Limited Phase II Property Assessment

Bexley Ferndale Recreational Park Area
Ferndale Place
Bexley, Ohio 43209

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1.0 INTRODUCTION

1.1 General

PANDEY Environmental, LLC (PANDEY) was authorized by its Client, the City of Bexley, to conduct a Limited Phase II Property Assessment for the proposed recreational park area located adjacently north of the Bexley Community Garden located along Ferndale Place and adjacently south of Charles Street in Bexley, Ohio 43209 (hereafter referred to as the subject property). The subject area consists of portions of parcels 020003692, 020003693 & 020000157. The specific location and boundaries of the subject property are provided on Figure 1. The subject property consists of approximately 0.35 acres and is currently owned by the City of Bexley. Currently, the subject property is a vacant grassy lot with some mature trees located around the perimeter. The property is identified as having an exempt land use status since it is owned by the City of Bexley, although it is anticipated that the property will be utilized for recreational purposes. This investigation is termed "limited" as this investigation is limited to the identification of presence or absence of contamination in the shallow soil media across the subject property. It does not serve to fully delineate the extent of vertical and horizontal contamination or to evaluate all potential exposures or potential receptors.

PANDEY personnel responsible for preparation of this report include Mr. Atul Pandey, P.E. and Mr. Nick Vallera, Environmental Scientist. Resumes of Mr. Pandey and Mr. Vallera are presented in Appendix B of this report.

1.2 Purpose

This Limited Phase II Property Assessment was conducted to investigate the 0' to 2' soil horizon across the subject property in order to determine potential risk of exposure to future receptors prior to the development of a community recreational park. A Sampling and Analysis Plan was prepared subsequent to the completion of an Ohio EPA VAP Phase I Property Assessment Report (VAP Phase I Report) dated March 9, 2018, prepared by PANDEY for an adjacent property, the completion of a Limited VAP Phase II Property Assessment dated May 23, 2018 prepared by PANDEY for an adjacent property, and subsequent to the reviewing the findings of two (2) former environmental

assessments performed by Burgess & Niple (B&N) and Stone Environmental, Inc. (Stone) in 2016 and 2007, respectively, for adjacent sites which included sampling locations on the subject property. Additional details regarding the previous assessments are provided in Section 1.3 of this Report. Additionally, the Sampling & Analysis Plant was prepared after completing a site reconnaissance on July 26, 2018. The Sampling and Analysis Plan for this Limited Phase II Property Assessment was developed based on the findings of the PANDEY Phase I & Phase II Reports of the properties located adjacently south of the subject property, the sampling results from the B&N and Stone investigations performed in the immediate area surrounding the subject property, as well as observations made during the July 2018 site reconnaissance and anticipated future use of the subject property as a recreational park.

1.3 Previous Assessments

1.3.1 Stone Environmental Phase I and Phase II ESA of the Sheridan Avenue Property – May 2007

A Phase I and Phase II ESA was performed by Stone Environmental (Stone) in May 2007. The Phase I ESA report was performed in conformance with the scope and limitations of ASTM E 1527-05 for parcels 020-000157 and 0202-003693. The two (2) parcels were located adjacently west of Sheridan Avenue, immediately surrounding and partially on the subject property (recreational park area). At the time the Stone Report was prepared, the two (2) parcels, which currently are the location of soccer fields and an asphalt parking lot, were vacant / wooded lots. Findings of the Stone Phase I ESA report noted that the Sheridan Avenue Property and subject property were utilized as a landfill prior to the 1950s, which was based on evidence from a 1938 aerial photograph and results of soil samples collected across the site. Household trash and debris was observed on the southeastern portion of the property.

The Stone Phase II ESA investigation was performed in conformance with the scope and limitations of ASTM E 1903-97 (2002). The Phase II investigation included the installation of five (5) soil borings via a Geoprobe drill rig. Approximately two (2) of the installed soil borings (borings C-6 & B-5:4') were located in the area of the subject property. Soil borings were installed to final depths ranging

from twelve (12) to twenty-four (24) feet bgs. Soils observed across the Sheridan Avenue Property included unnatural materials including glass, cinders, rotting wood, roots, and brick fragments to depths of approximately eight (8) feet bgs. Groundwater was encountered from approximately twelve (12) to eighteen (18) feet bgs. Six (6) soil samples were collected and submitted for laboratory analysis of RCRA-Metals and Volatile Organic Compounds (VOCs). Results of the soil sampling revealed that all six (6) soil samples exceeded the designated US EPA Region 9 Preliminary Remediation Goal (US EPA PRG) action level for arsenic. Four (4) of the soils samples also exceeded the Ohio EPA VAP Generic Direct Contact Soil Standards (GDCSS) for residential properties for arsenic. Additionally, two (2) soil samples exceeded VAP direct contact residential standards for lead. The detections were determined to be the likely result of leaching of household trash, debris and glass from former landfill operations at the site. No detections of VOCs were observed in any of the soil samples. Two (2) groundwater samples were collected from temporary one-inch wells which were screened from ten (10) to fifteen (15) feet bgs. One of the groundwater samples detected an exceedance of Cadmium compared to the VAP Generic Unrestricted Potable Use Standards. Based on the findings of the Phase I ESA and Phase II ESA report, Stone Environmental concluded that it appeared that former landfill operations had impacted the site.

A copy of the Stone 2007 Phase I and Phase II ESA Reports are provided in Appendix O of the PANDEY VAP Phase I Property Assessment Report, dated March 9, 2018 which is provided under separate cover.

1.3.2 Burgess & Niple Limited Phase II Site Investigation of the Charles Street Property– September 2016

Burgess & Niple (B&N) prepared a Limited Phase II Site Investigation for the vacant greenspace area which included the subject property itself as well as the area immediately west of the subject property and south of Charles Street (Charles Street Property), in September 2016. The Limited Phase II report, dated September 26, 2016, included the installation of twenty-five (25) soil borings and submittal of soil samples to ALS – Cincinnati (an Ohio EPA VAP Certified Lab) for analysis of Heavy Metals (including Arsenic, Lead and Cadmium), VOCs, and Polynuclear Aromatic Hydrocarbons (PAHs). Approximately eight (8) of the installed soil borings were in or around the perimeter of the proposed

Ferndale Recreational Park Area. Soils sampled across the Charles Street Property consisted of brown to gray silty sands and gravel. Some fill was encountered as well on the eastern-central portion of the site located near the subject property. Fill materials included brick, cinders, and glass fragments. Results of the soil sampling indicated exceedances of VAP direct contact residential land use standards for Arsenic, Lead, Benzo(a)pyrene and Dibenzo(a,h)anthracene. The anticipated future use of the site was a recreational area / soccer fields which are currently (as of August 2018) under construction and nearing completion. It was recommended by B&N that the top two (2) feet of soils be excavated / removed from the Charles Street Property, and replaced with clean fill prior to development as a park.

In March 2018, this site was observed by PANDEY to be undergoing remedial activities, including removal of the top two (2) feet of soils, and replacing them with clean, hard fill. As of August 2018 this site appeared to be nearing completion of development which included the presence of soccer fields and an asphalt parking area.

A copy of the B&N 2016 investigation is provided in Appendix O of the PANDEY VAP Phase I Property Assessment, dated March 9, 2018 which is provided under separate cover.

1.3.3 PANDEY VAP Phase I Property Assessment of 921-925 & 941-945 Ferndale Place Properties – March 2018

PANDEY prepared a VAP Phase I Property Assessment Report for the two (2) residential properties located at 921-925 & 941-945 Ferndale Place (located adjacently south of the subject property) on March 9, 2018. The Phase I report identified two (2) identified areas (IAs) on the site, as well as one (1) off-property concern, and concluded that a Phase II Property Assessment (described in the following Section, 1.3.4) was necessary to investigate the impact to soil, groundwater, sub-slab, indoor air and/or soil-gas media from the releases of hazardous substances and/or petroleum and former landfill operations. The subject site of the PANDEY Phase I ESA was not identified on any of the databases in the Environmental Data Resources, Inc. (EDR) regulatory report. However, a historical aerial photograph from 1938 showed evidence that the site was part of a former landfill / dumping operation. Additionally, other previous environmental assessments of the areas directly surrounding the subject property to the north and west, as well as previous assessments which included portions of

the subject property determined that the subject property and surrounding area was part of a former landfill operation prior to the 1950s.

The identified areas across the site of the PANDEY Phase I ESA located adjacently south of the subject property of this Report included the location of the former landfill / dumping area (which was observed in historical documents to be extending to the north including the area of the proposed Ferndale Recreational Park Area), and the site groundwater. Additionally, an off-site concern was identified to the areas west and north of the subject property where according to historical documents and previous environmental reports, a former landfill / dumping operations occurred. Chemicals-of-concern (COCs) included the following: RCRA 8 Metals (Lead, Arsenic, Barium, Chromium, Cadmium, Selenium, Silver and Mercury), Semi-Volatile Organic Compounds (SVOCs) and Volatile Organic Compounds (VOCs).

A copy of the PANDEY Phase I ESA Report is provided under separate cover.

1.3.4 PANDEY Limited VAP Phase II Property Assessment of 921-925 & 941-945 Ferndale Place Properties – May 2018

PANDEY prepared a Limited VAP Phase II Property Assessment Report for the residential properties located adjacently south of the subject property, dated May 23, 2018. The Phase II investigation included the sampling and laboratory analysis of the soil, groundwater and soil-gas media across the two (2) residential properties located along Ferndale Place in Bexley, Ohio. The investigation included the installation of eight (8) soil borings, two (2) groundwater wells and four (4) soil-gas probes. Half of the listed sampling locations were located on the northern parcel of this investigation which is located adjacently south of the subject property of this Report (proposed Recreational Park Area). A total of sixteen (16) soil samples, two (2) groundwater samples and four (4) soil-gas samples were collected from the subsurface media during this investigation.

Conclusions of the Limited VAP Phase II Investigation detected multiple chemicals of concern above their applicable VAP generic Direct Contact Soil Standards (GDCSS) for residential / unrestricted land use in all eight (8) soil borings. Specifically, the exceedances of chemicals of concern were related to

RCRA Metals (including Arsenic Chromium and Lead) and Poly-Aromatic Hydrocarbons (PAHs), including Benz(a)anthracene, Benzo(a)pyrene and Benzo(b)fluoranthene. The majority of the observed exceedances of metals and PAHs in the soil media were detected in the top 0'-2' soil horizon across the residential Ferndale Place properties. Additionally, the groundwater samples showed detections of metals including Arsenic, barium and Selenium. Results of the soil-gas sampling included minor detections of some volatiles (TO-15 compounds). However, all detections were below their applicable target screening levels and applicable VAP standards. Overall, the main concern observed across the site subject to the Limited VAP Phase II investigation was identified in the 0'-2' soil horizon which appeared to be impacted by metals.

A copy of the PANDEY Limited VAP Phase II Property Assessment is provided under separate cover.

1.4 Sampling Plan

The Sampling and Analysis Plan (SAP) for this Phase II Property Assessment was completed by PANDEY in July, 2018 and was based upon the findings in the previous environmental investigations described in Section 1.3, and the site reconnaissance performed by PANDEY on July 26, 2018.

This Phase II Property Assessment is termed as 'Limited' as the goal of the Phase II investigation was to identify environmentally adverse conditions or situations in the subsurface that may lead to environmental liability. The Phase II was not intended to delineate the horizontal or vertical extent of contamination, if any was found. The Phase II was also not intended to satisfy every provision of the Ohio Voluntary Action Program (VAP) rules and regulations, but was conducted in a manner where this data will be accepted by the Ohio EPA under the VAP.

The sampling plan called for the installation of ten (10) soil borings across the subject property. The borings were to be installed in a scatter pattern across the entire subject property and limited to the 0'-2' soil horizon. The depth of the borings was determined based on observations of soil sampling results detected in the previous environmental assessments performed on the surrounding areas, described in Section 1.3. Due to the final depth of the soil borings being approximately two (2) feet below ground

surface (bgs), the borings were planned to be installed by a steel hand auger with an approximate six (6) inch sampling bucket.

Details regarding the location of the soil borings, monitoring wells and soil gas probes are provided in Section 4.0 of this report. Soil sample analysis included RCRA Metals and Semi-Volatile Organic Compounds (SVOCs). Since the subject property was the location of a former landfill / dumping area, the main concern was the presence of fill materials in the shallow subsurface media. Thus, special attention was made during the sampling of the soils for the presence of such materials as brick fragments, glass shards, cinders, etc. The soils were also screened utilizing a Photoionization Detector (PID) calibrated to 100 ppm isobutylene to check for the potential presence of Volatile Organic Compounds (VOCs). Soil samples that displayed screening levels above site background were also to be submitted for laboratory analysis of VOCs. However, none of the soils across the subject property displayed screening levels above the site background of 0.0 ppm.

1.5 Numerical Standards

Numerical standards for this Phase II Property Assessment were obtained from Ohio EPA's Voluntary Action Program rules (VAP) in OAC 3745-300-08 for residential land use. In the event that numerical standards were not available in this rule, Ohio EPA VAP Program's Chemical Information Database and Applicable Regulatory Standards (CIDARS) database was consulted. A listing of numerical standards used can be found in Appendix C. This listing also includes the source of the standard, and the date the standard went into effect. Because CIDARS databases are not dated, the date of download from Ohio EPA's website is listed as the standard date. Upon download of CIDARS information, numerical standards were compared to OAC 3745-300-08 as well as previous CIDARS downloads to ensure validity of any changes.

2.0 SAMPLING PROCEDURES

PANDEY conducted subsurface investigations on August 7, 2018. The investigation was conducted to examine the 0'-2' soil horizon across the subject property.

The methods and procedures described in this section apply to the sampling and analysis of all subsurface media investigated by PANDEY during the course of this Phase II Property Assessment.

Laboratory Analytical Methods

VAP-certified laboratories are required to adhere to strict QA/QC procedures that have been predetermined and approved by Ohio EPA. The VAP certified laboratory Pace Analytical Services, Inc. in Indianapolis, IN (CL # 0065) performed analysis using the following analytical methods:

- SVOCs (Method 8270)
- RCRA Metals (Method 6010/7471)

The laboratory data, affidavits, case narrative, and chain of custody forms are provided in Appendix A of this report.

The Quality Assurance (QA) and Quality Control (QC) specifications for the subject property are outlined herein. These specifications describe the QA/QC requirement set up for collecting and analyzing samples for chemical analyses. The QA/QC procedures were used to assess the accuracy, precision, completeness, representativeness, and comparability of the analytical data.

Field Sampling and Analysis Program

The field team conducting the assessment adhered to the field sampling and analysis program detailed below. It included specific requirements outlining the procedures to be followed in relation to sample handling, packaging, and shipping. It also set guidelines for field documentation procedures.

Sample Handling, Packaging, and Shipping Requirements

Upon collection, samples were placed into their appropriate sample containers. The exterior of the sample containers were wiped clean and affixed with the proper labeling. Samples collected at the site were uniquely labeled with an alphanumeric sample identifier. Sample label information was completed using waterproof black ink. The labels contained such information as:

- Sample identification based on the sampling location;
- Time and date of collection; and,
- Parameters to be analyzed;

The samples were packaged, put on ice in a cooler and then sealed and shipped to the Pace Indianapolis, IN laboratory. Chain of custody documentation accompanied each group of samples submitted to the lab.

Field Documentation Procedures

The field team was required to maintain a field notebook. The field notebook was used to collect information on site conditions, personnel at the site, and other pertinent information.

2.1 August 2018 Investigation

During the August 2018 investigation, the subject property was vacant. Observations during the time of the sampling event included the presence of a newly installed asphalt parking lot and development of soccer fields adjacently west of the subject property. Pedestrians were observed entering / leaving the Bexley Community Garden located adjacently south of the subject property as well. However, nobody was present on the subject property itself during sampling activities.

2.1.1 Soil Investigation

A subsurface investigation was conducted on August 7, 2018 with the advancement of ten (10) soil bores (labeled HA-1, HA-2, HA-3, HA-4, HA-5, HA-6, HA-7, HA-8, HA-9 and HA-10) at the subject property. The soil borings were installed in a scatter pattern across the subject property utilizing a steel hand auger. A total of one (1) soil sample was collected from each installed soil boring. However, only five (5) soil samples were submitted for laboratory analysis. The five (5) samples chosen for laboratory submittal were chosen in a manner to obtain representative data for across the entire subject property and were biased towards soil samples that were observed to contain fill materials. Soils across the 0'-2' soil horizon across the subject property were observed to be predominantly brown sand & gravel with some silty clay. The presence of fill materials including glass shards, plastic fragments, brick fragments, etc. were observed in nearly all borings across the subject property. Although it should be noted that the heaviest volume of fill materials observed in soil were located predominantly in the western and central portions of the subject property.

The procedures for the sampling of soil borings HA-1 through HA-10 of this investigation are discussed below. Soil samples were analyzed by Pace Analytical Services, an Ohio EPA VAP certified laboratory. Analytical data and chain of custodies are provided in Appendix A of this report. Analytical data is summarized in Table 1 and locations of the soil bores are shown in Figures 2 and 3 of this report.

