2	1		03/26/14 05:33		
99 9	%.	38-163	1		03/26/14 05:33	460-00-4	
Analytical Me	ethod: EPA 82	270 Preparation Meth	od: EPA	\$3546			
ND 7	ua/ka	391	1	03/25/14 10:10	03/25/14 20:55	83-32-9	
	0 0	391	1				
	• •	391	1	03/25/14 10:10	03/25/14 20:55	120-12-7	
		391	1	03/25/14 10:10	03/25/14 20:55	56-55-3	
ND I	ug/kg	201	1	03/25/14 10:10	03/25/14 20:55	50-32-8	
ND I	ug/kg	391	1	03/25/14 10:10	03/25/14 20:55	205-99-2	
ND I	ug/kg	391	1	03/25/14 10:10	03/25/14 20:55	191-24-2	
ND ı	ug/kg	391	1	03/25/14 10:10	03/25/14 20:55	207-08-9	
ND ı	ug/kg	782	1	03/25/14 10:10	03/25/14 20:55	100-51-6	
ND เ	Jg/kg	391	1	03/25/14 10:10	03/25/14 20:55	101-55-3	
ND เ	ug/kg	391	1	03/25/14 10:10	03/25/14 20:55	85-68-7	
ND ι	Jg/kg	782	1	03/25/14 10:10	03/25/14 20:55	59-50-7	
ND เ	Jg/kg	782	1	03/25/14 10:10	03/25/14 20:55	106-47-8	
ND เ	Jg/kg	391	1	03/25/14 10:10	03/25/14 20:55	111-91-1	
ND ι	Jg/kg	391	1	03/25/14 10:10	03/25/14 20:55	111-44-4	
ND เ	Jg/kg	391	1	03/25/14 10:10	03/25/14 20:55	108-60-1	
ND ເ	Jg/kg	391	1				
		391	1				
	•••						
			-				
	ig/kg ig/kg	391	1 1	03/25/14 10:10			
	Analytical M ND ND 14.9 75 Analytical M ND 99 Analytical M ND 99 Analytical M ND ND ND ND ND ND ND ND ND ND ND ND ND	Analytical Method: EPA 80 ND mg/kg ND mg/kg 14.9 mg/kg 75 %. Analytical Method: EPA 80 ND mg/kg 99 %. Analytical Method: EPA 82 ND ug/kg ND ug/kg N	Analytical Method: EPA 8015 Mod Ext         Preparat           ND         mg/kg         11.8           14.9         mg/kg         11.8           75         %.         30-153           Analytical Method: EPA 8015 Mod Pur         ND           ND         mg/kg         1.2           99         %.         38-163           Analytical Method: EPA 8270         Preparation Meth           ND         ug/kg         391           ND         ug/kg         391	Analytical Method: EPA 8015 Mod Ext         Preparation         Method           ND         mg/kg         23.6         1           ND         mg/kg         11.8         1           14.9         mg/kg         11.8         1           75         %.         30-153         1           Analytical Method: EPA 8015 Mod Pur         ND         mg/kg         1.2         1           99         %.         38-163         1         1           Analytical Method: EPA 8270         Preparation Method: EPA         1           ND         ug/kg         391         1	Analytical Method: EPA 8015 Mod Ext         Preparation Method: EPA 3546           ND mg/kg         23.6         1         03/25/14 09:25           ND mg/kg         11.8         1         03/25/14 09:25           14.9 mg/kg         11.8         1         03/25/14 09:25           75 %.         30-153         1         03/25/14 09:25           Analytical Method: EPA 8015 Mod Pur         ND mg/kg         1.2         1           99 %.         38-163         1         Analytical Method: EPA 8270         Preparation Method: EPA 3546           ND ug/kg         391         1         03/25/14 10:10         ND ug/kg         391         1         03/25/14 10:10           ND ug/kg         391         1         03/25/14 10:10         ND ug/kg         391         1         03/25/14 10:10           ND ug/kg         391         1         03/25/14 10:10         ND ug/kg         391         1         03/25/14 10:10           ND ug/kg         391         1         03/25/14 10:10         ND ug/kg         391         1         03/25/14 10:10           ND ug/kg         391         1         03/25/14 10:10         ND ug/kg         391         1         03/25/14 10:10           ND ug/kg         391	Analytical Method: EPA 8015 Mod Ext. Preparation Method: EPA 3546           ND mg/kg         23.6         1         03/25/14 09:25         03/27/14 14:33           ND mg/kg         11.8         1         03/25/14 09:25         03/27/14 14:33           14.9 mg/kg         11.8         1         03/25/14 09:25         03/27/14 14:33           75 %.         30-153         1         03/25/14 09:25         03/27/14 14:33           Analytical Method: EPA 8015 Mod Pur         ND mg/kg         1.2         1         03/26/14 05:33           99 %.         38-163         1         03/25/14 10:10         03/25/14 20:55           ND ug/kg         391         1         03/25/14 10:10         03/25/14	Analytical Method: EPA 8015 Mod Ext         Preparation Method: EPA 3546           ND         mg/kg         23.6         1         03/25/14 09:25         03/27/14 14:33           14.9         mg/kg         11.8         1         03/25/14 09:25         03/27/14 14:33           75         %.         30-153         1         03/25/14 09:25         03/27/14 14:33           75         %.         30-153         1         03/25/14 09:25         03/27/14 14:33           99         %.         38-163         1         03/26/14 05:33         460-00-4           Analytical Method: EPA 8015 Mod Pur         ND         mg/kg         391         1         03/25/14 10:10         03/26/14 00:55         83-32-9           ND         ug/kg         391         1         03/25/14 10:10         03/25/14 20:55         120-12-7           ND         ug/kg         391         1         03/25/14 10:10         03/25/14 20:55         205-99-2           ND         ug/kg         391         1         03/25/14 10:10         03/25/14 20:55         205-28           ND         ug/kg         391         1         03/25/14 10:10         03/25/14 20:55         205-28           ND         ug/kg         391         1



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-2 2-4'	Lab ID: 5095061007	Collected: 03/19/14 11:07	Received: 0	3/21/14 12:35 N	Matrix: Solid	
Results reported on a "dry-weight	t" basis					
Parameters	Results Units	Report LimitDF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV SHORT LIST MICROWAVE	Analytical Method: EPA 82	70 Preparation Method: EF	A 3546			
Fluoranthene	ND ug/kg	391 1	03/25/14 10:10	03/25/14 20:55	206-44-0	
Fluorene	ND ug/kg	391 1	03/25/14 10:10	03/25/14 20:55	86-73-7	
Hexachlorocyclopentadiene	ND ug/kg	391 1	03/25/14 10:10	03/25/14 20:55	77-47-4	
Hexachloroethane	ND ug/kg	391 1	03/25/14 10:10	03/25/14 20:55	67-72-1	
Indeno(1,2,3-cd)pyrene	ND ug/kg	391 1	03/25/14 10:10	03/25/14 20:55	193-39-5	
Isophorone	ND ug/kg	391 1	03/25/14 10:10	03/25/14 20:55	78-59-1	
2-Methylnaphthalene	ND ug/kg	391 1	03/25/14 10:10	03/25/14 20:55	91-57-6	
2-Methylphenol(o-Cresol)	ND ug/kg	391 1	03/25/14 10:10	03/25/14 20:55	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND ug/kg	782 1	03/25/14 10:10	03/25/14 20:55		
Naphthalene	ND ug/kg	391 1	03/25/14 10:10	03/25/14 20:55	91-20-3	
2-Nitroaniline	ND ug/kg	1890 1		03/25/14 20:55		
3-Nitroaniline	ND ug/kg	1890 1		03/25/14 20:55		
4-Nitroaniline	ND ug/kg	1890 1	03/25/14 10:10	03/25/14 20:55	100-01-6	
Nitrobenzene	ND ug/kg	391 1		03/25/14 20:55		
2-Nitrophenol	ND ug/kg	391 1	03/25/14 10:10	03/25/14 20:55	88-75-5	
I-Nitrophenol	ND ug/kg	1890 1		03/25/14 20:55		
N-Nitroso-di-n-propylamine	ND ug/kg	391 1		03/25/14 20:55		
N-Nitrosodiphenylamine	ND ug/kg	391 1		03/25/14 20:55		
Phenanthrene	ND ug/kg	391 1		03/25/14 20:55		
Phenol	ND ug/kg	391 1		03/25/14 20:55		
<sup>o</sup> yrene	ND ug/kg	391 1		03/25/14 20:55		
4,5-Trichlorophenol	ND ug/kg	391 1		03/25/14 20:55		
2,4,6-Trichlorophenol	ND ug/kg	391 1		03/25/14 20:55		
Surrogates			00.20, 1	00/20/11/20:00	00 00 2	
Nitrobenzene-d5 (S)	73 %.	28-101 1	03/25/14 10:10	03/25/14 20:55	4165-60-0	
2-Fluorobiphenyl (S)	75 %.	31-94 1		03/25/14 20:55		
-Terphenyl-d14 (S)	86 %.	26-110 1		03/25/14 20:55		
Phenol-d5 (S)	80 %.	28-101 1		03/25/14 20:55		
2-Fluorophenol (S)	76 %.	24-104 1		03/25/14 20:55		
2,4,6-Tribromophenol (S)	87 %.	16-122 1		03/25/14 20:55		
260 MSV 5030 Low Level	Analytical Method: EPA 826	60				
Acetone	ND mg/kg	0.12 1		03/27/14 20:11	67-64-1	
Acrolein	ND mg/kg	0.12 1		03/27/14 20:11		
Benzene	ND mg/kg	0.0059 1		03/27/14 20:11		
Bromobenzene	ND mg/kg	0.0059 1		03/27/14 20:11		
Bromochloromethane	ND mg/kg	0.0059 1		03/27/14 20:11		
romodichloromethane	ND mg/kg	0.0059 1		03/27/14 20:11		
Bromoform	ND mg/kg	0.0059 1		03/27/14 20:11		
Bromomethane	ND mg/kg	0.0059 1		03/27/14 20:11		
Butanone (MEK)	ND mg/kg	0.039 1		03/27/14 20:11		
-Butylbenzene		0.0059 1				
•	ND mg/kg			03/27/14 20:11		
ec-Butylbenzene ert-Butylbenzene	ND mg/kg	0.0059 1		03/27/14 20:11		
•	ND mg/kg	0.0059 1		03/27/14 20:11		
Carbon disulfide	ND mg/kg	0.012 1		03/27/14 20:11	/5-15-0	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-2 2-4'	Lab ID: 5095061007	Collected: 03/19/14 11:07	Received: 03/21/14 12:35	Matrix: Solid
Results reported on a "dry-weigh	nt" basis			
Parameters	Results Unit	s Report Limit DF	Prepared Analyzed	CAS No. Qual
8260 MSV 5030 Low Level	Analytical Method: EPA	8260		
Carbon tetrachloride	ND mg/kg	0.0059 1	03/27/14 20:11	56-23-5
Chlorobenzene	ND mg/kg	0.0059 1	03/27/14 20:11	108-90-7
Chloroethane	ND mg/kg	0.0059 1	03/27/14 20:11	75-00-3
Chloroform	ND mg/kg	0.0059 1	03/27/14 20:11	67-66-3
Chloromethane	ND mg/kg	0.0059 1	03/27/14 20:11	74-87-3
2-Chlorotoluene	ND mg/kg	0.0059 1	03/27/14 20:11	95-49-8
4-Chiorotoluene	ND mg/kg	0.0059 1	03/27/14 20:11	106-43-4
Dibromochloromethane	ND mg/kg	0.0059 1	03/27/14 20:11	124-48-1
Dibromomethane	ND mg/kg	0.0059 1	03/27/14 20:11	74-95-3
1,2-Dichlorobenzene	ND mg/kg	0.0059 1	03/27/14 20:11	95-50-1
1,3-Dichlorobenzene	ND mg/kg	0.0059 1	03/27/14 20:11	541-73-1
1,4-Dichlorobenzene	ND mg/kg	0.0059 1	03/27/14 20:11	106-46-7
trans-1,4-Dichloro-2-butene	ND mg/kg	0.12 1	03/27/14 20:11	
Dichlorodifluoromethane	ND mg/kg	0.0059 1	03/27/14 20:11	75-71-8
1,1-Dichloroethane	ND mg/kg	0.0059 1	03/27/14 20:11	75-34-3
1,2-Dichloroethane	ND mg/kg	0.0059 1	03/27/14 20:11	
1,1-Dichloroethene	ND mg/kg	0.0059 1	03/27/14 20:11	
cis-1,2-Dichloroethene	ND mg/kg	0.0059 1	03/27/14 20:11	
trans-1,2-Dichloroethene	ND mg/kg	0.0059 1	03/27/14 20:11	
1,2-Dichloropropane	ND mg/kg	0.0059 1	03/27/14 20:11	
1,3-Dichloropropane	ND mg/kg	0.0059 1	03/27/14 20:11	
2,2-Dichloropropane	ND mg/kg	0.0059 1	03/27/14 20:11	
1,1-Dichloropropene	ND mg/kg	0.0059 1	03/27/14 20:11	
cis-1,3-Dichloropropene	ND mg/kg	0.0059 1	03/27/14 20:11	
trans-1,3-Dichloropropene	ND mg/kg	0.0059 1	03/27/14 20:11	
Ethylbenzene	ND mg/kg	0.0059 1	03/27/14 20:11	
Ethyl methacrylate	ND mg/kg	0.12 1	03/27/14 20:11	
2-Hexanone	ND mg/kg	0.12 1	03/27/14 20:11	
Iodomethane	ND mg/kg	0.12 1	03/27/14 20:11	
Isopropylbenzene (Cumene)	ND mg/kg	0.0059 1	03/27/14 20:11	
p-isopropyltoluene	ND mg/kg	0.0059 1	03/27/14 20:11	
Methylene Chloride	ND mg/kg	0.024 1	03/27/14 20:11	
4-Methyl-2-pentanone (MIBK)	ND mg/kg	0.024 1	03/27/14 20:11	
Methyl-tert-butyl ether	ND mg/kg	0.0059 1	03/27/14 20:11	
n-Propylbenzene	ND mg/kg	0.0059 1	03/27/14 20:11	
Styrene	ND mg/kg	0.0059 1	03/27/14 20:11	
1,1,1,2-Tetrachloroethane	•••	0.0059 1	03/27/14 20:11	
1,1,2,2-Tetrachloroethane	ND mg/kg			
Tetrachloroethene	ND mg/kg		03/27/14 20:11	
Toluene	ND mg/kg		03/27/14 20:11	
	ND mg/kg		03/27/14 20:11	
1,2,3-Trichlorobenzene	ND mg/kg	0.0059 1	03/27/14 20:11	
1,2,4-Trichlorobenzene	ND mg/kg	0.0059 1	03/27/14 20:11	
1,1,1-Trichloroethane	ND mg/kg	0.0059 1	03/27/14 20:11	
1,1,2-Trichloroethane	ND mg/kg	0.0059 1	03/27/14 20:11	
Trichloroethene	ND mg/kg	0.0059 1	03/27/14 20:11	
Trichlorofluoromethane	ND mg/kg	0.0059 1	03/27/14 20:11	75-69-4



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

 Sample:
 58-SB-2 2-4'
 Lab ID:
 5095061007
 Collected:
 03/19/14 11:07
 Received:
 03/21/14 12:35
 Matrix:
 Solid

 Results reported on a "dry-weight" basis
 Image: Solid state in the solid state

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Me	thod: EPA 826	0					
1,2,4-Trimethylbenzene	ND m	ig/kg	0.0059	1		03/27/14 20:11	95-63-6	
1,3,5-Trimethylberizene	ND m	ig/kg	0.0059	1		03/27/14 20:11	108-67-8	
Vinyl acetate	ND m	g/kg	0.12	1		03/27/14 20:11	108-05-4	
Vinyl chloride	ND m	ig/kg	0.0059	1		03/27/14 20:11	75-01-4	
Xylene (Total) Surrogates	ND m	ig/kg	0.012	1		03/27/14 20:11	1330-20-7	
Dibromofluoromethane (S)	98 %	<b>.</b>	85-118	1		03/27/14 20:11	1868-53-7	
Toluene-d8 (S)	103 %	<b>).</b>	71-128	1		03/27/14 20:11	2037-26-5	
4-Bromofluorobenzene (S)	98 %	).	56-144	1		03/27/14 20:11	460-00-4	
Percent Moisture	Analytical Met	thod: ASTM D2	2974-87					
Percent Moisture	15.6 %	)	0.10	1		03/24/14 15:44		



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

## **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-3 6-8'	Lab ID: 509	5061008	Collected: 03/19/	14 11:35	Received: 03	/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight"	" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Meth	nod: EPA 80	015 Mod Ext Prepara	ation Me	thod: EPA 3546			
Total Petroleum Hydrocarbons	ND mg	j/kg	24.3	1	03/25/14 09:25	03/27/14 14:4 <sup>-</sup>	l	
TPH (C10-C20)	ND mg	g/kg	12.1	1	03/25/14 09:25	03/27/14 14:4	l	
TPH (C20-C34)	12.8 mg	g/kg	12.1	1	03/25/14 09:25	03/27/14 14:4	l	
Surrogates								
n-Pentacosane (S)	68 %.		30-153	1	03/25/14 09:25	03/27/14 14:4	629-99-2	
8015 Gasoline Range Organics	Analytical Meth	nod: EPA 80	)15 Mod Pur					
TPH (C06-C12)	ND mg	j/kg	1.2	1		03/27/14 16:2 <sup>-</sup>	I	
Surrogates								
4-Bromofluorobenzene (S)	<b>9</b> 5 %.		38-163	1		03/27/14 16:21	460-00-4	
8270 MSSV SHORT LIST MICROWAVE	Analytical Meth	nod: EPA 82	270 Preparation Met	hod: EP/	3546			
Acenaphthene	ND ug	/ka	403	1	03/25/14 10:10	03/26/14 16:11	83-32-9	
Acenaphthylene	ND ug	-	403	1	03/25/14 10:10			
Anthracene	ND ug		403	1	03/25/14 10:10			
Benzo(a)anthracene	ND ug	-	403	1	03/25/14 10:10	03/26/14 16:11	56-55-3	
Benzo(a)pyrene	ND ug	-	208	1	03/25/14 10:10	03/26/14 16:11	50-32-8	
Benzo(b)fluoranthene	ND ug	-	403	1	03/25/14 10:10			
Benzo(g,h,i)perylene	ND ug	-	403	1	03/25/14 10:10	03/26/14 16:11	191-24-2	
Benzo(k)fluoranthene	ND ug	-	403	1	03/25/14 10:10	03/26/14 16:11	207-08-9	
Benzyl alcohol	ND ug	-	806	1	03/25/14 10:10	03/26/14 16:11	100-51-6	
4-Bromophenylphenyl ether	ND ug		403	1	03/25/14 10:10			
Butylbenzylphthalate	ND ug	-	403	1	03/25/14 10:10	03/26/14 16:11	85-68-7	
4-Chloro-3-methylphenol	ND ug	-	806	1	03/25/14 10:10	03/26/14 16:11	59-50-7	
4-Chloroaniline	ND ug	/kg	806	1	03/25/14 10:10	03/26/14 16:11	106-47-8	
bis(2-Chloroethoxy)methane	ND ug	-	403	1	03/25/14 10:10	03/26/14 16:11	111-91-1	
bis(2-Chloroethyl) ether	ND ug	/kg	403	1	03/25/14 10:10			
bis(2-Chloroisopropyl) ether	ND ug/	-	403	· 1	03/25/14 10:10	03/26/14 16:11	108-60-1	
2-Chioronaphthalene	ND ug/	/kg	403	1	03/25/14 10:10	03/26/14 16:11	91-58-7	
2-Chlorophenol	ND ug/	/kg	403	1	03/25/14 10:10	03/26/14 16:11	95-57-8	
4-Chlorophenylphenyl ether	ND ug/	′kg	403	1	03/25/14 10:10	03/26/14 16:11	7005-72-3	
Chrysene	ND ug/	′kg	403	1	03/25/14 10:10	03/26/14 16:11	218-01-9	
Dibenz(a,h)anthracene	ND ug/	'kg	208	1	03/25/14 10:10	03/26/14 16:11	53-70-3	
Dibenzofuran	ND ug/	'kg	403	1	03/25/14 10:10	03/26/14 16:11	132-64-9	
2,4-Dichlorophenol	ND ug/	'kg	403	1	03/25/14 10:10	03/26/14 16:11	120-83-2	
Diethylphthalate	ND ug/	'kg	403	1	03/25/14 10:10	03/26/14 16:11	84-66-2	
2,4-Dimethylphenol	ND ug/		403	1	03/25/14 10:10	03/26/14 16:11	105-67-9	
Dimethylphthalate	ND ug/		403	1	03/25/14 10:10	03/26/14 16:11	131-11-3	
Di-n-butylphthalate	ND ug/	kg	403	1	03/25/14 10:10	03/26/14 16:11	84-74-2	
4,6-Dinitro-2-methylphenol	ND ug/	kg	1950	1	03/25/14 10:10			
2,4-Dinitrophenol	ND ug/	kg	1950	1	03/25/14 10:10	03/26/14 16:11	51-28-5	
2,4-Dinitrotoluene	ND ug/	kg	403	1	03/25/14 10:10	03/26/14 16:11	121-14-2	
2,6-Dinitrotoluene	ND ug/	kg	403	1	03/25/14 10:10	03/26/14 16:11	606-20-2	
Di-n-octylphthalate	ND ug/	kg	403	1	03/25/14 10:10	03/26/14 16:11	117-84-0	
bis(2-Ethylhexyl)phthalate	ND ug/	kg	403	1	03/25/14 10:10	03/26/14 16:11	117-81-7	



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#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-3 6-8'	Lab ID: 5095061008	Collected: 03/19/14 1	1:35	Received: 03	3/21/14 12:35 I	Matrix: Solid	
Results reported on a "dry-weight"	" basis						
Parameters	Results Units	Report Limit D	F	Prepared	Analyzed	CAS No.	Qual
3270 MSSV SHORT LIST MICROWAVE	Analytical Method: EPA	8270 Preparation Method	: EPA	3546			
Iuoranthene	ND ug/kg	403	1	03/25/14 10:10	03/26/14 16:11	206-44-0	
Fluorene	ND ug/kg	403 <sup>-</sup>	1	03/25/14 10:10	03/26/14 16:11	86-73-7	
Hexachlorocyclopentadiene	ND ug/kg	403	1	03/25/14 10:10	03/26/14 16:11	77-47-4	
lexachloroethane	ND ug/kg	403	1	03/25/14 10:10	03/26/14 16:11	67-72-1	
ndeno(1,2,3-cd)pyrene	ND ug/kg	403 <sup>-</sup>	1	03/25/14 10:10	03/26/14 16:11	193-39-5	
sophorone	ND ug/kg	403	1	03/25/14 10:10	03/26/14 16:11	78-59-1	
2-Methylnaphthalene	ND ug/kg	403	1		03/26/14 16:11		
2-Methylphenol(o-Cresol)	ND ug/kg	403	1	03/25/14 10:10	03/26/14 16:11	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND ug/kg	806	1	03/25/14 10:10	03/26/14 16:11		
Naphthalene	ND ug/kg	403	1	03/25/14 10:10	03/26/14 16:11	91-20-3	
2-Nitroaniline	ND ug/kg	1950	1	03/25/14 10:10	03/26/14 16:11	88-74-4	
3-Nitroaniline	ND ug/kg	1950	1	03/25/14 10:10	03/26/14 16:11	99-09-2	
I-Nitroaniline	ND ug/kg	<b>1950</b> 1	1	03/25/14 10:10	03/26/14 16:11	100-01-6	
Nitrobenzene	ND ug/kg	<b>403</b> 1	1		03/26/14 16:11		
2-Nitrophenol	ND ug/kg	<b>403</b> 1	1	03/25/14 10:10	03/26/14 16:11	88-75-5	
l-Nitrophenol	ND ug/kg	1950 1	1		03/26/14 16:11		
I-Nitroso-di-n-propylamine	ND ug/kg	403 1	1		03/26/14 16:11		
I-Nitrosodiphenylamine	ND ug/kg	403 1			03/26/14 16:11		
Phenanthrene	ND ug/kg	403 1	1		03/26/14 16:11		
Phenol	ND ug/kg	403 1		03/25/14 10:10			
yrene	ND ug/kg	403 1			03/26/14 16:11		
4,5-Trichlorophenol	ND ug/kg	403 1	1	03/25/14 10:10			
4,6-Trichlorophenol	ND ug/kg	403 1			03/26/14 16:11		
Surrogates							
litrobenzene-d5 (S)	65 %.	28-101 1	l	03/25/14 10:10	03/26/14 16:11	4165-60-0	
-Fluorobiphenyl (S)	72 %.	31-94 1	l	03/25/14 10:10	03/26/14 16:11	321-60-8	
-Terphenyl-d14 (S)	83 %.	26-110 1	l	03/25/14 10:10	03/26/14 16:11	1718-51-0	
Phenol-d5 (S)	70 %.	28-101 1		03/25/14 10:10	03/26/14 16:11	4165-62-2	
-Fluorophenol (S)	69 %.	24-104 1		03/25/14 10:10			
,4,6-Tribromophenol (S)	81 %.	16-122 1		03/25/14 10:10			
260 MSV 5030 Low Level	Analytical Method: EPA 8	3260					
cetone	ND mg/kg	0.12 1			03/27/14 20:47	67-64-1	
crolein	ND mg/kg	0.12 1			03/27/14 20:47	107-02-8	
Benzene	ND mg/kg	0.0061 1			03/27/14 20:47		
Bromobenzene	ND mg/kg	0.0061 1			03/27/14 20:47		
romochloromethane	ND mg/kg	0.0061 1			03/27/14 20:47		
romodichloromethane	ND mg/kg	0.0061 1			03/27/14 20:47		
Bromoform	ND mg/kg	0.0061 1			03/27/14 20:47		
romomethane	ND mg/kg	0.0061 1			03/27/14 20:47		
-Butanone (MEK)	ND mg/kg	0.031 1			03/27/14 20:47		
-Butylbenzene	ND mg/kg	0.0061 1			03/27/14 20:47		
ec-Butylbenzene	ND mg/kg	0.0061 1			03/27/14 20:47		
-	ND mg/kg	0.0061 1			03/27/14 20:47		
ert-Butylbenzene							

