

# **PHASE I PROPERTY ASSESSMENT**

FOR THE:  
**HAM 75 BRENT SPENCE BRIDGE PROPERTY  
AKA DUKE ENERGY SITE  
646 & 655 MEHRING WAY  
CINCINNATI, OHIO 45201**

PREPARED FOR:  
**OHIO DEPARTMENT OF TRANSPORTATION  
1980 WEST BROAD STREET  
COLUMBUS, OHIO 43223**

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## 1.0 EXECUTIVE SUMMARY

This report presents the results of a Phase I Property Assessment (Phase I) of the property occupied by the eastern portions of 646 and 655 Mehring Way, Cincinnati, Hamilton County, Ohio (Property). The Property is part of a larger Duke Energy site. Hull & Associates, Inc. (Hull) conducted this Phase I during December 2016 through February 2017 for the Ohio Department of Transportation (ODOT; Client) as part of the HAM-75 Brent Spence Bridge project. This assessment was conducted in a manner consistent with the Ohio Voluntary Action Program (VAP) codified in Ohio Administrative Code (OAC) 3745-300-06<sup>1</sup> and consistent with the American Society for Testing and Materials (ASTM) Standard E 1527-13, which satisfies the All Appropriate Inquiry (AAI) Final Rule of November 6, 2013, 40 CFR Part 312.

In performing this assessment, Hull reviewed federal, state, and local lists of state hazardous sites; underground storage tanks (USTs); hazardous waste management facilities; and environmental releases of hazardous substances and petroleum. Hull also examined Ohio Department of Natural Resources (ODNR) records and a regulatory database report generated by Environmental Data Resources, Inc. (EDR).

According to records maintained by the Hamilton County Auditor, Duke Energy Ohio, Inc currently owns the Property. The Property comprises approximately 6.88 acres of land between West Pete Rose Way to the north and the Ohio River to the south. The Property was formerly part of the Cincinnati Gaslight and Coke Company manufactured gas plant and later Cincinnati Gas & Electric Company (CG&E), Union Gas & Electric Company, Cinergy, and Duke Energy Ohio, Inc. (Duke Energy) electrical powerhouse and substation. Duke Energy Ohio, Inc. currently owns the Property. The Cincinnati Gaslight and Coke Company began operations on the Property around 1843 and the Property has been utilized for electrical generation and as an electrical substation until recently. Historically, other portions of the Property were also utilized as a coal tar refiner and foundry, prior to Cincinnati Gaslight and Coke Company acquiring these portions of the Property in the late 1800s/early 1900s.

Hull has performed this Phase I in accordance with OAC 3745-300-06 and in accordance with the scope and limitations of ASTM Practice E 1527-13. Any exceptions to, or deletions from, this practice are described in Section 13 of this report. This assessment has revealed the following Identified Areas (IAs) or recognized environmental conditions (RECs) in connection with the Property:

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<sup>1</sup> OAC 3746-300-06 describes the procedures for conducting a Phase I Environmental Property Assessment under Ohio's Voluntary Action Program (VAP).

### **Northern Portion of the Property (north of Mehring Way)**

1. **Historical Manufactured Gas Plant Operations.** Former manufactured gas plant operations/activities including a gasometer, tar wells, oil houses, booster houses and purifiers. These operations/activities potentially affected soils, groundwater and/or soil vapor across the northern portion of the Property. Potential chemicals of concern (COCs) include volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), metals (lead, arsenic, cyanide), and/or total petroleum hydrocarbons (TPH).

### **Southern Portion of Property (south of Mehring Way)**

2. **Historical Manufactured Gas Plant Operations.** Former manufactured gas plant operations/activities occurred on the southern portion of the Property and included a former garage, retorts, coal storage yard, rail lines, and a gasoline underground storage tank. These operations/activities potentially affected soils, groundwater and/or soil vapor. Potential COCs include VOCs, PAHs, metals (lead, arsenic, cyanide), and TPH.

Other IAs/RECs in the southern portion of the Property which overlap former manufactured gas plant operations/activities include:

3. **Former Oil Storage and Fuel Oil House.** These two structures (IA/REC-3[a] and IA/REC-3[b]) are no longer present, except for the concrete slab associated with the fuel oil house. There were no visual indications of spills or releases around these former structures. However, a former release(s), if any, from these structures may have potentially affected soils, groundwater and/or soil vapor. Potential COCs for this area include benzene, toluene, ethylbenzene and xylenes (BTEX), PAHs, polychlorinated biphenyls (PCBs), and TPH.
4. **Electrical Substation Transformers.** CG&E and Duke Energy previously operated an electrical substation (IA/REC 4[a] on the Property that was decommissioned and moved in anticipation of the ODOT bridge expansion project. There was also a bank of transformers IA/REC-4[b] that was removed. The transformers were positioned in a poured concrete and concrete block structure and elevated above the ground surface to protect the transformers in case the river flooded. This structure was in the process of being demolished by Duke Energy's contractor at the time of Hull's reconnaissance. Any historic releases of PCBs could potentially affect soils. Potential COCs for this area include PCBs associated with transformer oil and possible TPH in soil.

Two additional IA/REC were identified in the southern portion of the Property beyond the apparent limits

of the former manufactured gas plant and electrical substation operations/activity areas. These IAs/RECs are associated with historical industrial operations that occurred on the Property prior to 1900 and include:

5. **Former Forest City Chemical Company.** The Forest City Chemical Company operated on the Property and was a refiner of coal tar and produced tar paper. Historical operations/activities potentially affected soils, groundwater and/or soil vapor. Potential COCs include VOCs, PAHs, lead, arsenic, cyanide, and TPH.
6. **Former J.W. Foley Foundry.** This former foundry operated in the late 1800s. Historical operations/activities potentially affected soils and groundwater. Potential COCs include metals.

### **Property Groundwater**

7. Historical Manufactured Gas Plant and CG&E Electrical Generation Operations/Activities – On-Property and off-Property. The Duke Energy site to the west was also the former location of manufactured gas plant operations/activities including gasometers, tar tanks, purifying houses, a condenser room, tar scrubbers, and coal yard, and in more recent years an electrical generation powerhouse. According to information discussed with Mr. Todd Bachand of Duke Energy, soils/residual materials in this area have been remediated via in-situ soil solidification, grout jetting and excavation. Although groundwater flow is primarily to the south, there is potential for groundwater exceeding VAP standards to migrate onto the Property. Potential COCs include VOCs, PAHs, and metals (lead, arsenic, cyanide).

## 2.0 INTRODUCTION

### **2.1 Scope of Work**

The Phase I Property Assessment was conducted from December 2016 through February 2017. This assessment was conducted in accordance with OAC 3745-300-06 and in accordance with ASTM E 1527-13 *Standard Practice for Environmental Property Assessments: Phase I Environmental Property Assessment Process*, which satisfies the AAI Final Rule of November 6, 2013, 40 CFR Part 312. A copy of the Scope of Work for this project is included in Appendix A. All figures referenced in this report are included at the end of the text.

### **2.2 Purpose**

The purpose of a Phase I Property Assessment under the Ohio VAP is to:

1. Determine whether there is reason to believe that a release of hazardous substances or petroleum has or may have occurred on, underlying, or is emanating from a property including any release from management, handling, treatment, storage, or disposal activities from on or off-property activities;
2. Determine whether the Property, or portions of the Property, are eligible for participation in Ohio's VAP; and
3. Determine the necessity and initial scope of a Phase II Property Assessment.

The purpose of complying with the ASTM Standard E1527-13 is to permit the Client to satisfy one of the requirements to qualify for the Innocent Landowner, Contiguous Property Owner, or Bona Fide Prospective Purchaser liability limitations of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601, et seq. Specifically, Hull conducted this assessment to evaluate the presence of IAs and/or RECs associated with the Property.<sup>2,3</sup> The assessment was based on information gained by qualified Hull personnel from review of public documents, files, photographs and maps; correspondence with regulatory agencies; review of an environmental regulatory database search report; interviews with local governmental agencies; and a reconnaissance of the Property.

### **2.3 Significant Assumptions**

No significant assumptions were made for the Phase I Assessment of this Property.

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<sup>2</sup> The Ohio VAP defines an Identified Area as any location at a property where a release of hazardous substances or petroleum has or may have occurred.

<sup>3</sup> ASTM defines a "recognized environmental condition" 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.



## **2.4 Special Terms and Conditions**

No special terms or conditions were applied to the ASTM standard for this project.

## **2.5 Report Limitations**

The conclusions presented herein are based on the level of effort and investigative techniques defined under the Scope of Work. Hull has conducted this investigation in a manner consistent with sound engineering practices and with professional judgment. No other warranty or guarantee, expressed or implied, is made. This report does not attempt to evaluate past or present compliance with federal, state, and local environmental or land use laws and regulations. Hull makes no guarantees regarding the completeness or accuracy of any information obtained in review of public or private files. Furthermore, this report is prepared for, and made available for the sole use of ODOT and the contents thereof may not be used or relied upon by any other person without the express written consent and authorization of ODOT and Hull.

### 3.0 PROPERTY DESCRIPTION

#### **3.1 Location and Legal Reference**

The Property consists of the eastern portion of the Duke Energy site. According to the Hamilton County Auditor's Office, the addresses of the Duke Energy site are listed as 646 and 655 West Mehring Way, Cincinnati, Hamilton County, Ohio 45203. The Property consists of the eastern portion of two contiguous parcels (137-0003-0020 and 137-0003-0070) on the Duke Energy site that are bisected from one another by West Mehring Way. The total acreage of the Property is approximately 6.88 acres. West Mehring Way is not included in the subject Property.

Parcel 137-0003-0020 is situated to the east of Rose Street between West Peter Rose Way and West Mehring Way. Parcel 137-0003-0070 is situated between West Mehring Way and the Ohio River. The location of the Property is shown on Figure 1 and Property photographs from the Property reconnaissance are included in Appendix B. Copies of the property record cards are included in Appendix C.