Soil Boring Installation and Sampling Methodology

Soil sampling was conducted using a using a four-foot hand auger. The auger utilizes a stainless-steel bucket to collect approximately 6" to 12" of soils at a time. Soil samples were collected in approximately 6 to 12 inch intervals and noted with respect to soil classification, color, moisture, and odor to depth ranging from zero (0) to twenty-four (24) inches below ground surface (bgs). Soils collected from the hand auger from the surface to an approximate depth of two (2) feet bgs were composited in a plastic bag for each soil boring. The soil was then mixed in the field for approximately 60 seconds prior to screening them with a PID for the presence of volatiles. It should be noted that all soils screened across the subject property did not screen at levels above background which was

established at 0.0 ppm. Soil samples were selected for laboratory analysis based on a hierarchy of field observations. The highest readings recorded during soil screening from a Mini-RAE Photo-ionization Detector (PID) were noted; if all PID results were close to background or equal then visual observations and/or olfactory indications of contamination were used to select the soil samples for analysis. If no visual observations of contamination were observed, then varying areas (i.e. east, west, north, south) were chosen in order to obtain a representative soil analysis for the 0'-2' soil horizon across the entire subject property.

The collected soils from the 0'-2' soil horizon across the subject property predominantly were comprised of brown sand and silt clay. Soils were generally slightly moist and included the presence of rootlets related to surface vegetation in the top few inches of each boring. There were multiple observations of fill material in the borings installed across the property including the presence of brick fragments, cinders, and glass shards. The observations of fill materials were predominantly noted in borings across the central, western and southern portions of the subject property. The presence of fill materials influenced which borings were selected for laboratory submittal. Borings HA-3, HA-1, HA-4, HA-6 and HA-10 were located in areas observed to contain fill materials in the top two (2) feet of soils. Additionally, these select soil borings were collected in order to cover a large, representative portion of the subject property rather than collecting all samples from a single quadrant or limited area of the site.

Soil samples collected for laboratory analysis were placed in 4 oz. glass soil jars with Teflon lids and placed in an iced cooler. Samples selected for appropriate laboratory analysis were shipped to Pace Analytical Services, Inc., an Ohio EPA VAP certified laboratory (CL# 0065). Laboratory chain of custody documentation and analytical results are included in Appendix A of this report.

Boreholes were abandoned by filling with leftover soil cuttings from each respective location.

3.0 PHASE II FINDINGS

3.1 QA/QC Data Review

No control issues or discrepancies were noted which would have had the potential to impact the findings of this report.

None of the soil samples analyzed resulted in parameters with MDLs above the applicable Ohio VAP Generic Direct Contact Soil Standards for residential land use.

3.2 Identification and Evaluation of Chemicals of Concern in 0'-2' Soil Horizon

Various chemicals of concern have been identified in the 0'-2' soil horizon across the subject property during the August 2018 Limited Phase II Property Assessment. Locations of soil sample locations are shown on Figures 2 & 3, and analytical results are presented on Table 1 of this report. References to soil standards in the following discussion are to the Ohio VAP Generic Direct Contact Soil Standards for residential / unrestricted land use.

The soils across the site were investigated by PANDEY during site investigations conducted on August 7, 2018 through the advancement of ten (10) soil borings labeled HA-1, HA-2, HA-3, HA-4, HA-5, HA-6, HA-7, HA-8, HA-9 and HA-10. The borings were installed in a scatter pattern across the subject property.

The soil borings were installed to a depth of approximately two (2) feet bgs as the main objective of this limited Phase II investigation was to investigate the shallow soil horizon across the site. One (1) soil sample was collected from each installed soil boring across the subject property, from the 0'-2' soil horizon at each location. A total of five (5) soil samples were submitted for laboratory analysis. The soil samples selected for laboratory analysis were based upon visual observations and olfactory indications of contamination. Soil samples were submitted from the 0-2' soil horizon from borings HA-1, HA-3, HA-4, HA-6 and HA-10. Samples collected from all borings were analyzed for SVOCs and RCRA Metals. All soil samples were screened for VOCs utilizing a PID. However, none of the

collected samples across the site displayed screening levels above the site background of 0.0 ppm. Various fill materials including glass fragments, bricks, and cinders were observed in the shallow soils across the subject property. This is consistent with observations noted in previous investigations performed on adjacent properties, described in Section 1.3. The fill materials confirm that the subject property is located on a former landfill area.

Laboratory analysis of all soil samples detected chemicals above laboratory reporting limits including metals (particularly Arsenic, Chromium and Lead) and Semi-Volatile Organic Compounds, particularly Poly-Aromatic Hydrocarbons (PAHs) such as Benzo(a)pyrene, Benzo(a)anthracene and Benzo(b)fluoranthene. Multiple detections of Arsenic were detected in exceedance of the applicable VAP GDCSS for residential /unrestricted land use. Additionally, multiple detections of PAHs including Benz(a)anthracene, Benzo(a)pyrene, and Benzo(b)fluoranthene were detected in exceedance of the applicable VAP GDCSS for residential /unrestricted land use. However, all other detections of Metals and SVOCs were below the applicable VAP soil standards. No analyses of VOCs were requested from the laboratory since none of the soil samples from across the site displayed screening levels above background conditions.

4.0 CONCLUSIONS

This Limited Phase II Property Assessment was conducted to identify the presence or absence of subsurface contamination in the 0'-2' soil horizon across the area of the proposed recreational park / playground located along Ferndale Place, primarily from the impact of Metals and SVOCs. Analysis and interpretation of data gathered as part of this property assessment has led to the following conclusions:

- Multiple detections of chemicals of concern were reported in soil samples. Detections of RCRA Metals (Arsenic, Barium, Cadmium, Chromium and Lead) were observed above applicable VAP Generic Direct Contact Soil Standards (GDCSS) for residential / unrestricted land use in borings HA-1 and HA-6. Additionally, detections of Poly-Aromatic Hydrocarbons (PAHs) were observed above the applicable VAP GDCSS for residential land use in borings HA-1, HA-3, HA-4 and HA-10. PAHs exceeding the applicable standards in these borings include Benz(a)anthracene, Benzo(a)pyrene and Benzo(b)fluoranthene. All of the observed exceedances of Metals and PAHs in the soil media were detected in the top 0'-2' soil horizon across the subject property.
- Various fill materials including glass fragments, bricks, and cinders were observed in the shallow soils across the subject property. This is consistent with observations noted in previous investigations performed on adjacent properties, described in Section 1.3. The fill materials confirm that the subject property is located on a former landfill area.

Based on this Limited Phase II Property Assessment, levels of Arsenic, Benzo(a)pyrene, Benzo(a)anthracene and Benzo(b)fluoranthene exceed their corresponding VAP single chemical direct contact standards for residential or unrestricted land use. As the evidence of historic landfilling in the proposed park / playground area has been confirmed through the sampling and analysis of the surficial soil samples collected during this limited Phase II investigation, it is recommended that an engineering control in the form of a two (2) foot clay cap and/or an asphalt/concrete surface cap be constructed at the park / playground area before its use. This engineering control will serve to prevent direct contact of receptors to the contaminated soils. Such an engineering control should be maintained periodically for its integrity and inspected annually for cracks, deterioration, etc.

5.0 STATEMENT OF LIMITATIONS AND QUALIFICATIONS

The subject property has been examined based on best professional judgment and current Phase II Property Assessment evaluation methods. These methods include requirements of the Ohio Voluntary Action Program, ASTM Standards, and other professional site assessment guidelines.

The evaluations, assessments, and conclusions stated in this report represent judgment and/or opinions which are based solely upon visual and analytical observations made during the site investigation and public records search including information from previous environmental investigations.

Any reuse of this information, assessment, or conclusions contained herein by parties other than those mentioned in Section 1 of this report, shall be at the sole risk or liability of the party undertaking the reuse of this information.

PANDEY makes no claim that the areas of contamination discovered as a result of the limited Phase II Property Assessment investigations represent the only possible areas of contamination at the site. The sampling locations were chosen based on a review of historical resources, previous environmental assessments, interviews, and a visual site reconnaissance.

Evidence has not been provided to PANDEY which suggests the likelihood of contamination at areas of the property other than those investigated to date. However, undocumented and/or unreported spills and/or releases which may have the potential to negatively impact the subject property may have occurred at the subject property over the course of its history.

FIGURES

FIGURE 1: PROPERTY LOCATION MAP

FIGURE 2: SOIL SAMPLING LOCATIONS MAP

FIGURE 3: SOIL ANALYTICAL DATA MAP

Property Boundary (Proposed Park Location)

0 0.005 0.01 0.02 Miles

Park Area Investigation
Proposed Bexley Park
Bexley, Ohio 43209
Figure 1
Property
Location Map

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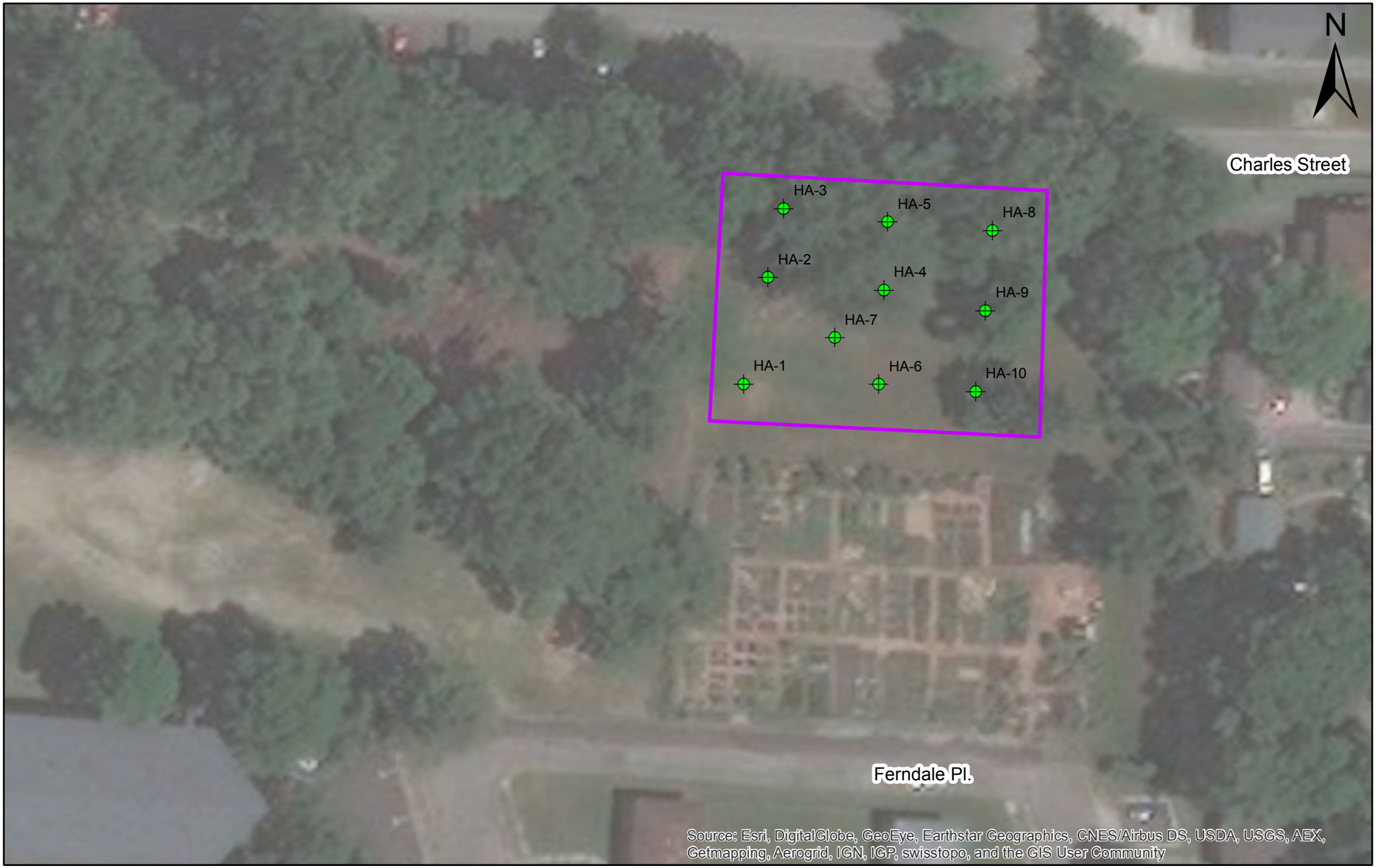

Property Boundary (Proposed Park Location)

Hand Auger Location (0'-2')

0 0.005 0.01 0.02 Miles

Park Area Investigation
Proposed Bexley Park
Bexley, Ohio 43209
Figure 2
Soil Sampling Locations Map

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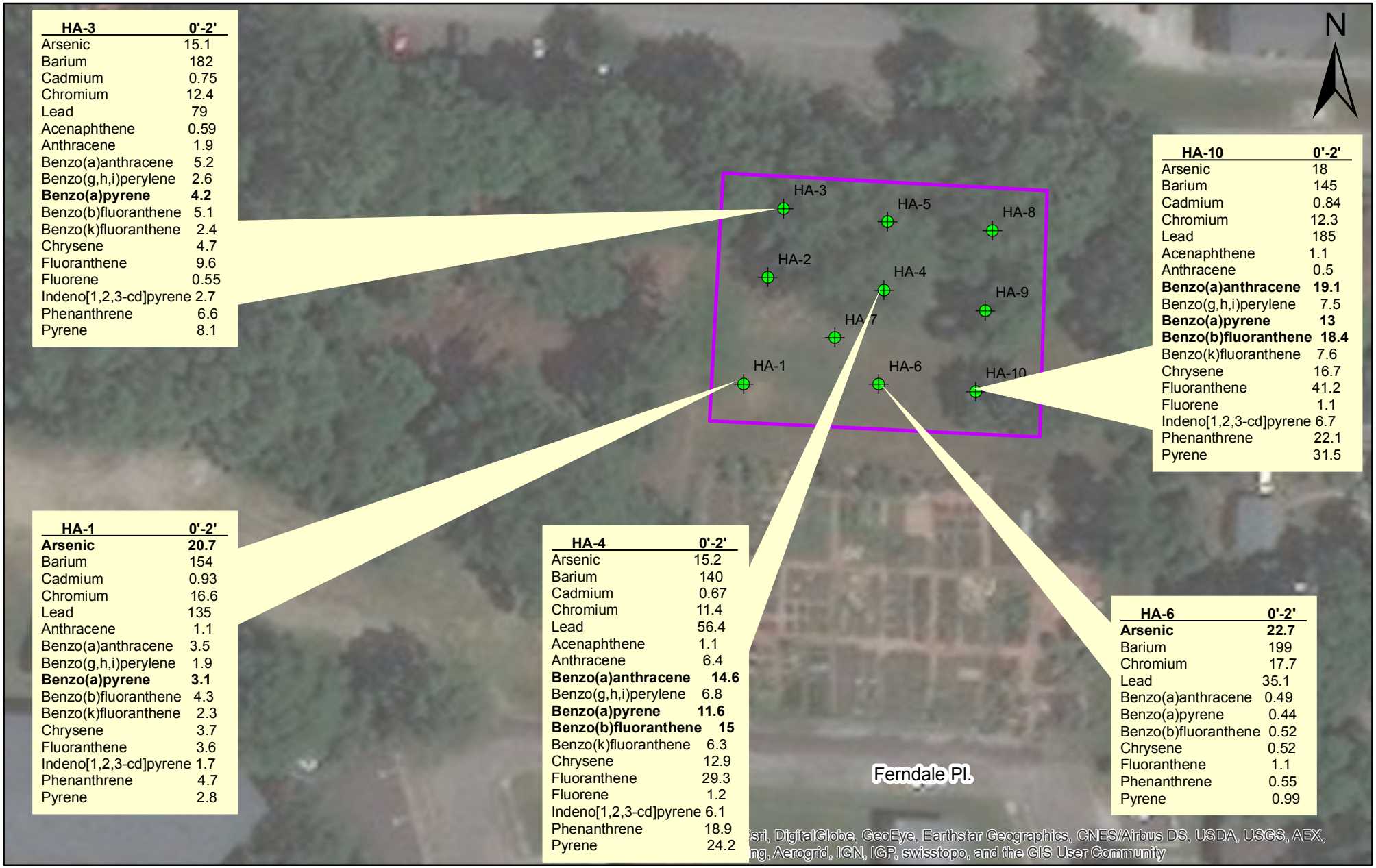

HA-3	0'-2'
Arsenic	15.1
Barium	182
Cadmium	0.75
Chromium	12.4
Lead	79
Acenaphthene	0.59
Anthracene	1.9
Benzo(a)anthracene	5.2
Benzo(g,h,i)perylene	2.6
Benzo(a)pyrene	**4.2**
Benzo(b)fluoranthene	5.1
Benzo(k)fluoranthene	2.4
Chrysene	4.7
Fluoranthene	9.6
Fluorene	0.55
Indeno[1,2,3-cd]pyrene	2.7
Phenanthrene	6.6
Pyrene	8.1

HA-10	0'-2'
Arsenic	18
Barium	145
Cadmium	0.84
Chromium	12.3
Lead	185
Acenaphthene	1.1
Anthracene	0.5
Benzo(a)anthracene	**19.1**
Benzo(g,h,i)perylene	7.5
Benzo(a)pyrene	**13**
Benzo(b)fluoranthene	**18.4**
Benzo(k)fluoranthene	7.6
Chrysene	16.7
Fluoranthene	41.2
Fluorene	1.1
Indeno[1,2,3-cd]pyrene	6.7
Phenanthrene	22.1
Pyrene	31.5

HA-1	0'-2'
Arsenic	**20.7**
Barium	154
Cadmium	0.93
Chromium	16.6
Lead	135
Anthracene	1.1
Benzo(a)anthracene	3.5
Benzo(g,h,i)perylene	1.9
Benzo(a)pyrene	**3.1**
Benzo(b)fluoranthene	4.3
Benzo(k)fluoranthene	2.3
Chrysene	3.7
Fluoranthene	3.6
Indeno[1,2,3-cd]pyrene	1.7
Phenanthrene	4.7
Pyrene	2.8

