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Preliminary Site Investigation

87th STREET AND WOODWARD AVENUE—BOLINGBROOK AND WOODRIDGE, DUPAGE COUNTY, ILLINOIS

Date: April 23, 2018
File No. 81.0220592.02

PREPARED FOR:
DuPage County Division of Transportation
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Wheaton, Illinois 60187

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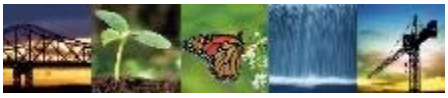

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April 23, 2018

Mr. Paul Krueger, P.E.
Chief Highway Engineer
DuPage County Division of Transportation
421 N. County Farm Road
Wheaton, Illinois 60187

Re: Preliminary Site Investigation
87th Street and Woodward Avenue – Bolingbrook and Woodridge, DuPage County, Illinois
File No. 81.0220592.02

Dear Mr. Krueger,

Huff & Huff, Inc., a subsidiary of GZA GeoEnvironmental, Inc. (H&H) is pleased to submit this *Preliminary Site Investigation* (PSI) for the proposed improvements at 87th Street and Woodward Avenue in Bolingbrook and Woodridge, IL.

The scope and depth of this study are consistent with those proposed and accepted by the DuPage County Division of Transportation. The field observations and results reported herein are considered sufficient in detail and scope to form an informed and professional opinion as to the obvious potential environmental hazards along the Project Corridor. This assessment has further investigated two (2) potentially impacted properties (PIPs) as well as an area where elevated PID readings were previously identified.

Soil samples were collected along the Project Corridor and specifically relative to the identified PIPs with laboratory analytical assessment for contaminants of concern associated with the various PIPs, including BTEX, SVOCs, PNAs, total RCRA metals, and soil pH. Soil samples achieved applicable remedial objectives in addition to the maximum allowable concentration (MAC) values for determining suitability for off-site final disposition at a clean construction and demolition debris (CCDD) facility with the exception of soils tested at boring B-3 and B-5.

Soils at borings B-3 and B-5 had detections of arsenic that exceeded the MAC value. The exceedance of MAC values will preclude this material from disposal at a CCDD facility. An exclusion zone has been established relative to these locations and depth interval as further discussed in the PSI and CCDD documentation. The PSI activities further defined and reduced an area of previously identified elevated PID readings; however, oversight and soil screening are recommended in the vicinity of the identified area to prohibit transportation of soils with elevated PID readings to a CCDD facility.

With the exception noted above, soils from the Project Corridor may be reused on-site or disposed of at a CCDD facility. The CCDD regulations require completion of Uncontaminated Soil Certification by Licensed Professional Engineer or Geologist (LPC-663) prior to placement of soils at either a CCDD or soil-only facility, in cases where PIPs have been identified. PIPs have been identified at two locations along Project Corridor, making an LPC-663 necessary for this project, which is included in Appendix E.

If you have any questions or comments, please don't hesitate to contact us at 630-684-9100.

Very truly yours,

HUFF & HUFF, INC.

Adam Kittler
Project Geologist

Shane Cuplin, P.G.
Senior Project Manager

Jeremy J. Reynolds, P.G.
Associate Principal

Attachments: 87th Street and Woodward Avenue PSI Report
LPC-663 Document

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GLOSSARY OF ACRONYMS

ACM	Asbestos-Containing Material	**MAC**	Maximum Allowable Concentration
ASTM	ASTM International	**NIPC**	Northern Illinois Planning Commission
bgs	below ground surface	**NFR**	No Further Remediation
BDE	Bureau of Design and Environment	**NPMS**	National Pipeline Mapping System
BLRS	Bureau of Local Roads and Streets	**PESA**	Preliminary Environmental Site Assessment
BTEX	Benzene, Toluene, Ethylbenzene, and total Xylenes	**PGA**	Peak Ground Acceleration
CCDD	Clean Construction or Demolition Debris	**PID**	Photoionization Detector
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System	**PIP**	Potentially Impacted Property
COC	Contaminant of Concern	**PNA**	Polynuclear Aromatic Hydrocarbons
CWA	Clean Water Act	**PSI**	Preliminary Site Investigation
ERIS	Environmental Risk Information Services	**RCRA**	Resource Conservation and Recovery Act
FEMA	Federal Emergency Management Agency	**REC**	Recognized Environmental Condition
FOIA	Freedom of Information Act	**RO**	Remedial Objective
IAC	Illinois Administration Code	**ROW**	Right-of-Way
IDOT	Illinois Department of Transportation	**SPILLS**	Spills and Incidences
IEMA	Illinois Emergency Management Agency	**SQG**	Small Quantity Generator
IEPA	Illinois Environmental Protection Agency	**USEPA**	United States Environmental Protection Agency
ISGS	Illinois State Geological Survey	**USGS**	United States Geological Survey
LUST	Leaking Underground Storage Tank	**UST**	Underground Storage Tank
		WWTP	Wastewater Treatment Plant

EXECUTIVE SUMMARY

Improvements are proposed along approximately 0.25 miles of 87th Street and 0.10 miles of Woodward Avenue in Bolingbrook and Woodridge, DuPage County, Illinois (Project Corridor). The planned work is primarily along the stretch of the Project Corridor along 87th Street from the intersection to approximately 0-17 miles east. The improvements include the following: road widening, resurfacing, and light pole installation. The maximum depth of excavation is anticipated to be approximately 25 feet bgs.

A *Preliminary Environmental Site Assessment* (PESA) was conducted by Huff & Huff, Inc. in 2013 with a second PESA being performed by V3 in August 2017. In addition, a *Preliminary Site Investigation* (PSI) for the Project Corridor was conducted by Huff & Huff, Inc. in February of 2017. The PESAs performed on the Project Corridor identified two (2) PIPs that exist adjacent to the Project Area that have the potential to affect the improvements project regarding construction worker safety, soil handling, and soil disposal. Soil borings were advanced as part of this PSI at seven locations within the existing right-of-way (ROW) on March 16, 2018 to address the PIPs summarized in the following table.

Table ES-1 Summary of Sites Determined to be PIPs

Site Name	Site ID	Address	Reason(s)
Shell/Circle K	1	2010 Boughton Road	Proximity and underground storage tanks
BP Amoco	2	1935 Boughton Road	Proximity, underground storage tanks, associated with hazardous material.

Since potential impacts to Project Corridor soils were identified, a Preliminary Site Investigation (PSI) was conducted to assess the Project Corridor for the contaminants of concern (COCs) associated with the impacted sites. As soil excavation activities will be conducted during the construction phase of the project, this report also addresses soil disposal considerations. The historic PESAs identified two (2) PIPs that were investigated during drilling activities on March 16, 2018.

Seven (7) soil borings were advanced to a depth of twelve (12) feet to twenty-five (25) feet bgs, corresponding to the maximum depth of the planned improvements. The current guidance for determining the ability to dispose of materials as clean construction demolition debris (CCDD) is through comparison of soil sample analytical results to the Maximum Allowable Concentrations (MACs) of chemical constituents in uncontaminated soil used as fill material. There is also a soil pH requirement (between 6.25 and 9.0).

Samples were selected from each boring for analysis of the COCs associated with the PIPs identified in the PESA, and include one or more the following: benzene, toluene, ethyl benzene, and total xylenes (BTEX), a sub-set of the volatile organic list; semi-volatile organic compounds (SVOCs); polynuclear aromatic compounds (PNAs); and total RCRA metals. Samples were also analyzed for soil pH to assess CCDD suitability of Project Corridor soils.

The results of soil samples analyzed from the seven soil borings indicate that soils within the Project Corridor achieve the Tier 1 Remedial Objectives (ROs) for the following exposure pathways: residential ingestion and inhalation; industrial/commercial ingestion and inhalation; construction worker ingestion and inhalation exposure; and soil component groundwater ingestion (Class I), with two exceptions. Arsenic was detected at boring B-3 (17-20) and B-5 (12-15) at concentrations of 16.1 and 14.7 mg/kg respectively, which do not achieve the MAC value of 13 mg/kg. The exceedances of arsenic at B-3 and B-5 above the MAC value will preclude this material from disposal at a CCDD facility.

The soil generated from these depth intervals are **NOT** certified for CCDD disposal but may be reused onsite or disposed of at a Subtitle D Sanitary Landfill. CCDD exclusion Zones along 87TH Street and Woodward Avenue, as depicted on Figure 4-1, have been established for soils generated from the areas near borings B-3 and B-5.

This PSI included advancement of two borings (B-6 and B-7) to further investigate an area of elevated PID readings identified in the 2017 PSI. The maximum PID reading detected as part of this PSI (7.8 ppm) occurred in soil boring B-6 and was significantly lower than that detected in boring B-04 (72 ppm) during the 2017 PSI. Based on the PID readings from this PSI and the 2017 PSI, environmental oversight with PID screening is recommended in an area along Boughton Road extend 70 feet east of B-6 and 130 feet west of B-6 near the eastern end of the Project Corridor, as depicted on Figure 4-1. We recommend environmental oversight with PID field screening during excavation near B-6 to segregate elevated PID material from being transported to a CCDD facility and to avoid rejected loads. If PID results of any loads transported to a CCDD facility are above background, the loads will be rejected, and the soil is no longer allowed to be directed to other CCDD facilities and would require profiling and disposal at a sanitary landfill (non-special waste).

1.0 INTRODUCTION

1.1 SCOPE OF ASSESSMENT

Huff & Huff, Inc., a subsidiary of GZA GeoEnvironmental, Inc. (H&H) completed this Preliminary Site Investigation (PSI) for the DuPage County Division of Transportation to identify man-made hazards that may be encountered within the proposed Project Corridor of 87th Street and Woodward Avenue in Bolingbrook and Woodridge, DuPage County, Illinois (Project Corridor).

Based on the findings of the 2013 PESA conducted by Huff & Huff, Inc., the 2017 PESA was performed by V3, and the 2017 *Preliminary Site Investigation Report* (PSI) conducted by Huff & Huff, Inc., seven soil borings were advanced for this PSI to assess Project Area soils for residential safety, industrial/commercial safety, and construction worker safety, as well as to address disposal considerations.

The specific methods used to prepare the assessment are contained in the following:

- A Manual for Conducting Preliminary Environmental Site Assessments for Illinois Department of Transportation Highway Projects (Erdmann et al., 2012)
- ASTM International Standard E 1527-13
- The IDOT BDE Manual, Chapter 27, Section 27-3 - *Special Waste Procedures*, and any subsequent revisions.
- IDOT's Bureau of Local Roads and Streets (BLRS) Manual, Chapter 20-12, Special Waste, July 2013.
- Public Act 96-1416
- Clean Construction or Demolition Debris Fill Operations and Uncontaminated Soil Fill
- Operations: Amendments to 35 Illinois Administrative Code 1100. Effective on August 27, 2012.

ASTM Standard E 1527-13 uses the term Recognized Environmental Condition (REC) to assess risk. ASTM specifically defines REC as "the presence or likely presence of any *hazardous substances* or *petroleum products* in, on, or at a property: (1) due to any *release* to the *environment*; (2) under conditions indicative of a *release* to the *environment*; or (3) under conditions that pose a *material threat* of a future *release* to the *environment*. *De minimis conditions* are not *recognized environmental conditions*."

Part 1100, 35 Illinois Administrative Code (IAC) has adopted the term Potentially Impacted Property (PIP) when assigning risk to sites. The PIP sites are essentially the same as REC sites as defined by ASTM Standard E 1527-13. Based on the establishment of PIP as the industry standard for describing sites at which special waste management issues may be associated, this report uses the term "PIP" to describe sites presenting environmental concern to the Project Corridor.

Since the proposed scope of this project includes soil excavation activities, soil disposal is anticipated to be a concern as the project progresses. The assessment included collection of soil samples along the Project Corridor to assess soil quality with respect to construction worker safety and soil disposal requirements. Soil sample analytical results are compared to Illinois Environmental Protection Agency (IEPA) Tiered Approach to Corrective Action Objectives (TACO) standards for soil

and groundwater exposure, as well as Maximum Allowable Concentrations (MACs) of chemical constituents and pH in uncontaminated soil for Clean Construction and Demolition Debris (CCDD) disposal.

1.2 SCOPE OF IMPROVEMENTS

The improvements are proposed primarily along 87th Street at Woodward Avenue extending along 87th Street approximately 0.17 miles east of Woodward Avenue in Bolingbrook and Woodridge, DuPage County, Illinois (Project Corridor). The Project Corridor is approximately 0.25 miles long along 87th Street and 0.10 miles long along Woodward Avenue. The improvements include the following: road widening, resurfacing, and light pole installation. The maximum depth of excavation is anticipated to be approximately 25 feet bgs.

Refer to Figure 1-1 for the Project Location Map and to Figure 1-2 for a depiction of the Project Corridor.

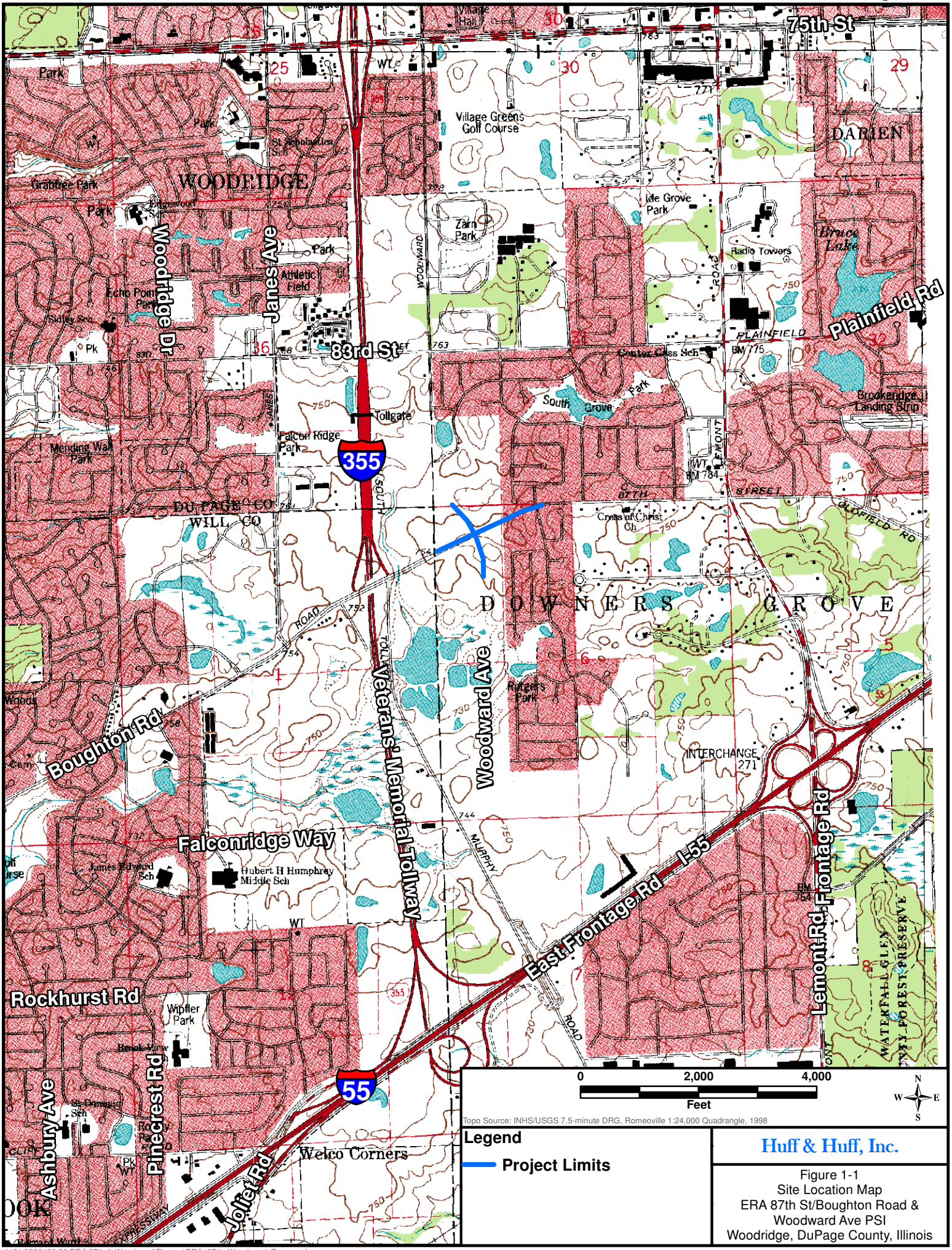
1.3 SUMMARY OF PREVIOUS ASSESSMENTS

87th Street/Boughton Road and Woodward Avenue Intersection PSI Report, February 2017

A *Preliminary Environmental Site Assessment* (PESA) was conducted by Huff & Huff, Inc. in 2013 and a PESA was also performed by V3 in August 2017. The PESA activities identified two PIPs as summarized in the following table. In addition, a *Preliminary Site Investigation* (PSI) for the Project Corridor was conducted by Huff & Huff, Inc. in February of 2017. The 2017 PSI included advancement of eight borings, one of which (B-04) identified a maximum PID reading of 72 ppm. The analytical results indicated achievement of MACs at the B-04 boring location and the remaining 2017 PSI borings. The 2017 PSI identified an approximate 620-foot area centered around B-04 for which a CCDD exclusion area was recommended (for PID readings only).

Table 1-1 February 2017 PESA Sites Determined to be PIPs

Site Name	Site ID	Address	Reason(s)
Shell/Circle K	1	2010 Boughton Road	Proximity and underground storage tanks
BP Amoco	2	1935 Boughton Road	Proximity, underground storage tanks, associated with hazardous material.



Topo Source: INHS/USGS 7.5-minute DRG, Romeoville 1:24,000 Quadrangle, 1998

Legend

Project Limits

Huff & Huff, Inc.

Figure 1-1
Site Location Map
ERA 87th St/Boughton Road &
Woodward Ave PSI
Woodridge, DuPage County, Illinois

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Huff & Huff, Inc.

Figure 1-2
Site Layout Map
ERA 87th St/Boughton Road &
Woodward Ave PSI
Woodridge, DuPage County, Illinois

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Site ID	Address	Status
1	2010 Boughton Road	PIP
2	1935 Boughton Road	PIP

Legend

- Project Limits
- PIP

Huff & Huff, Inc.

Figure 1-3
Potentially Impacted Properties Map
ERA 87th St/Boughton Road &
Woodward Ave PSI
Woodridge, DuPage County, Illinois

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2.0 SUBSURFACE INVESTIGATION

Soil sampling was performed at seven (7) locations on March 16, 2018 as depicted on Figure 2-1. The subsurface investigation was designed to characterize potential impacts associated with the PIPs, as well as to characterize the soils for future management. Soil boring locations were determined based on potential impacts associated with the PIPs, and to best represent the Project Corridor from a soil management perspective. The following sections present the procedures and findings for the soil sampling activities performed along the Project Corridor.

2.1 SAMPLING METHODOLOGY

On March 16, 2018, Environmental Soil Probing (ESP) and H&H, accompanied by Traffic Services, Inc. completed soil borings and collected soil samples along the Project Corridor at seven (7) locations. Soil borings were completed with a truck-mounted GeoProbe. Borings were advanced to a depth of twelve (12) to twenty-five (25) feet bgs to reflect the anticipated maximum depth of excavation for the proposed improvements. Samples were collected continuously to terminal depth. Samples were screened both visually and with a photo-ionization detector (PID) for possible signs of soil contamination.

2.2 PARAMETERS OF CONCERN

Both PIPs are associated with USTs or potential USTs used for heating oil, gasoline, or used oil associated with gas stations. In addition to the PIPs identified in the PESAs, an area of elevated PID readings was identified in the 2017 PSI. Parameters of concern were selected based on this information and include one or more of the following: benzene, toluene, ethyl benzene, and total xylenes (BTEX, a sub-set of the volatile organic list); semi-volatile organic compounds (SVOCs); polynuclear aromatic compounds (PNAs), and total RCRA metals. Samples were also analyzed for soil pH by laboratory analysis to assess CCDD suitability of Project Area soils.

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2.3 PHOTOIONIZATION DETECTOR (PID) SCREENING RESULTS

Field screening with a PID (10.6 eV) provided information regarding the potential presence of VOC-based contamination in the soil and was utilized when determining which samples to submit for laboratory analyses. Field PID screening values are provided in Table 2-1. Appendix C contains the PID screening methodology and boring logs.

Table 2-1 PID Screening Summary

Soil Boring	Depth, ft	PID Reading, PPM	Soil Boring	Depth, ft	PID Reading, PPM	Soil Boring	Depth, ft	PID Reading, PPM
B-1	0-1'	0.0	B-3	0-1'	0.0	B-5	0-1'	0.0
	1-3'	0.0		1-3'	0.0		1-3'	0.0
	3-5'	0.0		3-5'	0.0		**3-5'**	**0.2**
	5-7'	**0.0**		5-7'	0.0		5-7'	0.0
	7-10'	0.0		7-10'	0.0		7-10'	0.0
	10-12'	0.0		**10-12'**	**0.0**		10-12'	0.0
	12-15'	0.0		12-15'	0.0		**12-15'**	**0.0**
	15-17'	0.0		15-17'	0.0		15-17'	0.0
	17-20'	**0.0**		**17-20'**	**0.0**		17-20'	0.0
	20-22'	0.0		20-22'	0.0		20-22'	0.0
	22-25'	0.0		22-25'	0.0		22-25'	0.0
B-2	0-1'	0.0	B-4	0-1'	0.0	B-6	0-1'	0.0
	1-3'	0.0		1-3'	0.0		1-3'	0.1
	3-5'	**0.3**		3-5'	0.0		3-5'	0.3
	5-7'	0.1		**5-7'**	**0.0**		**5-7'**	**7.8**
	7-10'	0.0		7-10'	0.0		7-10'	0.9
	10-12'	0.0		10-12'	0.0		**10-12'**	**0.1**
	12-15'	0.0		12-15'	0.0	B-7	0-1'	0.0
	15-17'	0.0		15-17'	0.0		1-3'	0.0
	17-20'	0.0		17-20'	0.0		**3-5'**	**0.2**
	20-22'	**0.0**		**20-22'**	**0.0**		5-7'	0.0
	22-25'	0.0		22-25'	0.0		**7-10'**	**0.0**
Bold indicates sample submitted for analytical testing or placed on hold							10-12'	0.0

2.4 SOIL SAMPLE HANDLING

The Geoprobe unit uses disposable plastic sleeves inside of a metal macrocore sampler, which is driven into the ground with hydraulic percussion. Samples pass through the end of the macrocore sampler though a metal sampling shoe. The

Geoprobe macrocore sampling shoe was cleaned per the following procedure to prevent cross-contamination between sampling intervals and locations:

- Alconox wash
- Isopropyl Alcohol rinse
- Distilled water rinse
- Air dry

Soil samples were collected in glass jars and preserved in the field inside of a cooler ice bath and refrigerated upon reaching the H&H office. Samples were picked up by laboratory courier and transported to the laboratory. The following information was provided on all samples containers and the Chain-of-Custody form:

- Sampler's name
- Date and time of collection
- Sample name
- Sample analyses

2.5 GEOLOGICAL CHARACTERIZATION

Soil boring logs are included in Appendix C. The surficial geologic materials were described in the 2013 PESA as silt loam and silty clay loam soil types. The PSI soil borings encountered materials consisting predominantly of silty clay with traces of sand and gravel from 0 to 25. Several of the borings encountered a layer of silt, sand, and gravel at 22 to 23 feet below grade. Soil boring B-6 was noted to contain trace wood debris and organic matter from one to seven feet bgs. The 2017 PSI boring B-04 contained wood shavings at 2.5 feet bgs. The Soil Survey Map, Potential for Aquifer Contamination Map, and Stack Unit (geology) Map were included in the 2013 PESA Report, which is included in Appendix A (on CD) for reference.

3.0 TIER I AND MAC ASSESSMENT OF SOIL SAMPLE ANALYTICAL RESULTS

Soil samples were preserved and transmitted to First Environmental Laboratories, Inc. under Chain of Custody for analysis. The laboratory analytical report is provided in Appendix D. A summary of analytical results is presented in Tables 3-2 through 3-6. Laboratory analyses and interpretation of results are described below.

3.1 ASSESSMENT PROCEDURES

The Tiered Approach to Cleanup Objectives (TACO) is Illinois' risk-based approach to determining site-specific cleanup objectives for the protection of human health and the environment. TACO addresses four exposure routes (inhalation, soil ingestion, soil-migration-to-groundwater, and groundwater ingestion) and three types of potential receptors (residential, industrial/commercial [I/C], and construction worker [CW]). Numerical concentration standards for chemical compounds for each of the receptor groups are referred to as Remedial Objectives (ROs).

The TACO Tier I CW ingestion and inhalation routes are ROs for construction worker safety. If a constituent is detected above its respective Tier I CW RO, a construction worker caution must be placed in this area, and reuse of the soil within the Project Corridor would not be recommended.

Maximum Allowable Concentrations (MACs) are a set of values used to determine if soil meets the IEPA definition of "uncontaminated soil". The MACs are used strictly to determine if soil can be accepted at CCDD facilities. In general, a MAC value is determined by the most stringent TACO Tier I RO, but there are many exceptions. The MACs are found in Title 35 of the Illinois Administrative Code 1100, Subpart F and were finalized on August 27, 2012. Excavated soil is considered "uncontaminated soil" only if it achieves MAC of Chemical Constituents in Uncontaminated Soil (35 Ill. ADM. Code 1100.Subpart F) and has a soil pH between 6.25 and 9.00.

Analytical results were compared to TACO Tier 1 ROs for Residential, I/C, and CW receptors (soil inhalation and ingestion routes) and the soil component of the groundwater ingestion pathway for Class I Groundwater, as well as the MACs. For purposes of this investigation, soil results were compared to the MAC values to determine the recommended soil disposition method (CCDD-acceptable vs. non-special or special waste) and Tier I ROs (residential, I/C, CW, and soil component of the groundwater ingestion route) to evaluate exposure during construction activities and potential reuse on site.

Table 3-1 presents a summary of the soil samples analyzed and the analyses conducted for this PSI.

Table 3-1 Analytical Summary

SAMPLE ID	DEPTH, FT	CORRESPONDING TO PIP ID(S)	BTEX	SVOC	PNAS	TOTAL RCRA METALS	TOTAL ARSENIC	PH
SB-1 (7-10)	25	1	X		X			X
SB-1 (17-20)	25	1	X		X	X		
SB-2 (3-5)	25	1,2	X		X			X
SB-2 (20-22)	25	1,2	X		X	X		
SB-3 (10-12)	25	1,2	X		X			
SB-3 (17-20)	25	1,2	X		X	X		X
SB-4 (5-7)	25	2	X		X	X		
SB-4 (20-22)	25	2	X		X		X	X
SB-5 (3-5)	25	2	X		X			
SB-5 (2-15)	25	2	X		X	X		X
SB-6 (5-7)	12	PID Readings	X	X				X
SB-6 (10-12)	12	PID Readings	X		X	X		
SB-7 (3-5)	12	PID Readings	X		X			
SB-7 (7-10)	12	PID Readings	X		X			X

3.2 COMPARISON OF RESULTS TO MACS AND TIER I OBJECTIVES

Analytical results were compared to Tier 1 ROs and MACs, and the results are summarized by contaminants of concern (COC) below. A comparison of the soil results to the Tier 1 ROs and MACs is presented in Tables 3-2 through 3-6.

