

**CASE No. 14-1717-GA-BLN  
LON  
AVON LAKE GAS ADDITION PROJECT  
PROPOSED NATURAL GAS PIPELINE**

**ATTACHMENT C**

**CULTURAL RESOURCES AND OHIO HISTORIC PRESERVATION  
OFFICE COORDINATION AND CORRESPONDENCE**

**Environmental  
Resources  
Management**

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June 11, 2014

Mr. Mark Epstein  
Ohio Historic Preservation Office  
800 East 17<sup>th</sup> Avenue  
Columbus, Ohio 43211-2474

Subject: NRG Ohio Pipeline Company LLC Pipeline Project  
Lorain County, Ohio

Dear Mr. Epstein:

NRG Ohio Pipeline Company LLC ("NRG Ohio Pipeline") is developing an approximately 20-mile natural gas pipeline in Lorain County, Ohio in order to provide natural gas as a fuel source to the Avon Lake Power Plant, which is owned by an affiliate of NRG Ohio Pipeline ("Pipeline Project or Project"). The natural gas pipeline's proposed project route ("Proposed Project Route") mostly parallels existing road, railroad and utility rights-of-way ("ROW") and will be primarily located in previously disturbed areas. Affected or adjacent land uses mostly include existing industrial, commercial and mixed residential uses. Additionally, extensive wetlands occur along the Proposed Project Route. The pipeline will require a permanent 50-foot ROW for operation and maintenance and up to 50 additional feet of temporary ROW for construction.

In light of the previously disturbed nature of the area that will be affected by the Project and the prevalence of wetlands, we hereby seek your concurrence that archaeological resource surveys be focused only on those areas where there may be a higher potential to encounter significant, intact archaeological resources. Specifically, NRG Ohio Pipeline requests your concurrence that the extent of Phase I archaeological survey be limited to a 200-foot corridor in certain areas, for a total of approximately 28-acres north of Interstate 80 and approximately 175-acres south of Interstate 80 (as indicated on the attached Exhibit A maps as the 'archaeological survey area'). We also request your concurrence that a Phase I architectural history survey for the proposed route is not necessary, given the Project's location and description.

## **I. BACKGROUND AND PROJECT OVERVIEW**

The Avon Lake Power Plant is a 734 MW coal-fired generating facility located in Avon Lake, Ohio ("Power Plant").<sup>1</sup> The Power Plant is owned by NRG Power Midwest LP, which is a subsidiary of NRG Energy, Inc. ("NRG"). The Power Plant was slated for retirement by the facility's prior owner as a result of significant expenditures required to meet increasingly stringent environmental requirements. NRG has decided to move ahead with a gas addition project, which will keep the facility in operation on natural gas beyond its planned deactivation date ("Avon Lake Gas Addition Project" or "Project"). To add natural gas as a fuel supply for the Power Plant, an approximately 20-mile natural gas pipeline must be designed, permitted and constructed. The Avon Lake Gas Addition Project will bring environmental, economic, employment and electric supply reliability benefits to the State. The expected commercial operation date for the Project is April 2016.

NRG Ohio Pipeline is proposing to install either a 20-inch or 24-inch diameter high-grade steel natural gas pipeline entirely in Lorain County that will extend approximately 20-miles south from the Avon Lake Power Plant, along the Lake Erie shoreline, to the existing Dominion East Ohio Gas Pipeline. The proposed Dominion Pipeline tap location is located west-southwest of the Village of Grafton. The Proposed Project Route is the most feasible direct route between these two points after balancing all factors, including environmental, geographic, cultural, social and constructability considerations.

Only 1,623 feet of the proposed Pipeline Project will be aboveground. The Pipeline Project will require a permanent (operation and maintenance) ROW of 50-feet in width and a temporary (construction) ROW of 50-feet to accommodate construction activities. Additional temporary workspace areas ("TWAs") outside of the 100-foot construction ROW are anticipated for short durations for construction staging areas and special construction techniques for activities such as waterbody, wetland and road/rail crossings, and horizontal directional drilling. The setback distances of TWAs would be established on a site-specific basis. Existing public and private roads would be utilized for access to most of the construction ROW; however, 5-miles (or 26,156-feet) of 30-foot-wide temporary access roads are anticipated. Additionally, permanent metering and regulating stations (1 of each) will be required, each comprising approximately 1-acre.

The area of potential effect ("APE") encompasses approximately 290-acres and includes the combined permanent and temporary ROWs, TWAs, temporary access roads and the permanent metering and regulating stations.

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<sup>1</sup> The Power Plant also has one oil-fueled unit.

The proposed Pipeline Project will require siting approval from the Ohio Power Siting Board ("OPSB") and additional approvals from other state and federal agencies, including a Section 404 permit from the U.S. Army Corps of Engineers.

## II. RECOMMENDED SURVEY AREAS

### *Phase I Archaeological Survey*

Environmental Resources Management ("ERM") reviewed the proposed Pipeline Route in OHPO's online mapping system in February 2014. Results from the database query indicated that eight archaeological sites, consisting of prehistoric artifacts, were previously recorded within 0.25-miles of the Proposed Project Route, one of which is crossed by the Proposed Project Route. However, none of the eight archaeological sites are known to be already listed or eligible for inclusion in the National Register of Historic Places ("NRHP"). Further, the integrity of these sites, or whether or not they remain intact, is unknown.

As discussed herein and as demonstrated on Exhibit A, the majority of the Proposed Pipeline Route (almost 60%) will be located in or along previously disturbed ROWs or along existing developed areas. The portion of the Pipeline Project north of Interstate 80 is more developed and hence subject to greater prior disturbance than the portion of the Pipeline Project south of the interstate. South of Interstate 80, the Proposed Pipeline Route mostly diverges from existing ROWs into undeveloped areas in an effort to minimize the potential for impact to wetlands and to reduce the extent of tree removal required. Based on both a desktop and field delineation of wetlands, almost 30% of the Proposed Project Route will cross wetlands. Areas that would have a higher potential to encounter significant, intact archaeological resources would include those in upland (non-wetland) areas that have not been previously disturbed by the installation and operation of existing utilities or other infrastructure, or by any other form of land development.

Because the majority of the Proposed Pipeline Route is located in or along areas that have been previously disturbed and given the prevalence of wetlands, only a portion of the Pipeline Project will affect areas that may have a higher potential to encounter significant, intact archaeological resources. ERM recommends a Phase I archaeological survey be conducted within a 200-foot-corridor for only these areas. This focused extent of Phase I archaeological survey would comprise approximately 28-acres north of Interstate 80 and approximately 175-acres south of Interstate 80. Additional detail supporting our recommendation as to the focused extent of the Phase I archaeological survey is provided below:

- Approximately six miles of the Proposed Pipeline Route north of Interstate 80 parallels a Columbia Gas of Ohio proposed natural gas pipeline for which a

Phase I and II cultural resources survey was completed. The survey did not identify any archaeological sites in this area.

- A sanitary sewer line was recently constructed along the same general corridor as the Proposed Project Route (Lorain County Rural Wastewater District, Phase 1 Wastewater Collection and Treatment Improvements Project). The Proposed Project Route parallels this sanitary sewer line for approximately 0.5-miles north of Interstate 90 and an additional 5-miles from French Creek Road (just south of Interstate 90) to Interstate 80. ERM has reviewed the environmental report submitted to the Ohio Rural Community Assistance Program and associated consultation letters with the OHPO for this project. No cultural resources surveys were completed for this project because OHPO had determined that much of the area along the intended route appeared to be previously disturbed given the presence of an existing electric transmission line and previously surveyed gas line.

#### *Architectural History Survey*

As previously identified, ERM reviewed the Proposed Pipeline Route in OHPO's online mapping system in February 2014. Eight previously recorded architectural historic properties (all being structural properties) within 0.25-miles of the Proposed Pipeline Route were identified as a result of the database query. Seven of the eight properties are not eligible for inclusion in the NRHP and one property, the Peter Miller House, is listed on the NRHP.

However, the underground portions of the pipeline would be constructed in a way that minimizes any changes to the location, setting, design, materials, and workmanship of any existing aboveground properties along the Proposed Pipeline Route. Given its diminutive size and prominence and lack of significant aboveground features compared to other more prominent aboveground features adjacent to the Proposed Pipeline Route, such as existing utilities and other land uses, the permanent visual effects that the proposed pipeline would have on any aboveground properties would be minimal. Areas subject to temporary ground disturbance during construction will be restored to their pre-construction conditions, to the extent feasible.

As it relates to the aboveground portion of the pipeline, this portion of the Project would be located in a highly industrialized area near the Avon Lake Power Plant. The proposed aboveground portion of the pipeline is compatible with its surrounding setting in terms of design, scale, size, materials and use, and would serve to allow for the Avon Lake Power Plant to maintain its use and function as a power plant. This addition/alteration reflects the ongoing importance of the Avon Lake Power Plant as a critical link in meeting the growing energy needs of the regional area.

Given the overall lack of anticipated impacts to any aboveground properties and the compatibility of the aboveground portion of the Proposed Pipeline Route with its surrounding area, ERM recommends no Phase I architectural history survey be required for the Project.

### III. CONCLUSION

We request your written concurrence as to the survey extents described above. To reiterate our recommended survey extents:

- we recommend a Phase I archaeological survey of approximately 28-acres north of Interstate 80 and approximately 175-acres south of Interstate 80; and
- we recommend that no Phase I architectural history survey be required.

In order to meet the Project schedule, we have already commenced field investigations. We are available to meet with you to discuss the proposed Pipeline Project should that be preferred.

Thank you in advance for your time and consideration. If you have any questions or require additional information about the proposed Project, please do not hesitate to contact me at 443-207-0519, or via email at [andrew.bielakowski@erm.com](mailto:andrew.bielakowski@erm.com).