The following eight sets of latitude/longitude coordinates generally define the boundary of the Property and are included on Figure 2:

The northern portion of the Property includes the eastern portion of parcel 137-0003-0020. The approximate boundary corners starting at PT #1 clockwise are:

1. N 39° 5' 43.343" and W 84° 31' 24.098"
2. N 39° 5' 43.529" and W 84° 31' 22.172"
3. N 39° 5' 39.939" and W 84° 31' 21.990"
4. N 39° 5' 39.990" and W 84° 31' 24.213"

The southern portion of the Property includes the eastern portion of parcel 137-0003-0070. The approximate boundary corners starting at PT #5 clockwise are:

5. N 39° 5' 39.418" and W 84° 31' 24.233"
6. N 39° 5' 39.323" and W 84° 31' 19.183"
7. N 39° 5' 33.495" and W 84° 31' 18.908"
8. N 39° 5' 33.783" and W 84° 31' 24.426"

### **3.2 Property and Vicinity General Characteristics**

Property Setting: Commercial/Industrial

A Property Plan showing the general Property layout and characteristics is presented as Figure 3. A Property Plan with IAs/RECs is presented as Figure 4.

### **3.3 General Property Usage**

The Property consists of a vacated electrical substation yard and parking lot/lay down yard. Historically, the majority of the Property was utilized as a manufactured gas plant. The northern portion of the Property is a gravel lot currently used as a laydown yard by Duke Energy. Until recently, the southern portion of the Property housed an electrical substation yard. INTREN, a contractor for Duke Energy, utilizes the easternmost portion of this area for equipment storage and an office trailer. Additional detail about Property usage is provided in Section 4.2. Property conditions observed during the Property reconnaissance are presented in Section 8.0.

## 4.0 HISTORICAL AND CURRENT USES OF THE PROPERTY

### 4.1 Historical Property Usage

To identify the historical use of the Property, Hull personnel reviewed deed and title information, zoning information, city directories, aerial photographs, and historical land use maps. The land usage at the Property has included a manufactured gas plant and an electrical generation substation for more than 129 years.

#### Manufactured Gas Plant and Electrical Distribution

The Duke Energy site is primarily engaged in providing electric service to its customers. The Property encompasses the easternmost portion of the larger Duke Energy site. Duke Energy's west end facility was originally developed by the Cincinnati Gas, Light & Coke Company for the distillation of coal to manufacture gas for lighting and in the process produced residual coke that was sold for heating purposes beginning around 1843. The manufactured gas was stored in gasometers (gas holders) and then piped to the surrounding areas, where it was used for lighting, cooking, and heating homes and businesses. Former MGP-related structures on the VAP Property included a gasometer, a number of tar wells, gas purifying, condensing, water gas producer, and retort buildings as well as booster and oil houses, a machine shop, garage, metering shop and measuring station. There were also several coal storage areas, rail lines, and a coal tipple.

It appears that gas was manufactured using the water gas and coal carbonization processes. In the water gas process, coke or coal were first heated in a closed vessel or retort into which steam was injected. A chemical reaction took place which produced a flammable gas mixture of methane and carbon monoxide. Petroleum products were then sprayed into the hot gas mixture, creating another chemical reaction in which petroleum constituents were "cracked" to form methane, which increased the heating and lighting value of the gas. Coal carbonization involves heating coal in a closed retort with limited contact to outside air. Volatile constituents of the coal were driven off the gas, which was collected, cooled, and purified before being piped into the surrounding areas for use.

In 1889, Cincinnati Gas, Light & Coke began construction of an electric generating station adjacent to the company's West End Gas Works station. In 1901, Cincinnati Edison and Cincinnati Gas, Light & Coke consolidated their operations, and rename the corporation as the Cincinnati Gas & Electric Company (CG&E). In 1918 CG&E constructed the West End Power House.

Due to the increased availability of natural gas, CG&E stopped manufacturing artificial around 1928.

CG&E and PSI Energy Inc. merged to form Cinergy Corp in 1994 and in 2006, Duke Energy and Cinergy Corp. became one company.

#### Other Historical Uses

The 1887 and/or 1891 Sanborn Maps show the Forest City Chemical Company, W. Foley & Company Foundry, and the Mosler Bank Safe Company occupying the area south of W. Front Street (now known as West Mehring Way) east of the Cincinnati Gas, Light & Coke Company site within the apparent boundary of the Property. The Sanborn Maps indicate that the Forest City Chemical Company was a refiner of coal tar and also a tar paper factory.

#### **4.1.1 Ownership**

Historical information indicates that the Property has been utilized for industrial/commercial purposes since at least 1843 by Cincinnati Gaslight & Coke Company and later by CG&E, Cinergy and presently Duke Energy Ohio, Inc. By 1900, Cincinnati Gaslight & Coke Company had acquired all of the land composing the Property.

A copy of the chain of title is provided in Appendix C.

#### **4.1.2 Zoning Information**

Parcel Zoning: Parcel 137-0003-0020 is zoned Manufacturing – General.  
Land Use 456 – Parking Garage/Lots

Parcel 137-0003-0070 is zoned Riverfront Manufacturing  
Land Use 489 – Commercial/Utility

#### **4.1.3 City Directories**

City directories were searched and confirmed that the Property was occupied by CG&E. Based on information from other sources, the occupant history of the Property is known since at least 1843 primarily as a manufactured gas plant and later for electrical generation and distribution. Other historic occupants also included a chemical company and foundry. Copies of City Directories are included in Appendix C.

#### **4.1.4 Aerial Photographs**

Hull obtained aerial photographs from ODOT and also reviewed aerial photographs from EDR to aid in identifying past use of the Property and adjacent properties. Photographs were reviewed for the years 1938, 1950, 1953, 1956, 1968, 1974, 1977, 1985, 1988, 1993, 1994, 1997, 2003, 2005, 2006 and 2015. Copies of aerial photographs are provided in Appendix D.

<b>SUMMARY OF AERIAL PHOTOGRAPHS REVIEWED</b>	
<b>Date (Scale)</b>	<b>Description</b>
1938 (1" = 500')	<p>Property: The Property was developed as part of the larger CG&amp;E site that occupied the area to the west also. A large gasometer is present in the northern portion of the Property. Approximately four buildings were present between W. Pete Rose Way (formerly W. 2<sup>nd</sup> Street) and W. Mehring Way (formerly W. Front Street). The 1934 Sanborn Map labeled these buildings as booster houses, oil house and water gas producer. A large north-south oriented building along with additional smaller structures and rail sidings were present between W. Mehring Way and the Ohio River. The 1934 Sanborn Map labeled the larger building as housing a garage, meter shop and retorts.</p> <p>Adjacent Properties: Adjacent to the north of the Property was W. Pete Rose Way (W. 2<sup>nd</sup> Street), a large warehouse/storage building and numerous rail sidings. Four additional gasometers, numerous buildings and a power house and coal yard associated with the CG&amp;E site were present to the west. Adjacent to the east were railroad tracks, three large buildings, a number of smaller structures, and undeveloped land. The Ohio River is adjacent along the south side of the Property.</p>
1950 (1:3,600)	<p>Property: The rail tracks in the southern portion of the Property appeared to be no longer present. The remainder of the Property appeared similar to the previous photograph.</p> <p>Adjacent Properties: The four gasometers between W. Pete Rose Way (W. 2<sup>nd</sup> Street) and W Mehring Way (W. Front Street) to the west were no longer present. The remaining surrounding areas appeared similar to those in the previous photograph.</p>
1953 (1:3,600)	<p>Property: An access road extended south of Rose Street and W. Mehring Way (W. Front Street). The large north south oriented building and a number of the smaller structures observed in the previous photographs between W. Mehring Way and the Ohio River were no longer present and approximately three-quarters of this area was being utilized as a parking lot. The northern portion of the Property appeared similar to the previous photograph.</p> <p>Adjacent Properties: Several larger buildings and smaller structures to the east and near the Ohio River, were no longer present. The remaining surrounding areas appeared similar to those in the previous photograph.</p>
1956 (1" = 750')	<p>Property: The Property appeared similar to that in the 1953 photograph.</p> <p>Adjacent Properties: The surrounding areas appeared similar to those in the previous photographs.</p>

1968 (1" = 750')	<p>Property: The gasometer on the northern portion of the Property was no longer present. The scale of the photograph obscured some of the structures/details on the Property. It appeared that some of the buildings situated between W. Pete Rose (W. 2<sup>nd</sup> Street) and W. Mehring Way (W. Front Street) were no longer present. The parking lot south of W. Mehring Way (Front Street) was also no longer present and it appears that an electrical substation occupied a portion of the area. A new structure was present on the southern portion of the Property to the east of the Power House. Interstate I-71/I-75 is present running north-south across the center of the southern portion of the Property.</p> <p>Adjacent Properties: A number of the railroad sidings to the north of the Property were no longer present. The I-71/I-75 interchange and Brent Spence Bridge are present to the north and south of the Property. The surrounding areas appeared similar to those in the previous photographs.</p>
1974 (1:3,600)	<p>Property: There are two buildings and a high voltage electrical tower on the northern portion of the Property. The remainder of the Property appeared similar to that in the 1968 photograph.</p> <p>Adjacent Properties: The surrounding areas appeared similar to those in the previous photograph.</p>
1977 (1" = 750')	<p>Property: The clarity of the photograph obscured some of the structures/details on the Property and adjacent properties. It appeared that the Property was similar to that in the 1974 photograph, except that the electrical substation noted on the 1968 photograph appeared to have expanded to the north.</p> <p>Adjacent Properties: A portion of the Power House building to the west appeared to have been demolished. The surrounding areas appeared similar to those in the previous photographs.</p>
1985 (1" = 1000')	<p>Property: The clarity and scale of the photograph prevented detailed observations of structures/changes to the Property.</p> <p>Adjacent Properties: The clarity and scale of the photograph prevented detailed observations of structures/changes to the adjacent properties. However, observable images appeared similar to those in the previous photograph.</p>
1988 (1" = 750')	<p>Property: The Property appeared similar to that in the 1974/1977 photographs.</p> <p>Adjacent Properties: The large building east of the Property between W. Mehring Way and the Ohio River was no longer present and the area was vacant. The surrounding areas appeared similar to those in the previous photographs.</p>
1993 (1" = 750')	<p>Property: The clarity of the photograph obscured some of the structures/details on the Property and adjacent properties. It appeared that some of the buildings on the northernmost portion of the Property were no longer present and a portion of the area was being utilized as a parking lot. The remainder of the Property appeared similar to that in the 1988 photograph.</p> <p>Adjacent Properties: The area to the north previously occupied by railroad sidings north of the warehouse/storage building appeared to be a large parking lot. The area to the east of the Property appeared to be utilized for concrete/asphalt recycling. Piles of apparent granular material were present between W. Mehring Way and the Ohio River.</p>