3.2.1 BTEX (a subset of VOCs)

Fourteen soil samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), a subset of VOCs. Table 3-2 presents the soil VOC (and subset BTEX) results compared to the selected Tier 1 ROs. Table 3-3 presents the soil VOC (and subset BTEX) results compared to the MACs for assessment of disposal options.

The BTEX results are below detection limits for the samples analyzed, achieving the Tier 1 ROs and the MACs.

3.2.2 SVOCs and PNAs (a subset of SVOCs)

Fourteen soil samples were analyzed for semi-volatile organic compounds (SVOCs) or polynuclear aromatic hydrocarbon compounds (PNAs), a subset of SVOCs. Table 3-4 presents the soil sample PNA analytical results compared to each of the Tier 1 ROs. Table 3-5 presents the soil sample PNA analytical results compared to the MACs. Table 3-6 presents the soil sample SVOC analytical results compared to each of the Tier 1 ROs. Table 3-7 presents the soil sample SVOC analytical results compared to the MACs.

The SVOC/PNA results are below detection limits for the samples analyzed, achieving the Tier 1 ROs and the MACs.

3.2.3 Total RCRA Metals

Seven soil samples were analyzed for total RCRA metals. Table 3-8 presents the soil sample total RCRA metal analytical results compared to each of the Tier 1 ROs. Table 3-9 presents the soil sample total RCRA metal analytical results compared to the MACs. Detections of Chromium and Silver were identified in several of the samples that exceeded the background values within a metropolitan statistical area, however, these detections achieved their respective MAC values for CCDD disposal.

Samples B-3 (17-20) and B-5 (12-15) had detections of arsenic at 16.1mg/kg and 14.7 mg/kg respectively, exceeding the MAC value of 13 mg/kg. This exceedance will preclude these areas from being eligible for CCDD disposal.

The following seven samples had detectable concentrations of one or more total RCRA metals: B-1 (7-10), B-2 (20-22), B-3 (17-20), B-4 (5-7), B-4 (20-22), B-5 (12-15), and B-6 (10-12). Several RCRA metals were detected at low concentrations in each of these samples at levels achieving their respective MACs for CCDD disposal.

TABLE 3-2
BTEX SOIL RESULTS COMPARED TO TIER 1 REMEDIAL OBJECTIVES

Soil Boring	***Ingestion Exposure Route***			***Inhalation Exposure Route***			***Soil Component of Groundwater Ingestion (Class I)***	**B-1**	**B-1**	**B-2**	**B-2**	**B-3**	**B-3**	**B-4**
Depth, ft	*Residential* [a/]	*Industrial / Commerical* [a/]	*Constructon Worker* [a/]	*Residential* [a/]	*Industrial / Commerical* [a/]	*Constructon Worker* [a/]		7-10	17-20	3-5	20-22	10-12	17-20	5-7
Constituent	----------*mg/kg*----------													
Benzene	*12*	*100*	*2,300*	*0.8*	*1.6*	*2.2*	*0.03*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	*7,800*	*200,000*	*20,000*	*400*	*400*	*58*	*13*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tetrachloroethene	*12*	*110*	*2,400*	*11*	*20*	*28*	*0.06*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Xylene, Total	*16,000*	*410,000*	*41,000*	*320*	*320*	*5.6*	*150*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Soil Boring	***Ingestion Exposure Route***			***Inhalation Exposure Route***			***Soil Component of Groundwater Ingestion (Class I)***	**B-4**	**B-5**	**B-5**	**B-6**	**B-6**	**B-7**	**B-7**
Depth, ft	*Residential* [a/]	*Industrial / Commerical* [a/]	*Constructon Worker* [a/]	*Residential* [a/]	*Industrial / Commerical* [a/]	*Constructon Worker* [a/]		20-22	3-5	12-15	5-7	10-12	3-5	7-10
Constituent	----------*mg/kg*----------													
Benzene	*12*	*100*	*2,300*	*0.8*	*1.6*	*2.2*	*0.03*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	*7,800*	*200,000*	*20,000*	*400*	*400*	*58*	*13*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Tetrachloroethene	*12*	*110*	*2,400*	*11*	*20*	*28*	*0.06*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Xylene, Total	*16,000*	*410,000*	*41,000*	*320*	*320*	*5.6*	*150*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

[a/] Refers to Remediation Objective from Table B, Appendix B, Part 742 - TACO

-- Constituent for which sample was not analyzed, or for which no Remedial Objective exists.

TABLE 3-3

BTEX SOIL RESULTS COMPARED TO THE MACs FOR CCDD DISPOSAL

Soil Boring	*Maximum Allowable*	**B-1**	**B-1**	**B-2**	**B-2**	**B-3**	**B-3**	**B-4**	**B-4**	**B-5**	**B-5**	**B-6**	**B-6**	**B-7**	**B-7**
Depth, ft	*Concentration* [a/]	7-10	17-20	3-5	20-22	10-12	17-20	5-7	20-22	3-5	12-15	5-7	10-12	3-5	7-10
Constituent	----------	----------	----------	----------	----------	----------	*mg/kg*	----------	----------	----------	----------	----------	----------	----------	----------
Benzene	*0.03*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	*13*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	*12*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Xylene, Total	*5.6*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

[a/] Refers to Maximum Allowable Concentration (MAC) of Chemical Constituents in Uncontaminated Soil Used As Fill Material At Regulated Fill Operations (35 IAC 1100.Subpart F)

TABLE 3-4

PNA SOIL RESULTS COMPARED TO TIER 1 REMEDIAL OBJECTIVES

Soil Boring	*Ingestion Exposure Route*			*Inhalation Exposure Route*			***Soil Component of Groundwater Ingestion (Class I)***	**B-1**	**B-1**	**B-2**	**B-2**	**B-3**	**B-3**	**B-4**	**B-4**	**B-5**	**B-5**	**B-6**	**B-7**	**B-7**
Depth, ft	*Residential* [a/]	*Industrial / Commerical* [a/]	*Constructon Worker* [a/]	*Residential* [a/]	*Industrial / Commerical* [a/]	*Constructon Worker* [a/]		7-10	17-20	3-5	20-22	10-12	17-20	5-7	20-22	3-5	12-15	10-12	3-5	7-10
Constituent	----------	----------	----------	----------	----------	----------	*mg/kg*	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
Acenaphthene	*4,700*	*120,000*	*120,000*	--	--	--	*570*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	--	--	--	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	*23,000*	*610,000*	*610,000*	--	--	--	*12,000*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	*0.9*	*8*	*170*	--	--	--	*2*	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087
Benzo(a)pyrene	*2.1* [b/]	*0.8*	*17*	--	--	--	*8*	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Benzo(b)fluoranthene	*0.9*	*8*	*170*	--	--	--	*5*	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
Benzo(k)fluoranthene	*9*	*78*	*1,700*	--	--	--	*49*	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
Benzo(ghi)perylene	--	--	--	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	*88*	*780*	*17,000*	--	--	--	*160*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	*0.09*	*0.8*	*17*	--	--	--	*2*	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	*3,100*	*82,000*	*82,000*	--	--	--	*4,300*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	*3,100*	*82,000*	*82,000*	--	--	--	*560*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	*0.9*	*8*	*170*	--	--	--	*14*	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029
Naphthalene	*1,600*	*41,000*	*4,100*	*170*	*270*	*1.8*	*12*	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Phenanthrene	--	--	--	--	--	--	--	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	*2,300*	*61,000*	*61,000*	--	--	--	*4,200*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

[a/] Refers to Remediation Objective from Table B, Appendix B, Part 742 - TACO

[b/] Refers to PNA background value for metopolitan statistical areas (Table H, Appendix A, Part 742 - TACO) as Elgin, IL is located in Kane County

-- Constituent for which sample was not analyzed, or for which no Remedial Objective exists.

TABLE 3-5

PNA SOIL RESULTS COMPARED TO THE MACs FOR CCDD DISPOSAL

Soil Boring	*Maximum Allowable*	**B-1**	**B-1**	**B-2**	**B-2**	**B-3**	**B-3**	**B-4**	**B-4**	**B-5**	**B-5**	**B-6**	**B-7**	**B-7**
Depth, ft	*Concentration* [a/]	7-10	17-20	3-5	20-22	10-12	17-20	5-7	20-22	3-5	12-15	10-12	3-5	7-10
Constituent	----------*mg/kg*----------													
Acenaphthene	*570*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	*85*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	*12,000*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	*1.8* [b/]	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087
Benzo(a)pyrene	*2.1* [b/]	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Benzo(b)fluoranthene	*2.1* [b/]	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
Benzo(k)fluoranthene	*9*	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
Benzo(ghi)perylene	*2,300*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	*88*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	*0.42* [b/]	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	*3,100*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	*560*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	*1.6* [b/]	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029
Naphthalene	*1.8*	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Phenanthrene	*210*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	*2,300*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

[a/] Refers to Maximum Allowable Concentration (MAC) of Chemical Constituents in Uncontaminated Soil Used As Fill Material At Regulated Fill Operations (35 IAC 1100.Subpart F)

b/ Refers to MAC value within a populated area in a MSA excluding Chicago

TABLE 3-6
SVOC SOIL RESULTS COMPARED TO TIER 1 REMEDIAL OBJECTIVES

Soil Boring	***Ingestion Exposure Route***			***Inhalation Exposure Route***			***Soil Component of Groundwater Ingestion (Class I)***	**B-1**
Depth, ft	*Residential* [a/]	*Industrial / Commerical* [a/]	*Constructon Worker* [a/]	*Residential* [a/]	*Industrial / Commerical* [a/]	*Constructon Worker* [a/]		7-10
Constituent	*mg/kg*							
Acenaphthene	*4,700*	*120,000*	*120,000*	--	--	--	*570*	<0.33
Acenaphthylene	--	--	--	--	--	--	--	<0.33
Anthracene	*23,000*	*610,000*	*610,000*	--	--	--	*12000*	<0.33
Benzidine	--	--	--	--	--	--	--	<0.33
Benzo(a)anthracene	*1.8*	*8.0*	*170*	--	--	--	*2*	<0.33
Benzo(a)pyrene	*2.1*	*0.8*	*17*	--	--	--	*8*	<0.09
Benzo(b)fluoranthene	*2.1*	*8.0*	*170*	--	--	--	*5*	<0.33
Benzo(k)fluoranthene	*1.7*	*78*	*1,700*	--	--	--	*49*	<0.33
Benzo(ghi)perylene	*2*	--	--	--	--	--	--	<0.33
Benzoic acid	*310,000*	*1,000,000*	*820,000*				*400*	<0.33
Benzyl alcohol	--	--	--	--	--	--	--	<0.33
bis(2-Chloroethoxy)methane	--	--	--	--	--	--	--	<0.33
bis(2-Chloroethyl)ether	*0.60*	*5*	*75*	*0.2*	*0.47*	*0.66*	*0.0004*	<0.33
bis(2-Chloroisopropyl)ether	--	--	--	--	--	--	--	<0.33
bis(2-Ethylhexyl)phthalate	*46*	*410*	*4,100*	*31000*	*31000*	*31000*	*3600*	<0.33
4-Bromophenyl phenyl ether	--	--	--	--	--	--	--	<0.33
Butyl benzyl phthalate	*16,000*	*410,000*	*410,000*	*930*	*930*	*930*	*930*	<0.33
Carbazole	*32*	*290*	*6,200*	--	--	--	*0.6*	<0.33
4-Chloroaniline	*310*	*8,200*	*820*	--	--	--	*0.7*	<0.33
4-Chloro-3-methylphenol	--	--	--	--	--	--	--	<0.33
2-Chloronaphthalene	--	--	--	--	--	--	--	<0.33
2-Chlorophenol	*390*	*10,000*	*10,000*	*53000*	*53000*	*53000*	*4*	<0.33
4-Chlorophenyl phenyl ether	--	--	--	--	--	--	--	<0.33
Chrysene	*88*	*780*	*17,000*	--	--	--	*160*	<0.33
Dibenzo(a,h)anthracene	*0.09*	*0.80*	*17*	--	--	--	*2*	<0.09
Dibenzofuran	--	--	--	--	--	--	--	<0.33
1,2-Dichlorobenzene	*7,000*	*180,000*	*18,000*	*560*	*560*	*310*	*17*	<0.33
1,3-Dichlorobenzene	--	--	--	--	--	--	--	<0.33
1,4-Dichlorobenzene	--	--	--	*11000*	*17000*	*340*	*2*	<0.33
3,3'-Dichlorobenzidine	*1.0*	*13*	*280*	--	--	--	*0.007*	<0.66
2,4-Dichlorophenol	*230*	*6,100*	*610*	--	--	--	*1*	<0.33
Diethyl phthalate	*63,000*	*1,000,000*	*1,000,000*	*2000*	*2000*	*2000*	*470*	<0.33
2,4-Dimethylphenol	*1,600*	*41,000*	*41,000*	--	--	--	*9*	<0.33
Dimethyl phthalate	--	--	--	--	--	--	--	<0.33
Di-n-butyl phthalate	*7,800*	*200,000*	*200,000*	*2300*	*2300*	*2300*	*2300*	<0.33
4,6-Dinitro-2-methylphenol	--	--	--	--	--	--	--	<1.6
2,4-Dinitrophenol	*160*	*4,100*	*410*	--	--	--	*0.2*	<1.6
2,4-Dinitrotoluene	*0.90*	*8.4*	*180*	--	--	--	*0.0008*	<0.25
2,6-Dinitrotoluene	*0.90*	*8.4*	*180*	--	--	--	*0.0007*	<0.26
Di-n-octylphthalate	*1,600*	*41,000*	*4,100*	*10000*	*10000*	*10000*	*10000*	<0.33
Fluoranthene	*3,100*	*82,000*	*82,000*	--	--	--	*4300*	<0.33
Fluorene	*3,100*	*82,000*	*82,000*	--	--	--	*560*	<0.33
Hexachlorobenzene	*0.4*	*4*	*78*	*1.0*	*1.8*	*2.6*	*2*	<0.33
Hexachlorobutadiene	--	--	--	--	--	--	--	<0.33
Hexachlorocyclopentadiene	*550*	*14,000*	*14,000*	*10*	*16*	*1.1*	*400*	<0.33
Hexachloroethane	*78*	*2,000*	*2,000*	--	--	--	*0.5*	<0.33
Indeno(1,2,3-cd)pyrene	*0.9*	*8*	*170*	--	--	--	*14*	<0.33
Isophorone	*15,600*	*410,000*	*410,000*	*4600*	*4600*	*46000*	*8*	<0.33
2-Methylnaphthalene	--	--	--	--	--	--	--	<0.33
2-Methylphenol	*3,900*	*100,000*	*100,000*	--	--	--	*15*	<0.33
3 & 4-Methylphenol	--	--	--	--	--	--	--	<0.33
Naphthalene	*1,600*	*41,000*	*4,100*	*170*	*270*	*1.8*	*12*	<0.33
2-Nitroaniline	--	--	--	--	--	--	--	<1.6
3-Nitroaniline	--	--	--	--	--	--	--	<1.6
4-Nitroaniline	--	--	--	--	--	--	--	<1.6
Nitrobenzene	*39*	*1,000*	*1,000*	*92*	*140*	*9.4*	*0.1*	<0.26
2-Nitrophenol	--	--	--	--	--	--	--	<1.6
4-Nitrophenol	--	--	--	--	--	--	--	<1.6
n-Nitrosodi-n-propylamine	*0*	*1*	*18*	--	--	--	*0.00005*	<0.09
n-Nitrosodimethylamine	--	--	--	--	--	--	--	<0.33
n-Nitrosodiphenylamine	*130*	*1,200*	*25,000*	--	--	--	*1.0*	<0.33
Pentachlorophenol	*3.0*	*24*	*520*	--	--	--	*0.03*	<0.33
Phenanthrene	--	--	--	--	--	--	--	<0.33
Phenol	*23,000*	*610,000*	*61,000*	--	--	--	*100*	<0.33
Pyrene	*2300*	*61000*	*61000*	--	--	--	*4200*	<0.33
Pyridine	--	--	--	--	--	--	--	<0.33
1,2,4-Trichlorobenzene	*780*	*20000*	*2000*	*3200*	*3200*	*920*	*5*	<0.33
2,4,5-Trichlorophenol	*7800*	*200000*	*200000*				*270*	<0.33
2,4,6-Trichlorophenol	*58*	*520*	*11000*	*200*	*390*	*540*	*0.2*	<0.33

[a/] Refers to Remediation Objective from Table B, Appendix B, Part 742 - TACO

[b/] Refers to PNA background value for metopolitan statistical areas (Table H, Appendix A, Part 742 - TACO) as Elgin, IL is located in Kane County

-- Constituent for which sample was not analyzed, or for which no Remedial Objective exists.

TABLE 3-7

SVOC SOIL RESULTS COMPARED TO THE MACs FOR CCDD DISPOSAL

Soil Boring	*Maximum Allowable*	**B-1**
Depth, ft	*Concentration* [a/]	7-10
Constituent	----------*mg/kg*----------	
Acenaphthene	*570*	<0.33
Acenaphthylene	*85*	<0.33
Anthracene	*12000*	<0.33
Benzo(a)anthracene	*1.8* [b/]	<0.33
Benzo(a)pyrene	*2.1* [b/]	<0.09
Benzo(b)fluoranthene	*2.1* [b/]	<0.33
Benzo(k)fluoranthene	*9*	<0.33
Benzo(ghi)perylene	*2300*	<0.33
Benzoic acid	*400*	<0.33
bis(2-Chloroethyl)ether	*0.66*	<0.33
bis(2-Ethylhexyl)phthalate	*46*	<0.33
Butyl benzyl phthalate	*930*	<0.33
Carbazole	*0.6*	<0.33
4-Chloroaniline	*0.7*	<0.33
2-Chlorophenol	*1.5*	<0.33
Chrysene	*88*	<0.33
Dibenzo(a,h)anthracene	*0.42* [b/]	<0.09
1,2-Dichlorobenzene	*17*	<0.33
1,4-Dichlorobenzene	*2*	<0.33
3,3'-Dichlorobenzidine	*1.3*	<0.66
2,4-Dichlorophenol	*0.48*	<0.33
Diethyl phthalate	*470*	<0.33
2,4-Dimethylphenol	*9*	<0.33
Di-n-butyl phthalate	*2300*	<0.33
2,4-Dinitrophenol	*3.3*	<1.6
2,4-Dinitrotoluene	*0.25*	<0.25
2,6-Dinitrotoluene	*0.26*	<0.26
Di-n-octylphthalate	*1600*	<0.33
Fluoranthene	*3100*	<0.33
Fluorene	*560*	<0.33
Hexachlorobenzene	*0.4*	<0.33
Hexachlorocyclopentadiene	*1.1*	<0.33
Hexachloroethane	*0.5*	<0.33
Indeno(1,2,3-cd)pyrene	1.6[b/]	<0.33
Isophorone	*8*	<0.33
2-Methylphenol	*15*	<0.33
Naphthalene	*2*	<0.33
Nitrobenzene	*0.26*	<0.26
n-Nitrosodi-n-propylamine	*0.0018*	<0.09
n-Nitrosodiphenylamine	*1*	<0.33
Pentachlorophenol	*0.02*	<0.33
Phenanthrene	*210*	<0.33
Phenol	*100*	<0.33
Pyrene	*2300*	<0.33
1,2,4-Trichlorobenzene	*5*	<0.33
2,4,5-Trichlorophenol	*26*	<0.33
2,4,6-Trichlorophenol	*0.66*	<0.33

[a/] Refers to Maximum Allowable Concentration (MAC) of Chemical Constituents in Uncontaminated Soil Used As Fill Material At Regulated Fill Operations (35 IAC 1100.Subpart F)

b/ Refers to MAC value within a populated area in a MSA excluding Chicago

TABLE 3-8

RCRA METALS SOIL RESULTS COMPARED TO TIER 1 REMEDIAL OBJECTIVES

Soil Boring	***Ingestion Exposure Route***			***Inhalation Exposure Route***			**B-1**	**B-2**	**B-3**	**B-4**	**B-4**	**B-5**	**B-6**
Depth, ft	*Residential* [a/]	*Industrial / Commerical* [a/]	*Constructon Worker* [a/]	*Residential* [a/]	*Industrial / Commerical* [a/]	*Constructon Worker* [a/]	17-20	20-22	17-20	5-7	20-22	12-15	10-12
Constituent	----------*mg/kg*----------												
Arsenic	*13*	*13*	*61*	*750*	*1,200*	*25,000*	9.4	8.6	**16.1**	9	6.3	**14.7**	9.8
Barium	*5,500*	*140,000*	*14,000*	*690,000*	*910,000*	*870,000*	22	31.1	24.5	27.1	--	22.4	46.5
Cadmium	*78*	*2,000*	*200*	*1,800*	*2,800*	*59,000*	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5
Chromium	*230*	*6,100*	*4,100*	*270*	*420*	*690*	11.2	14.7	9.5	11.4	--	9.1	17.7
Lead	*400*	*800*	*700*	--	--	--	10.1	11.4	15.4	11.2	--	13.9	12.9
Mercury	*23*	*610*	*61*	*10*	*16*	*0.10*	<0.05	<0.05	<0.05	<0.05	--	<0.05	<0.05
Selenium	*390*	*10,000*	*1,000*	--	--	--	<1.0	<1.0	<1.0	<1.0	--	<1.0	<1.0
Silver	*390*	*10,000*	*1,000*	--	--	--	0.5	0.6	0.5	0.5	--	0.6	0.6

[a/] Refers to Remediation Objective from Table B, Appendix B, Part 742 - TACO

-- Constituent for which sample was not analyzed, or for which no Remedial Objective exists.

Bold denotes constituent above applicable Remedial Objective

TABLE 3-9
RCRA METALS SOIL RESULTS COMPARED TO THE MACs FOR CCDD DISPOSAL

Soil Boring	*Maximum Allowable*	**B-1**	**B-2**	**B-3**	**B-4**	**B-4**	**B-5**	**B-6**
Depth, ft	*Concentration* [a/]	17-20	20-22	17-20	5-7	20-22	12-15	10-12
Constituent	----------*mg/kg*----------							
Arsenic	*13*	9.4	8.6	**16.1**	9	6.3	**14.7**	9.8
Barium	1,500	22	31.1	24.5	27.1	--	22.4	46.5
Cadmium	5.2	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5
Chromium	21	11.2	14.7	9.5	11.4	--	9.1	17.7
Lead	107	10.1	11.4	15.4	11.2	--	13.9	12.9
Mercury	*0.89*	<0.05	<0.05	<0.05	<0.05	--	<0.05	<0.05
Selenium	*1.3*	<1.0	<1.0	<1.0	<1.0	--	<1.0	<1.0
Silver	*4*	0.5	0.6	0.5	0.5	--	0.6	0.6

[a/] Refers to Maximum Allowable Concentration (MAC) of Chemical Constituents in Uncontaminated Soil Used As Fill Material At Regulated Fill Operations (35 IAC 1100.Subpart F)

b/ Refers to MAC value within a populated area in a MSA excluding Chicago

Bold denotes constituent above applicable Remedial Objective

3.3 SOIL PH RESULTS

Table 3-8 presents the soil pH results. Soil samples were packed in laboratory provide glassware and transmitted to First Environmental Laboratories, Inc. under Chain of Custody for analysis. The laboratory analytical report is provided in Appendix D. CCDD regulations require soil pH between 6.25 and 9.00 to be acceptable for disposal at a CCDD or soil-only facility. Seven samples were submitted for soil pH analysis and are considered representative of the Project Corridor. The pH results ranged from 6.75 to 8.60 and are all within the acceptable 6.25 to 9.00 range. Therefore, soils from this Project Corridor achieve the CCDD soil pH criteria.

Table 3-10 Soil pH Results Compared to the Soil pH Requirement for CCDD Disposal

SOIL BORING ID	DEPTH, FT	SOIL PH RESULT
SB-1	7-10	8.13
SB-2	3-5	8.3
SB-3	17-20	8.6
SB-4	20-22	8.08
SB-5	12-15	8.39
SB-6	5-7	6.75
SB-7	7-10	8.49
CCDD Soil pH Requirement: between 6.25 - 9.0		

4.0 CONCLUSIONS AND SOIL MANAGEMENT RECOMMENDATIONS

4.1 CONCLUSIONS

The Project Corridor was previously investigated through an H&H PESA (2013) and PSI activities (2017) as well as through a PESA (2017) that was completed by V3. This PSI was completed to further evaluate the potential for natural and man-made hazards that may be encountered within the Project Corridor during construction activities. Based on the information presented in this report and data collected during the screening process, this assessment was designed to investigate two (2) PIPs in connection to the Project Corridor. An area of previously identified elevated PID readings were also investigated in this PSI.

To further address the PIPs from an environmental perspective and characterize the soils within the planned roadway improvement area for future soil management, seven (7) soil borings were advanced on March 16, 2018 and soil samples were screened in the field. Select soil samples were submitted for laboratory analyses consistent with contaminants of concern at the respective PIPs. Soil borings were advanced to depths of twelve (12) to twenty-five (25) feet bgs to reflect the maximum anticipated depth of excavation. Soil sample analyses at the laboratory included BTEX, SVOCs, PNAs, and total RCRA metals. In addition, soil pH was tested for compatibility with disposal requirements at CCDD facilities. The borings, soil sampling, and analyses provided sufficient coverage to address soil conditions within the Project Corridor.

Seven samples were analyzed for soil pH using laboratory analysis. The results range from 6.75 to 8.60, within the required range for CCDD disposal (6.25 to 9.0).

Arsenic was detected at B-3 (17-20) and B-5 (12-15) with a concentration of 16.1 and 14.7 mg/kg respectively, which exceeds the MAC value (13 mg/kg). The remaining total RCRA metal detections achieve their respective Tier 1 ROs for the following exposure pathways: residential ingestion and inhalation; industrial/commercial ingestion and inhalation; construction worker ingestion and inhalation; and soil component groundwater ingestion (Class I) in addition to their MAC values for CCDD disposal. The exceedances of arsenic at B-3 and B-5 above the MAC value precludes this material from disposal at a CCDD facility.

Analytical results for BTEX, SVOCs, and PNAs were below the detection limits, achieving their respective Tier 1 ROs for the following exposure pathways: residential ingestion and inhalation; industrial/commercial ingestion and inhalation; construction worker ingestion and inhalation; and soil component groundwater ingestion (Class I) in addition to their MAC values for CCDD disposal.

