

# **PHASE II ENVIRONMENTAL SITE ASSESSMENT**

**No Name Gas**

**625 Hilliard Rome Rd, Columbus, Ohio**

**Prepared for:**

**ACME Oil and Gas**

**Prepared by:**

**Plan B Environmental**

**366 N 6th Street**

**Columbus, OHIO**

**United States 43215**

**Report Date: 2022-12-08**

**Project Number: PN123456**

2022-12-08  
Ref. No. PN123456

ACME Oil and Gas  
350, 55th Street  
Houston, Texas  
United States 78654

**Attention:** ACME Oil and Gas

**Re:**           **Phase II Environmental Site Assessment Report**  
                  No Name Gas  
                  625 Hilliard Rome Rd, Columbus, Ohio

Plan B Environmental is pleased to submit our report describing the findings of the Phase II Environmental Site Assessment of No Name Gas. This assessment was prepared in general accordance with the American Society of Testing and Materials (ASTM) Standard Practices for Environmental Site Assessments: Phase II ESA Process (ASTM Designation: E1903-19).

The purpose of the Phase II ESA was to evaluate the recognized environmental conditions identified in the Phase I ESA or transaction screen process for the purpose of providing sufficient information regarding the nature and extent of contamination to assist in making informed business decisions about the property; and where applicable, providing the level of knowledge necessary to satisfy the innocent purchaser defense under CERCLA.

If you have any questions or require further clarification of the report findings, please contact the undersigned at your convenience. Thank you for the opportunity to be of service to ACME Oil and Gas.

Yours very truly,

**Plan B Environmental**

John Smith, P.E.  
Environmental Engineer

John Hancock, P.E.  
Engineering Manager

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## 1.0 EXECUTIVE SUMMARY

ACME Oil and Gas engaged Plan B Environmental to conduct a Phase II Environmental Site Assessment (ESA) of the property No Name Gas located at 625 Hilliard Rome Rd, Columbus, Ohio subsequently referred to in this report as "the property". This assessment was prepared in general accordance with the American Society of Testing and Materials (ASTM) Standard Practices for Environmental Site Assessments: Phase II ESA Process (ASTM Designation: E1903-19).

### 1.1 Statement of Objectives

The purpose of conducting this Phase II ESA is to acquire and evaluate information sufficient to achieve the objectives set forth below.

- Assess whether there has been a release of hazardous substances within the meaning of CERCLA, for purposes including landowner liability protections.
- Provide information relevant to identifying, defining, and evaluating property conditions associated with target analytes that may pose a risk to human health or the environment, or risk of bodily injury to persons on the property.

### 1.2 Recognized Environmental Concerns

The on-site recognized environmental concerns assessed as part of this Phase II ESA were:

- Underground storage tanks associated with gas station.
- The following assessments were performed for these on-site RECs:

- Collection and analysis of soil and groundwater samples for BTEX.

The results of the assessments performed for the on-site recognized environmental conditions were:

- Elevated levels of petroleum hydrocarbons above guidelines were detected in soil and groundwater samples on the south side of the underground storage tanks.

No off-site recognized environmental conditions were assessed as part of this Phase II ESA.

### 1.3 Absence, Presence, Degree, Extent of Target Analytes

Based on the results of this assessment, the following impacted soil above applicable or relevant and appropriate requirements ("ARARs") was identified:

- Impacted soil from petroleum hydrocarbons was found on the south side of the underground storage tanks.

Based on the results of this assessment, the following impacted groundwater above applicable or relevant

and appropriate requirements ("ARARs") was identified:

- Impacted groundwater from petroleum hydrocarbons was found in monitoring wells on the south side of the underground storage tanks.

Based on the results of this assessment, no other impacted media above applicable or relevant and appropriate requirements ("ARARs") was identified.

## **1.4 Conclusions and Recommendations**

The data gathered during this assessment was sufficient to accomplish the objectives listed in the Statement of Objectives.

Based on the results of this assessment the following further work is recommended:

- Additional test pits and borings to delineate the extend of the impacted soil and groundwater on the south side of the underground storage tanks.

## 2.0 INTRODUCTION

ACME Oil and Gas engaged Plan B Environmental to conduct a Phase II Environmental Site Assessment (ESA) of the property No Name Gas located at 625 Hilliard Rome Rd, Columbus, Ohio subsequently referred to in this report as "the subject property". This assessment was prepared in general accordance with the American Society of Testing and Materials (ASTM) Standard Practices for Environmental Site Assessments: Phase II ESA Process (ASTM Designation: E1903-19).

The Phase II ESA was authorized by the Client on 2022-11-10.

### 2.1 Statement of Objectives

The purpose of conducting this Phase II ESA is to acquire and evaluate information sufficient to achieve the objectives set forth below.

- Assess whether there has been a release of hazardous substances within the meaning of CERCLA, for purposes including landowner liability protections.
- Provide information relevant to identifying, defining, and evaluating property conditions associated with target analytes that may pose a risk to human health or the environment, or risk of bodily injury to persons on the property.