Sincerely,



Andrew Bielakowski  
*Principal Investigator*

Enclosures: Exhibit A, Maps

cc: Nathan Young, Ohio Historic Preservation Office  
Nate Rozic, NRG  
Doni Murphy, ERM

**Phase I Archaeological Investigation for NRG Ohio Pipeline  
Company's Proposed Pipeline Project**

**Lorain County, Ohio**

**Lead Public Agency:  
Ohio Power Siting Board**

**Prepared For:  
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211 Carnegie Center  
Princeton, New Jersey 08540**

**Prepared By:  
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Mark Doperalski, M.A., RPA**

**July 2014**

## ABSTRACT

In May 2014, Environmental Resources Management (“ERM”) conducted a Phase I Archaeological Survey on behalf of NRG Ohio Pipeline Company LLC (“NRG Ohio Pipeline”) for a proposed natural gas pipeline. NRG Ohio Pipeline is developing an approximately 20-mile natural gas pipeline in Lorain County, Ohio in order to provide natural gas as a fuel source to the Avon Lake Power Plant, which is owned by an affiliate of NRG Ohio Pipeline (the “Pipeline Project” or “Project”). The Avon Lake Power Plant is a 734 MW coal-fired generating facility located in Avon Lake, Ohio (“Power Plant”).<sup>1</sup> The Power Plant is owned by NRG Power Midwest LP, which is a subsidiary of NRG Energy, Inc. (“NRG”). The Power Plant was slated for retirement by the facility’s prior owner as a result of significant expenditures required to meet increasingly stringent environmental requirements. NRG has decided to move ahead with a gas addition project, which will keep the facility in operation on natural gas beyond its planned deactivation date (the “Avon Lake Gas Addition Project”). To add natural gas as a fuel supply for the Power Plant, the proposed natural gas pipeline must be designed, permitted and constructed. The Avon Lake Gas Addition Project will bring environmental, economic, employment and electric supply reliability benefits to the State. The expected operation date for the pipeline is April 2016.

NRG Ohio Pipeline is proposing to install a 24-inch diameter high-grade steel pipeline that will extend south from the Avon Lake Power Plant, which is located on the Lake Erie shoreline in the City of Avon Lake, to a proposed supply tap location west-southwest of the Village of Grafton (the “Proposed Route”). The Proposed Route is the most feasible direct route between these two points upon balancing all factors, including environmental, geographic, cultural, social and constructability considerations, as well as landowner concerns.

Approximately 1,623 feet of the proposed pipeline will be aboveground. The pipeline will require a permanent (operation) right-of-way (“ROW”) of 50-feet in width and a temporary (construction) ROW of 100-feet. Additional temporary workspace areas (“TWAs”) outside of the 100-foot construction ROW will be needed for short durations in some areas. Existing public and private roads would be utilized for access to most of the construction ROW; however, 5-miles (or 26,156-feet) of 30-foot-wide temporary access roads are anticipated. The required metering and regulating stations will each be approximately 1-acre in size.

The proposed Project will require siting approval from the Ohio Power Siting Board (“OPSB”) in accordance with Ohio Administrative Code 4906. Ohio Revised Code 149.53 states that state agencies, such as OPSB, should cooperate and work with the Ohio Historic Preservation Office (“OHPO”) during the planning and construction of state-reviewed projects. Therefore, OPSB requires consultation with the OHPO regarding the

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<sup>1</sup> The Power Plant also has one oil-fueled unit.



protection of National Register of Historic Places (“NRHP”) properties, including any sites that are eligible for listing, or state significant historic properties. The proposed Pipeline Project will require additional approvals from other state and federal agencies, including a Section 404 permit from the U.S. Army Corps of Engineers. Therefore, the proposed Pipeline Project would be subject to review under Section 106 of the National Historic Preservation Act of 1966, as amended.

The Phase I archaeological investigation was conducted within the scope of the Ohio Historic Preservation Office’s (“OHPO”) *Archaeological Guidelines* (OHPO 1994 as reprinted in 2011) and *The Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation* [48 Federal Register 44716-44740] (National Park Service [NPS] 1983). The investigation was conducted to identify archaeological resources associated with the Project’s Area of Potential Effect (“APE”) that may be potentially eligible for inclusion in the NRHP. The APE, for the purposes of this investigation, included all areas of proposed construction activities or other potential ground disturbing activities. The “Project Area” encompassed both the APE and an area extending beyond the APE. This additional area on either side of the anticipated right-of-way was included in the Project Area to allow for flexibility in the event of minor route or workspace adjustments. The Project Area consisted of a 500.63-acre (202.60-hectare) area, which included a 200-ft corridor centered on the centerline of the Proposed Route, as well as anticipated TWAs outside the 200-ft corridor.

The majority of the Project Area (nearly 60 percent) will be located in or along previously disturbed rights-of-way or along existing developed areas. The portion of the Project Area north of Interstate 80 is more developed and subject to greater prior disturbance than the portion of the Project Area south of the interstate. South of Interstate 80, the Project Area mostly diverges from existing ROWs into undeveloped areas in an effort to minimize the potential for impact to wetlands, namely forested wetlands. Based on both a desktop and field delineation of wetlands, nearly 30 percent of the Project Area will cross wetlands. Areas considered to have a high potential to contain significant, intact archaeological resources include those in upland (non-wetland) areas near water sources that have not been previously disturbed by the installation and operation of existing utilities or other infrastructure, or by any other form of land development.

Because the majority of the Project Area is located in or along areas that have been previously disturbed and given the prevalence of wetlands, only a portion of the Project Area falls within areas that were assumed to have a high potential to encounter significant, intact archaeological resources. As a result, a Phase I archaeological survey was only conducted within the portions of the Project Area that occur within these assumed high potential areas (the “Survey Area”) (see Appendix A: Survey Results Maps). The Survey Area consisted of 202.59 acres (81.99 hectares). Fieldwork was conducted from May 15 to May 29, 2014. Andrew Bielakowski and Mark Doperalski served as Principal Investigators.

The Survey Area was comprised largely of agricultural lands complimented with a small extent of wooded uplands. A majority of the agricultural lands that occur within the Survey Area consisted of actively cultivated fields exhibiting 50 to 95 percent surface visibility. A small extent of the agricultural lands that occur within the Survey Area consisted of pastureland or open grassland exhibiting little to no surface visibility. The small extent of wooded uplands that occur within the Survey Area also exhibited little to no surface visibility. Pedestrian survey was completed for 190.71 acres (77.18 hectares) and shovel testing was completed for 11.88 acres (4.81 hectares). Shovel tests (133) were excavated in eight areas that were assessed as warranting subsurface investigation.

During the Phase I archaeological survey, ERM identified five newly recorded archaeological sites (Figure 3; Table 5; Appendix A). All five sites (33LN0278, 33LN0279, 33LN0280, 33LN0281, and 33LN0282) are recommended not eligible for listing in the NRHP based on the results of the current investigation. These five sites consist of two lithic isolated finds (33LN0278 and 33LN0282), two sparse lithic scatters (33LN0280 and 33LN0281), and one historic-period site (33LN0279) consisting of a well feature and several drainage ditches. These five newly recorded archaeological sites are described in detail further below and summary information for each is presented in Table 5.

Two additional find spots, AV88.1-1 and AV199-1, were identified during the Phase I archaeological survey. Site AV88.1-1 is a modern-period dump deposit consisting of discarded wood comprised of railroad ties, pallets, and logs at the edge of a clearing. Site AV199-1 is a modern-period dump deposit consisting of large cut slabs of roadway stacked within a wooded area at the edge of a clearing. On average, the large rectangular slabs measure 3.5 meters long by 2.0 meters wide by 0.25 meters thick and consist of steel reinforced concrete overlain with an asphalt surface. The locations of these find spots were noted for due diligence and are depicted on Maps 4 and 6 of Appendix A; however, they were not recorded as official archaeological sites due to the apparent recent nature of the deposits. No further work is recommended prior to construction.

ERM also revisited the single archaeological site (33LN0076) previously identified within the Project Area (Figure 3; Table 5; Appendix A). Site 33LN0076 was reported by an artifact collector (William Sabol) to archaeologists conducting a survey for the proposed Route 20 by-pass in 1977. The site was recorded as an artifact scatter associated with the Archaic and Woodland periods based on information provided by the artifact collector. It appears that the artifact collection was not actually inspected by the archaeologists who recorded the site. Prior to the current investigation, the site area had not been previously investigated by any archaeologist nor had the site been evaluated for inclusion in the NRHP (Ohio Archaeological Site Recording Form 33LN0076; accessible on the OHPO *Online Mapping System*). The current Phase I archaeological investigation identified only two lithic artifacts within the portion of 33LN0076 intersected by the Project Area. The portion of 33LN0076 intersected by the Project Area is recommended not eligible for listing in the NRHP.

Based on the results of the Phase I archeological survey, no further archaeological work is recommended within the Project Area prior to construction. If the Project uncovers resources that might be of archeological interest within the Project Area during construction, the OHPO should be contacted immediately. If human remains should be encountered during construction activities, all ground disturbing activity must cease and local law enforcement and the OHPO must be notified. Additionally, should the Project Area be adjusted beyond the area that has been surveyed, additional Phase I archaeological survey may be completed in advance of construction, to the extent necessary or appropriate.