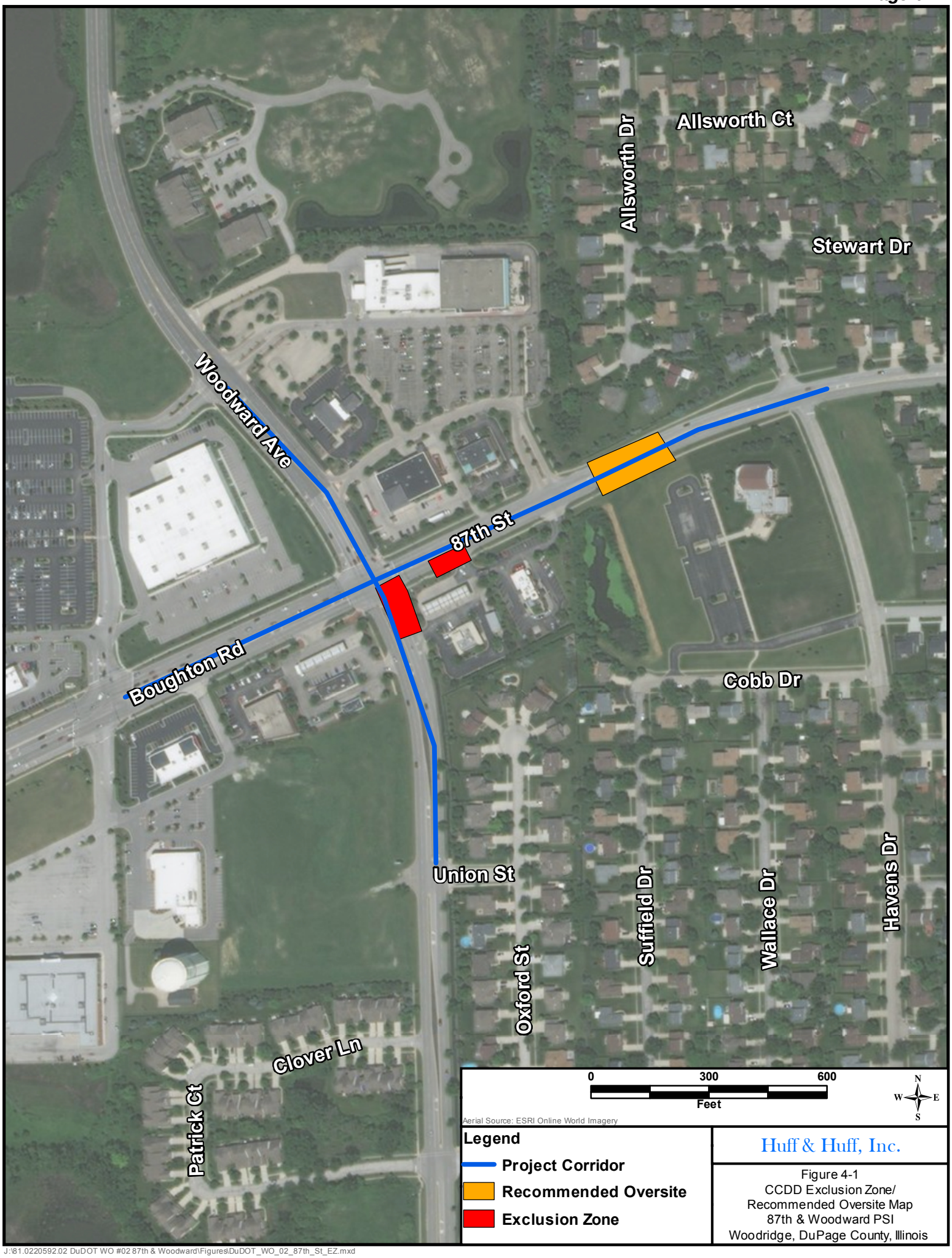
An exclusion zone has been established relative to the locations of B-3 and B-5. Additionally, if PID results above background are noted at the CCDD facility, the loads will be rejected, and the soil is no longer allowed to be directed to other CCDD facilities and would require profiling and disposal at a sanitary landfill (non-special waste). Should soils be encountered within the areas identified as CCDD acceptable that are not representative of the soils encountered during the PSI boring activities (odors, staining, or debris), those soils would need to be reassessed prior to disposal at a "clean fill" facility.

4.2 SOIL MANAGEMENT RECOMMENDATIONS

Based on the arsenic levels exceeding the MACs in the soils at B-3 and B-5 an exclusion zone has been established around the boring locations. The soil generated from these borings are **NOT** certified for CCDD disposal but may be reused onsite or disposed of at a Subtitle D Sanitary Landfill. The CCDD exclusion Zones along 87TH Street and Woodward Avenue, are depicted on Figure 4-1.

Though analytical results indicate achievement of the MACs, we recommend environmental oversight with PID field screening during excavation near B-6 to segregate elevated PID material from being transported to a CCDD facility and avoid potential load rejections. Currently, the limits of this recommended environmental oversight area along Boughton Road extend 70 feet east of B-6 and 130 feet west of B-6 near the eastern end of the Project Corridor, as depicted on Figure 4-1.

Should soils be encountered within the areas identified as CCDD acceptable that are not representative of the soils encountered during the PSI boring activities (odors, staining, or debris), those soils would need to be reassessed prior to disposal at a "clean fill" facility. With the exceptions noted above, soils from the Project Corridor may be reused on-site or disposed of at a CCDD facility. The CCDD regulations require completion of Uncontaminated Soil Certification by Licensed Professional Engineer or Geologist (LPC-663) prior to placement of soils at either a CCDD or soil-only facility, in cases where PIPs have been identified. PIPs have been identified along the entire Project Corridor, making an LPC-663 necessary for this project. The completed LPC-663 Form is included in Appendix E.



Huff & Huff, Inc.

Figure 4-1
CCDD Exclusion Zone/
Recommended Oversite Map
87th & Woodward PSI
Woodridge, DuPage County, Illinois

J:\81.0220592.02 DuDOT WO #02 87th & Woodward\Figures\DuDOT_WO_02_87th_St_EZ.mxd

5.0 ENDORSEMENTS

The scope and depth of this study are consistent with those proposed and accepted by the DuPage County Division of Transportation. The field observations and results reported herein are considered sufficient in detail and scope to form an informed and professional opinion as to the obvious potential environmental hazards along the Project Corridor. This assessment is complete and is believed to be accurate. Huff & Huff, Inc. cannot guarantee or warrant that the information provided is fully representative of all conditions across the entire Project Corridor.

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Adam Kittler, Project Geologist

Consultant Reviewer: _____ Date ***April 23, 2018***
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6.0 INFORMATION SOURCES

Maps

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*Information Sources for all remaining maps are noted on Figures

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APPENDIX A

PHOTOGRAPH LOG

			
Photograph 1:	Advancement of B1, facing east	***Photograph 2:***	Advancement of B2, facing east
			
Photograph 3:	Advancement of B3, facing north	***Photograph 4:***	Advancement of B4, facing east

DuPage County – Department of Transportation
87th Street and Woodward Avenue
LPC-663 Photo Log

Woodridge, DuPage County, Illinois

			
Photograph 5:	Advancement of B5, facing east	***Photograph 6:***	Advancement of B5, facing west
			
Photograph 7:	Advancement of B6, facing east	***Photograph 8:***	Advancement of B7, facing northeast

DuPage County – Department of Transportation
87th Street and Woodward Avenue
LPC-663 Photo Log

Woodridge, DuPage County, Illinois

APPENDIX B

2017 PSI

MEMORANDUM

PRELIMINARY
SITE INVESTIGATION

87th Street/Boughton Road and Woodward Avenue Intersection
In Woodridge, DuPage County, IL

Prepared for
Engineering Resource Associates, Inc.
3S701 West Avenue Suite 150
Warrenville, IL 60555

Prepared by
Huff & Huff, Inc.

February 2017

Huff & Huff, incorporated
A Subsidiary of GZA GeoEnvironmental, Inc.

EXECUTIVE SUMMARY

This *Preliminary Site Investigation* (PSI) pertains to the proposed improvements of the 87th Street/Boughton Road and Woodward Avenue intersection in Woodridge, DuPage County, IL (Project Area). Specifically, the improvements involve widening and resurfacing of 87th Street/Boughton Road and Woodward Avenue in Woodridge, DuPage County, IL. The maximum depth of excavation is anticipated to be approximately 15 feet below ground surface.

A *Preliminary Environmental Site Assessment* (PESA) was conducted by Huff & Huff, Inc. in October 2013. The PESA concluded that two (2) potentially impacted properties (PIPs) exist adjacent to the Project Area that have the potential to affect the improvements project regarding residential safety, industrial/commercial safety, construction worker safety, soil handling and soil disposal. Soil borings were advanced at eight locations within the existing right-of-way (ROW) on November 30, 2016 to address the PIPs, which are summarized in the following table. Samples from five of the eight borings were submitted for analytical testing.

TABLE E-1
SUMMARY OF POTENTIALLY IMPACTED PROPERTIES

Site Name	Site ID	Address	Reason(s)
Shell/Circle K	1	2010 Boughton Road	Proximity and underground storage tanks
BP Amoco	2	1935 Boughton Road	Proximity, underground storage tanks, associated with hazardous material

As soil excavation activities will be conducted during the construction phase of the project, this report also addresses soil disposal considerations. The current guidance for determining the ability to dispose of materials as clean construction demolition debris (CCDD) is through comparison of soil results to the Maximum Allowable Concentrations (MACs) of chemical constituents in uncontaminated soil used as fill material. There is also a soil pH requirement (between 6.25 and 9.0). The CCDD regulations were finalized on August 27, 2012.

Samples were selected from each boring for analysis of the contaminants of concern (COCs) associated with the PIPs identified in the PESA, and include one or more the following: volatile organic compounds (VOCs); benzene, toluene, ethyl benzene, total xylenes, and methyl-tert-butylether (BTEX/MTBE, a sub-set of the volatile organic list); and polynuclear aromatic compounds (PNAs). Samples were also analyzed for soil pH to assess CCDD suitability of Project Area soils.

The results of soil samples analyzed from the eight soil borings indicate that soils within the 87th Street/Boughton Road and Woodward Avenue Improvements Project are below the Tier 1 Remedial Objectives for the following exposure pathways: residential ingestion and inhalation; industrial/commercial ingestion and inhalation; construction worker ingestion and inhalation exposure; and soil component groundwater ingestion (class I). The soil samples also achieve the Maximum Allowable Concentrations (MACs) and pH requirement (between 6.25 and 9.0) for CCDD disposal.

However, sample B-04 from 6-7.5 feet had a Photoionization Detector (PID) reading noted above background values. Although soils generated from within the vicinity of B-04 are considered acceptable for CCDD disposal based on the analytical results, it should be noted that soils in this vicinity may be excluded from CCDD disposal based on PID readings as each incoming load will be screened with a PID. Therefore, it is currently considered a CCDD exclusion zone due to the PID reading of 72 ppm and it may be necessary to conduct field screening of the spoils in this area to limit the extent of the current exclusion zone. Currently, the limits of this area are along 87th Street/Boughton Road from approximately 310 feet west of B-04 to approximately 310 feet east of B-04 (general depth range of 3 to 9 feet deep), as depicted on Figure 4-1. The environmental oversight with soil screening using a PID meter during excavation in this area is recommended to segregate potentially impacted material from being transported to a CCDD facility to limit the potential for rejected loads.

1. INTRODUCTION

1.1 Proposed Project Improvements

The DuPage County Division of Transportation has proposed improvements to the 87th Street/Boughton Road and Woodward Avenue Intersection (approximately 0.75 linear miles). The Project Area is located in Woodridge, DuPage County, IL. Figure 1-1 depicts the location of the Project Area. Figure 1-2 depicts the site layout.

Based on the findings of the October 2013 *Preliminary Environmental Site Assessment* (PESA), eight soil borings were advanced for this *Preliminary Site Investigation Report* (PSI) to assess Project Area soils for residential safety, industrial/commercial safety, and construction worker safety, as well as to address disposal considerations.

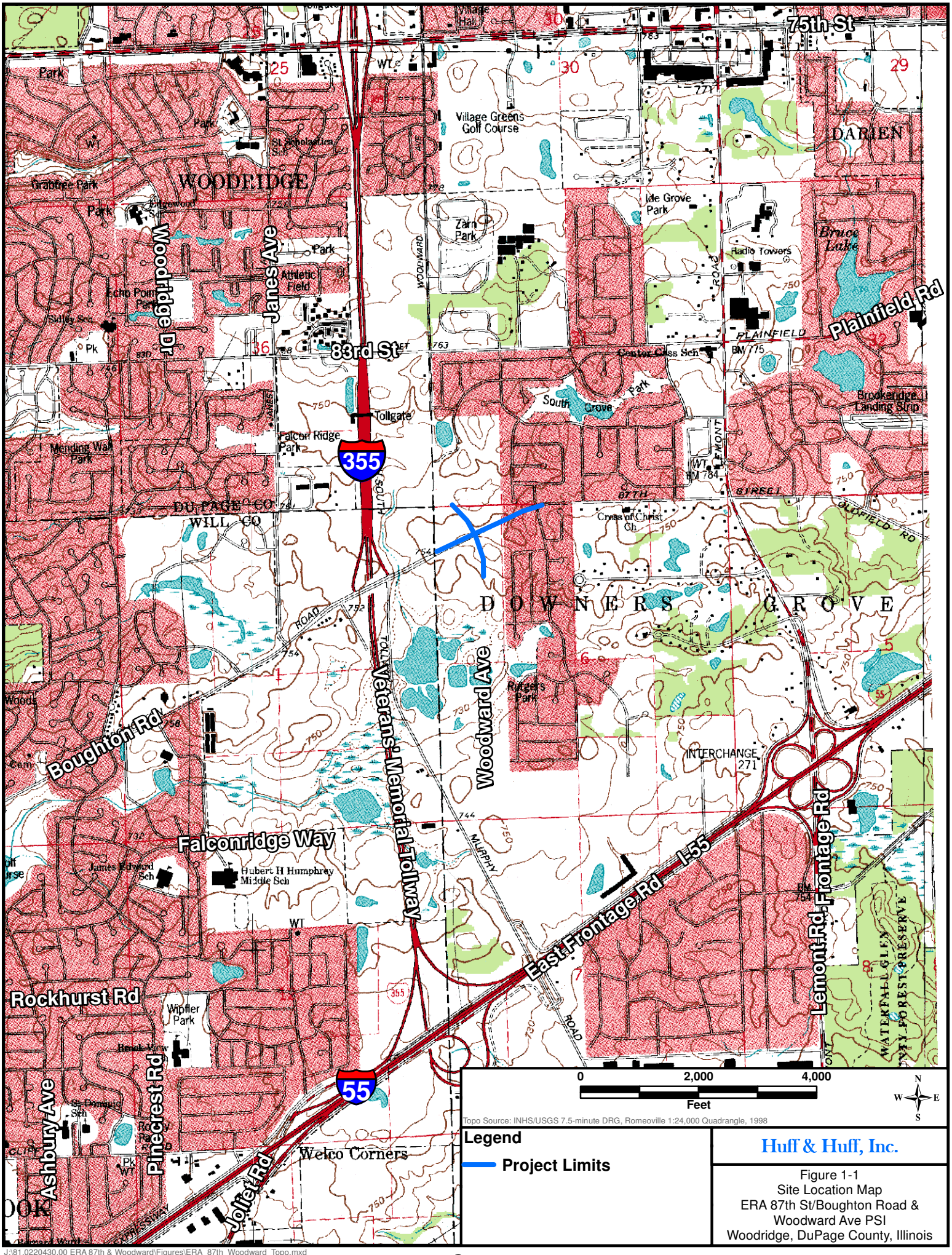
The specific methods used to prepare the assessment are contained in the following:

- A Manual for Conducting Preliminary Environmental Site Assessments for Illinois Department of Transportation Highway Projects (Erdmann et al., 2012).
- ASTM International (ASTM) standard 1527-13.
- The Illinois Department of Transportation's (IDOTs) Bureau of Design and Environment (BDE) Procedure Memorandum Number 10-07, *Special Waste Procedures*. This memo was incorporated into Chapter 27-3 of the IDOT BDE Manual in June 2012.
- IDOT Bureau of Local Roads and Streets (BLRS) Manual, Chapter 20-12, Special Waste, July 2013.
- Public Act 96-1416.
- Clean Construction or Demolition Debris Fill Operations (CCDD) and Uncontaminated Soil Fill Operations: Amendments to 35 Illinois Administrative Code 1100. Effective on August 27, 2012.

The IDOT BLRS Manual and ASTM E 1527-13 use the term Recognized Environmental Condition (REC) to assess risk. ASTM specifically defines REC as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to a release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions."

Part 1100, 35IAC has adopted the term Potentially Impacted Properties (PIPs) when assigning risk to sites. The PIP sites are essentially the same as REC sites as defined by ASTM E 1527-13. Based on the establishment of PIP as the industry standard for describing sites at which special waste management issues may be associated, this PSI uses the term "PIP" to describe sites presenting environmental concern to the Project Corridor.

On July 30, 2010, Public Act 96-1416 became effective, which significantly broadened the regulatory oversight on the use of CCDD and uncontaminated soil used as fill. Revised regulations were finalized on August 27, 2012 for CCDD disposal. These regulations include Maximum Allowable Concentrations (MACs) of chemical constituents in uncontaminated soil for CCDD disposal and a soil pH requirement.



Topo Source: INHS/USGS 7.5-minute DRG, Romeoville 1:24,000 Quadrangle, 1998

Legend

Project Limits

Huff & Huff, Inc.

Figure 1-1
Site Location Map
ERA 87th St/Boughton Road &
Woodward Ave PSI
Woodridge, DuPage County, Illinois

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Huff & Huff, Inc.

Figure 1-2
Site Layout Map
ERA 87th St/Boughton Road &
Woodward Ave PSI
Woodridge, DuPage County, Illinois

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1.2 Purpose of Investigation

Huff & Huff, Inc. completed a *Preliminary Environmental Site Assessment* (PESA) for the Project Area in October 2013. The 2013 PESA Report identified two sites as potentially impacted properties (PIPs) with the potential for encountering contamination within the proposed right-of-way (ROW) of the planned improvements. The 2013 PESA Report has been included in Appendix A (on CD) for reference. The identified PIPs are summarized in the following table. The locations of the PIPs along the Project area are depicted on Figure 1-3.

TABLE 1-1
SUMMARY OF POTENTIALLY IMPACTED PROPERTIES

Site Name	Site ID	Address	Reason(s)
Shell/Circle K	1	2010 Boughton Road	Proximity and underground storage tanks
BP Amoco	2	1935 Boughton Road	Proximity, underground storage tanks, associated with hazardous material

The PIPs were further evaluated by limited subsurface investigation in November 2016 to characterize Project Area soils, and to determine suitability for CCDD disposal of any excavated material from within the Project Area. The analysis conducted includes one or more of the following: volatile organic compounds (VOCs); benzene, toluene, ethyl benzene, total xylenes, and methyl-tert-butylether (BTEX/MTBE, a sub-set of the volatile organic list); polynuclear aromatic compounds (PNAs); and soil pH. A photo log of the subsurface investigation is included in Appendix B.

Site ID	Address	Status
1	2010 Boughton Road	PIP
2	1935 Boughton Road	PIP

Legend

- Project Limits
- PIP

Huff & Huff, Inc.

Figure 1-3
Potentially Impacted Properties Map
ERA 87th St/Boughton Road &
Woodward Ave PSI
Woodridge, DuPage County, Illinois

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2. SUBSURFACE INVESTIGATION

The PSI was designed to characterize potential impacts near the identified PIPs summarized in Section 1. Eight soil borings were drilled to provide sufficient coverage to address residential safety, industrial/commercial safety, construction worker safety, and soil disposal considerations. Boring logs are included in Appendix C for reference.

Five soil samples were analyzed to determine the appropriate management practices for Project Area soils. Two soil samples (B-01 from 13.5-15 feet and B-03 from 3.5-5 feet) were placed on hold for delineation purposes. Figure 2-1 depicts the locations of the soil borings regarding the Project Area and the identified PIPs. Groundwater was not encountered in any of the borings.

2.1 Parameters of Concern

Parameters of concern were selected based on the identified PIPs and include one or more of the following: volatile organic compounds (VOCs); benzene, toluene, ethyl benzene, total xylenes, methyl-tert-butylether (BTEX/MTBE, a sub-set of the volatile organic list); polynuclear aromatic compounds (PNAs); and soil pH. Table 2-1 summarizes the constituents analyzed by boring location and sample depth.

TABLE 2-1
SUMMARY OF SAMPLE ANALYSES

Soil Boring	Depth, ft	VOCs	BTEX/ MTBE	PNAs	pH	Hold
B-01	13.5-15					X
B-02	3.5-5		X	X	X	
B-03	3.5-5					X
B-04	6-7.5	X		X	X	
B-05	1-2.5				X	
B-06	1-2.5				X	
B-07	8.5-10		X	X	X	
B-08	6-7.5		X	X	X	

2.2 Sampling Methodology

On November 30, 2016, Rubino Engineering, Inc., under the supervision of H&H, advanced eight soil borings using a track-mounted Geoprobe unit. The eight borings were advanced to depths between 10 and 15 feet below ground surface (bgs). Samples were collected continuously and screened both visually and with a photoionization detector (PID) for possible signs of soil contamination.

2.3 Photoionization Detector (PID) Screening Results

Table 2-2 summarizes the PID screening results for each soil boring by depth interval. Samples were screened with a PID to investigate the potential for solvent or petroleum residuals in the Project Corridor. The screening results (in parts per million, ppm) were used in the selection of samples for analysis.

TABLE 2-2
PHOTOIONIZATION DETECTOR SCREENING RESULTS SUMMARY

Soil Boring	Depth, ft	PID Reading, ppm	Soil Boring	Depth, ft	PID Reading, ppm
B-01	1-2.5	0.3	B-05	**1-2.5**	**0.3**
	3.5-5	0.1		3.5-5	0.1
	6-7.5	0.2		6-7.5	0.1
	8.5-10	0.1		8.5-10	0.0
	13.5-15	**0.2**			
B-02	1-2.5	0.3	B-06	**1-2.5**	**0.3**
	3.5-5	**0.3**		3.5-5	0.3
	6-7.5	0.2		6-7.5	0.1
	8.5-10	0.3		8.5-10	0.5
				11-12.5	0.4
B-03	1-2.5	0.6	B-07	1-2.5	0.0
	3.5-5	**0.0**		3.5-5	0.0
	6-7.5	0.4		6-7.5	NR
	8.5-10	0.3		**8.5-10**	**0.1**
B-04	1-2.5	1.2	B-08	1-2.5	0.1
	3.5-5	NR		3.5-5	0.0
	6-7.5	**72**		**6-7.5**	**0.1**
	8.5-10	5.2		8.5-10	0.0

Bold indicates sample submitted for analytical testing or placed on hold

NR indicates no recovery for sample interval

Note: the PID background value on the date of sampling was noted to range from 0.0 ppm to 2.0 ppm (moisture content).

2.4 Soil Sample Handling

The Geoprobe unit uses hollow-stem augers to drill and split-spoons to sample, which are driven into the ground with a 140-pound hammer falling 30 inches. Samples pass through the end of the 18-inch long, 1⅜-inch inside-diameter split-spoon sampler. The spilt-spoon casings were cleaned per the following procedure to prevent cross-contamination between sampling intervals and locations:

- Alconox wash
- Methanol rinse
- Distilled water rinse
- Air dry

Soil samples were collected in glass jars and preserved in the field inside of a cooler ice bath and refrigerated upon reaching the H&H office. Samples were picked up by laboratory courier and transported to the laboratory. The following information was provided on all samples containers and the Chain-of-Custody form:

- Sampler's name
- Date and time of collection
- Sample name
- Sample analyses

2.5 Geological Characterization

The surficial geologic materials were described in the 2013 PESA as silt loam and silty clay loam soil types. The PSI soil borings encountered materials consisting predominantly of silty clay with trace sand and gravel from 0 to 15 feet. The Soil Survey Map, Potential for Aquifer Contamination Map, and Stack Unit (geology) Map were included in the 2013 PESA Report, which is included in Appendix A (on CD) for reference.

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3. SAMPLE RESULTS AND DISCUSSION

3.1 Assessment Procedures

The Tiered Approach to Cleanup Objectives (TACO) is Illinois' risk-based approach to determining site-specific cleanup objectives for the protection of human health and the environment. TACO addresses four exposure routes (inhalation, soil ingestion, soil-migration-to-groundwater, and groundwater ingestion) and three types of potential receptors (residential, industrial/commercial, and construction worker). The soil sample results were compared to the TACO objectives to assess construction worker risks and potential reuse on site. Additionally, soil results were compared to the Maximum Allowable Concentrations in Part 1100 of 35 Illinois Administrative Code regarding clean construction demolition debris.

Maximum Allowable Concentrations are a set of values used to determine if soil is "uncontaminated soil". The MAC values are used strictly by CCDD facilities to determine if soil will be allowed into the facility. Most chemical constituents (parameters) have a MAC value. In general, a MAC value is determined by the most stringent TACO Tier I RO. However, the parameter's soil saturation concentration, acceptable detection limit, and background concentration may also be used in certain situations. A key exception is the Tier I pH-based soil migration to Class I groundwater ingestion RO for metals. The MAC for each metal (assuming groundwater is the most stringent route) is the lowest pH dependent value between 6.25 and 9.0 from Appendix B, Table C.

The Illinois Administrative Code [35 IAC 742] sets forth the three tiers of risk-based assessment that may be conducted under TACO; however, for purposes of soil management, Tier I objectives and MAC values are used.

- A Tier 1 assessment simply compares the concentration of contaminants detected at a site to screening values listed in "look-up tables." The values in the Tier 1 tables consider limited site-specific information and are based on simple and conservative numeric models using default values.

3.2 Exposure Pathways/Receptors

The four TACO exposure routes are considered for the Tier 1 assessment: inhalation, soil ingestion, soil-migration-to-groundwater ingestion, and groundwater ingestion. These exposure routes can be evaluated for the three receptors for the residential, industrial/commercial and construction worker. For purposes of the PSI, soil results will generally be compared to the MAC values to determine the handling requirements of any excavated soil, and Tier I construction worker objectives to evaluate worker exposure during construction activities. The laboratory analytical report is included in Appendix D for reference.

3.3 Comparison of Results to MACs and Tier 1 Objectives

Analytical results were compared to the MACs and the Tier 1 ROs for the previously mentioned exposure pathways. The laboratory analytical report is included in Appendix D for reference.

3.3.1 VOCs

Table 3-1 presents the soil VOC (and subset BTEX/MTBE) results compared to the selected Tier 1 ROs. Table 3-2 presents the soil VOC (and subset BTEX/MTBE) results compared to the MACs for assessment of disposal options.

One sample (B-04 from 6-7.5 feet) was submitted for VOC analysis. Three additional samples (B-02 from 3.5-5 feet, B-07 from 8.5-10 ft, and B-08 from 6-7.5 feet) were analyzed for BTEX/MTBE.

Sample B-04 from 6-7.5 feet had a reportable detection of ethylbenzene. However, the result is below the respective Tier 1 RO and MAC. All other VOC (and subset BTEX/MTBE) results are below detection limits for the samples analyzed, achieving the Tier 1 ROs and the MACs.