### 2.2 Scope of Work

The scope of work for this assessment was in general accordance with the American Society of Testing and Materials (ASTM) Standard Practices for Environmental Site Assessments: Phase II ESA Process (ASTM Designation: E1903-19). These methodologies are described as representing good commercial and customary practice for conducting a Phase II ESA of a property for the purpose of evaluating recognized environmental conditions.

Specifically, the scope of work included the following tasks:

- Review of Existing Information
- Field Exploration
- Sampling and Chemical Analyses
- Evaluation of Results
- Discussion of Findings and Conclusions

### 2.3 Special Terms and Conditions

All recognized environmental concerns determined from the Phase I ESA were assessed as part of this Phase II ESA.

## 2.4 Limitations and Exceptions of Assessments

The report has been prepared in accordance with generally accepted environmental methodologies referred to in ASTM 1903-19 and contains all the limitations inherent in these methodologies. No other warranties, expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.

## 2.5 Limiting Conditions and Methodologies Used

No ESA can eliminate all uncertainty. Furthermore, any sample, either surface or subsurface, taken for chemical analysis may or may not be representative of a larger population. Professional judgment and interpretation are inherent in the process and uncertainty is inevitable. Additional assessment may be able to reduce the uncertainty.

Even when Phase II ESA work is executed with an appropriate site-specific standard of care, certain conditions present especially difficult detection problems. Such conditions may include, but are not limited to, complex geological settings, the fate and transport characteristics of certain substances, the distribution of existing target analytes, physical limitations imposed by the location of utilities and other man-made objects, and the inherent limitations of assessment technologies.

Phase II ESAs do not generally require an exhaustive assessment of environmental conditions on a property. There is a point at which the cost of information obtained, and the time required to obtain it outweigh the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions. If the presence of target analytes is confirmed on a property, the extent of further assessment is a function of the degree of confidence required and the degree of uncertainty that is acceptable in relation to the objectives of the assessment.

Measurements and sampling data only represent the site conditions at the time of data collection. Therefore, the usability of data collected as part of this Phase II ESA may have a finite lifetime depending on the application and use being made of the data.

## 3.0 BACKGROUND

### 3.1 Site Description and Features

The subject property is located at 625 Hilliard Rome Rd, Columbus, Ohio and consists of a corner gas station and convenience store. It is approximately 1.1 acres in size and rectangular in shape. The legal description of the subject property is Section 17, Lot 643, Parcel 23. The area is zoned as C1. The general area of the property is used for commercial with mixed retail and residential.



## 3.2 Physical Setting

The subject property is currently used for:

- Commercial
- Retail

There is a gas station on west side of property and a drive-thru on the east side.

## 3.3 Site History and Land Use

The buildings and structures located on the subject property are provided in the Tables section at the end of this report.

The history of the site is gas station from 1946 to present, prior to that the site was used for farming.

## 3.4 Adjacent Property Use

The current adjacent property uses are provided in the Tables section at the end of this report.

## 3.5 Summary of Previous Assessments

The following previous assessments were reviewed for the property:

Phase I ESA, Report Date 2022-11-10

## 4.0 WORK PERFORMED AND RATIONALE

### 4.1 Scope of Assessment

#### 4.1.1 Conceptual Site Model

The conceptual site model describes the target analytes likely to be present and where the target analytes are likely to be located now, considering the of the environmental behaviour, fate, and transport characteristics of the particular target analytes and all reasonably ascertainable information about their presence of likely presence.

This conceptual site model and sampling plan were developed in general accordance with ASTM Standard D1689 “*Guide for Developing Conceptual Site Models for Contaminated Sites*” and ASTM Standard D 5730:

*“Guide to Site Characteristics for Environmental Purposes with Emphasis on Soil, Rock, The Vadose Zone and Ground Water”.*

Based on the reported substance usage, generation or presence and potential for spatial and temporal dynamics influenced by environmental and anthropogenic factors, and upon a professional understanding of the substances typically used and generated in current and historical operations and activities, the target analytes that have or may have been released on the property are petroleum hydrocarbons.

The target analytes would likely have entered the environment from leaking or corroded underground storage tanks.

This assumption is based on knowledge of the characteristics of engineered structures, features, and containers present or known or inferred to have been present at the site, from which or through which the target analytes may have been released or dispersed on the site.

Based upon the site's physical conditions, and the behaviour, fate, and transport characteristics of the target analytes the environmental media and locations most likely to have the highest concentrations of the target analytes are soil and groundwater adjacent and down-gradient of underground storage tanks.

#### **4.1.2 Sampling and Chemical Testing Plan**

The sampling and chemical testing plan was designed to achieve reproducible chemical testing results for the target analytes in samples of collected from locations likely to have the highest concentration of target analytes. This testing plan included tests which provide quality assurance (QA) and techniques that provide quality control (QC) over the chemical analysis. A completed chain of custody record accompanied each sample shipment to the analytical laboratory. Chain of custody records provide written documentation regarding sample collection and handling, identify the persons involved in the chain of sample possession, and a written record of requested analytical parameters.