# **REPORT OF LABORATORY ANALYSIS**

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# **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-3 6-8'	Lab ID: 509506100	8 Collected: 03/19/	14 11:35	Received: 03/21/1	4 12:35	Matrix: Solid	- <u></u>
Results reported on a "dry-weigh	nt" basis						
Parameters	ResultsUni	ts Report Limit	DF	Prepared A	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method: EP	A 8260					
Carbon tetrachloride	ND mg/kg	0.0061	1	03/2	7/14 20:4	7 56-23-5	
Chlorobenzene	ND mg/kg	0.0061	1	03/2	7/14 20:4	7 108-90-7	
Chloroethane	ND mg/kg	0.0061	1	03/2	7/14 20:4	7 75-00-3	
Chloroform	ND mg/kg	0.0061	1	03/2	7/14 20:4	7 67-66-3	
Chloromethane	ND mg/kg	0.0061	1	03/2	7/14 20:4	7 74-87-3	
2-Chlorotoluene	ND mg/kg	0.0061	1	03/2	7/14 20:4	7 95-49-8	
4-Chlorotoluene	ND mg/kg	0.0061	1	03/2	7/14 20:4	7 106-43-4	
Dibromochloromethane	ND mg/kg	0.0061	1	03/2	7/14 20:4	7 124-48-1	
Dibromomethane	ND mg/kg	0.0061	1	03/2	7/14 20:47	7 74-95-3	
1,2-Dichlorobenzene	ND mg/kg	0.0061	1	03/2	7/14 20:47	7 95-50-1	
1,3-Dichlorobenzene	ND mg/kg	0.0061	1			7 541-73-1	
1,4-Dichlorobenzene	ND mg/kg	0.0061	1			7 106-46-7	
trans-1,4-Dichloro-2-butene	ND mg/kg	0.12	1			7 110-57-6	
Dichlorodifluoromethane	ND mg/kg	0.0061	1			7 75-71-8	
1.1-Dichloroethane	ND mg/kg	0.0061	1			7 75-34-3	
1,2-Dichloroethane	ND mg/kg	0.0061	1			7 107-06-2	
1,1-Dichloroethene	ND mg/kg	0.0061	1			7 75-35-4	
cis-1,2-Dichloroethene	ND mg/kg	0.0061	1			7 156-59-2	
trans-1,2-Dichloroethene	ND mg/kg	0.0061	1			7 156-60-5	
1,2-Dichloropropane	ND mg/kg	0.0061	1			7 78-87-5	
1,3-Dichloropropane	ND mg/kg	0.0061	1			7 142-28-9	
2,2-Dichloropropane	ND mg/kg	0.0061	1			7 594-20-7	
1,1-Dichloropropene	ND mg/kg	0.0061	1			7 563-58-6	
cis-1,3-Dichloropropene	ND mg/kg	0.0061	1			7 10061-01-5	
trans-1,3-Dichloropropene	ND mg/kg	0.0061	1			7 10061-01-0	
Ethylbenzene	ND mg/kg	0.0061	1			7 100-41-4	
Ethyl methacrylate	ND mg/kg	0.12	1			7 97-63-2	
2-Hexanone	ND mg/kg	0.12	1			7 591-78-6	
lodomethane	ND mg/kg	0.12	1		7/14 20:47 7/14 20:47		
Isopropylbenzene (Cumene)	ND mg/kg	0.0061	1			7 98-82-8	
p-lsopropyltoluene	ND mg/kg	0.0001	1			90-02-0 7 99-87-6	
Methylene Chloride	ND mg/kg	0.024	1			7 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND mg/kg	0.024	1			75-09-2	
Methyl-tert-butyl ether		0.0061	1				
n-Propylbenzene	ND mg/kg ND mg/kg		1			7 1634-04-4 7 103-65-1	
Styrene	00	0.0061 0.0061	1			103-65-1	
1,1,1,2-Tetrachloroethane	ND mg/kg	0.0061	1			630-20-6	
	ND mg/kg		1				
1,1,2,2-Tetrachloroethane	ND mg/kg	0.0061			7/14 20:47		
Tetrachloroethene Toluene	ND mg/kg	0.0061	1			127-18-4	
	ND mg/kg	0.0061	1			108-88-3	
1,2,3-Trichlorobenzene	ND mg/kg	0.0061	1			87-61-6	
1,2,4-Trichlorobenzene	ND mg/kg	0.0061	1			120-82-1	
1,1,1-Trichloroethane	ND mg/kg	0.0061	1		7/14 20:47		
1,1,2-Trichloroethane	ND mg/kg	0.0061	1		7/14 20:47		
	ND mg/kg	0.0061	1		7/14 20:47		
Trichlorofluoromethane	ND mg/kg	0.0061	1	03/27	7/14 20:47	/5-69-4	

## **REPORT OF LABORATORY ANALYSIS**

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#### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-3 6-8' Lab ID: 5095061008 Received: 03/21/14 12:35 Matrix: Solid Collected: 03/19/14 11:35 Results reported on a "dry-weight" basis Parameters Results Units Report Limit DF Prepared CAS No. Analyzed Qual 8260 MSV 5030 Low Level Analytical Method: EPA 8260 1,2,4-Trimethylbenzene ND mg/kg 0.0061 03/27/14 20:47 95-63-6 1 1,3,5-Trimethylbenzene 03/27/14 20:47 108-67-8 ND mg/kg 0.0061 1 Vinyl acetate 03/27/14 20:47 108-05-4 ND mg/kg 0.12 1 03/27/14 20:47 75-01-4 Vinyl chloride ND mg/kg 0.0061 1 Xylene (Total) 03/27/14 20:47 1330-20-7 ND mg/kg 0.012 1 Surrogates Dibromofluoromethane (S) 97 %. 85-118 1 03/27/14 20:47 1868-53-7 Toluene-d8 (S) 106 %. 71-128 1 03/27/14 20:47 2037-26-5 4-Bromofluorobenzene (S) 95 %. 03/27/14 20:47 460-00-4 56-144 1 **Percent Moisture** Analytical Method: ASTM D2974-87 Percent Moisture 18.1 % 0.10 1 03/24/14 15:44



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Analytical Method: EPA 8015 Mod Ext. Preparation Method: EPA 3546           Total Petroleum Hydrocarbons         241 mg/kg         109         5         0326/14 12:25         03/27/14 15:45           TPH (C10-C20)         ND mg/kg         54.3         5         0326/14 12:25         03/27/14 15:45           Surrogates         0         %.         30-153         5         03/26/14 12:25         03/27/14 15:45         629-09-2         S4           Surrogates         0         %.         30-153         5         03/26/14 12:25         03/27/14 15:45         629-09-2         S4           Surrogates         Analytical Method: EPA 8015 Mod Pur         T         1         03/26/14 13:03         460-00-4           Surrogates         4         Analytical Method: EPA 8270         Preparation Method: EPA 3546         MIGROWAVE           Acenaphthylene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         83-32-9           Acenaphthylene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         83-32-9           Acenaphthylene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         83-32-9           Berozo(japintracene         9300         ug/kg <th>Sample: 58-SB-4 2-4'</th> <th>Lab ID: 5095061</th> <th>Collected:</th> <th>03/19/14</th> <th>4 12:25</th> <th>Received: 03</th> <th>3/21/14 12:35</th> <th>Matrix: Solid</th> <th>- <b>.</b></th>	Sample: 58-SB-4 2-4'	Lab ID: 5095061	Collected:	03/19/14	4 12:25	Received: 03	3/21/14 12:35	Matrix: Solid	- <b>.</b>
Analytical Method: EPA 8015 Mod Ext. Preparation Method: EPA 3546           Total Petroleum Hydrocarbons         241 mg/kg         109         5         0326/14 12:25         03/27/14 15:45           TPH (C10-C20)         ND mg/kg         54.3         5         0326/14 12:25         03/27/14 15:45           Surrogates         0         %.         30-153         5         03/26/14 12:25         03/27/14 15:45         629-09-2         S4           Surrogates         0         %.         30-153         5         03/26/14 12:25         03/27/14 15:45         629-09-2         S4           Surrogates         Analytical Method: EPA 8015 Mod Pur         T         1         03/26/14 13:03         460-00-4           Surrogates         4         Analytical Method: EPA 8270         Preparation Method: EPA 3546         MIGROWAVE           Acenaphthylene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         83-32-9           Acenaphthylene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         83-32-9           Acenaphthylene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         83-32-9           Berozo(japintracene         9300         ug/kg <th>Results reported on a "dry-weight"</th> <th>" basis</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	Results reported on a "dry-weight"	" basis							
Total Petroleum Hydrocarbons         241 mg/kg         109         5         03/26/14 12:25         03/27/14 15:45           TPH (C20-C30)         ND mg/kg         54.3         5         03/26/14 12:25         03/27/14 15:45           Surrogates         0         %.         30-153         5         03/26/14 12:25         03/27/14 15:45           PH (C20-C30)         0 %.         30-153         5         03/26/14 12:25         03/27/14 15:45         629-99-2         \$4           8015 Gasoline Range Organics         Analytical Method: EPA 8015 Mod Pur          03/26/14 13:03         460-00-4           4Finomolinoobenzene (8)         88 %.         38-163         1         03/26/14 10:55         83-32-9           Acenaphthysine         S10 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         20-9-2           Acenaphthysine         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         20-9-2           Acenaphthysine         S10 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         20-9-2           Acenaphthysine         S10 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         20-12-7           Benzo(s)///Lorombane <th>Parameters</th> <th>Results</th> <th>Units Repor</th> <th>t Limit</th> <th>DF</th> <th>Prepared</th> <th>Analyzed</th> <th>CAS No.</th> <th>Qual</th>	Parameters	Results	Units Repor	t Limit	DF	Prepared	Analyzed	CAS No.	Qual
TPH (C10-C20)         ND mg/kg         54.3         5         03/26/14         12:25         03/27/14         15:45           Surrogates         0         %.         30-153         5         03/26/14         12:25         03/27/14         15:45           Surrogates         Analytical Method: EPA 8015 Mod Pur         V         Surrogates         03/26/14         12:25         03/26/14         13:03         460-00-4           Surrogates         Analytical Method: EPA 8015 Mod Pur         V         03/26/14         13:03         460-00-4           Surrogates         Analytical Method: EPA 80270         Preparation Method: EPA 3546         V         03/26/14         10:03/26/14         10:05         83-32-9           Acenaphthene         3510         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         20-96-8           Anthracene         3540         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         20-96-8           Benzo(a)pintracene         3510         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         20-92-8           Benzo(a)pintracene         3550         ug/kg	8015 TPH Ohio Microwave	Analytical Method:	EPA 8015 Mod Ext	Preparat	ion Met	thod: EPA 3546			
TPH (C20-C34)         196 mg/kg         5.4.3         5         0.3/26/14 12:25         0.3/27/14 15:45           n-Pentacosane (S)         0 %.         30-153         5         0.3/26/14 12:25         0.3/27/14 15:45         629-99-2         S4           8015 Gacoline Range Organics         Analytical Method: EPA 8015 Mod Pur          0.3/26/14 13:03           0.3/26/14 13:03         460-00-4           Surrogates         88 %.         38-163         1         0.3/26/14 10:03         460-00-4           Strong Microbenzene (S)         88 %.         38-163         1         0.3/26/14 10:55         8-3:2-9           Acanaphthytene         Analytical Method: EPA 8270         Preparation Method:         EPA 322/14 10:10         0.3/26/14 10:55         8-3:2-9           Acanaphthytene         3510 ug/kg         1800         5         0.3/25/14 10:10         0.3/26/14 10:55         8-3:2-9           Acanaphthytene         3540 ug/kg         1800         5         0.3/25/14 10:10         0.3/26/14 10:55         12-1:2-7           Benzo(a)phrene         9340 ug/kg         1800         5         0.3/25/14 10:10         0.3/26/14 10:55         20:3-2-8           Benzo(a)phrene         9350 ug/kg         1800         5         0.3/25/14 10:10	Total Petroleum Hydrocarbons	241 mg/kg		109	5	03/26/14 12:25	03/27/14 15:45	5	
Surregates         No.         30-153         5         03/26/14 12:25         03/27/14 15:45         6 29-99-2         S4           B015 Gasoline Range Organics         Analytical Method: EPA 8015 Mod Pur          03/26/14 12:25         03/26/14 13:03         5         03/26/14 13:03         5         03/26/14 13:03         6 <t< td=""><td>TPH (C10-C20)</td><td>ND mg/kg</td><td></td><td>54.3</td><td>5</td><td>03/26/14 12:25</td><td>03/27/14 15:45</td><td>5</td><td></td></t<>	TPH (C10-C20)	ND mg/kg		54.3	5	03/26/14 12:25	03/27/14 15:45	5	
n-Pertacosane (S)         0 %.         30-153         5         03/26/14 12:25         03/27/14 15:45         629-92         S4           8015 Gasoline Range Organics         Analytical Method: EPA 8015 Mod Pur           03/26/14 13:03          5         03/26/14 13:03         460-00-4           Surrogates         88 %.         36-163         1         03/26/14 13:03         460-00-4           2270 MSSV SHORT LIST         Analytical Method: EPA 8270         Preparation Method: EPA 3510         03/25/14 10:10         03/26/14 10:55         83-32-9           Acenaphthene         3510 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         83-32-9           Acenaphthylene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         20-12-7           Benzo(a)prime         9340 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         20-12-7           Benzo(a)prime         9340 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         20-12-7           Benzo(a)prime         9340 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         20-12-7           Benzo(a)prime         9350 ug/kg         1800	TPH (C20-C34)	<b>196</b> mg/kg		54.3	5	03/26/14 12:25	03/27/14 15:45	5	
Bots Gasoline Range Organics         Analytical Method: EPA 8015 Mod Pur           TPH (C06-C12)         ND mg/kg         1.1         1         03/26/14 13:03           Surrogates         4-Bronofluorobenzene (S)         88 %.         38-163         1         03/26/14 13:03         460-00-4           Z270 MSSV SHORT LIST         Analytical Method: EPA 8270         Preparation Method: EPA 3546         Accenaphthylene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         83-32-9           Acenaphthylene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         83-32-9           Acenaphthylene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         50-32-8           Benzo(a)pyrene         9510         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         50-32-8           Benzo(a)pyrene         9580         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         50-32-8           Benzo(a)fuluoranthene         7630         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         10-5-3           Buryleox/hubranthene         7630         ug/kg         1800         5 <td>Surrogates</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Surrogates								
TH (C06-C12)         ND mg/kg         1.1         1         03/26/14 13:03           Surrogates         4-Bronofluorobenzene (s)         88 %.         38-163         1         03/26/14 13:03         460-00-4           2270 MSSV SHORT LIST         Analytical Method: EPA 8270         Preparation Method: EPA 3546         EPA 3546           Acenaphthylene         3510 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         83-32-9           Acenaphthylene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         120-8-3           Acenaphthylene         9340 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         56-55-3           Benzo(a)prene         9310 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         50-32-8           Benzo(a)prene         9350 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         10-5-3           Benzo(a)prene         8350 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         10-5-4           Benzo(A)/lucranthene         8350 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         10-5-5           Benzo(A)/lucranthene	n-Pentacosane (S)	0 %.	:	30-153	5	03/26/14 12:25	03/27/14 15:45	629-99-2	S4
Surrigates         No.           4-Bromofluorobenzene (S)         88 %.         38-163         1         03/26/14 13:03         460-00-4           4-Bromofluorobenzene (S)         88 %.         38-163         1         03/26/14 13:03         460-00-4           2270 MSSV SHORT LIST MICROWAVE         Analytical Method: EPA 8270         Preparation Method: EPA 3546         5         03/25/14 10:10         03/26/14 10:55         208-92           Acenaphthylene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         208-92           Anthracene         9340 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         208-92           Benzo(a)privene         9510 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         203-28           Benzo(b)fluoranthene         7630 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         203-28           Benzo(b)fluoranthene         8350 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         203-28           Benzo(b)fluoranthene         8350 ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         203-28           Benzo(b)fluoranthene         ND ug/kg	8015 Gasoline Range Organics	Analytical Method:	EPA 8015 Mod Pur						
4-Bromofluorobenzene (S)         88 %.         38-163         1         03/26/14 13:03         460-00-4 <b>8270</b> MSSV SHORT LIST MICROWAVE         Analytical Method: EPA 8270         Preparation Method: EFA 3546         Status	TPH (C06-C12)	ND mg/kg		1.1	1		03/26/14 13:03	}	
Barcol Microwyte         Analytical Method: EPA 8270         Preparation Method: EPA 3546           Accenaphthylene         3510         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         28-36-8           Anthracene         3340         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         28-36-8           Anthracene         3340         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         56-53           Benzxo(a)privene         9510         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         20-32-8           Benzxo(a)privene         3550         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         10:1-22           Benzxo(a)privene         3550         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         10:3-26           Benzxo(a)privene         B550         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         10:55-3           Benzy (a)chon         ND ug/kg         180									
MICROWAVE         Acenaphthene         3510         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         83-32-9           Acenaphthylene         ND         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         208-96-8           Anthracene         9340         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         50-32-8           Benzo(a)pyrene         9510         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         50-32-8           Benzo(b)Iloranthene         7630         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         10:5-12           Benzo(b)Iloranthene         8350         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         10:5-16           4-Bromophenylphenylphenylphenylphenylphenyl ether         ND         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         10:5-63           Burylphenol         ND         ug/kg         1800         5         03/25/14         1	4-Bromofluorobenzene (S)	<b>88 %</b> .	:	38-163	1		03/26/14 13:03	460-00-4	
Acenaphthylene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         208-96-8           Anthracene         9340         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         120-12-7           Benzo(a)pyrene         9510         ug/kg         925         5         03/25/14 10:10         03/26/14 10:55         50-32-8           Benzo(a)pyrene         9510         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         205-99-2           Benzo(k)fluoranthene         7630         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         191-24-2           Benzo(k)fluoranthene         8350         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         101-55-3           Benzyl alcohol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         101-55-3           Benzyl alcohol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         101-55-3           Benzyl alcohol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         106-47-8           Benzyl alcohol         ND ug/kg		Analytical Method:	EPA 8270 Preparat	tion Metho	od: EPA	3546			
Anthracene         9340         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         120-12-7           Benzo(a)pyrene         9510         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         5         5           Benzo(a)pyrene         9510         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         50-32-8           Benzo(b)fluoranthene         7630         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         100-51-6           Benzy (a)chluoranthene         8350         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         100-51-6           Benzy (a)chluoranthene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         100-51-6           4-Bromophenylphenylphenyl ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         106-67-8           4-Chioro-anitine         ND ug/kg         3590         5         03/25/14 10:10         03/26/14 10:55         106-47-8           bis(2-Chioroethyl) ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         11-91-1 <td< td=""><td>Acenaphthene</td><td><b>3510</b> ug/kg</td><td></td><td>1800</td><td>5</td><td>03/25/14 10:10</td><td>03/26/14 10:55</td><td>83-32-9</td><td></td></td<>	Acenaphthene	<b>3510</b> ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	83-32-9	
Anthracene         9340         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         120-12-7           Benzo(a)pyrene         9510         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         5         5           Benzo(a)pyrene         9510         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         50-32-8           Benzo(b)fluoranthene         7630         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         100-51-6           Benzy (a)chluoranthene         8350         ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         100-51-6           Benzy (a)chluoranthene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         100-51-6           4-Bromophenylphenylphenyl ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         106-67-8           4-Chioro-anitine         ND ug/kg         3590         5         03/25/14 10:10         03/26/14 10:55         106-47-8           bis(2-Chioroethyl) ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         11-91-1 <td< td=""><td>Acenaphthylene</td><td>ND ug/kg</td><td></td><td>1800</td><td>5</td><td>03/25/14 10:10</td><td>03/26/14 10:55</td><td>208-96-8</td><td></td></td<>	Acenaphthylene	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	208-96-8	
Benzo(a)pyrene         9510         ug/kg         925         5         03/25/14         10:10         03/26/14         10:55         50-32-8           Benzo(b)fluoranthene         7630         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         191-24-2           Benzo(k)fluoranthene         8350         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         107-08-9           Benzy(k)fluoranthene         8350         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         101-55-3           Benzy(k)fluoranthene         ND <ug kg<="" td="">         1800         5         03/25/14         10:10         03/26/14         10:55         56-8-7           4-Bromophenylphenyl ether         ND<ug kg<="" td="">         3590         5         03/25/14         10:10         03/26/14         10:55         106-47-8           bis(2-Chloroethxy)methane         ND<ug kg<="" td="">         1800         5         03/25/14         10:10         03/26/14         10:55         111-44-4           bis(2-Chloroethxy)methane         ND<ug kg<="" td="">         1800         5         03/25/14         10:10         03/26/14         10:55         111</ug></ug></ug></ug>	Anthracene			1800	5	03/25/14 10:10	03/26/14 10:55	120-12-7	
Benzo(b)fluoranthene         7630         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         205-99-2           Benzo(g), h.jperylene         5850         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         191-24-2           Benzy (a) cohol         ND         ug/kg         3580         5         03/25/14         10:10         03/26/14         10:55         207-08-9           Benzy (a) cohol         ND         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         101-55-3           Butylbenzylphthalate         ND         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         106-47-8           A-Chloroa-Initine         ND         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         111-91-1           bis(2-Chloroethoxylmethane         ND         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         106-60-1           bis(2-Chloroethoxylmethane         ND         ug/kg         1800         5         03/25/14         10:10	Benzo(a)anthracene	12300 ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	56-55-3	
Benzo(g,h,i)perylene         5850         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         191-24-2           Benzy alcohol         ND         ug/kg         3590         5         03/25/14         10:10         03/26/14         10:55         100-51-6           4-Bromophenylphenyl ether         ND         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         101-55-3           Butylbenzylphthalate         ND         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         85-68-7           4-Chioro-3-methylphenol         ND         ug/kg         3590         5         03/25/14         10:10         03/26/14         10:55         85-60-7           4-Chioro-3-methylphenol         ND         ug/kg         3590         5         03/25/14         10:10         03/26/14         10:55         111-91-1           4-Chioroainphylphenol         ND         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         111-91-1           bis(2-Chiorosiporpyl) ether         ND         ug/kg         1800         5         03/25/14         10:10 <td>Benzo(a)pyrene</td> <td>9510 ug/kg</td> <td></td> <td>925</td> <td>5</td> <td>03/25/14 10:10</td> <td>03/26/14 10:55</td> <td>50-32-8</td> <td></td>	Benzo(a)pyrene	9510 ug/kg		925	5	03/25/14 10:10	03/26/14 10:55	50-32-8	
Benzo(g,h,i)perylene         5850         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         191-24-2           Benzy alcohol         ND         ug/kg         3590         5         03/25/14         10:10         03/26/14         10:55         100-51-6           4-Bromophenylphenyl ether         ND         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         101-55-3           Butylbenzylphthalate         ND         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         85-68-7           4-Chioro-3-methylphenol         ND         ug/kg         3590         5         03/25/14         10:10         03/26/14         10:55         85-60-7           4-Chioro-3-methylphenol         ND         ug/kg         3590         5         03/25/14         10:10         03/26/14         10:55         111-91-1           4-Chioroainphylphenol         ND         ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         111-91-1           bis(2-Chiorosiporpyl) ether         ND         ug/kg         1800         5         03/25/14         10:10 <td>Benzo(b)fluoranthene</td> <td>7630 ug/kg</td> <td></td> <td>1800</td> <td>5</td> <td>03/25/14 10:10</td> <td>03/26/14 10:55</td> <td>205-99-2</td> <td></td>	Benzo(b)fluoranthene	7630 ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	205-99-2	
Benzyl alcohol         ND ug/kg         3590         5         03/25/14 10:10         03/26/14 10:55         100-51-6           4-Bromophenylphenyl ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         101-55-3           Butylbenzylphthalate         ND ug/kg         3590         5         03/25/14 10:10         03/26/14 10:55         55-50-7           4-Chloro-3-methylphenol         ND ug/kg         3590         5         03/25/14 10:10         03/26/14 10:55         111-91-1           bis(2-Chloroethoxy)methane         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         111-91-1           bis(2-Chloroethoxy)methane         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         114-44           bis(2-Chloroethyl) ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         91-58-7           2-Chlorophenol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         91-58-7           2-Chlorophenol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         218-01-9           Dibenz(a,h)anthracene         1860         ug/kg         1800	Benzo(g,h,i)perylene	5850 ug/kg		1800	5				
4-Bromophenylphenyl ether         ND ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         101-55-3           Butylbenzylphthalate         ND ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         85-68-7           4-Chloro-3-methylphenol         ND ug/kg         3590         5         03/25/14         10:10         03/26/14         10:55         106-47-8           bis(2-Chloroethoxy)methane         ND ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         111-91-1           bis(2-Chloroethoxy)methane         ND ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         111-94-4           bis(2-Chloroethoxy)methane         ND ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         191-58-7           2-Chlorophenol         ND ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         95-57-8           4-Chlorophenylphenyl ether         ND ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         218-01-9           Dibenz/(a,h)ant	Benzo(k)fluoranthene	8350 ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	207-08-9	
Butylbenzylphthalate         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         85-68-7           4-Chloro-3-methylphenol         ND ug/kg         3590         5         03/25/14 10:10         03/26/14 10:55         59-50-7           4-Chloro-alline         ND ug/kg         3590         5         03/25/14 10:10         03/26/14 10:55         106-47-8           bis(2-Chloroethoxy)methane         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         111-91-1           bis(2-Chloroethyl) ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         111-44-4           bis(2-Chloroethyl) ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         91-58-7           2-Chloronaphthalene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         95-57-8           4-Chlorophenol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         218-01-9           Dibenz(a,h)anthracene <b>1860</b> ug/kg         925         03/25/14 10:10         03/26/14 10:55         132-64-9           2,4-Dichlorophenol         ND ug/kg         1800         5	Benzyl alcohol	ND ug/kg		3590	5	03/25/14 10:10	03/26/14 10:55	100-51-6	
4-Chloro-3-methylphenol         ND ug/kg         3590         5         03/25/14 10:10         03/26/14 10:55         59-50-7           4-Chloroaniline         ND ug/kg         3590         5         03/25/14 10:10         03/26/14 10:55         106-47-8           bis(2-Chloroethoxy)methane         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         111-91-1           bis(2-Chloroethoxy)methane         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         111-44-4           bis(2-Chloroethoxy)methane         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         91-58-7           2-Chlorophenol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         95-57-8           4-Chlorophenylphenyl ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         95-57-8           4-Chlorophenylphenyl ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         180-19           Dibenz(a, h)anthracene         1860         ug/kg         925         03/25/14 10:10         03/26/14 10:55         132-64-9           2,4-Dichlorophenol         ND ug/kg         1800	4-Bromophenylphenyl ether	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	101-55-3	
4-Chloroaniline       ND ug/kg       3590       5       03/25/14 10:10       03/26/14 10:55       106-47-8         bis(2-Chloroethoxy)methane       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       111-91-1         bis(2-Chloroethy) ether       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       111-44-4         bis(2-Chloroistopropyl) ether       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       91-58-7         2-Chlorophenol       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       95-57-8         2-Chlorophenylphenyl ether       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       7005-72-3         2-Chlorophenylphenyl ether       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       218-01-9         Dibenz(a, h)anthracene       1860       ug/kg       925       5       03/25/14 10:10       03/26/14 10:55       132-64-9         2,4-Dichlorophenol       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       120-68-2         2,4-Dichlorophenol       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       120-68-2	Butylbenzylphthalate	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	85-68-7	
bis(2-Chloroethoxy)methane         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         111-91-1           bis(2-Chloroethyl) ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         111-44-4           bis(2-Chloroisopropyl) ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         111-44-4           2-Chloronaphthalene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         91-58-7           2-Chlorophenol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         95-57-8           4-Chlorophenylphenyl ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         700-572-3           Dibenz(a,h)anthracene <b>1860</b> ug/kg         925         5         03/25/14 10:10         03/26/14 10:55         132-64-9           2,4-Dichlorophenol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         132-64-9           2,4-Dinethylphthalate         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         132-64-9           2,4-Dimethylphthalate         ND ug/kg	4-Chloro-3-methylphenol	ND ug/kg		3590	5	03/25/14 10:10	03/26/14 10:55	59-50-7	
bis(2-Chloroethyl) ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         111-44-4           bis(2-Chloroisopropyl) ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         108-60-1           2-Chloronaphthalene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         91-58-7           2-Chlorophenol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         95-57-8           4-Chlorophenylphenyl ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         7005-72-3           Chrysene <b>12900</b> ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         132-64-9           Dibenzofuran <b>2200</b> ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         132-64-9           2,4-Dichlorophenol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         120-83-2           2,4-Dintorophenol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         146-2           2,4-Dintehylphthalate         ND ug/kg         1800         5	4-Chloroaniline	ND ug/kg		3590	5	03/25/14 10:10	03/26/14 10:55	106-47-8	
bis/2-Chloroisopropyl) ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         108-60-1           2-Chloronaphthalene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         91-58-7           2-Chlorophenol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         95-57-8           4-Chlorophenylphenyl ether         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         7005-72-3           Chrysene <b>12900</b> ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         53-70-3           Dibenz(a,h)anthracene <b>1860</b> ug/kg         925         5         03/25/14 10:10         03/26/14 10:55         132-64-9           2,4-Dichlorophenol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         120-83-2           Diethylphthalate         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         140-62           2,4-Dimethylphenol         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         131-11-3           Dim-butylphthalate         ND ug/kg         1800         5         03	bis(2-Chloroethoxy)methane	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	111-91-1	
2-ChloronaphthaleneND ug/kg1800503/25/14 10:1003/26/14 10:5591-58-72-ChlorophenolND ug/kg1800503/25/14 10:1003/26/14 10:5595-57-84-Chlorophenylphenyl etherND ug/kg1800503/25/14 10:1003/26/14 10:557005-72-3Chrysene12900ug/kg1800503/25/14 10:1003/26/14 10:55218-01-9Dibenz(a,h)anthracene1860ug/kg925503/25/14 10:1003/26/14 10:5553-70-3Dibenzofuran2200ug/kg1800503/25/14 10:1003/26/14 10:55132-64-92,4-DichlorophenolND ug/kg1800503/25/14 10:1003/26/14 10:55120-83-2DiethylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:55120-83-2DimethylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:55131-11-3Din-butylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:55131-11-3Di-n-butylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:55131-11-3Q,4-Dinitro-2-methylphenolND ug/kg8710503/25/14 10:1003/26/14 10:5554-52-1Q,4-DinitrotolueneND ug/kg8710503/25/14 10:1003/26/14 10:5551-28-5Q,4-DinitrotolueneND ug/kg1800503/25/14 10:1003/26/14 10:5551-28-5Q,4-DinitrotolueneND ug/kg18005 <td>bis(2-Chloroethyl) ether</td> <td>ND ug/kg</td> <td></td> <td>1800</td> <td>5</td> <td>03/25/14 10:10</td> <td>03/26/14 10:55</td> <td>111-44-4</td> <td></td>	bis(2-Chloroethyl) ether	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	111-44-4	
2-ChlorophenolND ug/kg1800503/25/14 10:1003/26/14 10:5595-57-84-Chlorophenylphenyl etherND ug/kg1800503/25/14 10:1003/26/14 10:557005-72-3Chrysene12900ug/kg1800503/25/14 10:1003/26/14 10:55218-01-9Dibenz(a,h)anthracene1860ug/kg925503/25/14 10:1003/26/14 10:5553-70-3Dibenzofuran2200ug/kg1800503/25/14 10:1003/26/14 10:55132-64-92,4-DichlorophenolND ug/kg1800503/25/14 10:1003/26/14 10:55120-83-2DiethylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:55120-83-22,4-DimethylphenolND ug/kg1800503/25/14 10:1003/26/14 10:55131-11-3Di-n-butylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:55131-11-3Di-n-butylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:55534-52-12,4-DinitrophenolND ug/kg8710503/25/14 10:1003/26/14 10:5551-28-52,4-DinitrophenolND ug/kg1800503/25/14 10:1003/26/14 10:5551-28-52,4-DinitrophenolND ug/kg1800503/25/14 10:1003/26/14 10:5551-28-52,4-DinitrophenolND ug/kg1800503/25/14 10:1003/26/14 10:5551-28-52,4-DinitrotolueneND ug/kg1800503/25	bis(2-Chloroisopropyl) ether	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	108-60-1	
4-Chlorophenylphenyl ether       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       7005-72-3         Chrysene       12900       ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       218-01-9         Dibenz(a,h)anthracene       1860       ug/kg       925       5       03/25/14 10:10       03/26/14 10:55       53-70-3         Dibenzofuran       2200       ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       132-64-9         2,4-Dichlorophenol       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       120-83-2         Diethylphthalate       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       120-83-2         Q,4-Dimethylphenol       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       120-83-2         Diethylphthalate       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       105-67-9         Dimethylphthalate       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       131-11-3         Di-n-butylphthalate       ND ug/kg       8710       5       03/25/14 10:10       03/26/14 10:55       534-52-1	2-Chloronaphthalene	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	91-58-7	
Chrysene12900ug/kg1800503/25/1410:1003/26/1410:55218-01-9Dibenz(a,h)anthracene1860ug/kg925503/25/1410:1003/26/1410:5553-70-3Dibenzofuran2200ug/kg1800503/25/1410:1003/26/1410:55132-64-92,4-DichlorophenolNDug/kg1800503/25/1410:1003/26/1410:55120-83-2DiethylphthalateNDug/kg1800503/25/1410:1003/26/1410:5584-66-22,4-DimethylphenolNDug/kg1800503/25/1410:1003/26/1410:55105-67-9DimethylphthalateNDug/kg1800503/25/1410:1003/26/1410:55131-11-3Di-n-butylphthalateNDug/kg1800503/25/1410:1003/26/1410:55534-52-12,4-DinitrophenolNDug/kg8710503/25/1410:1003/26/1410:5551-28-52,4-DinitrophenolNDug/kg1800503/25/1410:1003/26/1410:5551-28-52,4-DinitrophenolNDug/kg1800503/25/1410:1003/26/1410:5551-28-52,4-DinitrophenolNDug/kg1800503/25/1410:1003/26/1410:5551-28-52,4-DinitrotolueneNDug/kg1800503/25/141	2-Chlorophenol	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	95-57-8	
Dibenz(a,h)anthracene1860ug/kg925503/25/1410:1003/26/1410:5553-70-3Dibenzofuran2200ug/kg1800503/25/1410:1003/26/1410:55132-64-92,4-DichlorophenolNDug/kg1800503/25/1410:1003/26/1410:55120-83-2DiethylphthalateNDug/kg1800503/25/1410:1003/26/1410:5584-66-22,4-DimethylphenolNDug/kg1800503/25/1410:1003/26/1410:55131-11-3DimethylphthalateNDug/kg1800503/25/1410:1003/26/1410:55131-11-3Din-butylphthalateNDug/kg1800503/25/1410:1003/26/1410:5584-74-24,6-Dinitro-2-methylphenolNDug/kg8710503/25/1410:1003/26/1410:5553-52-12,4-DinitrophenolNDug/kg8710503/25/1410:1003/26/1410:5551-28-52,4-DinitrotolueneNDug/kg1800503/25/1410:1003/26/1410:55121-14-22,6-DinitrotolueneNDug/kg1800503/25/1410:1003/26/1410:55121-14-22,6-DinitrotolueneNDug/kg1800503/25/1410:1003/26/1410:55606-20-2Di-n-octylphthalateNDug/kg18005 <td< td=""><td>4-Chlorophenylphenyl ether</td><td>ND ug/kg</td><td></td><td>1800</td><td>5</td><td>03/25/14 10:10</td><td>03/26/14 10:55</td><td>7005-72-3</td><td></td></td<>	4-Chlorophenylphenyl ether	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	7005-72-3	
Dibenzofuran2200ug/kg1800503/25/1410:1003/26/1410:55132-64-92,4-DichlorophenolNDug/kg1800503/25/1410:1003/26/1410:55120-83-2DiethylphthalateNDug/kg1800503/25/1410:1003/26/1410:5584-66-22,4-DimethylphenolNDug/kg1800503/25/1410:1003/26/1410:55105-67-9DimethylphthalateNDug/kg1800503/25/1410:1003/26/1410:55131-11-3Di-n-butylphthalateNDug/kg1800503/25/1410:1003/26/1410:5584-74-2A,6-Dinitro-2-methylphenolNDug/kg8710503/25/1410:1003/26/1410:5551-28-52,4-DinitrophenolNDug/kg1800503/25/1410:1003/26/1410:5551-28-52,4-DinitrotolueneNDug/kg1800503/25/1410:1003/26/1410:5551-28-52,4-DinitrotolueneNDug/kg1800503/25/1410:1003/26/1410:5551-28-52,4-DinitrotolueneNDug/kg1800503/25/1410:1003/26/1410:55606-20-22,6-DinitrotolueneNDug/kg1800503/25/1410:1003/26/1410:55606-20-2Di-n-octylphthalateNDug/kg1800503/	Chrysene	<b>12900</b> ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	218-01-9	
2,4-DichlorophenolND ug/kg1800503/25/14 10:1003/26/14 10:55120-83-2DiethylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:5584-66-22,4-DimethylphenolND ug/kg1800503/25/14 10:1003/26/14 10:55105-67-9DimethylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:55131-11-3Din-butylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:5584-74-24,6-Dinitro-2-methylphenolND ug/kg8710503/25/14 10:1003/26/14 10:55534-52-12,4-DinitrophenolND ug/kg8710503/25/14 10:1003/26/14 10:5551-28-52,4-DinitrotolueneND ug/kg1800503/25/14 10:1003/26/14 10:5551-28-52,4-DinitrotolueneND ug/kg1800503/25/14 10:1003/26/14 10:5551-28-52,6-DinitrotolueneND ug/kg1800503/25/14 10:1003/26/14 10:55606-20-2Di-n-octylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:55117-84-0	Dibenz(a,h)anthracene	<b>1860</b> ug/kg		925	5	03/25/14 10:10	03/26/14 10:55	53-70-3	
DiethylphthalateND ug/kg1800503/25/1410:1003/26/1410:5584-66-22,4-DimethylphenolND ug/kg1800503/25/1410:1003/26/1410:5584-66-2DimethylphthalateND ug/kg1800503/25/1410:1003/26/1410:55131-11-3Di-n-butylphthalateND ug/kg1800503/25/1410:1003/26/1410:5584-74-2A,6-Dinitro-2-methylphenolND ug/kg8710503/25/1410:1003/26/1410:55534-52-12,4-DinitrophenolND ug/kg8710503/25/1410:1003/26/1410:5551-28-52,4-DinitrotolueneND ug/kg1800503/25/1410:1003/26/1410:5551-28-52,6-DinitrotolueneND ug/kg1800503/25/1410:1003/26/1410:55606-20-2Di-n-octylphthalateND ug/kg1800503/25/1410:1003/26/1410:55117-84-0	Dibenzofuran	<b>2200</b> ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	132-64-9	
2,4-DimethylphenolND ug/kg1800503/25/14 10:1003/26/14 10:55105-67-9DimethylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:55131-11-3Di-n-butylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:5584-74-2A,6-Dinitro-2-methylphenolND ug/kg8710503/25/14 10:1003/26/14 10:55534-52-12,4-DinitrophenolND ug/kg8710503/25/14 10:1003/26/14 10:5551-28-52,4-DinitrotolueneND ug/kg1800503/25/14 10:1003/26/14 10:55121-14-22,6-DinitrotolueneND ug/kg1800503/25/14 10:1003/26/14 10:55606-20-2Di-n-octylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:55117-84-0	2,4-Dichlorophenol	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	120-83-2	
DimethylphthalateND ug/kg1800503/25/1410:1003/26/1410:55131-11-3Di-n-butylphthalateND ug/kg1800503/25/1410:1003/26/1410:5584-74-24,6-Dinitro-2-methylphenolND ug/kg8710503/25/1410:1003/26/1410:55534-52-12,4-DinitrophenolND ug/kg8710503/25/1410:1003/26/1410:5551-28-52,4-DinitrotolueneND ug/kg1800503/25/1410:1003/26/1410:55121-14-22,6-DinitrotolueneND ug/kg1800503/25/1410:1003/26/1410:55606-20-2Di-n-octylphthalateND ug/kg1800503/25/1410:1003/26/1410:55117-84-0	Diethylphthalate	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	84-66-2	
Di-n-butylphthalate         ND ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         84-74-2           4,6-Dinitro-2-methylphenol         ND ug/kg         8710         5         03/25/14         10:10         03/26/14         10:55         534-52-1           2,4-Dinitrophenol         ND ug/kg         8710         5         03/25/14         10:10         03/26/14         10:55         51-28-5           2,4-Dinitrotoluene         ND ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         51-28-5           2,6-Dinitrotoluene         ND ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         121-14-2           2,6-Dinitrotoluene         ND ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         606-20-2           Di-n-octylphthalate         ND ug/kg         1800         5         03/25/14         10:10         03/26/14         10:55         117-84-0	2,4-Dimethylphenol	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	105-67-9	
4,6-Dinitro-2-methylphenol       ND ug/kg       8710       5       03/25/14 10:10       03/26/14 10:55       534-52-1         2,4-Dinitrophenol       ND ug/kg       8710       5       03/25/14 10:10       03/26/14 10:55       51-28-5         2,4-Dinitrophenol       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       51-28-5         2,4-Dinitrotoluene       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       606-20-2         2,6-Dinitrotoluene       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       606-20-2         Di-n-octylphthalate       ND ug/kg       1800       5       03/25/14 10:10       03/26/14 10:55       117-84-0	Dimethylphthalate	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	131-11-3	
Z,4-DinitrophenolND ug/kg8710503/25/14 10:1003/26/14 10:5551-28-5Z,4-DinitrotolueneND ug/kg1800503/25/14 10:1003/26/14 10:55121-14-2Z,6-DinitrotolueneND ug/kg1800503/25/14 10:1003/26/14 10:55606-20-2Di-n-octylphthalateND ug/kg1800503/25/14 10:1003/26/14 10:55117-84-0	Di-n-butylphthalate	ND ug/kg							
2,4-Dinitrotoluene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         121-14-2           2,6-Dinitrotoluene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         606-20-2           Di-n-octylphthalate         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         117-84-0	4,6-Dinitro-2-methylphenol	ND ug/kg				03/25/14 10:10	03/26/14 10:55	534-52-1	
2,6-Dinitrotoluene         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         606-20-2           Di-n-octylphthalate         ND ug/kg         1800         5         03/25/14 10:10         03/26/14 10:55         117-84-0	2,4-Dinitrophenol	ND ug/kg		8710		03/25/14 10:10	03/26/14 10:55	51-28-5	
Di-n-octylphthalate ND ug/kg 1800 5 03/25/14 10:10 03/26/14 10:55 117-84-0	2,4-Dinitrotoluene			1800		03/25/14 10:10	03/26/14 10:55	121-14-2	
	2,6-Dinitrotoluene	•••		1800					
bis(2-Ethylhexyl)phthalate ND ug/kg 1800 5 03/25/14 10:10 03/26/14 10:55 117-81-7	Di-n-octylphthalate	•••						-	
	bis(2-Ethylhexyl)phthalate	ND ug/kg		1800	5	03/25/14 10:10	03/26/14 10:55	117-81-7	