3.3.2 PNAs

Table 3-3 presents the PNA results compared to the selected Tier 1 ROs, and Table 3-4 presents the PNA results compared to the MACs.

Four samples (B-02 from 3.5-5 feet, B-04 from 6-7.5 feet, B-07 from 8.5-10 ft, and B-08 from 6-7.5 feet) were submitted for PNAs analysis. Of the samples analyzed, B-04 from 6-7.5 feet had reportable detections of PNAs. However, the results are below their respective Tier 1 ROs and the MACs. The PNA results for all other samples analyzed are below detection limits, achieving their respective Tier 1 ROs and the MACs.

3.3.3 Soil pH

Table 3-5 presents the soil pH results compared to the soil pH requirement for CCDD disposal (between 6.25 and 9.0). Eight samples were submitted for soil pH testing. The soil pH results range from 7.75 to 8.34 for all samples analyzed, within the required range for CCDD disposal.

TABLE 3-1
VOC SOIL RESULTS COMPARED TO TIER 1 REMEDIAL OBJECTIVES

Soil Boring	***Ingestion Exposure Route*** [1]			***Inhalation Exposure Route*** [1]			***Migration to Class I Groundwater Exposure Route*** [1]	**B-02**	**B-04**	**B-07**	**B-08**
Depth, ft	*Residential*	*Industrial / Commerical*	*Constructon Worker*	*Residential*	*Industrial / Commerical*	*Constructon Worker*		3.5-5	6-7.5	8.5-10	6-7.5
Constituent	*mg/kg*										
Acetone	*70,000*	--	--	*100,000*	*100,000*	*100,000*	*25*	--	<0.200	--	--
Benzene	*12*	*100*	*2,300*	*0.8*	*1.6*	*2.2*	*0.03*	<0.005	<0.005	<0.005	<0.005
Bromodichloromethane	*10*	*92*	*2,000*	*3,000*	*3,000*	*3,000*	*0.6*	--	<0.005	--	--
Bromoform	*81*	*720*	*16,000*	*53*	*100*	*140*	*0.8*	--	<0.005	--	--
Bromomethane	*110*	*2,900*	*1,000*	*10*	*15*	*3.9*	*0.2*	--	<0.010	--	--
2-Butanone (MEK)	--	--	--	--	--	--	--	--	<0.100	--	--
Carbon disulfide	*7,800*	*200,000*	*20,000*	*720*	*720*	*9*	*32*	--	<0.005	--	--
Carbon tetrachloride	*5*	*44*	*410*	*0.3*	*0.64*	*0.9*	*0.07*	--	<0.005	--	--
Chlorobenzene	*1,600*	*41,000*	*4,100*	*130*	*210*	*1.3*	*1*	--	<0.005	--	--
Chlorodibromomethane	*1,600*	*41,000*	*41,000*	*1,300*	*1,300*	*1,300*	*0.4*	--	<0.005	--	--
Chloroethane	--	--	--	--	--	--	--	--	<0.010	--	--
Chloroform	*100*	*940*	*2,000*	*0.3*	*0.54*	*0.76*	*0.6*	--	<0.005	--	--
Chloromethane	--	--	--	--	--	--	--	--	<0.010	--	--
1,1-Dichloroethane	*7,800*	*200,000*	*200,000*	*1,300*	*1,700*	*130*	*23*	--	<0.005	--	--
1,2-Dichloroethane	*7*	*63*	*1,400*	*0.4*	*0.7*	*0.99*	*0.02*	--	<0.005	--	--
1,1-Dichloroethene	*3,900*	*100,000*	*10,000*	*290*	*470*	*3*	*0.06*	--	<0.005	--	--
cis-1,2-Dichloroethene	*780*	*20,000*	*20,000*	*1,200*	*1,200*	*1,200*	*0.4*	--	<0.005	--	--
trans-1,2-Dichloroethene	*1,600*	*41,000*	*41,000*	*3,100*	*3,100*	*3,100*	*0.7*	--	<0.005	--	--
1,2-Dichloropropane	*9*	*84*	*1,800*	*15*	*23*	*0.5*	*0.03*	--	<0.005	--	--
cis-1,3-Dichloropropene	*6.4*	*57*	*1,200*	*1.1*	*2.1*	*0.39*	*0.004*	--	<0.004	--	--
trans-1,3-Dichloropropene	*6.4*	*57*	*1,200*	*1.1*	*2.1*	*0.39*	*0.004*	--	<0.004	--	--
Ethylbenzene	*7,800*	*200,000*	*20,000*	*400*	*400*	*58*	*13*	<0.005	0.009	<0.005	<0.005
2-Hexanone	--	--	--	--	--	--	--	--	<0.010	--	--
Methyl-tert-butylether (MTBE)	*780*	*20,000*	*2,000*	*8,800*	*8,800*	*140*	*0.32*	<0.005	<0.005	<0.005	<0.005
4-Methyl-2-pentanone (MIBK)	--	--	--	--	--	--	--	--	<0.010	--	--
Methylene chloride	*85*	*760*	*12,000*	*13*	*24*	*34*	*0.02*	--	<0.020	--	--
Styrene	*16,000*	*410,000*	*41,000*	*1,500*	*1,500*	*430*	*4*	--	<0.005	--	--
1,1,2,2-Tetrachloroethane	--	--	--	--	--	--	--	--	<0.005	--	--
Tetrachloroethene	*12*	*110*	*2,400*	*11*	*20*	*28*	*0.06*	--	<0.005	--	--
Toluene	*16,000*	*410,000*	*410,000*	*650*	*650*	*42*	*12*	<0.005	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	--	--	--	*1,200*	*1,200*	*1,200*	*2*	--	<0.005	--	--
1,1,2-Trichloroethane	*310*	*8,200*	*8,200*	*1,800*	*1,800*	*1,800*	*0.02*	--	<0.005	--	--
Trichloroethene	*58*	*520*	*1,200*	*5*	*8.9*	*12*	*0.06*	--	<0.005	--	--
Vinyl acetate	*78,000*	*1,000,000*	*200,000*	*1,000*	*1,600*	*10*	*170*	--	<0.010	--	--
Vinyl chloride	*0.46*	*7.9*	*170*	*0.28*	*1.1*	*1.1*	*0.01*	--	<0.010	--	--
Xylene, Total	*16,000*	*410,000*	*41,000*	*320*	*320*	*5.6*	*150*	<0.005	<0.005	<0.005	<0.005

[a/] Refers to Remediation Objective from Table B, Appendix B, Part 742 - TACO

-- Constituent for which sample was not analyzed, or for which no Remedial Objective exists.

TABLE 3-2
VOC SOIL RESULTS COMPARED TO THE MACs FOR CCDD DISPOSAL

Soil Boring	*Maximum Allowable*	**B-02**	**B-04**	**B-07**	**B-08**
Depth, ft	*Concentration* [a/]	3.5-5	6-7.5	8.5-10	6-7.5
Constituent	*mg/kg*				
Acetone	*25*	--	<0.200	--	--
Benzene	*0.03*	<0.005	<0.005	<0.005	<0.005
Bromodichloromethane	*0.6*	--	<0.005	--	--
Bromoform	*0.8*	--	<0.005	--	--
Bromomethane	*0.2*	--	<0.010	--	--
2-Butanone (MEK)	*17*	--	<0.001	--	--
Carbon disulfide	*9*	--	<0.005	--	--
Carbon tetrachloride	*0.07*	--	<0.005	--	--
Chlorobenzene	*1*	--	<0.005	--	--
Chlorodibromomethane	*0.4*	--	<0.005	--	--
Chloroform	*0.3*	--	<0.005	--	--
1,1-Dichloroethane	*23*	--	<0.005	--	--
1,2-Dichloroethane	*0.02*	--	<0.005	--	--
1,1-Dichloroethene	*0.06*	--	<0.005	--	--
cis-1,2-Dichloroethene	*0.4*	--	<0.005	--	--
trans-1,2-Dichloroethene	*0.7*	--	<0.005	--	--
1,2-Dichloropropane	*0.03*	--	<0.005	--	--
cis-1,3-Dichloropropene	*0.005*	--	<0.004	--	--
trans-1,3-Dichloropropene	*0.005*	--	<0.004	--	--
Ethylbenzene	*13*	<0.005	0.009	<0.005	<0.005
Methyl-tert-butylether (MTBE)	*0.32*	<0.005	<0.005	<0.005	<0.005
Methylene chloride	*0.02*	--	<0.020	--	--
Styrene	*4*	--	<0.005	--	--
Tetrachloroethene	*0.06*	--	<0.005	--	--
Toluene	*12*	<0.005	<0.005	<0.005	<0.005
1,1,1-Trichloroethane	*2*	--	<0.005	--	--
1,1,2-Trichloroethane	*0.02*	--	<0.005	--	--
Trichloroethene	*0.06*	--	<0.005	--	--
Vinyl acetate	*10*	--	<0.010	--	--
Vinyl chloride	*0.01*	--	<0.010	--	--
Xylene, Total	*5.6*	<0.005	<0.005	<0.005	<0.005

[a/] Refers to Maximum Allowable Concentration (MAC) of Chemical Constituents in Uncontaminated Soil Used As Fill Material At Regulated Fill Operations (35 IAC 1100.Subpart F)

TABLE 3-3

PNA SOIL RESULTS COMPARED TO TIER 1 REMEDIAL OBJECTIVES

Soil Boring	***Ingestion Exposure Route*** [1]			***Inhalation Exposure Route*** [1]			***Migration to Class I Groundwater Exposure Route*** [1]	**B-02**	**B-04**	**B-07**	**B-08**
Depth, ft	*Residential*	*Industrial / Commerical*	*Constructon Worker*	*Residential*	*Industrial / Commerical*	*Constructon Worker*		3.5-5	6-7.5	8.5-10	6-7.5
Constituent	---mg/kg---										
Acenaphthene	*4700*	*120000*	*120,000*	--	--	--	*570*	<0.050	0.146	<0.050	<0.050
Acenaphthylene	--	--	--	--	--	--	--	<0.050	<0.050	<0.050	<0.050
Anthracene	*23000*	*610000*	*610,000*	--	--	--	*12000*	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	*0.9*	*8*	*170*	--	--	--	*2*	<0.009	0.036	<0.009	<0.009
Benzo(a)pyrene	*0.09*	*0.8*	*17*	--	--	--	*8*	<0.015	0.027	<0.015	<0.015
Benzo(b)fluoranthene	*0.9*	*8*	*170*	--	--	--	*5*	<0.011	0.026	<0.011	<0.011
Benzo(k)fluoranthene	*9*	*78*	*1,700*	--	--	--	*49*	<0.011	0.029	<0.011	<0.011
Benzo(ghi)perylene	--	--	--	--	--	--	--	<0.050	<0.050	<0.050	<0.050
Chrysene	*88*	*780*	*17,000*	--	--	--	*160*	<0.050	<0.050	<0.050	<0.050
Dibenzo(a,h)anthracene	*0.09*	*0.8*	*17*	--	--	--	*2*	<0.020	<0.020	<0.020	<0.020
Fluoranthene	*3100*	*82000*	*82,000*	--	--	--	*4300*	<0.050	0.095	<0.050	<0.050
Fluorene	*3100*	*82000*	*82,000*	--	--	--	*560*	<0.050	0.128	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	*0.9*	*8*	*170*	--	--	--	*14*	<0.029	<0.029	<0.029	<0.029
Naphthalene	*1600*	*41000*	*4,100*	*170*	*270*	*1.8*	*12*	<0.025	<0.025	<0.025	<0.025
Phenanthrene	--	--	--	--	--	--	--	<0.050	0.434	<0.050	<0.050
Pyrene	*2300*	*61000*	*61,000*	--	--	--	*4200*	<0.050	0.090	<0.050	<0.050

[a/] Refers to Remediation Objective from Table B, Appendix B, Part 742 - TACO

-- Constituent for which sample was not analyzed, or for which no Remedial Objective exists.

TABLE 3-4
PNA SOIL RESULTS COMPARED TO THE MACs FOR CCDD DISPOSAL

Soil Boring	*Maximum Allowable*	**B-02**	**B-04**	**B-07**	**B-08**
Depth, ft	*Concentration* [a/]	3.5-5	6-7.5	8.5-10	6-7.5
Constituent	*mg/kg*				
Acenaphthene	*570*	<0.050	0.146	<0.050	<0.050
Acenaphthylene	*85*	<0.050	<0.050	<0.050	<0.050
Anthracene	*12,000*	<0.050	<0.050	<0.050	<0.050
Benzo(a)anthracene	*1.8* [b/]	<0.009	0.036	<0.009	<0.009
Benzo(a)pyrene	*2.1* [b/]	<0.015	0.027	<0.015	<0.015
Benzo(b)fluoranthene	*2.1* [b/]	<0.011	0.026	<0.011	<0.011
Benzo(k)fluoranthene	*9*	<0.011	0.029	<0.011	<0.011
Benzo(ghi)perylene	*2,300*	<0.050	<0.050	<0.050	<0.050
Chrysene	*88*	<0.050	<0.050	<0.050	<0.050
Dibenzo(a,h)anthracene	*0.42* [b/]	<0.020	<0.020	<0.020	<0.020
Fluoranthene	*3,100*	<0.050	0.095	<0.050	<0.050
Fluorene	*560*	<0.050	0.128	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	*1.6* [b/]	<0.029	<0.029	<0.029	<0.029
Naphthalene	*1.8*	<0.025	<0.025	<0.025	<0.025
Phenanthrene	*210*	<0.050	0.434	<0.050	<0.050
Pyrene	*2,300*	<0.050	0.090	<0.050	<0.050

[a/] Refers to Maximum Allowable Concentration (MAC) of Chemical Constituents in Uncontaminated Soil Used As Fill Material At Regulated Fill Operations (35 IAC 1100.Subpart F)
b/ Refers to MAC value within a populated area in a MSA excluding Chicago - All results also achieve most stringent MAC values.

TABLE 3-5

SOIL pH RESULTS COMPARED TO THE CCDD SOIL pH REQUIREMENT

Soil Boring	Depth, ft	Soil pH
B-01	13.5-15	NA
B-02	3.5-5	8.34
B-03	3.5-5	NA
B-04	6-7.5	7.94
B-05	1-2.5	7.75
B-06	1-2.5	8.25
B-07	8.5-10	8.15
B-08	6-7.5	8.10
CCDD Soil pH Requirement: between 6.25 - 9.0 [a/]		

[a/] Refers to pH requirement in 35 IAC 1100.Subpart F for CCDD disposal.
NA indicates sample not analyzed

3.4 Results Discussion

A low concentration of ethylbenzene was detected in sample B-04 from 6-7.5 feet. All VOC (and subset BTEX/MTBE) results achieve their respective Tier 1 ROs for the following exposure pathways: residential ingestion and inhalation; industrial/commercial ingestion and inhalation; construction worker ingestion and inhalation; and soil component groundwater ingestion (class I). The results achieve the MACs for CCDD disposal as well.

Low concentrations of PNAs were detected in one sample (B-04 from 6-7.5 feet) of the four samples analyzed. All PNA results achieve their respective Tier 1 ROs for the following exposure pathways: residential ingestion and inhalation; industrial/commercial ingestion and inhalation; construction worker ingestion and inhalation; and soil component groundwater ingestion (class I). The results achieve the MACs for CCDD disposal as well.

Eight samples were analyzed for soil pH. The results range from 7.75 to 8.34, within the required range for CCDD disposal (between 6.25 and 9.0).

4. SOIL MANAGEMENT

As the scope of the proposed improvements include soil excavation, it is important to review the current regulatory oversight concerning "clean fill" determination. On July 30, 2010, Public Act 96-1416 became effective, which significantly broadened the regulatory oversight on the use of CCDD and uncontaminated soil used as fill. The law includes interim standards for CCDD fill facilities and uncontaminated soil fill operations. The Illinois Pollution Control Board finalized the CCDD Regulations on August 27, 2012. These regulations include MACs of chemical constituents in uncontaminated soil for CCDD disposal, including a soil pH requirement.

On-site handling and off-site disposal were alternatives considered for management of impacted soil. CCDD determination is based upon the following criteria:

1) Achievement of the MACs for CCDD disposal, including soil pH between 6.25 and 9.0
2) Physical characteristics compatible with "clean fill" definition

Excavated soil is considered "clean fill" only if it achieves all of the MACs and has a soil pH between 6.25 and 9.0. Excavated soil that has any contaminant level above any MAC, or soil pH outside of this range, must be disposed of in a landfill or reused on site. However, soil that achieves the MACs but contains glass or other debris and has the appearance of "fill" material is generally not accepted by CCDD facilities. The regulations require completion of Uncontaminated Soil Certification by a Licensed Professional Engineer (LPC-663) prior to placement of soils at either a CCDD or soil-only facility. The Illinois EPA webpage further discusses acceptable materials at CCDD facilities (http://www.epa.state.il.us/land/ccdd/index.html). Should soils be encountered that are not representative of those encountered during the PSI boring activities (odors or debris), those soils would need to be reassessed prior to disposal at a "clean fill" facility.

All soil results achieve the MAC objectives for VOCs (and subset BTEX/MTBE) and PNAs. All soil results also achieve the CCDD pH requirement (between 6.25 and 9.0). Based on the investigation presented in this PSI, soils from the Project Area are eligible for CCDD disposal with a LPC 663 form.

However, sample B-04 from 6-7.5 feet had a PID reading noted above background values. Although soils generated from within the vicinity of B-04 are considered acceptable for CCDD disposal based on the analytical results, it should be noted that soils in this vicinity may be excluded from CCDD disposal based on PID readings as each incoming load will be screened with a PID. Therefore, it is currently considered a CCDD exclusion zone due to the PID reading of 72 ppm and it may be necessary to conduct field screening of the spoils in this area to limit the extent of the current exclusion zone. Currently, the limits of this area are along 87th Street/Boughton Road from approximately 310 feet west of B-04 to approximately 310 feet east of B-04, as depicted on Figure 4-1.

Huff & Huff, Inc.

Figure 4-1
Recommended Environmental Oversight Area Map
ERA 87th St/Boughton Road & Woodward Ave PSI
Woodridge, DuPage County, Illinois

J:\81.0220430.00 ERA 87th & Woodward\Figures\ERA_87th_Woodward_EZ.mxd

5. CONCLUSIONS

H&H performed a PSI to assess the potential for natural and man-made hazards that may be encountered in the right-of-way within the vicinity of proposed construction for the 87th Street/Boughton Road and Woodward Avenue Improvements Project in Woodward Avenue, DuPage County, IL.

Soils were analyzed for VOCs (and subset BTEX/MTBE), PNAs, and soil pH. Soil concentrations have been compared to Tier 1 objectives and MACs established for acceptance consideration at CCDD or soil-only facilities. All results achieved the Tier 1 ROs and MAC values for CCDD facility acceptance consideration. Based on the results, all soils at the site may be reused within the Project Area.

However, a sample B-04 from 6-7.5 feet had elevated PID readings. Although soils generated from within the vicinity of B-04 are considered acceptable for CCDD disposal based on the analytical results, it should be noted that soils in this vicinity may be excluded from CCDD disposal based on PID readings as each incoming load will be screened with a PID. Therefore, it is currently considered a CCDD exclusion zone due to the PID reading of 72 ppm and it may be necessary to conduct field screening of the spoils in this area to limit the extent of the current exclusion zone. Currently, the limits of this area are along 87th Street/Boughton Road from approximately 310 feet west of B-04 to approximately 310 feet east of B-04, as depicted on Figure 4-1.

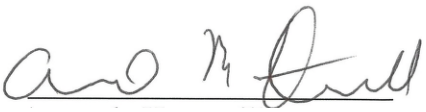
Should soils be encountered that are not representative of those encountered during the PSI boring activities (odors or debris), those soils would need to be reassessed prior to disposal at a "clean fill" facility.

6. RECOMMENDATIONS

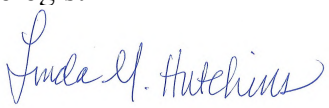
Soils generated as part of this can be reused on site as fill material. If engineering constraints do not allow for material reuse, Project Area soils are certified for CCDD disposal using the attached LPC-663 form, included in Appendix E, noting the current exclusion zone related to the 72 ppm PID reading at B-04 (6-7.5 feet). Therefore, it may be necessary to conduct field screening of the spoils in this area to limit the extent of the current exclusion zone (area if B-04 from 6-7.5 feet including approximate limits along 87th Street/Boughton Road from approximately 310 feet west of B-04 to approximately 310 feet east of B-04 in the general depth range of 3 to 9 feet deep) to segregate potentially impacted material from being transported to a CCDD facility to limit the potential for rejected loads.

Glass, debris, and fill material were not encountered during field activities; however, caution should be taken to ensure that these materials are not included in any soil transported to the CCDD facility. Soils encountered that are not representative of those encountered during the boring activities (odors or staining) would need to be reassessed prior to disposal at a CCDD facility.

7. ENDORSEMENTS

Author:  Date: 2/9/17

Armando M. Hermosillo
Geologist

Consultant Reviewer:  Date: 2/9/17

Linda Hutchins, P.G.
Senior Project Manager

Approved:  Date: 2/9/17

Jeremy J. Reynolds, P.G. State of Illinois
License # 196.001170

B-01

ERA

PRELIMINARY SITE INVESTIGATION
87TH ST / WOODWARD AVE

DUPAGE COUNTY, IL

Date Started	: 11/30/16	Casing (Size/Material)	: 2"
Date Completed	: 11/30/16	Northing Coord.	:
Weather Conditions	: 10 degrees F, cloudy	Easting Coord.	:
Drilling Company	: Rubino Engineering	Elevation	:
Rig Type	: Split-spoon	Logged By	: AH

KEY
SILTY CLAY

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Sample Number	PID 10.6 eV (PPM)	REMARKS
0						
	F45		SILTY CLAY, brown-gray, very stiff, dry, trace sand & gravel	1	0.3	1'-2.5' Interval 1' Recovery
2						
			Brown-red below 3.5 ft	2	0.1	3.5'-5' Interval 1.33' Recovery
4						
			Brown-gray below 6 ft	3	0.2	6'-7.5' Interval 1.5' Recovery
6						
				4	0.1	8.5'-10' Interval 1.5' Recovery
8						
10						
12						
				5	0.2	13.5'-15' Interval 1.5' Recovery
14						
			END OF BORING, SAMPLING COMPLETE			
16						
18						

B-02

ERA

PRELIMINARY SITE INVESTIGATION
87TH ST / WOODWARD AVE

DUPAGE COUNTY, IL

Date Started	: 11/30/16	Casing (Size/Material)	: 2"
Date Completed	: 11/30/16	Northing Coord.	:
Weather Conditions	: 10 degrees F, cloudy	Easting Coord.	:
Drilling Company	: Rubino Engineering	Elevation	:
Rig Type	: Split-spoon	Logged By	: AH

KEY
SILTY CLAY

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Sample Number	PID 10.6 eV (PPM)	REMARKS
0						
	F45		SILTY CLAY, brown-gray, very stiff, trace sand & gravel	1	0.3	1'-2.5' Interval 0.66' Recovery
2						
				2	0.3	3.5'-5' Interval 1' Recovery
4						
6			Brown below 6 ft	3	0.2	6'-7.5' Interval 1' Recovery
8				4	0.3	8.5'-10' Interval 1.5' Recovery
10			END OF BORING, SAMPLING COMPLETE			
12						The following depth(s) submitted for analysis: 3.5'-5' Interval

B-03

ERA

PRELIMINARY SITE INVESTIGATION
87TH ST / WOODWARD AVE

DUPAGE COUNTY, IL

Date Started	: 11/30/16	Casing (Size/Material)	: 2"
Date Completed	: 11/30/16	Northing Coord.	:
Weather Conditions	: 10 degrees F, cloudy	Easting Coord.	:
Drilling Company	: Rubino Engineering	Elevation	:
Rig Type	: Split-spoon	Logged By	: AH

KEY
SILTY CLAY

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Sample Number	PID 10.6 eV (PPM)	REMARKS
0			SILTY CLAY, black-brown, dry, very stiff, trace sand & gravel			
				1	0.6	1'-2.5' Interval 1' Recovery
2						
				2	0.0	3.5'-5' Interval 0.5' Recovery
4	F45		Trace old asphalt at 5'			
				3	0.4	6'-7.5' Interval 0.5' Recovery
6						
8			Medium stiffness below 8.5 ft	4	0.3	8.5'-10' Interval 0.83' Recovery
10			END OF BORING, SAMPLING COMPLETE			
12						The following depth(s) submitted for analysis: 3.5'-5' Interval

B-04

ERA

PRELIMINARY SITE INVESTIGATION
87TH ST / WOODWARD AVE

DUPAGE COUNTY, IL

Date Started	: 11/30/16	Casing (Size/Material)	: 2"
Date Completed	: 11/30/16	Northing Coord.	:
Weather Conditions	: 10 degrees F, cloudy	Easting Coord.	:
Drilling Company	: Rubino Engineering	Elevation	:
Rig Type	: Split-spoon	Logged By	: AH

KEY
SILTY CLAY

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Sample Number	PID 10.6 eV (PPM)	REMARKS
0						
	F45		SILTY CLAY, black-gray, very stiff, dry, trace sand & gravel	1	1.2	1'-2.5' Interval 1.33' Recovery
2			Wood shavings encountered at 2.5 ft			
			No recovery from 3.5-5 ft	2	NR	3.5'-5' Interval 1.33' Recovery
4						
6			Black-brown, slightly moist below 6 ft	3	72.0	6'-7.5' Interval 1.33' Recovery
8			Brown-gray, dry, very stiff below 8.5 ft	4	5.2	8.5'-10' Interval 1.33' Recovery
10			END OF BORING, SAMPLING COMPLETE			
12						The following depth(s) submitted for analysis: 6'-7.5' Interval

B-05

ERA

PRELIMINARY SITE INVESTIGATION
87TH ST / WOODWARD AVE

DUPAGE COUNTY, IL

Date Started	: 11/30/16	Casing (Size/Material)	: 2"
Date Completed	: 11/30/16	Northing Coord.	:
Weather Conditions	: 10 degrees F, cloudy	Easting Coord.	:
Drilling Company	: Rubino Engineering	Elevation	:
Rig Type	: Split-spoon	Logged By	: AH

KEY
SILTY CLAY

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Sample Number	PID 10.6 eV (PPM)	REMARKS
0						
	F45		SILTY CLAY, brown, very stiff, dry, trace sand & gravel	1	0.3	1'-2.5' Interval 1' Recovery
2						
4				2	0.1	3.5'-5' Interval 1' Recovery
6			Gray-brown below 6 ft	3	0.1	6'-7.5' Interval 1' Recovery
8				4	0.0	8.5'-10' Interval 1.33' Recovery
10			END OF BORING, SAMPLING COMPLETE			
12						The following depth(s) submitted for analysis: 1'-2.5' Interval

B-06

ERA

PRELIMINARY SITE INVESTIGATION
87TH ST / WOODWARD AVE

DUPAGE COUNTY, IL

Date Started	: 11/30/16	Casing (Size/Material)	: 2"
Date Completed	: 11/30/16	Northing Coord.	:
Weather Conditions	: 10 degrees F, cloudy	Easting Coord.	:
Drilling Company	: Rubino Engineering	Elevation	:
Rig Type	: Split-spoon	Logged By	: AH

KEY
SILTY CLAY

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Sample Number	PID 10.6 eV (PPM)	REMARKS
0						
	F45		SILTY CLAY, brown-gray, very stiff, dry, trace sand & gravel	1	0.3	1'-2.5' Interval 1' Recovery
2						
4				2	0.3	3.5'-5' Interval 0.83' Recovery
6				3	0.1	6'-7.5' Interval 0.83' Recovery
8			Brown-gray below 8.5 ft	4	0.5	8.5'-10' Interval 1' Recovery
10				5	0.4	11'-12.5' Interval 1' Recovery
12			END OF BORING, SAMPLING COMPLETE			
14						The following depth(s) submitted for analysis: 1'-2.5' Interval
16						

B-07

ERA

PRELIMINARY SITE INVESTIGATION
87TH ST / WOODWARD AVE

DUPAGE COUNTY, IL

Date Started	: 11/30/16	Casing (Size/Material)	: 2"
Date Completed	: 11/30/16	Northing Coord.	:
Weather Conditions	: 10 degrees F, cloudy	Easting Coord.	:
Drilling Company	: Rubino Engineering	Elevation	:
Rig Type	: Split-spoon	Logged By	: AH

KEY
SILTY CLAY

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Sample Number	PID 10.6 eV (PPM)	REMARKS
0						
	F45		SILTY CLAY, brown, trace sand & gravel, stiff, dry	1	0.0	1'-2.5' Interval 1' Recovery
2						
4				2	0.0	3.5'-5' Interval 1.16' Recovery
6			Rock encountered at 6 feet, causing no recovery from 6-7.5 ft	3	NR	6'-7.5' Interval No Recovery
8			Very stiff, dark brown below 8.5 ft	4	0.5	8.5'-10' Interval 1.5' Recovery
10			END OF BORING, SAMPLING COMPLETE			
12						The following depth(s) submitted for analysis: 8.5'-10' Interval

B-08

ERA

PRELIMINARY SITE INVESTIGATION
87TH ST / WOODWARD AVE

DUPAGE COUNTY, IL

Date Started	: 11/30/16	Casing (Size/Material)	: 2"
Date Completed	: 11/30/16	Northing Coord.	:
Weather Conditions	: 10 degrees F, cloudy	Easting Coord.	:
Drilling Company	: Rubino Engineering	Elevation	:
Rig Type	: Split-spoon	Logged By	: AH

KEY
SILTY CLAY

Depth in Feet	USCS	GRAPHIC	DESCRIPTION	Sample Number	PID 10.6 eV (PPM)	REMARKS
0						
	F45		SILTY CLAY, brown-gray, dry, stiff, trace sand & gravel	1	0.1	1'-2.5' Interval 1.33' Recovery
2						
			Brown-red below 3.5 ft	2	0.0	3.5'-5' Interval 1.33' Recovery
4						
6				3	0.1	6'-7.5' Interval 1.33' Recovery
8			Gray below 8.5 ft	4	0.0	8.5'-10' Interval 1.33' Recovery
10			END OF BORING, SAMPLING COMPLETE			
12						The following depth(s) submitted for analysis: 6'-7.5' Interval

APPENDIX D

Analytical Results

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

December 08, 2016

Mr. Armando Hermosillo
HUFF & HUFF INC.
915 Harger Road
Suite 330
Oak Brook, IL 60523

Project ID: ERA 87th and Woodward 81.0220430.00
First Environmental File ID: 16-6853
Date Received: December 02, 2016

Dear Mr. Armando Hermosillo:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 003811: effective 02/17/2016 through 02/28/2017.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Bill Mottashed
Project Manager

First
Environmental
Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Case Narrative

HUFF & HUFF INC.