The sampling plan consisted of soil and/or groundwater samples collected from test pits and/or borings as shown in Figure 2 and described in sections 4.2 and 4.3 of this report.

Soil sampling was conducted in general accordance with ASTM Standard D4600 *“Guide for Soil Sampling from the Vadose Zone”* and groundwater sampling was conducted in general accordance with ASTM Standard D4448 *“Guide for Sampling Ground-Water Monitoring Wells”*.

Personal health and safety precautions were followed in accordance with applicable federal and state law or local equivalents and any requirements imposed by the owner, occupant, or field personnel.

#### **4.1.3 Supplemental Record Review**

No supplemental records were reviewed as part of this Phase II ESA.

## 4.2 Exploration, Sampling and Test Screening Methods

### 4.2.1 Test Pits

A total of 4 test pits were excavated at the approximate locations shown on Figure 2. The locations, depths, and dates of the test pits are provided in the Tables section at the end of this report. Soil samples were recovered from the test pits at regular depth intervals and visually classified. The soil samples were analysed for combustible vapour concentrations using a Thermo TVA-1000.

This information is presented on the test pit logs in Appendix X1.

### 4.2.2 Test Borings

A total of 3 borings were drilled at the approximate locations shown on Figure 2. The locations, depths, and dates of the borings are provided in the Tables section at the end of this report. The soil samples were collected from the borings using a split-spoon sampler. The soil samples were analysed for combustible vapour concentrations using a Thermo TVA-1000.

This information is presented on the boring logs in Appendix X1.

### 4.2.3 Monitoring Well Installations

Groundwater monitoring wells were installed in the following borings:

MW1, MW2, and MW3

The monitoring wells were constructed using 10-foot screen in a sand pack from 10 to 20 feet. Above the screen and sand pack a bentonite seal was used for the first 10 feet. An aboveground cap was installed for each monitoring well. For construction details, see the boring logs in Appendix X1.

After well development, groundwater samples were collected from each of the monitoring wells on November 22, 2022. The wells were purged using a peristaltic pump equipped with dedicated polyethylene tubing. A YSI Water Quality Meter equipped with a flow-through cell was used to monitor the geochemical conditions during purging to assess whether steady-state conditions were achieved prior to sampling. Groundwater samples were collected a minimum of 24 hours after the development of the monitoring wells. Groundwater samples were collected using a dedicated bailer for each of the monitoring wells. The groundwater samples were collected directly into the laboratory-supplied containers. All groundwater samples were placed on ice in coolers and delivered to the accredited laboratory under a formal chain of custody. Liquid phase petroleum hydrocarbons (LPH) were not observed at the groundwater table in the monitoring wells.

### 4.2.4 Surface Water and Sediment Sampling

The investigation of sediments and surface water was not applicable as no surface water bodies are present on the subject property.

## 4.2.5 Elevation Surveying

An elevation survey of the boreholes and monitoring wells was conducted on Nov. 22, 2022. The elevations were recorded using GPS survey equipment. The ground surface elevations are recorded on the borehole and monitoring well logs in Appendix X1.

## 4.2.6 Quality Assurance and Quality Control Measures

Samples were given unique identifications as they were collected, typically identifying the project number, date, sample location and depth. Soil and groundwater samples were collected in laboratory prepared containers. Soil sample containers for PHC F1, BTEX and/or VOC analysis contained methanol preservative in a 40 mL glass vial with septum lid. Soil sample containers for PHCs F2-F4 and/or PAH analysis were a 120 mL or 250 mL unpreserved jar with Teflon lined lid. Groundwater sample containers for PHCs F1, PHCs F2-F4, and/or VOC analysis contained sodium bisulphate to pH < 2 in a 40 mL glass vial with septum lid. Groundwater samples collected for analysis of dissolved metals, mercury and hexavalent chromium were filtered in the field using a dedicated 0.45-micron in-line filter. A formal chain of custody was maintained for all samples submitted to the laboratory.

Dedicated equipment was used for well development and sampling for further minimize the risk of cross contamination. Non-dedicated equipment (i.e., interface probe) was cleaned before initial use and between all measurement points with a solution of Alconox and distilled water. Dedicated, disposable nitrile gloves were used for each sampling event to reduce the potential for cross-contamination.

A laboratory prepared trip blank accompanied the groundwater samples during each sampling event and was submitted for laboratory analysis of VOCs. All field screening devices were calibrated prior to use by the supplier. Calibration checks were completed, and re-calibrations were conducted as required. Field duplicate samples were collected at the time of sampling.

There were no deviations from the QA/QC program described in the Sampling and Analysis Plan.

## 4.3 Chemical Analytical Methods

### 4.3.1 Soil

A total of 7 soil samples were collected. The analyses, locations, depths, and dates of the samples are provided in the Tables section at the end of this report. The soil samples were submitted to ACME Labs for chemical analyses.

### 4.3.2 Groundwater

A total of 3 groundwater samples were collected. The analyses, locations, depths, and dates of the samples are provided in the Tables section at the end of this report. The groundwater samples were submitted to ACME Labs for chemical analyses.