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#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-4 2-4'	Lab ID: 5095	061009	Collected: 03/19/1	14 12:25	Received: 03	5/21/14 12:35 N	Matrix: Solid	
Results reported on a "dry-weight	t" basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV SHORT LIST MICROWAVE	Analytical Meth	od: EPA 82	270 Preparation Met	hod: EP/	A 3546			
Fluoranthene	<b>30900</b> ug/	kg	1800	5	03/25/14 10:10	03/26/14 10:55	206-44-0	
Fluorene	<b>4100</b> ug/	kg	1800	5	03/25/14 10:10	03/26/14 10:55	86-73-7	
Hexachlorocyclopentadiene	ND ug/		1800	5	03/25/14 10:10	03/26/14 10:55	77-47-4	
Hexachloroethane	ND ug/	-	1800	5	03/25/14 10:10	03/26/14 10:55	67-72-1	
ndeno(1,2,3-cd)pyrene	5330 ug/		1800	5	03/25/14 10:10	03/26/14 10:55	193-39-5	
sophorone	ND ug/		1800	5	03/25/14 10:10	03/26/14 10:55	78-59-1	
2-Methylnaphthalene	1820 ug/	•	1800	5		03/26/14 10:55		
2-Methylphenol(o-Cresol)	ND ug/	-	1800	5		03/26/14 10:55		
3&4-Methylphenol(m&p Cresol)	ND ug/	•	3590	5		03/26/14 10:55		
Naphthalene	ND ug/	•	1800	5		03/26/14 10:55		
2-Nitroaniline	ND ug/	-	8710	5		03/26/14 10:55		
3-Nitroaniline	ND ug/	-	8710	5		03/26/14 10:55		
4-Nitroaniline	ND ug/	•	8710	5		03/26/14 10:55		
Nitrobenzene	ND ug/	-	1800	5		03/26/14 10:55		
	•	-	1800	5		03/26/14 10:55		
2-Nitrophenol	ND ug/	•		5				
	ND ug/	•	8710			03/26/14 10:55		
Nitroso-di-n-propylamine	ND ug/	-	1800	5		03/26/14 10:55		
N-Nitrosodiphenylamine	ND ug/	-	1800	5		03/26/14 10:55		
Phenanthrene	28900 ug/	-	1800	5		03/26/14 10:55		
Phenol	ND ug/	-	1800	5		03/26/14 10:55		1d
Pyrene	<b>23700</b> ug/	-	1800	5		03/26/14 10:55		
2,4,5-Trichlorophenol	ND ug/	-	1800	5	03/25/14 10:10	03/26/14 10:55	95-95-4	
2,4,6-Trichlorophenol	ND ug/	kg	1800	5	03/25/14 10:10	03/26/14 10:55	88-06-2	
Surrogates				_				
Nitrobenzene-d5 (S)	56 %.		28-101	5		03/26/14 10:55		
2-Fluorobiphenyl (S)	64 %.		31-94	5		03/26/14 10:55		
o-Terphenyl-d14 (S)	77 %.		26-110	5		03/26/14 10:55		
Phenol-d5 (S)	58 %.		28-101	5	03/25/14 10:10	03/26/14 10:55	4165-62-2	
2-Fluorophenol (S)	56 %.		24-104	5	03/25/14 10:10	03/26/14 10:55	367-12-4	
2,4,6-Tribromophenol (S)	<b>62 %</b> .		16-122	5	03/25/14 10:10	03/26/14 10:55	118-79-6	
260 MSV 5030 Low Level	Analytical Methe	od: EPA 82	260					
Acetone	ND mg	′kg	0.11	1		03/27/14 21:22	67-64-1	
Acrolein	ND mg	÷	0.11	1		03/27/14 21:22	107-02-8	
Benzene	ND mg	-	0.0054	1		03/27/14 21:22		
Bromobenzene	ND mg	-	0.0054	1		03/27/14 21:22		
Bromochloromethane	ND mg	-	0.0054	1		03/27/14 21:22		
Bromodichloromethane	ND mg	-	0.0054	1		03/27/14 21:22		
Bromoform	ND mg/	•	0.0054	1		03/27/14 21:22		
Bromomethane	ND mg/	-	0.0054	1		03/27/14 21:22		
-Butanone (MEK)	ND mg/	-	0.027	1		03/27/14 21:22		
-Butylbenzene	ND mg/	-	0.0054	1		03/27/14 21:22		
•	-	-	0.0054	1		03/27/14 21:22		
ec-Butylbenzene	ND mg/	-						
ert-Butylbenzene	ND mg/	-	0.0054	1		03/27/14 21:22		
Carbon disulfide	ND mg/	кg	0.011	1		03/27/14 21:22	/5-15-0	



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#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-4 2-4'	Lab ID: 50950610	09 Collected: 03/19/	14 12:25	Received:	03/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weigh	nt" basis						
Parameters	Results U	nits Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method: E	PA 8260					
Carbon tetrachloride	ND mg/kg	0.0054	1		03/27/14 21:2	2 56-23-5	
Chlorobenzene	ND mg/kg	0.0054	1		03/27/14 21:2	2 108-90-7	
Chloroethane	ND mg/kg	0.0054	1		03/27/14 21:2	2 75-00-3	
Chloroform	ND mg/kg	0.0054	1		03/27/14 21:2	2 67-66-3	
Chloromethane	ND mg/kg	0.0054	1		03/27/14 21:2	2 74-87-3	
2-Chlorotoluene	ND mg/kg	0.0054	1		03/27/14 21:2	2 95-49-8	
4-Chlorotoluene	ND mg/kg	0.0054	1		03/27/14 21:2	2 106-43-4	
Dibromochloromethane	ND mg/kg	0.0054	1		03/27/14 21:2	2 124-48-1	
Dibromomethane	ND mg/kg	0.0054	1		03/27/14 21:2	2 74-95-3	
1,2-Dichlorobenzene	ND mg/kg	0.0054	1		03/27/14 21:2		
1,3-Dichlorobenzene	ND mg/kg	0.0054	1		03/27/14 21:2		
1,4-Dichlorobenzene	ND mg/kg	0.0054	1		03/27/14 21:2		
trans-1,4-Dichloro-2-butene	ND mg/kg	0.11	1		03/27/14 21:2		
Dichlorodifluoromethane	ND mg/kg	0.0054	1		03/27/14 21:2		
1,1-Dichloroethane	ND mg/kg	0.0054	1		03/27/14 21:2		
1,2-Dichloroethane	ND mg/kg	0.0054	1		03/27/14 21:2		
1.1-Dichloroethene	ND mg/kg	0.0054	1		03/27/14 21:2		
cis-1.2-Dichloroethene	ND mg/kg	0.0054	1		03/27/14 21:2		
trans-1,2-Dichloroethene	ND mg/kg	0.0054	1		03/27/14 21:2		
1,2-Dichloropropane	ND mg/kg	0.0054	1		03/27/14 21:2		
1,3-Dichloropropane	ND mg/kg	0.0054	1		03/27/14 21:2		
2,2-Dichloropropane	ND mg/kg	0.0054	1		03/27/14 21:2		
1,1-Dichloropropene	ND mg/kg	0.0054	1				
cis-1,3-Dichloropropene	ND mg/kg	0.0054	1		03/27/14 21:2	2 10061-01-5	
trans-1,3-Dichloropropene	ND mg/kg	0.0054	1				
	•••		1			2 10061-02-6	
Ethylbenzene Ethyl methoendete	ND mg/kg	0.0054			03/27/14 21:2		
Ethyl methacrylate	ND mg/kg	0.11	1 1		03/27/14 21:2		
2-Hexanone	ND mg/kg	0.11			03/27/14 21:2		
lodomethane	ND mg/kg	0.11	1		03/27/14 21:2		
Isopropylbenzene (Cumene)	ND mg/kg	0.0054	1		03/27/14 21:2		
p-Isopropyltoluene	ND mg/kg	0.0054	1		03/27/14 21:2		
Methylene Chloride	ND mg/kg	0.022	1		03/27/14 21:2		
4-Methyl-2-pentanone (MIBK)	ND mg/kg	0.027	1		03/27/14 21:2		
Methyl-tert-butyl ether	ND mg/kg	0.0054	1		03/27/14 21:2		
n-Propylbenzene	ND mg/kg	0.0054	1		03/27/14 21:2		
Styrene	ND mg/kg	0.0054	1		03/27/14 21:2		
1,1,1,2-Tetrachloroethane	ND mg/kg	0.0054	1		03/27/14 21:2		
1,1,2,2-Tetrachloroethane	ND mg/kg	0.0054	1		03/27/14 21:2		
Tetrachloroethene	ND mg/kg	0.0054	1		03/27/14 21:2		
Toluene	ND mg/kg	0.0054	1		03/27/14 21:2		
1,2,3-Trichlorobenzene	ND mg/kg	0.0054	1		03/27/14 21:2		
1,2,4-Trichlorobenzene	ND mg/kg	0.0054	1		03/27/14 21:2		
1,1,1-Trichloroethane	ND mg/kg	0.0054	1		03/27/14 21:2		
1,1,2-Trichloroethane	ND mg/kg	0.0054	1		03/27/14 21:2		
Trichloroethene	ND mg/kg	0.0054	1		03/27/14 21:2	2 79-01-6	
Trichlorofluoromethane	ND mg/kg	0.0054	1		03/27/14 21:2	2 75-69-4	