Lab File ID: **16-6853**

Project ID: **ERA 87th and Woodward 81.0220430.00**

Date Received: **December 02, 2016**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The results in this report apply to the samples in the following table:

Laboratory Sample ID	Client Sample Identifier	Date/Time Collected
16-6853-001	B-2 (3.5-5)	11/30/2016 13:45
16-6853-002	B-4 (6-7.5)	11/30/2016 10:50
16-6853-003	B-5 (1-2.5)	11/30/2016 9:16
16-6853-004	B-6 (1-2.5)	11/30/2016 12:00
16-6853-005	B-7 (8.5-10)	11/30/2016 8:42
16-6853-006	B-8 (6-7.5)	11/30/2016 9:48

Sample Batch Comments:

Sample acceptance criteria were met.

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Case Narrative

HUFF & HUFF INC.

Lab File ID: **16-6853**

Project ID: **ERA 87th and Woodward 81.0220430.00**

Date Received: **December 02, 2016**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The following is a definition of flags that may be used in this report:

Flag	Description	Flag	Description
A	Method holding time is 15 minutes from collection. Lab analysis was performed as soon as possible.		
B	Analyte was found in the method blank.		
<	Analyte not detected at or above the reporting limit.	L	LCS recovery outside control limits.
C	Sample received in an improper container for this test.	M	MS recovery outside control limits; LCS acceptable.
D	Surrogates diluted out; recovery not available.	P	Chemical preservation pH adjusted in lab.
E	Estimated result; concentration exceeds calibration range.	Q	Result was determined by a GC/MS database search.
G	Surrogate recovery outside control limits.	S	Analysis was subcontracted to another laboratory.
H	Analysis or extraction holding time exceeded.	W	Reporting limit elevated due to sample matrix.
J	Estimated result; concentration is less than routine RL but greater than MDL.	N	Analyte is not part of our NELAC accreditation or accreditation may not be available for this parameter.
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: ERA 87th and Woodward 81.0220430.00
Sample ID: B-2 (3.5-5)
Sample No: 16-6853-001

Date Collected: 11/30/16
Time Collected: 13:45
Date Received: 12/02/16
Date Reported: 12/08/16

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 12/02/16				
Total Solids	86.02		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 12/06/16				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 12/07/16		Preparation Date: 12/05/16		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 12/07/16				
pH @ 25°C, 1:2	8.34		Units	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: ERA 87th and Woodward 81.0220430.00
Sample ID: B-4 (6-7.5)
Sample No: 16-6853-002

Date Collected: 11/30/16
Time Collected: 10:50
Date Received: 12/02/16
Date Reported: 12/08/16

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 12/02/16				
Total Solids	81.90		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 12/06/16				
Acetone	< 200	200	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	9.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client: HUFF & HUFF INC.
Project ID: ERA 87th and Woodward 81.0220430.00
Sample ID: B-4 (6-7.5)
Sample No: 16-6853-002

Date Collected: 11/30/16
Time Collected: 10:50
Date Received: 12/02/16
Date Reported: 12/08/16

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 12/06/16				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 12/07/16		Preparation Date: 12/05/16		
Acenaphthene	146	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	36.4	8.7	ug/kg	
Benzo(a)pyrene	27	15	ug/kg	
Benzo(b)fluoranthene	26	11	ug/kg	
Benzo(k)fluoranthene	29	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	95	50	ug/kg	
Fluorene	128	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	434	50	ug/kg	
Pyrene	90	50	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 12/07/16				
pH @ 25°C, 1:2	7.94		Units	

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1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client:	HUFF & HUFF INC.	**Date Collected:**	11/30/16
Project ID:	ERA 87th and Woodward 81.0220430.00	**Time Collected:**	9:16
Sample ID:	B-5 (1-2.5)	**Date Received:**	12/02/16
Sample No:	16-6853-003	**Date Reported:**	12/08/16

Analyte	Result	R.L.	Units	Flags
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 12/07/16				
pH @ 25°C, 1:2	7.75		Units	

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client:	HUFF & HUFF INC.	**Date Collected:**	11/30/16
Project ID:	ERA 87th and Woodward 81.0220430.00	**Time Collected:**	12:00
Sample ID:	B-6 (1-2.5)	**Date Received:**	12/02/16
Sample No:	16-6853-004	**Date Reported:**	12/08/16

Analyte	Result	R.L.	Units	Flags
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 12/07/16				
pH @ 25°C, 1:2	8.25		Units	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: ERA 87th and Woodward 81.0220430.00
Sample ID: B-7 (8.5-10)
Sample No: 16-6853-005

Date Collected: 11/30/16
Time Collected: 8:42
Date Received: 12/02/16
Date Reported: 12/08/16

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 12/02/16				
Total Solids	85.28		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 12/06/16				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 12/07/16		Preparation Date: 12/05/16		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 12/07/16				
pH @ 25°C, 1:2	8.15		Units	

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client: HUFF & HUFF INC.
Project ID: ERA 87th and Woodward 81.0220430.00
Sample ID: B-8 (6-7.5)
Sample No: 16-6853-006

Date Collected: 11/30/16
Time Collected: 9:48
Date Received: 12/02/16
Date Reported: 12/08/16

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 12/02/16				
Total Solids	84.82		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 12/06/16				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 12/07/16		Preparation Date: 12/05/16		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 12/07/16				
pH @ 25°C, 1:2	8.10		Units	

CHAIN OF CUSTODY RECORD

Page 1 of 1 pgs

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com
IEPA Certification #100292

Company Name: Huff and Huff Inc
Street Address: 915 Harger Road Suite 330
City: Oak Brook State: IL Zip: 60523
Phone: 7459820469 e-mail: amanda.hermosillo@gza.com
Send Report To: Amanda Hermosillo
Sampled By: " "

Project I.D.: ERA 87th and Woodward
P.O. #: 81.0220430.00

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	PH	VOCs	BTEX/MTBE	PNAs	PH				Hold - Do Not Analyze	Comments	Lab I.D.
11/30/16 1245	B-1 (13.5-15)	S									X		
1345	B-2 (3.5-5)		X		X	X							16-68552-001
1120	B-3 (3.5-5)										X		
10:50	B-4 (6-7.5)		X	X		X							002
0916	B-5 (1-2.5)		X										003
1200	B-6 (1-2.5)		X										004
0842	B-7 (5.5-10)		X		X	X							005
0948	B-8 (6-7.5)		X		X	X							006

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes__ No.__ _____ºC
Received within 6 hrs. of collection:_____
Ice Present: Yes__ No__

Sample Refrigerated: Yes✓ No__
Refrigerator Temperature: 4 ºC
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____ºC

Program: ☐ TACO ☐ CCDD ☐ NPDES ☐ LUST

Notes and Special Instructions: _____

Relinquished By: [signature] Date/Time 12/2/16 1035 Received By: [signature] Date/Time 12/2/16 1035

Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

Rev. 8/15

July 28, 2017
(Revised August 15, 2017)

Mr. Paul Krueger, P.E.
Chief Highway Engineer
DuPage County - Division of Transporation
421 N. County Farm Road
Wheaton, Illinois 60187

RE: Preliminary Environmental Site Assessment
Work Order #8 - PESA - 87th & Woodward Improvements
87th Street / E. Boughton Road & Woodward Avenue
Woodridge and Bolingbrook, DuPage County, Illinois
V3 Project No.: 16326.08

Dear Mr. Krueger:

V3 Companies of Illinois, Ltd (V3) has completed a Preliminary Environmental Site Assessment (PESA) of the above-referenced site. This PESA has been conducted in general conformance with the scope and limitations of *A Manual for Conducting Preliminary Environmental Site Assessments for Illinois Department of Transportation Infrastructure Projects, Circular 585 (ISGS, 2014), dated 2014* and *American Society of Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Standard E1527-2013)*. The attached report provides our methodology, findings, opinions, and conclusions regarding environmental conditions at the Project Site.

V3 is providing this electronic version of the report for your review. If you have any questions regarding the findings and conclusions provided within this document, please contact us at (630) 724-9200. V3 appreciates the opportunity to serve you on this project.

Sincerely,
V3 COMPANIES, LTD

Lynn P. Smith

Lynn P. Smith, P.G.
Project Manager

LS/aa

Enclosure: Preliminary Environmental Site Assessment Report

PRELIMINARY ENVIRONMENTAL SITE ASSESSMENT

PROJECT SITE:

Work Order #8 – 87th & Woodward Improvements
87th Street / E. Boughton Road & Woodward Avenue
Woodridge and Bolingbrook, DuPage County, Illinois

PREPARED FOR:

DuPage County – Division of Transportation
421 N. County Farm Road
Wheaton, Illinois 60187

PREPARED BY:

V3 Companies of Illinois, Ltd.
7325 Janes Avenue
Woodridge, Illinois 60517
(630) 724-9200

July 28, 2017
(Revised August 15, 2017)

V3 Project Number: 16326.08

1.0 EXECUTIVE SUMMARY

V3 Companies of Illinois, Ltd. (V3) has completed a Preliminary Environmental Site Assessment (PESA) of approximately 1 mile of public right-of-ways (ROW) along 87th Street/ E. Boughton Road at Woodward Avenue, Woodridge and Bolingbrook, DuPage County, Illinois (Project Site). The report was prepared for the DuPage County – Division of Transportation which is proposing improvements to the intersection of 87th Street/Boughton Road and Woodward Avenue. Reportedly, the improvements consist of widening and resurfacing the Project roadways.

This PESA has been conducted in general conformance with the scope and limitations of *A Manual for Conducting Preliminary Environmental Site Assessments for Illinois Department of Transportation Infrastructure Projects (Circular 585)* published by the Illinois State Geological Survey (ISGS), dated 2014. In addition to the manual, where appropriate, *American Society of Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Standard E1527-13*) was used for guidance.

The purpose of this study is to provide a description of potential site hazards, which will be used to further investigate, avoid, mitigate, or remediate the hazards. The following provides a summary of our findings, opinions, and conclusions regarding environmental conditions at the Project Site.

1.1 Recognized Environmental Conditions

This report identifies *recognized environmental conditions (REC)* within the Project corridor that may adversely affect roadway construction or Project right-of-way acquisition (if required). A *Recognized Environmental Condition* is defined by ASTM E1527-13 as "the presence or likely presence of any *hazardous substances* or *petroleum products* in, on, or at a *property (1)* due to any *release* to the *environment; (2)* under conditions indicative of a *release* to the *environment; or (3)* under conditions that pose a *material threat* of a future *release* to the *environment. De minimis* conditions are not *recognized environmental conditions*." (Italics denote terms with specific ASTM definitions). The term includes *hazardous substances* or *petroleum products* even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

This assessment has revealed no evidence of *RECs* in connection with the Project Site except for the following:

- Circle K# 6730 - 2010 87th Street, Woodridge, IL: Based on review of city directories historical aerial photographs, and regulatory UST listings, the facility has been occupied by a gasoline station since 2000. Woodridge Shell was a previous occupant. There are no reported releases or spills. However, based on the long-term use as a gasoline station and the close proximity to the Project Site, this adjoining gasoline station property represents evidence of a REC in connection with the Project Site.

- BP Amoco - 1935 Boughton Road, Woodridge, IL: Based on review of city directories historical aerial photographs, and regulatory UST listings, the facility has been occupied by a gasoline station since 1999. Amoco Split Second/BP Connect gasoline stations listed as previous occupants. There are no reported releases or spills. However, based on the long-term use as a gasoline station and the close proximity to the Project Site, this adjoining gasoline station property represents evidence of a REC in connection with the Project Site.

1.2 Identified Data Gaps

Under the ASTM/AAI standards, if *data gaps* are identified during the ESA process, the *environmental professional* (EP) must comment on their significance and whether such gaps affect the overall findings. A *data gap* is defined by ASTM E1527-13 as "a lack of or inability to obtain information required this practice despite *good faith* efforts by the *environmental professional* to gather such information." A *data gap* is significant if other information and/or professional experience raises reasonable concerns involving the *data gap*.

- Significant *data gaps* were not identified.

1.3 Recommendations

Based on the findings of this investigation, a Preliminary Site Investigation (PSI) is recommended to assess for potential impact to the Project Site from the identified adjoining RECs. In V3's professional opinion additional sampling is warranted to fully assess the identified gasoline station PIPs as it relates to planned excavation for the roadway improvements and to delineate the extent of impact along the eastern end of 87th Street where elevated PID reading was detected.

2.0 INTRODUCTION

V3 Companies of Illinois, Ltd. (V3) performed a Preliminary Environmental Site Assessment (PESA) of approximately 1 mile of public right-of-way (ROW) along 87th Street/ E. Boughton Road at Woodward Avenue, Woodridge and Bolingbrook, DuPage County, Illinois (Project Site).

The report was prepared for the DuPage County – Division of Transportation which is proposing improvements to the intersection of 87th Street/Boughton Road and Woodward Avenue. Reportedly, the improvements consist of widening and resurfacing the Project roadways.

The assessment was completed by V3 Environmental Professionals, Ms. Lynn P. Smith, P.G., Project Manager, and Mr. Keith Oswald, P.E. Senior Project Manager. The professional credentials of the project team are provided in **Appendix A**. Figures for this PESA include Project Site Location Map, **Figure 1**; Surrounding Properties Map, **Figure 2**; and Project Site REC Map, **Figure 3.**

2.1 Purpose & Standards

Purpose of the PESA

V3 understands that the User is conducting studies to conduct roadway construction and improvements within the Project Site. This PESA was conducted to identify areas that may have an adverse effect on construction or for project right-of-way acquisition (if required). In the case of acquisition, the DuPage County - Division of Transporation (IDOT) (the User) can use the PESA to assess whether further environmental assessments and/or investigations are required.

Applicable Standards

V3 has conducted this PESA and developed this report in general conformance with the standards listed below, the scope and limitations of *A Manual for Preliminary Environmental Site Assessments for Illinois Department of Transportation Highway Projects (Circular 585)* (ISGS, 2014) and. The purpose of the PESA is to identify RECS and de minimis conditions, and

4.2.1 Project Site

The Project Site is a public right-of-way. No State and Federal database listings were identified on the Project Site.

4.2.2 Adjoining and Nearby Properties

V3 identified the following adjoining and nearby properties that have a potential to impact the Project Site.

Facility Name:	Costco Wholesale #1088 - Bolingbrook		
Address:	830 E. Boughton Road, Bolingbrook, IL		
Distance / Direction:	Approximately 250 feet northwest of 87th Street / E. Boughton Road		
BOL:	IEPA BOL Inv. Number: 1974155193	Status	BOL listing associated with RCRA LQG activity. No violations reported.
RCRA-LQG	EPA ID: ILR000163485 Waste Codes: D001, D002, D010, D011, D016, D018, P001. Dates reported from 2010 to 2016		2010 – 2016 RCRA LQG; No violations reported
UST	Costco Gasoline #1088 Facility ID: 2044763		Active USTs • Three (3), 20-000-gallon gasoline USTs installed in November 2010 • One (1) Lubrizol fuel additive, installed August 2011 • No reported spills or releases
Comments:	Based on the regulatory status with no reported violations or reported spills or releases, distance from Project Site and site reconnaissance observations, the BOL, UST, and RCRA-LQG listings associated with this adjoining property do not represent evidence of a REC.		

Facility Name:	Circle K# 6730		
Address:	2010 87th Street, Woodridge IL		
Distance / Direction:	Southwest Adjoining to 87th Street / E. Boughton Road and Woodward Ave intersection		
UST/ EDR Historical Auto Database:	Facility ID 2039796	Status	Active USTs • Two (2), 15,000-gallon gasoline USTs installed in September 2000 • No reported spills or releases
Comments:	Based on review of city directories (as compiled in EDR Historical Auto Station), historical aerial photographs, and regulatory UST listings, the facility has been occupied by a gasoline station since 2000. Woodridge Shell was a previous occupant. There are no reported releases or spills. However, based on the long-term use as a gasoline station and the close proximity to the Project Site, this adjoining gasoline station property represents evidence of a REC in connection with the Project Site.		

Facility Name:	Professional Petroleum Marketing Group/ BP Amoco		
Address:	1935 Boughton Road, Woodridge, IL		
Distance / Direction:	Southeast adjoining property to 87th Street / E. Boughton Road and Woodward Ave intersection		
UST	Professional Petroleum Marketing Group Facility ID: 2036541	Status	Active USTs • One (1), 12,000-gallon gasoline UST (installed July 1999) • Two (2), 10,0000-gallon gasoline USTs (installed July 1999) • No reported spills or releases

RCRA-SQG	BP Amoco EPA ID No.: ILR000131201 Start of Ownership: December 1999 Listed as RCRA- SQG for D018 (Benzene) from 2005 to 2009		No violations reported.
EDR Historical Auto Database:	Amoco Spilt Second/ BP Connect gasoline service station listed as occupants from 2006 to 2014 in EDR Historical Auto Database.		
Comments:	Based on review of city directories (as compiled in EDR Historical Auto Station), historical aerial photographs, and regulatory UST listings, the facility has been occupied by a gasoline station since 1999. Amoco Split Second /BP Connect gasoline stations listed as previous occupants. There are no reported releases or spills. However, based on the long-term use as a gasoline station and the close proximity to the Project Site, this adjoining gasoline station property represents evidence of a REC in connection with the Project Site.		

Facility Name:	CVS Pharmacy #6789		
Address:	8645 Woodward Avenue, Woodridge, IL 60517		
Distance / Direction:	Northeast Adjoining to 87th Street and Woodward Avenue		
BOL:	IEPA BOL Inv. Number: 0434290016 EPA ID: ILR000169938	Status	BOL listing associated with RCRA LQG activity. No violations reported.
RCRA-LQG	EPA ID: ILR000163485 Waste Codes: Various D-listed, U-listed and P-listed codes Dates reported from 2010 to 2016		2012 and 2016 RCRA LQG; No violations reported
Comments:	Based on the regulatory status with no reported violations or reported spills or releases and site reconnaissance, the BOL and RCRA-LQG listings associated with this adjoining property do not represent evidence of a REC.		

4.3 Local Records

Additional state agency records maintained on the internet were reviewed as determined useful. Relevant information is incorporated into appropriate sections of this report.

4.4 Previous ESA

The report listed below was provided by the *DuPage County Division of Transportation* and reviewed by V3. The report is appended in **Appendix E**.

Title	Memorandum Preliminary Environmental Site Assessment		
Location	87th Street / Boughton Road at Woodward Avenue, Unincorporated Downers Grove, DuPage County, Illinois		
Prepared By	Huff & Huff, Inc.		
Prepared For	Thomas Engineering Group	Date	October 2013

The PESA was prepared to address the potential to encounter impacted media (soil and groundwater) within the project area. Based on the results of their investigation, Huff & Huff revealed evidence of two potentially impacted properties in connection with the Project Site. The Shell/Circle K gasoline station at 2010 Boughton Road and the BP Amoco gasoline station at 1935 Boughton Road where identified as PIPs based on historical research, database review and site inspection.

The Huff & Huff PESA refers to the Project Location city as Unincorporated Downers Grove. The Project Location is located in Woodridge and Bolingbrook. V3 agrees with the Huff & Huff findings regarding the two PIPs/RECs in connection with the Project Site.

Title	Memorandum Preliminary Site Investigation		
Location	87th Street / Boughton Road at Woodward Avenue Intersection, Woodridge, DuPage County, Illinois		
Prepared By	Huff & Huff, Inc.		
Prepared For	Engineering Resource Associates, Inc.	Date	February 2017

The Preliminary Site Investigation (PSI) was conducted to assess potential subsurface impact from the PIPs identified in the Huff & Huff PESA completed in October 2013. Two PIPs were identified in connection with USTs and associated petroleum and hazardous material storage at the Shell/Circle K at 2010 Boughton road and the BP Amoco at 1935 Boughton Road. Samples were selected from each of the eight (8) soil borings for analysis of the contaminants of concern associated with the PIPs identified in the PESA, and include one of more of the following: VOCs, BTEX/MTBE, PNAs, and pH. The results of soil samples analyzed from the soil boring indicate that the soils within the 87th Street/Boughton Road and Woodward Avenue Improvements Project are below the IEPA TACO Tier I remediation objectives for residential properties. Furthermore, the soil samples were within the Maximum Allowable Concentrations (MACs) and pH requirement (between 6.25 and 9.0) for CCDD disposal. Sample B-4 located along 87th Street Road approximately 310 feet west of the intersection of 87th Street and Woodward Road had elevated photoionization detector (PID) readings that preclude the soil from being accepted at a CCDD facility.

In V3's professional opinion additional sampling is warranted to fully assess the identified PIPs as it relates to planned excavation for the roadway improvements and to delineate the extent of impact near sample B-4.

4.5 Historical Records Review

4.5.1 Records Reviewed

Multiple historic sources were reviewed to gain an understanding of the site history, including standard ASTM E1527-13 historical sources. In accordance with the standard, those sources that were both easily attainable and available within project constraints, and/or that were judged likely to be useful for the purposes of this study, are listed on the following table. Copies of these documents are provided in the appropriate Appendices.