### 4.3.3 Surface Water and Sediments

No surface water samples were collected and submitted for analysis.  
No sediment samples were collected and submitted for analysis.

## 5.0 PRESENTATION AND EVALUATION OF RESULTS

### 5.1 Subsurface Conditions

#### 5.1.1 Geologic Setting

The geology in the area consisted of sand and gravel till underlain by clay.

The stratigraphy encountered during this assessment consisted of 10 to 15 feet of sand gravel then clay. The stratigraphic information recorded during the investigation is presented on the test pit and boring records in Appendix X1.

#### 5.1.2 Hydrogeologic Conditions

Groundwater was encountered during the investigation at the following locations and elevations:

MW1 at 12 feet  
MW2 at 12.5 feet  
MW3 at 11.5 feet

Based on the groundwater elevations measured the flow direction is South.

### 5.2 Analytical Results

#### 5.2.1 Soil

##### Petroleum Hydrocarbons

The soil analytical results for petroleum hydrocarbons along with the applicable or relevant and appropriate requirements ("ARARs") are summarized in the Tables section at the end of this report. Soil samples TP4:SS4, TP3:SS3, MW1:SS6, and MW2:SS7 exceeded the guidelines.

#### 5.2.2 Groundwater

##### Petroleum Hydrocarbons

The groundwater analytical results for petroleum hydrocarbons compounds along with the applicable guidelines and criteria are summarized in the Tables section at the end of this report. Groundwater samples MW1:GW1 and MS2:GW2 exceeded the guidelines.

### 5.2.3 Surface Water and Sediment

The investigation of sediments and surface water was not applicable as no surface water bodies are present on the subject property.

## 5.3 Quality Assurance and Quality Control Results

### 5.3.1 Field QA/QC Duplicate Samples

The field QA/QC program included the collection and analysis of 2 field duplicate samples. A summary of the field duplicate samples analysed and an interpretation of the efficacy of the QA/QC program is provided in the Tables section at the end of this report.

The Relative Percentage Difference (“RPD”) is a method of measuring the variation in a set of data that looks at the variation as a proportion of the average or target value. The RPD for the parameters detected with the concentrations five (5) times the detection limits were calculated, and the results are within the acceptable ranges.

The results of the laboratory analysis of the field duplicate QA/QC samples are acceptable. The analytical results of the field QA/QC duplicate samples are provided in Appendix X2.

### 5.3.2 Trip Spike and Trip Blank Samples

The field QA/QC program included the collection and analysis of trip spike and trip blank samples. One trip spike and one trip blank were submitted for analysis of petroleum hydrocarbons.

A trip blank is a sample of analyte free media (supplied by the laboratory) taken to the site and returned to the laboratory unopened. The laboratory prepares the trip blank. A duplicate of the trip blank prepared at the same time is retained at the laboratory in a contaminant free location. The purpose is to identify potential cross-contamination that may occur from other samples, ambient conditions, or other sources that samples may be exposed.

A trip spike is a sample prepared by the laboratory that is fortified with a known concentration of target analytes. This sample is shipped along with containers and is to be taken into the field but returned unopened to the laboratory. Analysis is conducted and recoveries are reported expressed as a percentage. The purpose is to monitor the breakdown or loss of analytes during the sampling process. Holding time, and temperature effects on concentration can be accessed.

The results of the laboratory analysis of the trip spike and trip blank samples are acceptable. The analytical results of the trip spike and trip blank samples are provided in Appendix X2.

### 5.3.3 Sample Handling Protocol

The samples analyzed as part of this Phase II ESA were handled in accordance with the analytical protocol with respect to holding time, preservation method, storage requirement and sample container type. All samples collected as part of the Phase II ESA were submitted with chains of custody to the laboratory.

### 5.3.4 Laboratory QA/QC Results

The laboratory used for the analytical testing has an internal QA/QC analytical protocol, consisting of analysing duplicate, blank, control, certified reference material and matrix spike samples. Based on a review of the data in the laboratory Certificates of Analysis, it is indicated that all samples/sample extracts were analysed within the applicable holding times using approved analytical method. The reported detection limits were acceptable for all tested parameters.

### 5.3.5 QA/QC Results

Based on a review of the QA/QC sample results, chain of custody, and the laboratory Certificates of Analysis, Plan B Environmental confirms that:

- A Certificate of Analysis or Analytical Report has been received for each sample submitted for analysis.
- All Certificates of Analysis and analytical reports are included in Appendix VI.

Based on the interpretation of the laboratory results and the QA/QC program it is our opinion that the laboratory analytical data can be relied upon.

## 6.0 INTERPRETATION AND CONCLUSIONS

This assessment has been prepared in accordance with generally accepted environmental methodologies referred to in ASTM 1903-97 (Re-approved 2002) and contains all the limitations inherent in these methodologies. No other warranties, expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.

There were no deviations to the work plan.

## 6.1 Recognized Environmental Conditions

### 6.1.1 On-Site Recognized Environmental Conditions

The on-site recognized environmental concerns assessed as part of this Phase II ESA were:

- Underground storage tanks associated with gas station.