HA-4	0'-2'
Arsenic	15.2
Barium	140
Cadmium	0.67
Chromium	11.4
Lead	56.4
Acenaphthene	1.1
Anthracene	6.4
Benzo(a)anthracene	**14.6**
Benzo(g,h,i)perylene	6.8
Benzo(a)pyrene	**11.6**
Benzo(b)fluoranthene	**15**
Benzo(k)fluoranthene	6.3
Chrysene	12.9
Fluoranthene	29.3
Fluorene	1.2
Indeno[1,2,3-cd]pyrene	6.1
Phenanthrene	18.9
Pyrene	24.2

HA-6	0'-2'
Arsenic	**22.7**
Barium	199
Chromium	17.7
Lead	35.1
Benzo(a)anthracene	0.49
Benzo(a)pyrene	0.44
Benzo(b)fluoranthene	0.52
Chrysene	0.52
Fluoranthene	1.1
Phenanthrene	0.55
Pyrene	0.99

Property Boundary (Proposed Park Location)

Hand Auger Location (0'-2')

Results in **BOLD** indicate an exceedance of VAP Residential GDCSS
Locations with no tags indicates no sample was submitted for laboratory analysis

0 0.005 0.01 0.02 Miles

Park Area Investigation
Proposed Bexley Park
Bexley, Ohio 43209
Figure 3
Soil Analytical Data Map

PANDEY ENVIRONMENTAL, LLC
4100 Horizons Drive, Suite 205
Hamilton, Ohio 45011
(614) 444-8078
www.pandeyenvironmental.com

9/10/2018

TABLES

TABLE 1: SUMMARY OF SOIL SAMPLING DATA

Table 1-Proposed Park Area: Summary of Soil Sampling Data
Identified Area Proposed Park Area: Park Area

PANDEY
ENVIRONMENTAL, LLC

Bexley Ferndale Park Area: Ferndale Place; Bexley, Ohio

Chemical Name	HA-1: 0-2' (8/7/18)	HA-3: 0-2' (8/7/18)	HA-4: 0-2' (8/7/18)	HA-6: 0-2' (8/7/18)	HA-10: 0-2' (8/7/18)	GDCSS Res.	GDCSS Comm.	GDCSS Const.
Metals & Inorganic Analytes								
Arsenic, Inorganic	20.7	15.1	15.2	22.7	18	12	77	690
Barium and Compounds	154	182	140	199	145	n/a	n/a	n/a
Cadmium	0.93	0.75	0.67	<0.52	0.84	140	2600	1000
Chromium, Total	16.6	12.4	11.4	17.7	12.3	24	n/a	n/a
Lead and Compounds	135	79	56.4	35.1	185	400	800	400
Mercury and Compounds	<0.23	<0.24	<0.24	<0.24	<0.23	3.1	3.1	3.1
Selenium	<1.2	<1.1	<0.97	<1	<1.1	780	20000	11000
Silver	<0.6	<0.57	<0.48	<0.52	<0.53	780	20000	11000
Semi-Volatile Organic Compounds (SVOCs)								
Acenaphthene	<0.4	0.59	1.1	<0.39	1.1	6900	90000	780000
Acenaphthylene	<0.4	<0.4	<0.37	<0.39	0.5	7200	130000	870000
Anthracene	1.1	1.9	6.4	<0.39	5.9	34000	450000	1000000
Benz[a]anthracene	3.5	5.2	14.6	0.49	19.1	12	58	1200
Benzo(g,h,i)perylene	1.9	2.6	6.8	<0.39	7.5	3600	67000	430000
Benzo[a]pyrene	3.1	4.2	11.6	0.44	13	1.24	5.8	120
Benzo[b]fluoranthene	4.3	5.1	15	0.52	18.4	12	58	1200
Benzo[k]fluoranthene	2.3	2.4	6.3	<0.39	7.6	120	580	12000

All values reported in ppm. Non-detects are shown as less than reporting limit. n/a = Not Analyzed or Not Applicable
GDCSS = Ohio VAP Generic Direct Contact Soil Standard for Residential, Commercial/Industrial and Construction Scenarios
Red outline indicates an exceedance of the Residential GDCSS.
The background concentration for Arsenic in Franklin County has been promulgated by the Ohio EPA as 20.7 ppm.

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ENVIRONMENTAL, LLC

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Chemical Name	HA-1: 0-2' (8/7/18)	HA-3: 0-2' (8/7/18)	HA-4: 0-2' (8/7/18)	HA-6: 0-2' (8/7/18)	HA-10: 0-2' (8/7/18)	GDCSS Res.	GDCSS Comm.	GDCSS Const.
Semi-Volatile Organic Compounds (SVOCs)								
Bis(2-chloro-1-methylethyl) ether	<0.4	<0.4	<0.37	<0.39	<0.37	100	680	1000
Bis(2-chloroethoxy)methane	<0.4	<0.4	<0.37	<0.39	<0.37	370	5300	43000
Bis(2-chloroethyl)ether	<0.4	<0.4	<0.37	<0.39	<0.37	4.9	30	290
Bis(2-ethylhexyl)phthalate	<0.4	<0.4	<0.37	<0.39	<0.37	690	3500	71000
Butyl Benzyl Phthlate	<0.4	<0.4	<0.37	<0.39	<0.37	5100	26000	520000
Chloroaniline, p-	<0.8	<0.81	<0.75	<0.79	<0.75	49	250	710
Chloronaphthalene, Beta-	<0.4	<0.4	<0.37	<0.39	<0.37	13000	330000	1000000
Chlorophenol, 2-	<0.4	<0.4	<0.37	<0.39	<0.37	780	20000	22000
Chrysene	3.7	4.7	12.9	0.52	16.7	1200	5800	120000
Cresol, m/p	<0.8	<0.81	<0.75	<0.79	<0.75	n/a	n/a	n/a
Cresol, o-	<0.4	<0.4	<0.37	<0.39	<0.37	6100	88000	710000
Cresol, p-chloro-m-	<0.8	<0.81	<0.75	<0.79	<0.75	12000	180000	140000
Dibenz[a,h]anthracene	<0.4	<0.4	<0.37	<0.39	<0.37	1.24	5.8	120
Dibutyl Phthalate	<0.4	<0.4	<0.37	<0.39	<0.37	12000	180000	430000
Dichlorophenol, 2,4-	<0.4	<0.4	<0.37	<0.39	<0.37	370	5300	28000
Diethyl Phthalate	<0.4	<0.4	<0.37	<0.39	<0.37	98000	1000000	1000000
Dimethylphenol, 2,4-	<0.4	<0.4	<0.37	<0.39	<0.37	2400	35000	85000
Dinitrophenol, 2,4-	<1.9	<2	<1.8	<1.9	<1.8	240	3500	28000

All values reported in ppm. Non-detects are shown as less than reporting limit. n/a = Not Analyzed or Not Applicable
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PANDEY
ENVIRONMENTAL, LLC

Bexley Ferndale Park Area: Ferndale Place; Bexley, Ohio

Chemical Name	HA-1: 0-2' (8/7/18)	HA-3: 0-2' (8/7/18)	HA-4: 0-2' (8/7/18)	HA-6: 0-2' (8/7/18)	HA-10: 0-2' (8/7/18)	GDCSS Res.	GDCSS Comm.	GDCSS Const.
Semi-Volatile Organic Compounds (SVOCs)								
Dinitrotoluene, 2,4-	<0.4	<0.4	<0.37	<0.39	<0.37	31	160	2800
Dinitrotoluene, 2,6-	<0.4	<0.4	<0.37	<0.39	<0.37	6.5	33	670
Fluoranthene	3.6	9.6	29.3	1.1	41.2	4600	60000	160000
Fluorene	<0.4	0.55	1.2	<0.39	1.1	4600	60000	520000
Hexachlorocyclopentadiene	<0.4	<0.4	<0.37	<0.39	<0.37	730	11000	26000
Hexachloroethane	<0.4	<0.4	<0.37	<0.39	<0.37	86	1200	3000
Indeno[1,2,3-cd]pyrene	1.7	2.7	6.1	<0.39	6.7	12	58	1200
Isophorone	<0.4	<0.4	<0.37	<0.39	<0.37	10000	52000	1000000
Methylnaphthalene, 2-	<0.4	<0.4	<0.37	<0.39	<0.37	460	6000	5200
Naphthalene	<0.4	<0.4	<0.37	<0.39	<0.37	90	450	560
Nitrobenzene	<0.4	<0.4	<0.37	<0.39	<0.37	120	610	3000
Nitroso-di-N-propylamine, N-	<0.4	<0.4	<0.37	<0.39	<0.37	1.4	7	140
Nitrosodiphenylamine, N-	<0.4	<0.4	<0.37	<0.39	<0.37	2000	10000	200000
Octyl Phthalate, di-N-	<0.4	<0.4	<0.37	<0.39	<0.37	1200	18000	140000
Phenanthrene	4.7	6.6	18.9	0.55	22.1	36000	670000	1000000
Phenol	<0.4	<0.4	<0.37	<0.39	<0.37	37000	530000	840000
Pyrene	2.8	8.1	24.2	0.99	31.5	3400	45000	390000
Trichlorophenol, 2,4,5-	<0.4	<0.4	<0.37	<0.39	<0.37	12000	180000	1000000

All values reported in ppm. Non-detects are shown as less than reporting limit. n/a = Not Analyzed or Not Applicable
GDCSS = Ohio VAP Generic Direct Contact Soil Standard for Residential, Commercial/Industrial and Construction Scenarios
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ENVIRONMENTAL, LLC

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Chemical Name	HA-1: 0-2' (8/7/18)	HA-3: 0-2' (8/7/18)	HA-4: 0-2' (8/7/18)	HA-6: 0-2' (8/7/18)	HA-10: 0-2' (8/7/18)	GDCSS Res.	GDCSS Comm.	GDCSS Const.
Semi-Volatile Organic Compounds (SVOCs)								
Trichlorophenol, 2,4,6-	<0.4	<0.4	<0.37	<0.39	<0.37	120	1800	1400

All values reported in ppm. Non-detects are shown as less than reporting limit. n/a = Not Analyzed or Not Applicable
GDCSS = Ohio VAP Generic Direct Contact Soil Standard for Residential, Commercial/Industrial and Construction Scenarios
Red outline indicates an exceedance of the Residential GDCSS.
The background concentration for Arsenic in Franklin County has been promulgated by the Ohio EPA as 20.7 ppm.

APPENDIX A
LABORATORY ANALYTICAL DATA, CHAIN OF CUSTODY, AND LABORATORY AFFIDAVIT

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

August 15, 2018

Mr. Nick Vallera
Pandey Environmental, LLC
4100 Horizons Drive
Suite 205
Columbus, OH 43220

RE: Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Dear Mr. Vallera:
Enclosed are the analytical results for sample(s) received by the laboratory on August 08, 2018. 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,

Kenneth Hunt
kenneth.hunt@pacelabs.com
(317)228-3100
Project Manager

Enclosures

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

CERTIFICATIONS

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268
Illinois Certification #: 200074
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 #: 2017-124
Texas Certification #: T104704355-18-12
West Virginia Certification #: 330
Wisconsin Certification #: 999788130
USDA Soil Permit #: P330-16-00257

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

SAMPLE SUMMARY

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50202931001	**HA-10 : 0-2**	Solid	08/07/18 11:45	08/08/18 08:45
50202931002	**HA-3 : 0-2**	Solid	08/07/18 10:30	08/08/18 08:45
50202931003	**HA-1 : 0-2**	Solid	08/07/18 10:00	08/08/18 08:45
50202931004	**HA-4 : 0-2**	Solid	08/07/18 11:00	08/08/18 08:45
50202931005	**HA-6 : 0-2**	Solid	08/07/18 10:45	08/08/18 08:45

REPORT OF LABORATORY ANALYSIS

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

SAMPLE ANALYTE COUNT

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Lab ID	Sample ID	Method	Analysts	Analytes Reported
50202931001	**HA-10 : 0-2**	EPA 6010	MJC	7
		EPA 7471	AAG	1
		EPA 8270	TBP	51
		SM 2540G	RNP	1
50202931002	**HA-3 : 0-2**	EPA 6010	MJC	7
		EPA 7471	AAG	1
		EPA 8270	TBP	51
		SM 2540G	RNP	1
50202931003	**HA-1 : 0-2**	EPA 6010	MJC	7
		EPA 7471	AAG	1
		EPA 8270	TBP	51
		SM 2540G	RNP	1
50202931004	**HA-4 : 0-2**	EPA 6010	MJC	7
		EPA 7471	AAG	1
		EPA 8270	TBP	51
		SM 2540G	RNP	1
50202931005	**HA-6 : 0-2**	EPA 6010	MJC	7
		EPA 7471	AAG	1
		EPA 8270	TBP	51
		SM 2540G	RNP	1

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

SUMMARY OF DETECTION

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50202931001	**HA-10 : 0-2**					
EPA 6010	Arsenic	18.0	mg/kg	1.1	08/14/18 08:46	
EPA 6010	Barium	145	mg/kg	1.1	08/14/18 08:46	
EPA 6010	Cadmium	0.84	mg/kg	0.53	08/14/18 08:46	
EPA 6010	Chromium	12.3	mg/kg	1.1	08/14/18 08:46	
EPA 6010	Lead	185	mg/kg	1.1	08/14/18 08:46	
EPA 8270	Acenaphthene	1.1	mg/kg	0.37	08/10/18 16:20	
EPA 8270	Acenaphthylene	0.50	mg/kg	0.37	08/10/18 16:20	
EPA 8270	Anthracene	5.9	mg/kg	3.7	08/13/18 15:28	
EPA 8270	Benzo(a)anthracene	19.1	mg/kg	3.7	08/13/18 15:28	
EPA 8270	Benzo(a)pyrene	13.0	mg/kg	3.7	08/13/18 15:28	
EPA 8270	Benzo(b)fluoranthene	18.4	mg/kg	3.7	08/13/18 15:28	
EPA 8270	Benzo(g,h,i)perylene	7.5	mg/kg	3.7	08/13/18 15:28	
EPA 8270	Benzo(k)fluoranthene	7.6	mg/kg	3.7	08/13/18 15:28	
EPA 8270	Chrysene	16.7	mg/kg	3.7	08/13/18 15:28	
EPA 8270	Fluoranthene	41.2	mg/kg	3.7	08/13/18 15:28	
EPA 8270	Fluorene	1.1	mg/kg	0.37	08/10/18 16:20	
EPA 8270	Indeno(1,2,3-cd)pyrene	6.7	mg/kg	3.7	08/13/18 15:28	
EPA 8270	Phenanthrene	22.1	mg/kg	3.7	08/13/18 15:28	
EPA 8270	Pyrene	31.5	mg/kg	3.7	08/13/18 15:28	
SM 2540G	Percent Moisture	12.9	%	0.10	08/09/18 10:54	
50202931002	**HA-3 : 0-2**					
EPA 6010	Arsenic	15.1	mg/kg	1.1	08/14/18 08:48	
EPA 6010	Barium	182	mg/kg	1.1	08/14/18 08:48	
EPA 6010	Cadmium	0.75	mg/kg	0.57	08/14/18 08:48	
EPA 6010	Chromium	12.4	mg/kg	1.1	08/14/18 08:48	
EPA 6010	Lead	79.0	mg/kg	1.1	08/14/18 08:48	
EPA 8270	Acenaphthene	0.59	mg/kg	0.40	08/10/18 16:37	
EPA 8270	Anthracene	1.9	mg/kg	0.40	08/10/18 16:37	
EPA 8270	Benzo(a)anthracene	5.2	mg/kg	0.40	08/10/18 16:37	
EPA 8270	Benzo(a)pyrene	4.2	mg/kg	0.40	08/10/18 16:37	
EPA 8270	Benzo(b)fluoranthene	5.1	mg/kg	0.40	08/10/18 16:37	
EPA 8270	Benzo(g,h,i)perylene	2.6	mg/kg	0.40	08/10/18 16:37	
EPA 8270	Benzo(k)fluoranthene	2.4	mg/kg	0.40	08/10/18 16:37	
EPA 8270	Chrysene	4.7	mg/kg	0.40	08/10/18 16:37	
EPA 8270	Fluoranthene	9.6	mg/kg	4.0	08/13/18 15:44	
EPA 8270	Fluorene	0.55	mg/kg	0.40	08/10/18 16:37	
EPA 8270	Indeno(1,2,3-cd)pyrene	2.7	mg/kg	0.40	08/10/18 16:37	
EPA 8270	Phenanthrene	6.6	mg/kg	4.0	08/13/18 15:44	
EPA 8270	Pyrene	8.1	mg/kg	4.0	08/13/18 15:44	
SM 2540G	Percent Moisture	19.0	%	0.10	08/09/18 10:54	
50202931003	**HA-1 : 0-2**					
EPA 6010	Arsenic	20.7	mg/kg	1.2	08/14/18 08:55	
EPA 6010	Barium	154	mg/kg	1.2	08/14/18 08:55	
EPA 6010	Cadmium	0.93	mg/kg	0.60	08/14/18 08:55	
EPA 6010	Chromium	16.6	mg/kg	1.2	08/14/18 08:55	
EPA 6010	Lead	135	mg/kg	1.2	08/14/18 08:55	