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## **1.0 INTRODUCTION**

### **1.1 PROJECT DESCRIPTION**

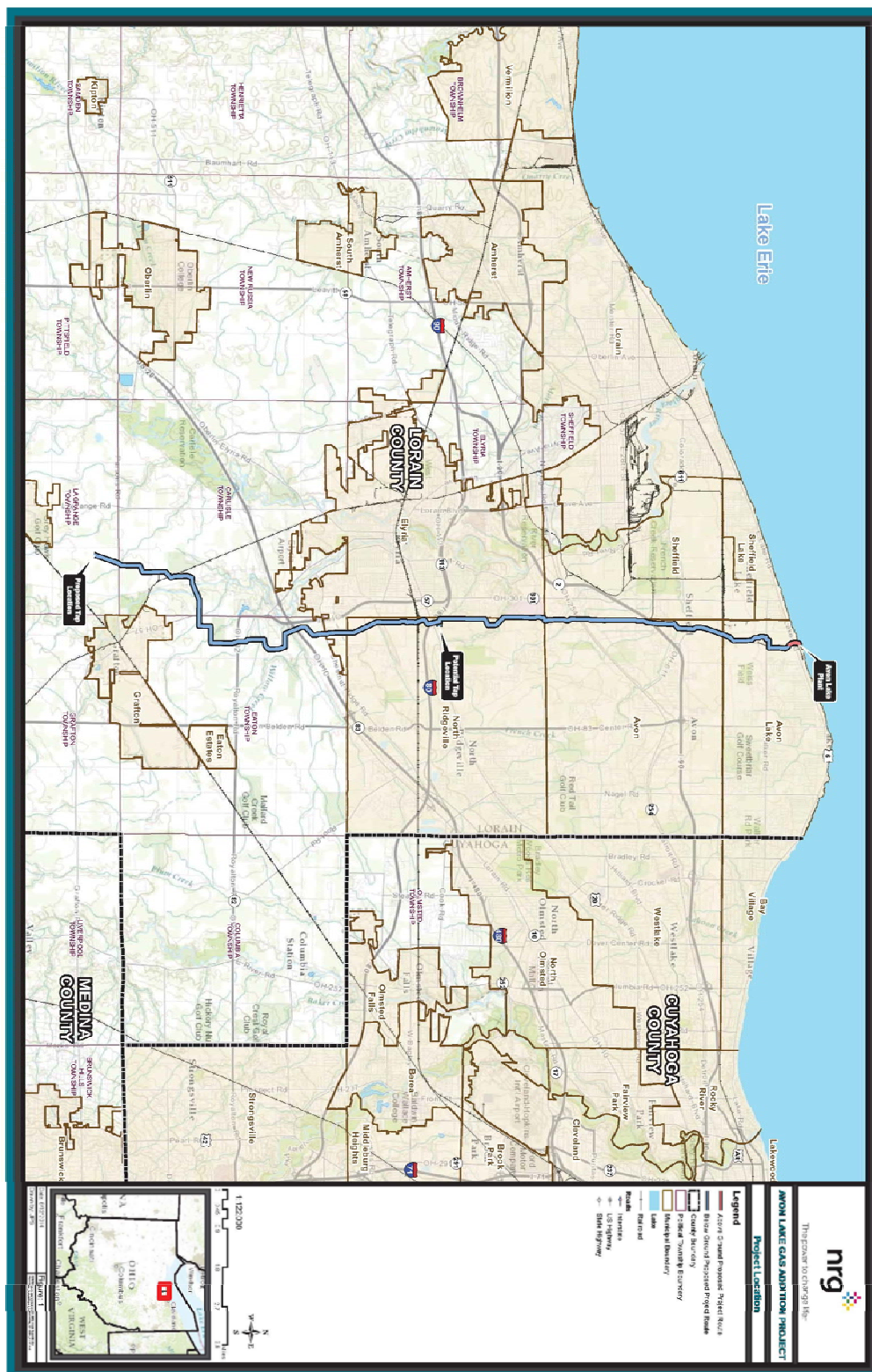
In May 2014, Environmental Resources Management (“ERM”) conducted a Phase I Archaeological Survey on behalf of NRG Ohio Pipeline Company LLC (“NRG Ohio Pipeline”) for a proposed natural gas pipeline. NRG Ohio Pipeline is developing an approximately 20-mile natural gas pipeline in Lorain County, Ohio in order to provide natural gas as a fuel source to the Avon Lake Power Plant, which is owned by an affiliate of NRG Ohio Pipeline (the “Pipeline Project” or “Project”). The Avon Lake Power Plant is a 734 MW coal-fired generating facility located in Avon Lake, Ohio (“Power Plant”).<sup>1</sup> The Power Plant is owned by NRG Power Midwest LP, which is a subsidiary of NRG Energy, Inc. (“NRG”). The Power Plant was slated for retirement by the facility’s prior owner as a result of significant expenditures required to meet increasingly stringent environmental requirements. NRG has decided to move ahead with a gas addition project, which will keep the facility in operation on natural gas beyond its planned deactivation date (the “Avon Lake Gas Addition Project”). To add natural gas as a fuel supply for the Power Plant, the proposed natural gas pipeline must be designed, permitted and constructed. The Avon Lake Gas Addition Project will bring environmental, economic, employment and electric supply reliability benefits to the State. The expected operation date for the pipeline is April 2016.

NRG Ohio Pipeline is proposing to install a 24-inch diameter high-grade steel pipeline that will extend south from the Avon Lake Power Plant, which is located on the Lake Erie shoreline in the City of Avon Lake, to a proposed supply tap location west-southwest of the Village of Grafton (the “Proposed Route”). The Proposed Route is the most feasible direct route between these two points upon balancing all factors, including environmental, geographic, cultural, social and constructability considerations, as well as landowner concerns.

Approximately 1,623 feet of the proposed pipeline will be aboveground. The pipeline will require a permanent (operation) right-of-way (“ROW”) of 50-feet in width and a temporary (construction) ROW of 100-feet. Additional temporary workspace areas (“TWAs”) outside of the 100-foot construction ROW will be needed for short durations in some areas. Existing public and private roads would be utilized for access to most of the construction ROW; however, 5-miles (or 26,156-feet) of 30-foot-wide temporary access roads are anticipated. The required metering and regulating stations will each be approximately 1-acre in size.

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<sup>1</sup> The Power Plant also has one oil-fueled unit.



### FIGURE 1. PROJECT LOCATION

## **1.2 AGENCY INVOLVEMENT AND LEGISLATIVE REQUIREMENTS**

The proposed Project will require siting approval from the Ohio Power Siting Board (“OPSB”) in accordance with Ohio Administrative Code 4906. Ohio Revised Code 149.53 states that state agencies, such as OPSB, should cooperate and work with the Ohio Historic Preservation Office (“OHPO”) during the planning and construction of state-reviewed projects. Therefore, OPSB requires consultation with the OHPO regarding the protection of National Register of Historic Places (“NRHP”) properties, including any sites that are eligible for listing, or state significant historic properties. The proposed Pipeline Project will require additional approvals from other state and federal agencies, including a Section 404 permit from the U.S. Army Corps of Engineers. Therefore, the proposed Pipeline Project would be subject to review under Section 106 of the National Historic Preservation Act of 1966, as amended.

## **1.3 PURPOSE AND NATURE OF THE ARCHAEOLOGICAL RESOURCES INVESTIGATION**

The Phase I archaeological investigation was conducted within the scope of the Ohio Historic Preservation Office’s (“OHPO”) *Archaeological Guidelines* (OHPO 1994 as reprinted in 2011) and *The Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation* [48 Federal Register 44716-44740] (National Park Service [NPS] 1983). The investigation was conducted to identify archaeological resources associated with the Project’s Area of Potential Effect (“APE”) that may be potentially eligible for inclusion in the NRHP. The APE, for the purposes of this investigation, included all areas of proposed construction activities or other potential ground disturbing activities.

The Phase I archaeological investigations consisted of a literature search of documents of previously recorded sites within one mile (1.6 km) of the Project centerline and of previously conducted surveys within the Project Area, as discussed below. The archaeological investigation also consisted of a Phase I Archaeological Survey to identify any intact archaeological sites associated with the Project Area. During May 2014, approximately 202.59 acres (81.99 hectares) were surveyed. The Project Area is located entirely in Lorain County, Ohio, traversing the communities and townships of Avon Lake, Avon, Elyria, North Ridgeville, Eaton, Carlisle, and LaGrange, from north to south. The majority of the Proposed Route crosses private lands located outside of municipal areas. Land use types along the Proposed Route mostly consist of residential, industrial, and other mixed uses, with some agricultural use along the southern portion of the route.

This report describes survey methodology, environmental and cultural settings, previous investigations, results, and recommendations for the Project.



## **2.0 ENVIRONMENTAL HISTORY OVERVIEW**

This chapter is designed to give a brief overview of the environmental landscape of the Project Area.

### **2.1 GLACIAL HISTORY, GEOLOGY, AND HYDROLOGY**

The Project Area falls within the Erie Lake Plain and Mautnee Lake Plain Physiographic Regions within the Huron-Erie Lake Plains Section of the Central Lowlands Province (Brockman 1998). The topography of the region can best be described as a relatively flat to gently rolling lake plain dissected by numerous drainages and exhibiting large tracts of wetland.

The Project Area was covered by Illinoian glaciation more than 75,000 years ago, and by Wisconsin glaciation approximately 15,000 to 20,000 years ago. Soils generally consist of clays formed in glacial drift. Surface drift in Lorain County consists of three predominant till deposits: Hiram till, Mogadore till, and an unnamed till of the Killbuck lobe (Ernst and Musgrave 1976). The underlying bedrock of the Project Area is primarily comprised of shale and sandstone of the Olentangy and Ohio Formation of the Devonian System (ODNR 2006).

The Project Area is located within the Black-Rocky watershed. The area is drained by several intermittent streams and ditches as well as French Creek. French Creek runs west for a short distance where it drains into the Black River. The Black River runs northwesterly until it empties into Lake Erie at Lorain. In addition to crossing various streams and ditches, significant waterbodies crossed by the Project Area include French Creek and the East Branch of the Black River (USGS 2014).

### **2.2 CLIMATE**

At the beginning of the Holocene period, much of the Midwest was dominated in summer by cool/dry air masses from Canada; however, as the Laurentide ice sheet began to retreat during the early Holocene, strong Pacific and Gulf air masses became increasingly dominant during the summer months. The warmth and dryness brought on by the Pacific and Gulf air masses reached a maximum at about 7200 B.P., after which came a period of small floods, likely brought about by convectional thunderstorms. This period, which ended around 6000 B.P., ushered in a period of larger floods and general cooling (Knox 1983). The vegetation “may be related directly to climatic controls such as storms and floods rather than indirectly to broad-scale [Holocene] changes in vegetative cover” (Knox 1983:33). After the complete retreat of the Laurentide ice sheet, the large differences in summer temperatures from Canada to the Gulf Coast no longer existed. Temperatures in the late Holocene favored those of the present-day regional and seasonal variations from moderately warm in summer to reasonably cold in the winter as both the Canadian and Gulf air masses were allowed to penetrate deep within the region (Knox 1983).

Today, warm, humid summers and cold, dry winters characterize the mid-continental climate of the Project Area, greatly influenced by its location off of Lake Erie. Average winter temperature in Lorain County within the Project Area is 29° Fahrenheit (F), with a winter average daily minimum temperature of 21° F. The summer average temperature is 71° F, with an average daily maximum temperature of 83° F. Total annual precipitation is an average of 35 inches per year, with 64 percent of the precipitation falling between March and September. Average annual snowfall is approximately 43 inches (Ernst and Musgrave 1976).

## 2.3 SOILS

General soil series encountered within the Project Area are listed below in Table 1 (Ernst and Musgrave 1976; USDA-NRCS 2014). Detailed descriptions of soils encountered during subsurface excavations are discussed in the relevant sections below in Section 6.