REVIEWED STANDARD HISTORICAL SOURCES			
Historical Document	Reasonably Ascertainable/ Available	Source/dates (if applicable)	Comments
Aerial Photographs	Yes	EDR (1939-2012) Google Earth (1993 -2017)	Limited in usefulness due to scale/resolution Appendix D
Fire Insurance Maps	No	EDR	No map coverage
Topographic Maps	Yes	EDR (1890-2012)	Limited in usefulness due to scale/resolution Appendix D
Local Street Directories	Yes	Cole Information Services and Haines Criss - Cross Directory via EDR (1989 -2013)	Appendix D
Regulatory Records	Yes	EDR	Refer to Section 4.2 and Appendix C

Letter	Occupant	Address	Regulatory
A	Costco Wholesale #1088	830 E. Boughton Rd	BOL, RCRA-LQG, UST
B	Art Van Furniture	900 E. Boughton Rd	---
C	McDonald's	840 E. Boughton Rd	---
D	Oberwweis Ice Cream and Dairy	860 E. Boughton Rd	---
E	PNC Bank	8635 Woodward Ave	---
F	CVS Pharmacy #6789	8645 Woodward Ave	BOL, RCRA-LGQ
G	Commercial Strip Mall	1920 87th St	---
H	La-Z-Boy Furniture Galleries Ashely HomeStore	875 E. Boughton Rd	---
I	Commerial Strip Center	2027 87th St	---
J	Commercial Strip Center	2019 87th St	---
K	Shell Gas Station (Circle K #6730)	2010 87th St	USTs
L	Professional Petroleum Marketing Group/BP Amoco	1935 E. Boughton Rd	UST, RCRA-SQG
M	Wendy's	1925 E. Boughton Rd	---
N	Christ the Servant Catholic Church	8700 Havens Dr	---

V3 Companies
7325 Janes Avenue
Woodridge, Illinois 60517
630.724.9200 phone
630.724.9202 fax
www.v3co.com

Visio, Vertere, Virtute...
"The Vision To Transform With Excellence"

PROJECT NO.: 16326.08
CREATED BY: KJW
DATE: 07/26/2017
SCALE: See Scale Bar

CLIENT: DuPage County
Division of Transportation
421 N. County Farm Road
Wheaton, Illinois 60187

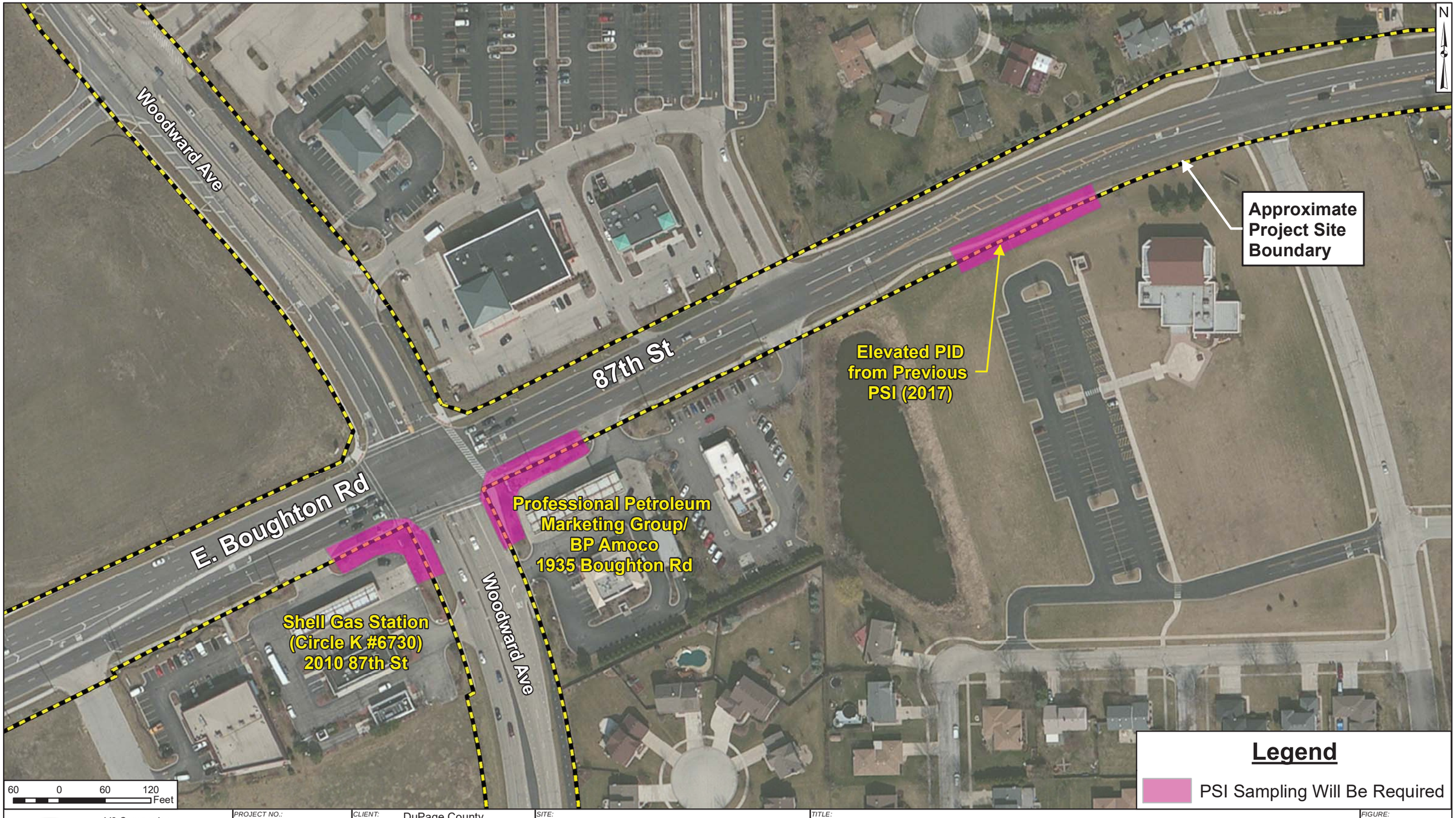
BASE LAYER: NAIP (2015)

SITE: Work Order #8 - PESA
87th & Woodward Improvements
87th St/E. Boughton Rd & Woodward Ave
Bolingbrook and Woodridge,
DuPage County, Illinois

TITLE: **SURROUNDING PROPERTIES MAP**

FIGURE: 2

N:\2016\16326\16326.08\Drawings\ArcGIS\Environ\FIG2surp16326.08.mxd



V3 Companies
7325 Janes Avenue
Woodridge, Illinois 60517
630.724.9200 phone
630.724.9202 fax
www.v3co.com

Visio, Vertere, Virtute...
"The Vision To Transform With Excellence"

PROJECT NO.:	16326.08
CREATED BY:	KJW
DATE:	08/15/2017
SCALE:	See Scale Bar
CLIENT:	DuPage County Division of Transportation 421 N. County Farm Road Wheaton, Illinois 60187
BASE LAYER:	NAIP (2015)
SITE:	Work Order #8 - PESA 87th & Woodward Improvements 87th St/E. Boughton Rd & Woodward Ave Bolingbrook and Woodridge, DuPage County, Illinois
TITLE:	**PROJECT SITE REC MAP**
FIGURE:	3

N:\2016\16326\16326.08\Drawings\ArcGIS\Environ\FIG3recs16326.08.mxd

APPENDIX C

BORING LOGS

Huff & Huff, Inc.
915 Harger Road, Suite 330
Oak Brook, IL 60523
(630)-984-9100

BORING NUMBER B- 1

CLIENT DuPage County Division of Transportation
PROJECT NAME 87th and Woodward PSI
PROJECT NUMBER 81.0220592.02
PROJECT LOCATION Woodridge, DuPage County, IL
DATE STARTED 3/16/18 **COMPLETED** 3/16/18
GROUND ELEVATION 751 +/- 2 **HOLE SIZE** 2 inches
DRILLING CONTRACTOR Environmental Soil Probing Corporation
DRILLING METHOD Direct Push
LOGGED BY AHK **CHECKED BY** JJR
DRILL RIG 7822DT Track Geoprobe

GROUND WATER LEVELS (ft, bgs):

DATE	TIME	DEPTH	CASING	STAB
3/16/2018	DD	23	25	N/A

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0		S-1: Stiff, lean silty CLAY with organics (OL), low plasticity; trace Sand, fine; black, moist		S-1 (0-1)	0.0	1	
		S-2: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown, moist		S-2 (1-3)	0.0	2	
5		S-3: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown, moist		S-3 (3-5)	0.0	1	
		S-4: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown, moist		S-4 (5-7)	0.0	2	
		S-5: Hard, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown and grey, moist	1	S-5 (7-10)	0.0	2	
10		S-6: Very stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-6 (10-12)	0.0	2	
		S-7: Very stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-7 (12-15)	0.0	3	
15		S-8: Soft, lean silty CLAY (CL-ML), low plasticity; with Sand, fine; trace Gravel, fine; grey, moist		S-8 (15-17)	0.0	2	
		S-9: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist	2	S-9 (17-20)	0.0	2	
20		S-10: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-10 (20-22)	0.0	2	
		S-11: Soft, lean silty CLAY (CL-ML), low plasticity; some Sand, fine; some Gravel, fine; grey, wet		S-11 (22-25)	0.0	1	
25		: End of boring at 25' BGS. Boring immediately backfilled with 3/8" bentonite chips and capped with remaining soil					

REMARKS

1. Sample submitted to Lab
2. Sample submitted to Lab

Huff & Huff, Inc.
915 Harger Road, Suite 330
Oak Brook, IL 60523
(630)-984-9100

BORING NUMBER B- 2

CLIENT DuPage County Division of Transportation
PROJECT NAME 87th and Woodward PSI
PROJECT NUMBER 81.0220592.02
PROJECT LOCATION Woodridge, DuPage County, IL
DATE STARTED 3/16/18 **COMPLETED** 3/16/18
GROUND ELEVATION 756 +/- 2 **HOLE SIZE** 2 inches
DRILLING CONTRACTOR Environmental Soil Probing Corporation
DRILLING METHOD Direct Push
LOGGED BY AHK **CHECKED BY** JJR
DRILL RIG 7822DT Track Geoprobe

GROUND WATER LEVELS (ft, bgs):

DATE	TIME	DEPTH	CASING	STAB
3/16/2018	DD	24	25	N/A

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0		S-1: Stiff, lean silty CLAY with organics (OL), low plasticity; trace Sand, fine; trace Gravel, fine; black, moist		S-1 (0-1)	0.0	1	
		S-2: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown, moist		S-2 (1-3)	0.0	2	
5		S-3: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown, moist	1	S-3 (3-5)	0.3	1	
		S-4: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown and grey, moist		S-4 (5-7)	0.1	2	
		S-5: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown and grey, moist		S-5 (7-10)	0.0	2	
10		S-6: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-6 (10-12)	0.0	2	
		S-7: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-7 (12-15)	0.0	2	
15		S-8: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-8 (15-17)	0.0	2	
		S-9: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-9 (17-20)	0.0	2	
20		S-10: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist	2	S-10 (20-22)	0.0	2	
		S-11: Soft, lean silty CLAY (CL-ML), low plasticity; some Sand, fine; some Gravel, fine; grey, wet		S-11 (22-25)	0.0	2	
25		: End of boring at 25' BGS. Boring immediately backfilled with 3/8" bentonite chips and capped with remaining soil					

REMARKS

1. Sample submitted to Lab
2. Sample submitted to Lab

Huff & Huff, Inc.
915 Harger Road, Suite 330
Oak Brook, IL 60523
(630)-984-9100

BORING NUMBER B- 3

CLIENT DuPage County Division of Transportation
PROJECT NAME 87th and Woodward PSI
PROJECT NUMBER 81.0220592.02
PROJECT LOCATION Woodridge, DuPage County, IL
DATE STARTED 3/16/18 **COMPLETED** 3/16/18
GROUND ELEVATION 756 +/- 2 **HOLE SIZE** 2 inches
DRILLING CONTRACTOR Environmental Soil Probing Corporation
DRILLING METHOD Direct Push
LOGGED BY AHK **CHECKED BY** JJR
DRILL RIG 7822DT Track Geoprobe

GROUND WATER LEVELS (ft, bgs):

DATE	TIME	DEPTH	CASING	STAB
3/16/2018	DD	DRY	25	N/A

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0		S-1: Stiff, lean silty CLAY with organics (OL), low plasticity; trace Sand, fine; trace Gravel, fine; black, moist		S-1 (0-1)	0.0	1	
		S-2: Hard, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown, moist		S-2 (1-3)	0.0	2	
5		S-3: Hard, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown, moist		S-3 (3-5)	0.0	2	
		S-4: Hard, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown, moist		S-4 (5-7)	0.0	2	
		S-5: Very stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown and grey, moist		S-5 (7-10)	0.0	3	
10		S-6: Hard, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown and grey, moist	1	S-6 (10-12)	0.0	2	
		S-7: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown and grey, moist		S-7 (12-15)	0.0	3	
15		S-8: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-8 (15-17)	0.0	2	
		S-9: Loose, well-graded SAND (SW), fine to coarse; some Clay, low plasticity; grey, moist	2	S-9 (17-20)	0.0	3	
20		S-10: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-10 (20-22)	0.0	2	
		S-11: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-11 (22-25)	0.0	3	
25		: End of boring at 25' BGS. Boring immediately backfilled with 3/8" bentonite chips and capped with remaining soil					

REMARKS

1. Sample submitted to Lab
2. Sample submitted to Lab

Huff & Huff, Inc.
915 Harger Road, Suite 330
Oak Brook, IL 60523
(630)-984-9100

BORING NUMBER B- 4

CLIENT DuPage County Division of Transportation
PROJECT NAME 87th and Woodward PSI
PROJECT NUMBER 81.0220592.02
PROJECT LOCATION Woodridge, DuPage County, IL
DATE STARTED 3/16/18 **COMPLETED** 3/16/18
GROUND ELEVATION 754 +/- 2 **HOLE SIZE** 2 inches
DRILLING CONTRACTOR Environmental Soil Probing Corporation
DRILLING METHOD Direct Push
LOGGED BY AHK **CHECKED BY** JJR
DRILL RIG 7822DT Track Geoprobe

GROUND WATER LEVELS (ft, bgs):

DATE	TIME	DEPTH	CASING	STAB
3/16/2018	DD	24	25	N/A

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0		S-1: Stiff, lean silty CLAY with organics (OL), low plasticity; trace Sand, fine; trace Gravel, fine; black, moist		S-1 (0-1)	0.0	1	
		S-2: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown, moist		S-2 (1-3)	0.0	2	
5		S-3: Medium stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown and grey, moist		S-3 (3-5)	0.0	1	
		S-4: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown and grey, moist	1	S-4 (5-7)	0.0	2	
		S-5: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown and grey, moist		S-5 (7-10)	0.0	3	
10		S-6: Hard, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-6 (10-12)	0.0	2	
		S-7: Hard, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-7 (12-15)	0.0	3	
15		S-8: Hard, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-8 (15-17)	0.0	2	
		S-9: Loose, well-graded SAND (SW), fine to coarse; with Gravel, fine; some Clay, low plasticity; grey, moist		S-9 (17-20)	0.0	2	
20		S-10: Hard, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist	2	S-10 (20-22)	0.0	2	
		S-11: Hard, lean silty CLAY (CL-ML), low plasticity; with Sand, fine; with Gravel, fine; grey, wet		S-11 (22-25)	0.0	2	
25		: End of boring at 25' BGS. Boring immediately backfilled with 3/8" bentonite chips and capped with remaining soil					

REMARKS

1. Sample submitted to Lab
2. Sample submitted to Lab

Huff & Huff, Inc.
915 Harger Road, Suite 330
Oak Brook, IL 60523
(630)-984-9100

BORING NUMBER B- 5

CLIENT DuPage County Division of Transportation
PROJECT NAME 87th and Woodward PSI
PROJECT NUMBER 81.0220592.02
PROJECT LOCATION Woodridge, DuPage County, IL
DATE STARTED 3/16/18 **COMPLETED** 3/16/18
GROUND ELEVATION 755 +/- 2 **HOLE SIZE** 2 inches
DRILLING CONTRACTOR Environmental Soil Probing Corporation
DRILLING METHOD Direct Push
LOGGED BY AHK **CHECKED BY** JJR
DRILL RIG 7822DT Track Geoprobe

GROUND WATER LEVELS (ft, bgs):

DATE	TIME	DEPTH	CASING	STAB
3/16/2018	DD	DRY	25	N/A

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0		S-1: Stiff, lean silty CLAY with organics (OL), low plasticity; trace Sand, fine; trace Gravel, fine; black, moist		S-1 (0-1)	0.0	1	
		S-2: Very stiff, lean silty CLAY (CL-ML), low plasticity; brown, moist		S-2 (1-3)	0.0	2	
5		S-3: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown and grey, moist	1	S-3 (3-5)	0.2	1	
		S-4: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown and grey, moist		S-4 (5-7)	0.0	2	
		S-5: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-5 (7-10)	0.0	2	
10		S-6: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-6 (10-12)	0.0	2	
		S-7: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist	2	S-7 (12-15)	0.0	3	
15		S-8: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-8 (15-17)	0.0	2	
		S-9: Medium stiff, lean silty CLAY (CL-ML), low plasticity; little Sand, fine; trace Gravel, fine; grey, moist		S-9 (17-20)	0.0	2	
20		S-10: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-10 (20-22)	0.0	2	
		S-11: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-11 (22-25)	0.0	2	
25		: End of boring at 25' BGS. Boring immediately backfilled with 3/8" bentonite chips and capped with remaining soil					

REMARKS

1. Sample submitted to Lab
2. Sample submitted to Lab

Huff & Huff, Inc.
915 Harger Road, Suite 330
Oak Brook, IL 60523
(630)-984-9100

BORING NUMBER B- 6

CLIENT DuPage County Division of Transportation
PROJECT NAME 87th and Woodward PSI
PROJECT NUMBER 81.0220592.02
PROJECT LOCATION Woodridge, DuPage County, IL
DATE STARTED 3/16/18 **COMPLETED** 3/16/18
GROUND ELEVATION 749 +/- 2 **HOLE SIZE** 2 inches
DRILLING CONTRACTOR Environmental Soil Probing Corporation
DRILLING METHOD Direct Push
LOGGED BY AHK **CHECKED BY** JJR
DRILL RIG 7822DT Track Geoprobe

GROUND WATER LEVELS (ft, bgs):

DATE	TIME	DEPTH	CASING	STAB
3/16/2018	DD	DRY	15	N/A

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		S-1: Stiff, lean silty CLAY with organics (OL), low plasticity; trace Sand, fine; trace Gravel, fine; black, moist		S-1 (0-1)	0.0	1	
		S-2: Very soft, lean silty CLAY (CL-ML), low plasticity; black to dark grey, moist; trace wood debris and organic material		S-2 (1-3)	0.1	2	
2.5		S-3: Very soft, lean silty CLAY (CL-ML), low plasticity; black to dark grey, moist; trace wood debris and organic material		S-3 (3-5)	0.3	1	
5.0		S-4: Very soft, lean silty CLAY (CL-ML), low plasticity; black to dark grey, moist; trace wood debris and organic material	1	S-4 (5-7)	7.8	2	
7.5		S-5: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; black and brown, moist		S-5 (7-10)	0.9	2	
10.0		S-6: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist	2	S-6 (10-12)	0.1	2	
		: End of boring at 12' BGS. Boring immediately backfilled with 3/8" bentonite chips and capped with remaining soil					

REMARKS

1. Sample submitted to Lab
2. Sample submitted to Lab

Huff & Huff, Inc.
915 Harger Road, Suite 330
Oak Brook, IL 60523
(630)-984-9100

BORING NUMBER B- 7

CLIENT DuPage County Division of Transportation
PROJECT NAME 87th and Woodward PSI
PROJECT NUMBER 81.0220592.02
PROJECT LOCATION Woodridge, DuPage County, IL
DATE STARTED 3/16/18 **COMPLETED** 3/16/18
GROUND ELEVATION 752 +/- 2 **HOLE SIZE** 2 inches
DRILLING CONTRACTOR Environmental Soil Probing Corporation
DRILLING METHOD Direct Push
LOGGED BY AHK **CHECKED BY** JJR
DRILL RIG 7822DT Track Geoprobe

GROUND WATER LEVELS (ft, bgs):

DATE	TIME	DEPTH	CASING	STAB
3/16/2018	DD	DRY	15	N/A

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS	SAMPLE TYPE NUMBER (Depth Interval)	PID RESULTS (PPM)	RECOVERY (feet)	POCKET PEN. (tsf)
0.0		S-1: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; black, moist		S-1 (0-1)	0.0	1	
		S-2: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown, moist		S-2 (1-3)	0.0	2	
2.5		S-3: Soft, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown, moist	1	S-3 (3-5)	0.2	1	
5.0		S-4: Stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown and grey, moist		S-4 (5-7)	0.0	2	
7.5		S-5: Very stiff, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; brown and grey, moist	2	S-5 (7-10)	0.0	3	
10.0		S-6: Hard, lean silty CLAY (CL-ML), low plasticity; trace Sand, fine; trace Gravel, fine; grey, moist		S-6 (10-12)	0.0	2	
		: End of boring at 12' BGS. Boring immediately backfilled with 3/8" bentonite chips and capped with remaining soil					

REMARKS

1. Sample submitted to Lab
2. Sample submitted to Lab

APPENDIX D

LABORATORY ANALYTICAL REPORT

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

March 27, 2018

Mr. Adam Kittler
HUFF & HUFF INC.
915 Harger Road
Suite 330
Oak Brook, IL 60523

Project ID: 81.0220430.00 87th and Woodward
First Environmental File ID: 18-1338
Date Received: March 19, 2018

Dear Mr. Adam Kittler:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 004324: effective 02/27/2018 through 02/28/2019.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Bill Mottashed
Project Manager

First
Environmental
Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Case Narrative

HUFF & HUFF INC.

Lab File ID: **18-1338**

Project ID: **81.0220430.00 87th and Woodward**

Date Received: **March 19, 2018**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The results in this report apply to the samples in the following table:

Laboratory Sample ID	Client Sample Identifier	Date/Time Collected
18-1338-001	B-1 7-10	3/16/2018 9:00
18-1338-002	B-1 17-20	3/16/2018 9:05
18-1338-003	B-2 3-5	3/16/2018 8:40
18-1338-004	B-2 20-22	3/16/2018 8:45
18-1338-005	B-3 10-12	3/16/2018 9:20
18-1338-006	B-3 17-20	3/16/2018 9:25
18-1338-007	B-4 5-7	3/16/2018 10:00
18-1338-008	B-4 20-22	3/16/2018 10:05
18-1338-009	B-5 3-5	3/16/2018 10:45
18-1338-010	B-5 12-15	3/16/2018 10:50
18-1338-011	B-6 5-7	3/16/2018 11:05
18-1338-012	B-6 10-12	3/16/2018 11:10
18-1338-013	B-7 3-5	3/16/2018 11:30
18-1338-014	B-7 7-10	3/16/2018 11:35

Sample Batch Comments:

Sample acceptance criteria were met.

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Case Narrative

HUFF & HUFF INC.

Lab File ID: **18-1338**

Project ID: **81.0220430.00 87th and Woodward**

Date Received: **March 19, 2018**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The following is a definition of flags that may be used in this report:

Flag	Description	Flag	Description
A	Method holding time is 15 minutes from collection. Lab analysis was performed as soon as possible.		
B	Analyte was found in the method blank.	L	LCS recovery outside control limits.
<	Analyte not detected at or above the reporting limit.	M	MS recovery outside control limits; LCS acceptable.
C	Sample received in an improper container for this test.	P	Chemical preservation pH adjusted in lab.
D	Surrogates diluted out; recovery not available.	Q	Result was determined by a GC/MS database search.
E	Estimated result; concentration exceeds calibration range.	S	Analysis was subcontracted to another laboratory.
G	Surrogate recovery outside control limits.	T	Result is less than three times the MDL value.
H	Analysis or extraction holding time exceeded.	W	Reporting limit elevated due to sample matrix.
J	Estimated result; concentration is less than routine RL but greater than MDL.	N	Analyte is not part of our NELAC accreditation or accreditation may not be available for this parameter.
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.

First
Environmental
Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-1 7-10
Sample No: 18-1338-001

Date Collected: 03/16/18
Time Collected: 9:00
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	87.43		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/22/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	8.13		Units	

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-1 17-20
Sample No: 18-1338-002

Date Collected: 03/16/18
Time Collected: 9:05
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	86.68		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/22/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/21/18		Preparation Date: 03/21/18		
Arsenic	9.4	1.0	mg/kg	
Barium	22.0	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	11.2	0.5	mg/kg	
Lead	10.1	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	0.5	0.2	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-1 17-20
Sample No: 18-1338-002

Date Collected: 03/16/18
Time Collected: 9:05
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Mercury **Method: 7471B**				
Analysis Date: 03/22/18				
Mercury	< 0.05	0.05	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-2 3-5
Sample No: 18-1338-003

Date Collected: 03/16/18
Time Collected: 8:40
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	87.83		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/22/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	8.30		Units	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-2 20-22
Sample No: 18-1338-004

Date Collected: 03/16/18
Time Collected: 8:45
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	86.13		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/22/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/21/18		Preparation Date: 03/21/18		
Arsenic	8.6	1.0	mg/kg	
Barium	31.1	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	14.7	0.5	mg/kg	
Lead	11.4	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	0.6	0.2	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-2 20-22
Sample No: 18-1338-004

Date Collected: 03/16/18
Time Collected: 8:45
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Mercury **Method: 7471B**				
Analysis Date: 03/22/18				
Mercury	< 0.05	0.05	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-3 10-12
Sample No: 18-1338-005

Date Collected: 03/16/18
Time Collected: 9:20
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	83.36		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-3 17-20
Sample No: 18-1338-006

Date Collected: 03/16/18
Time Collected: 9:25
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	88.52		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/21/18		Preparation Date: 03/21/18		
Arsenic	16.1	1.0	mg/kg	
Barium	24.5	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	9.5	0.5	mg/kg	
Lead	15.4	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	0.5	0.2	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-3 17-20
Sample No: 18-1338-006

Date Collected: 03/16/18
Time Collected: 9:25
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Mercury **Method: 7471B**				
Analysis Date: 03/22/18				
Mercury	< 0.05	0.05	mg/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	8.60		Units	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-4 5-7
Sample No: 18-1338-007

Date Collected: 03/16/18
Time Collected: 10:00
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	85.62		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/21/18		Preparation Date: 03/21/18		
Arsenic	9.0	1.0	mg/kg	
Barium	27.1	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	11.4	0.5	mg/kg	
Lead	11.2	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	0.5	0.2	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-4 5-7
Sample No: 18-1338-007

Date Collected: 03/16/18
Time Collected: 10:00
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Mercury **Method: 7471B**				
Analysis Date: 03/22/18				
Mercury	< 0.05	0.05	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-4 20-22
Sample No: 18-1338-008

Date Collected: 03/16/18
Time Collected: 10:05
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	88.90		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	8.08		Units	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-5 3-5
Sample No: 18-1338-009

Date Collected: 03/16/18
Time Collected: 10:45
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	84.93		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/21/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-5 12-15
Sample No: 18-1338-010

Date Collected: 03/16/18
Time Collected: 10:50
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	89.49		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/21/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/21/18		Preparation Date: 03/21/18		
Arsenic	14.7	1.0	mg/kg	
Barium	22.4	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	9.1	0.5	mg/kg	
Lead	13.9	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	0.6	0.2	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-5 12-15
Sample No: 18-1338-010

Date Collected: 03/16/18
Time Collected: 10:50
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Mercury **Method: 7471B**				
Analysis Date: 03/22/18				
Mercury	< 0.05	0.05	mg/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	8.39		Units	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-6 5-7
Sample No: 18-1338-011

Date Collected: 03/16/18
Time Collected: 11:05
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	75.00		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 03/21/18		Preparation Date: 03/20/18		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-6 5-7
Sample No: 18-1338-011

Date Collected: 03/16/18
Time Collected: 11:05
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 03/21/18		**Preparation Method 3540C** Preparation Date: 03/20/18		
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 90	90	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-6 5-7
Sample No: 18-1338-011

Date Collected: 03/16/18
Time Collected: 11:05
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 03/21/18		**Preparation Method 3540C** Preparation Date: 03/20/18		
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004** Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	6.75		Units	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-6 10-12
Sample No: 18-1338-012

Date Collected: 03/16/18
Time Collected: 11:10
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	84.44		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/21/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/21/18		Preparation Date: 03/21/18		
Arsenic	9.8	1.0	mg/kg	
Barium	46.5	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	17.7	0.5	mg/kg	
Lead	12.9	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	0.6	0.2	mg/kg	

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Analytical Report

Client:	HUFF & HUFF INC.	**Date Collected:**	03/16/18
Project ID:	81.0220430.00 87th and Woodward	**Time Collected:**	11:10
Sample ID:	B-6 10-12	**Date Received:**	03/19/18
Sample No:	18-1338-012	**Date Reported:**	03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Mercury **Method: 7471B**				
Analysis Date: 03/22/18				
Mercury	< 0.05	0.05	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-7 3-5
Sample No: 18-1338-013

Date Collected: 03/16/18
Time Collected: 11:30
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	86.00		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/21/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-7 7-10
Sample No: 18-1338-014

Date Collected: 03/16/18
Time Collected: 11:35
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	85.32		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/21/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	8.49		Units	

CHAIN OF CUSTODY RECORD

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com • www.firstenv.com
IEPA Certification #100292

Company Name: Huff + Huff
Street Address: 915 Harger Road
City: Oak Brook State: IL Zip: 60523
Phone: 224-423-3582 e-mail: adam.huff@gza.com
Send Report To: Adam Huff
Sampled By: Adam Huff

Project I.D.: 81.0220430.00 8th and Woodward

P.O. #:

Matrix Codes: S = Soil W = Water O = Other

Date/Time Taken	Sample Description	Matrix	BTEX/MTBE	DNAs	SVOCs	Total Recoverable Metals	pH				Hold – Do Not Analyze	Comments	Lab I.D.
3/16/18 900	B1 7-10	S	X	X		X							18-1338-001
905	B1 17-20	S	X	X		X							002
940	B2 3-5	S	X	X			X						003
945	B2 20-22	S	X	X		X							004
920	B3 10-12	S	X	X									005
925	B3 17-20	S	X	X		X	X						006
1000	B4 5-7	S	X	X		X							007
1005	B4 20-22	S	X	X			X						008
1045	B5 3-5	S	X	X									009
1050	B5 12-15	S	X	X		X	X						010
1105	B6 5-7	S	X		X		X						011
1110	B6 10-12	S	X	X		X							012

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes__ No.__ _____ºC
Received within 6 hrs. of collection:_____
Ice Present: Yes__ No__

Sample Refrigerated: Yes X No__
Refrigerator Temperature: 4 ºC
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____ºC

Program: ☐ TACO/SRP ☐ CCDD ☐ NPDES ☐ LUST ☐ SDWA

Notes and Special Instructions:

Relinquished By: [signature] Date/Time 3/19/18 955 Received By: [signature] Date/Time 3/19/18 9:55

Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

Rev. 5/17

CHAIN OF CUSTODY RECORD

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com • www.firstenv.com
IEPA Certification #100292

Company Name: Huff + Huff
Street Address: 915 Harger Road
City: Oak Brook State: IL Zip: 60523
Phone: 224-423-3500 e-mail: adam.kittler@szn.com
Send Report To: Adam Kittler
Sampled By: Adam Kittler

Project I.D.: 81.0220430.00 8TH and Heartland

P.O. #:

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	BTEX/MTBE	PNAs	PH						Hold – Do Not Analyze	Comments	Lab I.D.
3/16/18 1130	B7 3-5	S	X	X									18-1378-013
3/16/18 1135	B7 7-10	S	X	X	X								014

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6°C Yes__ No.__ _____°C
Received within 6 hrs. of collection:_____
Ice Present: Yes__ No__

Sample Refrigerated: Yes X No__
Refrigerator Temperature: 4 °C
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____°C

Program: ☐ TACO/SRP ☐ CCDD ☐ NPDES ☐ LUST ☐ SDWA

Notes and Special Instructions:

Relinquished By: Adam Kittler Date/Time 3/19/18 9:55 Received By: Ryan Eisenmeier Date/Time 3/19/18 9:55

Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

First Environmental Laboratories, Inc.
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March 29, 2018

Mr. Adam Kittler
HUFF & HUFF INC.
915 Harger Road
Suite 330
Oak Brook, IL 60523

Project ID: 81.0220430.00 87th and Woodward
First Environmental File ID: 18-1555
Date Received: March 19, 2018

Dear Mr. Adam Kittler:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 004324: effective 02/27/2018 through 02/28/2019.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Bill Mottashed
Project Manager

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Case Narrative

HUFF & HUFF INC.