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

SUMMARY OF DETECTION

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50202931003	**HA-1 : 0-2**					
EPA 8270	Anthracene	1.1	mg/kg	0.40	08/10/18 17:42	
EPA 8270	Benzo(a)anthracene	3.5	mg/kg	0.40	08/10/18 17:42	
EPA 8270	Benzo(a)pyrene	3.1	mg/kg	0.40	08/10/18 17:42	
EPA 8270	Benzo(b)fluoranthene	4.3	mg/kg	0.40	08/10/18 17:42	
EPA 8270	Benzo(g,h,i)perylene	1.9	mg/kg	0.40	08/10/18 17:42	
EPA 8270	Benzo(k)fluoranthene	2.3	mg/kg	0.40	08/10/18 17:42	
EPA 8270	Chrysene	3.7	mg/kg	0.40	08/10/18 17:42	
EPA 8270	Fluoranthene	3.6	mg/kg	2.0	08/13/18 16:00	
EPA 8270	Indeno(1,2,3-cd)pyrene	1.7	mg/kg	0.40	08/10/18 17:42	
EPA 8270	Phenanthrene	4.7	mg/kg	0.40	08/10/18 17:42	
EPA 8270	Pyrene	2.8	mg/kg	2.0	08/13/18 16:00	
SM 2540G	Percent Moisture	18.0	%	0.10	08/09/18 10:54	
50202931004	**HA-4 : 0-2**					
EPA 6010	Arsenic	15.2	mg/kg	0.97	08/14/18 08:57	
EPA 6010	Barium	140	mg/kg	0.97	08/14/18 08:57	
EPA 6010	Cadmium	0.67	mg/kg	0.48	08/14/18 08:57	
EPA 6010	Chromium	11.4	mg/kg	0.97	08/14/18 08:57	
EPA 6010	Lead	56.4	mg/kg	0.97	08/14/18 08:57	
EPA 8270	Acenaphthene	1.1	mg/kg	0.37	08/10/18 17:58	
EPA 8270	Anthracene	6.4	mg/kg	3.7	08/13/18 16:16	
EPA 8270	Benzo(a)anthracene	14.6	mg/kg	3.7	08/13/18 16:16	
EPA 8270	Benzo(a)pyrene	11.6	mg/kg	3.7	08/13/18 16:16	
EPA 8270	Benzo(b)fluoranthene	15.0	mg/kg	3.7	08/13/18 16:16	
EPA 8270	Benzo(g,h,i)perylene	6.8	mg/kg	3.7	08/13/18 16:16	
EPA 8270	Benzo(k)fluoranthene	6.3	mg/kg	3.7	08/13/18 16:16	
EPA 8270	Chrysene	12.9	mg/kg	3.7	08/13/18 16:16	
EPA 8270	Fluoranthene	29.3	mg/kg	3.7	08/13/18 16:16	
EPA 8270	Fluorene	1.2	mg/kg	0.37	08/10/18 17:58	
EPA 8270	Indeno(1,2,3-cd)pyrene	6.1	mg/kg	3.7	08/13/18 16:16	
EPA 8270	Phenanthrene	18.9	mg/kg	3.7	08/13/18 16:16	
EPA 8270	Pyrene	24.2	mg/kg	3.7	08/13/18 16:16	
SM 2540G	Percent Moisture	12.6	%	0.10	08/09/18 10:55	
50202931005	**HA-6 : 0-2**					
EPA 6010	Arsenic	22.7	mg/kg	1.0	08/14/18 09:00	
EPA 6010	Barium	199	mg/kg	1.0	08/14/18 09:00	
EPA 6010	Chromium	17.7	mg/kg	1.0	08/14/18 09:00	
EPA 6010	Lead	35.1	mg/kg	1.0	08/14/18 09:00	
EPA 8270	Benzo(a)anthracene	0.49	mg/kg	0.39	08/10/18 18:14	
EPA 8270	Benzo(a)pyrene	0.44	mg/kg	0.39	08/10/18 18:14	
EPA 8270	Benzo(b)fluoranthene	0.52	mg/kg	0.39	08/10/18 18:14	
EPA 8270	Chrysene	0.52	mg/kg	0.39	08/10/18 18:14	
EPA 8270	Fluoranthene	1.1	mg/kg	0.39	08/10/18 18:14	
EPA 8270	Phenanthrene	0.55	mg/kg	0.39	08/10/18 18:14	
EPA 8270	Pyrene	0.99	mg/kg	0.39	08/10/18 18:14	
SM 2540G	Percent Moisture	17.2	%	0.10	08/09/18 10:55	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Sample: HA-10 : 0-2 **Lab ID: 50202931001** Collected: 08/07/18 11:45 Received: 08/08/18 08:45 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
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**18.0**	mg/kg	1.1	1	08/10/18 06:45	08/14/18 08:46	7440-38-2	
Barium	**145**	mg/kg	1.1	1	08/10/18 06:45	08/14/18 08:46	7440-39-3	
Cadmium	**0.84**	mg/kg	0.53	1	08/10/18 06:45	08/14/18 08:46	7440-43-9	
Chromium	**12.3**	mg/kg	1.1	1	08/10/18 06:45	08/14/18 08:46	7440-47-3	
Lead	**185**	mg/kg	1.1	1	08/10/18 06:45	08/14/18 08:46	7439-92-1	
Selenium	ND	mg/kg	1.1	1	08/10/18 06:45	08/14/18 08:46	7782-49-2	
Silver	ND	mg/kg	0.53	1	08/10/18 06:45	08/14/18 08:46	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	ND	mg/kg	0.23	1	08/09/18 10:05	08/09/18 19:56	7439-97-6	
8270 SVOC SS Soil	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	**1.1**	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	83-32-9	
Acenaphthylene	**0.50**	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	208-96-8	
Anthracene	**5.9**	mg/kg	3.7	10	08/09/18 10:17	08/13/18 15:28	120-12-7	
Benzo(a)anthracene	**19.1**	mg/kg	3.7	10	08/09/18 10:17	08/13/18 15:28	56-55-3	
Benzo(a)pyrene	**13.0**	mg/kg	3.7	10	08/09/18 10:17	08/13/18 15:28	50-32-8	
Benzo(b)fluoranthene	**18.4**	mg/kg	3.7	10	08/09/18 10:17	08/13/18 15:28	205-99-2	
Benzo(g,h,i)perylene	**7.5**	mg/kg	3.7	10	08/09/18 10:17	08/13/18 15:28	191-24-2	
Benzo(k)fluoranthene	**7.6**	mg/kg	3.7	10	08/09/18 10:17	08/13/18 15:28	207-08-9	
Butylbenzylphthalate	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.75	1	08/09/18 10:17	08/10/18 16:20	59-50-7	
4-Chloroaniline	ND	mg/kg	0.75	1	08/09/18 10:17	08/10/18 16:20	106-47-8	
bis(2-Chloroethoxy)methane	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	111-44-4	
bis(2chloro1methylethyl) ether	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	108-60-1	
2-Chloronaphthalene	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	91-58-7	
2-Chlorophenol	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	95-57-8	
Chrysene	**16.7**	mg/kg	3.7	10	08/09/18 10:17	08/13/18 15:28	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	53-70-3	
2,4-Dichlorophenol	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	120-83-2	
Diethylphthalate	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	105-67-9	
Di-n-butylphthalate	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	84-74-2	
2,4-Dinitrophenol	ND	mg/kg	1.8	1	08/09/18 10:17	08/10/18 16:20	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	117-81-7	
Fluoranthene	**41.2**	mg/kg	3.7	10	08/09/18 10:17	08/13/18 15:28	206-44-0	
Fluorene	**1.1**	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	86-73-7	
Hexachlorocyclopentadiene	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	77-47-4	
Hexachloroethane	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	67-72-1	
Indeno(1,2,3-cd)pyrene	**6.7**	mg/kg	3.7	10	08/09/18 10:17	08/13/18 15:28	193-39-5	
Isophorone	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	78-59-1	

Pace Analytical Services, LLC
7726 Moller Road
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ANALYTICAL RESULTS

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Sample: HA-10 : 0-2 **Lab ID: 50202931001** Collected: 08/07/18 11:45 Received: 08/08/18 08:45 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
8270 SVOC SS Soil	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
2-Methylnaphthalene	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.75	1	08/09/18 10:17	08/10/18 16:20		
Naphthalene	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	91-20-3	
Nitrobenzene	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	98-95-3	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	86-30-6	
Phenanthrene	**22.1**	mg/kg	3.7	10	08/09/18 10:17	08/13/18 15:28	85-01-8	
Phenol	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	108-95-2	
Pyrene	**31.5**	mg/kg	3.7	10	08/09/18 10:17	08/13/18 15:28	129-00-0	
2,4,5-Trichlorophenol	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.37	1	08/09/18 10:17	08/10/18 16:20	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	56	%.	29-87	1	08/09/18 10:17	08/10/18 16:20	4165-60-0	
Phenol-d5 (S)	58	%.	24-99	1	08/09/18 10:17	08/10/18 16:20	4165-62-2	
2-Fluorophenol (S)	56	%.	22-99	1	08/09/18 10:17	08/10/18 16:20	367-12-4	
2,4,6-Tribromophenol (S)	71	%.	19-117	1	08/09/18 10:17	08/10/18 16:20	118-79-6	
2-Fluorobiphenyl (S)	55	%.	29-93	1	08/09/18 10:17	08/10/18 16:20	321-60-8	
p-Terphenyl-d14 (S)	75	%.	26-127	1	08/09/18 10:17	08/10/18 16:20	1718-51-0	
Percent Moisture	Analytical Method: SM 2540G							
Percent Moisture	**12.9**	%	0.10	1		08/09/18 10:54		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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ANALYTICAL RESULTS

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Sample: HA-3 : 0-2 **Lab ID: 50202931002** Collected: 08/07/18 10:30 Received: 08/08/18 08:45 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
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**15.1**	mg/kg	1.1	1	08/10/18 06:45	08/14/18 08:48	7440-38-2	
Barium	**182**	mg/kg	1.1	1	08/10/18 06:45	08/14/18 08:48	7440-39-3	
Cadmium	**0.75**	mg/kg	0.57	1	08/10/18 06:45	08/14/18 08:48	7440-43-9	
Chromium	**12.4**	mg/kg	1.1	1	08/10/18 06:45	08/14/18 08:48	7440-47-3	
Lead	**79.0**	mg/kg	1.1	1	08/10/18 06:45	08/14/18 08:48	7439-92-1	
Selenium	ND	mg/kg	1.1	1	08/10/18 06:45	08/14/18 08:48	7782-49-2	
Silver	ND	mg/kg	0.57	1	08/10/18 06:45	08/14/18 08:48	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	ND	mg/kg	0.24	1	08/09/18 10:05	08/09/18 19:58	7439-97-6	
8270 SVOC SS Soil	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	**0.59**	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	83-32-9	
Acenaphthylene	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	208-96-8	
Anthracene	**1.9**	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	120-12-7	
Benzo(a)anthracene	**5.2**	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	56-55-3	
Benzo(a)pyrene	**4.2**	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	50-32-8	
Benzo(b)fluoranthene	**5.1**	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	205-99-2	
Benzo(g,h,i)perylene	**2.6**	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	191-24-2	
Benzo(k)fluoranthene	**2.4**	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	207-08-9	
Butylbenzylphthalate	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.81	1	08/09/18 10:17	08/10/18 16:37	59-50-7	
4-Chloroaniline	ND	mg/kg	0.81	1	08/09/18 10:17	08/10/18 16:37	106-47-8	
bis(2-Chloroethoxy)methane	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	111-44-4	
bis(2chloro1methylethyl) ether	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	108-60-1	
2-Chloronaphthalene	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	91-58-7	
2-Chlorophenol	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	95-57-8	
Chrysene	**4.7**	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	53-70-3	
2,4-Dichlorophenol	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	120-83-2	
Diethylphthalate	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	105-67-9	
Di-n-butylphthalate	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	84-74-2	
2,4-Dinitrophenol	ND	mg/kg	2.0	1	08/09/18 10:17	08/10/18 16:37	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	117-81-7	
Fluoranthene	**9.6**	mg/kg	4.0	10	08/09/18 10:17	08/13/18 15:44	206-44-0	
Fluorene	**0.55**	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	86-73-7	
Hexachlorocyclopentadiene	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	77-47-4	
Hexachloroethane	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	67-72-1	
Indeno(1,2,3-cd)pyrene	**2.7**	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	193-39-5	
Isophorone	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	78-59-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Sample: HA-3 : 0-2 **Lab ID: 50202931002** Collected: 08/07/18 10:30 Received: 08/08/18 08:45 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
8270 SVOC SS Soil	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
2-Methylnaphthalene	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.81	1	08/09/18 10:17	08/10/18 16:37		
Naphthalene	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	91-20-3	
Nitrobenzene	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	98-95-3	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	86-30-6	
Phenanthrene	**6.6**	mg/kg	4.0	10	08/09/18 10:17	08/13/18 15:44	85-01-8	
Phenol	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	108-95-2	
Pyrene	**8.1**	mg/kg	4.0	10	08/09/18 10:17	08/13/18 15:44	129-00-0	
2,4,5-Trichlorophenol	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.40	1	08/09/18 10:17	08/10/18 16:37	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	58	%.	29-87	1	08/09/18 10:17	08/10/18 16:37	4165-60-0	
Phenol-d5 (S)	58	%.	24-99	1	08/09/18 10:17	08/10/18 16:37	4165-62-2	
2-Fluorophenol (S)	57	%.	22-99	1	08/09/18 10:17	08/10/18 16:37	367-12-4	
2,4,6-Tribromophenol (S)	71	%.	19-117	1	08/09/18 10:17	08/10/18 16:37	118-79-6	
2-Fluorobiphenyl (S)	56	%.	29-93	1	08/09/18 10:17	08/10/18 16:37	321-60-8	
p-Terphenyl-d14 (S)	72	%.	26-127	1	08/09/18 10:17	08/10/18 16:37	1718-51-0	
Percent Moisture	Analytical Method: SM 2540G							
Percent Moisture	**19.0**	%	0.10	1		08/09/18 10:54		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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ANALYTICAL RESULTS

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Sample: HA-1 : 0-2 **Lab ID: 50202931003** Collected: 08/07/18 10:00 Received: 08/08/18 08:45 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
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**20.7**	mg/kg	1.2	1	08/10/18 06:45	08/14/18 08:55	7440-38-2	
Barium	**154**	mg/kg	1.2	1	08/10/18 06:45	08/14/18 08:55	7440-39-3	
Cadmium	**0.93**	mg/kg	0.60	1	08/10/18 06:45	08/14/18 08:55	7440-43-9	
Chromium	**16.6**	mg/kg	1.2	1	08/10/18 06:45	08/14/18 08:55	7440-47-3	
Lead	**135**	mg/kg	1.2	1	08/10/18 06:45	08/14/18 08:55	7439-92-1	
Selenium	ND	mg/kg	1.2	1	08/10/18 06:45	08/14/18 08:55	7782-49-2	
Silver	ND	mg/kg	0.60	1	08/10/18 06:45	08/14/18 08:55	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	ND	mg/kg	0.23	1	08/09/18 10:05	08/09/18 20:00	7439-97-6	
8270 SVOC SS Soil	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	83-32-9	
Acenaphthylene	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	208-96-8	
Anthracene	**1.1**	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	120-12-7	
Benzo(a)anthracene	**3.5**	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	56-55-3	
Benzo(a)pyrene	**3.1**	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	50-32-8	
Benzo(b)fluoranthene	**4.3**	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	205-99-2	
Benzo(g,h,i)perylene	**1.9**	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	191-24-2	
Benzo(k)fluoranthene	**2.3**	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	207-08-9	
Butylbenzylphthalate	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.80	1	08/10/18 09:52	08/10/18 17:42	59-50-7	
4-Chloroaniline	ND	mg/kg	0.80	1	08/10/18 09:52	08/10/18 17:42	106-47-8	
bis(2-Chloroethoxy)methane	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	111-44-4	
bis(2chloro1methylethyl) ether	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	108-60-1	
2-Chloronaphthalene	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	91-58-7	
2-Chlorophenol	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	95-57-8	
Chrysene	**3.7**	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	53-70-3	
2,4-Dichlorophenol	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	120-83-2	
Diethylphthalate	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	105-67-9	
Di-n-butylphthalate	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	84-74-2	
2,4-Dinitrophenol	ND	mg/kg	1.9	1	08/10/18 09:52	08/10/18 17:42	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	117-81-7	
Fluoranthene	**3.6**	mg/kg	2.0	5	08/10/18 09:52	08/13/18 16:00	206-44-0	
Fluorene	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	86-73-7	
Hexachlorocyclopentadiene	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	77-47-4	
Hexachloroethane	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	67-72-1	
Indeno(1,2,3-cd)pyrene	**1.7**	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	193-39-5	
Isophorone	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	78-59-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Sample: HA-1 : 0-2 **Lab ID: 50202931003** Collected: 08/07/18 10:00 Received: 08/08/18 08:45 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
8270 SVOC SS Soil	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
2-Methylnaphthalene	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.80	1	08/10/18 09:52	08/10/18 17:42		
Naphthalene	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	91-20-3	
Nitrobenzene	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	98-95-3	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	86-30-6	
Phenanthrene	**4.7**	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	85-01-8	
Phenol	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	108-95-2	
Pyrene	**2.8**	mg/kg	2.0	5	08/10/18 09:52	08/13/18 16:00	129-00-0	
2,4,5-Trichlorophenol	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.40	1	08/10/18 09:52	08/10/18 17:42	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	58	%.	29-87	1	08/10/18 09:52	08/10/18 17:42	4165-60-0	
Phenol-d5 (S)	61	%.	24-99	1	08/10/18 09:52	08/10/18 17:42	4165-62-2	
2-Fluorophenol (S)	57	%.	22-99	1	08/10/18 09:52	08/10/18 17:42	367-12-4	
2,4,6-Tribromophenol (S)	79	%.	19-117	1	08/10/18 09:52	08/10/18 17:42	118-79-6	
2-Fluorobiphenyl (S)	59	%.	29-93	1	08/10/18 09:52	08/10/18 17:42	321-60-8	
p-Terphenyl-d14 (S)	82	%.	26-127	1	08/10/18 09:52	08/10/18 17:42	1718-51-0	
Percent Moisture	Analytical Method: SM 2540G							
Percent Moisture	**18.0**	%	0.10	1		08/09/18 10:54		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Sample: HA-4 : 0-2 **Lab ID: 50202931004** Collected: 08/07/18 11:00 Received: 08/08/18 08:45 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
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**15.2**	mg/kg	0.97	1	08/10/18 06:45	08/14/18 08:57	7440-38-2	
Barium	**140**	mg/kg	0.97	1	08/10/18 06:45	08/14/18 08:57	7440-39-3	
Cadmium	**0.67**	mg/kg	0.48	1	08/10/18 06:45	08/14/18 08:57	7440-43-9	
Chromium	**11.4**	mg/kg	0.97	1	08/10/18 06:45	08/14/18 08:57	7440-47-3	
Lead	**56.4**	mg/kg	0.97	1	08/10/18 06:45	08/14/18 08:57	7439-92-1	
Selenium	ND	mg/kg	0.97	1	08/10/18 06:45	08/14/18 08:57	7782-49-2	
Silver	ND	mg/kg	0.48	1	08/10/18 06:45	08/14/18 08:57	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	ND	mg/kg	0.24	1	08/09/18 10:05	08/09/18 20:02	7439-97-6	
8270 SVOC SS Soil	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	**1.1**	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	83-32-9	
Acenaphthylene	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	208-96-8	
Anthracene	**6.4**	mg/kg	3.7	10	08/10/18 09:52	08/13/18 16:16	120-12-7	
Benzo(a)anthracene	**14.6**	mg/kg	3.7	10	08/10/18 09:52	08/13/18 16:16	56-55-3	
Benzo(a)pyrene	**11.6**	mg/kg	3.7	10	08/10/18 09:52	08/13/18 16:16	50-32-8	
Benzo(b)fluoranthene	**15.0**	mg/kg	3.7	10	08/10/18 09:52	08/13/18 16:16	205-99-2	
Benzo(g,h,i)perylene	**6.8**	mg/kg	3.7	10	08/10/18 09:52	08/13/18 16:16	191-24-2	
Benzo(k)fluoranthene	**6.3**	mg/kg	3.7	10	08/10/18 09:52	08/13/18 16:16	207-08-9	
Butylbenzylphthalate	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.75	1	08/10/18 09:52	08/10/18 17:58	59-50-7	
4-Chloroaniline	ND	mg/kg	0.75	1	08/10/18 09:52	08/10/18 17:58	106-47-8	
bis(2-Chloroethoxy)methane	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	111-44-4	
bis(2chloro1methylethyl) ether	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	108-60-1	
2-Chloronaphthalene	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	91-58-7	
2-Chlorophenol	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	95-57-8	
Chrysene	**12.9**	mg/kg	3.7	10	08/10/18 09:52	08/13/18 16:16	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	53-70-3	
2,4-Dichlorophenol	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	120-83-2	
Diethylphthalate	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	105-67-9	
Di-n-butylphthalate	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	84-74-2	
2,4-Dinitrophenol	ND	mg/kg	1.8	1	08/10/18 09:52	08/10/18 17:58	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	117-81-7	
Fluoranthene	**29.3**	mg/kg	3.7	10	08/10/18 09:52	08/13/18 16:16	206-44-0	
Fluorene	**1.2**	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	86-73-7	
Hexachlorocyclopentadiene	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	77-47-4	
Hexachloroethane	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	67-72-1	
Indeno(1,2,3-cd)pyrene	**6.1**	mg/kg	3.7	10	08/10/18 09:52	08/13/18 16:16	193-39-5	
Isophorone	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	78-59-1	