**TABLE 1. SOIL SERIES ENCOUNTERED WITHIN THE PROJECT AREA**

<b>Soil Series</b>	<b>Description</b>
Mahoning	Very deep somewhat poorly drained soils formed in low-lime till on till plains of Wisconsin age. The till is derived primarily from shale and siltstone, with minor amounts of limestone and crystalline erratics. Slope is primarily 0 to 6 percent, but ranges to 15 percent.
Udorthents	Moderately well drained to excessively drained soils that have been disturbed by filling, and areas that are disturbed or covered by development. Slopes range from 0 to 10 percent but are dominantly 0 to 5 percent.
Orrville	Very deep, somewhat poorly drained soils formed in loamy alluvium and are on flood plain steps on flood plains. They formed in alluvium from upland areas of low-lime drift, and from areas of sandstone, siltstone, shale, and limestone. They are in or bordering areas of Wisconsinan or Illinoian glaciation. Slope ranges from 0 to 3 percent.
Miner	Very deep, very poorly drained soils formed in low-lime glacial till principally derived from acid shale on lake plains which have been modified by lake action, and in shallow depressions and narrow drainageways on till plains. They formed in till principally derived from acid shale. The slope gradient ranges from 0 to 2 percent.
Lorain	Very deep, very poorly drained soils that formed in Wisconsin age fine-textured glaciolacustrine sediments. These soils formed in Wisconsin age glaciolacustrine sediments in depressions on lake plains, terraces, and till plains. Slope ranges from 0 to 2 percent.
Fitchville	Very deep, somewhat poorly drained soils formed in stratified Wisconsinan age glaciolacustrine sediments that are derived mainly from materials high in sandstone and shale and are on summits and shoulders on lake plains and are on treads on terraces. Slope ranges from 0 to 12 percent.
Mermill	Very deep, very poorly drained soils on lake plains, and less

Soil Series	Description
	commonly on till plains of late Wisconsinan age. They have a plane or concave surface with a slope gradient of 0 to 2 percent.
Oshtemo	Very deep, well drained soils formed in stratified loamy and sandy deposits on outwash plains, valley trains, moraines, and beach ridges. These soils formed in stratified loamy and sandy deposits that have a high content of quartz and contain variable amounts of material derived from igneous and metamorphic rocks, sandstone, limestone, and dolomite. Slope ranges from 0 to 55 percent.
Holly	Very deep, very poorly and poorly drained soils formed on broad flat areas and in slight depressions on flood plains receiving alluvium from upland areas of low-lime drift and noncalcareous sandstone and shale. Slope ranges from 0 through 3 percent.
Chili	Very deep, well drained soils on outwash plains, terraces, kames, and beach ridges. The soils formed in Wisconsinan age stratified outwash derived largely from noncalcareous sandstone and shale that contains a high amount of quartz gravel. Commonly, the outwash is mantled with silt. The slope gradient typically is 0 to 18 percent, but the range is up to 70 percent.
Haskins	Very deep, somewhat poorly drained soils that are moderately deep or deep to dense till on lake plains and on till plains of late Wisconsinan age. They formed in loamy water-sorted or glaciolacustrine material and in the underlying till. These soils are on lake plains and till plains. Slope ranges from 0 to 6 percent.
Lobdell	Very deep, moderately well drained soils that formed in recent loamy alluvium. These soils are on nearly level flood plains receiving loamy alluvium from upland areas of sandstone, shale, and low lime glacial drift. Slope ranges from 0 to 3 percent.
Mentor	Very deep, well drained soils formed in silty lacustrine material. These soils are on threads and risers on terraces, dissected lake plains, and silty outwash plains. These soils are formed in stratified glaciolacustrine or terrace deposits derived from materials high in sandstone and shale. Slope ranges from 0 to 70 percent.
Luray	Very deep, very poorly drained soils formed in silty lacustrine material or slack water sediments. These soils are on slight depressions or on level areas on lake plains, terraces, outwash plains, and in small local areas on till plains. Slope ranges from 0 to 2 percent.
Sebring	Very deep, poorly drained soils formed in stratified Wisconsinan age glaciolacustrine sediments and are on broad flats and depressions on lake plains and slackwater terraces. Slope ranges from 0 to 2 percent.
Trumbull	Deep, poorly drained soils formed in low-lime glacial till. These soils are on level to gently sloping and depressional portions of till plains. Slopes are dominantly less than 4 percent but range to 6 percent.
Rawson	Very deep, moderately well drained soils that formed in loamy sediments and till on till plains, outwash plains and

Soil Series	Description
	lake plains of Wisconsin age. They are moderately deep or deep to dense till. Slope ranges from 0 to 12 percent.
Bogart	Very deep, moderately well drained soils that formed in Wisconsin age stratified outwash deposits and are on convex slopes in areas of low relief on stream terraces, beach ridges, and outwash plains. Slopes range from 0 to 12 percent.
Tioga	Very deep, well drained soils formed in alluvium on higher positions in flood plains. These soils formed in recent alluvium, mainly from areas of sandstone, siltstone, and shale. Slope ranges from 0 to 3 percent.
Ellsworth	Very deep, moderately well drained soils formed in low-lime till on plains of Wisconsin age typically with a calcium carbonate equivalent of between 5 and 15 percent. The till is derived from shale and sandstone, with minor amounts of limestone and crystalline rocks. Slope ranges from 0 to 70 percent.
Allis	Moderately deep, poorly drained soils on bedrock controlled uplands. They are on till plains and, less frequently, lake plains. The soils are formed in a thin mantle of glacial till dominated by, and underlain by, acid shale which, in some places is interbedded with siltstone and sandstone. Slope is 0 to 2 percent.
Jimtown	Very deep, somewhat poorly drained soils formed in Wisconsin Age stratified outwash deposits on stream terraces, outwash terraces, outwash plains, and beach ridges. Slope ranges from 0 to 6 percent.

## 2.4 FLORA AND FAUNA

Following the initial retreat of the Laurentide Ice Sheet, the Late Glacial period (14,000-10,000 B.P.) exhibited warm and dry conditions allowing for spruce parkland and mixed parkland communities to thrive, representing a mosaic of diverse plant communities (Grimm and Jacobson 2004). Environmentally sensitive species of voles and lemmings as well as large mammals and megafauna existed together in the Late Glacial period (Custer 1985). A mix of woodland musk-ox, mammoth, mastodon, giant moose, woodland peccaries, white-tailed deer, caribou, elk, and giant beaver, among other species, would have dominated the landscape and been prime game resources. Later period megafaunal extinctions would have forced native peoples to intensify the procurement of animals of smaller sizes, but lessening the need to travel greater distances to exploit these resources. Transition zones of grassland and woodland would have been the focus of the greatest variety of these types of species. However, low order streams, bogs, ponds, and swamps would also have been high potential game resource areas (Anderson 2001; Custer 1985).

The Pre-boreal/Boreal period (10,000-8,000 B.P.) saw a reduction of open grassland and a spread of boreal forests with spruce and pine as the dominant species, although some oak forests would have existed at this time. The spread of coniferous forest would have dramatically lowered the opportunities for megafauna and other large fauna to thrive. As

a result, poorly drained swampy areas and other waterbodies would have been the focus of game animals such as deer, moose, and elk (Anderson 2001). The warming trend of the Atlantic climatic period (8,000-5,000 B.P.) was characterized by greater precipitation and an expansion of mesic forests, starting with hemlock and followed by oak, which became the dominant species by approximately 5,000 B.P. (Grimm and Jacobson 2004). During this time, fauna would have relatively mirrored that of the present day, with deer and turkey as major game animals; however, locally available plant species that were later domesticated may have begun to be intensively collected at this time (Anderson 2001; Custer 1985).

Dramatic changes in flora and fauna was experienced during the Sub-boreal climatic period (5,000-3,000 B.P.) as moisture increased and temperature slowly decreased. These changes were evidenced by an increase in nut bearing trees such as hickory and an expansion of grasslands (Grimm and Jacobson 2004). These types of changes would have favored species such as deer and gaming birds, such as turkey. Hydrologic fluctuations due to the increase in moisture and precipitation would have also affected riverine and estuarine systems and, therefore, the species in them. Species with limited tolerance to temperature and salinity fluctuations, such as oysters and anadromous fish, would have been affected (Anderson 2001; Custer 1985).

The climate of the sub-Atlantic period (3,000 B.P. to Present) saw an increase in moisture and cooler temperatures and led to a relative approximation of modern conditions. Flora would have represented vast forests of largely white pine with smaller amounts of basswood and yellow birch. Roots, tubers, berries, and nuts would have supported white-tailed deer, black bear, turkey, cottontail, beaver, raccoon, elk, woodchuck, gray squirrel, ruffed grouse, and migratory water fowl, which would have been important species to the Project Area's native populations. This area also supports several species of reptiles, amphibians, and native fish populations, which would have equally been important to diversified animal resource procurement. Previously collected plant species, now heavily domesticated during this period, would have functioned as primary plant resources for native populations (Anderson 2001; Custer 1985).

### **3.0 CULTURAL HISTORY OVERVIEW**

#### **3.1 PREHISTORIC PERIOD**

The sequence of precontact cultural traditions is divided into generalized periods based on material culture (e.g., projectile-point types, ceramic types) and subsistence adaptations (e.g., hunting and gathering, horticulture, and agriculture). Other sources of information, including oral traditions and language studies, have also been used to “type” cultural traditions. The generalized periods presented here are Paleoindian, Archaic, and Woodland.

##### ***3.1.1 Paleoindian Period***

The Paleoindian period (ca. 15,000-9,000 B.P.) is traditionally considered the earliest period of human occupation in Ohio. Prior to 15,000 B.P., Ohio was largely covered by the Wisconsin glacier. As the ice receded and Pleistocene megafauna moved into Ohio, so did Paleoindians. The Paleoindians were organized in small nomadic hunting and gathering bands, and brought with them the technology and skill necessary to exploit the local resources (Blank 1982). Archaeological remains suggest that seasonal rounds were followed, exploiting hill, bluff, and terrace locations, and, very rarely, caves as campsites.