Lab File ID: **18-1555**

Project ID: **81.0220430.00 87th and Woodward**

Date Received: **March 19, 2018**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The results in this report apply to the samples in the following table:

Laboratory Sample ID	Client Sample Identifier	Date/Time Collected
18-1555-001	B-4 20-22	3/16/2018 10:05

Sample Batch Comments:

Sample acceptance criteria were met.

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Case Narrative

HUFF & HUFF INC.

Lab File ID: **18-1555**

Project ID: **81.0220430.00 87th and Woodward**

Date Received: **March 19, 2018**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The following is a definition of flags that may be used in this report:

Flag	Description	Flag	Description
A	Method holding time is 15 minutes from collection. Lab analysis was performed as soon as possible.		
B	Analyte was found in the method blank.	L	LCS recovery outside control limits.
<	Analyte not detected at or above the reporting limit.	M	MS recovery outside control limits; LCS acceptable.
C	Sample received in an improper container for this test.	P	Chemical preservation pH adjusted in lab.
D	Surrogates diluted out; recovery not available.	Q	Result was determined by a GC/MS database search.
E	Estimated result; concentration exceeds calibration range.	S	Analysis was subcontracted to another laboratory.
G	Surrogate recovery outside control limits.	T	Result is less than three times the MDL value.
H	Analysis or extraction holding time exceeded.	W	Reporting limit elevated due to sample matrix.
J	Estimated result; concentration is less than routine RL but greater than MDL.	N	Analyte is not part of our NELAC accreditation or accreditation may not be available for this parameter.
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-4 20-22
Sample No: 18-1555-001

Date Collected: 03/16/18
Time Collected: 10:05
Date Received: 03/19/18
Date Reported: 03/29/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, total **Method: 2540B**				
Analysis Date: 03/20/18				
Total Solids	88.90		%	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/29/18		Preparation Date: 03/29/18		
Arsenic	6.3	1.0	mg/kg	

CHAIN OF CUSTODY RECORD

Page 1 of 2 pgs

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com • www.firstenv.com
IEPA Certification #100292

Company Name: Huff + Huff
Street Address: 915 Harger Road
City: Oak Brook State: IL Zip: 60523
Phone: 224-423-3502 e-mail: adam.huff@gza.com
Send Report To: Adam Huff
Sampled By: Adam Huff

Project I.D.: 81.0220430.00 874 and Woodward
P.O. #:

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	BTEX/MTBE	PNAs	SVOCs	TOM Resource metals	pH	Arsenic		Hold – Do Not Analyze	Comments	Lab I.D.
3/16/18 900	B1 7-10	S	X	X			X					18-1338-001
905	B1 17-20	S	X	X		X						002
940	B2 3-5	S	X	X			X					003
945	B2 20-22	S	X	X		X						004
920	B3 10-12	S	X	X								005
925	B3 17-20	S	X	X		X	X					006
1000	B4 5-7	S	X	X		X						007
1005	B4 20-22	S	X	X			X		X		18-1555-001	008
1045	B5 3-5	S	X	X								009
1050	B5 12-15	S	X	X		X	X					010
1105	B6 5-7	S	X		X		X					011
1110	B6 10-12	S	X	X		X						012

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6°C Yes__ No.__ _____°C
Received within 6 hrs. of collection:_____
Ice Present: Yes__ No__

Sample Refrigerated: Yes X No__
Refrigerator Temperature: 4 °C
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____°C

Program: ☐ TACO/SRP ☐ CCDD ☐ NPDES ☐ LUST ☐ SDWA

Notes and Special Instructions:

Relinquished By: _____ Date/Time 3/19/18 955 Received By: _____ Date/Time 3/19/18 955
Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

Rev. 5/17

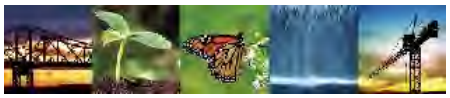
APPENDIX E

LPC-663 CCDD DOCUMENTATION

Huff & Huff incorporated
A Subsidiary of GZA

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

915 Harger Road
Suite 330
Oak Brook, IL 60523
T: 630.684.9100
F: 630.684.9120
www.huffnhuff.com
www.gza.com



To: Mr. Lee Rivera, P.E. – Project Engineer – DuPage County Division of Transportation

From: Jeremy J. Reynolds, P.G.

Date: April 23, 2018

Re: CCDD LPC-663 87th Street/Boughton Road & Woodward Avenue Improvements Project

---

Huff & Huff, Inc. provided services in support of a Form LPC-663 for the 87th Street and Woodward Avenue Improvements Project. Two (2) potentially impacted properties (PIPs) were determined to exist near the Project Area, which consists of the intersection of 87th Street and Woodward Avenue. Therefore, the LPC-663 form was utilized, and on March 16, 2018, seven (7) soil borings were advanced within the Project Area in proximity to the PIPs. Soils were screened in the field using a photoionization detector (PID).

Fourteen (14) representative soil samples were submitted for the analysis of one or more of the following contaminants of concern associated with the identified PIPs: benzene, toluene, ethylbenzene, and total xylenes, (BTEX, a subset of the VOC list); semi-volatile organic compounds (SVOCs); polynuclear aromatic hydrocarbons (PNAs); total RCRA Metals; and pH.

Analytical results for BTEX, SVOCs, and PNAs were below the detection limits, achieving their respective Maximum Allowable Concentration (MAC) values for CCDD disposal. Low concentrations of several total RCRA metals were detected in samples below the CCDD MACs. The soil pH results ranged from 6.75 to 8.60, within the required range for CCDD disposal (6.25 to 9.0).

Soils at borings B-3 and B-5 had arsenic detections that exceeded MAC values, the soils are precluded from acceptance at CCDD facilities. The soil generated from these depth intervals are **NOT** certified for CCDD disposal but may be reused onsite or disposed of at a Subtitle D Sanitary Landfill. CCDD exclusion Zones along 87TH Street and Woodward Avenue, as depicted on Figure 4-1, included in **Attachment A**, have been established for soils generated from the areas near borings B-3 and B-5.

Additionally, it is recommended that environmental oversight with PID field screening be conducted during excavation near B-6 to segregate elevated PID material from being transported to a CCDD facility and to avoid rejected loads. Currently, the limits of this recommended environmental oversight area along Boughton Road extend 70 feet east of B-6 and 130 feet west of B-6 near the eastern end of the project corridor, as depicted on Figure 4-2, included in **Attachment A**.

Should conditions within the Project Area change, such as unusual staining, odors, or if loads become rejected, additional analytical assessment may be required for final disposition of spoils from this Project Area. If you have any questions regarding this matter, please contact us at 630-684-9100.

Jeremy J. Reynolds, P.G.
Associate Principal

Illinois Environmental Protection Agency

Bureau of Land • 1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276

Uncontaminated Soil Certification by Licensed Professional Engineer or Licensed Professional Geologist for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: 87th St. and Woodward Ave. Improvements Project Office Phone Number, if available: 630-407-6900

Physical Site Location (address, incldluding number and street):

The intersection of 87th Street and Woodward Avenue extending approximatly 850' east along 87th Street/Boughton Road

City: Woodridge State: IL Zip Code: 60517

County: DuPage Township: Downers Grove

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 41.727796 (Decimal Degrees) Longitude: -88.026982 (-Decimal Degrees)

Identify how the lat/long data were determined:

☐ GPS ☐ Map Interpolation ☐ Photo Interpolation ☒ Survey ☐ Other

ISGS Public Land Survey System. Lat/long above refer to the approximate center of the Project Area

IEPA Site Number(s), if assigned: BOL: _____ BOW: _____ BOA: _____

II. Owner/Operator Information for Source Site

Site Owner		Site Operator	
Name:	DuPage County Division of Transportation	Name:	DuPage County Division of Transportation
Street Address:	421 N County Farm Road	Street Address:	421 N County Farm Road
PO Box:		PO Box:	
City:	Wheaton State: IL	City:	Wheaton State: IL
Zip Code:	60187 Phone: 630-407-6900	Zip Code:	60187 Phone: 630-407-6900
Contact:	Lee Rivera, P.E. - Project Engineer	Contact:	Lee Rivera, P.E. - Project Engineer
Email, if available:	Lee.Rivera@dupageco.org	Email, if available:	Lee.Rivera@dupageco.org

Project Name: 87th St. and Woodward Ave. Improvements Proje[redacted]

Latitude: 41.727796 Longitude: -88.026982

Uncontaminated Site Certification

III. Basis for Certification and Attachments

For each item listed below, reference the attachments to this form that provide the required information.

a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a)]:

A database review was completed in the 2013 H&H PESA and the 2017 V3 PESA for the Project Area, which consists of residential and commercial properties. Two (2) potentially impacted properties (PIPs) were identified in connection with the Project Area through the database review and site visit. Refer to the attachments for additional information.

b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0, including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201(g), 1100.205(a), 1100.610]:

Seven (7) soil borings were advanced within the Project Area on March 16, 2018. Samples were analyzed for one or more of the following: BTEX, SVOCs, PNAs, Total RCRA Metals, and pH. Refer to the attachments for additional information.

IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

I, Jeremy J. Reynolds, P.G. (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Company Name: Huff & Huff, Inc.

Street Address: 915 Harger Rd Suite 330

City: Oak Brook State: IL Zip Code: 60523

Phone: (630) 684-9100

Jeremy J. Reynolds, P.G.
Printed Name:

Licensed Professional Engineer or
Licensed Professional Geologist Signature:

4/23/18
Date:

LICENSED PROFESSIONAL GEOLOGIST
JEREMY J. REYNOLDS
196-001170
ILLINOIS
3/19

P.E. or L.P.G. Seal:

Uncontaminated Soil Certification
by Licensed Professional Engineer or Licensed Professional Geologist for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation.
LPC-663
Owner: DuPage County, IL
Project Name: 87th Street/Boughton Road & Woodward Avenue Improvements Project

III. Basis for Certification and Attachments

Explain the basis upon which you are certifying that the soil from this site is uncontaminated soil.

This form pertains to soils excavated from the 87th Street/Boughton Road & Woodward Avenue Improvements Project. The Project Area consists of the 87th Street/Boughton Road and Woodward Avenue intersection, approximately 4,000 linear feet total, in Woodridge, IL. Present-day land use consists of commercial and residential properties. The maximum excavation depth for the proposed improvements is approximately 25 feet deep. A map depicting the Project Area location, identified sites, and sample locations is included in **Attachment A**, and a photo log of site reconnaissance is included in **Attachment B**.

The following information presents a summary of the records review, the identified PIPs, and other nearby sites. Database excerpts are included in **Attachment C**. The analyses conducted and results are summarized at the end of this narrative. The laboratory analytical report is included in **Attachment D**.

Historic Aerials

Per the 2013 PESA, A review of historic aerial photographs with coverage of the Project Area for the years 1939, 1946, 1952, 1962, 1972, 1983, 1993, 2002, 2008, and 2012 indicates the following:

1939 In 1939, 87th Street/Boughton Road can be seen on the aerial photo. Woodward Avenue cannot be seen on this aerial photo. According to the historic topographic maps, Woodward Avenue did not extend this far south at this time. The land use surrounding the Project Corridor is completely rural/agricultural. Two rural homes are visible on the south side and one on the north side of 87th Street/Boughton Road, within the project limits

1946 There were no noticeable changes to the Project Corridor between 1939 and 1946

1952 There were no noticeable changes to the Project Corridor between 1946 and 1952.

1962 In the 1962 aerial photo there is one new residence on the north side of 87th Street/Boughton Road at the east end of the project limits. There were no other noticeable changes along the Project Corridor between 1952 and 1962.

1972 There were no noticeable changes to the Project Corridor between 1962 and 1972.

1983 The 1983 aerial photo is poor quality. Details of the Project Corridor and surrounding area are difficult to see, however there does appear to be a new residential development northeast of the Project Corridor.

1993 In 1993, Woodward Avenue can now be seen intersecting 87th Street/Boughton Road. The rural homes seen on previous aerial photos are gone and much of the Project Corridor is vacant land. There are several new residential areas east of the Project Corridor.

2002 In 2002, three commercial properties can be seen on the south side of 87th Street/Boughton Road. Two of those commercial properties are located at the SE and SW corners of the intersection of 87th Street/Boughton Road and Woodward Avenue (current locations of the BP gasoline station and Shell gasoline station). The gas station pump islands are approximately 70 feet south of 87th Street/Boughton Road. The Village of Woodridge water tower and several new residential homes can be seen south of the Project Corridor.

2008 The 2008 aerial photo shows an increase in commercial development at the NE corner of the intersection of 87th Street/Boughton Road and Woodward Avenue (current location of the CVS Pharmacy). The NW corner of the intersection is still vacant land. There is also a new commercial building on the south side of 87th Street/Boughton Road, west of Woodward Avenue (current location of a restaurant, dentist office, and liquor store).

2012 The 2012 aerial photo shows a new commercial building near the NW corner of the intersection of 87th Street/Boughton Road and Woodward Avenue. There were no other noticeable changes to the Project Corridor between 2008 and 2012.

Records Search

Per the 2013 PESA, the following site descriptions and table summarizes the identified PIPs that are adjacent to the Project Area.

Map ID	Name	Address	Database	Distance & Direction	PIP?
1	Shell/Circle K	2010 Boughton Road	N/A	Adjacent, south and west	Yes
2	BP Amoco	1935 Boughton Road	RCRA, UST	Adjacent, south and east	Yes

Map ID 1 – 2010 Boughton Road

The Shell/Circle K fueling station is located at 2010 Boughton Road in Woodridge, Illinois, on the Project Corridor (SW corner of intersection). The Shell/Circle K site was not identified in the Environmental Records Search (ERS) database search. During the site inspection, it was observed that the USTs were located on the northeast corner of the site, approximately 70 feet south of 87th Street/Boughton Road and approximately 50 feet west of Woodward Avenue. Five groundwater monitoring wells were observed on site; one north of the USTs, one south of the USTs, one on the north side of the site, one on the south side of the site, and one on the west side of the site.

Research of the Illinois Office of the State Fire Marshal (OSFM) UST database indicated the site currently has two 15,000-gallon gasoline USTs in use and there are no IEMA incident numbers listed for this site. The IEPA Bureau of Land (BOL) has assigned the site BOL ID# 0431255057. Additional information was not identified for this site.

A FOIA request was submitted to the IEPA for the address of 2010 Boughton Road. IEPA responded to the FOIA request by stating that they had no information in their records pertaining to this site. This site is considered a PIP based on the adjacent location to the Project Corridor and the presence of the USTs and monitoring wells on site. Based on the available information and its proximity to the Project Area, **this site is considered a PIP.**

Map ID 2 – 1935 Boughton Road

The BP Amoco fueling station is located at 1935 Boughton Road in Woodridge, Illinois, on the Project Corridor (SE corner of intersection). The site is listed in the RCRA database as being a small quantity generator (SQG) of hazardous waste; indicating the site generates more than 100 kilograms but less than 1,000 kilograms, of hazardous waste per month. The site is listed as having RCRA ID# ILR000131201. There is no documentation of RCRA violations and the hazardous waste on site is described as benzene.

This site is also listed in the UST database as currently having one 15,000-gallon gasoline UST and two 10,000-gallon gasoline USTs in use. There are no Illinois Emergency Management Agency (IEMA) incident numbers associated with these USTs.

During the site inspection, it was observed that the USTs were located on the east side of the site, approximately 80 feet south of 87th Street/Boughton Road. No staining or groundwater monitoring wells were observed on site. It was also observed that waste containers were located behind the building and housekeeping was good. The property was paved and the pavement was in good condition. Based on the available information and its proximity to the Project Area, **this site is considered a PIP.**

Analytical Summary

In order to assess impacts to Project Area soils from the identified PIPs, and to determine CCDD suitability of soils for pH, seven soil borings were advanced within the Project Area to depths of 25 feet bgs. Soils were screened continuously using a PID meter and representative soil samples were collected. The highest PID reading was encountered in sample B-6 (5-7 feet) (7.8 ppm). The PID readings are summarized in the following table.

Soil Boring	Depth, ft	PID Reading, PPM	Soil Boring	Depth, ft	PID Reading, PPM	Soil Boring	Depth, ft	PID Reading, PPM
	0-1'	0.0		0-1'	0.0		0-1'	0.0
	1-3'	0.0		1-3'	0.0		1-3'	0.0
	3-5'	0.0		3-5'	0.0		**3-5'**	**0.2**
	5-7'	**0.0**		5-7'	0.0		5-7'	0.0
	7-10'	0.0		7-10'	0.0		7-10'	0.0
B-1	10-12'	0.0	B-3	**10-12'**	**0.0**	B-5	10-12'	0.0
	12-15'	0.0		12-15'	0.0		**12-15'**	**0.0**
	15-17'	0.0		15-17'	0.0		15-17'	0.0
	17-20'	**0.0**		**17-20'**	**0.0**		17-20'	0.0
	20-22'	0.0		20-22'	0.0		20-22'	0.0
	22-25'	0.0		22-25'	0.0		22-25'	0.0
	0-1'	0.0		0-1'	0.0		0-1'	0.0
	1-3'	0.0		1-3'	0.0		1-3'	0.1
	3-5'	**0.3**		3-5'	0.0	B-6	3-5'	0.3
	5-7'	0.1		**5-7'**	**0.0**		**5-7'**	**7.8**
	7-10'	0.0		7-10'	0.0		7-10'	0.9
B-2	10-12'	0.0	B-4	10-12'	0.0		**10-12'**	**0.1**
	12-15'	0.0		12-15'	0.0		0-1'	0.0
	15-17'	0.0		15-17'	0.0		1-3'	0.0
	17-20'	0.0		17-20'	0.0		**3-5'**	**0.2**
	20-22'	**0.0**		**20-22'**	**0.0**	B-7	5-7'	0.0
	22-25'	0.0		22-25'	0.0		**7-10'**	**0.0**
Bold indicates sample submitted for analytical testing or placed on hold							10-12'	0.0

BTEX (a subset of VOCs)

Fourteen soil samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), a subset of VOCs. Table 3-2 presents the soil VOC (and subset BTEX) results compared to the selected Tier 1 ROs. Table 3-3 presents the soil VOC (and subset BTEX) results compared to the MACs for assessment of disposal options.

Results are below detection limits for the samples analyzed, achieving the Tier 1 ROs and the MACs.

SVOCs and PNAs (a subset of SVOCs)

Fourteen soil samples were analyzed for semi-volatile organic compounds (SVOCs) or polynuclear aromatic hydrocarbon compounds (PNAs), a subset of SVOCs. Table 3-4 presents the soil sample PNA analytical results compared to each of the Tier 1 ROs. Table 3-5 presents the soil sample PNA analytical results compared to the MACs. Table 3-6 presents the

soil sample SVOC analytical results compared to each of the Tier 1 ROs. Table 3-7 presents the soil sample SVOC analytical results compared to the MACs.

Results are below detection limits for the samples analyzed, achieving the Tier 1 ROs and the MACs.

Total RCRA Metals

Seven soil samples were analyzed for total RCRA metals. Table 3-8 presents the soil sample total RCRA metal analytical results compared to each of the Tier 1 ROs. Table 3-9 presents the soil sample total RCRA metal analytical results compared to the MACs. Detections of Chromium and Silver were identified in several of the samples that exceeded the background values within a metropolitan statistical area, however, these detections achieved their respective MAC values for CCDD disposal.

Samples B-3 (17-20) and B-5 (12-15) had detections of arsenic at 16.1mg/kg and 14.7 mg/kg respectively, exceeding the MAC value of 13 mg/kg. This exceedance will preclude these areas from being eligible for CCDD disposal.

The following seven samples had detectable concentrations of one or more total RCRA metals: B-1 (7-10), B-2 (20-22), B-3 (17-20), B-4 (5-7), B-4 (20-22), B-5 (12-15), and B-6 (10-12). Several RCRA metals were detected at low concentrations in each of these samples however these detections achieved their respective MACs for CCDD disposal.

Soil pH

Seven samples were analyzed for soil pH using laboratory analysis, as summarized in the analytical report found in **Attachment D**. The soil pH results range from 6.75 to 8.60, achieving the soil pH required range for CCDD disposal (6.25 to 9.0).

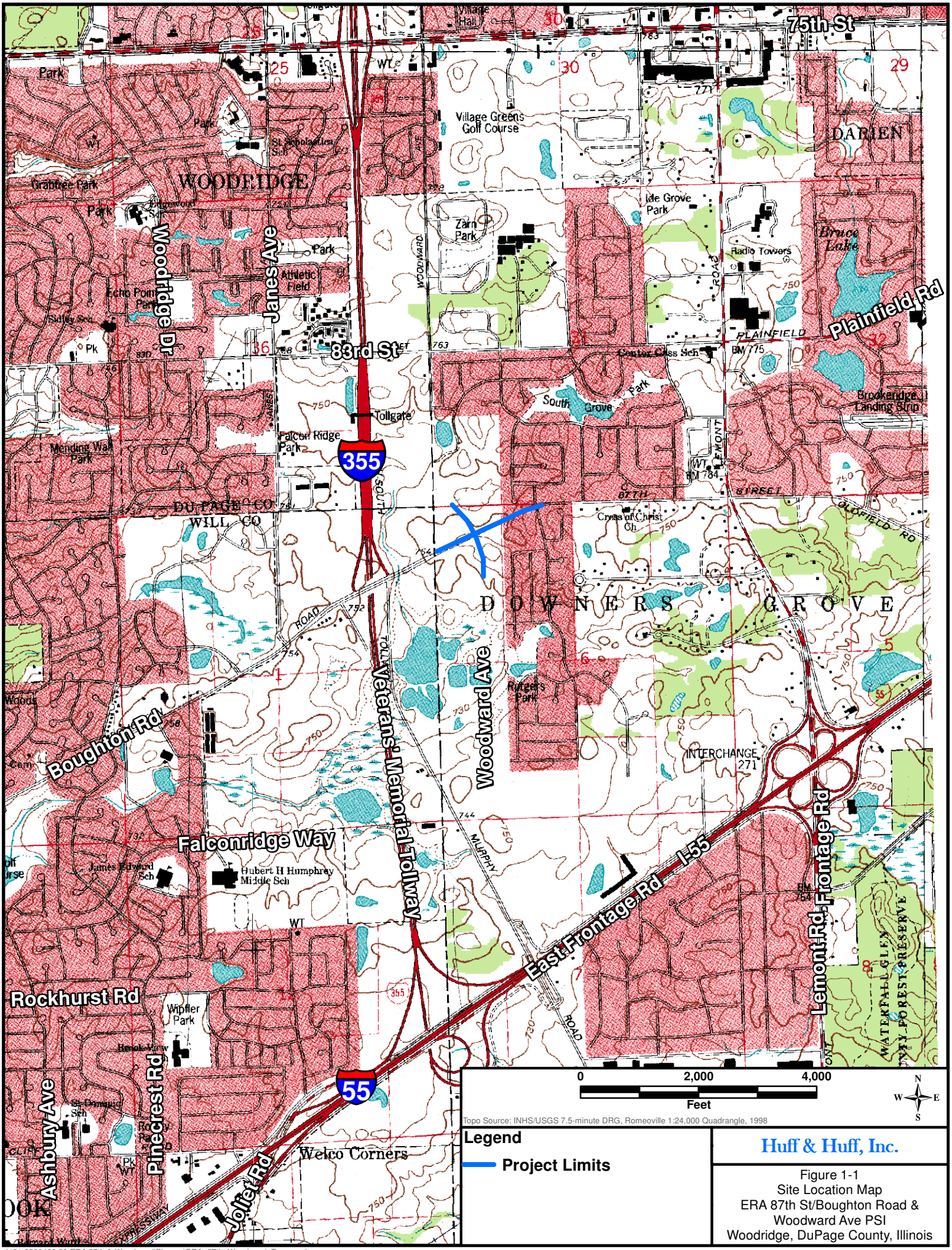
CCDD Determination

Based on the due diligence and analytical testing conducted, soils generated from the 87th and Woodward Avenue Improvements Project meet the requirements for CCDD disposal except for two areas currently excluded from CCDD disposal based on analytical results from borings B-3 and B-5

Soils at borings B-3 and B-5 had arsenic detections that exceeded MAC values, the soils are precluded from acceptance at CCDD facilities. The soil generated from these depth intervals are **NOT** certified for CCDD disposal but may be reused onsite or disposed of at a Subtitle D Sanitary Landfill. CCDD exclusion Zones along 87TH Street and Woodward Avenue, as depicted on Figure 4-1, have been established for soils generated from the areas near borings B-3 and B-5. Based on PID readings noted during PSI activities, it is recommended that environmental oversight with PID field screening be performed during excavation near B-6 to segregate elevated PID material from being transported to a CCDD facility and to avoid rejected loads. Currently, the limits of this recommended environmental oversight area along Boughton Road extend 70 feet east of B-6 and 130 feet west of B-6 near the eastern end of the Project Corridor, as depicted on Figure 4-2 included in **Attachment A**.