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

ANALYTICAL RESULTS

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Sample: HA-4 : 0-2 **Lab ID: 50202931004** Collected: 08/07/18 11:00 Received: 08/08/18 08:45 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
8270 SVOC SS Soil	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
2-Methylnaphthalene	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.75	1	08/10/18 09:52	08/10/18 17:58		
Naphthalene	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	91-20-3	
Nitrobenzene	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	98-95-3	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	86-30-6	
Phenanthrene	**18.9**	mg/kg	3.7	10	08/10/18 09:52	08/13/18 16:16	85-01-8	
Phenol	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	108-95-2	
Pyrene	**24.2**	mg/kg	3.7	10	08/10/18 09:52	08/13/18 16:16	129-00-0	
2,4,5-Trichlorophenol	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.37	1	08/10/18 09:52	08/10/18 17:58	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	54	%.	29-87	1	08/10/18 09:52	08/10/18 17:58	4165-60-0	
Phenol-d5 (S)	56	%.	24-99	1	08/10/18 09:52	08/10/18 17:58	4165-62-2	
2-Fluorophenol (S)	53	%.	22-99	1	08/10/18 09:52	08/10/18 17:58	367-12-4	
2,4,6-Tribromophenol (S)	74	%.	19-117	1	08/10/18 09:52	08/10/18 17:58	118-79-6	
2-Fluorobiphenyl (S)	53	%.	29-93	1	08/10/18 09:52	08/10/18 17:58	321-60-8	
p-Terphenyl-d14 (S)	76	%.	26-127	1	08/10/18 09:52	08/10/18 17:58	1718-51-0	
Percent Moisture	Analytical Method: SM 2540G							
Percent Moisture	**12.6**	%	0.10	1		08/09/18 10:55		

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Sample: HA-6 : 0-2 **Lab ID: 50202931005** Collected: 08/07/18 10:45 Received: 08/08/18 08:45 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
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Arsenic	**22.7**	mg/kg	1.0	1	08/10/18 06:45	08/14/18 09:00	7440-38-2	
Barium	**199**	mg/kg	1.0	1	08/10/18 06:45	08/14/18 09:00	7440-39-3	
Cadmium	ND	mg/kg	0.52	1	08/10/18 06:45	08/14/18 09:00	7440-43-9	
Chromium	**17.7**	mg/kg	1.0	1	08/10/18 06:45	08/14/18 09:00	7440-47-3	
Lead	**35.1**	mg/kg	1.0	1	08/10/18 06:45	08/14/18 09:00	7439-92-1	
Selenium	ND	mg/kg	1.0	1	08/10/18 06:45	08/14/18 09:00	7782-49-2	
Silver	ND	mg/kg	0.52	1	08/10/18 06:45	08/14/18 09:00	7440-22-4	
7471 Mercury	Analytical Method: EPA 7471 Preparation Method: EPA 7471							
Mercury	ND	mg/kg	0.24	1	08/09/18 10:05	08/09/18 20:04	7439-97-6	
8270 SVOC SS Soil	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
Acenaphthene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	83-32-9	
Acenaphthylene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	208-96-8	
Anthracene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	120-12-7	
Benzo(a)anthracene	**0.49**	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	56-55-3	
Benzo(a)pyrene	**0.44**	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	50-32-8	
Benzo(b)fluoranthene	**0.52**	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	207-08-9	
Butylbenzylphthalate	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	85-68-7	
4-Chloro-3-methylphenol	ND	mg/kg	0.79	1	08/10/18 09:52	08/10/18 18:14	59-50-7	
4-Chloroaniline	ND	mg/kg	0.79	1	08/10/18 09:52	08/10/18 18:14	106-47-8	
bis(2-Chloroethoxy)methane	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	111-91-1	
bis(2-Chloroethyl) ether	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	111-44-4	
bis(2chloro1methylethyl) ether	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	108-60-1	
2-Chloronaphthalene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	91-58-7	
2-Chlorophenol	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	95-57-8	
Chrysene	**0.52**	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	53-70-3	
2,4-Dichlorophenol	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	120-83-2	
Diethylphthalate	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	84-66-2	
2,4-Dimethylphenol	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	105-67-9	
Di-n-butylphthalate	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	84-74-2	
2,4-Dinitrophenol	ND	mg/kg	1.9	1	08/10/18 09:52	08/10/18 18:14	51-28-5	
2,4-Dinitrotoluene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	121-14-2	
2,6-Dinitrotoluene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	606-20-2	
Di-n-octylphthalate	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	117-84-0	
bis(2-Ethylhexyl)phthalate	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	117-81-7	
Fluoranthene	**1.1**	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	206-44-0	
Fluorene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	86-73-7	
Hexachlorocyclopentadiene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	77-47-4	
Hexachloroethane	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	193-39-5	
Isophorone	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	78-59-1	

REPORT OF LABORATORY ANALYSIS

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

ANALYTICAL RESULTS

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Sample: HA-6 : 0-2 **Lab ID: 50202931005** Collected: 08/07/18 10:45 Received: 08/08/18 08:45 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
8270 SVOC SS Soil	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
2-Methylnaphthalene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	91-57-6	
2-Methylphenol(o-Cresol)	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	mg/kg	0.79	1	08/10/18 09:52	08/10/18 18:14		
Naphthalene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	91-20-3	
Nitrobenzene	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	98-95-3	
N-Nitroso-di-n-propylamine	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	621-64-7	
N-Nitrosodiphenylamine	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	86-30-6	
Phenanthrene	**0.55**	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	85-01-8	
Phenol	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	108-95-2	
Pyrene	**0.99**	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	129-00-0	
2,4,5-Trichlorophenol	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	95-95-4	
2,4,6-Trichlorophenol	ND	mg/kg	0.39	1	08/10/18 09:52	08/10/18 18:14	88-06-2	
Surrogates								
Nitrobenzene-d5 (S)	49	%.	29-87	1	08/10/18 09:52	08/10/18 18:14	4165-60-0	
Phenol-d5 (S)	55	%.	24-99	1	08/10/18 09:52	08/10/18 18:14	4165-62-2	
2-Fluorophenol (S)	50	%.	22-99	1	08/10/18 09:52	08/10/18 18:14	367-12-4	
2,4,6-Tribromophenol (S)	65	%.	19-117	1	08/10/18 09:52	08/10/18 18:14	118-79-6	
2-Fluorobiphenyl (S)	51	%.	29-93	1	08/10/18 09:52	08/10/18 18:14	321-60-8	
p-Terphenyl-d14 (S)	66	%.	26-127	1	08/10/18 09:52	08/10/18 18:14	1718-51-0	
Percent Moisture	Analytical Method: SM 2540G							
Percent Moisture	**17.2**	%	0.10	1		08/09/18 10:55		

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

QC Batch: 456199 Analysis Method: EPA 7471
QC Batch Method: EPA 7471 Analysis Description: 7471 Mercury
Associated Lab Samples: 50202931001, 50202931002, 50202931003, 50202931004, 50202931005

METHOD BLANK: 2106562 Matrix: Solid
Associated Lab Samples: 50202931001, 50202931002, 50202931003, 50202931004, 50202931005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/kg	ND	0.20	08/09/18 19:09	

LABORATORY CONTROL SAMPLE: 2106563

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/kg	.51	0.53	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2106564 2106565

Parameter	Units	50202720007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/kg	ND	.6	.61	0.66	0.66	110	108	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

QC Batch: 456229 Analysis Method: EPA 6010
QC Batch Method: EPA 3050 Analysis Description: 6010 MET
Associated Lab Samples: 50202931001, 50202931002, 50202931003, 50202931004, 50202931005

METHOD BLANK: 2106640 Matrix: Solid
Associated Lab Samples: 50202931001, 50202931002, 50202931003, 50202931004, 50202931005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/kg	ND	1.0	08/14/18 07:57	
Barium	mg/kg	ND	1.0	08/14/18 07:57	
Cadmium	mg/kg	ND	0.50	08/14/18 07:57	
Chromium	mg/kg	ND	1.0	08/14/18 07:57	
Lead	mg/kg	ND	1.0	08/14/18 07:57	
Selenium	mg/kg	ND	1.0	08/14/18 07:57	
Silver	mg/kg	ND	0.50	08/14/18 07:57	

LABORATORY CONTROL SAMPLE: 2106641

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/kg	50	50.4	101	80-120	
Barium	mg/kg	50	51.1	102	80-120	
Cadmium	mg/kg	50	50.4	101	80-120	
Chromium	mg/kg	50	50.1	100	80-120	
Lead	mg/kg	50	48.8	98	80-120	
Selenium	mg/kg	50	50.4	101	80-120	
Silver	mg/kg	25	25.2	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2106642 2106643

Parameter	Units	50202914002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/kg	6.2	57.9	62.1	55.5	58.1	85	84	75-125	5	20	
Barium	mg/kg	123	57.9	62.1	183	195	103	116	75-125	7	20	
Cadmium	mg/kg	ND	57.9	62.1	50.3	53.7	86	86	75-125	7	20	
Chromium	mg/kg	22.8	57.9	62.1	74.0	79.0	88	91	75-125	7	20	
Lead	mg/kg	12.7	57.9	62.1	59.1	61.1	80	78	75-125	3	20	
Selenium	mg/kg	ND	57.9	62.1	48.3	51.8	82	82	75-125	7	20	
Silver	mg/kg	ND	29	31.1	25.4	27.1	88	87	75-125	7	20	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

QC Batch: 456227
QC Batch Method: EPA 3546
Analysis Method: EPA 8270
Analysis Description: 8270 Solid MSSV Microwave Short Spike
Associated Lab Samples: 50202931001, 50202931002

METHOD BLANK: 2106632
Matrix: Solid
Associated Lab Samples: 50202931001, 50202931002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2,4,5-Trichlorophenol	mg/kg	ND	0.33	08/10/18 10:22	
2,4,6-Trichlorophenol	mg/kg	ND	0.33	08/10/18 10:22	
2,4-Dichlorophenol	mg/kg	ND	0.33	08/10/18 10:22	
2,4-Dimethylphenol	mg/kg	ND	0.33	08/10/18 10:22	
2,4-Dinitrophenol	mg/kg	ND	1.6	08/10/18 10:22	
2,4-Dinitrotoluene	mg/kg	ND	0.33	08/10/18 10:22	
2,6-Dinitrotoluene	mg/kg	ND	0.33	08/10/18 10:22	
2-Chloronaphthalene	mg/kg	ND	0.33	08/10/18 10:22	
2-Chlorophenol	mg/kg	ND	0.33	08/10/18 10:22	
2-Methylnaphthalene	mg/kg	ND	0.33	08/10/18 10:22	
2-Methylphenol(o-Cresol)	mg/kg	ND	0.33	08/10/18 10:22	
3&4-Methylphenol(m&p Cresol)	mg/kg	ND	0.66	08/10/18 10:22	
4-Chloro-3-methylphenol	mg/kg	ND	0.66	08/10/18 10:22	
4-Chloroaniline	mg/kg	ND	0.66	08/10/18 10:22	
Acenaphthene	mg/kg	ND	0.33	08/10/18 10:22	
Acenaphthylene	mg/kg	ND	0.33	08/10/18 10:22	
Anthracene	mg/kg	ND	0.33	08/10/18 10:22	
Benzo(a)anthracene	mg/kg	ND	0.33	08/10/18 10:22	
Benzo(a)pyrene	mg/kg	ND	0.33	08/10/18 10:22	
Benzo(b)fluoranthene	mg/kg	ND	0.33	08/10/18 10:22	
Benzo(g,h,i)perylene	mg/kg	ND	0.33	08/10/18 10:22	
Benzo(k)fluoranthene	mg/kg	ND	0.33	08/10/18 10:22	
bis(2-Chloroethoxy)methane	mg/kg	ND	0.33	08/10/18 10:22	
bis(2-Chloroethyl) ether	mg/kg	ND	0.33	08/10/18 10:22	
bis(2-Ethylhexyl)phthalate	mg/kg	ND	0.33	08/10/18 10:22	
bis(2chloro1methylethyl) ether	mg/kg	ND	0.33	08/10/18 10:22	
Butylbenzylphthalate	mg/kg	ND	0.33	08/10/18 10:22	
Chrysene	mg/kg	ND	0.33	08/10/18 10:22	
Di-n-butylphthalate	mg/kg	ND	0.33	08/10/18 10:22	
Di-n-octylphthalate	mg/kg	ND	0.33	08/10/18 10:22	
Dibenz(a,h)anthracene	mg/kg	ND	0.33	08/10/18 10:22	
Diethylphthalate	mg/kg	ND	0.33	08/10/18 10:22	
Fluoranthene	mg/kg	ND	0.33	08/10/18 10:22	
Fluorene	mg/kg	ND	0.33	08/10/18 10:22	
Hexachlorocyclopentadiene	mg/kg	ND	0.33	08/10/18 10:22	
Hexachloroethane	mg/kg	ND	0.33	08/10/18 10:22	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.33	08/10/18 10:22	
Isophorone	mg/kg	ND	0.33	08/10/18 10:22	
N-Nitroso-di-n-propylamine	mg/kg	ND	0.33	08/10/18 10:22	
N-Nitrosodiphenylamine	mg/kg	ND	0.33	08/10/18 10:22	
Naphthalene	mg/kg	ND	0.33	08/10/18 10:22	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

METHOD BLANK: 2106632 Matrix: Solid
Associated Lab Samples: 50202931001, 50202931002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrobenzene	mg/kg	ND	0.33	08/10/18 10:22	
Phenanthrene	mg/kg	ND	0.33	08/10/18 10:22	
Phenol	mg/kg	ND	0.33	08/10/18 10:22	
Pyrene	mg/kg	ND	0.33	08/10/18 10:22	
2,4,6-Tribromophenol (S)	%.	81	19-117	08/10/18 10:22	
2-Fluorobiphenyl (S)	%.	56	29-93	08/10/18 10:22	
2-Fluorophenol (S)	%.	66	22-99	08/10/18 10:22	
Nitrobenzene-d5 (S)	%.	81	29-87	08/10/18 10:22	
p-Terphenyl-d14 (S)	%.	99	26-127	08/10/18 10:22	
Phenol-d5 (S)	%.	73	24-99	08/10/18 10:22	