The Early Paleoindian period tool kit includes fluted points such as Clovis and Cumberland types. Archaeologically, fluted points are concentrated along the Ohio, Scioto, and Miami Rivers and in Coshocton County, where Upper Mercer chert could be quarried (Seeman and Prufer 1982). The Late Paleoindian or Plano period tool kit included unfluted lanceolate projectile points of the parallel-flake tradition, and stemmed lanceolates such as Scottsbluff-Eden types (Prufer and Baby 1963). The Plano period shows transition between the Early Paleoindian period and the Archaic period, retaining much of the tool kit of the former, but shifting to the subsistence patterns of the latter, as Pleistocene megafauna became unavailable (Mason 1962, Prufer and Baby 1963). Archaeological remains of the Plano period are concentrated in northwestern Ohio.

##### ***3.1.2 Archaic Period***

The Archaic period in Ohio (ca. 10,000-2,500 B.P.) shows a continuation of Paleoindian lifeways, modified to accommodate the disappearance of Pleistocene megafauna. A wide variety of small fauna were exploited within a more restricted seasonal round. Archaic tool kits differ significantly from Paleoindian tool kits. Projectile points of stemmed, corner-notched, and bifurcate base forms prevail (Prufer and Long 1983).

The Early Archaic (10,000-8,000 B.P.) tool kit shows a continued emphasis on hide working and hunting. New to the tool kit are heavy wood-working and groundstone tools, which did not become common until later in the Archaic. Dalton, Kirk/Thebes, and Bifurcate projectile point types are common (Shane 1967; Broyles 1970). Most Kirk component sites in Ohio occur in riverine settings (Blank 1970).

Wood-working tools, groundstone tools, and atlatl weights become more prevalent in the Middle Archaic (8,000-5,500 B.P.) tool kit (Fiedel 1987). Middle Archaic sites also show an apparent increase in fishing, as suggested by net sinkers (Fowler 1959; Funk 1978; Griffin 1983). The prevalent projectile point types of the Middle Archaic in Ohio are Eva, Morrow Mountain, Big Sandy, Kanawha, and Stanley stemmed (Justice 1987).

Regional diversity flourishes in the Late Archaic (5,500-3,000 B.P.) archaeological record (Funk 1983; Griffin 1983; Feidel 1987). Populations grew during the Late Archaic, as regional cultures adapted to local conditions. One such local adaptation is the Laurentian Tradition, first defined in the St. Lawrence Valley of New York. The Laurentian Tradition is characterized by broad-bladed notched projectile points, biface knives, and end scrapers (Tuck 1977). In Ohio, Brewerton and Vosburg projectile points are common to Laurentian sites (Shane 1967; Justice 1987). Modern climate, environment, flora, and fauna were established in Ohio by ca. 3,000B.P. (Blank 1970; Funk 1978).

Archaeological remains of Archaic settlements suggest repeated seasonal use, and include more specialized activity sites and rockshelters than evident during the Paleo-Indian period. During the Late Archaic, semi-permanent settlements with large populations appear in the archaeological record. Exotic grave goods recovered from human burials suggest that long-distance trade networks were available (Blank 1982).

### ***3.1.3 Woodland Period***

The transition from the Archaic to the Woodland period in Ohio is evidenced archaeologically by broad spear points, including Perkiomen, Lehigh, and Ashtabula types (Shane 1967; Justice 1987). The Woodland period (ca. 3,000 B.P.-AD 1600) is distinguished archaeologically by continuously occupied habitation sites, horticulture, agriculture, and grit-tempered cord-marked ceramics. Burial practices are more elaborate than during the Archaic period.

The Early Woodland or Adena Phase (ca. 3,000-2,100 B.P.) is characterized by elaborate mortuary practices and circular earthworks. The Adena Phase is believed to have developed in the Ohio River Valley and spread to Indiana, Kentucky, and West Virginia. Blocked end tubular pipes, gorgets, Adena projectile points, copper items, and ceramics are among items typically recovered from Adena Phase sites. Adena people subsisted by hunting, plant collecting, fishing, and cultivating squash and corn (Blank 1982). The number and distribution of Adena mounds suggest that small social groups exploited small local territories (Seeman 1984).

The Middle Woodland, or Hopewellian Phase (ca. 2,100 B.P. to AD 600), had a widespread influence, centered in the Sciota River Valley in southern Ohio, Indiana, and Illinois. The Hopewellian Phase is characterized by burial mound clusters, geometric earthworks, exotic artifacts and raw materials, and subsistence based on hunting, fishing, plant collection, and squash, maize, amaranth, and goosefoot cultivation. Grave offerings

are more elaborate than in the Adena Phase, and include mica and tortoise shell objects, grizzly bear canines, effigy pipes, woven plant fiber fabrics, and human clay figurines (Fiedel 1987).

The Late Woodland period (AD 600-1600) shows continuation of Hopewellian Phase subsistence strategies, but not of the elaborate mortuary practices. Large nucleated village sites develop as maize agriculture becomes more important, and hunting less important. Archaeological evidence of the Late Woodland period is most frequently found on major floodplains with fertile, well drained soils. The Intrusive Mound people, who inhabited Ohio during the Late Woodland period, were so named by Squire and Davis in the 1840s when they discovered intrusive burials in Adena and Hopewell mounds. Grave offerings with these intrusive burials include large triangular chert blades, and scrapers of chert, deer bone, and shell. Bone and antler barbed harpoons were used for fishing. A cutting tool made of a beaver incisor mounted in an antler handle is characteristic of the Intrusive Mound people. Platform pipes similar to those used by the Hopewell have been found associated with the Intrusive Mound people, suggesting that the two groups could be related (Potter 1968:55-56).

Also occupying central and southern Ohio during the Late Woodland period were the people of the Cole Complex, so named after the Walter S. Cole Site in Delaware County, excavated in 1948 (Potter 1968:56-57). Archaeological evidence suggests that Cole Complex people hunted, collected wild plants, and cultivated some plants. Projectile points associated with this complex vary in size and thickness, but tend to be side notched. Large chipped triangular chert knives and chipped slate disks for skinning are characteristic to the Cole Complex (Potter 1968:57). Cole Complex sites include semi-permanent villages and temporary camp sites. Pottery from this complex is generally large, coiled, cord-marked, and grit-tempered, and is similar to Peters Cordmarked (Potter 1968:59; Prufer 1975:13). It is unclear whether Cole Complex people are related to the Hopewell, who preceded them, or to the Fort Ancient people, who followed them (Potter 1968:61-62). Fort Ancient people occupied southern Ohio, and Erie (Whittlesey) people occupied northern Ohio at the end of the Woodland period, both continuing typical Woodland lifeways (Potter 1968:63-72).

### **3.2 PROTO-HISTORIC PERIOD**

At the end of the Woodland period, populations in Ohio began to decrease. While there is no conclusive evidence of the reason for this general population decline, the transmission of European diseases inland from the East Coast through trade goods and inter-group contact is a likely cause (Griffin 1978). French maps from 1681 show that Shawnee (believed derived from the Mississippian-influenced Fort Ancient people) villages north of the Ohio had been destroyed, and that residents had relocated to western Tennessee (Callender 1978; Hunter 1978). Early historic records of what Native American groups had legitimate claim to territories in Ohio during the early contact period are not conclusive (Wallace 1969).



### **3.3 HISTORIC PERIOD**

From the 1730s to the 1750s, the Shawnee, Wyandot, and Delaware moved into Ohio. This region was beyond the strongest reach of the Iroquois and served as a refuge for tribes avoiding the Iroquois (Hurt 1996:9-10). At this time, the French and the British were vying for control of the Ohio area. The allegiance of the Native American tribes in the area was sought by both the French and the British, not only for the capital gains to be made in trade with the Indians, but also for the military support the Indians could provide. The British strategy for obtaining Indian support included generous trading practices. The French on the other hand, were viewed by the Indians as greedy in trade, but they were more willing to take up arms alongside the Indians, or even against them if they were displeased. The balance of power, and the allegiance of the Ohio tribes, swung back and forth between the British and French in the early history of Ohio (Hurt 1996).

In 1753, the French claimed all land north of the Ohio River, while the British claimed all land to the south of the Ohio River, leaving no land for Indian claims. The predicament of the Ohio tribes at this time was that the French were willing to have the Indians fight to protect French interests, as were the British, but neither side was willing to join the Indians in the fight for Indian land. Beginning in 1754, and throughout the French and Indian War, the Ohio tribes were allied with the French (Hurt 1996:40). Under the Treaty of 1763, also known as the Treaty of Paris, England was granted the area of Great Lakes from Pennsylvania to the Mississippi River, after Britain's victory over France and Spain formally ending the French and Indian War. Various eastern states, such as Virginia, Connecticut, and Pennsylvania, claimed all or part of Ohio. After the war, the British victors demanded the return of all prisoners, and viewed the Ohio tribes as their subjects. Indian tradition does not require the return of captives, who are often assimilated into the tribe to compensate for tribal members killed in conflict. The Pontiac Rebellion was born of the Ohio tribes' frustration over attempts to negotiate with the British (Hurt 1996:45).

In 1763, Neolin, a Delaware, began teaching that European ways and goods were sinful, and encouraging a return to traditional tribal ways of life (Hurt 1996:46). Pontiac, an Ottawa war chief, combined Neolin's message with military force directed at driving White settlers off of tribal land (Hurt 1996:47). When the Pontiac Rebellion drew to a close in 1766, there was some recognition of tribal land rights by the British, but the tribes were still viewed as British subjects, and very little had changed (Hurt 1996:54).

The Treaty of Fort Stanwix was negotiated by the British with the Iroquois in 1768 for all lands south and east of the Ohio River, ostensibly a permanent boundary between tribal and British lands. The Shawnee refused to acknowledge this treaty, claiming that the Iroquois had no right to negotiate regarding that area (Hurt 1996:56-57). By 1774, the Treaty of Fort Stanwix was violated by settlers moving into Virginia and Kentucky, with bloody results. Shawnee retaliated for the encroachment by murdering settlers along the Ohio River; settlers retaliated for those murders by murdering Shawnee (Hurt 1996:57). The Shawnee were not offered support by the Iroquois, or by neighboring tribes. The

Shawnee finally had to accept the Treaty of Fort Stanwix and stop hunting south of the Ohio River, the first cession of land by an Ohio tribe (Hurt 1996:58).