1994 (1:3,600)	<p>Property: No buildings are present in the northern portion of the property. The high voltage electrical tower is no longer present and the area was being utilized for parking. The remainder of the Property appeared similar to that in the 1973 photograph.</p> <p>Adjacent Properties: The surrounding areas appeared similar to those in the previous photograph.</p>
1997 (1" = 750')	<p>Property: The clarity of the photograph prevented detailed observations of structures/changes to the Property. However, observable images appeared similar to those in the previous photograph.</p> <p>Adjacent Properties: The clarity and scale of the photograph prevented detailed observations of structures/changes to the adjacent properties. However, observable images appeared similar to those in the previous photograph.</p>
2003 (1" = 750')	<p>Property: The Property appeared similar to that in the 1994 photograph except the parking area in the northern portion of the Property had been expanded.</p> <p>Adjacent Properties: All but one structure to the west of the Property between W. Pete Rose Way and W. Mehring Way were removed and the entire area was being utilized as a parking lot. A small parking lot was constructed southeast of the Property. Further to the east, the majority of the commercial/industrial buildings had been removed and the practice field for the Cincinnati Bengals football team had been constructed.</p>
2005 (1" = 604')	<p>Property: The Property appeared similar to that in the 2003 photograph.</p> <p>Adjacent Properties: The surrounding areas appeared similar to those in the previous photograph.</p>
2006 (1" = 604')	<p>Property: The Property appeared similar to that in the previous photographs.</p> <p>Adjacent Properties: The surrounding areas appeared similar to those in the previous photograph.</p>

The ASTM standard specifies that historical resources be reviewed in 5-year intervals. Exact five-year intervals were not available for the aerial photographs. This is not considered a significant data gap because the Property and adjacent sites did not show significant changes within those time frames and because of the presence of other sources of historical Property information.

#### 4.1.5 Historical Land Use Maps

##### 4.1.5.1 Sanborn Fire Insurance Maps

Hull reviewed Sanborn Fire Insurance Maps (Sanborns) for the years 1887, 1891, 1922, 1934, 1950 and 1981. A summary of the map review is included below. Copies of the maps are provided in Appendix E.



<b>SUMMARY OF PROPERTY OBSERVATIONS FROM SANBORNS</b>	
<b>Year</b>	<b>Property Land-Use</b>
1887	The Property is occupied by the Cincinnati Gas, Light & Coke Company (a manufactured gas plant). W. Front Street (current W. Mehring Way) bisects the Property. Railroad lines/sidings are shown along W. Front Street. Coal, pipe, and general storage are noted west of Rose Street between W. 2 <sup>nd</sup> Street (current W. Pete Rose Way) and W. Front Street. Scrubbers and a condenser room are also shown in this area of the Property. The No. 5 gasometer occupies a portion of the northwest corner of the Property. South of W. Front Street is occupied by an office, gasometer (No. 1), coal storage building, coal piles, coke bins and retorts. The Forest City Chemical Co. (refiners of coal tar) appears to occupy a small area in the southeast corner of the Property. There are two tanks shown on the map; one containing oil. North of Forest City Chemical Company was the J.W. Foley Company Foundry and vacant foundry buildings.
1891	The Mosler Bank Safe Co. is shown occupying the east central portion of the Property south of W. Front Street. The remainder of the Property is similar to the 1887 Sanborn Map
1922	The area previously shown as coal, pipe, and general storage west of Rose Street between W. 2 <sup>nd</sup> Street and W. Front Street is now occupied by a large gasometer (No. 6) and five structures. A large north-south oriented structure is present south of W. Front Street and part of another larger structure occupies a portion of the southwest corner of the Property. The Sanborn Map does not provide additional details of the uses or occupants of the on-Property structures.
1934	The layout of the 1934 Sanborn Map is similar to the 1922 Sanborn Map but provides details on the various structures on Property. The map indicates that the Property is now occupied by the Union Gaslight & Coke Co. Structures that are present include an oil house, booster houses, water gas producer, measuring station, machine shop, coal tipple, and a large 3-story north-south orientated structure occupied by a garage on the first floor, meter shop on the second floor and retorts on the third floor. The West End Power House occupies the southwest corner of the Property. Numerous rail sidings are present in the southern portion of the Property leading to the coal tipple and power house. A gasoline tank is noted northeast of the north-south orientated structure. Purifier tanks and tar wells are noted northwest of the intersection of W. Front Street and Rose Street. The No. 5 gasometer is no longer present.
1950	The 1950 Sanborn indicates the Property is occupied by the CG&E. The purifier tanks, tar wells, water gas producer, retorts are no longer shown on the map. The 3-story structure is now used as a stock room, salvage storage, and oil house. The coal tipple is no longer present.

1981	The only structures shown on the Property include an oil house and booster house between W 2 <sup>nd</sup> and W. Mehring Way. The gasometers and rail sidings in the southern portion of the Property are no longer present.
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<b>SUMMARY OF ADJACENT PROPERTY OBSERVATIONS FROM SANBORNS</b>				
Year	North	East	South	West
1887	West Second Street And the C.N.O and T.P.R.R Railroad freight depot	Rose Street followed by railroad sidings, P.C.C & St. L. R.R freight station, The Meader Furniture Co., Smith, Myer & Schnier (engine and machine MFG), coal storage/elevator	Ohio River	Cincinnati Gaslight & Coke Co. (gasometers, coal storage, retorts); further west Globe Rolling Mill
1891	West Second Street And the C.N.O and T.P.R.R Railroad freight depot	Rose Street followed by railroad sidings, Pan Handle Smith St. freight station, Cincinnati Electric Light Co, The Meader Furniture Co., Smith, Myer & Schnier (engine and machine MFG), coal storage/elevator	Ohio River	Cincinnati Gaslight & Coke Co. (gasometers, coal storage, retorts); further west Globe Rolling Mill
1922	West Second Street Railroad freight depot	Rose Street followed by railroad sidings, P.C.C & St. L. R.R freight station, Cincinnati Gas & Electric Light Co, The Brown Fuller Co., C&O Railroad	Ohio River	Cincinnati Gas & Electric Co. (gasometers and unlabeled structures)
1934	West Second Street Railroad freight depot	Rose Street followed by railroad sidings, Penn R.R Smith St. freight station, Jones & Laughlin Steel, private garage	Ohio River	Union Gas & Electric Co. (gasometers, coal storage, power house)
1950	West Second Street Railroad freight storage warehouse	Rose Street followed by railroad sidings, scrap iron & paper warehouse, Jones & Laughlin Steel, private garage and auto repair	Ohio River	Cincinnati Gas & Electric Co. (fewer gasometers than shown on previous Sanborn Maps, coal storage, West End Power House)
1981	West Second Street Railroad freight storage warehouse	Rose Street, Brent Spence Bridge, steel fabricator	Ohio River	CG&E (no gasometers remain, West End Power House)

The ASTM standard specifies that historical resources be reviewed in 5-year intervals. Exact five-year intervals were not available for the Sanborn Fire Insurance maps. This is not considered a significant data gap because the Property and adjacent sites did not show significant changes within those time frames and because of the presence of other sources of historical Property information.

#### 4.1.5.2 Historical Topographic Maps

Hull reviewed topographic maps for the years 1914, 1950/1952, 1955, 1961, 1969/1970, 1981/1983, 1987, and 2013. A summary of the map review is included below. Copies of the maps are provided in Appendix E.

<b>SUMMARY OF PROPERTY OBSERVATIONS FROM TOPOGRAPHIC MAPS</b>	
<b>Year</b>	<b>Property Land-Use</b>
1914	The Property was developed land. Gasometers and structures associated with the Cincinnati Gaslight & Coke Company are shown on the Property or immediately adjacent to it.
1950/1952	The map only shows Kentucky features south of the Ohio River. The Ohio side of the Ohio River is blank.
1955	A gasometer and railroad sidings are present on the Property.
1961	The only structures observed are associated with railroad sidings in the southern portion of the Property.
1969/1970	The Property appears similar to the previous map.
1981/1983	No observable structures are present on the map.
1987	One structure is present near the northwest corner of W. Mehring Way and Rose Street.
2013	No observable structures are present on the map.

SUMMARY OF ADJACENT PROPERTY OBSERVATIONS FROM TOPOGRAPHIC MAPS				
Year	North	East	South	West
1914	Large structure (railroad freight depot) and numerous railroad sidings	A number of structures are present along with rail lines/sidings. Two east-west oriented streets	Ohio River	Cincinnati Gas & Electric Co. (gasometers and a number of structures)
1950 / 1952	No details shown	No details shown	Ohio River	No details shown
1955	Large structure (railroad freight depot) and numerous railroad sidings	Two structures are present along with rail lines/sidings. Two east-west oriented streets	Ohio River	Cincinnati Gas & Electric Co. (gasometers and power house)
1961	Large structure (railroad freight depot) and numerous railroad sidings	Two structures are present along with rail lines/sidings. Two east-west oriented streets. I-71/I-75 and Brent Spence Bridge present.	Ohio River	Cincinnati Gas & Electric Co. (power house)
1969 / 1970	Large structure (railroad freight depot) and numerous railroad sidings	Two structures are present along with rail lines/sidings. Two east-west oriented streets. I-71/I-75 and Brent Spence Bridge present.	Ohio River	Cincinnati Gas & Electric Co. (power house and rail siding)
1981 / 1983	Numerous railroad sidings	A single structure is present and two east-west oriented streets. I-71/I-75 and Brent Spence Bridge present.	Ohio River	Cincinnati Gas & Electric Co. The map indicates substation. The power house is shown.
1987	A large structure. Many of the railroad sidings are no longer shown.	A single structure is present and two east-west oriented streets. I-71/I-75 and Brent Spence Bridge present.	Ohio River	Cincinnati Gas & Electric Co. The map indicates substation. The power house is shown.
2013	Only streets are shown	Only streets are shown	Ohio River	Only streets are shown

The ASTM standard specifies that historical resources be reviewed in 5-year intervals. Exact five-year intervals were not available for the historical topographic maps. This is not considered a significant data gap because the Property and adjacent sites did not show significant changes within those time frames and because of the presence of other sources of historical Property information.