The following assessments were performed for these on-site RECs:

- Collection and analysis of soil and groundwater samples for BTEX.

The results of the assessments performed for the on-site recognized environmental conditions were:

- Elevated levels of petroleum hydrocarbons above guidelines were detected in soil and groundwater samples on the south side of the underground storage tanks.

### 6.1.2 Off-Site Recognized Environmental Conditions

No off-site recognized environmental conditions were assessed as part of this Phase II ESA.

### 6.1.3 Non-Included Recognized Environmental Conditions

All recognized environmental concerns determined from the Phase I ESA were assessed as part of this Phase II ESA.

## 6.2 Conceptual Site Model Validation

The conceptual model developed for the site was validated during the investigation and the information from the investigation is sufficient to support sound conclusions regarding the presence and significance of target analytes.

The QA/QC procedures described in the chemical testing plan were adequate to verify the data acceptability.

### 6.2.1 Deviations from the Work Plan

There were no deviations to the work plan.

## 6.3 Absence, Presence, Degree, and Extent of Target Analytes

Based on the results of this assessment, the following impacted soil above applicable or relevant and appropriate requirements ("ARARs") was identified:



- Impacted soil from petroleum hydrocarbons was found on the south side of the underground storage tanks.

Based on the results of this assessment, the following impacted groundwater above applicable or relevant and appropriate requirements ("ARARs") was identified:

- Impacted groundwater from petroleum hydrocarbons was found in monitoring wells on the south side of the underground storage tanks.

Based on the results of this assessment, no other impacted media above applicable or relevant and appropriate requirements ("ARARs") was identified.

## 6.4 Other Concerns

There were no other concerns identified during this assessment.

## 6.5 Conclusions

The data gathered during this assessment was sufficient to accomplish the objectives listed in the Statement of Objectives.

## 7.0 RECOMMENDATIONS

Based on the results of this assessment the following further work is recommended:

- Additional test pits and borings to delineate the extend of the impacted soil and groundwater on the south side of the underground storage tanks.

## 8.0 CLOSURE

This report has been prepared for the sole benefit of ACME Oil and Gas. The report may not be relied upon by any other person or entity without the express written consent of GAEA Technologies and ACME Oil and Gas.

Respectfully submitted,

### Plan B Environmental

**Prepared by:**

John Smith, P.E.  
Environmental Engineer

**Reviewed by:**

John Hancock, P.E.  
Engineering Manager

## REFERENCES AND SOURCES OF INFORMATION

The following references may have been used in the preparation of this report.

ASTM Standard D 5730 Guide to Site Characteristics for Environmental Purposes with Emphasis on Soil, Rock, The Vadose Zone, and Ground Water.

ASTM Standard D 653 Terminology Relating to Soil, Rock, and Contained Fluids.

ASTM Standard D 4750 Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well. (Observation Well).

ASTM Standard E 1903-19 Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process.

ASTM Standard E1689 Guide for Developing Conceptual Site Models for Contaminated Sites.

EPA Environmental Investigations Standard Operating Procedures and Quality Assurance Manual, May 1996.

EPA Subsurface Characterization and Monitoring Techniques: A Desk Reference Practice-Vols I and II, EPA 625/R-93/003a and b.

EPA Regional Screening Levels (RSLs) - Generic Tables 2022.

## TABLES

### Buildings and Structures

Age (years)	Stories	Usage	Construction
26	1	Gas Kiosk and Store	Exterior walls are concrete block and brick.
26	1	Donut Drive-thru	Exterior walls are concrete block and brick.

### Adjacent Property Use

<b>North:</b>	Fast Food Restaurant
<b>South:</b>	Offices
<b>East:</b>	Gasoline Station
<b>West:</b>	Storage Units

### Test Pits Excavated

Number	Date	Depth	Location
TP1	2022-11-21	5.5 ft	NE side of USTs
TP2	2022-11-21	6 ft	NW side of USTs
TP3	2022-11-21	5.5 ft	SE side of USTs
TP4	2022-11-21	6.5 ft	SW side of USTs

### Borings Drilled

Number	Date	Depth	Location
MW1	2022-11-17	28 ft	SW side of USTs
MW2	2022-11-17	32 ft	SE side of USTs
MW3	2022-11-17	28 ft	North side of USTs

### Soil Samples Collected

Number	Date	Depth	Location	Analyses
TP1:SS3	2022-11-21	5 ft	TP1	TPH and BTEX
TP2:SS3	2022-11-21	5.5 ft	TP2	TPH and BTEX
TP3:SS3	2022-11-21	5 ft	TP3	TPH and BTEX
TP4:SS4	2022-11-21	5.5 ft	TP4	TPH and BTEX
MW1:SS5	2022-11-21	6.5 ft	MW1	TPH and BTEX
MW2:SS6	2022-11-21	6.5 ft	MW2	TPH and BTEX
MW3:SS7	2022-11-21	6 ft	MW3	TPH and BTEX