LABORATORY CONTROL SAMPLE: 2106633

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4-Dinitrotoluene	mg/kg	3.3	2.7	80	40-115	
2-Chlorophenol	mg/kg	3.3	2.5	77	44-99	
2-Methylnaphthalene	mg/kg	3.3	2.6	79	47-95	
4-Chloro-3-methylphenol	mg/kg	3.3	2.9	87	45-107	
Acenaphthene	mg/kg	3.3	2.4	73	48-100	
Acenaphthylene	mg/kg	3.3	2.4	72	49-103	
Anthracene	mg/kg	3.3	2.8	83	48-103	
Benzo(a)anthracene	mg/kg	3.3	2.8	83	51-103	
Benzo(a)pyrene	mg/kg	3.3	2.6	79	47-97	
Benzo(b)fluoranthene	mg/kg	3.3	2.7	81	45-102	
Benzo(g,h,i)perylene	mg/kg	3.3	2.5	76	46-97	
Benzo(k)fluoranthene	mg/kg	3.3	2.5	76	45-100	
Chrysene	mg/kg	3.3	2.7	82	52-103	
Dibenz(a,h)anthracene	mg/kg	3.3	2.6	77	46-98	
Fluoranthene	mg/kg	3.3	2.8	85	51-109	
Fluorene	mg/kg	3.3	2.5	74	49-104	
Indeno(1,2,3-cd)pyrene	mg/kg	3.3	2.6	78	46-98	
N-Nitroso-di-n-propylamine	mg/kg	3.3	2.6	78	40-96	
Naphthalene	mg/kg	3.3	2.5	74	47-90	
Phenanthrene	mg/kg	3.3	2.7	80	51-104	
Phenol	mg/kg	3.3	2.6	78	40-99	
Pyrene	mg/kg	3.3	2.8	84	51-105	
2,4,6-Tribromophenol (S)	%.			88	19-117	
2-Fluorobiphenyl (S)	%.			64	29-93	
2-Fluorophenol (S)	%.			75	22-99	
Nitrobenzene-d5 (S)	%.			68	29-87	
p-Terphenyl-d14 (S)	%.			98	26-127	
Phenol-d5 (S)	%.			70	24-99	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2106634 2106635

Parameter	Units	50202752021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
2,4-Dinitrotoluene	mg/kg	ND	4	4	3.1	2.4	76	59	40-115	26	20	R1
2-Chlorophenol	mg/kg	ND	4	4	3.1	2.8	76	69	13-110	10	20	
2-Methylnaphthalene	mg/kg	ND	4	4	3.1	2.8	78	71	18-110	9	20	
4-Chloro-3-methylphenol	mg/kg	ND	4	4	3.3	3.0	82	76	18-114	7	20	
Acenaphthene	mg/kg	ND	4	4	2.9	2.6	71	64	21-108	10	20	
Acenaphthylene	mg/kg	ND	4	4	2.8	2.5	70	64	18-115	10	20	
Anthracene	mg/kg	ND	4	4	3.2	2.9	80	74	11-115	8	20	
Benzo(a)anthracene	mg/kg	ND	4	4	3.2	3.0	80	74	10-120	7	20	
Benzo(a)pyrene	mg/kg	ND	4	4	3.0	2.7	76	69	13-103	10	20	
Benzo(b)fluoranthene	mg/kg	ND	4	4	3.2	2.6	79	64	10-112	21	20	R1
Benzo(g,h,i)perylene	mg/kg	ND	4	4	3.0	2.6	74	64	10-101	14	20	
Benzo(k)fluoranthene	mg/kg	ND	4	4	2.9	3.0	74	76	10-110	3	20	
Chrysene	mg/kg	ND	4	4	3.2	2.9	81	73	10-117	10	20	
Dibenz(a,h)anthracene	mg/kg	ND	4	4	3.0	2.7	76	67	15-104	12	20	
Fluoranthene	mg/kg	ND	4	4	3.3	3.0	81	74	13-119	9	20	
Fluorene	mg/kg	ND	4	4	2.9	2.6	72	66	18-115	9	20	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	4	4	3.0	2.7	75	68	10-104	11	20	
N-Nitroso-di-n-propylamine	mg/kg	ND	4	4	3.0	3.4	76	84	24-102	10	20	
Naphthalene	mg/kg	ND	4	4	3.0	2.9	74	72	14-108	2	20	
Phenanthrene	mg/kg	ND	4	4	3.2	2.8	79	70	14-118	12	20	
Phenol	mg/kg	ND	4	4	3.1	2.8	77	69	10-111	11	20	
Pyrene	mg/kg	ND	4	4	3.3	3.1	82	77	13-120	6	20	
2,4,6-Tribromophenol (S)	%.						80	74	19-117			
2-Fluorobiphenyl (S)	%.						62	58	29-93			
2-Fluorophenol (S)	%.						68	67	22-99			
Nitrobenzene-d5 (S)	%.						65	64	29-87			
p-Terphenyl-d14 (S)	%.						89	79	26-127			
Phenol-d5 (S)	%.						69	62	24-99			

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REPORT OF LABORATORY ANALYSIS

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7726 Moller Road
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QUALITY CONTROL DATA

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

QC Batch: 456441 Analysis Method: EPA 8270
QC Batch Method: EPA 3546 Analysis Description: 8270 Solid MSSV Microwave Short Spike
Associated Lab Samples: 50202931003, 50202931004, 50202931005

METHOD BLANK: 2107627 Matrix: Solid
Associated Lab Samples: 50202931003, 50202931004, 50202931005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2,4,5-Trichlorophenol	mg/kg	ND	0.33	08/10/18 16:53	
2,4,6-Trichlorophenol	mg/kg	ND	0.33	08/10/18 16:53	
2,4-Dichlorophenol	mg/kg	ND	0.33	08/10/18 16:53	
2,4-Dimethylphenol	mg/kg	ND	0.33	08/10/18 16:53	
2,4-Dinitrophenol	mg/kg	ND	1.6	08/10/18 16:53	
2,4-Dinitrotoluene	mg/kg	ND	0.33	08/10/18 16:53	
2,6-Dinitrotoluene	mg/kg	ND	0.33	08/10/18 16:53	
2-Chloronaphthalene	mg/kg	ND	0.33	08/10/18 16:53	
2-Chlorophenol	mg/kg	ND	0.33	08/10/18 16:53	
2-Methylnaphthalene	mg/kg	ND	0.33	08/10/18 16:53	
2-Methylphenol(o-Cresol)	mg/kg	ND	0.33	08/10/18 16:53	
3&4-Methylphenol(m&p Cresol)	mg/kg	ND	0.66	08/10/18 16:53	
4-Chloro-3-methylphenol	mg/kg	ND	0.66	08/10/18 16:53	
4-Chloroaniline	mg/kg	ND	0.66	08/10/18 16:53	
Acenaphthene	mg/kg	ND	0.33	08/10/18 16:53	
Acenaphthylene	mg/kg	ND	0.33	08/10/18 16:53	
Anthracene	mg/kg	ND	0.33	08/10/18 16:53	
Benzo(a)anthracene	mg/kg	ND	0.33	08/10/18 16:53	
Benzo(a)pyrene	mg/kg	ND	0.33	08/10/18 16:53	
Benzo(b)fluoranthene	mg/kg	ND	0.33	08/10/18 16:53	
Benzo(g,h,i)perylene	mg/kg	ND	0.33	08/10/18 16:53	
Benzo(k)fluoranthene	mg/kg	ND	0.33	08/10/18 16:53	
bis(2-Chloroethoxy)methane	mg/kg	ND	0.33	08/10/18 16:53	
bis(2-Chloroethyl) ether	mg/kg	ND	0.33	08/10/18 16:53	
bis(2-Ethylhexyl)phthalate	mg/kg	ND	0.33	08/10/18 16:53	
bis(2chloro1methylethyl) ether	mg/kg	ND	0.33	08/10/18 16:53	
Butylbenzylphthalate	mg/kg	ND	0.33	08/10/18 16:53	
Chrysene	mg/kg	ND	0.33	08/10/18 16:53	
Di-n-butylphthalate	mg/kg	ND	0.33	08/10/18 16:53	
Di-n-octylphthalate	mg/kg	ND	0.33	08/10/18 16:53	
Dibenz(a,h)anthracene	mg/kg	ND	0.33	08/10/18 16:53	
Diethylphthalate	mg/kg	ND	0.33	08/10/18 16:53	
Fluoranthene	mg/kg	ND	0.33	08/10/18 16:53	
Fluorene	mg/kg	ND	0.33	08/10/18 16:53	
Hexachlorocyclopentadiene	mg/kg	ND	0.33	08/10/18 16:53	
Hexachloroethane	mg/kg	ND	0.33	08/10/18 16:53	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.33	08/10/18 16:53	
Isophorone	mg/kg	ND	0.33	08/10/18 16:53	
N-Nitroso-di-n-propylamine	mg/kg	ND	0.33	08/10/18 16:53	
N-Nitrosodiphenylamine	mg/kg	ND	0.33	08/10/18 16:53	
Naphthalene	mg/kg	ND	0.33	08/10/18 16:53	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

METHOD BLANK: 2107627 Matrix: Solid
Associated Lab Samples: 50202931003, 50202931004, 50202931005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrobenzene	mg/kg	ND	0.33	08/10/18 16:53	
Phenanthrene	mg/kg	ND	0.33	08/10/18 16:53	
Phenol	mg/kg	ND	0.33	08/10/18 16:53	
Pyrene	mg/kg	ND	0.33	08/10/18 16:53	
2,4,6-Tribromophenol (S)	%.	82	19-117	08/10/18 16:53	
2-Fluorobiphenyl (S)	%.	65	29-93	08/10/18 16:53	
2-Fluorophenol (S)	%.	72	22-99	08/10/18 16:53	
Nitrobenzene-d5 (S)	%.	68	29-87	08/10/18 16:53	
p-Terphenyl-d14 (S)	%.	100	26-127	08/10/18 16:53	
Phenol-d5 (S)	%.	75	24-99	08/10/18 16:53	

LABORATORY CONTROL SAMPLE: 2107628

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4-Dinitrotoluene	mg/kg	3.3	2.5	75	40-115	
2-Chlorophenol	mg/kg	3.3	2.6	79	44-99	
2-Methylnaphthalene	mg/kg	3.3	2.7	81	47-95	
4-Chloro-3-methylphenol	mg/kg	3.3	2.8	86	45-107	
Acenaphthene	mg/kg	3.3	2.4	72	48-100	
Acenaphthylene	mg/kg	3.3	2.3	70	49-103	
Anthracene	mg/kg	3.3	2.8	85	48-103	
Benzo(a)anthracene	mg/kg	3.3	2.9	87	51-103	
Benzo(a)pyrene	mg/kg	3.3	2.9	89	47-97	
Benzo(b)fluoranthene	mg/kg	3.3	3.1	93	45-102	
Benzo(g,h,i)perylene	mg/kg	3.3	2.2	67	46-97	
Benzo(k)fluoranthene	mg/kg	3.3	2.5	76	45-100	
Chrysene	mg/kg	3.3	2.7	83	52-103	
Dibenz(a,h)anthracene	mg/kg	3.3	2.2	68	46-98	
Fluoranthene	mg/kg	3.3	2.8	85	51-109	
Fluorene	mg/kg	3.3	2.4	74	49-104	
Indeno(1,2,3-cd)pyrene	mg/kg	3.3	2.2	68	46-98	
N-Nitroso-di-n-propylamine	mg/kg	3.3	2.6	80	40-96	
Naphthalene	mg/kg	3.3	2.5	75	47-90	
Phenanthrene	mg/kg	3.3	2.7	83	51-104	
Phenol	mg/kg	3.3	2.5	77	40-99	
Pyrene	mg/kg	3.3	2.8	85	51-105	
2,4,6-Tribromophenol (S)	%.			87	19-117	
2-Fluorobiphenyl (S)	%.			61	29-93	
2-Fluorophenol (S)	%.			72	22-99	
Nitrobenzene-d5 (S)	%.			69	29-87	
p-Terphenyl-d14 (S)	%.			95	26-127	
Phenol-d5 (S)	%.			71	24-99	

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REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

QC Batch: 456274 Analysis Method: SM 2540G
QC Batch Method: SM 2540G Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 50202931001, 50202931002, 50202931003, 50202931004, 50202931005

SAMPLE DUPLICATE: 2106787

Parameter	Units	50202931001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	12.9	15.1	16	5	R1

SAMPLE DUPLICATE: 2106788

Parameter	Units	50202931002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.0	16.4	15	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

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

QUALIFIERS

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

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.

TNTC - Too Numerous To Count

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 - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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

METHOD CROSS REFERENCE TABLE

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Parameter	Matrix	Analytical Method	Preparation Method
6010 MET ICP	Solid	SW-846 6010B	SW-846 3050B
7471 Mercury	Solid	SW-846 7471A	SW-846 7471A
8270 SVOC SS Soil	Solid	SW-846 8270C	SW-846 3546

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Bexley Fendule Park Area
Pace Project No.: 50202931

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50202931001	**HA-10 : 0-2**	EPA 3050	456229	EPA 6010	456700
50202931002	**HA-3 : 0-2**	EPA 3050	456229	EPA 6010	456700
50202931003	**HA-1 : 0-2**	EPA 3050	456229	EPA 6010	456700
50202931004	**HA-4 : 0-2**	EPA 3050	456229	EPA 6010	456700
50202931005	**HA-6 : 0-2**	EPA 3050	456229	EPA 6010	456700
50202931001	**HA-10 : 0-2**	EPA 7471	456199	EPA 7471	456375
50202931002	**HA-3 : 0-2**	EPA 7471	456199	EPA 7471	456375
50202931003	**HA-1 : 0-2**	EPA 7471	456199	EPA 7471	456375
50202931004	**HA-4 : 0-2**	EPA 7471	456199	EPA 7471	456375
50202931005	**HA-6 : 0-2**	EPA 7471	456199	EPA 7471	456375
50202931001	**HA-10 : 0-2**	EPA 3546	456227	EPA 8270	456464
50202931002	**HA-3 : 0-2**	EPA 3546	456227	EPA 8270	456464
50202931003	**HA-1 : 0-2**	EPA 3546	456441	EPA 8270	456580
50202931004	**HA-4 : 0-2**	EPA 3546	456441	EPA 8270	456580
50202931005	**HA-6 : 0-2**	EPA 3546	456441	EPA 8270	456580
50202931001	**HA-10 : 0-2**	SM 2540G	456274		
50202931002	**HA-3 : 0-2**	SM 2540G	456274		
50202931003	**HA-1 : 0-2**	SM 2540G	456274		
50202931004	**HA-4 : 0-2**	SM 2540G	456274		
50202931005	**HA-6 : 0-2**	SM 2540G	456274		

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

2196544

Section A **Required** Client Information:

Company: PANDEY Environmental
Address: 4100 Horizons Dr. Columbus, OH 43220
Email To: nvallera@pandeyenvironmental
Phone: 614-444-8078 Fax:
Requested Due Date/TAT: STD

Section B **Required** Project Information:

Report To: Nick Vallera
Copy To:
Purchase Order No.:
Project Name: Bexley Ferndale Park Area
Project Number:

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Ken Hurst
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER VAP

Site Location STATE: OH

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	RCRA 8 metals	SVOCs										Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 50202931
1	HA-10 : 0-2	SL	G			8-7-18	11:45		2	X									X	X										001
2	HA-3 : 0-2	SL	G				10:30		2	X									X	X										002
3	HA-1 : 0-2	SL	G				10:00		2	X									X	X										003
4	HA-4 : 0-2	SL	G				11:00		2	X									X	X										004
5	HA-6 : 0-2	SL	G				10:45		2	X									X	X										005
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
VAP	[signature]	8-7-18	2:48	[signature] / PACE	8-7-18	1448				
	[signature] / PACE	8-7-18	1700	Fedex / PACE	8-7-18	1700				
	Fedex			FEDEX [signature]	8-8-18	0845	3.4	Y	Y	Y
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Nick Vallera

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 08/07/18

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Pace Analytical

SAMPLE CONDITION UPON RECEIPT FORM

Project #: 50202931

Date/Time and Initials of person examining contents: CJ 08-08-18 1355

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other _____

Tracking #: 4550 5528 8946

Custody Seal on Cooler/Box Present: ☑ Yes ☐ No **Seals Intact:** ☑ Yes ☐ No

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer: 1 2 3 4 5 6 A B C D E F Ice Type: ☑ Wet ☐ Blue ☐ None | Samples collected today and on ice: ☐ Yes ☑ No ☐ N/A

Cooler Temperature: 3.2/3.4 Ice Visible in Sample Containers?: ☐ Yes ☐ No ☑ N/A

(Initial/Corrected) Temp should be above freezing to 6°C If temp. is Over 6°C or under 0°C, was the PM Notified?: ☐ Yes ☐ No ☑ N/A

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
Are samples from West Virginia? Document any containers out of temp.		✓	All containers needing acid/base pres. Have been checked?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** All containers needing preservation are found to be in compliance with EPA recommendation (<2, >9, >12) unless otherwise noted.			✓
USDA Regulated Soils? (ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓				
Chain of Custody Present:	✓		Circle: HNO3 H2SO4 NaOH NaOH/ZnAc			
Chain of Custody Filled Out:	✓		Dissolved Metals field filtered?:			✓
Short Hold Time Analysis (<72hr)?: Analysis:		✓	Headspace Wisconsin Sulfide			✓
Time 5035A TC placed in Freezer or Short Holds To Lab:				Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
			Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Rush TAT Requested:		✓	Headspace in VOA Vials (>6mm):			✓
Containers Intact?:	✓		Trip Blank Present?:		✓	
Sample Labels Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Custody Seals?:		✓	

Comments:

Sample Container Count

WO# : 50202931

50202931

CLIENT: PANDEY ENVIRONMENTAL

COC PAGE 1 of 1

COC ID# _____

Project # 50202931

Sample Line Item	DG9H	VG9H	AG0U	AG1H	AG1U	AG2U	AG3S	WGFU	SP5T	BP1U	BP2N	BP2S	BP2U	BP3B	BP3N	BP3S	BP3U	Bull Kit R	WGFU			Matrix SL/ (Soil/Wat Aqueous	pH <2	pH >9	pH>12
1																			2			SL			
2																			2						
3																			2						
4																			2						
5																			2						
6																									
7																									
8																									
9																									
10																									
11																									
12																									

Container Codes

Glass

DG9B	40mL Na Bisulfate amber vial	AG0U	100mL unpreserved amber glass
DG9H	40mL HCL amber voa vial	AG1H	1 liter HCL amber glass
DG9M	40mL MeOH clear vial	AG1S	1 liter H2SO4 amber glass
DG9P	40mL TSP amber vial	AG1T	1 liter Na Thiosulfate amber glass
DG9S	40mL H2SO4 amber vial	AG1U	1liter unpreserved amber glass
DG9T	40mL Na Thio amber vial	AG2N	500mL HNO3 amber glass
DG9U	40mL unpreserved **amber** vial	AG2S	500mL H2SO4 amber glass
VG9H	40mL HCL clear vial	AG2U	500mL unpreserved amber glass
VG9T	40mL Na Thio. clear vial	AG3S	250mL H2SO4 glass amber
VG9U	40mL unpreserved **clear** vial	AG3U	250mL unpreserved amber glass
VGFX	40mL w/hexane wipe vial	BG1H	1 liter HCL clear glass
VSG	Headspace septa vial & HCL	BG1S	1 liter H2SO4 clear glass
WGAU	8oz unpreserved clear jar	BG1T	1 liter Na Thiosulfate clear glass
WGFU	4oz clear soil jar	BG1U	1 liter unpreserved glass
JGFU	4oz unpreserved amber wide	BG3H	250mL HCl Clear Glass
		BG3U	250mL Unpreserved Clear Glass

Plastic / Misc.