#### 4.1.5.3 Historical Facility Drawings

Hull reviewed historical facility drawings from 1917, 1937, 1939, 1954, 1965, 1986 and 1989. Copies of the maps are provided in Appendix E.

SUMMARY OF HISTORICAL FACILITY DRAWINGS	
Date	Description
1917	The drawing shows the northern portion of the Property containing a large gasometer, high pressure building, tar scrubber and rotary scrubber rooms, condenser room and yard. The southern portion of the Property is occupied by a retorts building and coke house. The drawing also refers to an old foundry at the eastern edge of the Property.
1937	The drawing shows significant operations/activities south of the gasometer including an exhauster room, booster room, producer house, boiler units, decanter room, and coal hopper. A number of water lines, sewer lines, and gas lines are also shown. Retort House #4 and the measuring station are shown on the southern portion of the Property. The coke house shown on the 1917 drawing is no longer present.
1939	The 1939 drawing shows structures and rail lines, but does not provide details. The location of structures appears similar to the previous drawing.
1954	The 1954 drawing shows significant changes to the Property. The northern portion of the Property contains the gasometer, a booster house and gas distribution office and parking. The building houses Retort # 4 is gone and the area is now a large parking lot with an access drive from W. Mehring Way (W. Front Street) and Rose Street. Four wells labeled deep well 3, 4, 5 and 6 are shown on the drawing along with an oil house near the southwest corner of the Property
1965	The 1965 drawing shows the gasometer along with an office, locker room and electrical tower on the northern portion of the Property. The southern portion of the Property is occupied by an electrical substation, transformers, parking area, oil house and fuel oil house. The I-71/I-75 bridge is present on the drawing.
1986	The 1986 drawing only shows the southern portion of the Property. The layout appears similar except that the substation is much larger and expanded to the north.
1989	The 1989 drawing only shows the northern portion of the Property. The entire area was used for employee parking except for the area around the high voltage electrical tower.

#### 4.1.6 Summary of Historical Operations

A summary of significant historical events for the Property and historical usage based upon all lines of evidence examined by Hull is included below.

SUMMARY OF HISTORICAL EVENTS AND PROPERTY USAGE		
Date(s)	Property Use or Significant Historical Event	Source
1887, 1891, 1922, 1934	Cincinnati Gaslight & Coke Company (Manufactured gas plant)	Sanborn Maps

1887, 1891	The eastern portion of the Property between W. Mehring Way and the Ohio River was occupied by the Forest City Chemical Company (coal tar refiner) and J.W. Foley & Son (iron foundry)	Sanborn Maps
1928	Manufactured gas plant operations ceased.	T. Bachand
1950	The Property is occupied by CG&E. A number of buildings/equipment previously utilized to manufacture gas had been either repurposed or removed. A gasometer remains on the northern portion of the property.	Sanborn Map
1968	<i>Electrical sub-station and transformers present in southern portion of Property.</i>	Aerial photograph
1994	The Cincinnati Gas & Electric Co. and PSI Energy Inc. merged to form Cinergy Corp. in 1994 and in 2006, Duke Energy and Cinergy Corp. became one company.	History of CG&E
2006	Duke Energy and Cinergy Corp. became one company.	Duke Energy web site
2010-2013	Remediation activities on the Duke Energy site including remediation of former gasometer on northern portion of Property	Mr. Todd Bachand, Duke Energy

#### **4.2 Current Property Usage**

Duke Energy Ohio, Inc currently owns the Property which is a vacant former electrical substation yard and storage laydown yard. No activities are currently occurring on the Property. A detailed description of the Property is provided in Section 8.0.

##### **4.2.1 Utility Information**

Electric Service: Duke Energy  
 Gas Service: Duke Energy  
 Potable Water Service: City of Cincinnati  
 Sewer Service: City of Cincinnati

## **5.0 CLIENT-PROVIDED INFORMATION**

### **5.1 Environmental Liens**

Hull requested information from the Client concerning possible environmental liens associated with the Property. The Client was not aware of any such liens.

### **5.2 Specialized Knowledge**

The Client provided Hull with a previous Phase I ESA conducted at the Property. A summary of this Phase I ESA is provided in Section 6.1 where details of the previous investigations are discussed. Any environmental records pertaining to the Property and provided by the Client are summarized and referenced in the applicable sections of this report.

### **5.3 Valuation Reduction for Environmental Issues**

The Client did not express any actual knowledge that the value of the Property is significantly less than the value of comparable properties. The Client was not aware of any reduction in the value of the Property resulting from environmental issues.

### **5.4 Owner and Occupant Information**

The Client indicated that the Property is owned by Duke Energy Ohio, Inc and is currently vacant with no structures. Hull interviewed Mr. Todd Bachand, Environmental Specialist with Duke Energy and Charlie Rowe with the Ohio Department of Transportation as part of this assessment. Pertinent information from the interviews is included where applicable throughout this report.

### **5.5 Reason for Performing the Assessment**

The purpose of this assessment meeting the ASTM Standard E 1527-13 is to evaluate potential RECs at the Property prior to redevelopment of the Property. The purpose of this assessment under the Ohio VAP rules codified in OAC 3745-300-06 is to determine whether there is any reason to believe that a release of hazardous substances or petroleum has or may have occurred on, underlying, or is emanating from a property including any release from management, handling, treatment, storage, or disposal activities from on or off-Property activities. This assessment was also performed to characterize the eligibility of the Property for participation in the Ohio VAP.

### **5.6 Other**

The Client did not report to Hull other relevant information regarding RECs or IAs in connection with the Property.

## 6.0 ENVIRONMENTAL RECORDS REVIEW

### 6.1 Previous Studies

Duke Energy has conducted previous assessment and remedial activities on and adjacent to the Property. Copies of these documents were not provided to Hull for review, however, Hull met with Mr. Todd Bachand, Duke Energy's Lead Environmental Specialist, Remediation & Decommissioning, to discuss environmental issues associated with the Property on January 11, 2017. Based on Hull's meeting with Duke Energy's representative, a brief summary of the assessment and remedial activities conducted on the Property is described below.

Mr. Bachand indicated that previous Phase II assessment activities were conducted on the Duke Energy site by AECOM. However, the majority of assessment activities completed occurred off-Property to the west. On the Property, the area around the former gasometer that was situated adjacent to West Pete Rose Way was assessed. Other areas of the Property had only limited Phase II assessment activities. The main COCs are related to former manufactured gas operations and include VOCs, SVOCs; primarily PAHs, and metals. Mr. Bachand indicated that Duke Energy has contracted with CH2M Hill to conduct VAP Phase II assessment activities across the remainder of the Property (between the former gasometer and West Mehring Way) and between West Mehring Way and the Ohio River. This work is scheduled to commence in early 2017.

Mr. Bachand also indicated that extensive remedial activities were conducted on the Duke Energy site between approximately 2010 and 2013. Similar to assessment activities, the majority of the remedial activities occurred west of the Property, but did include the former gasometer on the Property. An earthen retention system (sheet piling with wooden lagging and tie backs) was installed to an approximate depth of 30 feet around the remedial areas and remain in place. Gasometer walls were removed to a depth of 20 feet. Soil remedial activities included in-situ soil solidification (soil, slag, cement mixture), jet grouting (around obstructions), and excavation. Soils were solidified or excavated to elevations of between 475 feet and 450 feet; approximately 20 to 45 feet in depth throughout. Any pipes that were encountered were grouted closed. The former on-Property gasometer was excavated to remove manufactured gas residuals and bottom ash that was previously placed in the holder during operation of the former powerhouse. Mr. Bachand indicated that an eastern segment of the gasometer wall was left in place due to the proximity to West Pete Rose Way and Rose Street. Excavated material was properly disposed off-Property at a licensed disposal facility and the excavation was backfilled with engineered material meeting applicable VAP standards and compacted to 95%. The upper 6 inches consisted of crushed stone over a geotextile material for stability. Mr. Bachand indicated that remedial activities were managed by Burns & McDonnell.



Groundwater beneath the Property has also been impacted by historical operations. Currently, Duke Energy monitors groundwater on the Property and across the larger Duke Energy site. Groundwater flow is primarily to the south across the Duke Energy site with slight localized variations in the flow direction.

Groundwater data shows concentrations of VOCs (primarily benzene, toluene, ethylbenzene and 1,2,4-trimethylbenzene), PAHs, and metals (lead and arsenic) in a number of wells at concentrations that would exceed unrestricted potable use standards under the Ohio VAP. Low concentrations of PAH constituents and lead were detected in the downgradient well on the Property. In general, the highest detected concentrations were off-Property to the west. In addition, some of the monitoring wells to the west of the Property reportedly have measurable product in the wells. It was not stated if the product was light-non-aqueous phase liquids (LNAPL) or dense, non-aqueous phase liquids (DNAPL).

Mr. Bachand indicated that adjacent properties were identified with potential to impact the Property included a metals component and manufacturing and assembling company and two former chemical companies engaged in tar recycling; and a former foundry and machine shop. Mr. Bachand indicated that there is no evidence at this time to that indicate these adjacent property uses have impacted the Property.