During the Revolutionary War, the Ohio tribes joined the British to maintain trade relations and to be on the winning side. Since the British had defeated the French, the Indians believed they would also defeat the Americans. The Americans, meanwhile, courted peace with the Indians, who did not trust them (Hurt 1996:76). After the Treaty of Paris of 1783, the land north of the Ohio River was a bone of contention between the Americans and the Ohio tribes (Hurt 1996). In 1785, the Treaty at the Mouth of the Great Miami, between the Shawnee and the United States, gave the United States control of the land north of Ohio River. The Ohio land claims of the eastern states were settled by the Ordinance of 1787, creating the Northwest Territory. Connecticut retained a strip of land 120 miles long from Pennsylvania to Sandusky along Lake Erie, called the Western Reserve. In 1796, the State of Connecticut sold the Western Reserve to the Connecticut Land Company, and settlers began coming to the Western Reserve in great numbers in the following decades (WPA 1940).

After "Mad Anthony" Wayne negotiated the Treaty of Greenville in 1795, American and Indian relations changed:

After Wayne's victory, the Indian policy of the United States changed as Thomas Jefferson had wished from "war to bribery." Thereafter, the government assumed that whenever it wanted more land, the Indian nations would sell it on demand, a perverse form of preemption by whites on Indian lands (Hurt 1996:142).

While the Indians saw this as a permanent boundary, the United States viewed it as temporary (Hurt 1996:142).

From that point on, the little territory left to the Ohio tribes was reduced incrementally. After the constitution of the state of Ohio was approved by the United States Congress on February 19, 1803, white settlement of the state proceeded quickly (Hurt 1996:282). After The War of 1812, the economy boomed and the rate of settlement by whites increased rapidly. In 1815, residents of European descent owned 75% of the land in the state, the Western Reserve also held land (Hurt 1996:344).

The Treaty of Fort Meigs, in 1817, relegated the Wyandots to a reservation in northwestern Ohio (Hurt 1996:1), as were the Delaware in the same year (Hurt 1996:212). In 1832, and again in 1836, this area was reduced in size. The Seneca and the Shawnee were removed from Ohio by 1840, as were the Wyandot in 1843. At that time, only about 700 Wyandot remained in the state, to be relocated in Kansas (Hurt 1996:1-2).

### **3.3.1 *Lorain County***

The lands in Ohio currently known as Lorain County were purchased by the Connecticut Land Company in 1795 for about 42 cents per acre. In the first years of the nineteenth century, some of the first European settlers began to arrive from Connecticut and other eastern states. Some traveled overland on muddy roads, and the rest by boat. The first family to settle the county was the Beebes, who came in 1807 as the advance agents of Nathan Perry, Jr., son of Nathan Perry of Cleveland. Shortly after their arrival, Perry built a house a short distance east of Black River, in which he opened a store and began trading with the Native Americans. In April of 1811, William Martin came from Pennsylvania with his family. They were followed in that same year by the Gillmore family from Massachusetts (Nichols 1924).

In 1822, having enough residents, Lorain County, named for the province of Lorraine in France, was formed out of parts of Cuyahoga, Medina, and Huron counties. Up to 1830, little or no settlement was made in the county away from Lake Erie. In 1833, a number of Germans immigrants arrived. Among the family names were: Feber, Baumhart, Friend, Bark, Haulkauer, Hageman, Hahn, Vetter, Harwick and others. Heman Ely first came to the area in the early 1800s. He donated land and money for the construction of the courthouse in Elyria, swaying the legislator's decisions to locate the county seat there (Nichols 1924).

By the mid-nineteenth century, industries such as shipbuilding, steelmaking, and fishing brought people, money and railroads to the area. In 1832, Presbyterian minister John L. Shipherd began planning to establish an institution of higher education in Oberlin, Ohio. The school opened in December 1833 and became known as Oberlin College. It was the first institution of higher education in the United States to admit women and African Americans into the same classes as white men (Ohio Historical Society 2005).

During the twentieth century, Lorain County's population has continued to grow. One of the reasons for this growth was the township's proximity to Cleveland, Ohio, in neighboring Cuyahoga County. Many Cleveland residents moved to the area hoping to escape the high housing costs and congestion of the city. However, many of Carlisle Township's residents commute to Cleveland to work. Between 1990 and 2000, Lorain County's population increased by five percent to a total of 284,664 residents in 2000. Lorain County has remained largely rural, with only seven percent of the county deemed to be urban. Despite the area's rural character, most residents earn their livings by working in manufacturing, sales, or service positions. Lorain's harbor has remained an important source of industry, sending products across the Great Lakes and around the world. For a brief period, during the late nineteenth and early twentieth centuries, steel was a major industry in Lorain County. By the mid-twentieth century, those operations had disappeared from the county (Ohio Historical Society 2005).

## **4.0 METHODS**

### **4.1 OBJECTIVES**

The primary objectives of the investigation were to determine whether the area to be affected by the proposed Project contains any archaeological resources and if those resources are potentially eligible for listing in the NRHP. All work was conducted in accordance with the OHPO *Archaeological Guidelines* (OHPO 1994 as reprinted in 2011) and *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* [48 Federal Register 44716-44740] (National Park Service [NPS] 1983).

### **4.2 AREA OF POTENTIAL EFFECT (APE)**

The APE, for the purposes of this investigation, included all areas of proposed construction activities or other potential ground disturbing activities. However, the "Project Area" encompassed the APE and an area extending beyond the APE. This additional area on either side of the anticipated right-of-way was included in the Project Area to allow for flexibility in the event of minor route or workspace adjustments. The Project Area consisted of a 500.63-acre (202.60-hectare) area, which included a 200-ft corridor centered on the centerline of the Proposed Route, as well as anticipated TWAs outside the 200-ft corridor.

### **4.3 ARCHAEOLOGICAL SURVEY AREA**

The majority of the Project Area (nearly 60 percent) will be located in or along previously disturbed rights-of-way or along existing developed areas. The portion of the Project Area north of Interstate 80 is more developed and hence subject to greater prior disturbance than the portion of the Project Area south of the interstate. South of Interstate 80, the Project Area mostly diverges from existing ROWs into undeveloped areas in an effort to minimize the potential for impact to wetlands, namely forested wetlands. Based on both a desktop and field delineation of wetlands, nearly 30 percent of the Project Area will cross wetlands. Areas considered to have a high potential to contain significant, intact archaeological resources include those in upland (non-wetland) areas near water sources that have not been previously disturbed by the installation and operation of existing utilities or other infrastructure, or by any other form of land development.

Because the majority of the Project Area is located in or along areas that have been previously disturbed and given the prevalence of wetlands, only a portion of the Project Area falls within areas that were assumed to have a high potential to encounter significant, intact archaeological resources. As a result, a Phase I archaeological survey was only conducted within the portions of the Project Area that occur within these assumed high potential areas (the "Survey Area") (see Appendix A: Survey Results Maps). The Survey Area consisted of 202.59 acres (81.99 hectares). Fieldwork was conducted from May 15 to May 29, 2014. Andrew Bielakowski and Mark Doperalski served as Principal Investigators.

#### **4.4 ARCHAEOLOGICAL BACKGROUND RESEARCH**

On February 26, 2014, staff from ERM conducted background research online using the Ohio Historic Preservation Office's ("OHPO") *Online Mapping System* for information regarding previously identified archaeological sites within one mile (1.6 km) of the proposed centerline, as well as archaeological surveys previously conducted within the Project Area. In addition, USGS topographic quadrangles, historical plat maps, aerial photographs, soils data were consulted and reviewed in order to assess the portions of the Project Area that may possess a higher potential for containing previously unidentified archaeological sites.

#### **4.5 ARCHAEOLOGICAL SURVEY METHODS**

The Phase I archaeological survey work for the Project was conducted during May of 2014. Andrew Bielakowski, M.A., RPA and Mark Doperalski, M.A., RPA served as Principal Investigators, and Mark Doperalski, M.A., RPA conducted the fieldwork with Kyle Spurgeon, M.A., Ryan Lisson, B.S., Aaron Gordon, B.S., and Frank Koep, B.A. (see Appendix D for a list of Project personnel).

The following survey methodology was implemented to identify archaeological resources within the Survey Area as defined above. All work was conducted in accordance with the OHPO *Archaeological Guidelines* (OHPO 1994 as reprinted in 2011).

##### **4.5.1 Pedestrian Survey**

Systematic pedestrian surface reconnaissance was carried out across the entire Survey Area as defined above. Pedestrian reconnaissance was employed to ascertain whether above ground features, such as earthworks, stone features, or abandoned structural foundations, were present within the Survey Area. Pedestrian survey was also employed to identify artifacts in all areas where 50 percent or more of the ground surface was visible. Pedestrian reconnaissance was conducted at 10-meters (m) (33-ft) intervals and was reduced to 1- to 5-m (3- to 16-ft) intervals at locations where artifacts were identified or within the boundaries of previously recorded archaeological sites.

##### **4.5.2 Shovel Testing**

At least one shovel test was excavated in each area exhibiting greater than 50 percent surface visibility where artifacts were identified on the surface. Shovel tests were excavated at 15-m (49-ft) intervals in areas exhibiting less than 50 percent ground surface visibility that were not inundated or exhibiting excessive slope. With regard to areas exhibiting less than 50 percent surface visibility, once artifacts were recovered spacing of shovel tests was reduced to 5-m (16-ft) intervals and continued until two sequential negative shovel tests were excavated in all four cardinal directions. Shovel tests were square excavations, measuring approximately 50 by 50 centimeters (cm). All excavated soil matrices were passed through ¼-inch hardware mesh to ensure the consistent

recovery of artifacts. Tests were excavated in 10 cm arbitrary levels within soil layers to a minimum of 10 cm into the subsoil.

#### **4.5.3 Site Delineation**

When archaeological sites were identified during the pedestrian surface reconnaissance survey, an intensive surface examination of the site area was conducted to determine the boundary of the site area as well as record artifact concentrations and feature locations. Shovel tests were used to establish the soil stratigraphy at the site, determine the vertical limits of the site, and assess if subsurface deposits were likely to exist below the plow zone or initial soil horizon.

When archaeological sites were identified during subsurface survey (i.e., shovel testing) within areas exhibiting less than 50 percent ground surface visibility, additional shovel tests were placed 5 m (16 ft) from the original find spot in all four cardinal directions. Subsequent shovel tests were placed 5 m (16 ft) apart in the cardinal directions from all positive shovel tests until two negative shovel tests occurred in each direction; however, testing was confined to within the Survey Area.