BP1A	1 liter NaOH, Asc Acid plastic	BP3U	250mL unpreserved plastic
BP1N	1 liter HNO3 plastic	BP3Z	250mL NaOH, Zn Ac plastic
BP1S	1 liter H2SO4 plastic		
BP1U	1 liter unpreserved plastic	AF	Air Filter
BP1Z	1 liter NaOH, Zn, Ac	C	Air Cassettes
BP2A	500mL NaOH, Asc Acid plastic	R	Terra core kit
BP2N	500mL HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
BP2O	500mL NaOH plastic	U	Summa Can
BP2S	500mL H2SO4 plastic	ZPLC	Ziploc Bag
BP2U	500mL unpreserved plastic		
BP2Z	500mL NaOH, Zn Ac		
BP3B	250mL NaOH plastic		
BP3N	250mL HNO3 plastic		
BP3S	250mL H2SO4 plastic		

Affidavit of VAP Certified Laboratory

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

State of Indiana)
) ss:
County of Marion)

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

1. I am an adult over the age of eighteen years old and competent to testify herein.

2. I am employed by Pace Analytical Services - Indianapolis ("the laboratory") as Quality Assurance Analyst. I am authorized to submit this affidavit on behalf of the laboratory.

3. The purpose of this submission is to support a request for a no further action letter or other aspects of a voluntary action, under Ohio's Voluntary Action Program (VAP) as set forth in Ohio Revised Code Chapter 3746 and Ohio Administrative Code (OAC) Chapter 3745-300.

4. Pace Analytical Services - Indianapolis performed analyses for Pandey Environmental, LLC for a voluntary action at property known as Bexley Fendule Park Area.

5. This affidavit applies to and is submitted with the following information, data, documents or reports for the property:

Document ID	Date of Document
50202931	August 15, 2018

6. Pace Analytical Services - Indianapolis was a VAP certified laboratory pursuant to OAC 3745-300-04 when it performed the analyses referenced herein.

7. All analyses under this affidavit consist of VAP "certified data" as described in OAC 3745-300-04(A) - - unless paragraph b., below, specifies the exceptions:

   a. The laboratory performed the analyses within its current VAP certification, number CL0065. The laboratory was certified for each analyte, parameter group and method used at the time that it performed the analyses – see Method Cross Reference Table. The analyses were performed consistent with the laboratory's standard operating procedures and quality assurance program plan as approved under OAC 3745-300-04.

   b. Exceptions, if any: Any soil moisture performed by method SM 2540G used for dry weight correction of data or any analysis used for batch QC on matrix spikes, matrix spike duplicates or sample duplicates that are not associated with the referenced project number identified in item 5 above.

8. The information, data, documents and reports identified under this affidavit are true, accurate and complete.

Further affiant sayeth naught.

Signature of Affiant

Sworn to before me and subscribed in my presence this 28th day of August, 2018.

Melissa Lynn Albertson
Notary Public Seal State of Indiana
Marion County
Commission # 710839
My Commission Expires 02/28/2026

Notary Public

50202931

APPENDIX B
RESUMES OF ENVIRONMENTAL PROFESSIONALS

Atul Pandey, P.E., C.P., M.S.

President

Mr. Pandey is the President and CEO of PANDEY Environmental, LLC. His area of expertise includes site assessment, remediation, brownfield redevelopment, and urban conservation. Mr. Pandey has more than 20 years of experience performing Phase I, II, and III site assessments, underground storage tank removals, closure, assessment, and corrective action, RCRA closures and corrective actions, Ohio EPA Voluntary Action Program No Further Action Letters, Clean Ohio Fund Site Assessments and general site assessment and remediation tasks. Clients have included municipalities, federal and state agencies, commercial and industrial realtors, bankers, insurance companies and real estate developers.

Mr. Pandey has worked for Ohio EPA, where he developed the Ohio EPA VAP Generic Leaching Guidance Document used by the Voluntary Action Program. He also worked in Ohio EPA's Southwest District Office of Division of Solid and Infectious Waste Management, located in Dayton, Ohio.

Prior to forming PANDEY Environmental, LLC in 2002, Mr. Pandey technically and administratively supervised a multi-disciplinary team of seven professionals at a private consulting firm. Projects included Phase I and II environmental site assessments, underground storage tank closures, corrective actions, risk assessments, RCRA closures and corrective actions, landfill groundwater monitoring and assessment programs, and Voluntary Action Program projects.

Mr. Pandey has also authored multiple publications.

EDUCATION:

University of Cincinnati, Ohio
Master of Science in Environmental Engineering, 1993
Thesis Title: Effect of Swelling Percentages on the Shear Strength of Compacted Clay Liners

University of Delhi, India
Bachelor of Science in Civil Engineering, 1991
Emphasis: Environmental Engineering

CERTIFICATIONS

- Registered Professional Engineer, States of Ohio and South Carolina, Environmental Engineering
- State of Ohio Voluntary Action Program, Certified Professional, Certification #CP224
- Qualified as an Environmental Professional under "All Appropriate Inquires" (AAI) Rule
- 40 hour HAZWOPER certified (29 CFR 1910.120)

CAREER HIGHLIGHTS/ACCOMPLISHMENTS

- Issued twenty-one (21) VAP NFA letters, twenty (20) of which have received Covenants Not to Sue (one NFA was recently issued and the CNS is pending Ohio EPA review).
- Prepared five (5) successful Urban Setting Designation Requests.

- Authored Ohio EPA VAP Generic Leaching Guidance Document; this document is currently being used in the state of Ohio by VAP Certified Professionals as a standard to evaluate leaching of vadose zone contaminants under VAP and RCRA programs.
- Selected by the Ohio EPA in April 2005 to represent all Ohio EPA Certified Professionals (Brownfield Licensed Professionals) to the Hazardous Waste division of the Ohio EPA. This prestigious recognition was made due to extensive experience with multiple programs of the Ohio EPA including the Voluntary Action Program (Brownfields Program), and programs under the Division of Hazardous Waste and the Division of Solid Waste.

PROFESSIONAL EXPERIENCE

10/02 to present *President, PANDEY Environmental, LLC*

Mr. Pandey founded PANDEY Environmental, LLC to provide fast, reliable, and expert environmental site assessment services to commercial and industrial clients at a competitive price. Services provided by the consulting company include but are not limited to Phase I, II Environmental Site Assessments, Underground Storage Tank Removal, Closure, and Corrective Action, Voluntary Action Program Site Assessments, Clean Ohio Fund Application Preparation and Site Assessments, Expert Witness Services, Risk Assessment Services, Fate and Transport Modeling, and VAP Certified Professional Services.

11/98 to 9/02 *Vice President/Senior Engineer, Smalley & Associates, Inc.*

Duties and responsibilities included supervising a multi-disciplinary team of 7 professionals that were involved in various projects ranging from Phase I and II environmental site assessment, underground storage tank closure, corrective action, and risk assessment, RCRA closures and corrective action, landfill groundwater monitoring and assessment programs, and Voluntary Action Program projects; Also responsible for professional development of these individuals.

Duties also included managing the operations of a full service Ohio EPA VAP certified analytical laboratory and drilling crew. Additional responsibilities included business development and client interface for Ohio VAP and RCRA projects.

In this position, issued eleven (11) No Further Action letters under Voluntary Action Program to Ohio EPA for the following properties; all of these properties have successfully obtained VAP Covenants Not to Sue.

11/96 to 11/98 *Environmental Engineer, Ohio EPA Voluntary Action Program*

General responsibilities included assessment of No Further Action Letters prepared by Certified Professionals conducting voluntary actions at properties with hazardous substances and petroleum contamination; determining RCRA corrective action eligibility of the properties for the Voluntary Action Program, and assessing leaching of petroleum constituents and other contaminants; providing technical assistance to Certified Professionals, volunteers, and other parties interested in voluntary action; managing field audits of properties that have received Covenants Not to Sue.

At the Ohio EPA's Division of Solid and Infectious Waste Management, general responsibilities included reviewing and evaluating Permit to Install applications and detail plans for all types of solid and

infectious waste facilities making recommendations for approval or denial; directing the inspectors in conducting the solid waste compliance monitoring program; providing technical assistance to local governments , citizens, industry, and others regarding solid and infectious waste management; also spoke at public meetings on solid waste permitting issues.

1/92 to 11/96 Project Engineer, Science Applications International Corporation

Responsibilities as a project engineer included project management and team support, budget control, report preparation, negotiations with state and federal regulatory agencies, vendor and consultant oversight, and working on site remediation and compliance issues. Select project experience includes:

- Identified, screened, and evaluated remedial technologies for RCRA CMS or CERCLA RI/FS; conducted the same for four solid waste management units at Portsmouth US DOE site with soil and/or groundwater contamination; also negotiated corrective action scope with regulatory agencies and co-authored the CMS reports.
- Managed and supervised a $500,000 contract for conducting a pilot scale treatability study of measuring enhancements to groundwater flow using an innovative technology (pneumatic fracturing) ; developed work plan, support plans (HSP, QAPjP, SAP), and summary report.
- Managed a $200,000 project dealing with a field and laboratory investigation to establish adsorptive and natural attenuation characteristics at a superfund site.
- Developed a database to facilitate air emissions reporting and permitting for over 250 sources in accordance with Title V requirements of the Clean Air Act for a synthetic organic chemical manufacturer in southern Ohio; created data architecture, conducted the beta-test on the database software, and created chemical process-specific user's guides.
- Facilitated compliance with RCRA Subtitle CC regulations at a chemical manufacturer's facility; also prepared the SARA 313, fee emission, and Title V reports for the facility.
- Served as Technical Advisor to the State of Ohio, Environmental Protection Agency's modeling subgroup of the generic standards subcommittee charged with the development of generic deep soil cleanup levels across the state in accordance with the requirements of Senate Bill 221 (Brownfields); conducted all of the modeling on this project using an unsaturated soil zone leaching model (SESOIL); also authored the associated technical guidance documents.
- Constructed and calibrated groundwater flow models using MAGNAS3 and FRAC3DVS codes for groundwater plumes at the US DOE site; evaluated remedial alternatives with these models.

PUBLICATIONS

Pandey, A., Hetrick, D.M., and Khan, A., Innovative Approach Proposed for Evaluating Risks due to Soil Contamination, SESOIL - A Decade, Amherst Scientific Publishers, 1996.

Pandey, A., Cherry, E., Steigerwald, V., and Pickrel, C., Groundwater Protection and Soil Remediation, Fifth Annual Business and Industry's Environmental Symposium - Conference Proceedings, Cincinnati, 1996.

Pandey, A. et al., Innovative Approach Developed for Deriving Leach-Based Soil Cleanup Values Protective of Groundwater, 12th Annual Conference on Contaminated Soils, University of Massachusetts at Amherst, 1997.

Hetrick, D. and Pandey, A., A methodology for establishing cleanup objectives in the saturated soil zone using sensitivity and uncertainty analysis for chemical fate and transport, Journal of Soil Contamination, 8(5):559-576, 1999

ENGINEERING & MODELING SOFTWARE

Proficient with a wide range of environmental modeling software including MODFLOW, MAGNAS3, FRAC3DVS, MT3D, SAS, SURFER, GeoEAS, HELP, SESOIL, CHEMFLO, VLEACH, RITZ, PESTAN, Summers, AT123D, EnCompass, GARDS, SIMS, HonRuler, TANKS, and STARSHIP (Title V); advanced knowledge of Microsoft EXCEL and SURFER programs.

Also taught 3-day modeling course entitled “Application of SESOIL in Ohio EPA’s Voluntary Action Program” in June, 1999 to Certified Professionals and other consultants.

Nick Vallera

Environmental Scientist

Mr. Vallera performs and manages Phase I and II investigations (ASTM & VAP), BUSTR investigations, remedial oversight, soils management oversite, project proposals, scheduling and cost estimates. He also performs Operation & Maintenance activities along with analytical data review and database management. He is proficient in field aspects of environmental site assessment and remediation where he performs multiple types of sampling, works closely with property owners and clients, determines analytical analyses, manages data, and ensures that project objectives are met. He is also proficient in the technical writing of environmental assessments, Urban Setting Designations (USDs), No Further Action Letters (NFAs), project proposals and regulatory agency reports.

EDUCATION:

The Ohio State University, Columbus, Ohio
Master of Education, Major in Secondary Science Education; 2012

The Ohio State University, Columbus, Ohio
Bachelor of Science, Major in Geology; 2011

SPECIALIZED TRAINING/ PROFESSIONAL AFFILIATIONS:

- Ohio EPA VAP Soil Classification Training
- Ohio Department of Transportation (ODOT) Soil and Rock Classification Training
- 40 Hour OSHA HAZWOPER Certified
- 10 Hour OSHA Construction Certified
- Hess UBU Training
- Miner Safety and Health Administration (MSHA) Certified
- Safeland: Oil and Gas Safety Training
- National Groundwater Association (NGWA) Member

CAREER HIGHLIGHTS/ACCOMPLISHMENTS

- Performed oversite, planning and sampling activities at the Former Van Dorn Property, a Clean Ohio (CORF) project, which included a remedial excavation, testing / analyzing of the excavated area, associated remedial reporting, follow-up testing and incorporation of all data into larger NFA letter for the property. Completed and obtained an NFA Letter for the Property.
- Completed an Urban Setting Designation (USD) request for a 5+ acre industrial property located in South Columbus, as well as completed the USD verification for two (2) industrial properties.
- Developed and prepared multiple project proposals for municipal clients which included a summary of the project understanding, scope of work to be performed, proposed sampling and safety plans, schedule of work to be performed and cost estimates.
- Performed BUSTR investigations on three (3) abandoned gas station properties. Included preparation of project proposal, cost estimates, writing sampling plan in accordance with BUSTR rules, performing field exploration, sampling, data analysis and reporting.
- Managed soil movement project involving the testing of multiple sources of backfill materials, excavation of selected soils, management of testing data and necessary technical reporting of

findings. Coordinated and oversaw proper transportation of over 75,000 cubic yards of soil. Directly worked and coordinated with construction managers and site superintendents throughout project.