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# **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-4 2-4' Lab ID: 5095061009 Collected: 03/19/14 12:25 Received: 03/21/14 12:35 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Me	thod: EPA 826						
1,2,4-Trimethylbenzene	0.0056 m	ig/kg	0.0054	1		03/27/14 21:22	95-63-6	
1,3,5-Trimethylbenzene	ND m	ig/kg	0.0054	1		03/27/14 21:22	108-67-8	
Vinyl acetate	ND m	ig/kg	0.11	1		03/27/14 21:22	108-05-4	
Vinyl chloride	ND m	ig/kg	0.0054	1		03/27/14 21:22	75-01-4	
Xylene (Total) Surrogates	ND m	g/kg	0.011	1		03/27/14 21:22	1330-20-7	
Dibromofluoromethane (S)	99 %	<b>.</b>	85-118	1		03/27/14 21:22	1868-53-7	
foluene-d8 (S)	106 %	<b>.</b>	71-128	1		03/27/14 21:22	2037-26-5	
4-Bromofluorobenzene (S)	92 %	<b>)</b> .	56-144	1		03/27/14 21:22	460-00-4	
Percent Moisture	Analytical Met	thod: ASTM D2	2974-87					
Percent Moisture	8.1 %	)	0.10	1		03/24/14 15:44		



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#### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-5 4-6'	Lab ID: 50950	61010 Collected	: 03/19/1	4 12:50	Received: 03	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight	" basis							
Parameters	Results	Units Repo	rt Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Method	d: EPA 8015 Mod Ex	t Prepara	ation Me	hod: EPA 3546			
Total Petroleum Hydrocarbons	ND mg/k	g	25.5	1	03/26/14 12:25	03/26/14 17:15	5	
TPH (C10-C20)	ND mg/k	g	12.7	1	03/26/14 12:25	03/26/14 17:15	5	
TPH (C20-C34)	ND mg/k	g	12.7	1	03/26/14 12:25	03/26/14 17:15	5	
Surrogates								
n-Pentacosane (S)	68 % <i>.</i>		30-153	1	03/26/14 12:25	03/26/14 17:15	5 629-99-2	
8015 Gasoline Range Organics	Analytical Method	d: EPA 8015 Mod Pu	r					
TPH (C06-C12)	ND mg/k	g	1.3	1		03/26/14 13:29	)	
Surrogates								
4-Bromofluorobenzene (S)	100 %.		38-163	1		03/26/14 13:29	460-00-4	
8270 MSSV SHORT LIST MICROWAVE	Analytical Method	1: EPA 8270 Prepara	ation Meth	nod: EPA	3546			
Acenaphthene	ND ug/kg	1	420	1	03/25/14 10:10	03/26/14 11:15	83-32-9	
Acenaphthylene	ND ug/kg		420	1	03/25/14 10:10	03/26/14 11:15	208-96-8	
Anthracene	ND ug/kg	, ,	420	1	03/25/14 10:10	03/26/14 11:15	120-12-7	
Benzo(a)anthracene	ND ug/kg	)	420	1	03/25/14 10:10	03/26/14 11:15	56-55-3	
Benzo(a)pyrene	ND ug/kg	)	216	1	03/25/14 10:10	03/26/14 11:15	50-32-8	
Benzo(b)fluoranthene	ND ug/kg	)	420	1	03/25/14 10:10	03/26/14 11:15	205-99-2	
Benzo(g,h,i)perylene	ND ug/kg	)	420	1	03/25/14 10:10	03/26/14 11:15	191-24-2	
Benzo(k)fluoranthene	ND ug/kg	)	420	1	03/25/14 10:10	03/26/14 11:15	207-08-9	
Benzyl alcohol	ND ug/kg	ļ	840	1	03/25/14 10:10	03/26/14 11:15	100-51-6	
4-Bromophenylphenyl ether	ND ug/kg	)	420	1	03/25/14 10:10	03/26/14 11:15	101-55-3	
Butylbenzylphthalate	ND ug/kg	)	420	1	03/25/14 10:10	03/26/14 11:15	85-68-7	
4-Chloro-3-methylphenol	ND ug/kg	1	840	1	03/25/14 10:10	03/26/14 11:15	59-50-7	
4-Chloroaniline	ND ug/kg	I	840	1	03/25/14 10:10	03/26/14 11:15	106-47-8	
bis(2-Chloroethoxy)methane	ND ug/kg	I	420	1	03/25/14 10:10	03/26/14 11:15	111-91-1	
bis(2-Chloroethyl) ether	ND ug/kg	l i i i i i i i i i i i i i i i i i i i	420	1	03/25/14 10:10	03/26/14 11:15	111-44-4	
bis(2-Chloroisopropyl) ether	ND ug/kg	l.	420	1	03/25/14 10:10	03/26/14 11:15	108-60-1	
2-Chloronaphthalene	ND ug/kg	t	420	1	03/25/14 10:10	03/26/14 11:15	91-58-7	
2-Chlorophenol	ND ug/kg		420	1	03/25/14 10:10	03/26/14 11:15	95-57-8	
4-Chlorophenylphenyl ether	ND ug/kg	l	420	1	03/25/14 10:10	03/26/14 11:15	7005-72-3	
Chrysene	ND ug/kg	I	420	1	03/25/14 10:10			
Dibenz(a,h)anthracene	ND ug/kg	l	216		03/25/14 10:10			
Dibenzofuran	ND ug/kg	ļ	420		03/25/14 10:10			
2,4-Dichlorophenol	ND ug/kg	l	420	1	03/25/14 10:10	03/26/14 11:15	120-83-2	
Diethylphthalate	ND ug/kg		420	1	03/25/14 10:10			
2,4-Dimethylphenol	ND ug/kg		420	1	03/25/14 10:10			
Dimethylphthalate	ND ug/kg		420	1	03/25/14 10:10			
Di-n-butylphthalate	ND ug/kg		420	1	03/25/14 10:10			
4,6-Dinitro-2-methylphenol	ND ug/kg		2040		03/25/14 10:10			
2,4-Dinitrophenol	ND ug/kg		2040		03/25/14 10:10			
2,4-Dinitrotoluene	ND ug/kg		420	1	03/25/14 10:10			
2,6-Dinitrotoluene	ND ug/kg		420	1	03/25/14 10:10			
Di-n-octylphthalate	ND ug/kg		420		03/25/14 10:10			
bis(2-Ethylhexyl)phthalate	ND ug/kg		420	1	03/25/14 10:10	03/26/14 11:15	117-81-7	



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#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-5 4-6'	Lab ID: 5095	061010	Collected: 03/19/1	4 12:50	Received: 03	M21/14 12:35 N	Aatrix: Solid	
Results reported on a "dry-weight"	' basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
3270 MSSV SHORT LIST MICROWAVE	Analytical Metho	od: EPA 82	270 Preparation Meth	nod: EP/	A 3546			
luoranthene	ND ug/l	g	420	1	03/25/14 10:10	03/26/14 11:15	206-44-0	
Fluorene	ND ug/	kġ	420	1	03/25/14 10:10	03/26/14 11:15	86-73-7	
Hexachlorocyclopentadiene	ND ug/l	g	420	1	03/25/14 10:10	03/26/14 11:15	77-47-4	
Hexachloroethane	ND ug/		420	1	03/25/14 10:10	03/26/14 11:15	67-72-1	
ndeno(1,2,3-cd)pyrene	ND ug/	g	420	1	03/25/14 10:10	03/26/14 11:15	193-3 <b>9-</b> 5	
sophorone	ND ug/l	g	420	1	03/25/14 10:10	03/26/14 11:15	78-59-1	
2-Methylnaphthalene	ND ug/		420	1	03/25/14 10:10	03/26/14 11:15	91-57-6	
2-Methylphenol(o-Cresol)	ND ug/l	g	420	1	03/25/14 10:10	03/26/14 11:15	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND ug/l	-	840	1	03/25/14 10:10	03/26/14 11:15		
Naphthalene	ND ug/	-	420	1	03/25/14 10:10	03/26/14 11:15	91-20-3	
2-Nitroaniline	ND ug/	-	2040	1	03/25/14 10:10	03/26/14 11:15	88-74-4	
3-Nitroaniline	ND ug/	-	2040	1	03/25/14 10:10	03/26/14 11:15	99-09-2	
1-Nitroaniline	ND ug/	-	2040	1	03/25/14 10:10	03/26/14 11:15	100-01-6	
Nitrobenzene	ND ug/	-	420	1		03/26/14 11:15		
2-Nitrophenol	ND ug/	-	420	1		03/26/14 11:15		
l-Nitrophenol	ND ug/	-	2040	1	03/25/14 10:10	03/26/14 11:15	100-02-7	
I-Nitroso-di-n-propylamine	ND ug/k	•	420	1	03/25/14 10:10	03/26/14 11:15	621-64-7	
N-Nitrosodiphenylamine	ND ug/k	-	420	1		03/26/14 11:15		
Phenanthrene	ND ug/k	-	420	1		03/26/14 11:15		
Phenol	ND ug/k	-	420	1		03/26/14 11:15		
<sup>o</sup> yrene	ND ug/k	•	420	1		03/26/14 11:15		
2,4,5-Trichlorophenol	ND ug/k	-	420	1		03/26/14 11:15		
2,4,6-Trichlorophenol	ND ug/k	-	420	1		03/26/14 11:15		
Surrogates	•	•						
Nitrobenzene-d5 (S)	<b>65 %</b> .		28-101	1	03/25/14 10:10	03/26/14 11:15	4165-60-0	
-Fluorobiphenyl (S)	70 %.		31-94	1	03/25/14 10:10	03/26/14 11:15	321-60-8	
-Terphenyl-d14 (S)	83 %.		26-110	1	03/25/14 10:10	03/26/14 11:15	1718-51-0	
Phenol-d5 (S)	68 %.		28-101	1	03/25/14 10:10	03/26/14 11:15	4165-62-2	
P-Fluorophenol (S)	67 %.		24-104	1	03/25/14 10:10	03/26/14 11:15	367-12-4	
2,4,6-Tribromophenol (S)	74 %.		16-122	1	03/25/14 10:10	03/26/14 11:15	118-79-6	
260 MSV 5030 Low Level	Analytical Metho	d: EPA 82	60					
Acetone	ND mg/	kg	0.13	1		03/27/14 21:57	67-64-1	
Acrolein	ND mg/	•	0.13	1		03/27/14 21:57		
Benzene	ND mg/	•	0.0064	1		03/27/14 21:57		
Bromobenzene	ND mg/		0.0064	1		03/27/14 21:57		
Bromochloromethane	ND mg/	-	0.0064	1		03/27/14 21:57		
Bromodichloromethane	ND mg/l	•	0.0064	1		03/27/14 21:57		
Bromoform	ND mg/		0.0064	1		03/27/14 21:57		
Bromomethane	ND mg/l		0.0064	1		03/27/14 21:57		
-Butanone (MEK)	ND mg/l	-	0.032	1		03/27/14 21:57		
-Butylbenzene	ND mg/l		0.0064	1		03/27/14 21:57		
ec-Butylbenzene	ND mg/l		0.0064	1		03/27/14 21:57		
	-	-						
ert-Butylbenzene	ND mg/l	( <b>n</b>	0.0064	1		03/27/14 21:57	08-06-6	



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## **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-5 4-6'	Lab ID: 509506101	0 Collected: 03/19/1	14 12:50	Received: 03	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weigh	nt" basis						
Parameters	Results Uni	ts Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Method: EP	A 8260					
Carbon tetrachloride	ND mg/kg	0.0064	1		03/27/14 21:5	7 56-23-5	
Chlorobenzene	ND mg/kg	0.0064	1		03/27/14 21:5	7 108-90-7	
Chloroethane	ND mg/kg	0.0064	1		03/27/14 21:5	7 75-00-3	
Chloroform	ND mg/kg	0.0064	1		03/27/14 21:5	7 67-66-3	
Chloromethane	ND mg/kg	0.0064	1		03/27/14 21:5	7 74-87-3	
2-Chlorotoluene	ND mg/kg	0.0064	1		03/27/14 21:5	7 95-49-8	
4-Chlorotoluene	ND mg/kg	0.0064	1		03/27/14 21:5	7 106-43-4	
Dibromochloromethane	ND mg/kg	0.0064	1		03/27/14 21:5	7 124-48-1	
Dibromomethane	ND mg/kg	0.0064	1		03/27/14 21:5	7 74-95-3	
1,2-Dichlorobenzene	ND mg/kg	0.0064	1		03/27/14 21:5	7 95-50-1	
1,3-Dichlorobenzene	ND mg/kg	0.0064	1		03/27/14 21:5	7 541-73-1	
1,4-Dichlorobenzene	ND mg/kg	0.0064	1		03/27/14 21:5		
trans-1,4-Dichloro-2-butene	ND mg/kg	0.13	1		03/27/14 21:5		
Dichlorodifluoromethane	ND mg/kg	0.0064	1		03/27/14 21:5		
1,1-Dichloroethane	ND mg/kg	0.0064	1		03/27/14 21:5		
1,2-Dichloroethane	ND mg/kg	0.0064	1		03/27/14 21:5		
1,1-Dichloroethene	ND mg/kg	0.0064	1		03/27/14 21:5		
cis-1,2-Dichloroethene	ND mg/kg	0.0064	1		03/27/14 21:5		
trans-1,2-Dichloroethene	ND mg/kg	0.0064	1		03/27/14 21:5		
1,2-Dichloropropane	ND mg/kg	0.0064	1		03/27/14 21:5		
1,3-Dichloropropane	ND mg/kg	0.0064	1		03/27/14 21:5		
2,2-Dichloropropane	ND mg/kg	0.0064	1		03/27/14 21:5		
1,1-Dichloropropene	ND mg/kg	0.0064	1		03/27/14 21:5		
cis-1,3-Dichloropropene	ND mg/kg	0.0064	1			7 10061-01-5	
trans-1,3-Dichloropropene	ND mg/kg	0.0064	1			7 10061-02-6	
Ethylbenzene	ND mg/kg	0.0064	1		03/27/14 21:5		
Ethyl methacrylate	ND mg/kg	0.13	1		03/27/14 21:5		
2-Hexanone	ND mg/kg	0.13	1		03/27/14 21:5		
lodomethane	ND mg/kg	0.13	1		03/27/14 21:5		
Isopropylbenzene (Cumene)	ND mg/kg	0.0064	1		03/27/14 21:5		
p-lsopropyltoluene	ND mg/kg	0.0064	1		03/27/14 21:5		
Methylene Chloride	ND mg/kg	0.025	1		03/27/14 21:5		
4-Methyl-2-pentanone (MIBK)	ND mg/kg	0.023	1		03/27/14 21:5		
Methyl-tert-butyl ether		0.0064	1				
n-Propylbenzene	ND mg/kg ND mg/kg	0.0064	1		03/27/14 21:5		
		0.0064	י 1				
Styrene 1,1,1,2-Tetrachloroethane	ND mg/kg		1		03/27/14 21:5		
1,1,2,2-Tetrachloroethane	ND mg/kg	0.0064	•		03/27/14 21:5		
	ND mg/kg	0.0064	1		03/27/14 21:5		
Tetrachloroethene	ND mg/kg	0.0064	1		03/27/14 21:5		
Toluene	ND mg/kg	0.0064	1		03/27/14 21:5		
1,2,3-Trichlorobenzene	ND mg/kg	0.0064	1		03/27/14 21:5		
1,2,4-Trichlorobenzene	ND mg/kg	0.0064	1		03/27/14 21:5		
1,1,1-Trichloroethane	ND mg/kg	0.0064	1		03/27/14 21:5		
1,1,2-Trichloroethane	ND mg/kg	0.0064	1		03/27/14 21:57		
Trichloroethene	ND mg/kg	0.0064	1		03/27/14 21:57		
Trichlorofluoromethane	ND mg/kg	0.0064	1		03/27/14 21:5	( 75-69-4	



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### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

 Sample:
 58-SB-5 4-6'
 Lab ID:
 5095061010
 Collected:
 03/19/14
 12:50
 Received:
 03/21/14
 12:35
 Matrix:
 Solid

 Results reported on a "dry-weight" basis
 Collected:
 03/19/14
 12:50
 Received:
 03/21/14
 12:35
 Matrix:
 Solid

Results reported on a dry-wely	ni Dasis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Me	thod: EPA 8260	)					
1,2,4-Trimethylbenzene	ND m	g/kg	0.0064	1		03/27/14 21:57	95-63-6	
1,3,5-Trimethylbenzene	ND m	g/kg	0.0064	1		03/27/14 21:57	108-67-8	
Vinyl acetate	ND m	g/kg	0.13	1		03/27/14 21:57	108-05-4	
Vinyl chloride	ND m	g/kg	0.0064	1		03/27/14 21:57	75-01-4	
Xylene (Total)	ND m	g/kg	0.013	1		03/27/14 21:57	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	97 %		85-118	1		03/27/14 21:57	1868-53-7	
Toluene-d8 (S)	102 %		71-128	1		03/27/14 21:57	2037-26-5	
4-Bromofluorobenzene (S)	100 %	14	56-144	1		03/27/14 21:57	460-00-4	
Percent Moisture	Analytical Met	hod: ASTM D2	974-87					
Percent Moisture	21.4 %	,	0.10	1		03/24/14 15:44		



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#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-6 6-8'	Lab ID: 50950	61011 Colle	cted: 03/19/1	4 13:08	Received: 03	3/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight	" basis							
Parameters	Results	Units F	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 TPH Ohio Microwave	Analytical Method	I: EPA 8015 Mod	d Ext Prepara	tion Me	thod: EPA 3546			
Total Petroleum Hydrocarbons	ND mg/k	g	21.4	1	03/26/14 12:25	03/26/14 17:36	<b>i</b>	
TPH (C10-C20)	ND mg/k	g	10.7	1	03/26/14 12:25	03/26/14 17:36	i	
TPH (C20-C34)	ND mg/k	g	10.7	1	03/26/14 12:25	03/26/14 17:36	i	
Surrogates								
n-Pentacosane (S)	91 %.		30-153	1	03/26/14 12:25	03/26/14 17:36	629-99-2	
8015 Gasoline Range Organics	Analytical Method	I: EPA 8015 Moo	d Pur					
TPH (C06-C12)	ND mg/k	9	1.1	1		03/26/14 14:47	,	
Surrogates								
4-Bromofluorobenzene (S)	94 %.		38-163	1		03/26/14 14:47	460-00-4	
8270 MSSV SHORT LIST MICROWAVE	Analytical Method	l: EPA 8270 Pre	eparation Meth	od: EPA	3546			
Acenaphthene	ND ug/kg	I	356	1	03/25/14 10:10	03/26/14 11:35	83-32-9	
Acenaphthylene	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	208-96-8	
Anthracene	ND ug/kg	1	356	1	03/25/14 10:10	03/26/14 11:35	120-12-7	
Benzo(a)anthracene	445 ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	56-55-3	
Benzo(a)pyrene	461 ug/kg		184	1	03/25/14 10:10	03/26/14 11:35	50-32-8	
Benzo(b)fluoranthene	425 ug/kg	l	356	1	03/25/14 10:10	03/26/14 11:35	205-99-2	
Benzo(g,h,i)perylene	ND ug/kg	l	356	1	03/25/14 10:10	03/26/14 11:35	191-24-2	
Benzo(k)fluoranthene	455 ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	207-08-9	
Benzyl alcohol	ND ug/kg		713	1	03/25/14 10:10	03/26/14 11:35	100-51-6	
4-Bromophenylphenyl ether	ND ug/kg	l	356	1	03/25/14 10:10	03/26/14 11:35	101-55-3	
Butylbenzylphthalate	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	85-68-7	
4-Chioro-3-methylphenol	ND ug/kg		713	1	03/25/14 10:10	03/26/14 11:35	59-50-7	
4-Chloroaniline	ND ug/kg		713	1	03/25/14 10:10	03/26/14 11:35	106-47-8	
bis(2-Chloroethoxy)methane	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	111-91-1	
bis(2-Chloroethyl) ether	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	111-44-4	
bis(2-Chloroisopropyl) ether	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	108-60-1	
2-Chloronaphthalene	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	91-58-7	
2-Chlorophenol	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	95-57-8	
4-Chlorophenylphenyl ether	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	7005-72-3	
Chrysene	572 ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	218-01-9	
Dibenz(a,h)anthracene	ND ug/kg		184	1	03/25/14 10:10			
Dibenzofuran	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	132-64-9	
2,4-Dichlorophenol	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	120-83-2	
Diethylphthalate	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	84-66-2	
2,4-Dimethylphenol	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	105-67-9	
Dimethylphthalate	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	131-11-3	
Di-n-butylphthalate	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	84-74-2	
4,6-Dinitro-2-methylphenol	ND ug/kg		1730	1	03/25/14 10:10	03/26/14 11:35	534-52-1	
2,4-Dinitrophenol	ND ug/kg		1730	1	03/25/14 10:10			
2,4-Dinitrotoluene	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	121-14-2	
2,6-Dinitrotoluene	ND ug/kg		356	1	03/25/14 10:10			
Di-n-octylphthalate	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	117-84-0	
bis(2-Ethylhexyl)phthalate	ND ug/kg		356	1	03/25/14 10:10	03/26/14 11:35	117-81-7	



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#### ANALYTICAL RESULTS

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

Sample: 58-SB-6 6-8'	Lab ID:	5095061011	Collected: 03/19/14	4 13:08	Received: 03	8/21/14 12:35	Matrix: Solid	
Results reported on a "dry-weight"	' basis							
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
3270 MSSV SHORT LIST MICROWAVE	Analytical	Method: EPA 82	270 Preparation Methe	od: EPA	3546			
Fluoranthene	1010	) ug/kg	356	1	03/25/14 10:10	03/26/14 11:35	5 206-44-0	
Fluorene	NE	) ug/kg	356	1	03/25/14 10:10	03/26/14 11:35	5 86-73-7	
Hexachlorocyclopentadiene	NE	) ug/kg	356	1	03/25/14 10:10	03/26/14 11:35	5 77-47-4	
Hexachloroethane	NE	) ug/kg	356	1	03/25/14 10:10	03/26/14 11:35	5 67-72-1	
ndeno(1,2,3-cd)pyrene	NE	) ug/kg	356	1	03/25/14 10:10	03/26/14 11:35	5 193-39-5	
sophorone	NE	) ug/kg	356	1	03/25/14 10:10	03/26/14 11:35	5 78-59-1	
2-Methylnaphthalene	NE	) ug/kg	356	1	03/25/14 10:10	03/26/14 11:35	5 91-57-6	
2-Methylphenol(o-Cresol)	NE	) ug/kg	356	1	03/25/14 10:10	03/26/14 11:35	5 95-48-7	
3&4-Methylphenol(m&p Cresol)	NE	) ug/kg	713	1	03/25/14 10:10	03/26/14 11:35	5	
Naphthalene	NE	) ug/kg	356	1	03/25/14 10:10	03/26/14 11:35	5 91-20-3	
2-Nitroaniline	NE	) ug/kg	1730	1	03/25/14 10:10	03/26/14 11:35	5 88-74-4	
3-Nitroaniline		ug/kg	1730	1	03/25/14 10:10	03/26/14 11:35	5 99-09-2	
1-Nitroaniline		) ug/kg	1730	1	03/25/14 10:10	03/26/14 11:35	5 100-01-6	
Nitrobenzene		ug/kg	356	1	03/25/14 10:10	03/26/14 11:35	5 98-95-3	
2-Nitrophenol		ug/kg	356	1	03/25/14 10:10	03/26/14 11:35	88-75-5	
-Nitrophenol		ug/kg	1730	1	03/25/14 10:10	03/26/14 11:35	5 100-02-7	
I-Nitroso-di-n-propylamine		ug/kg	356	1	03/25/14 10:10	03/26/14 11:35	621-64-7	
I-Nitrosodiphenylamine		ug/kg	356	1	03/25/14 10:10			
Phenanthrene		i ug/kg	356	1	03/25/14 10:10			
Phenol		ug/kg	356		03/25/14 10:10			
yrene		ug/kg	356	1	03/25/14 10:10			
2,4,5-Trichlorophenol		ug/kg	356	1	03/25/14 10:10			
2,4,6-Trichlorophenol		ug/kg	356	1	03/25/14 10:10			
Surrogates		-33						
Nitrobenzerie-d5 (S)	68	%.	28-101	1	03/25/14 10:10	03/26/14 11:35	4165-60-0	
-Fluorobiphenyl (S)	74	%.	31-94	1	03/25/14 10:10	03/26/14 11:35	321-60-8	
-Terphenyl-d14 (S)	79	%.	26-110	1	03/25/14 10:10	03/26/14 11:35	1718-51-0	
Phenol-d5 (S)	70	%.	28-101	1	03/25/14 10:10	03/26/14 11:35	4165-62-2	
2-Fluorophenol (S)	70	%.	24-104	1	03/25/14 10:10	03/26/14 11:35	367-12-4	
2,4,6-Tribromophenol (S)		%.	16-122		03/25/14 10:10			
260 MSV 5030 Low Level	Analytical N	lethod: EPA 82	260					
Acetone	ND	mg/kg	0.11	1		03/27/14 22:33	67-64-1	
Acrolein		mg/kg	0.11	1		03/27/14 22:33	107-02-8	
enzene		mg/kg	0.0054	1		03/27/14 22:33		
sromobenzene		mg/kg	0.0054	1		03/27/14 22:33		
Bromochloromethane		mg/kg	0.0054	1		03/27/14 22:33		
Iromodichloromethane		mg/kg	0.0054	1		03/27/14 22:33		
romoform		mg/kg	0.0054	1		03/27/14 22:33		
romomethane		mg/kg	0.0054	1		03/27/14 22:33		
-Butanone (MEK)		mg/kg	0.027	1		03/27/14 22:33		
-Butylbenzene		mg/kg	0.0054	1		03/27/14 22:33		
ec-Butylbenzene		mg/kg	0.0054	1		03/27/14 22:33		
	שא							
ert-Butylbenzene	10	mg/kg	0.0054	1		03/27/14 22:33		



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#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