## **6.2 Physical Setting Source(s)**

### **6.2.1 Regional Geology and Hydrogeology**

The Property lies in the Till Plains Section of the Central Lowlands Physiographic Region. This region is characterized by structural and sedimentary basins, domes and arches. Hamilton County lies near the crest of the structurally significant Cincinnati Arch. The surrounding area displays a gentle to moderate slope to the south towards the Ohio River. The Property is located in the Ohio River Valley. The average elevation of the Property ranges from approximately 495 to 497 feet mean sea level (MSL). There is a section of retaining wall along the southern portion of the Property adjacent to the Ohio River. The pool elevation of the Ohio River is approximately 455 feet MSL at the Property.

According to the Soil Survey of Hamilton County (USDA; 1992), the Property is situated in an area characterized as Urban land–Huntington Complex that frequently floods. This complex consists of Urban land and a deep, nearly level, well drained Huntington silt loam soil on flood plains with 0 to 2 percent slopes. Urban land soils are characterized by a surface covering of asphalt, concrete, buildings, or other manufactured material over more than 80 percent of the surface area. The Urban land and Huntington silt loam soil are intricately mixed, or so small that its impractical to separate them.

Bedrock underlying Hamilton County is Ordovician-age shale and fossiliferous limestone. According to the Ohio Department of Natural Resources (ODNR) well logs, bedrock near the Property is encountered approximately 120 feet below ground surface (bgs).

The Groundwater Resources Map of Hamilton County, indicates that the Property overlies permeable sand and gravel deposits where yields of more than 500 gallons per minute (gpm) may be developed. Given the approximate elevation of the Property (495 to 497 feet MSL) and the approximate elevation of the Ohio River (455 feet MSL), groundwater likely occurs at a depth of approximately 40 feet beneath the Property, with anticipated flow toward the Ohio River.

Potable water for the majority of the Cincinnati area is provided by the Cincinnati Water Works. Water supplies for the Property and surrounding area are obtained from a surface water intake on the Ohio River, up river of the Property at California, Ohio.

#### **6.2.2 Ohio Department of Natural Resources Oil and Gas Well Log Information**

Hull used the ODNR Geographical Information Management System (GIMS) metadatabase to obtain information related to oil and gas wells within 0.5 mile of the Property. According to the GIMS database, there are no oil and/or gas wells located within 0.5 mile of the Property. A copy of the ODNR oil and gas well map is included in Appendix F.

#### **6.2.3 Ohio Department of Natural Resources Water Well Log Information**

Hull searched the ODNR Division of Water online database for private/public/monitoring wells within 0.5 mile of the Property. A total of 51 wells (10 monitoring wells, 22 dewatering wells (Paul Brown Stadium), 3 HVAC wells, and 16 industrial/test wells) were determined to be located within the applicable search radius of the Property boundary. Of the 12 wells installed by CG&E, six (6) of the wells were test wells. One or more of these wells may have been located on the Property. A 1954 historical map of the site identifies four deep wells on the Property.

The lithology described on the well logs for the 12 wells on the CG&E site indicates the presence of fill material ranging in thickness between 3 feet and 67 feet overlying clay/sandy clay and/or sand and gravel with boulder zones. The thickness of the silt/clay deposits, when present, ranged from 9 to 47 feet in thickness. Sand and gravel deposits were encountered between 34 feet and 67 feet bgs. Shale bedrock was encountered between 85 and 126 feet bgs. Static water levels in the wells reportedly ranged from 28 feet to 57 feet after installation. Groundwater yields from the wells ranged from 300 gpm to 1,080 gpm.

The lithology described on the well logs for the 22 dewatering wells at Paul Brown Stadium indicate deposits of clay/silty clay ranging in thickness between 15 feet and 40 feet overlying sand and gravel with occasional clay and boulder zones. Sand and gravel deposits extended to a depth of at least 93 feet, the maximum depth completed. Static water levels in these wells ranged from 10 feet to 24 feet. Groundwater yields from the wells ranged from 265 gpm to 1,072 gpm.

Copies of ODNR water well logs are included in Appendix G.

### **6.3 Federal, State, and Tribal Environmental Records**

An environmental database report generated by EDR was used to access environmental records for this report. The proximity of various listed facilities was reviewed to identify the potential affect, if any, that these facilities may have on the Property. The databases searched included those specified by ASTM E 1527-05 as well as several additional federal and state databases.

EDR contacts government agencies to receive updated records on a monthly or quarterly basis, depending on the database. As a result, facilities that were recently added to the list, and therefore not identified by EDR, may exist within the specified search distance. EDR has verified that it updates its database every 90 days or within 90 days of the last agency update. In addition to the facilities identified in the EDR report, EDR provides a list of non-geocoded orphan facilities. These facilities, which are listed on one or more databases, do not have enough address information to be specifically located by EDR. The EDR report identified 12 orphan facilities which were each reviewed by Hull. The list of orphan sites identified the Cincinnati Gaslight & Coke Company as a former Manufactured gas plant. This facility is part of the Property. None of the other orphan facilities indicated a concern for the Property. A copy of the report by EDR is included in Appendix H.

Based on regulatory information from the databases, as well as topography, geological conditions, and hydrogeological considerations including anticipated groundwater flow direction, potential groundwater flow barriers, such as rivers or streams, only facilities located adjacent to the Property to the north, east and west of the Property would potentially affect the Property if releases occurred at those facilities. The Property is bordered to the north by multiple businesses occupying the former B&O Railroad Freight and storage facility, to the east by Rose Street, ODOT property and Hilltop Basic Resources (aka Valley Asphalt Corporation), and to the west by Duke Energy. The following are significant findings from the EDR Report:

#### **Property:**

According to the December 16, 2016 EDR Radius Map Report, the Property is listed in the following databases:

- Historic Manufactured Gas Plant (MGP),
- RCRA - Small Quantity Generator (SQG),
  - EPA ID: OHR000156000,
  - Waste codes D001 (ignitable waste), D003 (reactive waste) and D009 (mercury),
- Emergency Response Notification System (ERNS); and
- OH-Spill.
  - PCB spill on 11/2/1999; spill number 9911-31-3873. No other information provided.

**Off-Property:**

Company Name	Address
Valley Asphalt Corporation/Hilltop Basic Resources- Adjacent to East	612 Mehring Way, Cincinnati, Ohio 45202
Valley Asphalt - Adjacent to East	610 Augusta Avenue, Cincinnati, Ohio 45202
Former B&O Railroad Freight and Storage Facility - Across W. Pete Rose Way to North	700 W. Pete Rose Way, Cincinnati, Ohio 45203
ODOT - Adjacent to East	637 W. Pete Rose Way, Cincinnati, Ohio 45202
ODOT - Adjacent to East	633 & 638 Augusta Avenue, Cincinnati, Ohio 45202
ODOT - Adjacent to East	630 Mehring Way, Cincinnati, Ohio 45202
WM Enderlein Garage - Adjacent to East	329 Mehring Way (FKA W. Front Street), Cincinnati, Ohio 45202

**6.3.1 Ohio Environmental Protection Agency (EPA) Central Office**

Offices: Central Office, Office of Emergency Planning and Community Right-To-Know

Issues Identified: No

Central Office indicated that they have no records on file for the Property or the adjacent properties listed above. Air records were not requested for the Property.

Correspondence with the Ohio EPA is included in Appendix I.

**6.3.2 Ohio EPA District Office**

Offices: Southwest District Office

Issues Identified: No

Southwest District Office indicated that they have no records on file for the Property or the adjacent properties listed above. Air records were not requested for the Property.

Correspondence with Ohio EPA is included in Appendix I.

### **6.3.3 Ohio Bureau of Underground Storage Tanks Regulations (BUSTR)**

Issues Identified: A response has not yet been received from BUSTR. A letter addendum to the report will be issued if a response indicates a concern for the Property. BUSTR's on-line Otter website did not have any listings of USTs/releases for the Duke Energy site for addresses on West Mehring Way, Rose Street or Pete Rose Way.

Correspondence with BUSTR is included in Appendix I.

## **6.4 Local Environmental Records**

### **6.4.1 Local Health Department**

Health Department: Cincinnati Health Department

Issues Identified: A response has not yet been received from the Cincinnati Health Department. A letter addendum to the report will be issued if a response indicates a concern for the Property.

Correspondence with the health department is included in Appendix I.

### **6.4.2 Local Emergency Planning Committee (LEPC)**

County LEPC: Hamilton County Local Emergency Planning Committee

Issues Identified: Richard Jones from the Hamilton County LEPC provided information regarding the 2009 to 2015 chemical inventory for the Duke Energy site located at 655 Mehring Way and the adjacent Valley Asphalt Corporation facility located at 612 Mehring Way. Chemicals listed on the Duke Energy site include: battery electrolyte (sulfuric acid) and Portland cement, and at Valley Asphalt Corporation #2 fuel oil and asphalt cement. No incidents were reported for either site.

Correspondence with the EMA is included in Appendix I.

### **6.4.3 Local Fire Department**

Fire Department: Cincinnati Fire Department

Issues Identified: A response has not yet been received from the fire department. A letter addendum to the report will be issued if a response indicates a concern for the Property.

Correspondence with the fire department is included in Appendix I.

## **7.0 HAZARDOUS SUBSTANCE AND PETROLEUM RELEASE HISTORY**

Based on a review of the EDR report, historical operation of the Property as a manufactured gas plant, and information provided by Mr. Todd Bachand of Duke Energy, documented releases of petroleum substances have historically occurred at the Property.

## 8.0 PROPERTY RECONNAISSANCE

### 8.1 General

On January 4, 2017, Hull representative Mr. Ray Kennedy performed a reconnaissance of the Property to visually assess the Property and to identify IAs and/or RECs. Mr. Kennedy, met with Duke Energy representative Mr. Todd Bachand on January 11, 2017 to discuss environmental issues for the Property. The Scope of Work for the Property reconnaissance is included in Appendix A. A layout of the Property is presented on Figure 2 and the approximate Property boundary is shown in yellow. Property photographs are located in Appendix B.