### Groundwater Samples Collected

Number	Date	Depth	Location	Analyses
MW1:GW1	2022-11-22	12	MW1	BTEX
MW2:GW2	2022-11-22	12.5	MW2	BTEX
MW3:GW3	2022-03-15	11.5	MW3	BTEX

### Summary of Soil Analytical Results - Petroleum Hydrocarbons

	Units	Criteria							
<b>Sample Number</b>	mg/kg		TP1:SS3	TP2:SS3	TP3:SS3	TP4:SS4	MW1:SS5	MW2:SS6	MW3:SS7
<b>Sample Date</b>	mg/kg		5 ft	5.5 ft	5 ft	5.5 ft	6.5 ft	6.5 ft	6 ft
<b>Lab. Ref. ID</b>	mg/kg		2022-11-21	2022-11-21	2022-11-21	2022-11-21	2022-11-22	2022-11-22	2022-11-22
<b>Benzene</b>	mg/kg	5.1	1.5	1.9	2.8	<b>8.2</b>	<b>6.6</b>	<b>7.2</b>	3.2
<b>Ethylbenzene</b>	mg/kg	25	8	5	<b>47</b>	<b>98</b>	<b>59</b>	<b>35</b>	12
<b>Toluene</b>	mg/kg	47000	1252	28412	<b>65120</b>	1220	<b>56812</b>	12421	2512
<b>Xylenes</b>	mg/kg	2500	401	323	<b>2811</b>	<b>6235</b>	<b>9805</b>	<b>5915</b>	1521
<b>TPH (Aliphatic High)</b>	mg/kg	3500000	25121	51225	53215	68881	125812	268812	45121
<b>TPH (Aliphatic Low)</b>	mg/kg	1500	536	232	<b>1821</b>	842	<b>2154</b>	<b>2655</b>	1211
<b>TPH (Aliphatic Medium)</b>	mg/kg	440	322	254	<b>655</b>	388	<b>512</b>	215	325
<b>TPH (Aromatic High)</b>	mg/kg	220	124	35	<b>354</b>	<b>1255</b>	<b>255</b>	<b>322</b>	154
<b>TPH (Aromatic Medium)</b>	mg/kg	17000	1211	2115	5688	844	4511	1821	325

The soil analytical results were compared with the following regulatory criteria:

EPA Regional Screening Levels - Generic Tables 2022. Industrial Soil THQ=1.0

### Summary of Groundwater Analytical Results - Petroleum Hydrocarbons

	Units	Criteria			
<b>Sample Number</b>			MW1:GW1	MW2:GW2	MW3:GW3
<b>Sample Date</b>			2022-11-22	2022-11-22	2022-11-22
<b>Lab. Ref. ID</b>					
<b>Benzene</b>	µg/L	5	<b>11</b>	<b>66</b>	2
<b>Ethylbenzene</b>	µg/L	700	<b>1210</b>	<b>2151</b>	154
<b>Toluene</b>	µg/L	1000	<b>2301</b>	<b>3505</b>	605
<b>Xylenes</b>	µg/L	10000	<b>16250</b>	<b>21522</b>	6125

The groundwater analytical results were compared with the following regulatory criteria:

EPA Regional Screening Levels - Generic Tables 2022. MCL THQ=1.0

### Summary of QA/QC Results

Sample ID	QA/QC Duplicate	Media	Parameter Analyzed	QA/QC Result
TP4:SS4	TP4:SS4-F	Soil	TPH and BTEX	Results are within RPD criteria.
MW1:GW1	MW1:GW1-D	Groundwater	BTEX	

## FIGURES

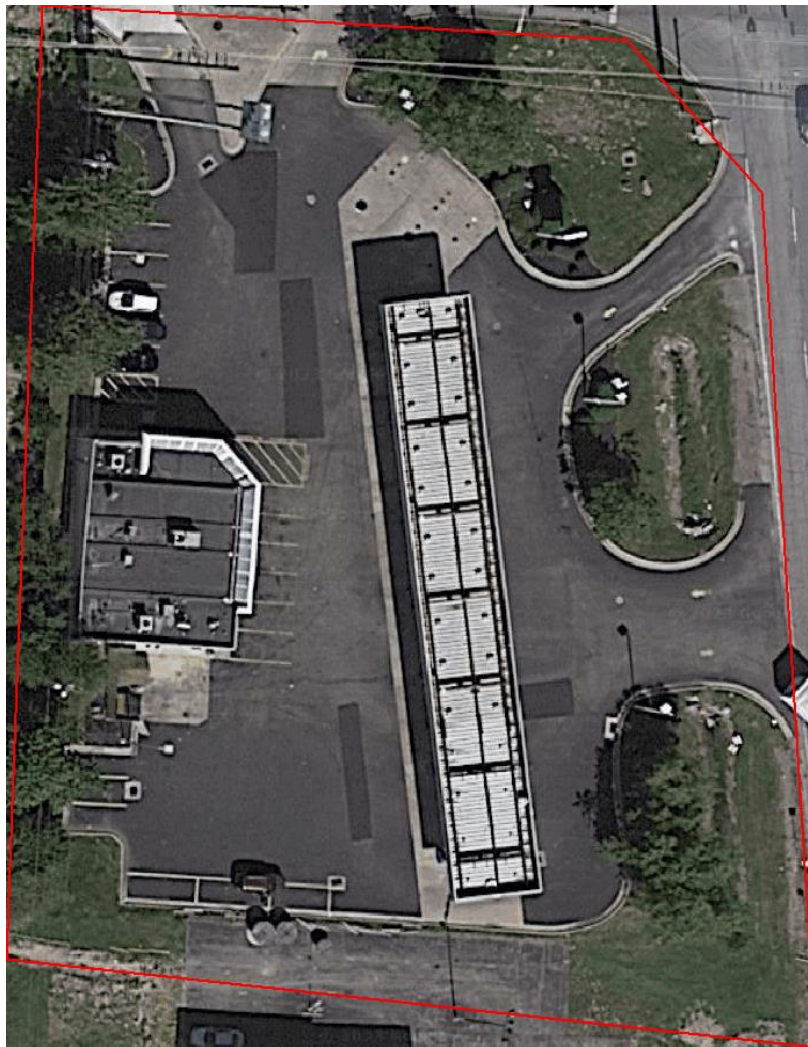
### Figure 1 : Site and Exploration Location Plan