•	75-0.22 / 52888				
Pace Project No.: 5095061					
Sample: 58-SB-6 6-8'	Lab ID: 509506	1011 Collected: 03/19/	4 13:08	Received: 03/21/14 12:3	5 Matrix: Solid
Results reported on a "dry-weigh	nt" Dasis				
Parameters	Results	Units Report Limit	DF	Prepared Analyz	ed CAS No. Qua
8260 MSV 5030 Low Level	Analytical Method:	EPA 8260			
Carbon tetrachloride	ND mg/kg	0.0054	1	03/27/14 2	22:33 56-23-5
Chlorobenzene	ND mg/kg	0.0054	1	03/27/14 2	22:33 108-90-7
Chloroethane	ND mg/kg	0.0054	1	03/27/14 2	22:33 75-00-3
Chloroform	ND mg/kg	0.0054	1	03/27/14 2	2:33 67-66-3
Chloromethane	ND mg/kg	0.0054	1	03/27/14 2	2:33 74-87-3
2-Chlorotoluene	ND mg/kg	0.0054	1	03/27/14 2	2:33 95-49-8
4-Chlorotoluene	ND mg/kg	0.0054	1	03/27/14 2	2:33 106-43-4
Dibromochloromethane	ND mg/kg	0.0054	1	03/27/14 2	2:33 124-48-1
Dibromomethane	ND mg/kg	0.0054	1	03/27/14 2	2:33 74-95-3
1,2-Dichlorobenzene	ND mg/kg	0.0054	1	03/27/14 2	2:33 95-50-1
,3-Dichlorobenzene	ND mg/kg	0.0054	1	03/27/14 2	2:33 541-73-1
I,4-Dichlorobenzene	ND mg/kg	0.0054	1	03/27/14 2	2:33 106-46-7
rans-1,4-Dichloro-2-butene	ND mg/kg	0.11	1	03/27/14 2	2:33 110-57-6
Dichlorodifluoromethane	ND mg/kg	0.0054	1		2:33 75-71-8
.1-Dichloroethane	ND mg/kg	0.0054	1		2:33 75-34-3
,2-Dichloroethane	ND mg/kg	0.0054	1		2:33 107-06-2
,1-Dichloroethene	ND mg/kg	0.0054	1		2:33 75-35-4
sis-1,2-Dichloroethene	ND mg/kg	0.0054	1		2:33 156-59-2
rans-1,2-Dichloroethene	ND mg/kg	0.0054	1		2:33 156-60-5
,2-Dichloropropane	ND mg/kg	0.0054	1		2:33 78-87-5
,3-Dichloropropane	ND mg/kg	0.0054	1		2:33 142-28-9
2,2-Dichloropropane	ND mg/kg	0.0054	1		2:33 594-20-7
,1-Dichloropropene	ND mg/kg	0.0054	1		2:33 563-58-6
sis-1,3-Dichloropropene	ND mg/kg	0.0054	1		2:33 10061-01-5
rans-1,3-Dichloropropene	ND mg/kg	0.0054	1		2:33 10061-01-5
Ethylbenzene	ND mg/kg	0.0054	1		2:33 100-41-4
•			1		
Ethyl methacrylate 2-Hexanone	ND mg/kg	0.11	1		2:33 97-63-2
	ND mg/kg	0.11			2:33 591-78-6
odomethane	ND mg/kg	0.11	1		2:33 74-88-4
sopropylbenzene (Cumene)	ND mg/kg	0.0054	1		2:33 98-82-8
-Isopropyltoluene	ND mg/kg	0.0054	1		2:33 99-87-6
lethylene Chloride	ND mg/kg	0.022	1		2:33 75-09-2
-Methyl-2-pentanone (MIBK)	ND mg/kg	0.027	1		2:33 108-10-1
lethyl-tert-butyl ether	ND mg/kg	0.0054	1		2:33 1634-04-4
-Propylbenzene	ND mg/kg	0.0054	1		2:33 103-65-1
tyrene	ND mg/kg	0.0054	1		2:33 100-42-5
,1,1,2-Tetrachloroethane	ND mg/kg	0.0054	1		2:33 630-20-6
,1,2,2-Tetrachloroethane	ND mg/kg	0.0054	1		2:33 7 <b>9-</b> 34-5
etrachloroethene	ND mg/kg	0.0054	1		2:33 127-18-4
oluene	ND mg/kg	0.0054	1	03/27/14 2	2:33 108-88-3
,2,3-Trichlorobenzene	ND mg/kg	0.0054	1	03/27/14 2	2:33 87-61-6
,2,4-Trichlorobenzene	ND mg/kg	0.0054	1	03/27/14 2	2:33 120-82-1
,1,1-Trichloroethane	ND mg/kg	0.0054	1	03/27/14 2	2:33 71-55-6
1 1 2-Trichloroethane		0.0054	4	00/07/44 0	0.22 70 00 F

## **REPORT OF LABORATORY ANALYSIS**

0.0054

0.0054

0.0054

1

1

1

ND mg/kg

ND mg/kg

ND mg/kg

1,1,2-Trichloroethane

Trichlorofluoromethane

Trichloroethene

03/27/14 22:33 79-00-5

03/27/14 22:33 79-01-6

03/27/14 22:33 75-69-4



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#### **ANALYTICAL RESULTS**

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

 Sample:
 58-SB-6 6-8'
 Lab ID:
 5095061011
 Collected:
 03/19/14 13:08
 Received:
 03/21/14 12:35
 Matrix:
 Solid

 Results reported on a "dry-weight" basis
 Image: Solid state in the solid state

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5030 Low Level	Analytical Met	hod: EPA 826	D					
1,2,4-Trimethylbenzene	ND m	g/kg	0.0054	1		03/27/14 22:33	95-63-6	
1,3,5-Trimethylbenzene	ND m	g/kg	0.0054	1		03/27/14 22:33	108-67-8	
Vinyl acetate	ND m	g/kg	0.11	1		03/27/14 22:33	108-05-4	
Vinyl chloride	ND m	g/kg	0.0054	1		03/27/14 22:33	75-01-4	
Xylene (Total)	ND m	g/kg	0.011	1		03/27/14 22:33	1330-20-7	
Surrogates								
Dibromofluoromethane (S)	98 %		85-118	1		03/27/14 22:33	1868-53-7	
Toluene-d8 (S)	106 %	-	71-128	1		03/27/14 22:33	2037-26-5	
4-Bromofluorobenzene (S)	93 %	•	56-144	1		03/27/14 22:33	460-00-4	
Percent Moisture	Analytical Met	hod: ASTM D2	2974-87					
Percent Moisture	7.4 %		0.10	1		03/24/14 15:45		



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#### QUALITY CONTROL DATA

Project: Pace Project No.:	ODOT HAN 5095061	M-75-0.22 / 52	888										
QC Batch:	GCV/178	38		Analys	sis Method	E	PA 8015 Mc	od Pur					
QC Batch Method:	EPA 8015				sis Descrip		015 Solid G						
Associated Lab Sam		95061001, 509	95061002, 5		•				5095061007	7			
METHOD BLANK:	1067665				Matrix: Sol	id							
Associated Lab Sam	ples: 509	95061001, 509	95061002, 5	5095061003 Blani		004, 50950 eporting	61005, 509	5061006, 5	095061007	7			
Param	eter		Units	Resu		Limit	Analyz	zed	Qualifiers				
TPH (C06-C12)		mg/kg			ND	1.0	03/25/14	19:13		_			
4-Bromofluorobenze	ne (S)	%.			94	38-163	03/25/14	19:13					
LABORATORY CON	TROL SAM	IPLE: 10676	66										
_				Spike	LCS		LCS	% Re	-				
Param	eter		Units	Conc.	Resu	lt	% Rec	Limits	s Qi	ualifiers	_		
TPH (C06-C12)		mg/kg		10	)	9.5	95	75	5-139		-		
4-Bromofluorobenze	ne (S)	%.					101	38	3-163				
MATRIX SPIKE & M			E: 10676	67		1067668							
				MS	MSD								
		50	95059007	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	er	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
TPH (C06-C12)		mg/kg	<1.4	14.4	14.4	10	10.5	69	73	10-151	5	20	



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# QUALITY CONTROL DATA

Project:	ODOT HAN	M-75-0.22 / 52	888										
Pace Project No.:	5095061												
QC Batch:	GCV/1784	40		Analys	sis Method	: Е	PA 8015 Mc	d Pur				· · · · · ·	
QC Batch Method:	EPA 8015	Mod Pur		Analys	sis Descrip	tion: 8	015 Solid G	cv					
Associated Lab Sam	ples: 509	95061009, 509	95061010, 5	5095061011									
METHOD BLANK:	1068256				Matrix: So	lid							
Associated Lab Sam	oles: 509	95061009, 509	95061010, 5	5095061011									
				Blanl	k F	Reporting							
Param	eter		Units	Resu	lt	Limit	Analyz	ed	Qualifiers				
TPH (C06-C12)		mg/kg			ND	1.0	03/26/14	11:20					
4-Bromofluorobenzer	ne (S)	%.			94	38-163	03/26/14	11:20					
LABORATORY CON	TROL SAM	PLE: 10682	257										
				Spike	LCS	S	LCS	% Rec	;				
Parame	eter		Units	Conc.	Resu	ult	% Rec	Limits	Q	ualifiers	_		
TPH (C06-C12)		mg/kg		10	)	9.7	97	75	-139		-		
4-Bromofluorobenzer	ie (S)	%.					100	38	-163				
MATRIX SPIKE & MA			E: 10682	58	· ·	1068259							
			L. 10002	MS	MSD	1000200							
		50	95061010	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	r	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
TPH (C06-C12)		mg/kg	ND	12.7	12.7	11.6	12.2	91	96	10-151	5	20	



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#### QUALITY CONTROL DATA

Project: Pace Project No.:	ODOT HAN 5095061	M-75-0.22 / 52	888										
QC Batch:	GCV/178	48		Analys	sis Method	E	PA 8015 Mc	od Pur					
QC Batch Method:	EPA 8015	5 Mod Pur		-	sis Descrip		015 Solid G	CV					
Associated Lab Sam	ples: 509	95061008			•								
METHOD BLANK:	1069364				Matrix: Sol	id						<u> </u>	
Associated Lab Sam	ples: 509	95061008											
Param	eter		Units	Blanl Resu		eporting Limit	Analyz	ed	Qualifiers				
TPH (C06-C12)					ND	1.0	03/27/14	15:55		_			
4-Bromofluorobenze	ne (S)	%.			92	38-163							
										<del></del>			
LABORATORY CON	TROL SAM	IPLE: 10693	365	Spike	LCS		LCS	% Rec					
Param	eter		Units	Conc.	Resu		% Rec	Limits		ualifiers			
TPH (C06-C12)		mg/kg		10	,	9.4	94	75	-139		-		
4-Bromofluorobenze	ne (S)	%.					104	38	-163				
MATRIX SPIKE & M			E: 10693	66		1069367			<u></u>				
			L. 10000	MS	MSD	1000007							
		50	94884002	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Paramete	er	Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
TPH (C06-C12) 4-Bromofluorobenze	ne (S)	— mg/kg %.	29.5	9.5	7.8	37.3	36.1	82 153	84 158	10-151 38-163	3	20	MO



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#### QUALITY CONTROL DATA

Project: ODC	)T HAM-75-0.22 / 52888				
Pace Project No.: 509	5061				
QC Batch: MS	V/62969	Analysis Meth	od: EF	PA 8260	
QC Batch Method: EP	A 8260	Analysis Desc	ription: 82	60 MSV 5030 Low	
Associated Lab Samples	5095061001, 5095061002, 5	5095061004, 50950	61005, 509506	1006, 5095061007	7, 5095061008, 5095061009,
	5095061010, 5095061011				
METHOD BLANK: 106	0397	Matrix:	Solid		
Associated Lab Samples:	5095061001, 5095061002, 5	5095061004, 50950	61005, 509506	1006, 5095061007	7, 5095061008, 5095061009,
	5095061010, 5095061011				
<b>-</b> /		Blank	Reporting	Anal-ad	Qualifiana
Parameter	Units	Result	Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	e mg/kg	ND	0.0050	03/27/14 13:47	
1,1,1-Trichloroethane	mg/kg	ND	0.0050	03/27/14 13:47	
1,1,2,2-Tetrachloroethane	e mg/kg	ND	0.0050	03/27/14 13:47	
1,1,2-Trichloroethane	mg/kg	ND	0.0050	03/27/14 13:47	
,1-Dichloroethane	mg/kg	ND	0.0050	03/27/14 13:47	
,1-Dichloroethene	mg/kg	ND	0.0050	03/27/14 13:47	
,1-Dichloropropene	mg/kg	ND	0.0050		
,2,3-Trichlorobenzene	mg/kg	ND	0.0050		
,2,4-Trichlorobenzene	mg/kg	ND	0.0050	03/27/14 13:47	
,2,4-Trimethylbenzene	mg/kg	ND	0.0050	03/27/14 13:47	
,2-Dichlorobenzene	mg/kg	ND	0.0050	03/27/14 13:47	
,2-Dichloroethane	mg/kg	ND	0.0050	03/27/14 13:47	
,2-Dichloropropane	mg/kg	ND	0.0050	03/27/14 13:47	
,3,5-Trimethylbenzene	mg/kg	ND	0.0050	03/27/14 13:47	
,3-Dichlorobenzene	mg/kg	ND	0.0050	03/27/14 13:47	
,3-Dichloropropane	mg/kg	ND	0.0050	03/27/14 13:47	
,4-Dichlorobenzene	mg/kg	ND	0.0050	03/27/14 13:47	
2,2-Dichloropropane	mg/kg	ND	0.0050	03/27/14 13:47	
2-Butanone (MEK)	mg/kg	ND	0.025	03/27/14 13:47	
2-Chlorotoluene	mg/kg	ND	0.0050	03/27/14 13:47	
2-Hexanone	mg/kg	ND	0.10	03/27/14 13:47	
-Chlorotoluene	mg/kg	ND	0.0050	03/27/14 13:47	
-Methyl-2-pentanone (M		ND	0.025	03/27/14 13:47	
Acetone	mg/kg	ND	0.10	03/27/14 13:47	
Acrolein	mg/kg	ND	0.10	03/27/14 13:47	
Benzene	mg/kg	ND	0.0050	03/27/14 13:47	
Bromobenzene	mg/kg	ND	0.0050	03/27/14 13:47	
Bromochloromethane	mg/kg	ND	0.0050	03/27/14 13:47	
Bromodichloromethane	mg/kg	ND	0.0050	03/27/14 13:47	
Bromoform	mg/kg	ND		03/27/14 13:47	
Bromomethane	mg/kg	ND	0.0050	03/27/14 13:47	
Carbon disulfide	mg/kg	ND	0.010	03/27/14 13:47	
arbon tetrachloride	mg/kg	ND	0.0050	03/27/14 13:47	
Chlorobenzene	mg/kg	ND	0.0050	03/27/14 13:47	
hloroethane	mg/kg	ND	0.0050	03/27/14 13:47	
Chloroform	mg/kg	ND	0.0050	03/27/14 13:47	
Chloromethane	mg/kg	ND	0.0050	03/27/14 13:47	
is-1,2-Dichloroethene	mg/kg	ND	0.0050	03/27/14 13:47	
is-1,3-Dichloropropene	mg/kg	ND	0.0050	03/27/14 13:47	
Dibromochloromethane	mg/kg	ND	0.0050	03/27/14 13:47	
Dibromomethane	mg/kg	ND	0.0050	03/27/14 13:47	



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#### **QUALITY CONTROL DATA**

Project:	ODOT HAM-75-0.22 / 52888
Pace Project No .:	5095061

#### METHOD BLANK: 1069397

#### Matrix: Solid

Associated Lab Samples: 5095061001, 5095061002, 5095061004, 5095061005, 5095061006, 5095061007, 5095061008, 5095061009, 5095061010, 5095061011

5095	001010, 5095061011				
Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dichlorodifluoromethane	mg/kg	 ND	0.0050	03/27/14 13:47	
Ethyl methacrylate	mg/kg	ND	0.10	03/27/14 13:47	
Ethylbenzene	mg/kg	ND	0.0050	03/27/14 13:47	
lodomethane	mg/kg	ND	0.10	03/27/14 13:47	
sopropylbenzene (Cumene)	mg/kg	ND	0.0050	03/27/14 13:47	
Methyl-tert-butyl ether	mg/kg	ND	0.0050	03/27/14 13:47	
Methylene Chloride	mg/kg	ND	0.020	03/27/14 13:47	
n-Butylbenzene	mg/kg	ND	0.0050	03/27/14 13:47	
n-Propylbenzene	mg/kg	ND	0.0050	03/27/14 13:47	
p-Isopropyltoluene	mg/kg	ND	0.0050	03/27/14 13:47	
sec-Butylbenzene	mg/kg	ND	0.0050	03/27/14 13:47	
Styrene	mg/kg	ND	0.0050	03/27/14 13:47	
ert-Butylbenzene	mg/kg	ND	0.0050	03/27/14 13:47	
Tetrachloroethene	mg/kg	ND	0.0050	03/27/14 13:47	
Toluene	mg/kg	ND	0.0050	03/27/14 13:47	
rans-1,2-Dichloroethene	mg/kg	ND	0.0050	03/27/14 13:47	
rans-1,3-Dichloropropene	mg/kg	ND	0.0050	03/27/14 13:47	
rans-1,4-Dichloro-2-butene	mg/kg	ND	0.10	03/27/14 13:47	
Trichloroethene	mg/kg	ND	0.0050	03/27/14 13:47	
Frichlorofluoromethane	mg/kg	ND	0.0050	03/27/14 13:47	
Vinyl acetate	mg/kg	ND	0.10	03/27/14 13:47	
/inyl chloride	mg/kg	ND	0.0050	03/27/14 13:47	
(ylene (Total)	mg/kg	ND	0.010	03/27/14 13:47	
1-Bromofluorobenzene (S)	%.	101	56-144	03/27/14 13:47	
Dibromofluoromethane (S)	%.	98	85-118	03/27/14 13:47	
Γoluene-d8 (S)	%.	102	71-128	03/27/14 13:47	

#### LABORATORY CONTROL SAMPLE: 1069398

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	mg/kg	.05	0.054	109	62-123	-
1,1,1-Trichloroethane	mg/kg	.05	0.050	100	70-123	
1,1,2,2-Tetrachloroethane	mg/kg	.05	0.054	107	65-124	
1,1,2-Trichloroethane	mg/kg	.05	0.050	101	74-129	
1,1-Dichloroethane	mg/kg	.05	0.047	93	73-130	
1,1-Dichloroethene	mg/kg	.05	0.043	86	66-126	
1,1-Dichloropropene	mg/kg	.05	0.047	94	78-125	
1,2,3-Trichlorobenzene	mg/kg	.05	0.047	94	66-131	
1,2,4-Trichlorobenzene	mg/kg	.05	0.048	95	68-129	
1,2,4-Trimethylbenzene	mg/kg	.05	0.049	97	67-126	
1,2-Dichlorobenzene	mg/kg	.05	0.047	95	73-122	
1,2-Dichloroethane	mg/kg	.05	0.051	102	73-127	
,2-Dichloropropane	mg/kg	.05	0.051	101	75-118	
I,3,5-Trimethylbenzene	mg/kg	.05	0.048	95	65-127	



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### **QUALITY CONTROL DATA**

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095061

### LABORATORY CONTROL SAMPLE: 1069398

Parameter	LE: 1069398 Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,3-Dichlorobenzene	mg/kg	.05	0.047	94	73-121	<u>-</u>
1,3-Dichloropropane	mg/kg	.05	0.049	97	72-121	
1,4-Dichlorobenzene	mg/kg	.05	0.047	94	75-119	
2,2-Dichloropropane	mg/kg	.05	0.052	104	63-122	
2-Butanone (MEK)	mg/kg	.25	0.26	104	59-139	
2-Chlorotoluene	mg/kg	.05	0.048	96	72-121	
2-Hexanone	mg/kg	.25	0.27	108	56-139	
4-Chlorotoluene	mg/kg	.05	0.048	96	75-123	
I-Methyl-2-pentanone (MIBK)	mg/kg	.25	0.27	109	63-136	
Acetone	mg/kg	.25	0.32	127	46-156	
Acrolein	mg/kg	1	1.2	123	47-200	
Benzene	mg/kg	.05	0.046	91	74-119	
Bromobenzene	mg/kg	.05	0.047	95	69-129	
Bromochloromethane	mg/kg	.05	0.056	112	67-129	
Bromodichloromethane	mg/kg	.05	0.053	107	68-121	
Bromoform	mg/kg	.05	0.045	89	49-124	
Bromomethane	mg/kg	.05	0.048	95	44-142	
Carbon disulfide	mg/kg	.05	0.089	89	61-129	
Carbon tetrachloride	mg/kg	.05	0.053	106	58-127	
chlorobenzene	mg/kg	.05	0.047	94	77-122	
Chloroethane	mg/kg	.05	0.044	88	59-141	
hloroform	mg/kg	.05	0.044	97	75-124	
hloromethane	mg/kg	.05	0.048	82	46-133	
is-1,2-Dichloroethene	mg/kg	.05	0.049	98	72-122	
s-1,2-Dichloropropene	mg/kg	.05	0.049	98 107	68-115	
ibromochloromethane	mg/kg	.05	0.054	107	60-113	
bromomethane	mg/kg	.05	0.052	103	72-124	
	•••	.05	0.052	85	26-186	
Dichlorodifluoromethane	mg/kg	.05	0.043	109	63-130	
thyl methacrylate	mg/kg	.2 .05	0.048	96	72-123	
•	mg/kg	.05	.083J	90 83	38-149	
odomethane	mg/kg	.05	0.043	86		
sopropylbenzene (Cumene)	mg/kg		0.043	110	65-123 68-120	
lethyl-tert-butyl ether	mg/kg	.1 .05	0.11	92	57-142	
lethylene Chloride	mg/kg			92 97		
	mg/kg	.05	0.048 0.047	97 94	68-125 68-122	
-Propylbenzene	mg/kg	.05		-		
	mg/kg	.05	0.049	98	66-133	
ec-Butylbenzene	mg/kg	.05	0.048	95	64-131	
tyrene	mg/kg	.05	0.049	98	70-126	
rt-Butylbenzene	mg/kg	.05	0.046	93	46-124	
etrachloroethene	mg/kg	.05	0.045	89	72-126	
bluene	mg/kg	.05	0.047	94	71-121	
ans-1,2-Dichloroethene	mg/kg	.05	0.042	84	69-123	
ans-1,3-Dichloropropene	mg/kg	.05	0.057	114	66-114	
ans-1,4-Dichloro-2-butene	mg/kg	.2	0.22	110	61-124	
nchloroethene	mg/kg	.05	0.051	102	74-123	
richlorofluoromethane	mg/kg	.05	0.046	91	72-146	
inyl acetate	mg/kg	.2	0.19	97	57-131	



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### QUALITY CONTROL DATA

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095061

### LABORATORY CONTROL SAMPLE: 1069398

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Vinyl chloride	mg/kg	.05	0.043	86	55-128	
Xylene (Total)	mg/kg	.15	0.14	93	66-124	
4-Bromofluorobenzene (S)	%.			101	56-144	
Dibromofluoromethane (S)	%.			100	85-118	
Toluene-d8 (S)	%.			97	71-128	

MATRIX SPIKE SAMPLE:	1069399						
		5095061001	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
1,1,1,2-Tetrachloroethane	mg/kg	ND	.065	0.072	111	10-129	
1,1,1-Trichloroethane	mg/kg	ND	.065	0.067	103	26-143	
1,1,2,2-Tetrachloroethane	mg/kg	ND	.065	0.082	125	10-156	
1,1,2-Trichloroethane	mg/kg	ND	.065	0.067	102	13-156	
1,1-Dichloroethane	mg/kg	ND	.065	0.063	97	36-150	
1,1-Dichloroethene	mg/kg	ND	.065	0.054	83	31-146	
1,1-Dichloropropene	mg/kg	ND	.065	0.053	81	26-145	
1,2,3-Trichlorobenzene	mg/kg	ND	.065	0.031	47	10-119	
1,2,4-Trichlorobenzene	mg/kg	ND	.065	0.027	41	10-122	
1,2,4-Trimethylbenzene	mg/kg	ND	.065	0.069	106	10-139	
1,2-Dichlorobenzene	mg/kg	ND	.065	0.047	73	10-132	
1,2-Dichloroethane	mg/kg	ND	.065	0.059	90	30-140	
1,2-Dichloropropane	mg/kg	ND	.065	0.065	99	29-135	
1,3,5-Trimethylbenzene	mg/kg	ND	.065	0.074	114	10-143	
1,3-Dichlorobenzene	mg/kg	ND	.065	0.043	65	10-130	
1,3-Dichloropropane	mg/kg	ND	.065	0.060	92	17-139	
1,4-Dichlorobenzene	mg/kg	ND	.065	0.039	60	10-128	
2,2-Dichloropropane	mg/kg	ND	.065	0.075	114	2 <del>9</del> -136	
2-Butanone (MEK)	mg/kg	ND	.33	0.53	162	22-176	
2-Chlorotoluene	mg/kg	ND	.065	0.065	<b>99</b>	10-146	
2-Hexanone	mg/kg	ND	.33	0.51	156	12-165	
4-Chlorotoluene	mg/kg	ND	.065	0.052	79	10-138	
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	.33	0.39	120	22-155	
Acetone	mg/kg	ND	.33	0.98	301	11-200 L3	
Acrolein	mg/kg	ND	1.3	1.5	114	10-200	
Benzene	mg/kg	ND	.065	0.057	88	27-140	
Bromobenzene	mg/kg	ND	.065	0.041	63	10-133	
Bromochloromethane	mg/kg	ND	.065	0.066	102	28-142	
Bromodichloromethane	mg/kg	ND	.065	0.061	93	13-139	
Bromoform	mg/kg	ND	.065	0.051	79	10-122	
Bromomethane	mg/kg	ND	.065	0.059	90	10-154	
Carbon disulfide	mg/kg	ND	.13	0.062	47	20-142	
Carbon tetrachloride	mg/kg	ND	.065	0.066	101	1 <b>9</b> -135	
Chlorobenzene	mg/kg	ND	.065	0.048	74	10-136	
Chloroethane	mg/kg	ND	.065	0.059	91	24-161	
Chloroform	mg/kg	ND	.065	0.063	96	36-138	
Chloromethane	mg/kg	ND	.065	0.054	83	28-143	
cis-1,2-Dichloroethene	mg/kg	ND	.065	0.051	78	29-136	



