

**PHASE II ENVIRONMENTAL SITE ASSESSMENT
AND FILE REVIEW**

**FORMER SANITARIUM (SITE 1);
FORMER JAIL AND SHERIFF'S HOUSE (SITE 2)
KIVETT'S (SITE 3)
MARTINSVILLE, INDIANA
A&W PROJECT No.: 16IN0712**

**PREPARED FOR:
THE RETREAT AT MINERAL SPRINGS, LP
INDIANAPOLIS, INDIANA**

**PREPARED BY:
ALT & WITZIG CONSULTING SERVICES**



Solutions From the Subsurface Up

NOVEMBER 17, 2016

November 17, 2016

The Retreat at Mineral Springs, LP
8900 Keystone at the Crossing
Indianapolis, Indiana
Attention: Ms. Julie Collier

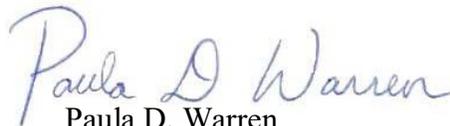
RE: Phase II Environmental Site Assessment
and File Review
Former Sanitarium (Site 1): 265 North
Harrison Street
Former Jail and Sheriff's House (Site 2):
110 West Washington Street
Kivett's (Site 3): 110 North Main Street
Martinsville, Indiana
A&W Project No.: 16IN0712

Dear Ms. Collier:

In compliance with your request, Alt & Witzig Consulting Services has completed a Phase II Environmental Site Assessment for the above mentioned Site. The Statement of Objectives, Scope of Work, and results of our investigation are presented in the following report. It is our pleasure to transmit one (1) electronic .pdf copy of this final version of the report.

If you have questions or comments regarding our investigation or report, please do not hesitate to contact us.

Sincerely,
ALT & WITZIG CONSULTING SERVICES
ENVIRONMENTAL DIVISION



Paula D. Warren
Project Manager



John C. Flannelly
Senior Project Manager

TABLE OF CONTENTS

EXECUTIVE SUMMARY	I
Findings and Conclusions	i
Recommendations	ii
1.0 INTRODUCTION	1
1.1 Purpose.....	1
1.2 Statement of Objectives	1
1.3 Assessment Exclusions	1
1.4 Scope of Work.....	1
1.5 Incorporations by Reference	1
1.6 Report Limitations and Exceptions	2
1.7 Report Reliance	2
2.0 BACKGROUND INFORMATION	3
2.1 Site Location.....	3
2.2 Site Description	3
2.3 Regional Setting	3
2.3.1 Topography.....	3
2.3.2 Soils.....	3
2.4 Summary of Site History and Use	3
2.5 Summary of Adjacent Property History and Use	4
3.0 CONCEPTUAL SITE MODEL (CSM)	5
3.1 CSM Introduction	5
3.2 Target Analytes	5
3.2.1 Target Analyte Transformation	5
3.2.2 Potential Release Source(s) and Entry Mechanism(s)	5
3.2.3 Target Analyte Behavior, Fate, and Transport Characteristics	5
3.2.4 Target Analyte Migration Pathways	6
3.3 Evaluation of U.S. EPA Data	6
3.4 Sampling and Analysis Plan.....	6
4.0 WORK PERFORMED	7
4.1 Boring Locations	7
4.2 Soil Sampling	7
4.2.1 Soil Sampling Methodology.....	7
4.2.2 Laboratory Analyses for Soil Samples.....	8
4.3 Groundwater Sampling	8
4.3.1 Groundwater Elevation	8
4.3.2 Groundwater Sampling Methodology.....	8
4.3.3 Laboratory Analyses for Groundwater Samples.....	9
4.4 Site Photographs	9
5.0 INVESTIGATION RESULTS	10

5.1 Site-Specific Geologic Results	10
5.2 Site-Specific Hydrogeologic Results	10
5.3 Laboratory Results for Soil Samples	10
5.4 Laboratory Results for Groundwater Samples	10
5.5 Sampling and Analysis Plan Deviations	11
5.6 Validation of the Conceptual Site Model.....	11
6.0 INTERPRETATIONS AND CONCLUSIONS	12
6.1 Re-Statement of Objectives.....	12
6.2 Investigation Analysis and Conclusions	12
6.3 Recommendations.....	13
7.0 WARRANTY	14
8.0 REFERENCES	15

APPENDIX A

Figures

APPENDIX B

Sampling and Analysis Plan

APPENDIX C

Boring Logs

APPENDIX D

Laboratory Analytical Results Tables

APPENDIX E

Laboratory Certificate of Analyses and Sampling Chain of Custody

APPENDIX F

Site Photographs

EXECUTIVE SUMMARY

Alt & Witzig Consulting Services (A&W) has performed a Phase II Environmental Site Assessment (ESA) and/or a file review on three (3) non-contiguous properties: 265 North Harrison Street (Site 1); the former Sheriff's House and Jail located at 110 West Washington Street (Site 2); and the Kivett's Building located at 110 North Main Street (Site 3) in Martinsville, Indiana in conformance with the scope and limitations of ASTM Practice E 1903-11 and for the following objective(s):

This assessment addresses the on-Site soil and/or groundwater conditions with respect to this subsurface investigation and/or evaluation of available United States Environmental Protection Agency (US EPA) data and information. According to A&W Phase I ESAs completed in 2016 (A&W Project Nos.: 16IN0524 and 16IN0525), a regional tetrachloroethene (PCE) groundwater plume, *Pike & Mulberry Streets PCE Plume* (PCE Plume), is located in downtown Martinsville and encompasses approximately 38-acres, including Site 1, Site 2, and Site 3. The PCE contaminants have reached and contaminated one (1) of the three (3) city of Martinsville municipal wells above the US EPA Maximum Contaminant Level (MCL). Although a source removal was completed on the former Master Ware property (one (1) of the named sources of the plume), the concentrations of PCE in the groundwater have continued to increase and are currently above the US EPA MCL and the IDEM RCG Vapor Exposure Groundwater Screening Levels (VEGWSLs) in many areas downtown Martinsville.

In August 2015, A&W performed a Vapor Intrusion (VI) Investigation on Sites 1, 2, and 3 and analyzed for chlorinated Volatile Organic Compounds (cVOCs). Analytical results indicated cVOCs above their respective Indiana Department of Environmental Management (IDEM) Remediation Closure Guide (RCG) Residential and/or Commercial Screening Levels in the sub-slab, crawl space, and/or indoor air at Sites 1 and 2. In order to determine if these impacts were a result of impacted groundwater beneath the Sites, a Phase II ESA was completed on Site 1 and Site 2. Evaluation of the provided US EPA data was performed for Site 3.

An A&W representative performed this Phase II ESA on November 1, 2016. This investigation was performed for The Retreat at Mineral Springs, LP. Authorization to perform this investigation was in the form of an A&W proposal accepted by Ms. Julie Collier of The Retreat at Mineral Springs, LP.

Findings and Conclusions

A total of four (4) soil borings were advanced on Site 1 and Site 2 during this investigation; borings could not be advanced on Site 3 due to access issues and underground utilities. Two (2) soil borings (Site 1: B-1 and Site 1: B-2) were advanced on the south-central and central portion of Site 1, respectively. Two (2) soil borings (Site 2: B-1 and Site 2: B-2) were advanced on the northern portion of Site 2. Four (4) soil and four (4) groundwater samples were collected and analyzed for the following potential contaminants: cVOCs.

Soil analytical results indicated PCE above the IDEM RCG Soil Migration to Groundwater (MTG) Screening Level but below the IDEM RCG Residential Direct Contact (RDC) and Commercial Direct Contact (CDC) Screening Level in boring Site 1: B-1 at a depth of eight (8) to 10 feet below ground surface (bgs). PCE was also detected above the laboratory reporting limit but below the

IDEM RCG MTG, RDC, and CDC Screening Levels in boring Site 1: B-2 at a depth of four (4) to six (6) feet bgs. All other soil results were indicated below laboratory reporting limits and/or IDEM RCG Screening Levels.

Groundwater analytical results indicated PCE above the IDEM RCG Residential Tapwater Screening Level (RTSL) and Residential VEGWSL (RVEGWSL) but below the IDEM RCG Commercial VEGWSL (CVEGWSL) in boring Site 1: B-2 and above the IDEM RTSL but below the RVEGWSL and CVEGWSL in borings Site 1: B-1 and Site 2: B-2. Methylene chloride was detected above the laboratory reporting limit and/or IDEM RCG RTSL in three (3) samples; however, this compound was flagged as a common laboratory artifact and does not have established VI screening levels. All other analyzed constituents were indicated below laboratory reporting limits.

The Site building encompasses the entirety of Site 3, and based on the location of the surrounding underground utilities, soils boring could not be advanced on Site 3 during this Phase II Investigation. Therefore, a review of available on-going US EPA investigations and results was completed in order to evaluate if a determination could be made as to whether the underlying groundwater is impacted. Permanent monitoring wells in proximity to Site 3 are MW-3 to the southwest (adjacent to the former Kent Cleaners depicted on the map) and MW-22 to the south. Further east is MW-36, and one (1) block north/northwest is MW-7, and MW-16 to the northwest. Based on the 2015 quarterly monitoring results provided to A&W, each of these monitoring wells have contained cVOCs above their respective IDEM RCG RTSL and/or RVEGWSL but below the IDEM RCG CVEGWSL. Therefore, based on these results, groundwater is impacted with cVOCs to the east, south, southwest, northwest, and north of the Site, hence, making the reasonable conclusion that the groundwater underlying the Site, and between these monitoring wells is also impacted above IDEM RCG Screening Levels.

In addition, a soil vapor sample collected near the southeast corner of Site 3 (upgradient) was above the Vapor Intrusion Screening Levels for soil vapor. Based on this information regarding the underlying groundwater plume encompassing the Site area, a groundwater restriction for the Site is determined appropriate.

Recommendations

Based on the results of this investigation, additional soil and/or groundwater subsurface investigations are not warranted on the Sites at this time since the source(s) remain off-Site and the risk to human health has already been investigated through A&W VI investigations. A&W recommends following the recommendations of the VI Report, including installing vapor mitigation systems in the Site buildings during construction activities and following the Reasonable Steps outlined in the Comfort Letter. This report should be submitted to IDEM Brownfields Program for review, and based on the analytical results, an Environmental Restrictive Covenant (ERC) will likely be necessary on each Site.

1.0 INTRODUCTION

1.1 Purpose

The purpose of Alt & Witzig Consulting Services (A&W) conducting a Phase II Environmental Site Assessment (ESA) at 265 North Harrison Street (Site 1); the former Sheriff's House and Jail located at 110 West Washington Street (Site 2); and the Kivett's Building located at 110 North Main Street (Site 3), Martinsville, Indiana (Site) is to evaluate the recognized environmental conditions (RECs) identified in the Phase I ESA and Vapor Intrusion (VI) Investigation process for the purpose of providing sufficient information regarding the nature of potential soil and/or groundwater contamination to assist in making informed business decisions about the property; and where applicable, providing the level of knowledge necessary to establish limitations of or defenses to potential Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) liability via Landowner Liability Protections (LLPs), such as the *bona fide prospective purchaser*, *contiguous property owner*, and *innocent landowner* LLPs.

Establishing LLPs may not be a realistic objective in some instances. Accordingly, the extent of this investigation is based on the business objectives of The Retreat at Mineral Springs, LP as well as the degree of uncertainty acceptable to The Retreat at Mineral Springs, LP.

1.2 Statement of Objectives

This investigation was conducted to determine if the groundwater on the Sites has been impacted as a result of the regional tetrachloroethene (PCE) groundwater plume, Pike & Mulberry Streets PCE Plume (PCE Plume).

1.3 Assessment Exclusions

Due to access limitations and utility locations, groundwater samples could not be collected on Site 3; therefore, a review of existing US EPA data was conducted to determine if the groundwater underlying Site 3 is likely to be impacted.

1.4 Scope of Work

During the Phase II ESA, four (4) borings (Site 1: B-1; Site 1: B-2; Site 2: B-1; Site 2: B-2) were advanced on Site 1 and Site 2. Four (4) soil samples and four (4) groundwater samples were collected and analyzed for likely potential contaminants. US EPA data was reviewed to evaluate the groundwater plume at Site 3.

1.5 Incorporations by Reference

The investigation was conducted in general accordance with the American Society for Testing and Materials (ASTM) "Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process E1903-11 (2011)" (Practice) and contains all of the limitations inherent therein.

This investigation was performed for The Retreat at Mineral Springs, LP. The proposed statement of objectives and scope of work were outlined in the form of A&W Proposal Number 1610E0000 duly authorized by Ms. Julie Collier of The Retreat at Mineral Springs, LP. The Scope of Work

proposed to address the objectives of the Phase II ESA does not include significant schedule, budget, or cost limitations that would compromise A&W's ability to conduct the Phase II ESA in accordance with the Practice.

This investigation was performed in the State of Indiana. Regulatory requirements applicable to the investigation are outlined within the 2012 Indiana Department of Environmental Management (IDEM) *Remediation Closure Guide/Remediation Program Guide* (RCG/RPG), with updates.

1.6 Report Limitations and Exceptions

Soil and groundwater sampling and laboratory analysis focused on potential contaminants outlined in our proposal and were not exhaustive. Professional judgments expressed herein are based on facts currently available within the limits of the existing data, scope of work, budget and schedule. To the extent that the client desires more definitive conclusions than are warranted by the currently available facts, it is A&W's specific intent that the conclusions and recommendations stated herein are provided based on known facts derived from the current investigation. Professional judgment and interpretation are inherent in the completion of any ESA. We make no warranties, express or implied, including, without limitation, warranties as to merchantability or fitness for a particular purpose. Additionally, the information provided to The Retreat at Mineral Springs, LP in this report is not to be construed as legal advice.

This Phase II ESA does not address the evaluation of business environmental risks in light of data collected through the ESA process. Such evaluation is a function of site- and transaction-specific variables, and of the user's objectives and risk tolerance. The user will evaluate legal, business and environmental risks in light of known data relating to the particular site and transaction, and in consultation with legal and business advisors as well as the Phase II Assessor (A&W).

1.7 Report Reliance

This report is solely for the use of The Retreat at Mineral Springs, LP and any reliance of this report by third parties shall be at such party's sole risk and may not contain sufficient information for purposes of other parties for other uses. This report shall only be presented in full and may not be used to support any other objectives than those set out in the scope of work, except where written approval and consent are provided by The Retreat at Mineral Springs, LP and A&W.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The Site is located in the City of Martinsville in Morgan County, Indiana at 265 North Harrison Street (Site 1); the former Sheriff's House and Jail located at 110 West Washington Street (Site 2); and the Kivett's Building located at 110 North Main Street (Site 3). The Site is further located on the U.S.G.S. 7.5-Minute Series Topographic map of Martinsville, Indiana (**Figure 1, Appendix A**) in the southwest quarter of Section 33 Township 12 North, Range 1 East.