**Plan B Environmental**  
366 N 6th Street  
Columbus, OH

## Figure 2: Aerial Photograph



**Plan B Environmental**  
366 N 6th Street  
Columbus, OH

**Project Map**

Project Number: US EX  
Project Name: US Examples  
Client Name: ACME Oil and Gas

**Site Location**

Address: 625 Hilliard Rome Road  
City: Columbus  
State: Ohio

Project Manager: John Smith  
Date: 2022-11-09

## **APPENDIX X1: SUBSURFACE EXPLORATION LOGS**

**Plan B Environmental**  
 366 N 6th Street, Columbus, OH

**Log of Borehole: MW1**

**Project No.:** PN123456  
**Project:** No Name Gas  
**X Coordinate:** -83.150694  
**Y Coordinate:** 39.972352  
**Status:** Unspecified  
**Elevation:** 100  
**Total Depth:** 28  
**Project Manager:**

SUBSURFACE PROFILE				SAMPLE					Well Completion Details
Depth (ft)	Symbol	Description	Depth/Elev.	Number	Type	Recovery	Vapour	Lab Analysis	
0		<b>Ground Surface</b>	100.0						<p>Concrete                  Bentonite                  #3 Silica Sand                  1" Steel Casing                  2" Slot 10 Screen</p>
0.0		Poorly-graded gravels, gravel-sand mixtures, little or no fines.	0.0						
1									
2									
3									
4									
5									
6									
7				SS5	SS	80	350	BTEX	
8									
9									
10									
11									
12									
13									
14			86.0						
14.0		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.	14.0						
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28			72.0						
			28.0						

**Drilled By:**  
**Drill Method:**  
**Drill Date:** 2022-11-17

**Hole Size:**  
**Datum:**  
**Sheet:** 1 of 1

**Plan B Environmental**  
 366 N 6th Street, Columbus, OH

**Log of Borehole: MW2**

**Project No.:** PN123456  
**Project:** No Name Gas  
**X Coordinate:** -83.150226  
**Y Coordinate:** 39.972314  
**Status:** Unspecified  
**Elevation:** 100  
**Total Depth:** 32  
**Project Manager:**

SUBSURFACE PROFILE			SAMPLE					Well Completion Details	
Depth (ft)	Symbol	Description	Depth/Elev.	Number	Type	Recovery	Vapour		Lab Analysis
0		<b>Ground Surface</b>	100.0						<p>The diagram illustrates the well completion details. It shows a 1" Steel Casing extending from the surface down to a depth of 15.0 feet. At the top of the casing, there is a concrete seal. Below the seal, there is a layer of bentonite. At the bottom of the casing, there is a #3 Silica Sand screen. The screen is labeled as a 2" Slot 10 Screen. The casing is shown to be surrounded by bentonite and silica sand.</p>
0.0		Poorly-graded gravels, gravel-sand mixtures, little or no fines.							
1									
2									
3									
4									
5									
6									
7				SS6	SS	80	420	BTEX	
8									
9									
10									
11									
12									
13									
14									
15			85.0						
15.0		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.	15.0						
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									

**Drilled By:**  
**Drill Method:**  
**Drill Date:** 1899-12-30

**Hole Size:**  
**Datum:**  
**Sheet:** 1 of 2

**Plan B Environmental**  
 366 N 6th Street, Columbus, OH

**Log of Borehole: MW3**

**Project No.:** PN123456  
**Project:** No Name Gas  
**X Coordinate:** -83.150468  
**Y Coordinate:** 39.972931  
**Status:** Unspecified