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### QUALITY CONTROL DATA

Project: ODOT HAM-75-0.22 / 52888

Pace Project No.: 5095061

MATRIX SPIKE SAMPLE:	1069399						
		5095061001	Spike	MS	MS	% Rec	
Parameter	Units	Result	Conc.	Result	% Rec	Limits	Qualifiers
cis-1,3-Dichloropropene	mg/kg	ND	.065	0.054	83	10-130	
Dibromochloromethane	mg/kg	ND	.065	0.056	87	10-124	
Dibromomethane	mg/kg	ND	.065	0.051	79	24-136	
Dichlorodifluoromethane	mg/kg	ND	.065	0.062	95	15-187	
Ethyl methacrylate	mg/kg	ND	.26	0.26	100	10-147	
Ethylbenzene	mg/kg	ND	.065	0.059	91	10-144	
lodomethane	mg/kg	ND	.13	.11J	86	10-155	
Isopropylbenzene (Cumene)	mg/kg	ND	.065	0.058	88	10-134	
Methyl-tert-butyl ether	mg/kg	ND	.13	0.15	118	30-147	
Methylene Chloride	mg/kg	ND	.065	0.069	105	23-150	
n-Butylbenzene	mg/kg	ND	.065	0.056	86	10-141	
n-Propylbenzene	mg/kg	ND	.065	0.066	102	10-143	
p-Isopropyltoluene	mg/kg	ND	.065	0.073	112	10-146	
sec-Butylbenzene	mg/kg	ND	.065	0.073	113	10-150	
Styrene	mg/kg	ND	.065	0.044	67	10-138	
tert-Butylbenzene	mg/kg	ND	.065	0.079	122	10-135	
Tetrachloroethene	mg/kg	ND	.065	0.057	88	10-153	
Toluene	mg/kg	ND	.065	0.060	92	10-140	
trans-1,2-Dichloroethene	mg/kg	ND	.065	0.038	59	28-139	
trans-1,3-Dichloropropene	mg/kg	ND	.065	0.045	69	10-126	
trans-1,4-Dichloro-2-butene	mg/kg	ND	.26	0.17	64	10-132	
Trichloroethene	mg/kg	ND	.065	0.055	84	17-148	
Trichlorofluoromethane	mg/kg	ND	.065	0.064	97	31-177	
Vinyl acetate	mg/kg	ND	.26	0.17	67	10-131	
Vinyl chloride	mg/kg	ND	.065	0.050	77	30-145	
Xylene (Total)	mg/kg	ND	.2	0.17	87	10-143	
4-Bromofluorobenzene (S)	%.				89	56-144	
Dibromofluoromethane (S)	%.				100	85-118	
Toluene-d8 (S)	%.				107	71-128	



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### **QUALITY CONTROL DATA**

Project: ODOT H	AM-75-0.22 / 52888					
Pace Project No.: 5095061						
QC Batch: MSV/63		Analysis Meth		PA 8260		
QC Batch Method: EPA 82	60	Analysis Des	cription: 82	8260 MSV 5030 Low		
Associated Lab Samples: 5	095061003					
METHOD BLANK: 1070653		Matrix:	Solid			
Associated Lab Samples: 5	095061003					
• -		Blank	Reporting			
Parameter	Units	Result	Limit	Analyzed	Qualifiers	
1,1,1,2-Tetrachloroethane	mg/kg	ND	0.0050	03/28/14 15:15	<u> </u>	
1,1,1-Trichloroethane	mg/kg	ND	0.0050	03/28/14 15:15		
1,1,2,2-Tetrachloroethane	mg/kg	ND	0.0050	03/28/14 15:15		
1,1,2-Trichloroethane	mg/kg	ND	0.0050	03/28/14 15:15		
1,1-Dichloroethane	mg/kg	ND	0.0050	03/28/14 15:15		
1,1-Dichloroethene	mg/kg	ND	0.0050	03/28/14 15:15		
1,1-Dichloropropene	mg/kg	ND	0.0050	03/28/14 15:15		
1,2,3-Trichlorobenzene	mg/kg	ND	0.0050	03/28/14 15:15		
1,2,4-Trichlorobenzene	mg/kg	ND	0.0050	03/28/14 15:15		
1,2,4-Trimethylbenzene	mg/kg	ND	0.0050	03/28/14 15:15		
1,2-Dichlorobenzene	mg/kg	ND	0.0050	03/28/14 15:15		
1,2-Dichloroethane	mg/kg	ND	0.0050	03/28/14 15:15		
1,2-Dichloropropane	mg/kg	ND	0.0050	03/28/14 15:15		
1,3,5-Trimethylbenzene	mg/kg	ND	0.0050	03/28/14 15:15		
1,3-Dichlorobenzene	mg/kg	ND	0.0050	03/28/14 15:15		
1,3-Dichloropropane	mg/kg	ND	0.0050	03/28/14 15:15		
1,4-Dichlorobenzene	mg/kg	ND	0.0050	03/28/14 15:15		
2,2-Dichloropropane	mg/kg	ND	0.0050	03/28/14 15:15		
2-Butanone (MEK)	mg/kg	ND	0.025	03/28/14 15:15		
2-Chlorotoluene	mg/kg	ND	0.0050	03/28/14 15:15		
2-Hexanone	mg/kg	ND	0.10	03/28/14 15:15		
4-Chlorotoluene	mg/kg	ND	0.0050	03/28/14 15:15		
4-Methyl-2-pentanone (MIBK)	mg/kg	ND	0.025	03/28/14 15:15		
Acetone	mg/kg	ND	0.10	03/28/14 15:15		
Acrolein	mg/kg	ND	0.10	03/28/14 15:15		
Benzene	mg/kg	ND	0.0050	03/28/14 15:15		
Bromobenzene	mg/kg	ND	0.0050	03/28/14 15:15		
Bromochloromethane	mg/kg	ND	0.0050	03/28/14 15:15		
Bromodichloromethane	mg/kg	ND	0.0050	03/28/14 15:15		
Bromoform	mg/kg	ND	0.0050	03/28/14 15:15		
Bromomethane	mg/kg	ND	0.0050	03/28/14 15:15		
Carbon disulfide	mg/kg	ND	0.010	03/28/14 15:15		
Carbon tetrachloride	mg/kg	ND	0.0050	03/28/14 15:15		
Chlorobenzene	mg/kg	ND	0.0050	03/28/14 15:15		
Chloroethane	mg/kg	ND	0.0050	03/28/14 15:15		
Chloroform	mg/kg	ND	0.0050	03/28/14 15:15		
Chloromethane	mg/kg	ND	0.0050	03/28/14 15:15		
cis-1,2-Dichloroethene	mg/kg	ND	0.0050	03/28/14 15:15		
cis-1,3-Dichloropropene	mg/kg	ND	0.0050	03/28/14 15:15		
Dibromochloromethane	mg/kg	ND	0.0050	03/28/14 15:15		
Dibromomethane	mg/kg	ND	0.0050	03/28/14 15:15		
Dichlorodifluoromethane	mg/kg	ND	0.0050	03/28/14 15:15		
Ethyl methacrylate	mg/kg	ND	0.10	03/28/14 15:15		
-	-					

### **REPORT OF LABORATORY ANALYSIS**

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Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### **QUALITY CONTROL DATA**

Matrix: Solid

Project:	ODOT HAM-75-0.22 / 52888
Pace Project No.:	5095061

### METHOD BLANK: 1070653

Associated Lab Samples: 5095061003

Blank Reporting Parameter Units Result Limit Analyzed Qualifiers Ethylbenzene 0.0050 03/28/14 15:15 mg/kg ND lodomethane mg/kg ND 0.10 03/28/14 15:15 03/28/14 15:15 isopropylbenzene (Cumene) mg/kg ND 0.0050 ND 0.0050 03/28/14 15:15 Methyl-tert-butyl ether mg/kg Methylene Chloride ND 0.020 03/28/14 15:15 mg/kg n-Butylbenzene mg/kg ND 0.0050 03/28/14 15:15 ND 0.0050 03/28/14 15:15 n-Propylbenzene mg/kg p-Isopropyltoluene ND 0.0050 03/28/14 15:15 mg/kg sec-Butylbenzene mg/kg ND 0.0050 03/28/14 15:15 Styrene mg/kg ND 0.0050 03/28/14 15:15 ND 03/28/14 15:15 tert-Butylbenzene mg/kg 0.0050 Tetrachloroethene ND 0.0050 03/28/14 15:15 mg/kg Toluene ND 0.0050 03/28/14 15:15 mg/kg trans-1,2-Dichloroethene mg/kg ND 0.0050 03/28/14 15:15 trans-1,3-Dichloropropene mg/kg ND 0.0050 03/28/14 15:15 trans-1,4-Dichloro-2-butene mg/kg ND 0.10 03/28/14 15:15 Trichloroethene mg/kg ND 0.0050 03/28/14 15:15 ND 0.0050 03/28/14 15:15 Trichlorofluoromethane mg/kg ND 03/28/14 15:15 Vinvl acetate mg/kg 0.10 ND Vinyl chloride mg/kg 0.0050 03/28/14 15:15 Xylene (Total) ND 0.010 mg/kg 03/28/14 15:15 4-Bromofluorobenzene (S) 99 56-144 03/28/14 15:15 %. Dibromofluoromethane (S) %. 98 85-118 03/28/14 15:15 Toluene-d8 (S) %. 100 71-128 03/28/14 15:15

### LABORATORY CONTROL SAMPLE: 1070654 Spike LCS LCS % Rec Conc. Parameter Units Result % Rec Limits Qualifiers .05 107 62-123 1,1,1,2-Tetrachloroethane mg/kg 0.053 1,1,1-Trichloroethane mg/kg .05 0.050 100 70-123 65-124 1,1,2,2-Tetrachloroethane mg/kg .05 0.053 106 1.1.2-Trichloroethane mg/kg .05 0.051 102 74-129 1.1-Dichloroethane .05 0.047 95 73-130 mg/kg .05 0.044 88 66-126 1.1-Dichloroethene mg/kg 0.048 78-125 1,1-Dichloropropene .05 96 mg/kg 1.2.3-Trichlorobenzene .05 0.048 95 66-131 mg/kg 1.2.4-Trichlorobenzene mg/kg .05 0.048 95 68-129 1,2,4-Trimethylbenzene mg/kg .05 0.049 99 67-126 1,2-Dichlorobenzene mg/kg .05 0.048 96 73-122 1,2-Dichloroethane mg/kg .05 0.051 101 73-127 .05 0.051 102 75-118 1,2-Dichloropropane mg/kg 1,3,5-Trimethylbenzene mg/kg .05 0.049 98 65-127 1,3-Dichlorobenzene mg/kg .05 0.048 96 73-121 1,3-Dichloropropane mg/kg .05 0.049 98 72-121 1,4-Dichlorobenzene mg/kg .05 0.048 96 75-119



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### QUALITY CONTROL DATA

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095061

### LABORATORY CONTROL SAMPLE: 1070654

	Units	Conc.	Result	% Rec	Limits	Qualifiers
2,2-Dichloropropane	mg/kg	.05	0.053	105	63-122	
2-Butanone (MEK)	mg/kg	.25	0.25	100	59-139	
2-Chlorotoluene	mg/kg	.05	0.049	99	72-121	
2-Hexanone	mg/kg	.25	0.26	104	56-139	
I-Chlorotoluene	mg/kg	.05	0.050	99	75-123	
I-Methyl-2-pentanone (MIBK)	mg/kg	.25	0.26	104	63-136	
Acetone	mg/kg	.25	0.31	125	46-156	
Acrolein	mg/kg	1	1.2	120	47-200	
Benzene	mg/kg	.05	0.046	93	74-119	
Bromobenzene	mg/kg	.05	0.048	97	69-129	
Bromochloromethane	mg/kg	.05	0.060	121	67-129	
Bromodichloromethane	mg/kg	.05	0.053	106	68-121	
Bromoform	mg/kg	.05	0.042	84	49-124	
Bromomethane	mg/kg	.05	0.032	63	44-142	
Carbon disulfide	mg/kg	.00	0.089	89	61-129	
Carbon tetrachloride	mg/kg	.05	0.051	103	58-127	
Chlorobenzene	mg/kg	.05	0.047	94	77-122	
Chloroethane	mg/kg	.05	0.044	88	59-141	
Chloroform	mg/kg	.05	0.050	100	75-124	
Chloromethane	mg/kg	.05	0.038	76	46-133	
is-1,2-Dichloroethene	mg/kg	.05	0.050	101	72-122	
is-1,3-Dichloropropene	mg/kg	.05	0.052	101	68-115	
ibromochloromethane	mg/kg	.05	0.052	99	60-113	
ibromomethane	mg/kg	.05	0.050	103	72-124	
Dichlorodifluoromethane	mg/kg	.05	0.031	79	26-186	
thyl methacrylate	mg/kg	.03	0.040	106	63-130	
thylbenzene		.2	0.049	98	72-123	
odomethane	mg/kg	.05	0.049 ND	98 48	38-149	
	mg/kg	.05	0.044	48 88	65-149 65-123	
sopropylbenzene (Cumene)	mg/kg	.05 .1	0.044	108	68-123	
fethyl-tert-butyl ether	mg/kg	.05	0.11	93	57-142	
lethylene Chloride	mg/kg mg/kg			93 99		
-Butylbenzene	mg/kg mg/kg	.05	0.049 0.049	99 97	68-125 68-122	
-Propylbenzene	mg/kg mg/kg	.05			68-122	
-Isopropyltoluene	mg/kg	.05	0.050	101 99	66-133 64 121	
ec-Butylbenzene	mg/kg	.05	0.049 0.049	99 99	64-131 70 126	
tyrene	mg/kg	.05			70-126	
ert-Butylbenzene	mg/kg	.05	0.048	96	46-124	
etrachloroethene	mg/kg	.05	0.046	91	72-126	
oluene	mg/kg	.05	0.048	96	71-121	
ans-1,2-Dichloroethene	mg/kg	.05	0.043	86	69-123	
ans-1,3-Dichloropropene	mg/kg	.05	0.055	110	66-114	
ans-1,4-Dichloro-2-butene	mg/kg	.2	0.19	97	61-124	
richloroethene	mg/kg	.05	0.052	104	74-123	
richlorofluoromethane	mg/kg	.05	0.044	89	72-146	
inyl acetate	mg/kg	.2	0.19	95	57-131	
inyl chloride	mg/kg	.05	0.041	82	55-128	
ylene (Total) -Bromofluorobenzene (S)	mg/kg %.	.15	0.14	94 99	66-124 56-144	



### QUALITY CONTROL DATA

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095061

LABORATORY CONTROL SAMPLE:	1070654					
_		Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
Dibromofluoromethane (S)	%.			98	85-118	
Toluene-d8 (S)	%.			97	71-128	



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### QUALITY CONTROL DATA

Project: ODOT HAN Pace Project No.: 5095061	<b>/</b> -75-0.22 / 52888										
QC Batch: OEXT/353	364	Analysi	s Method	: E	PA 8015 Mc	d Ext					····
QC Batch Method: EPA 3546		Analysi	s Descrip	tion: E	PA 8015 TP	H Ohio					
Associated Lab Samples: 509	95061001, 5095061003, 5	5095061004,	5095061	005, 50950	61006, 509	5061007, 50	95061008	3			
METHOD BLANK: 1067208		М	latrix: Sol	id				- · · ·			
Associated Lab Samples: 509	95061001, 5095061003, 5	5095061004,	5095061	005, 50950	61006, 509	5061007, 50	95061008	3			
		Blank	R	leporting							
Parameter	Units	Result		Limit	Analyz	ed C	Qualifiers				
Total Petroleum Hydrocarbons	mg/kg	-	ND	20.0	03/27/14	12:03					
TPH (C10-C20)	mg/kg		ND	10.0	03/27/14	12:03					
TPH (C20-C34)	mg/kg		ND	10.0	03/27/14	12:03					
n-Pentacosane (S)	%.		64	30-153	03/27/14	12.00					
LABORATORY CONTROL SAM	PLE: 1067209										
		Spike	LCS	-	LCS	% Rec					
Parameter	Units	Conc.	Resu	ult	% Rec	Limits	Qı	ualifiers	_		
Total Petroleum Hydrocarbons	mg/kg	83.3		43.5	52	43	-88				
n-Pentacosane (S)	%.				58	30-1	153				
MATRIX SPIKE & MATRIX SPIK	E DUPLICATE: 10672	210		1067211							
		MS	MSD								
	5095059001	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter	Units Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Total Petroleum Hydrocarbons n-Pentacosane (S)	mg/kg <23.5 %.	97.8	96.8	49.9	53.4	49 61	53 65	10-136 30-153		20	



62

68 30-153

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### QUALITY CONTROL DATA

QC Batch:	OEXT/35374	4											
		4											
	EDA 2546	<b>T</b>		Analys	sis Method	: E	PA 8015 Mo	od Ext					
QC Batch Method:					sis Descrip	tion: E	PA 8015 TF	PH Ohio					
Associated Lab Samp	oles: 50950	061002, 509	95061009, 5	095061010	, 5095061	011							
METHOD BLANK: 1	1067971			N	Matrix: Sol	id						·	
Associated Lab Samp	oles: 50950	061002, 509	95061009, 5	095061010	, 5095061	011							
				Blank	c R	eporting							
Parame	eter		Units	Resu	t	Limit	Analyz	zed	Qualifiers				
Total Petroleum Hydro	ocarbons	mg/kg			ND	20.0	03/26/14	16:46		_			
TPH (C10-C20)		mg/kg			ND	10.0							
TPH (C20-C34)		mg/kg			ND	10.0							
n-Pentacosane (S)		%.			71	30-153	03/26/14	16:46					
LABORATORY CONT	ROL SAMPL	.E: 10679	972				<u> </u>				-		
				Spike	LCS	6	LCS	% Re	c				
Parame	ter		Units	Conc.	Resu	lt	% Rec	Limits	s Qi	ualifiers			
Total Petroleum Hydro	carbons	mg/kg		83.3		52.4	63	4	13-88		-		
n-Pentacosane (S)		%.					70	30	)-153				
MATRIX SPIKE & MA		DUPLICAT	E: 10680	03		1068004				·····-			
				MS	MSD								
		50	95061010	Spike	Spike	MS	MSD	MS	MSD	% Rec		Max	
Parameter		Units	Result	Conc.	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual
Total Petroleum Hydro		mg/kg	ND	106	105	64.8	66.7	59	61	10-136	3	20	

### **REPORT OF LABORATORY ANALYSIS**

n-Pentacosane (S)

%.



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### QUALITY CONTROL DATA

Project: C	DOT HAM-75-	0.22 / 52888				
Pace Project No.: 5	095061					
QC Batch:	OEXT/35365		Analysis Metho	od: EF	PA 8270	
QC Batch Method:	EPA 3546		Analysis Descr	iption: 82	70 Solid MSSV Mid	crowave Short Spike
Associated Lab Samp	les <sup>.</sup> 5095061	001. 5095061002	. 5095061003. 509506	31004. 509506	1005. 5095061006	s, 5095061007, 5095061008,
		1009, 5095061010			,	,,
METHOD BLANK: 1	067212		Matrix: S	olid		
Associated Lab Samp	les: 5095061	1001, 5095061002	, 5095061003, 509506	31004, 509506	1005, 5095061006	8, 5095061007, 5095061008,
	5095061	009, 5095061010	, 5095061011			
			Blank	Reporting		
Parame	ter	Units	Result	Limit	Analyzed	Qualifiers
2,4,5-Trichlorophenol		ug/kg		330	03/25/14 17:37	
2,4,6-Trichlorophenol		ug/kg	ND	330	03/25/14 17:37	
2,4-Dichlorophenol		ug/kg	ND	330	03/25/14 17:37	
2,4-Dimethylphenol		ug/kg	ND	330	03/25/14 17:37	
2,4-Dinitrophenol		ug/kg	ND	1600	03/25/14 17:37	
2,4-Dinitrotoluene		ug/kg	ND	330	03/25/14 17:37	
2,6-Dinitrotoluene		ug/kg	ND	330	03/25/14 17:37	
2-Chloronaphthalene		ug/kg	ND	330	03/25/14 17:37	
2-Chlorophenol		ug/kg	ND	330	03/25/14 17:37	
2-Methylnaphthalene		ug/kg	ND	330	03/25/14 17:37	
2-Methylphenol(o-Cres	sol)	ug/kg	ND	330	03/25/14 17:37	
2-Nitroaniline		ug/kg	ND	1600	03/25/14 17:37	
2-Nitrophenol		ug/kg	ND	330	03/25/14 17:37	
3&4-Methylphenol(m&	p Cresol)	ug/kg	ND	660	03/25/14 17:37	
B-Nitroaniline		ug/kg	ND	1600	03/25/14 17:37	
l,6-Dinitro-2-methylph	enol	ug/kg	ND	1600	03/25/14 17:37	
I-Bromophenylphenyl		ug/kg	ND	330	03/25/14 17:37	
I-Chloro-3-methylpher	lor	ug/kg	ND	660	03/25/14 17:37	
I-Chloroaniline		ug/kg	ND	660	03/25/14 17:37	
-Chlorophenylphenyl	ether	ug/kg	ND	330	03/25/14 17:37	
-Nitroaniline		ug/kg	ND	1600	03/25/14 17:37	
-Nitrophenol		ug/kg	ND	1600	03/25/14 17:37	
cenaphthene		ug/kg	ND	330	03/25/14 17:37	
Acenaphthylene		ug/kg	ND	330	03/25/14 17:37	
Anthracene		ug/kg	ND	330	03/25/14 17:37	
Benzo(a)anthracene		ug/kg	ND	330	03/25/14 17:37	
Benzo(a)pyrene		ug/kg	ND	170	03/25/14 17:37	
Benzo(b)fluoranthene		ug/kg	ND	330	03/25/14 17:37	
Senzo(g,h,i)perylene		ug/kg	ND	330	03/25/14 17:37	
Benzo(k)fluoranthene		ug/kg	ND	330	03/25/14 17:37	
Senzyl alcohol		ug/kg	ND	660	03/25/14 17:37	
is(2-Chloroethoxy)me		ug/kg	ND	330	03/25/14 17:37	
is(2-Chloroethyl) ethe		ug/kg	ND	330	03/25/14 17:37	
is(2-Chloroisopropyl)		ug/kg	ND	330	03/25/14 17:37	
is(2-Ethylhexyl)phthal	ate	ug/kg	ND	330	03/25/14 17:37	
lutylbenzylphthalate		ug/kg	ND	330	03/25/14 17:37	
hrysene		ug/kg	ND	330	03/25/14 17:37	
Di-n-butylphthalate		ug/kg	ND	330	03/25/14 17:37	
Di-n-octylphthalate		ug/kg	ND	330	03/25/14 17:37	
Dibenz(a,h)anthracene	1	ug/kg	ND	170	03/25/14 17:37	
Dibenzofuran		ug/kg	ND	330	03/25/14 17:37	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### QUALITY CONTROL DATA

Project:	ODOT HAM-75-0.22 / 52888
Pace Project No .:	5095061

METHOD	BI ANK	1067212
		1001212

Matrix: Solid

Associated Lab Samples: 5095061001, 5095061002, 5095061003, 5095061004, 5095061005, 5095061006, 5095061007, 5095061008, 5095061009, 5095061010, 5095061011

		Blank	Reporting		
Parameter	Units	Result	Limit	Analyzed	Qualifiers
Diethylphthalate	ug/kg	ND	330	03/25/14 17:37	
Dimethylphthalate	ug/kg	ND	330	03/25/14 17:37	
Fluoranthene	ug/kg	ND	330	03/25/14 17:37	
Fluorene	ug/kg	ND	330	03/25/14 17:37	
Hexachlorocyclopentadiene	ug/kg	ND	330	03/25/14 17:37	
Hexachloroethane	ug/kg	ND	330	03/25/14 17:37	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	330	03/25/14 17:37	
Isophorone	ug/kg	ND	330	03/25/14 17:37	
N-Nitroso-di-n-propylamine	ug/kg	ND	330	03/25/14 17:37	
N-Nitrosodiphenylamine	ug/kg	ND	330	03/25/14 17:37	
Naphthalene	ug/kg	ND	330	03/25/14 17:37	
Nitrobenzene	ug/kg	ND	330	03/25/14 17:37	
Phenanthrene	ug/kg	ND	330	03/25/14 17:37	
Phenol	ug/kg	ND	330	03/25/14 17:37	
Pyrene	ug/kg	ND	330	03/25/14 17:37	
2,4,6-Tribromophenol (S)	%.	74	16-122	03/25/14 17:37	
2-Fluorobiphenyl (S)	%.	70	31-94	03/25/14 17:37	
2-Fluorophenol (S)	%.	70	24-104	03/25/14 17:37	
Nitrobenzene-d5 (S)	%.	68	28-101	03/25/14 17:37	
p-Terphenyl-d14 (S)	%.	96	26-110	03/25/14 17:37	
Phenol-d5 (S)	%.	70	28-101	03/25/14 17:37	

LABORATORY CONTROL SAMPLE:	1067213

LABORATORT CONTROL SAMPLE	2. 1007213	Spike	LCS	LCS	% Rec	
Parameter	Units	Conc.	Result	% Rec	Limits	Qualifiers
2,4-Dinitrotoluene	ug/kg	3330	2410	72	39-103	
2-Chlorophenol	ug/kg	3330	2220	67	38-96	
2-Methylnaphthalene	ug/kg	3330	2390	72	36-94	
4-Chloro-3-methylphenol	ug/kg	3330	2440	73	38-104	
4-Nitrophenol	ug/kg	3330	2350	70	34-104	
Acenaphthene	ug/kg	3330	2190	66	43-99	
Acenaphthylene	ug/kg	3330	2260	68	42-101	
Anthracene	ug/kg	3330	2430	73	46-107	
Benzo(a)anthracene	ug/kg	3330	2500	75	45-108	
Benzo(a)pyrene	ug/kg	3330	2360	71	47-113	
Benzo(b)fluoranthene	ug/kg	3330	2210	66	41-110	
Benzo(g,h,i)perylene	ug/kg	3330	2290	69	42-112	
Benzo(k)fluoranthene	ug/kg	3330	2160	65	44-107	
Chrysene	ug/kg	3330	2470	74	43-103	
Dibenz(a,h)anthracene	ug/kg	3330	2340	70	43-110	
Fluoranthene	ug/kg	3330	2520	76	45-105	
Fluorene	ug/kg	3330	2480	74	42-103	
Indeno(1,2,3-cd)pyrene	ug/kg	3330	2290	69	43-111	
N-Nitroso-di-n-propylamine	ug/kg	3330	2140	64	37-96	