2.2 Site Description

Site 1 included approximately 0.67-acres of commercial land occupied by a vacant former Sanitarium. Site 2 included approximately 0.20-acres of commercial land occupied by a vacant former Sheriff's House and Jail. Site 3 included property entirely encompassed by an approximately 22,656-square foot former Kivett's Five & Dime building. The building consisted of vacant retail, residential and meeting space.

2.3 Regional Setting

2.3.1 Topography

The surfaces of the immediate Sites were relatively flat, with a relief of less than five (5) feet. The approximate mean sea level (msl) elevation of the Sites ranges from 600 to 607 feet. Drainage on Site 1 was along the ground surface toward the eastern unimproved portion of the Site or storm sewer drains in the adjoining roadways. Drainage on Site 2 and Site 3 was along the ground surface toward storm sewer drains in the adjoining roadways. Based on previous investigations associated with the Pike and Mulberry PCE Plume throughout the City of Martinsville, groundwater flow direction was measured to the northwest.

2.3.2 Soils

Topsoil on the Site consists primarily of Princeton soil association. The Princeton soils are described by the U.S. Department of Agriculture Soil Conservation Service as being deep, nearly level to moderately steep, well drained soils that formed in windblown silt and sand, on uplands.

2.4 Summary of Site History and Use

Site 1 was unimproved as of 1888 and the Site building was constructed in 1890. Site 1 consisted of largely unimproved land and a portion of the Martinsville Sanitarium located on the western portion of the Site from 1890 through approximately 1908. By 1916, an office had been added to the Site building. By 1927, the Site consisted of an irregular-shaped building with an L-shaped portion containing an enclosed patio near the south central portion of the eastern side of the building, constructed as it was currently observed. The Martinsville Sanitarium occupied the Site from 1896 through 1988. According to reviewed historical sources, from at least 1988 through 2012, the Site was utilized as a living center and/or apartments. From at least 2012 to the present, the Site has remained vacant. However, the current owner of the Site indicated the Site building has been vacant since 2000.

Site 2 was occupied by a residence in 1888 and consisted of the Morgan County Sheriff's Office/House and Jail from at least 1892 through circa the 1990s. From 1990 to May 2014, the Site had periods of vacancy but was partially occupied by a retail store and small restaurant, a catering business, a childcare facility and a residence. From May 2014 to the present, the building has remained vacant.

Site 3 had been occupied by a retail and residential building from at least 1888 through the present. Tenants of obvious environmental concern were not noted in the city directory review, a review of Sanborn Fire Insurance maps or interviews conducted. Former retail tenants were noted to include Kivett's Five and Dime, a clothing store, an antique shop and A to Z Auction House. The second story has reportedly been used strictly for residential purposes and the third floor was historically occupied by a Masonic Lodge and may have briefly been utilized as a women's shelter.

2.5 Summary of Adjacent Property History and Use

According to the previous Phase I ESAs completed on the Sites, the current and/or historical uses of the surrounding properties to Site 1, Site 2 or Site 3 should not present a REC to the Site. However, a regional groundwater PCE plume underlies each Site. Concentrations of PCE are above the US EPA MCL and continue to show increased concentrations in the groundwater. According to a 2015 VI Investigation at each Site, it appears the presence of the PCE Plume has impacted the sub-slab/crawlspace vapor and/or indoor air at both Site 1 and Site 2. Therefore, this PCE plume is considered a REC and a VEC to the Site.

3.0 CONCEPTUAL SITE MODEL (CSM)

3.1 CSM Introduction

The conceptual Site model consists of descriptions of the likely environmental conditions of the property relative to the presence or likely presence of target analytes in environmental media. It includes discussion of the potential sources of contamination, likely contaminants based on Site use, and the fate and transport mechanisms of potential contaminants through the subsurface.

3.2 Target Analytes

Based on the historical PCE Plume in the vicinity of the Sites and associated with this Phase II ESA focused on likely potential contaminants as detailed in table below. Specific analytes of each target group are itemized individually in the analytical summary tables located in the appendices section of this report.

Target Analytes for Phase II ESA		
Chemical Name	Abbreviation	Methodology
Chlorinated Solvent Target Analytes		
1,1-Dichloroethane	1,1-DCA	US EPA SW-846 Method 8260
1,1-Dichloroethene	1,1-DCE	US EPA SW-846 Method 8260
cis-1,2 Dichloroethene	cis-1,2-DCE	US EPA SW-846 Method 8260
trans-1,2 Dichloroethene	trans-1,2-DCE	US EPA SW-846 Method 8260
Dichloromethane (Methylene Chloride)	DCM	US EPA SW-846 Method 8260
Tetrachloroethene (tetrachloroethylene)	PCE	US EPA SW-846 Method 8260
1,1,1-Trichloroethane	1,1,1-TCA	US EPA SW-846 Method 8260
Trichloroethene (trichloroethylene)	TCE	US EPA SW-846 Method 8260
Vinyl Chloride (chloroethene)	VC	US EPA SW-846 Method 8260

3.2.1 Target Analyte Transformation

PCE is known to breakdown in anaerobic environments into the secondary target analytes 1,2-DCE and VC; therefore, the daughter products of the original release source have been included in the sampling and analysis plan (SAP) for this ESA.

3.2.2 Potential Release Source(s) and Entry Mechanism(s)

The historical dry cleaner, Master Wear, in Martinsville, and/or additional unidentified contributors, have impacted the groundwater beneath and surrounding the Sites. Entry was likely via spills during typical operations that entered the subsurface and migrating via the groundwater aquifer. Potential release sources were not identified on the Sites.

3.2.3 Target Analyte Behavior, Fate, and Transport Characteristics

Target analytes generally persist, and are commonly at their highest concentration, near the point of entry into environmental media. Migration of a release of target analytes generally results in a three (3)-dimensional expansion of the zone impacted by the target analytes.

Regional and measured groundwater direction traverses northwest; therefore, the contaminant plume will likely continue to migrate northwest. This factor and known groundwater movement and flow direction allows the deduction that the Kivett's building is

encompasses by the underlying groundwater plume with concentrations above the IDEM RCG Screening Levels.

Depending on concentrations of target analytes, their relative volatility, and Site-specific preferential pathways (i.e. subsurface utilities), vapors emanating from a potential contaminant plume may migrate to environmental receptors (refer to previous A&W VI reports on each Site for additional information).

3.2.4 Target Analyte Migration Pathways

The primary migration pathway for the PCE Plume would be transport via the underlying groundwater table in the northwest direction of groundwater flow.

3.3 Evaluation of U.S. EPA Data

Soil borings could not be advanced on Site 3 during this Phase II Investigation due to the Site being entirely encompassed by a building and the location of the adjoining underground utilities. Therefore, a review of available ongoing US EPA investigations and results was completed in order to evaluate if a determination could be made as to whether the underlying groundwater is impacted. Permanent monitoring wells in proximity to Site 3 include MW-3 to the southwest (adjacent to the former Kent Cleaners depicted on the map) and MW-22 to the south. Further east is MW-36, and one (1) block north/northwest is MW-7, and MW-16 to the northwest.

Based on the 2015 quarterly monitoring results provided to A&W, each of these monitoring wells have contained cVOCs above their respective IDEM RCG Residential Tapwater Screening Level (RTSL) and/or Residential VEGWSL (RVEGWSL) but below the IDEM RCG Commercial VEGWSL (CVEGWSL). Therefore, based on these results, groundwater is impacted with cVOCs to the east, south, southwest, northwest, and north of the Site, hence, making the reasonable conclusion that the groundwater underlying the Site, and between these monitoring wells is also impacted above IDEM RCG Screening Levels. Please refer to Figure 6, Appendix A.

In addition, a soil vapor sample collected near the southeast corner of the Site (upgradient) was above the Vapor Intrusion Screening Levels for soil vapor. Based on this information regarding the underlying groundwater plume encompassing the Site area, a groundwater restriction for the Site is determined necessary.

3.4 Sampling and Analysis Plan

A Site-specific SAP was created based on the hypotheses derived during the creation of the conceptual Site model, following generally accepted Quality Assurance/Quality Control (QA/QC) protocols for sample collection, preservation, and analysis. The SAP is included in **Appendix B**.

VI sampling has been conducted on each Site by A&W in 2015. Therefore, vapor sampling was not performed in conjunction with this ESA.

4.0 WORK PERFORMED

4.1 Boring Locations

On November 1, 2016, two (2) soil borings (Site 1: B-1 and Site 1: B-2) were advanced on Site 1 and two (2) soil borings (Site 2: B-1 and Site 2: B-2) were advanced on Site 2, for a total of four (4) soil borings. The Site 1 soil borings were advanced in the south-central and central portions of the Site and the Site 2 soil boring were advanced on the northern portion of the Site. The locations of the Soil boring locations are illustrated on **Figures 2A and 2B, Boring Location Plan (Appendix A)**.

4.2 Soil Sampling

This section details the methodology used in collecting representative soil samples, a general overview of soil lithology identified within advanced borings and laboratory analyses of soil samples.

4.2.1 Soil Sampling Methodology

The soil borings were advanced using a truck-mounted Geoprobe® 5410 unit with direct push technology to depths of approximately 14 to 20 feet below ground surface (bgs). Soil samples were continuously collected from a four (4)-foot Geoprobe® dual tube sampling device with an inner acetate liner.

Soil samples from the inner liner were field classified in two (2) foot sections and inspected for observable staining and noticeable odors. Once classified, the soil samples were collected and split into two (2) aliquots. One (1) aliquot was collected in a plastic zip-lock bag. The other aliquot was collected utilizing US EPA 5035A sampling methodology and placed in three (3) 40-milliliter (mL) glass vials with Teflon-lined lids preserved with methanol or deionized water for volatile analysis.

New nitrile gloves were used for each sample collection to prevent cross-contamination. The aliquots collected for potential laboratory analysis were labeled and placed on ice in a cooler.

Each aliquot collected in the zip-lock bags were screened for VOCs using a Mini Rae 2000 photoionization detector (PID) equipped with a 10.2 eV probe. The PID measures the concentration of total photoionizable vapors (TPVs) in the air (headspace) surrounding the sample. Accordingly, the readings reported from the PID are in units relative to the calibration gas, rather than exact concentrations. The PID was calibrated to an isobutylene standard prior to Site operations.

The soil samples were allowed to equilibrate at the ambient temperature for a minimum of 10 minutes prior to screening procedures. Each individual aliquot was agitated for approximately 10 seconds to break soil clods and release vapors. The zip lock bag was opened and the PID probe tip carefully inserted into a small aperture in the bag. The highest instrument reading was immediately recorded. Headspace analysis results are reported on the boring logs located in **Appendix C**.

Since potential contamination (i.e. PID reading, staining, odor) was not encountered in borings, the soil samples collected from the vadose zone were selected for laboratory analysis. The following soil samples were submitted to the laboratory for analysis:

Boring ID	Sample Depth (ft. bgs)	PID Reading (ppm)
Site 1: B-1	8-10	0.0
Site 1: B-2	4-6	0.0
Site 2: B-1	8-10	0.0
Site 2: B-2	4-6	0.0

4.2.2 Laboratory Analyses for Soil Samples

Four (4) soil samples collected from the vicinity of the underlying PCE Groundwater Plume were analyzed at Pace Analytical Services, Inc. in Indianapolis, Indiana for:

- cVOCs using US EPA method SW846-8260.

Table 1, Appendix D provides a sample collection and analysis summary. **Table 2, Appendix D** provides a summary of laboratory results for soils. The laboratory certificate of analysis and sampling chain of custody form are presented as **Appendix E**.

4.3 Groundwater Sampling

This section details the methodology used in collecting representative groundwater samples, an estimated depth to groundwater within advanced borings and the laboratory analyses of groundwater samples.

4.3.1 Groundwater Elevation

Groundwater was sampled at approximately 14 to 20 feet bgs in each boring B-1.

4.3.2 Groundwater Sampling Methodology

Groundwater samples were collected from their respective on-Site soil borings for a total of four (4) groundwater samples.

In order to collect groundwater samples for groundwater quality analysis, a Geoprobe® Screen Point (SP)-16 groundwater sampling system was installed in each boring. The SP-16 groundwater sampling system was constructed of a four (4)-foot section of machine slotted screen, and a steel bailer was used to collect the groundwater samples. The steel bailer was decontaminated between each sample collection. New nitrile gloves were used for each sample collection to prevent cross-contamination. The SP-16 diagrams are located on the boring logs in **Appendix C**. The SP-16 was removed from each borehole following sample collection. Each borehole was then filled with bentonite chips to the ground surface.

The groundwater samples were placed in three (3) 40-mL vials preserved with hydrochloric acid. The samples were then labeled and placed on ice in a cooler.

The following groundwater samples were submitted to the laboratory for analysis:

Boring ID	Screen Sample Depth (ft. bgs)
Site 1: B-1	16-20
Site 1: B-2	14-18
Site 2: B-1	16-20
Site 2: B-2	16-20

4.3.3 Laboratory Analyses for Groundwater Samples

Four (4) groundwater sample the underlying PCE Groundwater Plume were analyzed at Pace Analytical Services, Inc. in Indianapolis, Indiana for:

- cVOCs using US EPA method SW846-8260.

Table 1, Appendix D provides a sample collection and analysis summary. **Table 3, Appendix D** provides a summary of laboratory results for groundwater. The laboratory certificate of analysis and sampling chain of custody form are presented as **Appendix E**.

4.4 Site Photographs

Photographs were taken during the Site investigation to supplement our observations. A photographic log depicting Site activities is presented as **Appendix F**.

5.0 INVESTIGATION RESULTS

5.1 Site-Specific Geologic Results

Soil borings generally indicated silt loam textured soils, underlain by silty clay loam textured soils, underlain by sandy clay loam textured soils, underlain by sand and gravel to boring refusals or terminations. Topsoil and fill material was observed in the first two (2) feet of boring Site 2: B-1. Copies of the boring logs are provided in **Appendix C**.

5.2 Site-Specific Hydrogeologic Results

As described in Section 4.3.1, on-Site groundwater was measured at approximate depths ranging from 14 to 20 feet bgs across the Site. The SP-16 screens were set to intercept the soil/groundwater interface as estimated by field observations.

5.3 Laboratory Results for Soil Samples

As summarized in **Table 2, Appendix D**, laboratory analysis of soil indicated the following:

- PCE was detected above the IDEM RCG Soil Migration to Groundwater (MTG) Screening Level but below the IDEM RCG Residential Direct Contact (RDC) and Commercial Direct Contact (CDC) and Screening Levels in boring Site 1: B-1 at a depth of eight (8) to 10 feet bgs. PCE was detected above the laboratory reporting limit but below the IDEM RCG RDC, CDC and MTG Screening Levels in boring Site 1: B-2 at a depth of four (4) to six (6) feet bgs.