- Managed and oversaw the handling of two large soil oversite projects, a remedial excavation project, three (3) VAP Phase I investigations, two (2) Limited VAP Phase II investigations, and the developing of a Remedial Action Plan for a VAP project simultaneously while meeting deadlines for all of the projects to the Client's satisfaction.
- Worked with subcontractors to identify, delineate and excavate contaminated environmental media and coordinated the removal and manifesting of the media. Included management of total tonnage and daily logs of removal to ensure the project remained within proper limits / funding.
- Managed, coordinated with, and oversaw other personnel that were performing soils movement or remedial oversite projects.
- Performed emergency assessment of a property with high risk soil-gas contamination to surrounding receptors. Installed monitoring wells and nested soil-gas probes around the property as well as developed a "nearest receptor figure" to determine the risk of soil-gas contamination reaching residential receptors around a brownfield property. This included coordinating field work, performing field installation, measurements of nearest receptors, and sampling of environmental media under Ohio EPA oversight
- Participated in Ohio Brownfields Conference including networking with subcontractors, clients and government agencies as well as promoting PANDEY's services.
- Performed environmental investigation, sampling plan and reporting for a property that included historical USTs, commercial operations, asbestos containing materials and largely scattered asbestos contamination across the soils on the property. Prepared a remedial action plan and costs associated with remedial activities for the property after determining findings and conclusions for the property.
- Developed and maintained productive / professional relationships with clients (private and municipal), subcontractors and vendors (laboratories and remedial product vendors) acting as a point of contact, lead communicator and coordinator for projects throughout all stages (including proposal, investigation, analytical, reporting and remedial activities).
- Worked on multiple sites under the Ohio Voluntary Action Program (VAP). Work included Phase I and II Environmental Site Assessments, risk assessment, demonstration of background levels, contaminant transport modeling, site specific remediation, and No Further Action Letter issuances.
- Worked and managed project from development stages (requests, proposals, cost estimates, etc.) through field investigation, implementation, analysis and risk assessment reporting on EPA Grant funded project for the Former Mud Run Gun Club in Cuyahoga Falls, Ohio
- Performed soil management oversight, reporting, USD verifying, Phase I Updates and continuous O&M sampling investigations for Ohio VAP Jaeger / Union Tools property in Columbus, Ohio
- Provided oversight for the delineation, soil and groundwater sampling, QA/QC sampling, delivery, and assessment during an emergency crude oil release of 30,000+ gallons.
- Participated in the design, and managing databases for laboratory data received during field sampling events.

- Completed field investigation, data mitigation, GIS figure generation and technical writing of Phase II report, conclusions and recommendation letter for 18 acre property in Chillicothe, Ohio.
- Performed geotechnical drilling and analysis for engineering projects involving the construction of shale/gas oil pads in eastern Ohio.
- Collected data for Clean Ohio project for an idle steel mill plant in Yorkville, Ohio. Included logging and sampling over 140 boreholes, installing, and sampling multiple wells, delineating identified areas and collecting soil-gas and air samples during a multi-month period.
- Provided assistance to asbestos abatement oversight on a project in Chillicothe, Ohio.
- Completed Area Wide Assessments to identify brownfields in a community that produced multiple Phase I and Phase II environmental site assessments.
- Participated in or completed multiple Phase II environmental site assessments following ASTM and/or VAP guidelines.
- Provided oversight of geotechnical installations of dams and barriers to isolate product during an emergency oil spill
- Performed on site monitoring well sampling at South Bend, Indiana site which required the collection of samples at 73 monitoring wells across the city.
- Managed laboratory data and QA/QC collection of all data from South Bend, Indiana city-wide project tracking a TCE plume.
- Participated in Phase I, Phase II, and data collection / organization activities for submission into the Clean Ohio Revitalization Fund program for multiple projects.
- Performed explosive gas monitoring at a city landfill.
- Proficient in the use of the following field equipment: Soil vapor pin installation, SUMMA canister soil gas and air sampling, peristaltic pump, bladder pump, inertia pump, flow though sonde active groundwater parameter monitoring, various groundwater parameter sampling equipment (i.e. turbidimeter, conductivity/temperature/pH meter), Photo Ionization Detector (PID), Multi-gas meter, bailer groundwater sampling, Laser Level for monitoring well and groundwater elevations.

PROFESSIONAL EXPERIENCE

06/15 to present *Environmental Scientist, PANDEY Environmental, LLC*

Duties include conducting ASTM E1527 and VAP compliant Phase I and Phase II Property assessments, Risk Assessment Reporting, preparing Cost Estimates and Proposals, staying in contact with Clients, managing lab data and database, environmental sampling, and supervising subcontractors utilized for site investigation and remediation activities.

Specific field activities include soil boring, monitoring well, and gas extraction well installations, soil excavations, demolition oversight, skimming oil from groundwater, vapor barrier installations, active and passive gas extraction systems (hazardous gas, hydrogen sulfide and methane), gas monitoring sensor installations and maintenance, underground storage tank removals, in-site groundwater remedial injections, and soil gas sampling.

Other duties include implementing operation & maintenance plans, preparation of figures and maps using ArcGIS, and preparation of plans and reports.

08/13 to 06/15 *Hydrogeologist I, Hull & Associates*

Performed filed work activities on a diversity of projects including: BUSTR, VAP, ASTM, Clean Ohio, shale/oil gas pads and ODOT. Taking detailed notes in the field and bringing information into the office to complete technical report writing and summary reports for environmental assessments and conclusions. Performed routine oversight and monitoring regularly at multiple job sites. Performed field work that involved: Groundwater sampling, soil sampling, air sampling, soil-gas sampling, sediment sampling, waste characterization, wetland delineation, sub-base sampling, rock coring, soil logging, slug testing, Passive Diffusive Bag sampling, product level monitoring and explosive gas monitoring. Writing Phase I and II reports, interviewing clients and performing site reconnaissance.

05/12 to 07/13 *Geoscience & Astronomy Teacher, Evanston Township High*

Performed all duties of a full time teacher. Responsible for developing and teaching senior level science courses specifically in the areas of geology and astronomy. Managed 5 preps of classes and students. Managed student behavior, grading, tracking and database management of student grades. Participated in school team events and extracurricular activities / hosting clubs for students after school.

ENGINEERING & MODELING SOFTWARE

Knowledge of Microsoft Office (including Word, Outlook, Access, Excel, PowerPoint) and Microsoft Access database management. GIS (ESRI ArcMap), Trimble GPS Geoexplorer Units, GeoGraphics boring log generating software and topographic map generation software. Experience with Seasonal Soil compartment model (SESOIL) for water, sediment, and pollutant transport.

APPENDIX C
REGULATORY STANDARDS AND DATA VALIDATION

E-1: VAP SOIL GENERIC DIRECT CONTACT SOIL STANDARDS

Table E-1: Direct Contact Soil Standards Used in Risk Evaluation

PANDEY
ENVIRONMENTAL, LLC

Bexley Ferndale Park Area: Ferndale Place; Bexley, Ohio

Unrestricted/Residential

CAS	Chemical Name	Standard	Non-Cancer Standard	Cancer Standard	Units	Date of Standard	Source
Metals & Inorganic Analytes							
7440-38-2	Arsenic, Inorganic	12	68	12	mg/kg	5/2/2017	CIDARS Download 5/2/2017
7440-39-3	Barium and Compounds	n/a	n/a	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
7440-43-9	Cadmium	140	140	26000	mg/kg	5/2/2017	CIDARS Download 5/2/2017
7440-47-3	Chromium, Total	24	470	24	mg/kg	5/2/2017	CIDARS Download 5/2/2017
7439-92-1	Lead and Compounds	400	n/a	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
7439-97-6	Mercury and Compounds	3.1	9.7	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
7782-49-2	Selenium	780	780	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
7440-22-4	Silver	780	780	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
Volatile Organic Compounds (VOCs)							
67-64-1	Acetone	110000	130000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
71-43-2	Benzene	26	200	26	mg/kg	5/2/2017	CIDARS Download 5/2/2017
100-44-7	Benzyl Chloride	24	58	24	mg/kg	5/2/2017	CIDARS Download 5/2/2017
75-27-4	Bromodichloromethane	6.8	3100	6.8	mg/kg	5/2/2017	CIDARS Download 5/2/2017
75-25-2	Bromoform	1200	2400	1200	mg/kg	5/2/2017	CIDARS Download 5/2/2017
74-83-9	Bromomethane	18	18	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
106-99-0	Butadiene, 1,3-	1.3	4.9	1.3	mg/kg	5/2/2017	CIDARS Download 5/2/2017
75-15-0	Carbon Disulfide	740	2000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
56-23-5	Carbon Tetrachloride	15	250	15	mg/kg	5/2/2017	CIDARS Download 5/2/2017
108-90-7	Chlorobenzene	700	700	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017

Table E-1: Direct Contact Soil Standards Used in Risk Evaluation

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ENVIRONMENTAL, LLC

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Unrestricted/Residential

CAS	Chemical Name	Standard	Non-Cancer Standard	Cancer Standard	Units	Date of Standard	Source
67-66-3	Chloroform	7.4	500	7.4	mg/kg	5/2/2017	CIDARS Download 5/2/2017
74-87-3	Chloromethane	300	300	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
98-82-8	Cumene	270	4800	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
110-82-7	Cyclohexane	120	18000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
124-48-1	Dibromochloromethane	17	2400	17	mg/kg	5/2/2017	CIDARS Download 5/2/2017
106-93-4	Dibromoethane, 1,2-	0.83	69	0.83	mg/kg	5/2/2017	CIDARS Download 5/2/2017
74-95-3	Dibromomethane (Methylene Bro	1600	1600	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
95-50-1	Dichlorobenzene, 1,2-	380	4500	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
106-46-7	Dichlorobenzene, 1,4-	61	7500	61	mg/kg	5/2/2017	CIDARS Download 5/2/2017
75-71-8	Dichlorodifluoromethane	850	31000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
75-34-3	Dichloroethane, 1,1-	83	31000	83	mg/kg	5/2/2017	CIDARS Download 5/2/2017
107-06-2	Dichloroethane, 1,2-	11	90	11	mg/kg	5/2/2017	CIDARS Download 5/2/2017
156-59-2	Dichloroethene, cis - 1,2	n/a	n/a	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
75-35-4	Dichloroethylene, 1,1-	360	360	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
156-60-5	Dichloroethylene, 1,2-trans-	370	370	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
78-87-5	Dichloropropane, 1,2-	23	43	23	mg/kg	5/2/2017	CIDARS Download 5/2/2017
142-28-9	Dichloropropane, 1,3-	1500	3100	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
141-78-6	Ethyl Acetate	1700	1700	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
75-00-3	Ethyl Chloride	2100	21000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
97-63-2	Ethyl Methacrylate	1100	3600	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017

Table E-1: Direct Contact Soil Standards Used in Risk Evaluation

PANDEY
ENVIRONMENTAL, LLC

Bexley Ferndale Park Area: Ferndale Place; Bexley, Ohio

Unrestricted/Residential

CAS	Chemical Name	Standard	Non-Cancer Standard	Cancer Standard	Units	Date of Standard	Source
100-41-4	Ethylbenzene	130	7900	130	mg/kg	5/2/2017	CIDARS Download 5/2/2017
110-54-3	Hexane, N-	140	1400	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
591-78-6	Methyl butyl ketone	5000	5000	n/a	mg/kg	7/5/2011	CIDARS - Ohio EPA Website
78-93-3	Methyl Ethyl Ketone (2-Butanone)	28000	48000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
108-10-1	Methyl Isobutyl Ketone (4-methyl-	3400	11000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
1634-04-4	Methyl tert-Butyl Ether (MTBE)	1100	41000	1100	mg/kg	5/2/2017	CIDARS Download 5/2/2017
75-09-2	Methylene Chloride	750	750	1200	mg/kg	5/2/2017	CIDARS Download 5/2/2017
100-42-5	Styrene	870	14000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
630-20-6	Tetrachloroethane, 1,1,1,2-	46	4700	46	mg/kg	5/2/2017	CIDARS Download 5/2/2017
79-34-5	Tetrachloroethane, 1,1,2,2-	14	3100	14	mg/kg	5/2/2017	CIDARS Download 5/2/2017
127-18-4	Tetrachloroethylene	170	210	540	mg/kg	5/2/2017	CIDARS Download 5/2/2017
109-99-9	Tetrahydrofuran	42000	42000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
108-88-3	Toluene	820	10000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
120-82-1	Trichlorobenzene, 1,2,4-	150	150	440	mg/kg	5/2/2017	CIDARS Download 5/2/2017
71-55-6	Trichloroethane, 1,1,1-	640	22000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
79-00-5	Trichloroethane, 1,1,2-	26	630	26	mg/kg	5/2/2017	CIDARS Download 5/2/2017
79-01-6	Trichloroethylene	11	11	22	mg/kg	5/2/2017	CIDARS Download 5/2/2017
75-69-4	Trichlorofluoromethane	1200	2000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
95-63-6	Trimethylbenzene, 1,2,4-	160	160	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
108-67-8	Trimethylbenzene, 1,3,5	180	620	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017

Table E-1: Direct Contact Soil Standards Used in Risk Evaluation

PANDEY
ENVIRONMENTAL, LLC

Bexley Ferndale Park Area: Ferndale Place; Bexley, Ohio

Unrestricted/Residential

CAS	Chemical Name	Standard	Non-Cancer Standard	Cancer Standard	Units	Date of Standard	Source
108-05-4	Vinyl Acetate	620	620	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
75-01-4	Vinyl Chloride	1.3	170	1.3	mg/kg	5/2/2017	CIDARS Download 5/2/2017
1330-20-7	Xylenes	260	1600	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
Semi-Volatile Organic Compounds (SVOCs)							
83-32-9	Acenaphthene	6900	6900	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
208-96-8	Acenaphthylene	7200	7200	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
120-12-7	Anthracene	34000	34000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
56-55-3	Benz[a]anthracene	12	n/a	12	mg/kg	5/2/2017	CIDARS Download 5/2/2017
191-24-2	Benzo(g,h,i)perylene	3600	3600	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
50-32-8	Benzo[a]pyrene	1.24	n/a	1.24	mg/kg	5/2/2017	CIDARS Download 5/2/2017
205-99-2	Benzo[b]fluoranthene	12	n/a	12	mg/kg	5/2/2017	CIDARS Download 5/2/2017
207-08-9	Benzo[k]fluoranthene	120	n/a	120	mg/kg	5/2/2017	CIDARS Download 5/2/2017
108-60-1	Bis(2-chloro-1-methylethyl) ether	100	6300	100	mg/kg	5/2/2017	CIDARS Download 5/2/2017
111-91-1	Bis(2-chloroethoxy)methane	370	370	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
111-44-4	Bis(2-chloroethyl)ether	4.9	n/a	4.9	mg/kg	5/2/2017	CIDARS Download 5/2/2017
117-81-7	Bis(2-ethylhexyl)phthalate	690	2400	690	mg/kg	5/2/2017	CIDARS Download 5/2/2017
85-68-7	Butyl Benzyl Phthlate	5100	24000	5100	mg/kg	5/2/2017	CIDARS Download 5/2/2017
106-47-8	Chloroaniline, p-	49	490	49	mg/kg	5/2/2017	CIDARS Download 5/2/2017
91-58-7	Chloronaphthalene, Beta-	13000	13000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
95-57-8	Chlorophenol, 2-	780	780	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017

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Unrestricted/Residential

CAS	Chemical Name	Standard	Non-Cancer Standard	Cancer Standard	Units	Date of Standard	Source
218-01-9	Chrysene	1200	n/a	1200	mg/kg	5/2/2017	CIDARS Download 5/2/2017
95-48-7	Cresol, o-	6100	6100	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
59-50-7	Cresol, p-chloro-m-	12000	12000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
53-70-3	Dibenz[a,h]anthracene	1.24	n/a	1.24	mg/kg	5/2/2017	CIDARS Download 5/2/2017
84-74-2	Dibutyl Phthalate	12000	12000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
120-83-2	Dichlorophenol, 2,4-	370	370	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
84-66-2	Diethyl Phthalate	98000	98000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
105-67-9	Dimethylphenol, 2,4-	2400	2400	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
51-28-5	Dinitrophenol, 2,4-	240	240	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
121-14-2	Dinitrotoluene, 2,4-	31	240	31	mg/kg	5/2/2017	CIDARS Download 5/2/2017
606-20-2	Dinitrotoluene, 2,6-	6.5	n/a	6.5	mg/kg	5/2/2017	CIDARS Download 5/2/2017
206-44-0	Fluoranthene	4600	4600	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
86-73-7	Fluorene	4600	4600	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
87-68-3	Hexachlorobutadiene	120	120	120	mg/kg	5/2/2017	CIDARS Download 5/2/2017
77-47-4	Hexachlorocyclopentadiene	730	730	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
67-72-1	Hexachloroethane	86	86	240	mg/kg	5/2/2017	CIDARS Download 5/2/2017
193-39-5	Indeno[1,2,3-cd]pyrene	12	n/a	12	mg/kg	5/2/2017	CIDARS Download 5/2/2017
78-59-1	Isophorone	10000	24000	10000	mg/kg	5/2/2017	CIDARS Download 5/2/2017
91-57-6	Methylnaphthalene, 2-	460	460	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
91-20-3	Naphthalene	90	330	90	mg/kg	5/2/2017	CIDARS Download 5/2/2017

Table E-1: Direct Contact Soil Standards Used in Risk Evaluation

PANDEY
ENVIRONMENTAL, LLC

Bexley Ferndale Park Area: Ferndale Place; Bexley, Ohio

Unrestricted/Residential

CAS	Chemical Name	Standard	Non-Cancer Standard	Cancer Standard	Units	Date of Standard	Source
98-95-3	Nitrobenzene	120	270	120	mg/kg	5/2/2017	CIDARS Download 5/2/2017
621-64-7	Nitroso-di-N-propylamine, N-	1.4	n/a	1.4	mg/kg	5/2/2017	CIDARS Download 5/2/2017
86-30-6	Nitrosodiphenylamine, N-	2000	n/a	2000	mg/kg	5/2/2017	CIDARS Download 5/2/2017
117-84-0	Octyl Phthalate, di-N-	1200	1200	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
85-01-8	Phenanthrene	36000	36000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
108-95-2	Phenol	37000	37000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
129-00-0	Pyrene	3400	3400	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
95-95-4	Trichlorophenol, 2,4,5-	12000	12000	n/a	mg/kg	5/2/2017	CIDARS Download 5/2/2017
88-06-2	Trichlorophenol, 2,4,6-	120	120	880	mg/kg	5/2/2017	CIDARS Download 5/2/2017