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### QUALITY CONTROL DATA

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095061

### LABORATORY CONTROL SAMPLE: 1067213

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Naphthalene	ug/kg		2090	63	44-100	
Phenanthrene	ug/kg	3330	2480	74	44-104	
Phenol	ug/kg	3330	2270	68	37-101	
Pyrene	ug/kg	3330	2590	78	44-105	
2,4,6-Tribromophenol (S)	%.			75	16-122	
2-Fluorobiphenyl (S)	%.			70	31-94	
2-Fluorophenol (S)	%.			69	24-104	
Nitrobenzene-d5 (S)	%.			66	28-101	
p-Terphenyl-d14 (S)	%.			94	26-110	
Phenol-d5 (S)	%.			69	28-101	

MATRIX SPIKE & MATRIX SP	IKE DUPLICAT	E: 10672			1067237							
Parameter	50 Units	095061002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4-Dinitrotoluene	ug/kg	ND	4320	4320	2320	2700	54	62	15-102	15	20	
2-Chiorophenol	ug/kg	ND	4320	4320	2710	2940	63	68	22-96	8	20	
2-Methylnaphthalene	ug/kg	ND	4320	4320	2840	3090	66	71	14-107	8	20	
4-Chloro-3-methylphenol	ug/kg	ND	4320	4320	2780	3050	64	70	21-105	9	20	
4-Nitrophenol	ug/kg	ND	4320	4320	2600	3040	60	70	12-107	16	20	
Acenaphthene	ug/kg	ND	4320	4320	2460	2750	57	64	1 <del>9</del> -110	11	20	
Acenaphthylene	ug/kg	ND	4320	4320	2510	2810	58	65	21-106	11	20	
Anthracene	ug/kg	ND	4320	4320	2600	3000	60	69	22-112	14	20	
Benzo(a)anthracene	ug/kg	ND	4320	4320	2500	3050	58	70	13-116	20	20	
Benzo(a)pyrene	ug/kg	ND	4320	4320	2320	2870	54	66	11-119	21	20	R1
Benzo(b)fluoranthene	ug/kg	ND	4320	4320	2130	2850	49	66	10-126	29	20	R1
Benzo(g,h,i)perylene	ug/kg	ND	4320	4320	1940	2370	45	55	10-114	20	20	
Benzo(k)fluoranthene	ug/kg	ND	4320	4320	2340	2640	54	61	10-117	12	20	
Chrysene	ug/kg	ND	4320	4320	2470	3000	57	69	14-107	19	20	
Dibenz(a,h)anthracene	ug/kg	ND	4320	4320	2120	2530	49	59	10-119	18	20	
Fluoranthene	ug/kg	ND	4320	4320	2650	3080	61	71	17-110	15	20	
Fluorene	ug/kg	ND	4320	4320	2720	3030	63	70	17-115	11	20	
Indeno(1,2,3-cd)pyrene	ug/kg	ND	4320	4320	2030	2450	47	57	11-111	19	20	
N-Nitroso-di-n-propylamine	ug/kg	ND	4320	4320	2590	2790	60	64	18-103	7	20	
Naphthalene	ug/kg	ND	4320	4320	2520	2700	58	62	16-102	7	20	
Phenanthrene	ug/kg	ND	4320	4320	2670	3060	62	71	10-128	14	20	
Phenol	ug/kg	ND	4320	4320	2770	3080	64	71	22-97	10	20	
Pyrene	ug/kg	ND	4320	4320	2680	3150	62	73	10-123	16	20	
2,4,6-Tribromophenol (S)	%.						68	77	16-122			
2-Fluorobiphenyl (S)	%.						61	67	31-94			
2-Fluorophenol (S)	%.						65	70	24-104			
Nitrobenzene-d5 (S)	%.						56	62	26-98			
p-Terphenyl-d14 (S)	%.						71	82	26-110			
Phenol-d5 (S)	%.						65	72	28-101			



### QUALITY CONTROL DATA

Project:	ODOT HAM-75-0	1.22 / 52888					
Pace Project No.:	5095061						
QC Batch:	PMST/9265		Analysis Meth	od: /	ASTM D2974-87		<u> </u>
QC Batch Method:	ASTM D2974-8	7	Analysis Desc	ription: [	Dry Weight/Perce	nt Moisture	
Associated Lab Sat		001, 5095061002, 009, 5095061010,	, 5095061003, 50950 , 5095061011	61004, 50950	061005, 5095061	006, 509506	1007, 5095061008,
SAMPLE DUPLICA	TE: 1067020						
Para	meter	Units	5095061001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	<u></u>	%	23.3	24.1	1 3		5
SAMPLE DUPLICA	TE: 1067021				<u>.</u>		- <u></u>
SAMPLE DUPLICA	TE: 1067021		5095061010	Dup		Max	
SAMPLE DUPLICA		Units	5095061010 Result	Dup Result	RPD	Max RPD	Qualifiers



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### QUALIFIERS

Project:	ODOT HAM-75-0.22 / 52888
Pace Project No .:	5095061

### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

**RPD - Relative Percent Difference** 

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

### LABORATORIES

PASI-I Pace Analytical Services - Indianapolis

### **ANALYTE QUALIFIERS**

- 1d Due to the extract's physical characteristics, the analysis was performed at dilution. NJ 3-26-14
- L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
- M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
- R1 RPD value was outside control limits.
- S3 Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.
- S4 Surrogate recovery not evaluated against control limits due to sample dilution.



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### METHOD CROSS REFERENCE TABLE

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095061

Parameter	Matrix	Analytical Method	Preparation Method
8015 GRO 5035	Solid	SW-846 8015B	SW-846 5035A
8015 Gasoline Range Organics	Solid	SW-846 8015A	SW-846 5030A
8015 TPH Ohio Microwave	Solid	SW-846 8015B	SW-846 3546
8260 MSV 5030 Low Level	Solid	SW-846 8260A	SW-846 5030A
8270 MSSV SHORT LIST MICROWAVE	Solid	SW-846 8270C	SW-846 3546



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095061

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5095061001	65-SB-1 10-12'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/1227
5095061002	65-SB-2 8-12'	EPA 3546	OEXT/35374	EPA 8015 Mod Ext	GCSV/12276
5095061003	65-SB-4 4-6'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/1227
5095061004	65-SB-5 4-8'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095061005	65-SB-6 8-10'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095061006	58-SB-1 2-4'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095061007	58-SB-2 2-4'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/1227
5095061008	58-SB-3 6-8'	EPA 3546	OEXT/35364	EPA 8015 Mod Ext	GCSV/12271
5095061009	58-SB-4 2-4'	EPA 3546	OEXT/35374	EPA 8015 Mod Ext	GCSV/12276
5095061010	58-SB-5 4-6'	EPA 3546	OEXT/35374	EPA 8015 Mod Ext	GCSV/12276
5095061011	58-SB-6 6-8'	EPA 3546	OEXT/35374	EPA 8015 Mod Ext	GCSV/12276
5095061001	65-SB-1 10-12'	EPA 8015 Mod Pur	GCV/17838		
5095061002	65-SB-2 8-12'	EPA 8015 Mod Pur	GCV/17838		
5095061003	65-SB-4 4-6'	EPA 8015 Mod Pur	GCV/17838		
5095061004	65-SB-5 4-8'	EPA 8015 Mod Pur	GCV/17838		
5095061005	65-SB-6 8-10'	EPA 8015 Mod Pur	GCV/17838		
5095061006	58-SB-1 2-4'	EPA 8015 Mod Pur	GCV/17838		
095061007	58-SB-2 2-4'	EPA 8015 Mod Pur	GCV/17838		
095061008	58-SB-3 6-8'	EPA 8015 Mod Pur	GCV/17848		
095061009	58-SB-4 2-4'	EPA 8015 Mod Pur	GCV/17840		
095061010	58-SB-5 4-6'	EPA 8015 Mod Pur	GCV/17840		
095061011	58-SB-6 6-8'	EPA 8015 Mod Pur	GCV/17840		
5095061001	65-SB-1 10-12'	EPA 3546	OEXT/35365	EPA 8270	MSSV/14864
095061002	65-SB-2 8-12'	EPA 3546	OEXT/35365	EPA 8270	MSSV/14864
095061003	65-SB-4 4-6'	EPA 3546	OEXT/35365	EPA 8270	MSSV/14864
095061004	65-SB-5 4-8'	EPA 3546	OEXT/35365	EPA 8270	MSSV/14864
095061005	65-SB-6 8-10'	EPA 3546	OEXT/35365	EPA 8270	MSSV/14864
095061006	58-SB-1 2-4'	EPA 3546	OEXT/35365	EPA 8270	MSSV/14864
095061007	58-SB-2 2-4'	EPA 3546	OEXT/35365	EPA 8270	MSSV/14864
095061008	58-SB-3 6-8'	EPA 3546	OEXT/35365	EPA 8270	MSSV/14864
095061009	58-SB-4 2-4'	EPA 3546	OEXT/35365	EPA 8270	MSSV/14864
095061010	58-SB-5 4-6'	EPA 3546	OEXT/35365	EPA 8270	MSSV/14864
095061011	58-SB-6 6-8'	EPA 3546	OEXT/35365	EPA 8270	MSSV/14864
095061001	65-SB-1 10-12'	EPA 8260	MSV/62969		
095061002	65-SB-2 8-12'	EPA 8260	MSV/62969		
095061003	65-SB-4 4-6'	EPA 8260	MSV/63043		
095061004	65-SB-5 4-8'	EPA 8260	MSV/62969		
095061005	65-SB-6 8-10'	EPA 8260	MSV/62969		
095061006	58-SB-1 2-4'	EPA 8260	MSV/62969		
095061007	58-SB-2 2-4'	EPA 8260	MSV/62969		
095061008	58-SB-3 6-8'	EPA 8260	MSV/62969		
095061009	58-SB-4 2-4'	EPA 8260	MSV/62969		
095061010	58-SB-5 4-6'	EPA 8260	MSV/62969		
095061011	58-SB-6 6-8'	EPA 8260	MSV/62969		



Pace Analytical Services, Inc. 7726 Moller Road Indianapolis, IN 46268 (317)228-3100

### QUALITY CONTROL DATA CROSS REFERENCE TABLE

 Project:
 ODOT HAM-75-0.22 / 52888

 Pace Project No.:
 5095061

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
5095061001	65-SB-1 10-12'	ASTM D2974-87	PMST/9265		
5095061002	65-SB-2 8-12'	ASTM D2974-87	PMST/9265		
5095061003	65-SB-4 4-6'	ASTM D2974-87	PMST/9265		
5095061004	65-SB-5 4-8'	ASTM D2974-87	PMST/9265		
5095061005	65-SB-6 8-10'	ASTM D2974-87	PMST/9265	,	
5095061006	58-SB-1 2-4'	ASTM D2974-87	PMST/9265	,	
5095061007	58-SB-2 2-4'	ASTM D2974-87	PMST/9265		
5095061008	58-SB-3 6-8'	ASTM D2974-87	PMST/9265		
5095061009	58-SB-4 2-4'	ASTM D2974-87	PMST/9265		
5095061010	58-SB-5 4-6'	ASTM D2974-87	PMST/9265		
5095061011	58-SB-6 6-8'	ASTM D2974-87	PMST/9265		

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Pace Analytical

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OHIGINAL Reaction for the first for the fir	- 22-	2-41	<b>*</b>	*	2:35		$\uparrow$	≯	5	:		7	7						-	•
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Cooler Temperature       1/1/2       Ice Visible in Sample Containers:       96       10         Corrected, If applicable)       Temp should be above freezing to 6°C       Comments:       Dete and Initials of person acamplening contents:       11         Chain of Custody Present:       Dryc       DNo       DNA       1.         Chain of Custody Present:       Dryc       DNo       DNA       2.         Chain of Custody Filled Out:       Bryc       DNo       DNA       2.         Chain of Custody Relinquished:       Bryc       DNo       DNA       3.         Sampler Name & Signature on COC:       If Yee       DNo       DNA       6.         Short Hold Time Analysis (<72hr):       DYee       DNo       DNA       6.         Sample Labels match       DYee       DNo       DNA       6.         Containers Intact:       DYee       DNo       DNA       7.         Sample Labels match COC:       Dree       DNo       RNA       8.       Quick Scell 1       Dut         -includes data/time/ID/Analysis       Ore Salve Present:       Ore Salve Present:       Ore Salve Present:       Dree       DNO       BNA       9.       (Carulo HNO3       H2SO4       NaOH       HCI         acostainer needing ac	Sam	ple Conditio	n Upon Receipt		
Courter:       [] Fed Ex [] UPS ] USPS ]       Client       Dommercial       Pace Other         Tracking #: <u>S68053355837</u> Discourd (Courter)       Discourd (Courter)       Discourd (Courter)         Custody Beal on Cooler/Box Present:       [] Packing listerial:       [] Packing listerian:       [] Packing listerian:	Face Analytical Client Name:	Burges	s+Niple	Project # 5	1 90290
Tracking #: <u>5680 5.8.35 S.8.37</u> DeterTrine 5038.4 kfs         Custody Seal on Cooleriflox Present:       Lybe       no       Seals Intact:       DeterTrine 5038.4 kfs         Packing Naterial:       Dibble Wrap       Ebble Wrap </td <td></td> <td></td> <td></td> <td></td> <td>,</td>					,
Custody Seal on Cooler/Box Present: Use no Seals Intact: Type no Deta/Time 50354 ktis Packing listerist: Effectible Wrap Effectible Bags None Effore Zio/0C Thermometer Used 12340ABCDE Type of Ics: (Ver) Blue None Deamples on Ice, cooling process has begun lee Vielble In Sample Containers: 966 100 Cooler Temperature 1/1/4C Concertas, if applicable) Temp should be above freezing to 5°C Comments: 000 The Containers: 966 100 Contents: 1/1/6C Contents: 1/1/6C Contents: 1/1/6C Comments: 000 The Containers: 1/1/6C Comments: 1/1/6C Comments: 1/1/6C Contents: 1/1/6C Contents: 1/1/6C Comments: 1/1/6C Comments			Pace Other		<u></u>
Packing Material: [] Bubble Wrap [Bubble Bags None [] Bither Zip/DC. [] Packet In Neutring Material: [] Bubble Wrap [Bubble Bags None [] Bither Zip/DC. [] Packet In Neutring Packating Process has begun to color Tamperature [] Packet In Sample Containers: [] Yes [] Packet In Sample Containers Intact: [] Yes [] Packet Interview Inte		Ino Se	ais intact: Zives	no	
Thermometer Used       12346ABCDE         Type of los:       Weith Blue None       Desception on los, cooling process has begun los Visible In Sample Containers:       Y8         Connected, If applicable)       Important Stream       Y8       The         Chain of Custody Present:       Diry       Important Stream       Y8       The         Chain of Custody Relinquished:       Briss       Important Stream       Y8       The         Sampler Name & Signature on COC:       Diry       Important Stream       Diry       Important Stream         Sampler Name & Signature on COC:       Dres       Important Stream       Sampler Name & Signature on COC:       Dres       Important Stream       Diry       Important Stream       Sampler Name & Signature on COC:       Dres       Important Stream       Diry       Important Stream       Sampler Name & Signature on COC:       Dres       Important Stream       Diry       Important Stream       Sampler Labels match COC:       Important Stream       Important Stream       Diry       Constant Stream       Sampler Labels match COC:       Important Stream       Important Stream       Important Stream       Sampler Labels match COC:       Important Stream       Important Stream <t< td=""><td></td><td></td><td></td><td>loes</td><td>piaced in treezer</td></t<>				loes	piaced in treezer
(Corrected, If applicable)       Date and Initials of person accurptuing contents:       Date and Initials of person accurptuing contents:         (Corrected, If applicable)       Dive       Di		Type of Ice: (V	/et Blue None	Zemples on ice, cooli	ng process has begun
Temp should be above freezing to 8°C       Comments:       Different and mean means of the second and mean means of the second and means of the second and means of the second and the	Cooler Temperature	ice Visible in	Sample Containers:		
Chain of Custody Present:       DN/s       DN/s       1.         Chain of Custody Filled Out:       By/s       DN/s       2.         Chain of Custody Relinquished:       By/s       DN/s       3.         Sampler Name & Signature on COC:       DV/s       DN/s       3.         Short Hold Time Analysis (<72hr):	(Corrected, if applicable)	,	Commonts.	Date and initials	of person mamining
Chain of Custody Filled Out:       Effyse	<b>I</b>			Coments;	15 -12/14
Chain of Custody Relinquished:       By       INo					
Sampler Name & Signature on COC:       Eve       IN/A       4.         Short Hold Time Analysis (<72hr):		11			
Short Hold Time Analysis (<72hr):					
Rush Turn Around Time Requested:       Dyee       DNo       DNA       6.       306/14         Containers Intact:       Dree       DNA       7.         Sample Labels match COC:       Dree       DNA       8.       2 viou's recu w/ custody seel.1 but         -Includes date/time/ID/Analysis       No       DNA       8.       2 viou's recu w/ custody seel.1 but         All containers needing add/base pres. have been checked?       Dree       DNA       9.       (circle) HNO3       H2SO4       NaOH       HCI         axceptions: VOA, cettors, TOC, Gke       All containers needing preservation are found to be in compliance with EPA       Precommendation (<2, >9, >12) unless otherwise noted.       Prec       DNA       10.         Headapace-In VOA Vials (>6mm):       Dree       Dree       DNA       10.       Dree       DNA       10.         Trip Blank Custody Seels Present       Dree       Dree       DNA       11.       Trip Blank Custody Seels Present       Dree       DNA       12.         Sufficient Volume:       Dree       Dree       DNA       Dree       Dree       NA       13.         Correct Containers Used:       Dree       Dree       Dree       Dree       NA       14.         Client Notification/ Resolution:       Date/Time: <td></td> <td></td> <td>/</td> <td></td> <td></td>			/		
Containers Intact:       Dive       Diva       7.         Sample Labels match COC:       Dives       Diva       8. 2 vious recu w/ custody seel 1 but         -Includes date/time/ID/Analysis       No       Diva       8. 2 vious recu w/ custody seel 1 but         All containers needing acid/base pres. have been checked?       Dives       Diva       8. 2 vious recu w/ custody seel 1 but         All containers needing preservation are found to be in compliance with EPA       no source it is in compliance with EPA       9. (circle) HNO3       H2SO4       NaOH       HCI         All containers needing preservation are found to be in compliance with EPA       no       Simple Seel 1 but       Headspace in VOA Vials (>6mm):       Dive       Diva       10.         Headspace in VOA Vials (>6mm):       Dive       Diva       10.       Simples Arrived within Hold Time:       Dive       Diva       12.         Sufficient Volume:       Dive       Dive       Diva       13.       Correct Containers Used:       Dive       Diva       14.         Client Notification/ Resolution:       Date/Time:       Date/Time:       Date/Time:       Date/Time:       Date/Time:       Date/Time:	· · ·		NA 6. 3 28 14		
-Includes date/time/ID/Analysis All containers needing acid/base pres. have been checked?  IVes DNo EnviA 9. (Circle) HNO3 H2SO4 NaOH HCl  acceptions: VOA, coliform, TOC, OLG All containers needing preservation are found to be in compliance with EPA recommendation (<2, >9, >12) unless otherwise noted. Headspace in VOA Vials ( >6mm):  IVes DNo DNA 10.  Trip Blank Present:  IVes DNo DNA Samples Arrived within Hold Time:  Dyes DNo DNA 12.  Sufficient Volume:  Dyes DNo DNA 13.  Correct Containers Used:  Cifert Notification/ Resolution:  Person Contacted:  Date/Time:  Date/Time:	Containers Intact:				
All containers needing acid/base pres. have been checked? Byee DNo EthVA 9. (Circle) HNO3 H2SO4 NaOH HCl acceptions: YOA, cottions, TQC, cite All containers needing preservation are found to be in compliance with EPA recommendation (<2, >9, >12) unless otherwise noted. Headspace in VOA Vials (>6mm): Dree WiNo DNA 10. Trip Blank Present: Dree DNo DNA 11. Trip Blank Custody Seals Present Dree DNo DNA 12. Samples Arrived within Hold Time: Dree DNo DNA 12. Sufficient Volume: Dree DNo DNA 13. Correct Containers Used: DNo DNA 14. Client Notification/ Resolution: Date/Time: Date/Tim	Sample Labels match COC:		NA 8. 2 viols rec	n m) castody	sed but
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All containers needing preservation are found to be in compliance with EPA recommendation (<2, >9, >12) unless otherwise noted. Headspace in VOA Vials (>6mm): □Yes ©INo □N/A 10. Trip Blank Present: □Yes □No DN/A 11. Trip Blank Custody Seals Present □Yes □No DN/A Samples Arrived within Hold Time: □Yes □No □N/A 12. Sufficient Volume: □Yes □No □N/A 13. Correct Containers Used: □Yes □No □N/A 14. Client Notification/ Resolution: □Yes □No □N/A 14. Person Contacted: □Yes □No □N/A 14.			N/A 9. (Circle) HNO3	H2SO4 NaOH	t HCl
recommendation (<2, >9, >12) unless otherwise noted.         Headspace in VOA Vials (>6mm):       IYee         Trip Blank Present:       IYee         ITrip Blank Custody Seals Present       IYee         IYee       INo         Samples Arrived within Hold Time:       IYee         Ifficient Volume:       IYee         IYee       INo         Ifficient Volume:       IYee         IYee       INo         Ifficient Volume:       IYee         Ifficient Volume:       IYee         Ifficient Volume:       IYee         Intervieweither       Intervieweither         Interv		niance with FPA			
Trip Blank Present:     □Yes     □No     DN/2     11.       Trip Blank Custody Seals Present     □Yes     □No     DN/4       Samples Arrived within Hold Time:     ①Yes     □No     □N/4       Sufficient Volume:     ÛYes     □No     □N/4       Correct Containers Used:     □Yes     □No     □N/4       Client Notification/ Resolution:     □Yes     □N/4     14.	recommendation (<2, >9, >12) unless otherwise noted.				
Trip Blank Custody Seals Present     Dres     INo     Dinva       Samples Arrived within Hold Time:     100 m/a     12.       Sufficient Volume:     100 m/a     13.       Correct Containers Used:     100 m/a     14.       Client Notification/ Resolution:     Date/Time:     Person Contacted:	Headspace in VOA Vials ( >6mm):	Ciyes Wing C	NA 10.		
Samples Arrived within Hold Time:     Dyes     Ino     Inv.     12.       Sufficient Volume:     Dyes     Ino     Inv.     13.       Correct Containers Used:     Dyes     Ino     Inv.     14.       Client Notification/ Resolution:     Person Contacted:     Date/Time:     Inv.	Trip Blank Present:	•			
Sufficient Volume:     Dres     INo     INA     13.       Correct Containers Used:     Dres     INO     INA     14.       Client Notification/ Resolution:     Field Data Required?     Y     /       Person Contacted:     Date/Time:     One	Trip Blank Custody Seals Present	Elyes ElNo E	<u>Kva</u>		
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Correct Containers Used:   Client Notification/ Resolution:  Person Contacted:Date/Time:	Samples Arrived within Hold Time:	10	· · · ·		•
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Project Manager Review: JPANANA TANA TANA Date: 3/J////	Project Manager Review:	MA	thut	Date:	3/21/14
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Sample Container Count

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Sample Line	Item DG9	+	2	3	4	5	ø	7		0	10	- ++	12	
	DG9H AG1U WGFU AG0U R 4/6 BP2N BP2U BP2S													•
	WGFU ,										_			
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	Container Codes						
DG9H	40mL HCL amber voa vist	AGOU	DG9H 40mL HCL amber voa vial AG0U 100mL unpreserved amber gi BP1N 1 liter HNO3 plastic	BP1N	1 liter HNO3 plastic	DGBP	DG9P 40mL TSP amber vial
AG1U	AG1U 1 litter unpreserved amber gid AG1H 1 litter HCL amber glass	AG1H	1 litter HCL amber glass	BP1S	BP1S 1 liter H2SO4 plastic	DG9S	DG9S 40mL H2SO4 amber vial
WGFU	WGFU 4oz clear soil jar	AG1S	88	BP1U	BP1U 1 liter unpreserved plastic	DG9T	DG9T 40mL Na Thio amber vial
R	R terra core kit	AG1T	AG1T 1 litter Na Thiosulfate amber	BP1Z	BP1Z 1 liter NaOH, Zn, Ac	DGBU	DG9U 40mL unpreserved amber vial
BP2N	BP2N 500mL HNO3 plastic	AG2N	AG2N 500mL HNO3 amber glass	BP2A	BP2A 500mL NaOH, Asc Acid plastic	1	Wipe/Swab
BP2U	500mL unpreserved plastic	AG2S	BP2U 500mL unpreserved plastic AG2S 500mL H2SO4 amber glass	BP20	BP20 600mL NaOH plastic	JGFU	JGFU   4oz unpreserved amber wide
BP2S	BP2S 500mL H2SO4 plastic	AG2U	AG2U 500mL unpreserved amber g BP2Z 500mL NaOH, Zn Ac	BP2Z	500mil. NaOH, Zh Ac	D	U Summa Can
BP3N	BP3N 250mL HNO3 plastic	AG3U	AG3U 250mL unpreserved amber g		AF Ar Fitter	VG9H	VG9H 40mL HCL clear vial
BP3U	BP3U 250mL unpreserved plastic BG1H 1 fitter HCL clear glass	<b>BG1H</b>		<b>BP3C</b>	BP3C 250mL NaOH plastic	VG9T	VG9T 40mL Na Thio. clear vial
BP3S	BP3S 250mL H2SO4 plastic	BG1S	BG1S 1 litter H2SO4 clear glass	BP3Z	BP3Z 250mL NaOH, Zn Ac plastic	VG9U	VG9U 40mL unpreserved clear visi
AG3S	AG3S 250mL H2SO4 glass amber BG1T 1 fitter Na Thiosultate clear	BG1T	1 litter Ne Thiosulfate clear gl		C Air Cassettes	VSG	VSG Headspace septa vial & HCL
AG1S	AG1S 1 fitter H2SO4 amber glass BG1U 1 litter unpreserved glass	BG1U		DG9B	DG9B 40mL Na Bisuffate amber vial	WGFX	WGFX 4oz wide jar w/hexane wipe
BP1U	1 liter unpreserved plastic	BP1A	BP1U 1 litter unpreserved plastic BP1A 1 litter NaOH, Asc Acid plastic DG9M 40mL MeOH clear viai	DGBM	40mL MeOH clear vial	ZPLC	ZPLC Ziploc Bag