As summarized in **Table 2, Appendix D**, laboratory analysis of soil indicated all other analyzed potential contaminants in each soil sample were identified below their respective IDEM RCG MTG, RDC and CDC Screening Levels or were below laboratory reporting limits (BRL).¹

Figure 3, Appendix A depicts soil analytical results above laboratory reporting limits and their associated soil boring.

5.4 Laboratory Results for Groundwater Samples

As summarized in **Table 3, Appendix D**, laboratory analysis of groundwater indicated the following:

- PCE was detected above the IDEM RTSL and RVEGWSL but below the IDEM RCG CVEGWSL in boring Site 1: B-2. PCE was also detected above the IDEM RCG RTSL but below the RVEGWSL and the CVEGWSL in borings Site 1: B-1 and Site 2: B-2.
- Methylene chloride was detected above the laboratory reporting limit and/or IDEM RCG RTSL in three (3) samples; however, this compound was flagged as a common laboratory artifact.

As summarized in **Table 3, Appendix D**, laboratory analysis of groundwater indicated all other analyzed potential contaminants in each groundwater sample were detected below their respective IDEM RCG RTSL, RVEGWSL, and CVEGWSL or were BRL.¹

¹ Several analyzed compounds may not have an analytical method available with a detection limit or quantitation limit that will meet the screening level.

Figures 4A and 4B, Appendix A depicts groundwater analytical results above laboratory reporting limits and their associated soil boring.

5.5 Sampling and Analysis Plan Deviations

There were no deviations from the SAP for this investigation. A copy of the SAP is provided in **Appendix B**.

5.6 Validation of the Conceptual Site Model

Soil characterization results, hydraulic information, and analytical results confirm that appropriate environmental media were sampled from optimal or other appropriate locations and were tested for the appropriate target analytes based on the historic Site use, in accordance with the SAP and as required to meet the objective of the assessment.

6.0 INTERPRETATIONS AND CONCLUSIONS

6.1 Re-Statement of Objectives

A&W has performed a Phase II ESA on three (3) non-contiguous properties located at 265 North Harrison Street (Site 1); the former Sheriff's House and Jail located at 110 West Washington Street (Site 2); and the Kivett's Building located at 110 North Main Street (Site 3) in Martinsville, Indiana in conformance with the scope and limitations of ASTM Practice E 1903-11 and for the following objectives: to determine if Site soil and/or groundwater have been affected by the regional PCE Groundwater Plume.

6.2 Investigation Analysis and Conclusions

Groundwater was present in each boring in proximity to the PCE Plume on the corresponding Site. Soil and groundwater samples were collected from each boring.

Soil analytical results indicated PCE above the IDEM RCG MTG Screening Level but below the IDEM RCG RDC and CDC Screening Level in boring Site 1: B-1 at a depth of eight (8) to 10 feet bgs. PCE was also detected above the laboratory reporting limit but below the IDEM RCG MTG, RDC, and CDC Screening Levels in boring Site 1: B-2 at a depth of four (4) to six (6) feet bgs. All other soil results were indicated below laboratory reporting limits and/or IDEM RCG Screening Levels.

Groundwater analytical results indicated PCE above the IDEM RCG RTSL and RVEGWSL but below the IDEM RCG CVEGWSL in boring Site 1: B-2 and above the IDEM RTSL but below the RVEGWSL and CVEGWSL in borings Site 1: B-1 and Site 2: B-2. Methylene chloride was detected above the laboratory reporting limit and/or IDEM RCG RTSL in three (3) samples; however, this compound was flagged as a common laboratory artifact and does not have established VI screening levels.

Soil borings could not be advanced on Site 3 during this Phase II Investigation due to the Site being entirely encompassed by a building and adjoining underground utilities. Therefore, a review of available ongoing US EPA investigations and results was completed in order to evaluate if a determination could be made as to whether the underlying groundwater is impacted. Permanent monitoring wells in proximity to Site 3 are MW-3 to the southwest (adjacent to the former Kent Cleaners depicted on the map) and MW-22 to the south. Further east is MW-36, and one (1) block north/northwest is MW-7, and MW-16 to the northwest. Based on the 2015 quarterly monitoring results provided to A&W, each of these monitoring wells have contained cVOCs above their respective IDEM RCG RTSL and/or RVEGWSL but below the IDEM RCG CVEGWSL. Therefore, based on these results, groundwater is impacted with cVOCs to the east, south, southwest, northwest, and north of the Site, hence, making the reasonable conclusion that the groundwater underlying the Site, and between these monitoring wells is also impacted above IDEM RCG Screening Levels.

In addition, a soil vapor sample collected near the southeast corner of the Site (upgradient) was above the Vapor Intrusion Screening Levels for soil vapor. Based on this information regarding the underlying groundwater plume encompassing the Site area, a groundwater restriction for the Site is determined necessary.

Based on the groundwater analytical results from this Phase II ESA and the U.S. EPA data provided to A&W, it can be determined that the regional PCE Groundwater Plume has had a negative effect on-Site environmental media.

6.3 Recommendations

Based on the results of this investigation, additional soil and/or groundwater subsurface investigations are not warranted on the Sites at this time since the source(s) remain off-Site and the risk to human health has already been investigated through A&W VI investigations. A&W recommends following the recommendations of the VI Report, including installing vapor mitigation systems in the Site buildings during construction activities and following the Reasonable Steps outlined in the Comfort Letter. This report should be submitted to IDEM Brownfields Program for review, and based on the analytical results, an Environmental Restrictive Covenant (ERC) will likely be necessary on each Site.

7.0 WARRANTY

A&W warrants that the findings and conclusions contained herein were derived in accordance with the methodologies and protocol of standard industry practices for subsurface investigations. It should be noted that all environmental evaluations are inherently limited in the sense that conclusions are drawn and recommendations developed from information obtained from limited research and evaluations. Additionally, the passage of time may result in a change in the environmental characteristics at the Site and surrounding properties. This report does not warrant against future operations or conditions, nor does this warrant operations or conditions present of a type or at a location not investigated. This report is not a regulatory compliance audit and is not intended to satisfy the requirements of any federal, state or local real estate laws.

8.0 REFERENCES

American Society of Testing and Materials (ASTM), Practice E1903-11 – Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process, 2011.

Indiana Department of Environmental Management, Remediation Closure Guide, March 22, 2012, with updates.

Indiana Department of Environmental Management, Remediation Program Guide, February 2012.

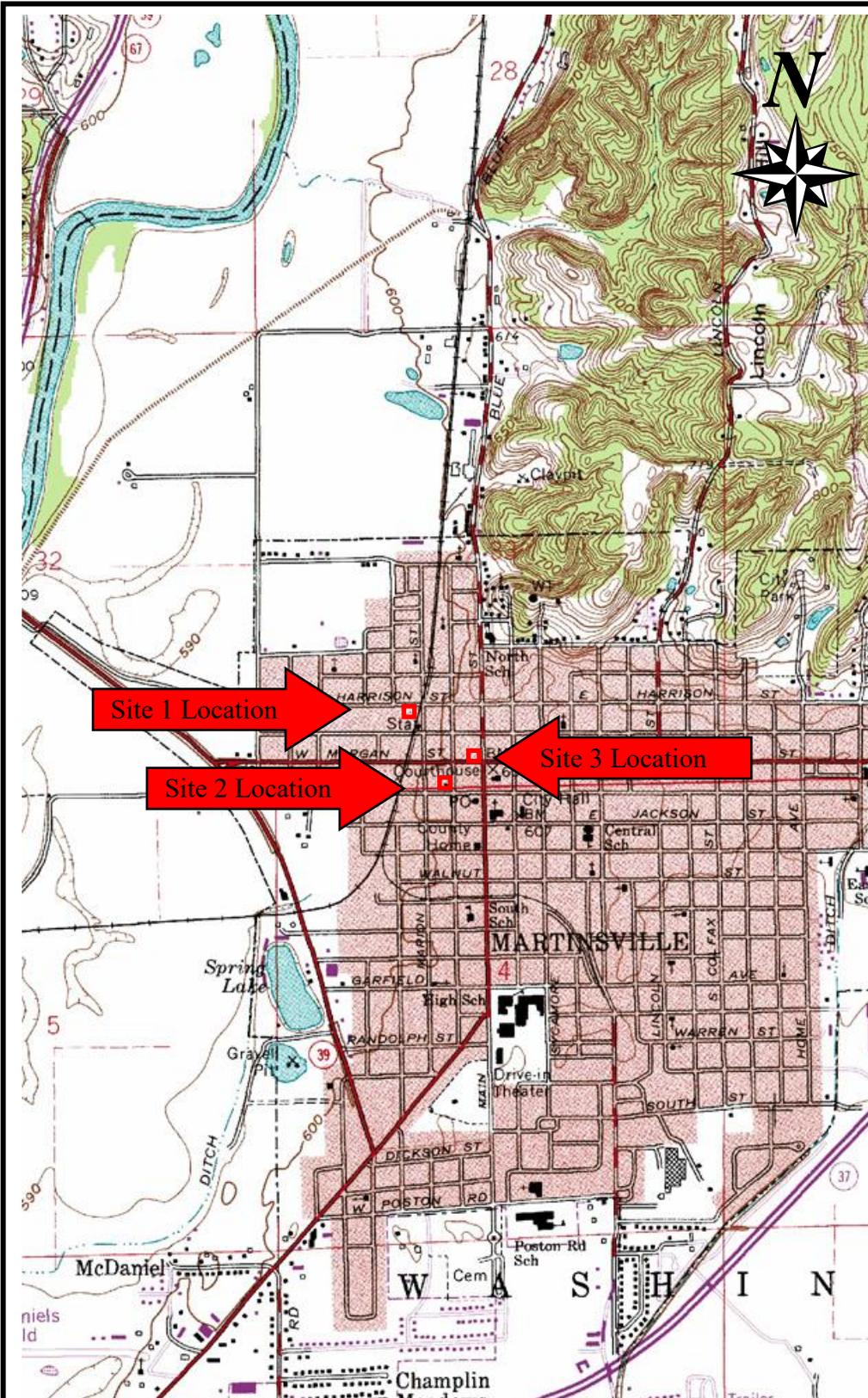
Pace Analytical Services, Laboratory Certificate of Analysis Number 50157906: Martinsville Sites, November 9, 2016.

U.S. Environmental Protection Agency (EPA) Monitoring Results Table and Location Map.

APPENDIX A

Figures

FIGURE 1: SITE LOCATION MAP



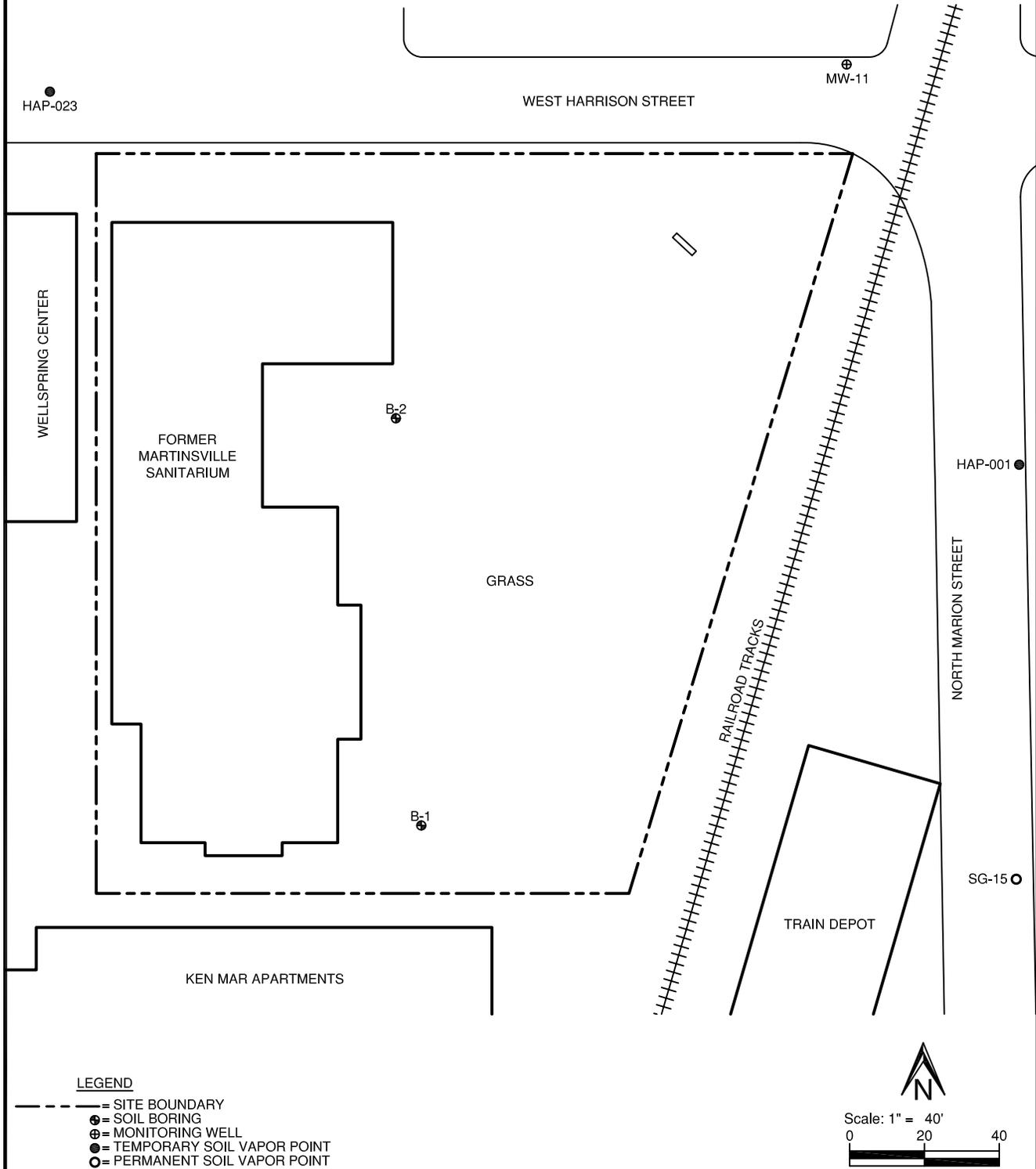
*USGS Topographic Map:
Martinsville Quadrangle*

*Township: T 12 N.
Range: R 1 E.
Section: 33*

PROJECT: Sanitarium (Site 1), County Jail (Site 2), Kivett's Building (Site 3)
LOCATION: 301 W. Harrison St., 110 W. Washington St., 110 W. Main St.
CLIENT: Retreat at Mineral Springs, LP
A&W File No.: 16IN0712