The Property is divided into two parcels separated by West Mehring Way. There were no buildings on the Property with the exception of an office trailer located beneath the Brent Spence Bridge structure. The northern portion of the Property between West Pete Rose Way (Photos 1 and 2) and Mehring Way (Photo 5) consisted of a large level gravel lot that was being utilized as a laydown yard for miscellaneous piping, electrical poles, and steel lattice (Photos 15-25). Historically, this portion of the Property contained a gasometer, tar wells, and numerous building/processes associated with the former manufactured gas plant. No evidence remains of these former structures. Both empty and tarped roll-off boxes were observed (Photo 24). It appeared that all of these roll-offs were located in the portion of the gravel lot west of the Property boundary. Labels on the roll-offs indicate that the materials were both hazardous and non-hazardous waste and a number of the roll-offs were empty. According to Mr. Bachand, empty roll-offs are staged in the lot in case of an emergency response to allow for rapid deployment. The roll-offs containing material are from off-Property emergency responses and are only temporarily staged on site pending analysis of the material and then shipped for proper disposal. Access to the northern portion of the Property is from Rose Street and West Mehring Way (Photo 4 and 5). There is no access from West Peter Rose Way. There is an approximately eight-foot tall vertical retaining wall (Photos 1 through 3) along West Pete Rose Way to account for the difference in elevation between the gravel lot and Street elevation. This difference in elevation decreases along Rose Street to West Mehring Way.

The southern portion of the Property is located between West Mehring Way and the Ohio River and extends eastward beneath the Brent Spence Bridge to the adjacent Hilltop Basic Resources facility (Photos 6 through 9 and Photos 26 through 47). This area of the Property is relatively level except in proximity to the Ohio River where the elevation changes abruptly by approximately 25 to 30 feet lower at the river. A portion of the shore line along the Ohio River is covered by concrete (Photo 13). The southern portion of the Property is accessed from Rose Street and West Mehring Way. A large portion of this area was occupied by a Duke Energy's substation that had been decommissioned and moved to an adjacent area to the west on the Duke Energy site. Contractors were on-Property during the Property reconnaissance removing remaining support

structures from the decommissioned substation. This portion of the property was gravel covered with a number of concrete pads that previously supported the lattice structure of the substation (Photo 37). Broken fragments of ceramic insulators (Photos 32 and 34) were present scattered within the gravel in the former substation area. To the south of the decommissioned substation was a partially demolished concrete block structure that formerly housed a bank of transformers (Photo 42). Mr. Bachand indicated that the transformers were elevated approximately 16 feet above the ground surface to protect the transformers in case of a flood. A section of rail lines was observed leading into the adjacent West End Power House. Another section of rail that had been removed and was laying on the ground surface. Two roll-off boxes were observed; one containing transformers/insulators (Photo 42) and the other miscellaneous debris. Three small poly tanks were also observed near the southeast corner of the power house (Photo 38). The three tanks appeared empty and one had a label indicating used oil. No staining was observed on the ground surface around the tanks. The eastern portion of this area is situated beneath the Brent Spence Bridge. This portion is asphalt paved and being utilized by INTREN (Photos 43 through 47), a Duke Energy contractor, for storage of miscellaneous conduit, electrical wire, supplies and equipment (backhoes, trucks, generators, compressors, etc.). INTREN also has an office trailer in this area of the Property. There is a gas pipeline that runs beneath this portion of the Property and continues southward beneath the Ohio River into Kentucky.

**Description of Structures, Roads, and Other Improvements on the Property**

Property Access: The Property is accessed from Rose Street and West Mehring Way.

**Current Uses of Adjoining Properties**

Adjoining properties were observed from the Property’s boundaries, public rights-of-way, or other vantage points, including an inspection of areas where hazardous substances may be or may have been stored, treated, handled, or disposed. Observations of the adjoining properties are summarized as follows:

<b>CURRENT USE OF ADJOINING PROPERTIES</b>	
<b>North</b>	W. Pete Rose Way, 700 W. Pete Rose Way. This is a former B&O railroad freight station and storage warehouse that is now utilized by various businesses.
<b>South</b>	The Ohio River.
<b>East</b>	ODOT property associated with the Brent Spence I-71/I-75 bridge and Hilltop Basic Resources, Inc. Crushed aggregate storage and distribution facility.
<b>West</b>	Duke Energy storage yard, West End Power house (switch house) and electrical substation.

**8.1.1 Hazardous Substances and Petroleum Products**

Hull did not observe any hazardous substances currently stored and used at the Property. Three small poly tanks (less than 250-gallons), one labeled as used oil, were observed near the southeast corner of the power house. The tanks all appeared empty and no staining was observed on the ground surface surrounding them.



Hull did not observe any other petroleum products currently stored and used on Property. A former manufactured gas plant operated on the Property and on the Duke Energy site to the west. Duke Energy has conducted extensive remedial activities (combination of soil excavation, in-situ soil solidification and/or jet grouting) to the west and on the northernmost portion of the Property in an area once occupied by a gasometer. However, residual petroleum contamination associated with the former manufactured gas plant remains at depth and in groundwater.

### **8.1.2 Solid and Hazardous Waste Generation, Storage, and Disposal**

Solid waste dumpsters and eight roll-offs, some empty, and others identified as containing hazardous waste (labeled as PCB containing solids and asbestos) and non-hazardous waste were observed. These roll-offs were tarped and appeared to be properly secured and no staining was observed on the ground surface around them. It appeared that all of these roll-offs were staged on the Duke Energy site west of the Property boundary. According to Mr. Bachand, empty roll-offs are staged in the lot in case of an emergency response to allow for rapid deployment. Roll-offs containing material are only temporarily staged on site pending analysis of the material and then shipped for disposal. Transformers and electrical insulators were observed in one roll-off in the southern portion of the Property.

### **8.1.3 Underground Storage Tanks (USTs)**

USTs present: No evidence of USTs (i.e. vent pipes, fill ports, patched pavement, etc.) was observed or reported on the Property and none were identified in the environmental database report as discussed in Section 6.3.

Evidence of historic USTs: No evidence of historic USTs was observed during the Property reconnaissance and none were identified in the environmental database report as discussed in Section 6.3. However, as noted in Section 6.1, Sanborn Maps showed a gasoline tank on the southern portion of the Property.

### **8.1.4 Aboveground Storage Tanks (ASTs)**

ASTs present: Yes; Three poly tanks (<250 gallons in size) were observed near the southeast corner of the power house during the Property reconnaissance. The tanks all appeared empty and no staining was observed on the ground surface surrounding them.

Evidence of historic ASTs: No evidence of historic ASTs was observed during the Property reconnaissance. The Property and the adjacent Duke Energy site to the west was once part of a former manufactured gas plant. Historical Sanborn maps and aerial photographs show the presence of a number of gasometers and other ASTs on Property and on the adjacent Duke Energy site.

### **8.1.5 Polychlorinated Biphenyls (PCBs)**

Potential PCB-bearing equipment observed: A number of transformers were being stored in a roll-off in the

southern portion of the Property. No staining was observed on the ground surface around the roll-off. An electrical substation and transformers previously were located on the southern portion of the Property. The electrical substation was moved to the west, north of the power house building in anticipation of the ODOT bridge expansion project.

Pole mounted transformers were also observed adjacent to the Property along West Pete Rose Way, Rose Street and West Mehring Way. Hull did not observe labels on the transformers indicating whether they were PCB-containing. No staining was observed on the ground surface around the power poles.

#### **8.1.6 Wastewater and Stormwater**

No buildings or processes are present on the Property to generate waste water. Stormwater runoff flows across the Property to catch basins on the Property or into catch basins located along Rose Street and West Mehring Way or into the Ohio River.

#### **8.1.7 Pits, Ponds, Lagoons**

No pits, ponds, or lagoons were observed during the Property reconnaissance.

#### **8.1.8 Stressed Vegetation and Stained Pavement**

The majority of the property is covered by gravel and hardscape pavement. Only limited areas of vegetation are present; primarily in the southeast corner of the Property along the bank with the Ohio River. Since, the Property reconnaissance was conducted during the winter months of the year, an accurate visual observation of stressed vegetation could not be conducted.

#### **8.1.9 Odors**

No strong, pungent, or noxious odors were apparent during the Property reconnaissance.

#### **8.1.10 Pools of Liquid**

No standing surface water containing liquids likely to contain hazardous substances or petroleum products were observed on the Property.

#### **8.1.11 Drains and Sumps**

Storm trench drains were observed at the base of the entrances to the gravel lot in the northern portion of the Property from Rose Street and West Mehring Way. Two storm drain catch basins were observed in the asphalt paved area occupied by INTREN and another storm drain was observed at the southern edge of the Property as the elevation abruptly lowers to the Ohio River. All drains appeared to be in good condition with no evidence of staining or sheens around or in the drains.

#### **8.1.12 Wells**

Two monitoring wells were observed at the northeast corner of the northern Property parcel and two monitoring wells were observed on the southern portion of the Property during the reconnaissance. Mr. Bachand indicated that these wells are part of a monitoring well network being monitored across the larger Duke Energy site.

#### **8.1.13 Septic Systems**

No evidence of septic systems was observed during the Property reconnaissance and none were reported to be on the Property.

#### **8.1.14 Other**

No other items were included as part of this assessment.

## 9.0 FINDINGS AND OPINION

Hull performed a Phase I Property Assessment of the Property comprised of the eastern portions of parcels 137-0003-0020 and 137-0003-0070 in Cincinnati, Hamilton County, Ohio. The assessment was conducted during December 2016 through February 2017 to evaluate the presence of IAs and/or RECs from current and past operations associated with the Property and was prepared in accordance with the Ohio VAP codified in OAC 3745-300-06 and in accordance with the ASTM Standard E 1527-13 *Standard Practice for Environmental Property Assessments: Phase I Environmental Property Assessment Process*. The assessment was based on information gained by qualified Hull personnel from a review of public documents, files, photographs and maps; correspondence with regulatory agencies; a review of an environmental regulatory database search report; interviews with Duke Energy and ODOT officials; and a reconnaissance of the Property.