#### **4.5.4 Field Documentation**

The Survey Area was navigated using a Trimble GeoExplorer XH sub-meter global positioning system (“GPS”) unit. All significant archaeological finds and site boundaries were documented using GPS. Survey data was recorded through standardized forms and the field director’s daily log. Recorded information included: shovel test locations and methods of testing; the numbers, types, and locations of recovered archaeological materials; the depth of shovel tests and the thickness of excavated soil layers; soil textures and inclusions (both natural and archaeological); and soil color according to Munsell® color charts.

### **4.6 LABORATORY METHODS**

For the purposes of cataloging and analysis, each provenience from which artifacts were collected was assigned a unique bag number in the field, beginning with bag number “1” at each site. Upon completion of the fieldwork, all artifacts collected during the archaeological investigation were returned to the ERM archaeological laboratory for cleaning, processing, and cataloging. All artifacts identified on public lands will be curated in accordance the OHPO *Archaeological Guidelines* (OHPO 1994 as reprinted in 2011). ERM is currently in the process of setting up a curation agreement with the Ohio Historical Society. In the case of artifacts identified on private lands, a letter will be sent to the appropriate landowner asking if the landowner is willing to donate their artifacts to an OHPO-approved curation facility. If the landowner is unwilling to donate their artifacts to a curation facility, the artifacts will be photographed and fully documented prior to the artifacts being returned to the landowner.

## **4.7 EVALUATION**

Upon completion of the fieldwork and laboratory analyses, the eligibility of the identified sites for listing on the NRHP was assessed based on the site's significance and integrity. The NRHP criteria, summarized below, were used to help assess the significance of the site. While all four criteria are considered, prehistoric archaeological sites are typically eligible for listing on the NRHP under Criterion A or D.

- Criterion A – association with the events that have made a significant contribution to the broad patterns of our history;
- Criterion B – association with the lives of persons significant in our past;
- Criterion C – embodiment of the distinctive characteristics of a type, period, or method of construction; representation of the work of a master; possession of high artistic values; or representation of a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D – potential to yield information important to prehistory or history (NPS 1983).

## 5.0 LITERATURE REVIEW

### 5.1 PREVIOUS ARCHAEOLOGICAL SURVEYS

The literature search indicated that four previous archaeological surveys have been conducted within the Project Area. These previous surveys are listed in Table 2 (see Figure 2 and Appendix A for previous survey locations).

**TABLE 2. PREVIOUS ARCHAEOLOGICAL SURVEYS WITHIN THE PROJECT AREA**

<b>Year</b>	<b>Archive ID</b>	<b>Author</b>	<b>Company</b>	<b>Title</b>
1981	11929	David Bush, et al.	Case Western Reserve University	<i>The Archaeological Resources of the Ohio Turnpike – Phase II Investigations at Existing and Proposed Interchanges</i>
1989	12895	Rae Norris Sprague	Archaeological Services Consultants Group, Inc.	<i>Reconnaissance Survey for the Proposed AT&amp;T Medina-Whitehouse Fiber Optic Cable through Medina, Lorain, Erie, Sandusky, Ottawa, Wood and Lucas County, Ohio</i>
1990	14067	David Bush, et al.	David R. Bush, Inc.	<i>A Phase I and II Archaeological Investigation of the Proposed LOR-301/611-25.00/8.60 Project in Avon and Sheffield Townships, Lorain County, Ohio</i>
1994	13648	Veronica Riegel	3D/Environmental	<i>Phase I and II Cultural Resources Report on Columbia Gas of Ohio Incorporated's Proposed 6.83 Mile Natural Gas Pipeline in Lorain County, Ohio</i>

In 1981, Case Western Reserve University conducted Phase II archaeological investigations for the Ohio Department of Transportation's existing and proposed interchanges of the Ohio Turnpike in Lorain County, Ohio. The project consisted of a literature search of previous cultural resources surveys and archaeological sites and Phase II archaeological survey within a proposed project area consisting of 33.7 acres, which is crossed by approximately 1,720 feet of the currently proposed Project. The survey report was not available to ERM for review; however, based on a review of the OHPO *Online Mapping System*, no archaeological sites were identified within the current proposed Project Area (Bush, et al. 1981).

In 1988 and 1989, Archaeological Services Consultants Group, Inc. conducted an archaeological reconnaissance survey for the proposed AT&T Medina-Whitehouse fiber optics cable alignment in various Ohio counties. In total, the project consisted of approximately 114 miles within a 100-foot survey corridor (approximately 113 acres), which is crossed by approximately 100 feet of the currently proposed Project. The



project consisted of a literature search of previous cultural resources surveys and archaeological sites and an archaeological reconnaissance survey within areas of higher archaeological and historical sensitivity within the APE. Although this archaeological reconnaissance survey identified a total of 51 prehistoric and historic sites within the various Ohio counties, no archaeological sites were identified within the current Project Area (Sprague 1989).

In 1989, David R. Bush, Inc. conducted a Phase I and II cultural resources investigation for the Ohio Department of Transportation's proposed LOR-301/611-25.00/8.60 project located in Avon and Sheffield Townships, Lorain County, Ohio. The APE consisted of a 150-foot area on either side of portions of Routes 611 and 301 (approximately 166 acres), which is crossed by approximately 450 feet of the currently proposed Project. The project consisted of a literature search of previous cultural resources surveys and properties and Phase I and II cultural resources survey. Although this cultural resources investigation identified a total of 31 cultural resource properties within the APE, no cultural resources were identified within the current Project Area (Bush et al. 1990).

In 1994, 3D/Environmental conducted a Phase I and II cultural resources investigation for Columbia Gas of Ohio, Inc.'s 6.83 mile natural gas pipeline in Lorain County, Ohio. The APE consisted of a 50-foot ROW along the majority of the 6.83 miles, although the APE was expanded to 70 feet along minor waterbodies and 100 feet at French Creek (approximately 67 acres total). The currently proposed Project parallels and crosses the previously proposed APE for approximately 6.4 miles. The project consisted of a literature search of previous cultural resources surveys and properties and Phase I and II cultural resources survey. No archaeological sites were identified within the current Project Area (Riegel 1994).

In addition to the above documented surveys, there are other previously existing utility and infrastructure projects (i.e., roads, railroads, transmission lines, and sewer lines) that are within the current Project Area. One of these is the Lorain County Rural Wastewater District, Phase 1 Wastewater Collection and Treatment Improvements Project (Ohio RCAP 2006). The project consists of a gravity sanitary sewer collection system and involves the installation of approximately 100,000 linear feet of 8-21 inch gravity sanitary sewer lines, 123,000 linear feet of 8-16 inch force main, and 16 pump stations and appurtenances. The Project Area parallels this sanitary sewer line for approximately 0.5 miles north of Interstate 90 and an additional 5 miles from French Creek Road (just south of Interstate 90) to Interstate 80. ERM has reviewed the environmental report submitted to the *Ohio Rural Community Assistance Program and associated consultation letters with the OHPO for this project* (Ohio RCAP 2006). No cultural resources surveys were completed for this project because OHPO had determined that much of the area

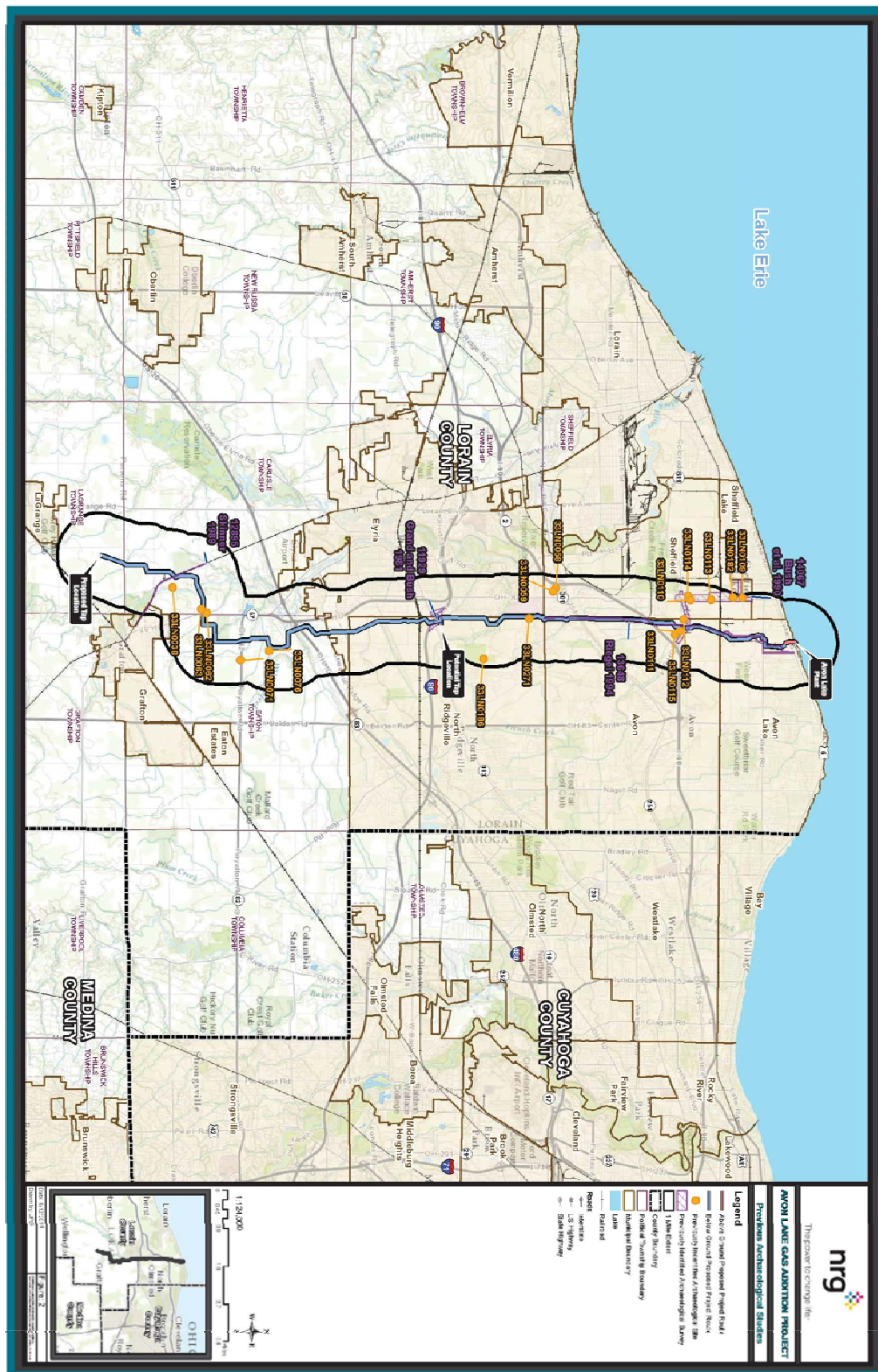


FIGURE 2. PREVIOUS ARCHAEOLOGICAL STUDIES AND SITE LOCATIONS

along the intended route appeared to be previously disturbed given the presence of an existing electric transmission line and previously surveyed gas line.