*Alt & Witzig Consulting Services
 4105 W. 99th Street · Carmel, IN 46032
 TEL (317)875-7000 · FAX (317) 876-3705
www.altwitzig.com*

**FIGURE 2A
BORING LOCATION PLAN-SITE 1**

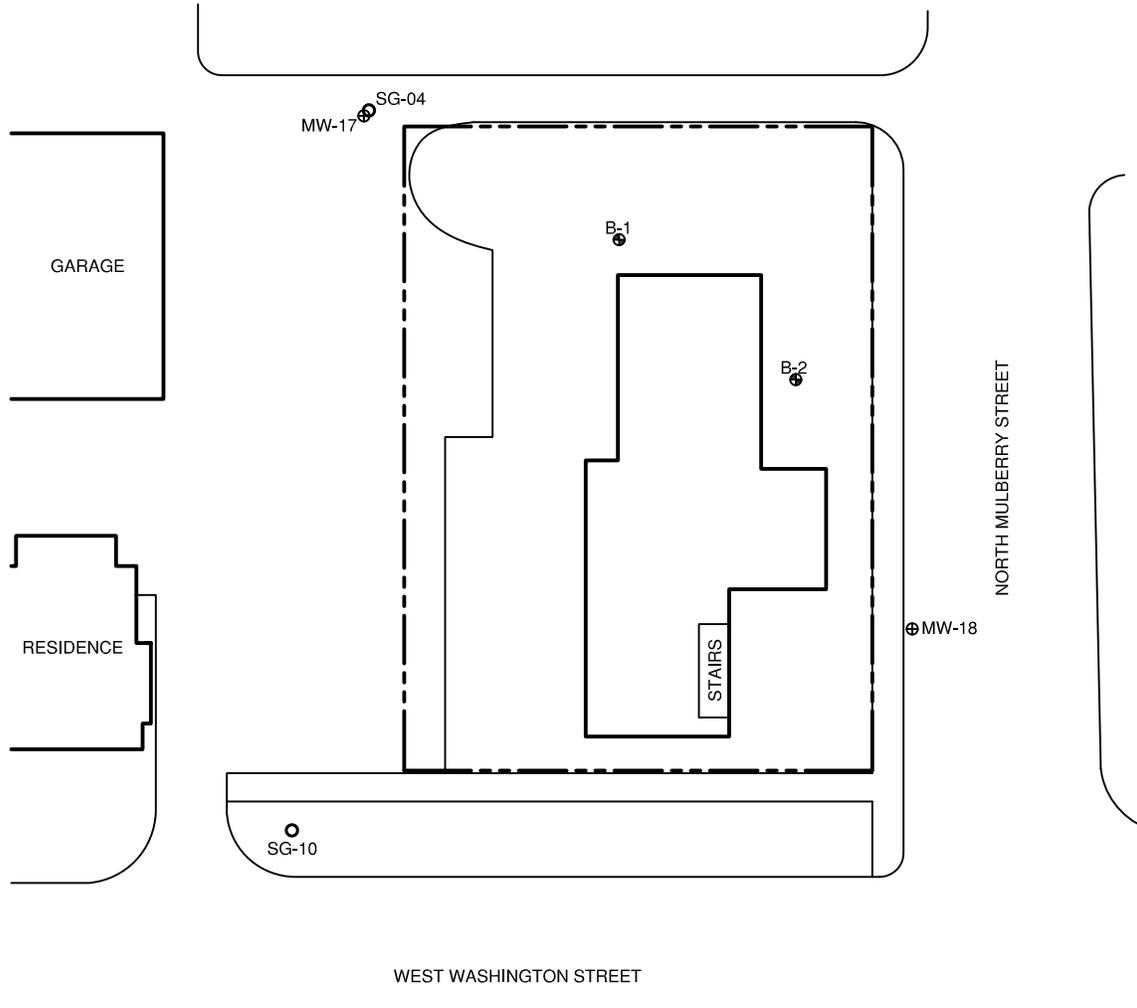


PROJECT: Sanitarium (Site 1)
 LOCATION: 289 W. Harrison St.
 PREPARED FOR: Retreat at Mineral Springs, LP
 PROJECT NO: 16IN0712

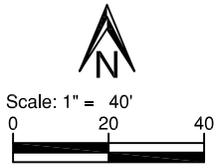
Project Manager: PW
 Checked By: DH
 Drawn By: JT
 Date: 11/16

Alt & Witzig Consulting Services
 4105 West 99th Street • Carmel, IN 46032
 Telephone: (317) 875-7000 • Fax (317) 876-3705

FIGURE 2B
BORING LOCATION PLAN-SITE 2



- LEGEND**
- = SITE BOUNDARY
 - = SOIL BORING
 - ⊕ = MONITORING WELL
 - = PERMANENT SOIL VAPOR POINT

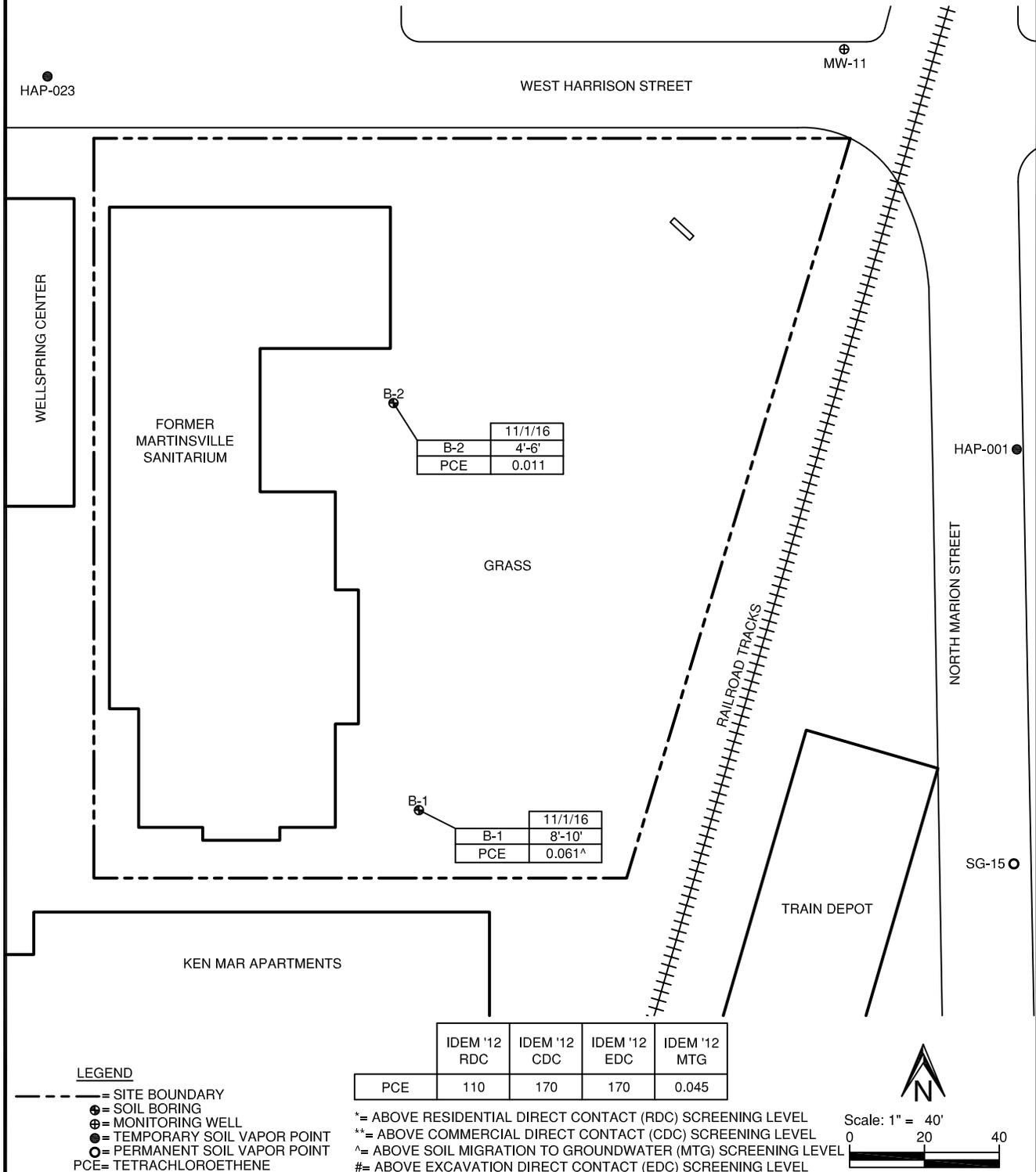


PROJECT: County Jail (Site 2)
 LOCATION: 110 W. Washington St.
 PREPARED FOR: Retreat at Mineral Springs, LP
 PROJECT NO: 16IN0712

Project Manager: PW
 Checked By: DH
 Drawn By: JT
 Date: 11/16

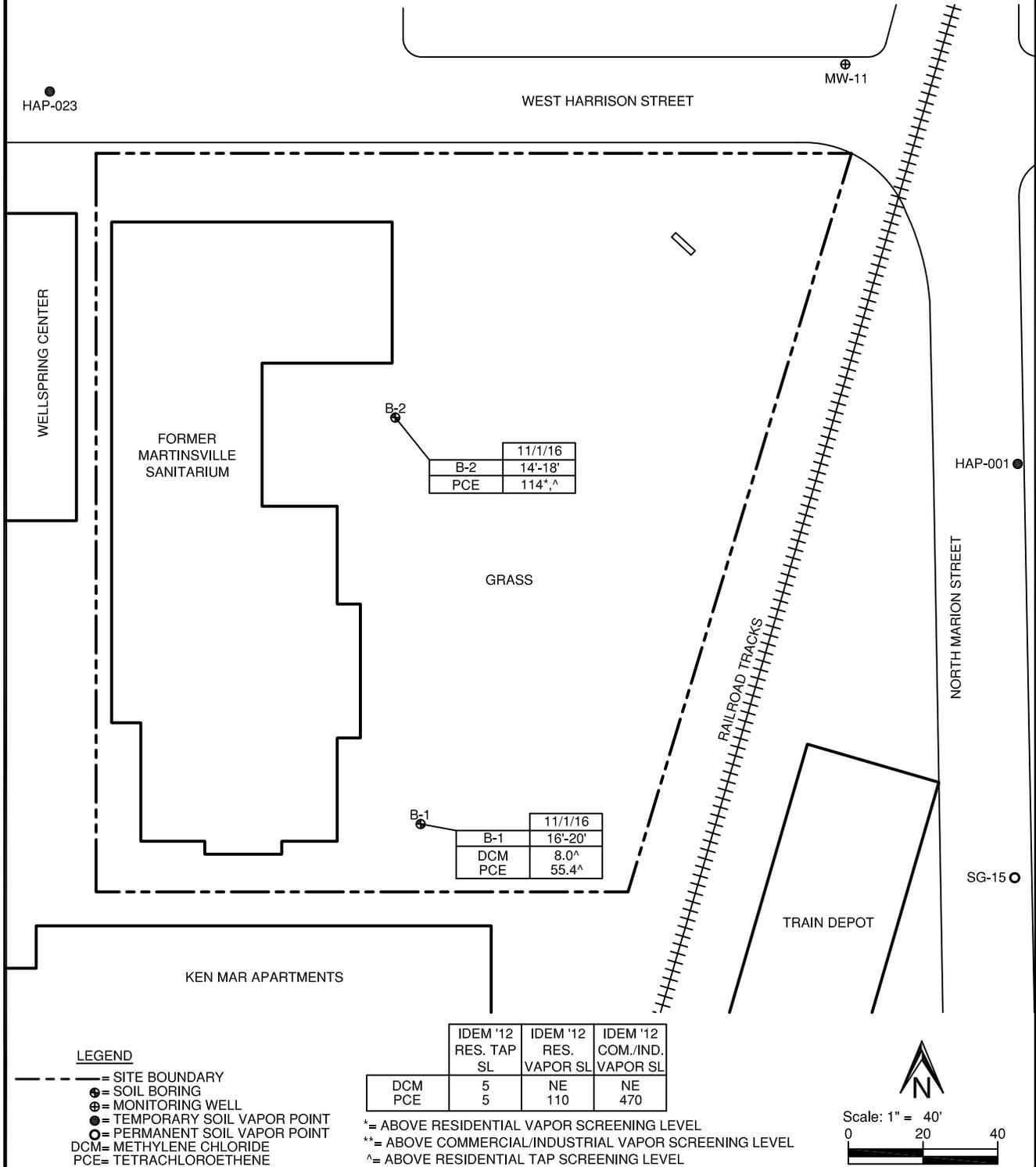
Alt & Witzig Consulting Services
 4105 West 99th Street • Carmel, IN 46032
 Telephone: (317) 875-7000 • Fax (317) 876-3705

**FIGURE 3
SOIL ANALYTICAL RESULTS
ABOVE LABORATORY REPORTING LIMITS (mg/kg)**



<p>PROJECT: Sanitarium (Site 1) LOCATION: 289 W. Harrison St. PREPARED FOR: Retreat at Mineral Springs, LP PROJECT NO: 16IN0712</p>	<p>Project Manager: PW Checked By: DH Drawn By: JT Date: 11/16</p>	<p>Alt & Witzig Consulting Services 4105 West 99th Street • Carmel, IN 46032 Telephone: (317) 875-7000 • Fax (317) 876-3705</p>
--	---	--