A description of the physical setting of the Property, background historical information for the Property and the findings obtained through the review of environmental records are presented in Sections 3.0, 4.0 and 6.0. A description of the Property investigation, including the Property reconnaissance, is presented in Section 8.0.

This assessment has revealed the following IAs/RECs in connection with the Property.

### **Northern Portion of the Property (north of Mehring Way)**

1. **Historical Manufactured Gas Plant Operations.** Former manufactured gas plant operations/activities including a gasometer, tar wells, oil houses, booster houses and purifiers. These operations/activities potentially affected soils, groundwater and/or soil vapor across the northern portion of the Property. Potential COCs include VOCs, PAHs, metals (lead, arsenic, cyanide), and/or TPH.

### **Southern Portion of Property (south of Mehring Way)**

2. **Historical Manufactured Gas Plant Operations.** Former manufactured gas plant operations/activities occurred on the southern portion of the Property and included a former garage, retorts, coal storage yard, rail lines, and a potential gasoline UST. These operations/activities potentially affected soils, groundwater and/or soil vapor. Potential COCs include VOCs, PAHs, lead, arsenic, cyanide, and TPH.

Other IAs/RECs in the southern portion of the Property which overlap former manufactured gas plant operations/activities include:

3. **Former Oil Storage and Fuel Oil Houses.** These two structures (IA/REC-3[a] and IA/REC-3[b]) are no longer present, except for the concrete slab associated with the fuel oil house. There were no visual indications of spills or releases around these former structures. However, a former release(s), if any, from these structures may have potentially affected soils, groundwater and/or soil vapor. Potential COCs for this area include BTEX, PAHs, PCBs, and TPH.
  
4. **Electrical Substation Transformers.** CG&E and Duke Energy previously operated an electrical substation (IA/REC 4[a] on the Property that was decommissioned and moved in anticipation of the ODOT bridge expansion project. There was also a bank of transformers (IA/REC-4[b] that was removed. The transformers were positioned in a poured concrete and concrete block structure and elevated above the ground surface to protect the transformers in case the river flooded. This structure was in the process of being demolished by Duke Energy's contractor at the time of Hull's reconnaissance. Any historic releases of PCBs could potentially affect soils. Potential COCs for this area include PCBs associated with transformer oil.

Two additional IA/REC were identified in the southern portion of the Property beyond the apparent limits of the former manufactured gas plant and electrical substation operations/activity areas. These IAs/RECs are associated with historical industrial operations that occurred on the Property prior to 1900 and include:

5. **Former Forest City Chemical Company.** The Forest City Chemical Company operated on the Property and was a refiner of coal tar and produced tar paper. Historical operations/activities potentially affected soils, groundwater and/or soil vapor. Potential COCs include VOCs, PAHs, lead, arsenic, cyanide, and TPH.
  
6. **Former J.W. Foley Foundry.** This former foundry operated in the late 1800s. Historical operations/activities potentially affected soils and groundwater. Potential COCs include metals.

### **Property-wide Groundwater**

7. Historical Manufactured Gas Plant and CG&E Electrical Generation Operations/Activities On-Property and Off-Property. The Duke Energy site to the west was also the former location of manufactured gas plant operations/activities including gasometers, tar tanks, purifying houses, a condenser room, tar scrubbers, and coal yard, and in more recent years

an electrical generation powerhouse. According to information discussed with Mr. Todd Bachand of Duke Energy, soils/residual materials in this area have been remediated via in-situ soil solidification, grout jetting and excavation. Although groundwater flow is primarily to the south, there is potential for groundwater exceeding VAP standards to migrate onto the Property. Potential COCs include VOCs, PAHs, and metals (lead, arsenic, cyanide).

**Conditional Recognized Environmental Conditions (CRECs):**

A CREC is an environmental condition that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (property use restrictions, activity and use limitations, institutional controls, or engineering controls), per ASTM Standard E1527-13. No CRECs were identified at the Property.

**Historical Recognized Environmental Conditions (HRECs):**

A HREC is an environmental condition that has been addressed to the satisfaction of the applicable regulatory authority, which meets unrestricted use criteria, per ASTM Standard E1527-13. No HRECs were identified at the Property.

**De Minimis Conditions:**

A de minimis condition is evidence of a release of a small quantity of petroleum or hazardous substances that does not likely affect building materials, or soil or groundwater on the Site. An example is small areas (i.e., less than nine square feet in size) of surficial staining on paved surfaces. Minor de minimis conditions (oily staining) were noted as part of this assessment on the gravel and asphalt pavement in the southern portion of the Property.

## 10.0 SIGNIFICANT DATA GAPS

Hull was not provided copies of any previous environmental reports prepared for the Duke Energy site in which the Property is a part of. Although these reports were not provided, Hull met with Mr. Todd Bachand, Duke Energy's Lead Environmental Specialist Remediation & Decommissioning, to discuss known environmental issues and remedial activities that have been undertaken. Most of the previous investigation and remedial work was completed on the adjacent Duke Energy site to the west and on the northernmost portion of the Property related to the remediation of a former gasometer. These previous reports could provide some additional information that could potentially eliminate IAs and/or RECs, but the lack of access to this information should not affect our ability to identify IAs or RECs because of other documentation that was reviewed during the Phase I.

## 11.0 VOLUNTARY ACTION PROGRAM ELIGIBILITY

Listed below are the eight issues that could render portions of a property ineligible for Ohio's VAP, as codified in OAC 3745-300-02. Based on Hull's review of the documents and Property reconnaissance, none of these are potential issues with the possible exception of issue number 6 as explained below.

1. *National priorities list sites. Any property identified on the national priorities list, pursuant to the CERCLA, and regulations adopted thereunder.*

**This potential VAP eligibility issue does not apply to the Property.**

2. *Properties subject to the underground injection control program. Any property or portion thereof which is subject to requirements for site assessment, removal, or remediation, pursuant to the Safe Drinking Water Act, 42 U.S.C. 300f, et seq., as amended, and the regulations adopted thereunder, or Chapter 6111. of the Revised Code and rules adopted thereunder, regarding class I, II, III, and IV underground injection control wells.*

*Any property or portion thereof on which a class V underground injection control well is located is eligible for the voluntary action program if it is not the subject of an order or permit requiring site assessment, removal, or remediation of hazardous substances or petroleum.*

**This potential VAP eligibility issue does not apply to the Property.**

3. *Properties subject to federal or state corrective action permit obligations. Any property or portion thereof which is required to perform corrective action, pursuant to a federal or a state permit issued under RCRA, and the regulations adopted thereunder, and Chapter 3734. of the Revised Code and rules adopted thereunder.*

**This potential VAP eligibility issue does not apply to the Property.**

4. *Properties subject to federal enforcement. Any property that is the subject of a federal enforcement action which requires site assessment, removal, or remedial activities, pursuant to any federal laws and regulations, including, without limitation, the federal laws set forth in division (A) of section 3746.02 of the Revised Code. For the purposes of this paragraph, "federal enforcement action" includes but is not limited to the issuance of administrative or judicial orders, injunctions, and consent decrees.*

**This potential VAP eligibility issue does not apply to the Property.**

5. *Closure required under Chapter 3734 of the Revised Code. Any property where closure of a hazardous waste facility or a solid waste facility is required under Chapter 3734 of the Revised Code or rules adopted thereunder.*

(a) *"Solid waste facility," for purposes of this paragraph, includes any facility as defined in section 3734.01 of the Revised Code and rule 3745-27-01 of the Ohio Administrative Code, including but not limited to sanitary landfill facilities, municipal solid waste disposal facilities, residual waste landfill facilities, industrial solid waste facilities, solid waste transfer facilities, scrap tire facilities, solid waste incinerator or solid waste energy recovery facilities, or composting facilities. "Property where closure of a solid waste facility is required" includes the following:*



- (i) Any solid waste facility for which a license, plan approval, permit-to-install, registration, or other authorization has been issued pursuant to Chapter 3734. of the Revised Code and rules adopted thereunder; and
  - (ii) Any solid waste facility, for which closure activities have been completed in accordance with Chapter 3734. of the Revised Code, during the term of any applicable post-closure care period required by Chapters 3745-27, 3745-29, and 3745-30 of the Administrative Code.
- (b) For the purposes of this rule, "property where closure of a hazardous waste facility is required" includes the following:
- (i) Those portions of a property on which hazardous waste generator closure of any accumulation area is required pursuant to Chapter 3745-52 of the Administrative Code;
  - (ii) Those portions of a property on which "closure" of a "hazardous waste management unit" is required under Chapter 3734. of the Revised Code, as those terms are defined in section 3734.01 of the Revised Code, and rule 3745-50-10 of the Administrative Code, respectively, regardless of whether a hazardous waste facility installation and operation permit has been issued. Properties on which "hazardous wastes," as defined in section 3734.01 of the Revised Code, were treated, stored, or disposed of, are required to be closed in accordance with Chapter 3734. of the Revised Code and rules adopted thereunder; and
  - (iii) Any hazardous waste management unit described in paragraph (B)(5)(b) of this rule, for which closure activities have been completed in accordance with Chapter 3734. of the Revised Code, during the term of any applicable post-closure care period required by Chapters 3745- 55 and 3745-66 of the Administrative Code.

[Comment: Division (H) of section 3734.02 of the Revised Code and rule 3745-27-13 of the Administrative Code require that authorization be received from the director prior to engaging in the filling, grading, excavating, building, drilling, or mining on land where a hazardous waste facility, or a solid waste facility was operated.]

**This potential VAP eligibility issue does not apply to the Property.**

6. Petroleum underground storage tank systems. Any property that is subject to site assessment, removal, or remediation, pursuant to sections 3737.88, 3737.882, and 3737.89 of the Revised Code and rules adopted thereunder regarding underground storage tank systems, including any underground storage tank systems which contain or had previously contained petroleum.