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CLIENT:	CLIENT: Burracc & Alinles	ר גי	- <i>N</i> /2.0	é				<i>•</i>	ampl	Sample Container Count	taine	r Cou	nt.						Construction"
OC PAGE	∞c PAGE 2 of 2 ∞c ID# 705836						Proje	 # סל	ک	209504	DUL	- <u> </u>							Incompany and
Sample Line Item	DG9H AG1U WGFU AG0U R 4/6 BP2N BP2U BP2S	J WGFL	J AGOU	R 4/8	BP2N	BP2U	BP2S		, BP3U	BP3N BP3U BP3S AG3S AG1H BP3C BP1U SPST みのてみせ ⊲ btP12	AG3S /	AG1H E	3P3C	BP1U	SPST .	doz	년 신	마누12	Comments
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	Container Codes	des																	
DG9H	40mL HCL amber voa vlal	amber v	oa vlai	AGOU	AGOU 100mL unpreserved :	nnpre	peved	amber g	amber gi BP1N		1 litter HNO3 plastic	astic						DG9P	DG9P 40mL TSP amber vial
AG1U	1ilter unpreserved amber gts AG1H	lerved a	mber gia	AG1H		Н Ц В	1 litter HCL amber glass	888	BP1S		1 litter H2SO4 plastic	Mastic						DG9S	40mL H2SO4 amber vial
WGFU		li jar		AG1S		<b>P</b> SSE	1 litter H2SO4 amber	r glass	BP1U	1 liter u	1 liter unpreserved plastic	ved plas	tic					DG9T	40mL Na Thio amber vial
R	terra core kit			AG1T	1 litter	Na The	osultate	1 litter Na Thiosulfate amber	BP1Z	1 litter N	1 litter NaOH, Zn, Ac	n, Ac						DGBU	DG9U 40mL unpreserved amber vial
BP2N		<b>13 plasti</b>		AG2N	500mL	Ň	500mL HNO3 amber	r glass	BP2A	BP2A 500mL NaOH, Asc Acid plastic	NaOH,	Asc Ack	d plastic					1	Qipe/Swab
BP2U		peviese		AG2S	500ml	- H2SC	A amb	500mL H2SO4 amber glass		BP20 500mL NaOH plastic	NaOH E	Mastic						JGFU	JGFU 4cz unpreserved amber wide
BP2S		04 plas		AG2U		eudun -	500mL unpreserved	amber g		BP2Z 500mL NaOH, Zh Ac	NaOH,	Zn Ac						D	Summa Can
BP3N		3 plasti	_	AG3U	250mL	adun -	250mL unpreserved	amber g		AF Air Filter								KGGH	VG9H 40mL HCL clear vial
BP3U		peviese	_	<b>BG1H</b>	1 litter	E E E	1 litter HCL clear glass		BP3C	BP3C 250mL NaOH plastic	NaOH	lastic			-			VGBT	VG9T 40mL Na Thio. clear vial '
BP3S		04 plas	2	BG1S	1 Hter	H2SQ	dear	lass		BP3Z 250mL NaOH, Zn Ac plastic	NaOH,	Zn Ac p	lastic					VGOU	VG9U 40mL unpreserved clear vial
AG3S	250mi_H2SO4 glass amber BG1T 1 litter Na Thiosulfate clear gl	04 glast	s amber	BG1T	1 litter	Na Thk	<b>Deulfate</b>	dear gl		C Air Cassettes	settes							<b>D</b> SS	VSG Headspace septa vial & HCL

AG1S 1 fitter H2SO4 amber glass BG1U 1 fitter unpreserved glass BP1U Page 76 of 76

1 litter unpreserved plastic

VG9U 40mL unpreserved clear vial VSG Headspace septa vial & HCL WGFX 4oz wide jar w/hexane wipe

ZPLC Ziploc Bag

DG9B 40mL Na Bisulfate amber vial

BP1A 1 liter NaOH, Asc Acid plastic DG9M 40mL MeOH clear viel

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### Affidavit of VAP Certified Laboratory

[For VAP certified laboratories to attest to "certified data" under OAC 3745-300-13(N) and OAC 3745-300-04(A). Note that Ohio EPA is to receive a legible copy of the CL's affidavit. The entity that received the CL's analytical report under affidavit may retain the CL's affidavit original.]

State of	Indiana	)	s:
County of	Marion	)	э.

I, Kenneth Hunt, being first duly sworn according to law, state that, to the best of my knowledge, information and belief:

- I am an adult over the age of eighteen years old and competent to testify herein. 1.
- I am employed by Pace Analytical Services Indianapolis ("the laboratory") as Project 2. Manager. I am authorized to submit this affidavit on behalf of the laboratory.
- The purpose of this submission is to support a request for a no further action letter or other 3. aspects of a voluntary action, under Ohio's Voluntary Action Program (VAP) as set forth in Ohio Revised Code Chapter 3746 and Ohio Administrative Code (OAC) Chapter 3745-300.
- Pace Analytical Services Indianapolis performed analyses for Burgess & Niple, Inc. for a 4. voluntary action at property known as ODOT HAM-75-0.22.
- This affidavit applies to and is submitted with the following information, data, documents or 5. reports for the property:

Document ID	Date of Document
5095061	March 31, 2014

- Pace Analytical Services Indianapolis was a VAP certified laboratory pursuant to OAC 6. 3745-300-04 when it performed the analyses referenced herein.
- All analyses under this affidavit consist of VAP "certified data" as described in OAC 3745-7. 300-04(A) - - unless paragraph b., below, specifies the exceptions:
  - The laboratory performed the analyses within its current VAP certification, number a. CL0065. The laboratory was certified for each analyte, parameter group and method used at the time that it performed the analyses - see Method Cross Reference Table. The analyses were performed consistent with the laboratory's standard operating procedures and quality assurance program plan as approved under OAC 3745-300-04.
  - Exceptions, if any: Not applicable b.
- The information, data, documents and reports identified under this affidavit are true, accurate 8. and complete.

Further affiant sayeth naught.

Certified Lab Affidavit Pursuant to OAC 3745-300-13(N) Page 2

Sworn to before me and subscribed in my presence this <u>3</u> day of <u>April</u>, 20<u>14</u>.



Notary Public

5095061

Revised 5/09, 8/09, 4/11; consistent with OAC 3745-300-04 (10/14/06, and rev. eff. 3/1/09 versions)

### APPENDIX E

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### TABLES

### Table 1 Analytical Soil Results Site 17 - Large Apartment Complex 845 Ezzard Charles, Cincinnati, Ohio HAM-75-0.22 PID 89068; Task Order #08-J Seven Sites Associated with the Brent Spence Bridge Project Ohio Department of Transportation - District 8

Parameter	BUSTR Re-Use <sup>1</sup>	VAP Residential <sup>2</sup>	VAP Commercial / Industrial <sup>3</sup>	17-SB-1 4-6'	17-SB-2 8-10'
BTEX/MTBE					
Benzene	0.015	64.00	140.00	< 0.0072	< 0.0061
Ethylbenzene	4.550	230.00	230.00	< 0.0072	< 0.0061
Methyl-tert-butyl ether	0.047	850.00	1,900.00	< 0.0072	< 0.0061
Toluene	4.910	520.00	520.00	< 0.0072	< 0.0061
Xylene (Total)	15.700	370.00	370.00	< 0.014	< 0.012
ТРН					
ТРН (С06-С12)	1,000	1,0	000	<1.4	<1.2
ТРН (С10-С20)	2,000	2,0	000	<14.2	<12.1

All results and applicable standards expressed in mg/kg (parts per million).

1 = Bureau of Underground Storage Tank Regulations (BUSTR) soil re-use standards (OAC 1301:7-9-16).

2 = Ohio VAP Single Chemical Generic Direct Contact Standards for Residential Land Use (OAC 3745-300-08).

3 = Ohio VAP Single Chemical Generic Direct Contact Standards for Commercial/Industrial Land Use (OAC 3745-300-08). Bold = BUSTR soil re-use standard Exceedance.

Bold and Italics = Ohio VAP Single Chemical Generic Direct Contact Standard Residential Land Use Exceedance.

Bold and Shaded = Ohio VAP Single Chemical Generic Direct Contact Standard for Commercial/Industrial Land Use Exceedance.

## Table 2 Analytical Soil Results Site 29 - City of Cincinnati right-of-way 817 Mound Street, Cincinnati, Ohio HAM-75-0.22 PID 89068; Task Order #08-J Seven Sites Associated with the Brent Spence Bridge Project Ohio Department of Transportation - District 8

Parameter	BUSTR Re-Use <sup>1</sup>	VAP Residential <sup>2</sup>	VAP Commercial / Industrial <sup>3</sup>	29-SB-1 2-4'	29-SB-2 4-6'
BTEX/MTBE					
Benzene	0.015	64.00	140.00	< 0.0063	< 0.0061
Ethylbenzene	4.550	230.00	230.00	< 0.0063	< 0.0061
Methyl-tert-butyl ether	0.047	850.00	1,900.00	< 0.0063	< 0.0061
Toluene	4.910	520.00	520.00	< 0.0063	< 0.0061
Xylene (Total)	15.700	370.00	370.00	< 0.013	< 0.012
ТРН					
ТРН (С06-С12)	1,000	1,0	000	<1.3	
ТРН (С10-С20)	2,000	2,0	000	43.2	
ТРН (С06-С12)	1,000	8,0	* 00		<1.2
TPH (C10-C20)	2,000	10,0	* 000		<12.1

All results and applicable standards expressed in mg/kg (parts per million).

1 = Bureau of Underground Storage Tank Regulations (BUSTR) soil re-use standards (OAC 1301:7-9-16).

2 = Ohio VAP Single Chemical Generic Direct Contact Standards for Residential Land Use (OAC 3745-300-08).

3 = Ohio VAP Single Chemical Generic Direct Contact Standards for Commercial/Industrial Land Use (OAC 3745-300-08).

Bold = BUSTR soil re-use standard Exceedance.

Bold and Italics = Ohio VAP Single Chemical Generic Direct Contact Standard Residential Land Use Exceedance.

Bold and Shaded = Ohio VAP Single Chemical Generic Direct Contact Standard for Commercial/Industrial Land Use Exceedance. \* = Ohio VAP TPH standard for clay soils.

### Table 3 Analytical Soil Results Site 49 - ARTIMIS (ODOT) / Former Gas Station 508 West 3rd Street, Cincinnati, Ohio HAM-75-0.22 PID 89068; Task Order #08-J Seven Sites Associated with the Brent Spence Bridge Project Ohio Department of Transportation - District 8

Parameter	BUSTR Re-Use <sup>1</sup>	VAP Residential <sup>2</sup>	VAP Commercial / Industrial <sup>3</sup>	49-SB-1 0-3'	49-SB-2 2-4'
BTEX/MTBE					
Benzene	0.015	64.00	140.00	< 0.0059	< 0.0061
Ethylbenzene	4.550	230.00	230.00	< 0.0059	< 0.0061
Methyl-tert-butyl ether	0.047	850.00	1,900.00	< 0.0059	< 0.0061
Toluene	4.910	520.00	520.00	< 0.0059	< 0.0061
Xylene (Total)	15.700	370.00	370.00	< 0.012	< 0.012
ТРН					
ТРН (С06-С12)	1,000	1,0	000	<1.2	<1.2
ТРН (С10-С20)	2,000	2,0	000	<11.7	<12.2

All results and applicable standards expressed in mg/kg (parts per million).

1 = Bureau of Underground Storage Tank Regulations (BUSTR) soil re-use standards (OAC 1301:7-9-16).

2 = Ohio VAP Single Chemical Generic Direct Contact Standards for Residential Land Use (OAC 3745-300-08).

3 = Ohio VAP Single Chemical Generic Direct Contact Standards for Commercial/Industrial Land Use (OAC 3745-300-08).

Bold = BUSTR soil re-use standard Exceedance.

Bold and Italics = Ohio VAP Single Chemical Generic Direct Contact Standard Residential Land Use Exceedance.

Bold and Shaded = Ohio VAP Single Chemical Generic Direct Contact Standard for Commercial/Industrial Land Use Exceedance.

### Table 4 Analytical Soil Results Site 51 - Vacant Site owned by Cincinnati 4th Street & Central Avenue, Cincinnati, Ohio HAM-75-0.22 PID 89068; Task Order #08-J Seven Sites Associated with the Brent Spence Bridge Project Ohio Department of Transportation - District 8

Parameter	BUSTR Re-Use <sup>1</sup>	VAP Residential <sup>2</sup>	VAP Commercial / Industrial <sup>3</sup>	51-SB-1 8-10'	51-SB-2 2-4'
BTEX/MTBE					
Benzene	0.015	64.00	140.00	< 0.0059	< 0.0055
Ethylbenzene	4.550	230.00	230.00	< 0.0059	< 0.0055
Methyl-tert-butyl ether	0.047	850.00	1,900.00	< 0.0059	< 0.0055
Toluene	4.910	520.00	520.00	< 0.0059	< 0.0055
Xylene (Total)	15.700	370.00	370.00	< 0.012	< 0.011
ТРН					
ТРН (С06-С12)	1,000	1,0	000	<1.2	<1.1
TPH (C10-C20)	2,000	2,0	000	<11.8	<54.3

All results and applicable standards expressed in mg/kg (parts per million).

1 = Bureau of Underground Storage Tank Regulations (BUSTR) soil re-use standards (OAC 1301:7-9-16).

2 = Ohio VAP Single Chemical Generic Direct Contact Standards for Residential Land Use (OAC 3745-300-08).

3 = Ohio VAP Single Chemical Generic Direct Contact Standards for Commercial/Industrial Land Use (OAC 3745-300-08).

Bold = BUSTR soil re-use standard Exceedance.

Bold and Italics = Ohio VAP Single Chemical Generic Direct Contact Standard Residential Land Use Exceedance.

Bold and Shaded = Ohio VAP Single Chemical Generic Direct Contact Standard for Commercial/Industrial Land Use Exceedance.

## Table 5Analytical Soil ResultsSite 53 - Speedway SuperAmerica605 West 3rd Street, Cincinnati, OhioHAM-75-0.22PID 89068; Task Order #08-JSeven Sites Associated with the Brent Spence Bridge ProjectOhio Department of Transportation - District 8

Parameter	BUSTR Re-Use <sup>1</sup>	VAP Residential <sup>2</sup>	VAP Commercial / Industrial <sup>3</sup>	53-SB-1 2-4'	53-SB-2 6-8'	53-SB-3 8-10'	53-SB-4 6-8'
VOCs - All labora	tory results below l	aboratory report	ting limit and app	licable BUSTH	R / VAP standa	rd.	
PAHs - All laborat	tory results below l	aboratory report	ing limit and appl	icable BUSTR	/ VAP standar	·d.	
TPH - All laborate	ory results below la	boratory reportin	ng limit and appli	cable BUSTR	/ VAP standard	1.	

1 = Bureau of Underground Storage Tank Regulations (BUSTR) soil re-use standards (OAC 1301:7-9-16).

2 = Ohio VAP Single Chemical Generic Direct Contact Standards for Residential Land Use (OAC 3745-300-08).

3 = Ohio VAP Single Chemical Generic Direct Contact Standards for Commercial/Industrial Land Use (OAC 3745-300-08).

Table 6

### West 3rd St./Pete Rose Way/Central Ave./Smith St. Block, Cincinnati, Ohio Site 58 - Parking Lot Owned by City of Cincinnati Analytical Soil Results HAM-75-0.22

PID 89068; Task Order #08-J

Seven Sites Associated with the Brent Spence Bridge Project **Ohio Department of Transportation - District 8** 

Parameter	BUSTR Re-Use <sup>1</sup>	VAP Residential <sup>2</sup>	VAP Commercial / Industrial <sup>3</sup>	58-SB-1 2-4'	58-SB-2 2-4'	58-SB-3 6-8'	58-SB-4 2-4'	58-SB-5 4-6'	58-SB-6 6-8'
VOCs									
,2,4-Trimethylbenzene *	NS	85.00	120.00	<0.0058	<0.0059	<0.0061	0.0056	<0.0064	<0.0054
SVOCs							00000	100000	LCON'NS
2-Methylnaphthalene	NS	7,800.00	94,000.00	<0.380	<0.391	<0.403	1.82	<0.420	<0.356
Acenaphthene	NS	3,500.00	56,000.00	<0.380	<0.391	<0.403	3.51	<0.420	<0.356
Anthracene	NS	18,000.00	280,000.00	<0.380	<0.391	<0.403	9.34	<0.420	<0.356
Benzo(a)anthracene	2.200	11.00	76.00	<0.380	<0.391	<0.403	12.3	<0.420	0.445
Benzo(a)pyrene	1.100	1.10	7.70	<0.196	<0.201	<0.208	9.51	<0.216	0.461
Benzo(b)fluoranthene	5.530	00.11	77.00	<0.380	<0.391	<0.403	7.63	<0.420	0.425
Benzo(g,h,i)perylene	NS	1.700.00	23,000.00	<0.380	<0.391	<0.403	5.85	<0.420	<0.356
Benzo(k)fluoranthene	1.970	110.00	770.00	<0.380	<0.391	<0.403	8.35	<0.420	0.455
Chrysene	1.270	1,100.00	7,600.00	<0.380	<0.391	<0.403	12.9	<0.420	0.572
Dibenz(a,h)anthracene	0.940	1.10	7.70	<0.196	<0.201	<0.208	1.86	<0.216	<0.184
Dibenzofuran	NS	NS	NS	<0.380	<0.391	<0.403	2.20	<0.420	<0.356
Fluoranthene	NS	2,400.00	37,000.00	<0.380	<0.391	<0.403	30.9	<0.420	10.1
Fluorene	NS	2,400.00	37,000.00	<0.380	<0.391	<0.403	4.10	<0.420	<0.356
Indeno(1,2,3-cd)pyrene	0.150	11.00	77.00	<0.380	<0.391	<0.403	5.33	<0.420	<0.356
Phenanthrene	NS	24,000.00	870,000.00	<0.380	<0.391	<0.403	28.9	<0.420	0.625
Pyrene	NS	1,800.00	28,000.00	<0.380	<0.391	<0.403	23.7	<0.420	0.959
FPH									
TPH (C20-C34)	5,000	5,0	5,000	<11.5	14.9	12.8	196	1	<10.7
TPH (C20-C34)	5,000	40,00	40,000 **	;	1	1	-	<17.7	

All results and applicable standards expressed in mg/kg (parts per million).

1 = Bureau of Underground Storage Tank Regulations (BUSTR) soil re-use standards (OAC 1301:7-9-16).

2 = Ohio VAP Single Chemical Generic Direct Contact Standards for Residential Land Use (OAC 3745-300-08).

3 = Ohio VAP Single Chemical Generic Direct Contact Standards for Commercial/Industrial Land Use (OAC 3745-300-08).

Bold = BUSTR soil re-use standard Exceedance.

Bold and Italics = Ohio VAP Single Chemical Generic Direct Contact Standard Residential Land Use Exceedance.

Bold and Shaded = Ohio VAP Single Chemical Generic Direct Contact Standard for Commercial Industrial Land Use Exceedance.

NS = No default standard under specific program.

\* = Parameter analyzed by laboratory as a VOC and VAP soil standards are categorized as SVOC. \*\* = Ohio VAP TPH standard for clay soils.

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### West 3rd St./Pete Rose Way/Central Ave./Smith St. Block, Cincinnati, Ohio Seven Sites Associated with the Brent Spence Bridge Project Site 58 - Parking Lot Owned by City of Cincinnati **Ohio Department of Transportation - District 8** PID 89068; Task Order #08-J Analytical Soil Results HAM-75-0.22 Table 6

Parameter	VAP Residential <sup>2</sup>	VAP Commercial / Industrial <sup>3</sup>	58-SB-1 2-4'	58-SB-2 2-4'	58-SB-3 6-8'	58-SB-4 2-4'	58-SB-5 4-6'	58-SB-6 6-8'
VOCs								
1,2,4-Trimethylbenzene *	85.00	120.00	<0.0058	<0.0059	<0.0061	0.0056	<0.0064	<0.0054
SVOCs								
2-Methylnaphthalene	7,800.00	94,000.00	<0.380	<0.391	<0.403	1.82	<0.420	<0.356
Acenaphthene	3,500.00	56,000.00	<0.380	<0.391	<0.403	3.51	<0.420	<0.356
Anthracene	18,000.00	280,000.00	<0.380	<0.391	<0.403	9.34	<0.420	<0.356
Benzo(a)anthracene	00.11	76.00	<0.380	<0.391	<0.403	12.3	<0.420	0.445
Benzo(a)pyrene	1.10	7.70	<0.196	<0.201	<0.208	9.51	<0.216	0.461
Benzo(b)fluoranthene	11.00	77.00	<0.380	<0.391	<0.403	7.63	<0.420	0.425
Benzo(g,h,i)perylene	1,700.00	23,000.00	<0.380	<0.391	<0.403	5.85	<0.420	<0.356
Benzo(k)fluoranthene	110.00	770.00	<0.380	<0.391	<0.403	8.35	<0.420	0.455
Chrysene	1,100.00	7.600.00	<0.380	<0.391	<0.403	12.9	<0.420	0.572
Dibenz(a,h)anthracene	1.10	7.70	<0.196	<0.201	<0.208	1.86	<0.216	<0.184
Dibenzofuran	NS	NS	<0.380	<0.391	<0.403	2.20	<0.420	<0.356
Fluoranthene	2,400.00	37,000.00	<0.380	<0.391	<0.403	30.9	<0.420	1.01
Fluorene	2,400.00	37,000.00	<0.380	<0.391	<0.403	4.10	<0.420	<0.356
Indeno(1,2,3-cd)pyrene	11.00	77.00	<0.380	<0.391	<0.403	5.33	<0.420	<0.356
Phenanthrene	24,000.00	870,000.00	<0.380	<0.391	<0.403	28.9	<0.420	0.625
Pyrene	1,800.00	28,000.00	<0.380	<0.391	<0.403	23.7	<0.420	0.959
TPH								
TPH (C20-C34)	5,(	5,000	<11.5	14.9	12.8	196	1	<10.7
TPH (C20-C34)	40,0	40,000 **	1	1	1	1	<12.7	1

All results and applicable standards expressed in mg/kg (parts per million).

1 = Bureau of Underground Storage Tank Regulations (BUSTR) soil re-use standards (OAC 1301:7-9-16).

2 = Ohio VAP Single Chemical Generic Direct Contact Standards for Residential Land Use (OAC 3745-300-08).

3 = Ohio VAP Single Chemical Generic Direct Contact Standards for Commercial/Industrial Land Use (OAC 3745-300-08).

Bold = Ohio VAP Single Chemical Generic Direct Contact Standard Residential Land Use Exceedance.

Bold and Shaded = Ohio VAP Single Chemical Generic Direct Contact Standard for Commercial/Industrial Land Use Exceedance. NS = No default standard under specific program.

\* = Parameter analyzed by laboratory as a VOC and VAP soil standards are categorized as SVOC.

\*\* = Ohio VAP TPH standard for clay soils.

Table 7Analytical Soil ResultsSite 65 - Valley Asphalt612 Mehring Way, Cincinnati, OhioHAM-75-0.22PID 89068; Task Order #08-JSeven Sites Associated with the Brent Spence Bridge ProjectOhio Department of Transportation - District 8

Parameter	BUSTR Re-Use <sup>1</sup>	VAP Residential <sup>2</sup>	VAP Commercial / Industrial <sup>3</sup>	65-SB-1 10-12'	65-SB-2 8-12'	65-SB-4 4-6'	65-SB-5 4-8'	65-SB-6 8-10'
VOCs								
Acetone	NS	64,000.00	100,000.00	<0.13	<0.13	<0.17	<0.15	0.29
SVOCs								
3&4-Methylphenol(m&p Cresol)	NS	310.00	5,600.00	<0.861	<0.857	<1.10	<0.996	1.57
Benzo(a)anthracene	2.200	11.00	76.00	<0.430	<0.428	0.582	<0.498	<0.519
Benzo(a)pyrene	1.100	1.10	7.70	<0.222	<0.221	0.338	<0.257	<0.268
Fluoranthene	NS	2,400.00	37,000.00	<0.430	<0.428	0.928	<0.498	<0.519
Phenanthrene	NS	24,000.00	870,000.00	<0.430	<0.428	1.06	<0.498	<0.519
Pyrene	NS	1,800.00	28,000.00	<0.430	<0.428	0.808	<0.498	<0.519
HdT								
TPH (C10-C20)	2,000	2,(	2,000	<13.0	<13.0	43.7	<14.9	36.9
TPH (C20-C34)	5,000	5,(	5,000	<13.0	<13.0	33.4	<14.9	57.2

All results and applicable standards expressed in mg/kg (parts per million).

1 = Bureau of Underground Storage Tank Regulations (BUSTR) soil re-use standards (OAC 1301:7-9-16).

2 = Ohio VAP Single Chemical Generic Direct Contact Standards for Residential Land Use (OAC 3745-300-08).

3 = Ohio VAP Single Chemical Generic Direct Contact Standards for Commercial/Industrial Land Use (OAC 3745-300-08).

Bold = Ohio VAP Single Chemical Generic Direct Contact Standard Residential Land Use Exceedance.

Bold and Shaded = Ohio VAP Single Chemical Generic Direct Contact Standard for Commercial/Industrial Land Use Exceedance. Bold and Italics = BUSTR soil re-use standard Exceedance.

NS = No default standard under specific program.