**FIGURE 4A
GROUNDWATER ANALYTICAL RESULTS
ABOVE LABORATORY REPORTING LIMITS (µg/L)**

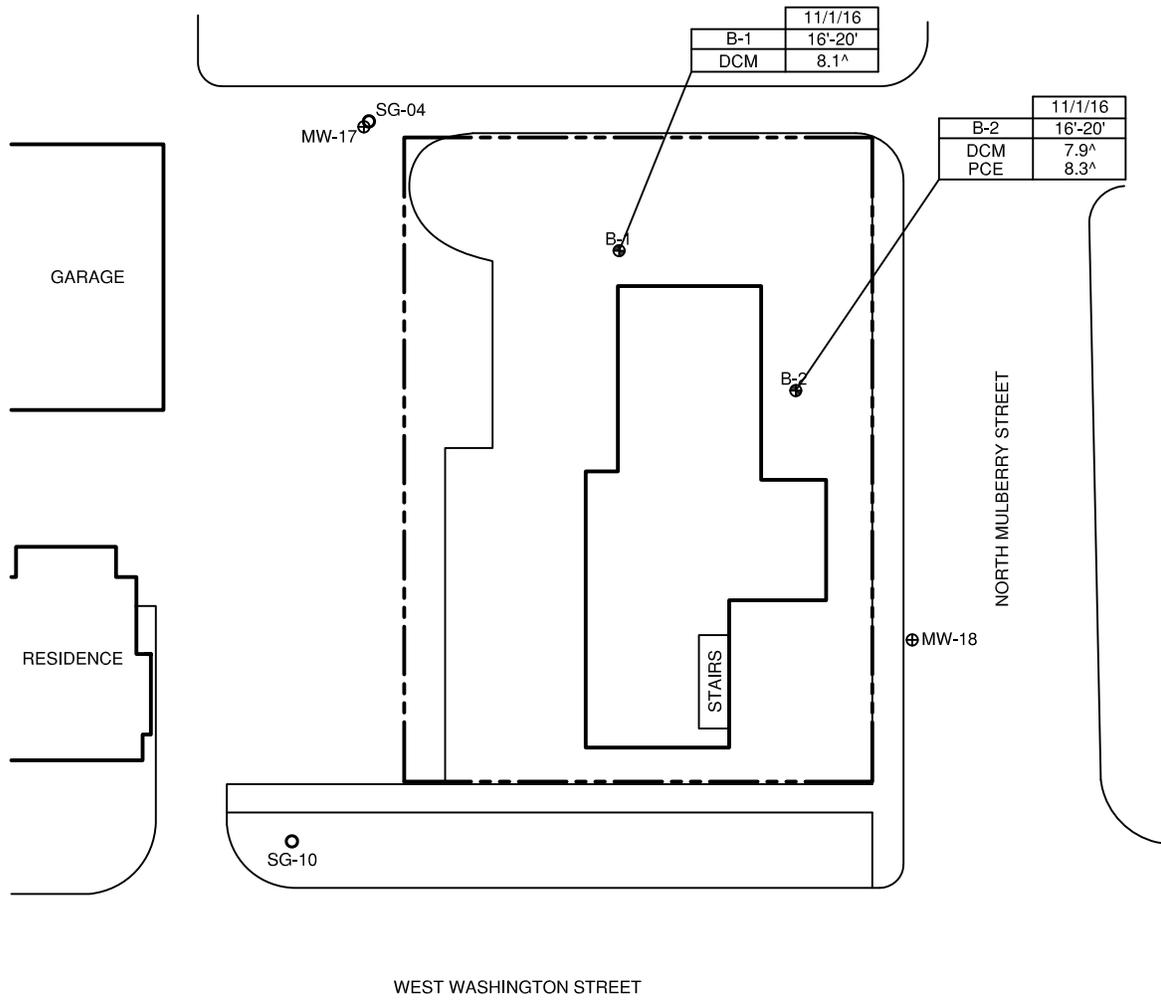


PROJECT: Sanitarium (Site 1)
LOCATION: 289 W. Harrison St.
PREPARED FOR: Retreat at Mineral Springs, LP
PROJECT NO: 16IN0712

Project Manager: PW
Checked By: DH
Drawn By: JT
Date: 11/16

Alt & Witzig Consulting Services
 4105 West 99th Street • Carmel, IN 46032
 Telephone: (317) 875-7000 • Fax (317) 876-3705

**FIGURE 4B
GROUNDWATER ANALYTICAL RESULTS
ABOVE LABORATORY REPORTING LIMITS (µg/L)**



	11/1/16
B-1	16'-20'
DCM	8.1 [^]

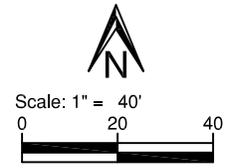
	11/1/16
B-2	16'-20'
DCM	7.9 [*]
PCE	8.3 [^]

	IDEM '12 RES. TAP SL	IDEM '12 RES. VAPOR SL	IDEM '12 COM./IND. VAPOR SL
DCM	5	NE 110	NE 470
PCE	5		

LEGEND

- SITE BOUNDARY
- ⊙ SOIL BORING
- ⊕ MONITORING WELL
- PERMANENT SOIL VAPOR POINT

*= ABOVE RESIDENTIAL VAPOR SCREENING LEVEL
 **= ABOVE COMMERCIAL/INDUSTRIAL VAPOR SCREENING LEVEL
 ^= ABOVE RESIDENTIAL TAP SCREENING LEVEL

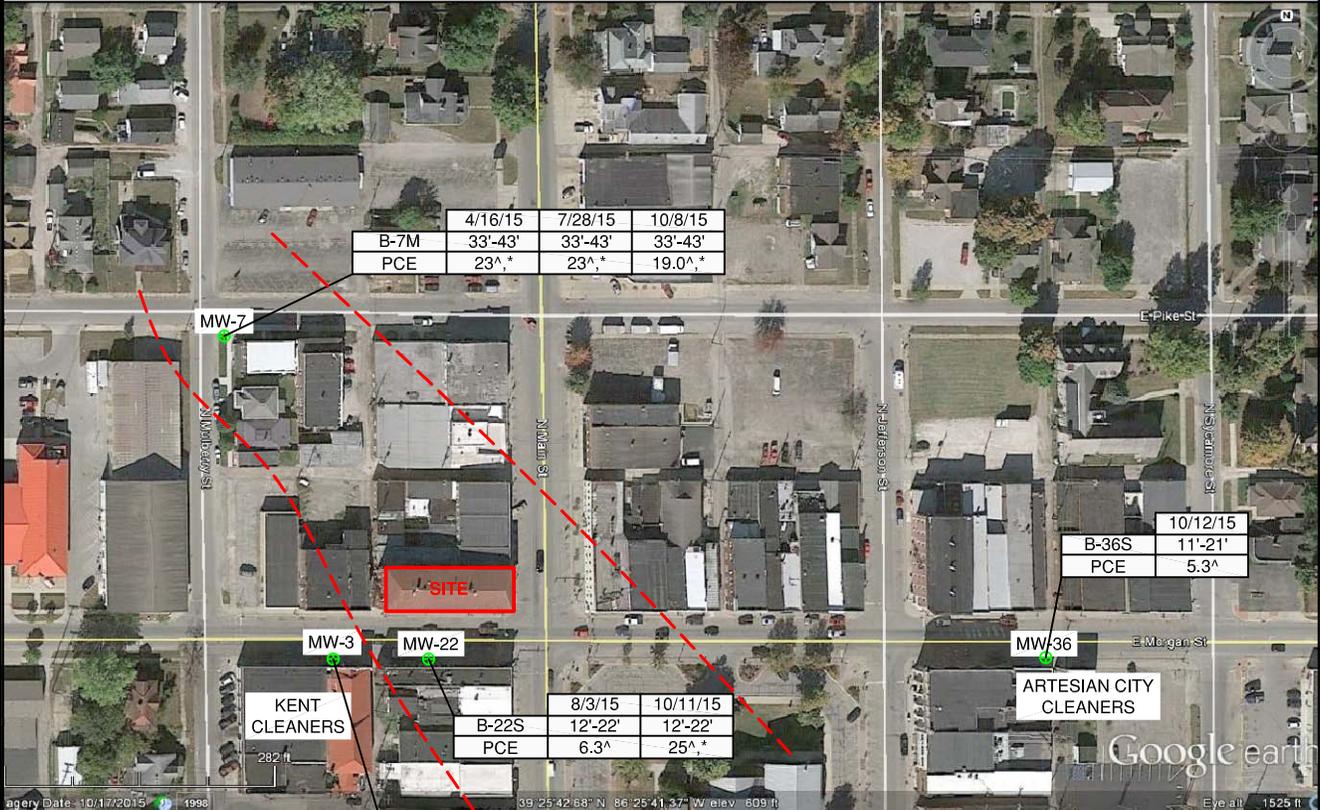


PROJECT: County Jail (Site 2)
 LOCATION: 110 W. Washington St.
 PREPARED FOR: Retreat at Mineral Springs, LP
 PROJECT NO: 16IN0712

Project Manager: PW
 Checked By: DH
 Drawn By: JT
 Date: 11/16

Alt & Witzig Consulting Services
 4105 West 99th Street • Carmel, IN 46032
 Telephone: (317) 875-7000 • Fax (317) 876-3705

FIGURE 5
SITE 3-KIVETT'S
U.S. EPA MONITORING WELL RESULTS-2015 (µg/L)



	4/16/15	7/28/15	10/8/15
B-7M	33'-43'	33'-43'	33'-43'
PCE	23 [^] *	23 [^] *	19.0 [^] *

	10/12/15
B-36S	11'-21'
PCE	5.3 [^]

	8/3/15	10/11/15
B-22S	12'-22'	12'-22'
PCE	6.3 [^]	25 [^] *

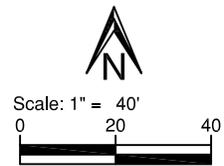
	4/16/15	7/30/15	10/11/15
B-3S	10'-20'	10'-20'	10'-20'
PCE	11 [^]	9.8 [^]	14.0 [^]

LEGEND

- ⊕ = MONITORING WELL
- - - PCE ABOVE IDEM RCG RESIDENTIAL VAPOR EXPOSURE GROUNDWATER SCREENING LEVEL.
- PCE= TETRACHLOROETHENE

	IDEM '12 RES. TAP SL	IDEM '12 RES. VAPOR SL	IDEM '12 COM./IND. VAPOR SL
PCE	5	110	470

- *= ABOVE RESIDENTIAL VAPOR SCREENING LEVEL
- **= ABOVE COMMERCIAL/INDUSTRIAL VAPOR SCREENING LEVEL
- ^= ABOVE RESIDENTIAL TAP SCREENING LEVEL



PROJECT: Sanitarium (Site 1)
LOCATION: 289 W. Harrison St.
PREPARED FOR: Retreat at Mineral Springs, LP
PROJECT NO: 16IN0712

Project Manager: PW
Checked By: DH
Drawn By: JT
Date: 11/16

Alt & Witzig Consulting Services
 4105 West 99th Street • Carmel, IN 46032
 Telephone: (317) 875-7000 • Fax (317) 876-3705

APPENDIX B

Sampling and Analysis Plan

SAMPLING AND ANALYSIS PLAN

Goal:

Advance soil borings to determine if the soil and/or groundwater on the Sites have been impacted by the Pike & Mulberry Streets PCE Plume.

Sample ID	Location	Media		Depth		Analysis		Soil		Groundwater	
		Soil	Groundwater	Soil	Groundwater	Soil	Groundwater	Terracore	40-mL vials		
Site 1: B-1	Within former gasoline UST excavation	1	1	Highest PID or between 0-10 ft.	Interface	cVOC	cVOC	1			3
Site 1: B-2	Approximately 5 feet north of former gasoline UST excavatoin	1	1	Highest PID or between 0-10 ft.	Interface	cVOC	cVOC	1			3
Site 2: B-1	Approximately 5 feet west of former gasoline UST excavatoin	1	1	Highest PID or between 0-10 ft.	Interface	cVOC	cVOC	1			3
Site 2: B-2	Approximately 5 feet south of former gasoline UST excavatoin	1	1	Highest PID or between 0-10 ft.	Interface	cVOC	cVOC	1			3
Site 3: B-1	Adjacent to Site 3 if utilities allow	1	1	Highest PID or between 0-10 ft.	Interface	cVOC	cVOC	1			3
Total:		5	5					1			3

Scope and/or Additional Comments:

Collect one (1) soil and one (1) groundwater sample from each boring.
 Place on ice. Submit to Pace Analytical Services.

APPENDIX C

Boring Logs



4105 West 99th Street
 Carmel, Indiana 46032-1194
 317-875-7000/317-876-3705(Fax)

Client: Retreat at Mineral Springs, LP		Alt & Witzig File No: 16IN0712		Boring/Well: Site 1: B-1	
Project: 3 Martinsville Sites			Well Construction Data		
Date Started: 11/1/2016		Date Completed: 11/1/2016		Screen: SP-16  From: 16.0 To: 20.0	
Logged By: B. Rutherford		Checked By: P. Warren		Pack: N/A  From: N/A To: N/A	
Drilling Co.: A&W Consulting Services		Driller: B. Rutherford		Seal: N/A  From: N/A To: N/A	
Method: Dual Tube		Equipment: Geoprobe 5410		Grout: N/A  From: N/A To: N/A	
Boring Depth: 20.0 feet		Ground Surface Elevation: N/A		Inner Casing: N/A	
Initial GW Level: N/A		GW Level: N/A		Outer Casing/Stick Up: N/A	

Depth	Sample	Sample Number	Blow Count	Rec. (%)	PID (ppm)	Lith.	Description	Remarks	Well Construction
0.0		1		50	0.0		Very Dark Brown (10 YR 2/2) SILT LOAM		
0.0					0.0		Dark Brown (10 YR 3/3) SILTY CLAY LOAM		
5.0		2		40	0.0		Dark Brown (10 YR 3/3) SANDY CLAY LOAM		
0.0					0.0		Dark Brown (10 YR 3/3) SANDY CLAY LOAM		
10.0		3		50	0.0		Brown (10 YR 4/3) Dry Medium to Coarse SAND and GRAVEL	Soil Sample @ 8'-10'	
0.0					0.0		Brown (10 YR 4/3) Dry Medium to Coarse SAND and GRAVEL		
0.0		4		60	0.0		Brown (10 YR 4/3) Dry Medium to Coarse SAND and GRAVEL		
0.0					0.0		Brown (10 YR 4/3) Wet Medium to Coarse SAND and GRAVEL		
0.0		5		60	0.0		Brown (10 YR 4/3) Wet Medium to Coarse SAND and GRAVEL		
0.0					0.0		Brown (10 YR 4/3) Wet Medium to Coarse SAND and GRAVEL		
20.0							Boring Terminated at 20.0 feet		



4105 West 99th Street
 Carmel, Indiana 46032-1194
 317-875-7000/317-876-3705(Fax)

Client: Retreat at Mineral Springs, LP		Alt & Witzig File No: 16IN0712		Boring/Well: Site 1: B-2	
Project: 3 Martinsville Sites			Well Construction Data		
Date Started: 11/1/2016		Date Completed: 11/1/2016		Screen: SP-16  From: 14.0 To: 18.0	
Logged By: B. Rutherford		Checked By: P. Warren		Pack: N/A  From: N/A To: N/A	
Drilling Co.: A&W Consulting Services		Driller: B. Rutherford		Seal: N/A  From: N/A To: N/A	
Method: Dual Tube		Equipment: Geoprobe 5410		Grout: N/A  From: N/A To: N/A	
Boring Depth: 20.0 feet		Ground Surface Elevation: N/A		Inner Casing: N/A	
Initial GW Level: N/A		GW Level: 14.50		Outer Casing/Stick Up: N/A	