Should conditions within the Project Area change, such as unusual staining, odors, or if loads become rejected, additional analytical assessment may be required for final disposition of spoils from this Project Area. If you have any questions regarding this matter, please contact us at 630-684-9100.

ATTACHMENT A



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Site ID	Address	Status
1	2010 Boughton Road	PIP
2	1935 Boughton Road	PIP

Legend

- Project Limits
- PIP

Huff & Huff, Inc.

Figure 1-3
Potentially Impacted Properties Map
ERA 87th St/Boughton Road &
Woodward Ave PSI
Woodridge, DuPage County, Illinois

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Huff & Huff, Inc.

Figure 2-1
Soil Boring Location Map
87th & Woodward PSI
Woodridge, DuPage County, Illinois

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Huff & Huff, Inc.

Figure 4-1
CCDD Exclusion Zone/
Recommended Oversite Map
87th & Woodward PSI
Woodridge, DuPage County, Illinois

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ATTACHMENT B

			
Photograph 1:	Advancement of B1, facing east	***Photograph 2:***	Advancement of B2, facing east
			
Photograph 3:	Advancement of B3, facing north	***Photograph 4:***	Advancement of B4, facing east

Huff & Huff incorporated

DuPage County – Department of Transportation
87th Street and Woodward Avenue
LPC-663 Photo Log

Woodridge, DuPage County, Illinois

			
Photograph 5:	Advancement of B5, facing east	***Photograph 6:***	Advancement of B5, facing west
			
Photograph 7:	Advancement of B6, facing east	***Photograph 8:***	Advancement of B7, facing northeast

DuPage County – Department of Transportation
87th Street and Woodward Avenue
LPC-663 Photo Log

Woodridge, DuPage County, Illinois

ATTACHMENT C

ATTACHMENT D

TABLE 3-3

BTEX SOIL RESULTS COMPARED TO THE MACs FOR CCDD DISPOSAL

Soil Boring	*Maximum Allowable*	**B-1**	**B-1**	**B-2**	**B-2**	**B-3**	**B-3**	**B-4**	**B-4**	**B-5**	**B-5**	**B-6**	**B-6**	**B-7**	**B-7**
Depth, ft	*Concentration* [a/]	7-10	17-20	3-5	20-22	10-12	17-20	5-7	20-22	3-5	12-15	5-7	10-12	3-5	7-10
Constituent	----------	----------	----------	----------	----------	----------	*mg/kg*	----------	----------	----------	----------	----------	----------	----------	----------
Benzene	*0.03*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ethylbenzene	*13*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Toluene	*12*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Xylene, Total	*5.6*	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

[a/] Refers to Maximum Allowable Concentration (MAC) of Chemical Constituents in Uncontaminated Soil Used As Fill Material At Regulated Fill Operations (35 IAC 1100.Subpart F)

TABLE 3-5

PNA SOIL RESULTS COMPARED TO THE MACs FOR CCDD DISPOSAL

Soil Boring	*Maximum Allowable*	**B-1**	**B-1**	**B-2**	**B-2**	**B-3**	**B-3**	**B-4**	**B-4**	**B-5**	**B-5**	**B-6**	**B-7**	**B-7**
Depth, ft	*Concentration* [a/]	7-10	17-20	3-5	20-22	10-12	17-20	5-7	20-22	3-5	12-15	10-12	3-5	7-10
Constituent	---mg/kg---													
Acenaphthene	*570*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Acenaphthylene	*85*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Anthracene	*12,000*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)anthracene	*1.8* [b/]	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087
Benzo(a)pyrene	*2.1* [b/]	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Benzo(b)fluoranthene	*2.1* [b/]	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
Benzo(k)fluoranthene	*9*	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
Benzo(ghi)perylene	*2,300*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chrysene	*88*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dibenzo(a,h)anthracene	*0.42* [b/]	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Fluoranthene	*3,100*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	*560*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-cd)pyrene	*1.6* [b/]	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029	<0.029
Naphthalene	*1.8*	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Phenanthrene	*210*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pyrene	*2,300*	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

[a/] Refers to Maximum Allowable Concentration (MAC) of Chemical Constituents in Uncontaminated Soil Used As Fill Material At Regulated Fill Operations (35 IAC 1100.Subpart F)

b/ Refers to MAC value within a populated area in a MSA excluding Chicago

TABLE 3-7

SVOC SOIL RESULTS COMPARED TO THE MACs FOR CCDD DISPOSAL

Soil Boring	*Maximum Allowable*	**B-1**
Depth, ft	*Concentration* [a/]	7-10
Constituent	----------*mg/kg*----------	
Acenaphthene	*570*	<0.33
Acenaphthylene	*85*	<0.33
Anthracene	*12000*	<0.33
Benzo(a)anthracene	*1.8* [b/]	<0.33
Benzo(a)pyrene	*2.1* [b/]	<0.09
Benzo(b)fluoranthene	*2.1* [b/]	<0.33
Benzo(k)fluoranthene	*9*	<0.33
Benzo(ghi)perylene	*2300*	<0.33
Benzoic acid	*400*	<0.33
bis(2-Chloroethyl)ether	*0.66*	<0.33
bis(2-Ethylhexyl)phthalate	*46*	<0.33
Butyl benzyl phthalate	*930*	<0.33
Carbazole	*0.6*	<0.33
4-Chloroaniline	*0.7*	<0.33
2-Chlorophenol	*1.5*	<0.33
Chrysene	*88*	<0.33
Dibenzo(a,h)anthracene	*0.42* [b/]	<0.09
1,2-Dichlorobenzene	*17*	<0.33
1,4-Dichlorobenzene	*2*	<0.33
3,3'-Dichlorobenzidine	*1.3*	<0.66
2,4-Dichlorophenol	*0.48*	<0.33
Diethyl phthalate	*470*	<0.33
2,4-Dimethylphenol	*9*	<0.33
Di-n-butyl phthalate	*2300*	<0.33
2,4-Dinitrophenol	*3.3*	<1.6
2,4-Dinitrotoluene	*0.25*	<0.25
2,6-Dinitrotoluene	*0.26*	<0.26
Di-n-octylphthalate	*1600*	<0.33
Fluoranthene	*3100*	<0.33
Fluorene	*560*	<0.33
Hexachlorobenzene	*0.4*	<0.33
Hexachlorocyclopentadiene	*1.1*	<0.33
Hexachloroethane	*0.5*	<0.33
Indeno(1,2,3-cd)pyrene	1.6[b/]	<0.33
Isophorone	*8*	<0.33
2-Methylphenol	*15*	<0.33
Naphthalene	*2*	<0.33
Nitrobenzene	*0.26*	<0.26
n-Nitrosodi-n-propylamine	*0.0018*	<0.09
n-Nitrosodiphenylamine	*1*	<0.33
Pentachlorophenol	*0.02*	<0.33
Phenanthrene	*210*	<0.33
Phenol	*100*	<0.33
Pyrene	*2300*	<0.33
1,2,4-Trichlorobenzene	*5*	<0.33
2,4,5-Trichlorophenol	*26*	<0.33
2,4,6-Trichlorophenol	*0.66*	<0.33

[a/] Refers to Maximum Allowable Concentration (MAC) of Chemical Constituents in Uncontaminated Soil Used As Fill Material At Regulated Fill Operations (35 IAC 1100.Subpart F)

b/ Refers to MAC value within a populated area in a MSA excluding Chicago

TABLE 3-9
RCRA METALS SOIL RESULTS COMPARED TO THE MACs FOR CCDD DISPOSAL

Soil Boring	*Maximum Allowable*	**B-1**	**B-2**	**B-3**	**B-4**	**B-4**	**B-5**	**B-6**
Depth, ft	*Concentration* [a/]	17-20	20-22	17-20	5-7	20-22	12-15	10-12
Constituent	----------*mg/kg*----------							
Arsenic	*13*	9.4	8.6	**16.1**	9	6.3	**14.7**	9.8
Barium	1,500	22	31.1	24.5	27.1	--	22.4	46.5
Cadmium	5.2	<0.5	<0.5	<0.5	<0.5	--	<0.5	<0.5
Chromium	21	11.2	14.7	9.5	11.4	--	9.1	17.7
Lead	107	10.1	11.4	15.4	11.2	--	13.9	12.9
Mercury	*0.89*	<0.05	<0.05	<0.05	<0.05	--	<0.05	<0.05
Selenium	*1.3*	<1.0	<1.0	<1.0	<1.0	--	<1.0	<1.0
Silver	*4*	0.5	0.6	0.5	0.5	--	0.6	0.6

[a/] Refers to Maximum Allowable Concentration (MAC) of Chemical Constituents in Uncontaminated Soil Used As Fill Material At Regulated Fill Operations (35 IAC 1100.Subpart F)

b/ Refers to MAC value within a populated area in a MSA excluding Chicago

Bold denotes constituent above applicable Remedial Objective

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March 27, 2018

Mr. Adam Kittler
HUFF & HUFF INC.
915 Harger Road
Suite 330
Oak Brook, IL 60523

Project ID: 81.0220430.00 87th and Woodward
First Environmental File ID: 18-1338
Date Received: March 19, 2018

Dear Mr. Adam Kittler:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 004324: effective 02/27/2018 through 02/28/2019.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Bill Mottashed
Project Manager

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Case Narrative

HUFF & HUFF INC.

Lab File ID: **18-1338**

Project ID: **81.0220430.00 87th and Woodward**

Date Received: **March 19, 2018**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The results in this report apply to the samples in the following table:

Laboratory Sample ID	Client Sample Identifier	Date/Time Collected
18-1338-001	B-1 7-10	3/16/2018 9:00
18-1338-002	B-1 17-20	3/16/2018 9:05
18-1338-003	B-2 3-5	3/16/2018 8:40
18-1338-004	B-2 20-22	3/16/2018 8:45
18-1338-005	B-3 10-12	3/16/2018 9:20
18-1338-006	B-3 17-20	3/16/2018 9:25
18-1338-007	B-4 5-7	3/16/2018 10:00
18-1338-008	B-4 20-22	3/16/2018 10:05
18-1338-009	B-5 3-5	3/16/2018 10:45
18-1338-010	B-5 12-15	3/16/2018 10:50
18-1338-011	B-6 5-7	3/16/2018 11:05
18-1338-012	B-6 10-12	3/16/2018 11:10
18-1338-013	B-7 3-5	3/16/2018 11:30
18-1338-014	B-7 7-10	3/16/2018 11:35

Sample Batch Comments:

Sample acceptance criteria were met.

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Case Narrative

HUFF & HUFF INC.

Lab File ID: **18-1338**

Project ID: **81.0220430.00 87th and Woodward**

Date Received: **March 19, 2018**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The following is a definition of flags that may be used in this report:

Flag	Description	Flag	Description
A	Method holding time is 15 minutes from collection. Lab analysis was performed as soon as possible.		
B	Analyte was found in the method blank.	L	LCS recovery outside control limits.
<	Analyte not detected at or above the reporting limit.	M	MS recovery outside control limits; LCS acceptable.
C	Sample received in an improper container for this test.	P	Chemical preservation pH adjusted in lab.
D	Surrogates diluted out; recovery not available.	Q	Result was determined by a GC/MS database search.
E	Estimated result; concentration exceeds calibration range.	S	Analysis was subcontracted to another laboratory.
G	Surrogate recovery outside control limits.	T	Result is less than three times the MDL value.
H	Analysis or extraction holding time exceeded.	W	Reporting limit elevated due to sample matrix.
J	Estimated result; concentration is less than routine RL but greater than MDL.	N	Analyte is not part of our NELAC accreditation or accreditation may not be available for this parameter.
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-1 7-10
Sample No: 18-1338-001

Date Collected: 03/16/18
Time Collected: 9:00
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	87.43		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/22/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	8.13		Units	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-1 17-20
Sample No: 18-1338-002

Date Collected: 03/16/18
Time Collected: 9:05
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	86.68		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/22/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/21/18		Preparation Date: 03/21/18		
Arsenic	9.4	1.0	mg/kg	
Barium	22.0	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	11.2	0.5	mg/kg	
Lead	10.1	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	0.5	0.2	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-1 17-20
Sample No: 18-1338-002

Date Collected: 03/16/18
Time Collected: 9:05
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Mercury **Method: 7471B**				
Analysis Date: 03/22/18				
Mercury	< 0.05	0.05	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-2 3-5
Sample No: 18-1338-003

Date Collected: 03/16/18
Time Collected: 8:40
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	87.83		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/22/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	8.30		Units	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-2 20-22
Sample No: 18-1338-004

Date Collected: 03/16/18
Time Collected: 8:45
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	86.13		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/22/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/21/18		Preparation Date: 03/21/18		
Arsenic	8.6	1.0	mg/kg	
Barium	31.1	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	14.7	0.5	mg/kg	
Lead	11.4	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	0.6	0.2	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-2 20-22
Sample No: 18-1338-004

Date Collected: 03/16/18
Time Collected: 8:45
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Mercury **Method: 7471B**				
Analysis Date: 03/22/18				
Mercury	< 0.05	0.05	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-3 10-12
Sample No: 18-1338-005

Date Collected: 03/16/18
Time Collected: 9:20
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	83.36		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-3 17-20
Sample No: 18-1338-006

Date Collected: 03/16/18
Time Collected: 9:25
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	88.52		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/21/18		Preparation Date: 03/21/18		
Arsenic	16.1	1.0	mg/kg	
Barium	24.5	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	9.5	0.5	mg/kg	
Lead	15.4	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	0.5	0.2	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-3 17-20
Sample No: 18-1338-006

Date Collected: 03/16/18
Time Collected: 9:25
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Mercury **Method: 7471B**				
Analysis Date: 03/22/18				
Mercury	< 0.05	0.05	mg/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	8.60		Units	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-4 5-7
Sample No: 18-1338-007

Date Collected: 03/16/18
Time Collected: 10:00
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	85.62		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/21/18		Preparation Date: 03/21/18		
Arsenic	9.0	1.0	mg/kg	
Barium	27.1	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	11.4	0.5	mg/kg	
Lead	11.2	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	0.5	0.2	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-4 5-7
Sample No: 18-1338-007

Date Collected: 03/16/18
Time Collected: 10:00
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Mercury **Method: 7471B**				
Analysis Date: 03/22/18				
Mercury	< 0.05	0.05	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-4 20-22
Sample No: 18-1338-008

Date Collected: 03/16/18
Time Collected: 10:05
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	88.90		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/20/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	8.08		Units	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-5 3-5
Sample No: 18-1338-009

Date Collected: 03/16/18
Time Collected: 10:45
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	84.93		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/21/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-5 12-15
Sample No: 18-1338-010

Date Collected: 03/16/18
Time Collected: 10:50
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	89.49		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/21/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/21/18		Preparation Date: 03/21/18		
Arsenic	14.7	1.0	mg/kg	
Barium	22.4	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	9.1	0.5	mg/kg	
Lead	13.9	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	0.6	0.2	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-5 12-15
Sample No: 18-1338-010

Date Collected: 03/16/18
Time Collected: 10:50
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Mercury **Method: 7471B**				
Analysis Date: 03/22/18				
Mercury	< 0.05	0.05	mg/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	8.39		Units	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-6 5-7
Sample No: 18-1338-011
Date Collected: 03/16/18
Time Collected: 11:05
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	75.00		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 03/21/18		Preparation Date: 03/20/18		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-6 5-7
Sample No: 18-1338-011

Date Collected: 03/16/18
Time Collected: 11:05
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 03/21/18		**Preparation Method 3540C** Preparation Date: 03/20/18		
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 90	90	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-6 5-7
Sample No: 18-1338-011

Date Collected: 03/16/18
Time Collected: 11:05
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 03/21/18		**Preparation Method 3540C** Preparation Date: 03/20/18		
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004** Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	6.75		Units	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-6 10-12
Sample No: 18-1338-012

Date Collected: 03/16/18
Time Collected: 11:10
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	84.44		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/21/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/21/18		Preparation Date: 03/21/18		
Arsenic	9.8	1.0	mg/kg	
Barium	46.5	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	17.7	0.5	mg/kg	
Lead	12.9	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	0.6	0.2	mg/kg	

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Analytical Report

Client:	HUFF & HUFF INC.	**Date Collected:**	03/16/18
Project ID:	81.0220430.00 87th and Woodward	**Time Collected:**	11:10
Sample ID:	B-6 10-12	**Date Received:**	03/19/18
Sample No:	18-1338-012	**Date Reported:**	03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Mercury **Method: 7471B**				
Analysis Date: 03/22/18				
Mercury	< 0.05	0.05	mg/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-7 3-5
Sample No: 18-1338-013

Date Collected: 03/16/18
Time Collected: 11:30
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	86.00		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/21/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	

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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-7 7-10
Sample No: 18-1338-014

Date Collected: 03/16/18
Time Collected: 11:35
Date Received: 03/19/18
Date Reported: 03/27/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540B**				
Analysis Date: 03/20/18 14:38				
Total Solids	85.32		%	
BTEX Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 03/23/18				
Benzene	< 5.0	5.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Polynuclear Aromatic Hydrocarbons **Method: 8270C**		**Preparation Method 3546**		
Analysis Date: 03/22/18		Preparation Date: 03/21/18		
Acenaphthene	< 50	50	ug/kg	
Acenaphthylene	< 50	50	ug/kg	
Anthracene	< 50	50	ug/kg	
Benzo(a)anthracene	< 8.7	8.7	ug/kg	
Benzo(a)pyrene	< 15	15	ug/kg	
Benzo(b)fluoranthene	< 11	11	ug/kg	
Benzo(k)fluoranthene	< 11	11	ug/kg	
Benzo(ghi)perylene	< 50	50	ug/kg	
Chrysene	< 50	50	ug/kg	
Dibenzo(a,h)anthracene	< 20	20	ug/kg	
Fluoranthene	< 50	50	ug/kg	
Fluorene	< 50	50	ug/kg	
Indeno(1,2,3-cd)pyrene	< 29	29	ug/kg	
Naphthalene	< 25	25	ug/kg	
Phenanthrene	< 50	50	ug/kg	
Pyrene	< 50	50	ug/kg	
pH @ 25°C, 1:2 **Method: 9045D 2004**				
Analysis Date: 03/20/18 9:20				
pH @ 25°C, 1:2	8.49		Units	

CHAIN OF CUSTODY RECORD

First Environmental Laboratories, Inc.

First Environmental Laboratories
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Naperville, Illinois 60563
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E-mail: firstinfo@firstenv.com • www.firstenv.com
IEPA Certification #100292

Company Name: Huff + Huff
Street Address: 915 Harger Road
City: Oak Brook State: IL Zip: 60523
Phone: 224-423-3582 e-mail: adam.huff@gza.com
Send Report To: Adam Huff
Sampled By: Adam Huff

Project I.D.: 81.0220430.00 8th and Woodward

P.O. #:

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	BTEX/MTBE	DNAs	SVOCs	Total Resin metals	pH				Hold – Do Not Analyze	Comments	Lab I.D.
3/16/18 900	B1 7-10	S	X	X		X							18-1338-001
905	B1 17-20	S	X	X		X							002
840	B2 3-5	S	X	X			X						003
845	B2 20-22	S	X	X		X							004
920	B3 10-12	S	X	X									005
925	B3 17-20	S	X	X		X	X						006
1000	B4 5-7	S	X	X		X							007
1005	B4 20-22	S	X	X			X						008
1045	B5 3-5	S	X	X									009
1050	B5 12-15	S	X	X		X	X						010
1105	B6 5-7	S	X		X		X						011
1110	B6 10-12	S	X	X		X							012

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes__ No.__ _____ºC
Received within 6 hrs. of collection:_____
Ice Present: Yes__ No__

Sample Refrigerated: Yes X No__
Refrigerator Temperature: 4 ºC
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____ºC

Program: ☐ TACO/SRP ☐ CCDD ☐ NPDES ☐ LUST ☐ SDWA

Notes and Special Instructions:

Relinquished By: [signature] Date/Time 3/19/18 955 Received By: [signature] Date/Time 3/19/18 9:55

Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

Rev. 5/17

CHAIN OF CUSTODY RECORD

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com • www.firstenv.com
IEPA Certification #100292

Company Name: Huff + Huff
Street Address: 915 Harger Road
City: Oak Brook State: IL Zip: 60523
Phone: 224-423-3500 e-mail: adam.kittler@sza.com
Send Report To: Adam Kittler
Sampled By: Adam Kittler

Project I.D.: 81.0220430.00 STH and Westland
P.O. #:

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	BTEX/MTBE	PNAs	PH						Hold – Do Not Analyze	Comments	Lab I.D.
3/16/18 1130	B7 3-5	S	X	X									18-1378-017
3/16/18 1135	B7 7-10	S	X	X	X								014

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6°C Yes__ No.__ _____°C
Received within 6 hrs. of collection:_____
Ice Present: Yes__ No__

Sample Refrigerated: Yes X No__
Refrigerator Temperature: 4 °C
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____°C

Program: ☐ TACO/SRP ☐ CCDD ☐ NPDES ☐ LUST ☐ SDWA

Notes and Special Instructions:

Relinquished By: [signature] Date/Time 3/19/18 9:55 Received By: [signature] Date/Time 3/19/18 9:55
Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

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March 29, 2018

Mr. Adam Kittler
HUFF & HUFF INC.
915 Harger Road
Suite 330
Oak Brook, IL 60523

Project ID: 81.0220430.00 87th and Woodward
First Environmental File ID: 18-1555
Date Received: March 19, 2018

Dear Mr. Adam Kittler:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number 004324: effective 02/27/2018 through 02/28/2019.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Bill Mottashed
Project Manager

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Case Narrative

HUFF & HUFF INC.

Lab File ID: **18-1555**

Project ID: **81.0220430.00 87th and Woodward**

Date Received: **March 19, 2018**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The results in this report apply to the samples in the following table:

Laboratory Sample ID	Client Sample Identifier	Date/Time Collected
18-1555-001	B-4 20-22	3/16/2018 10:05

Sample Batch Comments:

Sample acceptance criteria were met.

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Case Narrative

HUFF & HUFF INC.

Lab File ID: **18-1555**

Project ID: **81.0220430.00 87th and Woodward**

Date Received: **March 19, 2018**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The following is a definition of flags that may be used in this report:

Flag	Description	Flag	Description
A	Method holding time is 15 minutes from collection. Lab analysis was performed as soon as possible.		
B	Analyte was found in the method blank.	L	LCS recovery outside control limits.
<	Analyte not detected at or above the reporting limit.	M	MS recovery outside control limits; LCS acceptable.
C	Sample received in an improper container for this test.	P	Chemical preservation pH adjusted in lab.
D	Surrogates diluted out; recovery not available.	Q	Result was determined by a GC/MS database search.
E	Estimated result; concentration exceeds calibration range.	S	Analysis was subcontracted to another laboratory.
G	Surrogate recovery outside control limits.	T	Result is less than three times the MDL value.
H	Analysis or extraction holding time exceeded.	W	Reporting limit elevated due to sample matrix.
J	Estimated result; concentration is less than routine RL but greater than MDL.	N	Analyte is not part of our NELAC accreditation or accreditation may not be available for this parameter.
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.

First Environmental Laboratories, Inc.
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Analytical Report

Client: HUFF & HUFF INC.
Project ID: 81.0220430.00 87th and Woodward
Sample ID: B-4 20-22
Sample No: 18-1555-001

Date Collected: 03/16/18
Time Collected: 10:05
Date Received: 03/19/18
Date Reported: 03/29/18

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, total **Method: 2540B**				
Analysis Date: 03/20/18				
Total Solids	88.90		%	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 03/29/18		Preparation Date: 03/29/18		
Arsenic	6.3	1.0	mg/kg	

CHAIN OF CUSTODY RECORD

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IEPA Certification #100292

Company Name: Huff + Huff
Street Address: 915 Harger Road
City: Oak Brook State: IL Zip: 60523
Phone: 224-423-3502 e-mail: adam.huff@gza.com
Send Report To: Adam Huff
Sampled By: Adam Huff

Project I.D.: 81.0220430.00 874 and Woodward
P.O. #:

Matrix Codes: S = Soil W = Water O = Other

Analyses

Date/Time Taken	Sample Description	Matrix	BTEX/MTBE	PNAs	SVOCs	Total Resa metals	pH	Arsenic		Hold – Do Not Analyze	Comments	Lab I.D.
3/16/18 900	B1 7-10	S	X	X			X					18-1338-001
905	B1 17-20	S	X	X		X						002
940	B2 3-5	S	X	X			X					003
945	B2 20-22	S	X	X		X						004
920	B3 10-12	S	X	X								005
925	B3 17-20	S	X	X		X	X					006
1000	B4 5-7	S	X	X		X						007
1005	B4 20-22	S	X	X			X		X		18-1555-001	008
1045	B5 3-5	S	X	X								009
1050	B5 12-15	S	X	X		X	X					010
1105	B6 5-7	S	X		X		X					011
1110	B6 10-12	S	X	X		X						012

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6°C Yes__ No.__ _____°C
Received within 6 hrs. of collection:_____
Ice Present: Yes__ No__

Sample Refrigerated: Yes X No__
Refrigerator Temperature: 4 °C
5035 Vials Frozen: Yes__ No__
Freezer Temperature:_____°C

Program: ☐ TACO/SRP ☐ CCDD ☐ NPDES ☐ LUST ☐ SDWA

Notes and Special Instructions:

Relinquished By: _____ Date/Time 3/19/18 955 Received By: _____ Date/Time 3/19/18 955
Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

Rev. 5/17

Huff & Huff, a Subsidiary of GZA