**Elevation:** 100  
**Total Depth:** 28  
**Project Manager:**

SUBSURFACE PROFILE				SAMPLE					Well Completion Details
Depth (ft)	Symbol	Description	Depth/Elev.	Number	Type	Recovery	Vapour	Lab Analysis	
0		<b>Ground Surface</b>	100.0						<p>Concrete                      Bentonite                      #3 Silica Sand                      1" Steel Casing                      2" Slot 10" Screen</p>
1		Poorly-graded gravels, gravel-sand mixtures, little or no fines.	0.0						
2									
3									
4									
5									
6				SS7	SS	80	220	BTEX	
7									
8									
9			90.0						
10		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.	10.0						
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28			72.0						
			28.0						

**Drilled By:**  
**Drill Method:**  
**Drill Date:** 1899-12-30

**Hole Size:**  
**Datum:**  
**Sheet:** 1 of 1

<b>Plan B Environmental</b> 366 N 6th Street Columbus, Ohio											
<b>PROJECT</b> No Name Gas					<b>TEST PIT NO.</b> TP1						
<b>CLIENT</b> Acme Oil and Gas					<b>PROJECT NO.</b> PN123456						
<b>LOCATION</b> 925 Hilliad Rome Rd, Columbus, OH					<b>GROUND ELEV.</b> 100						
<b>EXCAVATION METHOD</b> Backhoe					<b>LOGGER</b>						
<b>DEPTH TO - Water:</b> Not encountered					<b>DATE</b> 2022-11-16						
<b>Wells checked:</b>					<b>Caving:</b> Slight						
					<b>SHEET</b> 1 of 1						
DEPTH (ft)	SOIL SYMBOLS AND SAMPLERS			MATERIAL DESCRIPTION	U.S.C.S. DESIGNATION	Number	Lab Analyses	Wn	WL	Wp	Ip
	BULK	DRIVEN	GRAPHIC								
0.0			Ground Surface								
0.5			Poorly-graded gravels, gravel-sand mixtures, little or no fines.	GP							
1.0											
1.5											
2.0											
2.5											
3.0											
3.5											
4.0											
4.5						SS1	BTEX				
5.0											
5.5											
6.0											
6.5											
7.0											
7.5											
8.0											
<b>Notes:</b>  1 - INCLUDES AASHTO CLASSIFICATION											





<b>Plan B Environmental</b> 366 N 6th Street Columbus, Ohio											
<b>PROJECT</b> No Name Gas					<b>TEST PIT NO.</b> TP3						
<b>CLIENT</b> Acme Oil and Gas					<b>PROJECT NO.</b> PN123456						
<b>LOCATION</b> 925 Hilliad Rome Rd, Columbus, OH					<b>GROUND ELEV.</b> 100						
<b>EXCAVATION METHOD</b> Backhoe					<b>LOGGER</b>						
<b>DEPTH TO - Water:</b> Not encountered					<b>DATE</b> 1899-12-30						
<b>Wells checked:</b>					<b>Caving:</b> Slight						
					<b>SHEET</b> 1 of 1						
DEPTH (ft)	SOIL SYMBOLS AND SAMPLERS			MATERIAL DESCRIPTION	U.S.C.S. DESIGNATION	Number	Lab Analyses	Wn	WL	Wp	Ip
	BULK	DRIVEN	GRAPHIC								
0.0			Ground Surface								
0.5			Poorly-graded gravels, gravel-sand mixtures, little or no fines.	GP							
1.0											
1.5											
2.0											
2.5											
3.0											
3.5											
4.0											
4.5											
5.0						SS3	BTEX				
5.5											
6.0											
6.5											
7.0											
7.5											
8.0											
<b>Notes:</b> 1 - INCLUDES AASHTO CLASSIFICATION											

<b>Plan B Environmental</b> 366 N 6th Street Columbus, Ohio											
<b>PROJECT</b> No Name Gas					<b>TEST PIT NO.</b> TP4						
<b>CLIENT</b> Acme Oil and Gas					<b>PROJECT NO.</b> PN123456						
<b>LOCATION</b> 925 Hilliad Rome Rd, Columbus, OH					<b>GROUND ELEV.</b> 100						
<b>EXCAVATION METHOD</b> Backhoe					<b>LOGGER</b>						
<b>DEPTH TO - Water:</b> Not encountered					<b>DATE</b> 1899-12-30						
<b>Moisture checked:</b>					<b>Caving:</b> Slight						
					<b>SHEET</b> 1 of 1						
DEPTH (ft)	SOIL SYMBOLS AND SAMPLERS			MATERIAL DESCRIPTION	U.S.C.S. DESIGNATION	Number	Lab Analyses	Wn	WL	Wp	Ip
	BULK	DRIVEN	GRAPHIC								
0.0			Ground Surface								
0.5			Poorly-graded gravels, gravel-sand mixtures, little or no fines.	GP							
1.0											
1.5											
2.0											
2.5											
3.0											
3.5											
4.0											
4.5											
5.0						SS4	BTEX				
5.5											
6.0											
6.5											
7.0											
7.5											
8.0											
<b>Notes:</b> 1 - INCLUDES AASHTO CLASSIFICATION											



## **APPENDIX X2: LABORATORY REPORTS**

## **APPENDIX X3: OTHER INFORMATION**