Depth	Sample	Sample Number	Blow Count	Rec. (%)	PI D (ppm)	Lith.	Description	Remarks	Well Construction
0.0		1		60	0.0		Very Dark Brown (10 YR 2/2) SILT LOAM		
0.0					0.0		Dark Brown (10 YR 3/3) SILTY CLAY LOAM		
5.0		2		60	0.0		Dark Brown (10 YR 3/3) SANDY CLAY LOAM	Soil Sample @ 4'-6'	
10.0		3		60	0.0		Brown (10 YR 4/3) Dry Medium to Coarse SAND and GRAVEL		
15.0		4		60	0.0		Brown (10 YR 4/3) Wet Medium to Coarse SAND and GRAVEL		
20.0		5		50	0.0		Brown (10 YR 4/3) Wet Medium to Coarse SAND and GRAVEL		
20.0							Boring Terminated at 20.0 feet		



4105 West 99th Street
 Carmel, Indiana 46032-1194
 317-875-7000/317-876-3705(Fax)

Client: Retreat at Mineral Springs, LP		Alt & Witzig File No: 16IN0712		Boring/Well: Site 2: B-1	
Project: 3 Martinsville Sites			Well Construction Data		
Date Started: 11/1/2016		Date Completed: 11/1/2016		Screen: SP-16  From: 16.0 To: 20.0	
Logged By: B. Rutherford		Checked By: P. Warren		Pack: N/A  From: N/A To: N/A	
Drilling Co.: A&W Consulting Services		Driller: B. Rutherford		Seal: N/A  From: N/A To: N/A	
Method: Dual Tube		Equipment: Geoprobe 5410		Grout: N/A  From: N/A To: N/A	
Boring Depth: 20.0 feet		Ground Surface Elevation: N/A		Inner Casing: N/A	
Initial GW Level: N/A		GW Level: 17.00		Outer Casing/Stick Up: N/A	

Depth	Sample	Sample Number	Blow Count	Rec. (%)	PID (ppm)	Lith.	Description	Remarks	Well Construction
0.0							Black (10 YR 2/1) TOPSOIL		
0.0		1		60			Black (10 YR 2/1) Stone Gravel Brick FILL MATERIAL		
5.0							Brown (10 YR 4/3) SILTY CLAY LOAM		
5.0		2		60			Dark Brown (10 YR 3/3) SANDY CLAY LOAM		
10.0							Brown (10 YR 4/3) Dry Medium to Coarse SAND and GRAVEL	Soil Sample @ 8'-10'	
10.0		3		60					
15.0								Dual Tube Refusal @ 14'	
15.0		4		60					
15.0							BLANK DRILL (SP-16)		
20.0							Boring Terminated at 20.0 feet		



4105 West 99th Street
 Carmel, Indiana 46032-1194
 317-875-7000/317-876-3705(Fax)

Client: Retreat at Mineral Springs, LP		Alt & Witzig File No: 16IN0712		Boring/Well: Site 2: B-2	
Project: 3 Martinsville Sites			Well Construction Data		
Date Started: 11/1/2016		Date Completed: 11/1/2016		Screen: SP-16  From: 16.0 To: 20.0	
Logged By: B. Rutherford		Checked By: P. Warren		Pack: N/A  From: N/A To: N/A	
Drilling Co.: A&W Consulting Services		Driller: B. Rutherford		Seal: N/A  From: N/A To: N/A	
Method: Dual Tube		Equipment: Geoprobe 5410		Grout: N/A  From: N/A To: N/A	
Boring Depth: 20.0 feet		Ground Surface Elevation: N/A		Inner Casing: N/A	
Initial GW Level: N/A		GW Level: 17.00		Outer Casing/Stick Up: N/A	

Depth	Sample	Sample Number	Blow Count	Rec. (%)	PI D (ppm)	Lith.	Description	Remarks	Well Construction
0.0		1		60	0.0		Very Dark Brown (10 YR 2/2) SILT LOAM		
0.0					0.0		Dark Brown (10 YR 3/3) SILTY CLAY LOAM	Soil Sample @ 4'-6'	
5.0		2		60	0.0		Dark Brown (10 YR 3/3) SANDY CLAY LOAM		
0.0					0.0		Brown (10 YR 4/3) Dry Medium to Coarse SAND and GRAVEL		
0.0		3		60	0.0				
0.0					0.0				
0.0		4		60	0.0				
0.0					0.0				
15.0							BLANK DRILL (SP-16)	Dual Tube Refusal @ 14'	
20.0							Boring Terminated at 20.0 feet		

APPENDIX D

Laboratory Analytical Results Tables

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY
FORMER SANITARIUM (SITE 1) AND
FORMER JAIL/SHERIFF'S HOUSE (SITE 2)
MARTINSVILLE, INDIANA

<i>Sample Identification</i>	<i>Sample Depth (feet bgs)</i>	<i>Matrix</i>	<i>Collection Date</i>	<i>Parameters</i>	<i>Analytical Method</i>
Site 1: B-1	8-10	Soil	11/1/2016	cVOCs	US EPA method SW846-8260
Site 1: B-2	4-6	Soil	11/1/2016	cVOCs	US EPA method SW846-8260
Site 2: B-1	8-10	Soil	11/1/2016	cVOCs	US EPA method SW846-8260
Site 2: B-2	4-6	Soil	11/1/2016	cVOCs	US EPA method SW846-8260
Site 1: B-1	16-20	Groundwater	11/1/2016	cVOCs	US EPA method SW846-8260
Site 1: B-2	14-18	Groundwater	11/1/2016	cVOCs	US EPA method SW846-8260
Site 2: B-1	16-20	Groundwater	11/1/2016	cVOCs	US EPA method SW846-8260
Site 2: B-2	16-20	Groundwater	11/1/2016	cVOCs	US EPA method SW846-8260

Abbreviations & Notes

US EPA = United States Environmental Protection Agency

cVOCs = Chlorinated Volatile Organic Compounds

TABLE 2

SUMMARY OF SOIL ANALYTICAL DATA
FORMER SANITARIUM (SITE 1) AND
FORMER JAIL/SHERIFF'S HOUSE (SITE 2)
MARTINSVILLE, INDIANA

<i>Sample ID (and Depth - ft.):</i>	<i>IDEM 2012 RCG RESIDENTIAL DIRECT CONTACT SLs (*)</i>	<i>IDEM 2012 RCG COMMERCIAL DIRECT CONTACT SLs (**)</i>	<i>IDEM 2012 RCG EXCAVATION DIRECT CONTACT SLs (#)</i>	<i>IDEM 2012 RCG SOIL MIGRATION TO GROUNDWATER SLs (^)</i>	Site 1: B-1 (8-10)	Site 1: B-2 (4-6)	Site 2: B-1 (8-10)	Site 2: B-2 (4-6)
<i>Sample Date:</i>					11/1/2016	11/1/2016	11/1/2016	11/1/2016
<i>Parameters</i>								
SHORT LIST VOCs (8260)								
1,1-Dichloroethane (1,1-DCA)	50	160	1,700	0.16	<0.0054	<0.0056	<0.14	<0.0043
1,1-Dichloroethene (1,1-DCE)	320	1,000	1,200	0.05	<0.0054	<0.0056	<0.14	R <0.0043
cis-1,2-Dichloroethene (cis-1,2-DCE)	220	2,300	2,400	0.41	<0.0054	<0.0056	<0.14	<0.0043
trans-1,2-Dichloroethene (trans-1,2-DCE)	1,900	1,900	1,900	0.62	<0.0054	<0.0056	<0.14	<0.0043
Methylene Chloride	490	3,200	3,300	0.025	<0.022	<0.022	<0.55	R <0.017
Tetrachloroethene (PCE)	110	170	170	0.045	0.061 ^	0.011	<0.14	R <0.0043
1,1,1-Trichloroethane (1,1,1-TCA)	640	640	640	1.4	<0.0054	<0.0056	<0.14	<0.0043
Trichloroethene (TCE)	5.7	19	95	0.036	<0.0054	<0.0056	<0.14	R <0.0043
Vinyl Chloride	0.83	17	1,300	0.014	<0.0054	<0.0056	<0.14	R <0.0043

Abbreviations & Notes

All results and IDEM Screening Levels are reported in mg/kg or parts per million (ppm)

IDEM = Indiana Department of Environmental Management

RCG = Remediation Closure Guide

SLs = Screening Levels (updated March 2016)

¹ = Identified in the IDEM guidance as Lead Scavengers

NA = Not analyzed NE=Not Established

R = Reporting limit (RL) above closure level due to dilution

* = Above Residential Direct Contact Screening Level

** = Above Commercial/Industrial Direct Contact Screening Level

= Above Excavation Direct Contact Screening Level

^ = Above Soil Migration to Groundwater Screening Level

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL DATA
FORMER SANITARIUM (SITE 1) AND
FORMER JAIL/SHERIFF'S HOUSE (SITE 2)
MARTINSVILLE, INDIANA

<i>Sample ID</i>	<i>IDEM 2012 RCG RESIDENTIAL TAP SLs (^)</i>	<i>IDEM 2012 RCG RESIDENTIAL VAPOR SLs (*)</i>	<i>IDEM 2012 RCG COM/IND VAPOR SLs (**)</i>	Site 1: B-1	Site 1: B-2	Site 2: B-1	Site 2: B-2
<i>Sample Date:</i>				11/1/2016	11/1/2016	11/1/2016	11/1/2016
<i>Parameters</i>							
SHORT LIST VOCs (8260)							
1,1-Dichloroethane (1,1-DCA)	28	130	550	<5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene (1,1-DCE)	7	300	1,300	<5.0	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene (cis-1,2-DCE)	70	NE	NE	<5.0	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene (trans-1,2-DCE)	100	NE	NE	<5.0	<5.0	<5.0	<5.0
Methylene Chloride	5	NE	NE	8.0 ^	<5.0	8.1 ^	7.9 ^
Tetrachloroethene (PCE)	5	110	470	55.4 ^	114 *,^	<5.0	8.3 ^
1,1,1-Trichloroethane (1,1,1-TCA)	200	13,000	54,000	<5.0	<5.0	<5.0	<5.0
Trichloroethene (TCE)	5	9.1	38	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride	2	2.1	35	<5.0 R	<5.0 R	<5.0 R	<5.0 R

Abbreviations & Notes

All results and IDEM Screening Levels are reported in µg/L or parts per billion (ppb)

IDEM = Indiana Department of Environmental Management

RCG = Remediation Closure Guide

SLs = Screening Levels (updated March 2016)

¹ = Identified in the IDEM guidance as Lead Scavengers

NA = Not analyzed NE = Not Established

R = Reporting limit (RL) above closure level due to dilution

^ = Above Residential Tap Screening Level

* = Above Residential Vapor Screening Level

** = Above Commercial/Industrial Vapor Screening Level

APPENDIX E

Laboratory Certificate of Analysis and Sampling Chain of Custody

November 09, 2016

Ms. Paula Warren
Alt & Witzig Engineering, Inc.
4105 West 99th Street
Carmel, IN 46032

RE: Project: Martinsville Sites 16IN0712
Pace Project No.: 50157906

Dear Ms. Warren:

Enclosed are the analytical results for sample(s) received by the laboratory on November 01, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC 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,



Regina Bedel
regina.bedel@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



October 7, 2016

Quality Office General Case Narrative

Methylene Chloride Contamination

Pace is experiencing Methylene Chloride contamination. It is not uncommon to see this contamination when air conditioning is being used and utilization of Methylene Chloride in the organic extractions lab increases. Additionally, construction activities within the lab have temporarily increased airflow that can potentially contribute to contamination. Any positive Methylene Chloride results believed to be due to laboratory contamination are being qualified appropriately. The laboratory is making every effort to minimize this contamination.

A handwritten signature in black ink that reads "Beth Schrage". The signature is written in a cursive, flowing style.

Beth Schrage
Quality Manager
Pace Analytical Services



Pace Analytical Services, LLC
Not NELAP Accredited
4860 Blazer Parkway
Dublin, OH 43017
(614)486-5421

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

CERTIFICATIONS

Project: Martinsville Sites 16IN0712
Pace Project No.: 50157906

Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268
Illinois Certification #: 003971
Indiana Certification #: C-49-06
Kansas/NELAP Certification #:E-10177
Kentucky UST Certification #: 80226
Kentucky WW Certification #:98019

Ohio VAP Certification #: CL-0065
Oklahoma Certification #: 2016-075
Texas Certification #: T104704355-16-10
West Virginia Certification #: 330
Wisconsin Certification #: 999788130
USDA Soil Permit #: P330-16-00257

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE SUMMARY

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50157906001	Site 1; B-1 8-10	Solid	11/01/16 11:50	11/01/16 16:36
50157906002	Site 1; B-2 4-6	Solid	11/01/16 10:40	11/01/16 16:36
50157906003	Site 2; B-1 8-10	Solid	11/01/16 14:00	11/01/16 16:36
50157906004	Site 2; B-2 4-6	Solid	11/01/16 15:00	11/01/16 16:36
50157906005	Site 1; B-1	Water	11/01/16 12:00	11/01/16 16:36
50157906006	Site 1; B-2	Water	11/01/16 10:50	11/01/16 16:36
50157906007	Site 2; B-1	Water	11/01/16 14:15	11/01/16 16:36
50157906008	Site 2; B-2	Water	11/01/16 15:20	11/01/16 16:36

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE ANALYTE COUNT

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Lab ID	Sample ID	Method	Analysts	Analytes Reported
50157906001	Site 1; B-1 8-10	EPA 8260	JLZ	12
		SM 2540G	SKK	1
50157906002	Site 1; B-2 4-6	EPA 8260	JLZ	12
		SM 2540G	SKK	1
50157906003	Site 2; B-1 8-10	EPA 8260	JLZ	12
		SM 2540G	SKK	1
50157906004	Site 2; B-2 4-6	EPA 8260	JLZ	12
		SM 2540G	SKK	1
50157906005	Site 1; B-1	EPA 8260	JLZ	12
50157906006	Site 1; B-2	EPA 8260	JLZ	12
50157906007	Site 2; B-1	EPA 8260	JLZ	12
50157906008	Site 2; B-2	EPA 8260	JLZ	12