**Sanborn maps show the presence of an unknown capacity gasoline UST on the Property. The Duke Energy representative did not have any knowledge of this tank nor did BUSTR have any records for a tank on the Duke Energy site. If a tank is discovered, this area of the Property may be ineligible for the VAP until BUSTR has issued an NFA status for**

**the Property or UST site.**

7. *Oil and gas. Any property that is subject to site assessment, removal, or remediation, pursuant to Chapter 1509. of the Revised Code and rules adopted thereunder.*

**This potential VAP eligibility issue does not apply to the Property.**

8. *Properties subject to an enforcement letter. Any property that is the subject of an enforcement letter from the director relating to a release or threatened release of hazardous substances or petroleum on, underlying or emanating from the property which poses a substantial threat to public health or safety or the environment, except when sufficient evidence of entry and participation in the voluntary action program is demonstrated, as provided in paragraph (C) of this rule.*

**This potential VAP eligibility issue does not apply to the Property.**

## 12.0 CONCLUSIONS AND RECOMMENDATIONS

Hull has performed this Phase I Property Assessment in accordance with the Ohio VAP codified in OAC 3745-300-06 and with the ASTM Standard E 1527-13 *Standard Practice for Environmental Property Assessments: Phase I Environmental Property Assessment Process*. Any exceptions to, or deletions from, this practice are described in Section 13.0 of this report. This assessment has revealed evidence of IAs and/or RECs in connection with the Property.

Based upon the findings of this Phase I Property Assessment, Hull recommends Phase II activities be conducted at the Property in accordance with OAC 3745-60-007. Chemicals of concern that potentially will be encountered on Property due to historical operations include: VOCs, PAHs, metals (lead, arsenic, cyanide), and TPH.

### 13.0 DEVIATIONS

The assessment was conducted to evaluate the presence of IAs and/or RECs from current and past operations associated with the Property and was conducted in accordance with the Ohio VAP codified in OAC 3745-300-06 and in accordance with the ASTM Standard E 1527-13 *Standard Practice for Environmental Property Assessments: Phase I Environmental Property Assessment Process*. No deviations from this standard occurred during this project.

## 14.0 REFERENCES

A variety of technical documents and publications were referred to during the course of this project. Some of the references consulted are presented below. Referenced documents and publications may or may not have been reviewed in their entirety. The guidelines and procedures presented in the documents and publications referenced have not been strictly adhered to unless stated otherwise.

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## 15.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. Copies of our résumés showing pertinent qualifications are presented in Appendix J.

Prepared by:



Raymond Kennedy  
Senior Project Manager

Reviewed by:



---

Steven M. Gross  
Senior Project Manager  
Certified Professional No. 192

Date: February 27, 2017

## FIGURES

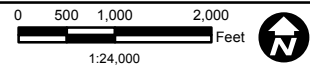




● Property Location

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Quad: Covington

Source: The topographic map was acquired through the USGS Topographic Map web service.

The aerial photo in the inset was acquired through the ESRI Imagery web service. Aerial photography dated 2013.



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Phase I Property Assessment  
HAM75 - Brent Spence Bridge Property

**Property Location Map**

Portion of 646 and 655 Mehring Way  
City of Cincinnati, Hamilton County, Ohio

Date:

**February 2017**

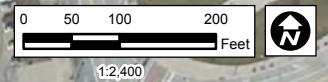
File Name:

ODT200\_01\_Fig01\_PLM.mxd

Edited: 2/9/2017 By: jsliifer

Figure

**1**



- Property Boundary
- Property Parcels
- Property Corners

**Notes:**  
The aerial photo was acquired through the ESRI Imagery web service. Aerial photography dated 2015.



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Phase I Property Assessment  
HAM75 - Brent Spence Bridge Property

Figure

### Property Plan

# 2

Portion of 646 and 655 Mehring Way  
City of Cincinnati, Hamilton County, Ohio



**Notes:**  
The aerial photo was acquired through the ESRI Imagery web service. Aerial photography dated 2015.



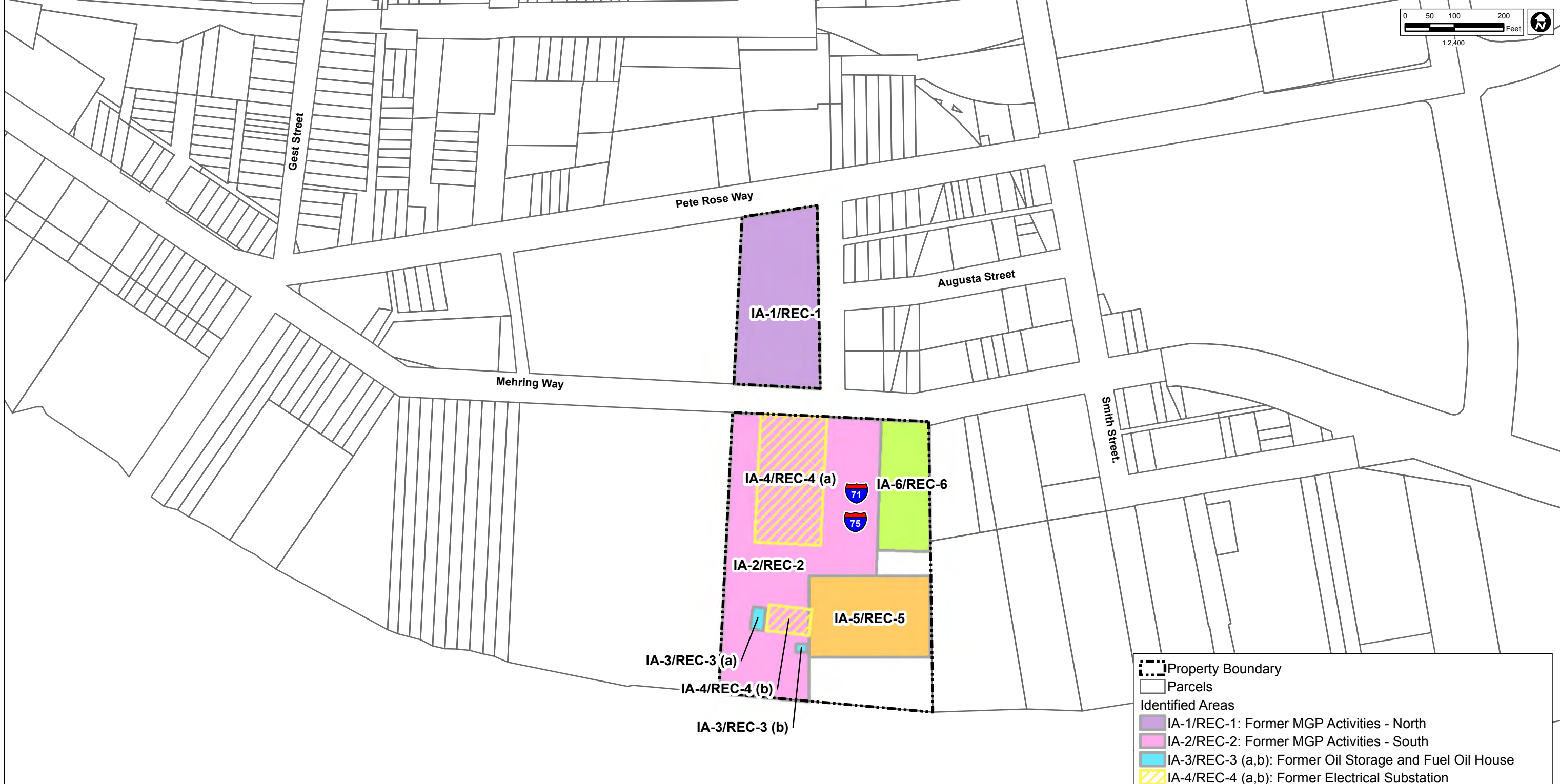
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February 2017

Phase I Property Assessment  
HAM75 - Brent Spence Bridge Property  
**Property Plan Showing  
Property and Surrounding Area**  
Portion of 646 and 655 Mehring Way  
City of Cincinnati, Hamilton County, Ohio

Figure  
**3**



**Legend**

- Property Boundary
- Parcels
- Identified Areas**
  - IA-1/REC-1: Former MGP Activities - North
  - IA-2/REC-2: Former MGP Activities - South
  - IA-3/REC-3 (a,b): Former Oil Storage and Fuel Oil House
  - IA-4/REC-4 (a,b): Former Electrical Substation
  - IA-5/REC-5: Former Forest City Chemical Company
  - IA-6/REC-6: Former J.W. Foley Foundry
  - IA-7/REC-7: Property-Wide Groundwater (Not Shown on Plan)

Ohio River



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February 2017

Phase I Property Assessment  
HAM75 - Brent Spence Bridge Property

**Property Plan Showing  
IAs/RECs**

Portion of 646 and 655 Mehring Way  
City of Cincinnati, Hamilton County, Ohio

Figure  
**4**

## **APPENDIX A**

Scope of Work

**APPENDIX AVAILABLE UPON REQUEST** (Large File)

## **APPENDIX B**

Photographs from Property Reconnaissance

**APPENDIX AVAILABLE UPON REQUEST** (Large File)

## **APPENDIX C**

Historical Documentation

**APPENDIX AVAILABLE UPON REQUEST** (Large File)

## **APPENDIX D**

Aerial Photographs

**APPENDIX AVAILABLE UPON REQUEST** (Large File)



## **APPENDIX E**

Historical Land Use Maps

**APPENDIX AVAILABLE UPON REQUEST** (Large File)

## **APPENDIX F**

Oil and Gas Well Map

**APPENDIX AVAILABLE UPON REQUEST** (Large File)

## **APPENDIX G**

ODNR Water Well Logs and Wellhead Protection Area Map

**APPENDIX AVAILABLE [UPON REQUEST](#)** (Large File)

## **APPENDIX H**

Environmental Database Report

**APPENDIX AVAILABLE UPON REQUEST** (Large File)

## **APPENDIX I**

Regulatory Agency Correspondence

**APPENDIX AVAILABLE UPON REQUEST** (Large File)

## **APPENDIX J**

Résumés of Environmental Professionals

**APPENDIX AVAILABLE UPON REQUEST** (Large File)