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SUMMARY OF DETECTION

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50157906001	Site 1; B-1 8-10					
EPA 8260	Tetrachloroethene	0.061	mg/kg	0.0054	11/06/16 04:16	
SM 2540G	Percent Moisture	4.5	%	0.10	11/03/16 16:37	
50157906002	Site 1; B-2 4-6					
EPA 8260	Tetrachloroethene	0.011	mg/kg	0.0056	11/08/16 16:59	
SM 2540G	Percent Moisture	11.4	%	0.10	11/03/16 16:37	
50157906003	Site 2; B-1 8-10					
SM 2540G	Percent Moisture	3.7	%	0.10	11/03/16 16:38	
50157906004	Site 2; B-2 4-6					
SM 2540G	Percent Moisture	12.8	%	0.10	11/03/16 16:38	
50157906005	Site 1; B-1					
EPA 8260	Methylene Chloride	8.0	ug/L	5.0	11/04/16 13:22	C9
EPA 8260	Tetrachloroethene	55.4	ug/L	5.0	11/04/16 13:22	
50157906006	Site 1; B-2					
EPA 8260	Tetrachloroethene	114	ug/L	5.0	11/08/16 18:03	
50157906007	Site 2; B-1					
EPA 8260	Methylene Chloride	8.1	ug/L	5.0	11/04/16 15:21	C9
50157906008	Site 2; B-2					
EPA 8260	Methylene Chloride	7.9	ug/L	5.0	11/04/16 15:44	C9
EPA 8260	Tetrachloroethene	8.3	ug/L	5.0	11/04/16 15:44	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Sample: Site 1; B-1 8-10 **Lab ID: 50157906001** Collected: 11/01/16 11:50 Received: 11/01/16 16:36 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA		Analytical Method: EPA 8260						
1,1-Dichloroethane	ND	mg/kg	0.0054	1		11/06/16 04:16	75-34-3	
1,1-Dichloroethene	ND	mg/kg	0.0054	1		11/06/16 04:16	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.0054	1		11/06/16 04:16	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.0054	1		11/06/16 04:16	156-60-5	
Methylene Chloride	ND	mg/kg	0.022	1		11/06/16 04:16	75-09-2	
Tetrachloroethene	0.061	mg/kg	0.0054	1		11/06/16 04:16	127-18-4	
1,1,1-Trichloroethane	ND	mg/kg	0.0054	1		11/06/16 04:16	71-55-6	
Trichloroethene	ND	mg/kg	0.0054	1		11/06/16 04:16	79-01-6	
Vinyl chloride	ND	mg/kg	0.0054	1		11/06/16 04:16	75-01-4	
Surrogates								
Dibromofluoromethane (S)	88	%	70-128	1		11/06/16 04:16	1868-53-7	
Toluene-d8 (S)	108	%	72-139	1		11/06/16 04:16	2037-26-5	
4-Bromofluorobenzene (S)	89	%	65-127	1		11/06/16 04:16	460-00-4	
Percent Moisture		Analytical Method: SM 2540G						
Percent Moisture	4.5	%	0.10	1		11/03/16 16:37		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Sample: Site 1; B-2 4-6 **Lab ID: 50157906002** Collected: 11/01/16 10:40 Received: 11/01/16 16:36 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA		Analytical Method: EPA 8260						
1,1-Dichloroethane	ND	mg/kg	0.0056	1		11/08/16 16:59	75-34-3	
1,1-Dichloroethene	ND	mg/kg	0.0056	1		11/08/16 16:59	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.0056	1		11/08/16 16:59	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.0056	1		11/08/16 16:59	156-60-5	
Methylene Chloride	ND	mg/kg	0.022	1		11/08/16 16:59	75-09-2	
Tetrachloroethene	0.011	mg/kg	0.0056	1		11/08/16 16:59	127-18-4	
1,1,1-Trichloroethane	ND	mg/kg	0.0056	1		11/08/16 16:59	71-55-6	
Trichloroethene	ND	mg/kg	0.0056	1		11/08/16 16:59	79-01-6	
Vinyl chloride	ND	mg/kg	0.0056	1		11/08/16 16:59	75-01-4	
Surrogates								
Dibromofluoromethane (S)	103	%	70-128	1		11/08/16 16:59	1868-53-7	
Toluene-d8 (S)	99	%	72-139	1		11/08/16 16:59	2037-26-5	
4-Bromofluorobenzene (S)	110	%	65-127	1		11/08/16 16:59	460-00-4	
Percent Moisture		Analytical Method: SM 2540G						
Percent Moisture	11.4	%	0.10	1		11/03/16 16:37		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Sample: Site 2; B-1 8-10 **Lab ID: 50157906003** Collected: 11/01/16 14:00 Received: 11/01/16 16:36 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA		Analytical Method: EPA 8260						
1,1-Dichloroethane	ND	mg/kg	0.14	25		11/08/16 17:31	75-34-3	
1,1-Dichloroethene	ND	mg/kg	0.14	25		11/08/16 17:31	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.14	25		11/08/16 17:31	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.14	25		11/08/16 17:31	156-60-5	
Methylene Chloride	ND	mg/kg	0.55	25		11/08/16 17:31	75-09-2	
Tetrachloroethene	ND	mg/kg	0.14	25		11/08/16 17:31	127-18-4	
1,1,1-Trichloroethane	ND	mg/kg	0.14	25		11/08/16 17:31	71-55-6	
Trichloroethene	ND	mg/kg	0.14	25		11/08/16 17:31	79-01-6	
Vinyl chloride	ND	mg/kg	0.14	25		11/08/16 17:31	75-01-4	
Surrogates								
Dibromofluoromethane (S)	95	%	70-128	25		11/08/16 17:31	1868-53-7	1d
Toluene-d8 (S)	99	%	72-139	25		11/08/16 17:31	2037-26-5	
4-Bromofluorobenzene (S)	91	%	65-127	25		11/08/16 17:31	460-00-4	
Percent Moisture		Analytical Method: SM 2540G						
Percent Moisture	3.7	%	0.10	1		11/03/16 16:38		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Sample: Site 2; B-2 4-6 **Lab ID: 50157906004** Collected: 11/01/16 15:00 Received: 11/01/16 16:36 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV 5035A VOA		Analytical Method: EPA 8260						
1,1-Dichloroethane	ND	mg/kg	0.0043	1		11/08/16 16:27	75-34-3	
1,1-Dichloroethene	ND	mg/kg	0.0043	1		11/08/16 16:27	75-35-4	
cis-1,2-Dichloroethene	ND	mg/kg	0.0043	1		11/08/16 16:27	156-59-2	
trans-1,2-Dichloroethene	ND	mg/kg	0.0043	1		11/08/16 16:27	156-60-5	
Methylene Chloride	ND	mg/kg	0.017	1		11/08/16 16:27	75-09-2	
Tetrachloroethene	ND	mg/kg	0.0043	1		11/08/16 16:27	127-18-4	
1,1,1-Trichloroethane	ND	mg/kg	0.0043	1		11/08/16 16:27	71-55-6	
Trichloroethene	ND	mg/kg	0.0043	1		11/08/16 16:27	79-01-6	
Vinyl chloride	ND	mg/kg	0.0043	1		11/08/16 16:27	75-01-4	
Surrogates								
Dibromofluoromethane (S)	100	%	70-128	1		11/08/16 16:27	1868-53-7	
Toluene-d8 (S)	83	%	72-139	1		11/08/16 16:27	2037-26-5	
4-Bromofluorobenzene (S)	102	%	65-127	1		11/08/16 16:27	460-00-4	
Percent Moisture		Analytical Method: SM 2540G						
Percent Moisture	12.8	%	0.10	1		11/03/16 16:38		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: Martinsville Sites 16IN0712
Pace Project No.: 50157906

Sample: Site 1; B-1		Lab ID: 50157906005	Collected: 11/01/16 12:00	Received: 11/01/16 16:36	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260						
1,1-Dichloroethane	ND	ug/L	5.0	1		11/04/16 13:22	75-34-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/04/16 13:22	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/04/16 13:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/04/16 13:22	156-60-5	
Methylene Chloride	8.0	ug/L	5.0	1		11/04/16 13:22	75-09-2	C9
Tetrachloroethene	55.4	ug/L	5.0	1		11/04/16 13:22	127-18-4	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/04/16 13:22	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/04/16 13:22	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/04/16 13:22	75-01-4	
Surrogates								
Dibromofluoromethane (S)	104	%.	84-118	1		11/04/16 13:22	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	79-116	1		11/04/16 13:22	460-00-4	
Toluene-d8 (S)	100	%.	86-110	1		11/04/16 13:22	2037-26-5	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Sample: Site 1; B-2		Lab ID: 50157906006		Collected: 11/01/16 10:50	Received: 11/01/16 16:36	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260						
1,1-Dichloroethane	ND	ug/L	5.0	1		11/08/16 18:03	75-34-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/08/16 18:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/08/16 18:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/08/16 18:03	156-60-5	
Methylene Chloride	ND	ug/L	5.0	1		11/08/16 18:03	75-09-2	
Tetrachloroethene	114	ug/L	5.0	1		11/08/16 18:03	127-18-4	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/08/16 18:03	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/08/16 18:03	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/08/16 18:03	75-01-4	
Surrogates								
Dibromofluoromethane (S)	98	%.	84-118	1		11/08/16 18:03	1868-53-7	
4-Bromofluorobenzene (S)	88	%.	79-116	1		11/08/16 18:03	460-00-4	
Toluene-d8 (S)	97	%.	86-110	1		11/08/16 18:03	2037-26-5	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Sample: Site 2; B-1		Lab ID: 50157906007		Collected: 11/01/16 14:15	Received: 11/01/16 16:36	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260						
1,1-Dichloroethane	ND	ug/L	5.0	1		11/04/16 15:21	75-34-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/04/16 15:21	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/04/16 15:21	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/04/16 15:21	156-60-5	
Methylene Chloride	8.1	ug/L	5.0	1		11/04/16 15:21	75-09-2	C9
Tetrachloroethene	ND	ug/L	5.0	1		11/04/16 15:21	127-18-4	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/04/16 15:21	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/04/16 15:21	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/04/16 15:21	75-01-4	
Surrogates								
Dibromofluoromethane (S)	99	%.	84-118	1		11/04/16 15:21	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	79-116	1		11/04/16 15:21	460-00-4	
Toluene-d8 (S)	87	%.	86-110	1		11/04/16 15:21	2037-26-5	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

ANALYTICAL RESULTS

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Sample: Site 2; B-2		Lab ID: 50157906008	Collected: 11/01/16 15:20	Received: 11/01/16 16:36	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260						
1,1-Dichloroethane	ND	ug/L	5.0	1		11/04/16 15:44	75-34-3	
1,1-Dichloroethene	ND	ug/L	5.0	1		11/04/16 15:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1		11/04/16 15:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1		11/04/16 15:44	156-60-5	
Methylene Chloride	7.9	ug/L	5.0	1		11/04/16 15:44	75-09-2	C9
Tetrachloroethene	8.3	ug/L	5.0	1		11/04/16 15:44	127-18-4	
1,1,1-Trichloroethane	ND	ug/L	5.0	1		11/04/16 15:44	71-55-6	
Trichloroethene	ND	ug/L	5.0	1		11/04/16 15:44	79-01-6	
Vinyl chloride	ND	ug/L	2.0	1		11/04/16 15:44	75-01-4	
Surrogates								
Dibromofluoromethane (S)	112	%.	84-118	1		11/04/16 15:44	1868-53-7	
4-Bromofluorobenzene (S)	92	%.	79-116	1		11/04/16 15:44	460-00-4	
Toluene-d8 (S)	95	%.	86-110	1		11/04/16 15:44	2037-26-5	

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: Martinsville Sites 16IN0712
Pace Project No.: 50157906

QC Batch: 359860 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 50157906005, 50157906007, 50157906008

METHOD BLANK: 1663060 Matrix: Water
Associated Lab Samples: 50157906005, 50157906007, 50157906008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/04/16 10:36	
1,1-Dichloroethane	ug/L	ND	5.0	11/04/16 10:36	
1,1-Dichloroethene	ug/L	ND	5.0	11/04/16 10:36	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/04/16 10:36	
Methylene Chloride	ug/L	ND	5.0	11/04/16 10:36	
Tetrachloroethene	ug/L	ND	5.0	11/04/16 10:36	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/04/16 10:36	
Trichloroethene	ug/L	ND	5.0	11/04/16 10:36	
Vinyl chloride	ug/L	ND	2.0	11/04/16 10:36	
4-Bromofluorobenzene (S)	%	102	79-116	11/04/16 10:36	
Dibromofluoromethane (S)	%	103	84-118	11/04/16 10:36	
Toluene-d8 (S)	%	97	86-110	11/04/16 10:36	

LABORATORY CONTROL SAMPLE: 1663061

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	52.3	105	72-123	
1,1-Dichloroethane	ug/L	50	40.2	80	70-120	
1,1-Dichloroethene	ug/L	50	41.5	83	69-127	
cis-1,2-Dichloroethene	ug/L	50	48.4	97	74-120	
Methylene Chloride	ug/L	50	43.0	86	66-130	
Tetrachloroethene	ug/L	50	49.6	99	69-119	
trans-1,2-Dichloroethene	ug/L	50	42.0	84	72-122	
Trichloroethene	ug/L	50	49.8	100	75-123	
Vinyl chloride	ug/L	50	40.3	81	61-147	
4-Bromofluorobenzene (S)	%			99	79-116	
Dibromofluoromethane (S)	%			101	84-118	
Toluene-d8 (S)	%			98	86-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1663413 1663414

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Spike Conc.	Result	Spike Conc.	Result							
1,1,1-Trichloroethane	ug/L	ND	50	50	60.8	64.9	122	130	51-140	7	20	
1,1-Dichloroethane	ug/L	ND	50	50	64.1	52.6	128	105	48-137	20	20	
1,1-Dichloroethene	ug/L	ND	50	50	56.0	56.7	112	113	51-144	1	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	57.2	57.8	114	116	43-144	1	20	
Methylene Chloride	ug/L	8.0	50	50	73.3	58.8	130	102	48-140	22	20	R1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1663413		1663414		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		50157906005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Tetrachloroethene	ug/L	55.4	50	50	106	103	101	95	38-139	3	20		
trans-1,2-Dichloroethene	ug/L	ND	50	50	66.7	57.1	133	114	50-139	15	20		
Trichloroethene	ug/L	ND	50	50	57.2	60.4	114	121	44-146	5	20		
Vinyl chloride	ug/L	ND	50	50	54.9	56.8	110	114	43-166	3	20		
4-Bromofluorobenzene (S)	%.						109	98	79-116				
Dibromofluoromethane (S)	%.						106	106	84-118				
Toluene-d8 (S)	%.						97	90	86-110				

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

QC Batch: 360643 Analysis Method: EPA 8260
 QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
 Associated Lab Samples: 50157906006

METHOD BLANK: 1666244 Matrix: Water

Associated Lab Samples: 50157906006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	5.0	11/08/16 10:36	
1,1-Dichloroethane	ug/L	ND	5.0	11/08/16 10:36	
1,1-Dichloroethene	ug/L	ND	5.0	11/08/16 10:36	
cis-1,2-Dichloroethene	ug/L	ND	5.0	11/08/16 10:36	
Methylene Chloride	ug/L	ND	5.0	11/08/16 10:36	
Tetrachloroethene	ug/L	ND	5.0	11/08/16 10:36	
trans-1,2-Dichloroethene	ug/L	ND	5.0	11/08/16 10:36	
Trichloroethene	ug/L	ND	5.0	11/08/16 10:36	
Vinyl chloride	ug/L	ND	2.0	11/08/16 10:36	
4-Bromofluorobenzene (S)	%	104	79-116	11/08/16 10:36	
Dibromofluoromethane (S)	%	102	84-118	11/08/16 10:36	
Toluene-d8 (S)	%	107	86-110	11/08/16 10:36	

LABORATORY CONTROL SAMPLE: 1666245

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	47.0	94	72-123	
1,1-Dichloroethane	ug/L	50	45.2	90	70-120	
1,1-Dichloroethene	ug/L	50	40.8	82	69-127	
cis-1,2-Dichloroethene	ug/L	50	45.1	90	74-120	
Methylene Chloride	ug/L	50	43.3	87	66-130	
Tetrachloroethene	ug/L	50	46.0	92	69-119	
trans-1,2-Dichloroethene	ug/L	50	45.6	91	72-122	
Trichloroethene	ug/L	50	45.9	92	75-123	
Vinyl chloride	ug/L	50	38.2	76	61-147	
4-Bromofluorobenzene (S)	%			92	79-116	
Dibromofluoromethane (S)	%			97	84-118	
Toluene-d8 (S)	%			97	86-110	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
 without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: Martinsville Sites 16IN0712
Pace Project No.: 50157906

QC Batch: 360020 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 50157906001

METHOD BLANK: 1664061 Matrix: Solid
Associated Lab Samples: 50157906001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	mg/kg	ND	0.0050	11/05/16 21:46	
1,1-Dichloroethane	mg/kg	ND	0.0050	11/05/16 21:46	
1,1-Dichloroethene	mg/kg	ND	0.0050	11/05/16 21:46	
cis-1,2-Dichloroethene	mg/kg	ND	0.0050	11/05/16 21:46	
Methylene Chloride	mg/kg	ND	0.020	11/05/16 21:46	
Tetrachloroethene	mg/kg	ND	0.0050	11/05/16 21:46	
trans-1,2-Dichloroethene	mg/kg	ND	0.0050	11/05/16 21:46	
Trichloroethene	mg/kg	ND	0.0050	11/05/16 21:46	
Vinyl chloride	mg/kg	ND	0.0050	11/05/16 21:46	
4-Bromofluorobenzene (S)	%	103	65-127	11/05/16 21:46	
Dibromofluoromethane (S)	%	104	70-128	11/05/16 21:46	
Toluene-d8 (S)	%	97	72-139	11/05/16 21:46	

LABORATORY CONTROL SAMPLE: 1664062

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	mg/kg	.05	0.054	108	67-123	
1,1-Dichloroethane	mg/kg	.05	0.045	90	69-115	
1,1-Dichloroethene	mg/kg	.05	0.064	128	64-133	
cis-1,2-Dichloroethene	mg/kg	.05	0.049	97	74-115	
Methylene Chloride	mg/kg	.05	0.047	95	57-126	
Tetrachloroethene	mg/kg	.05	0.039	77	66-118	
trans-1,2-Dichloroethene	mg/kg	.05	0.049	98	71-120	
Trichloroethene	mg/kg	.05	0.049	97	73-120	
Vinyl chloride	mg/kg	.05	0.073	146	54-155	
4-Bromofluorobenzene (S)	%			82	65-127	
Dibromofluoromethane (S)	%			105	70-128	
Toluene-d8 (S)	%			81	72-139	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1664063 1664064

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		Spike Conc.	Result	Spike Conc.	Result							
1,1,1-Trichloroethane	mg/kg	ND	.042	.044	0.046	0.049	109	112	37-144	7	20	
1,1-Dichloroethane	mg/kg	ND	.042	.044	0.034	0.041	82	95	39-139	19	20	
1,1-Dichloroethene	mg/kg	ND	.042	.044	0.051	0.055	123	125	36-162	7	20	
cis-1,2-Dichloroethene	mg/kg	ND	.042	.044	0.033	0.040	80	91	34-143	17	20	
Methylene Chloride	mg/kg	ND	.042	.044	0.045	0.051	76	88	35-142	14	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1664063		1664064		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		50157605002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Tetrachloroethene	mg/kg	ND	.042	.044	0.042	0.044	101	101	14-156	4	20		
trans-1,2-Dichloroethene	mg/kg	ND	.042	.044	0.039	0.046	94	104	33-147	15	20		
Trichloroethene	mg/kg	ND	.042	.044	0.034	0.038	82	87	21-164	10	20		
Vinyl chloride	mg/kg	ND	.042	.044	0.067	0.055	161	127	32-177	19	20		
4-Bromofluorobenzene (S)	%.						87	81	65-127				
Dibromofluoromethane (S)	%.						102	101	70-128				
Toluene-d8 (S)	%.						108	94	72-139				

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

QC Batch: 360455 Analysis Method: EPA 8260
 QC Batch Method: EPA 8260 Analysis Description: 8260 MSV 5035A Volatile Organics
 Associated Lab Samples: 50157906002, 50157906003, 50157906004

METHOD BLANK: 1665549 Matrix: Solid

Associated Lab Samples: 50157906002, 50157906003, 50157906004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	mg/kg	ND	0.0050	11/08/16 11:40	
1,1-Dichloroethane	mg/kg	ND	0.0050	11/08/16 11:40	
1,1-Dichloroethene	mg/kg	ND	0.0050	11/08/16 11:40	
cis-1,2-Dichloroethene	mg/kg	ND	0.0050	11/08/16 11:40	
Methylene Chloride	mg/kg	ND	0.020	11/08/16 11:40	
Tetrachloroethene	mg/kg	ND	0.0050	11/08/16 11:40	
trans-1,2-Dichloroethene	mg/kg	ND	0.0050	11/08/16 11:40	
Trichloroethene	mg/kg	ND	0.0050	11/08/16 11:40	
Vinyl chloride	mg/kg	ND	0.0050	11/08/16 11:40	
4-Bromofluorobenzene (S)	%	104	65-127	11/08/16 11:40	
Dibromofluoromethane (S)	%	103	70-128	11/08/16 11:40	
Toluene-d8 (S)	%	95	72-139	11/08/16 11:40	

LABORATORY CONTROL SAMPLE: 1665550

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	mg/kg	.05	0.050	100	67-123	
1,1-Dichloroethane	mg/kg	.05	0.047	94	69-115	
1,1-Dichloroethene	mg/kg	.05	0.047	94	64-133	
cis-1,2-Dichloroethene	mg/kg	.05	0.049	99	74-115	
Methylene Chloride	mg/kg	.05	0.047	94	57-126	
Tetrachloroethene	mg/kg	.05	0.047	93	66-118	
trans-1,2-Dichloroethene	mg/kg	.05	0.049	98	71-120	
Trichloroethene	mg/kg	.05	0.048	95	73-120	
Vinyl chloride	mg/kg	.05	0.040	80	54-155	
4-Bromofluorobenzene (S)	%			105	65-127	
Dibromofluoromethane (S)	%			97	70-128	
Toluene-d8 (S)	%			80	72-139	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

QC Batch: 359708

Analysis Method: SM 2540G

QC Batch Method: SM 2540G

Analysis Description: Dry Weight/Percent Moisture

Associated Lab Samples: 50157906001, 50157906002, 50157906003, 50157906004

SAMPLE DUPLICATE: 1662308

Parameter	Units	50157739006 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	5.9	7.0	17	5	R1

SAMPLE DUPLICATE: 1662309

Parameter	Units	50157740001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	4.2	5.0	17	5	R1

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALIFIERS

Project: Martinsville Sites 16IN0712
Pace Project No.: 50157906

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

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.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

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 Sample analyzed at a dilution due to lack of DI terracore vials remaining. JLZ 11/9/16
C9 Common Laboratory Contaminant.
R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

METHOD CROSS REFERENCE TABLE

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Parameter	Matrix	Analytical Method	Preparation Method
8260 MSV	Water	SW-846 8260C	SW-846 5030B
8260 MSV 5035A VOA	Solid	SW-846 8260C	SW-846 5035A

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Martinsville Sites 16IN0712

Pace Project No.: 50157906

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50157906005	Site 1; B-1	EPA 8260	359860		
50157906006	Site 1; B-2	EPA 8260	360643		
50157906007	Site 2; B-1	EPA 8260	359860		
50157906008	Site 2; B-2	EPA 8260	359860		
50157906001	Site 1; B-1 8-10	EPA 8260	360020		
50157906002	Site 1; B-2 4-6	EPA 8260	360455		
50157906003	Site 2; B-1 8-10	EPA 8260	360455		
50157906004	Site 2; B-2 4-6	EPA 8260	360455		
50157906001	Site 1; B-1 8-10	SM 2540G	359708		
50157906002	Site 1; B-2 4-6	SM 2540G	359708		
50157906003	Site 2; B-1 8-10	SM 2540G	359708		
50157906004	Site 2; B-2 4-6	SM 2540G	359708		

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.
7726 Moller Road, Indianapolis, IN 46268

Required Client Information: Section A

Company: Alt & Wizig Consulting Services
Address: 4105 W 99th St
Carmel, IN 46032
Phone: 317-875-7000
Fax:

Required Client Information: Section B

Report To: Paula Warren
Copy To:
Invoice To: Paula Warren
P.O.
Project Name: Martinsville Sites
Project Number: 16IN0712

Client Information (Check quote/contract):

Requested Due Date:
*TAT:
* Turn around time less than 14 days subject laboratory and contractual obligations and may in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calendar days.

To Be Completed by Pace Analytical Client: Section C

Quote Reference:
Project Manager:
Project #:
Profile #:

Required Client Information: Section D

SAMPLE ID (One character per box.)

Valid Matrix Codes	Code
Matrix	WT
Water	SL
Soil	OL
Oil	WP
Wipe	AR
Air	TS
Tissue	OT
Other	

ITEM NUMBER	DATE COLLECTED	MATRIX CODE	TIME COLLECTED	# Containers	Unpreserved	H2SO4	HNO3	HCl	NaOH	Method	cVOCs	Requested Analysis	REMARKS / Lab ID
1	11/1/16	SL	1150	4	X					21	X		50157906 001
2	11/1/16	SL	1040	4	1					21	X		002
3	11/1/16	SL	1400	4	1					21	X		003
4	11/1/16	SL	1500	4	1					21	X		004
5													
6	11/1/16	WT	1200	3		3					X		005
7	11/1/16	WT	1050	3		3					X		006
8	11/1/16	WT	1415	3		3					X		007
9	11/1/16	WT	1520	3		3					X		008
10													
11													
12													

SHIPMENT METHOD: AIRBILLING SHIPPING DATE: 11/1/16 NO. OF COOLERS: 1 ITEM # 16136
RELINQUISHED BY: Paul Warren / ASW ACCEPTED BY: Paul Warren / ASW DATE: 11/1/16 TIME: 11/1/16 1636

SAMPLE CONDITION: SAMPLE NOTES:

Temp in C	2.4
Received on Ice	N
Sealed Cooler	Y
Sample Intact	N

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: BILL RUTHERFORD

SIGNATURE of SAMPLER: Bill Rutherford

DATE Signed: 11/1/16

Sample Condition Upon Receipt



Pace Analytical

Client Name: Alt & Witzig

Project # 5015 9906

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Date/Time 5035A kits placed in freezer
1:00

Packing Material: Bubble Wrap Bubble Bags None Other _____

Thermometer 1 2 3 4 5 6 A B C D E F

Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temperature (Initial/Corrected) 2.4/2.4°C

Ice Visible in Sample Containers: yes no

Temp should be above freezing to 6°C

Comments:

Date and initials of person examining contents: 11-1-16 Le

Are samples from West Virginia? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1.
Document any containers out of temp.	
Chain of Custody Present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Filled Out: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Chain of Custody Relinquished: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Sampler Name & Signature on COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Containers Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Sample Labels match COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A -Includes date/time/ID/Analysis	9.
All containers needing acid/base pres. have been checked? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A exceptions: VOA, colform, TOC, O&G	10. (Circle) HNO3 H2SO4 NaOH NaOH/ZnAc
All containers needing preservation are found to be in compliance with EPA recommendation (<2, >9, >12) unless otherwise noted.	
Residual Chlorine Check (SVOC 625 Pest/PCB 608)	11. Present Absent
Residual Chlorine Check (Total/Amenable/Free Cyanide)	12. Present Absent
Headspace in VOA Vials (>6mm): <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Headspace Wisconsin Sulfide <input type="checkbox"/> Yes <input type="checkbox"/> No	14.
Trip Blank Present: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Custody Seals Present <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	17.

Project Manager Review:

Samples Arrived within Hold Time: Yes No N/A 15.

Sufficient Volume: Yes No N/A 16.

Correct Containers Used: Yes No N/A 17.

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: [Signature]

Date: 11/1/16

Sample Container Count

CLIENT: Att & Witzig

COC PAGE 1 of 1
COC ID#

Project # 50167906



Sample Line Item	AG1U	WG9U	AG0U R	4/6	BP2N	BP2U	BP2S	BP3N	BP3U	BP3S	AG3S	AG1H	BP3C	BP1U	SP5T	AG2U	Matrix (SW/OT/Other)	pH <2	pH >9	pH >12
1																	SL			
2				4													SL			
3				4													SL			
4				4													SL			
5																				
6																	WT			
7																	WT			
8																	WT			
9																	WT			
10																				
11																				
12																				

Container Codes

Container Code	Description	BP1N	BP1S	BP1U	BP1Z	BP2A	BP2O	BP2Z	AF	BP3C	BP3Z	C	DG9B	DG9M	DG9P	DG9S	DG9T	DG9U	SP5T	JGFU	U	VG9H	VG9T	VG9U	VSG	WGFX	ZPLC
DG9H	40mL HCL amber vial																										
AG1U	1 liter unpreserved amber glass																										
WG9U	4oz clear soil jar																										
R	terra core kit																										
BP2N	500mL HNO3 plastic																										
BP2U	500mL unpreserved plastic																										
BP2S	500mL H2SO4 plastic																										
BP3N	250mL HNO3 plastic																										
BP3U	250mL unpreserved plastic																										
BP3S	250mL H2SO4 plastic																										
AG3S	250mL H2SO4 glass amber																										
AG1S	1 liter H2SO4 amber glass																										
BP1U	1 liter unpreserved plastic																										

APPENDIX F

Site Photographs



Photo #1: View of boring placement.



Photo #2: View of boring placement.



Photo #3: View of boring placement.



Photo #4: View of boring placement.



Photo #5: View of the utilities adjacent to Kivett's (Site 3); preventing boring installations.



Photo #6: View of boring placement.