## 5.2 PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES

One archaeological site has been recorded within the Project Area (see Figure 2; Table 3; and Appendix A for previous site locations).

Site 33LN0076 was reported by an artifact collector (William Sabol) to archaeologists conducting a survey for the proposed Route 20 by-pass in 1977. The site was recorded as an artifact scatter associated with the Archaic and Woodland periods based on information provided by the artifact collector. It appears that the artifact collection was not actually inspected by the archaeologists who recorded the site, nor had it been evaluated for inclusion in the NRHP (Ohio Archaeological Site Recording Form 33LN0076; accessible on the OHPO *Online Mapping System*). ERM revisited the site as part of the current investigation and the results are discussed below in Section 6.

**TABLE 3. PREVIOUSLY IDENTIFIED ARCHAEOLOGICAL SITES WITHIN THE PROJECT AREA**

Site No.	Site Name	Period	Type	NRHP Status
33LN0076	Brush School Site	Prehistoric	Artifact Scatter	Not Evaluated

An additional 16 archaeological sites have been recorded beyond the Project Area but within one mile (1.6 km) of the Project centerline (see Figure 2; Table 4; and Appendix A for previous site locations).

**TABLE 4. PREVIOUSLY IDENTIFIED ARCHAEOLOGICAL SITES WITHIN ONE-MILE OF THE PROJECT CENTERLINE**

Site No.	Site Name	Period	Type	NRHP Status
33LN0038	Van Ambaugh Site	Prehistoric	Artifact Scatter	Not Evaluated
33LN0058	Garnall Site #1	Prehistoric	Artifact Scatter	Not Evaluated
33LN0059	Garnall Site #2	Prehistoric	Artifact Scatter	Not Evaluated
33LN0062	Dimaline Site #1	Prehistoric	Artifact Scatter	Not Evaluated
33LN0063	Dimaline Site #2	Prehistoric	Artifact Scatter	Not Evaluated
33LN0071	Sabol Site	Prehistoric	Artifact Scatter	Not Evaluated
33LN0109	Abbe Road Site	Prehistoric	Lithic Scatter	Not Evaluated
33LN0110	Blaha Site	Prehistoric	Lithic Scatter	Not Evaluated
33LN0111	Conrad Site	Prehistoric	Artifact Scatter	Not Evaluated
33LN0112	Burkart Site	Prehistoric	Isolated Find	Not Evaluated
33LN0113	Rieth	Historic	Foundation and Features	Not Evaluated
33LN0114	-----	Historic	Foundations	Not Evaluated
33LN0115	-----	Historic	Foundation, Features, and Architectural Artifacts	Not Evaluated
33LN0182	Thomas Farmstead	Historic	Historic Structure and Artifacts	Not Evaluated
33LN0186	-----	Prehistoric	Isolated Find	Not Evaluated
33LN0271	Balog Site	Prehistoric	Artifact Scatter	Not Evaluated

## 6.0 ARCHAEOLOGICAL SURVEY RESULTS

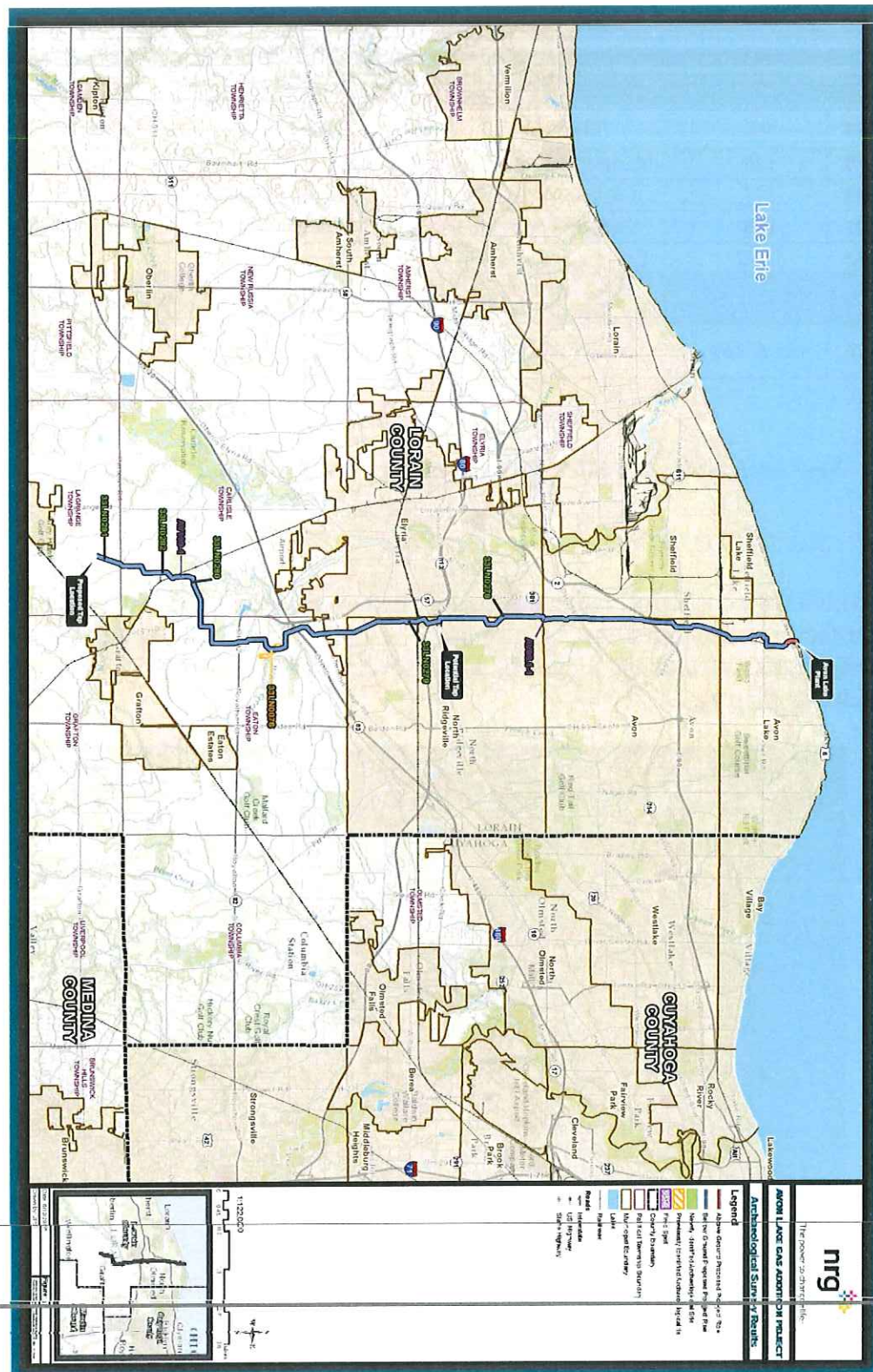
### 6.1 SURVEY RESULTS

During the Phase I archaeological survey for the Project, ERM identified five newly recorded archaeological sites within the Survey Area (Figure 3; Table 5; Appendix A). All five sites (33LN0278, 33LN0279, 33LN0280, 33LN0281, and 33LN0282) are recommended not eligible for listing in the NRHP based on the results of the current investigation. These five sites consist of two lithic isolated finds (33LN0278 and 33LN0282), two sparse lithic scatters (33LN0280 and 33LN0281), and one historic-period site (33LN0279) consisting of a well feature and several drainage ditches. These five newly recorded archaeological sites are described in detail below and summary information for each is presented in Table 5. Four of the five sites are either isolated or their integrity has been disturbed such that there is no potential for these sites to provide additional information important to history. The remaining site does not appear to be associated with an event of local or national importance and does not exhibit architecturally remarkable structures demonstrating the work of a master. For these reasons, ERM does not recommend any further archaeological investigation for these areas.

Two additional find spots, AV88.1-1 and AV199-1, were identified during the archaeological survey. Site AV88.1-1 is a modern-period dump deposit consisting of discarded wood comprised of railroad ties, pallets, and logs at the edge of a clearing. Site AV199-1 is a modern-period dump deposit consisting of large cut slabs of roadway stacked within a wooded area at the edge of a clearing. On average the large rectangular slabs measure 3.5 meters long by 2.0 meters wide by 0.25 meters thick and consist of rebar reinforced concrete overlain with an asphalt surface. The locations of these find spots were noted for due diligence and are depicted on Maps 7 and 17 of Appendix A; however, they were not recorded as official archaeological sites due to the apparent recent nature of the deposits. No further work is recommended prior to construction.

ERM also revisited the single archaeological site (33LN0076) previously identified within the Project Area (Figure 3; Table 5; Appendix A). Site 33LN0076 was reported by an artifact collector (William Sabol) to archaeologists conducting a survey for the proposed Route 20 by-pass in 1977. The site was recorded as an artifact scatter associated with the Archaic and Woodland periods based on information provided by the artifact collector. It appears that the artifact collection was not actually inspected by the archaeologists who recorded the site. Prior to the current investigation, the site area had not been previously investigated by an archaeologist nor had it been evaluated for inclusion in the NRHP (Ohio Archaeological Site Recording Form 33LN0076; accessible on the OHPO *Online Mapping System*). The current Phase I archaeological investigation identified only two lithic artifacts within the portion of 33LN0076 intersected by the Project Area. Based on the results of the current investigation the portion of 33LN0076 intersected by the Project Area is recommended not eligible for listing in the NRHP.





### FIGURE 3. PHASE I ARCHAEOLOGICAL SURVEY RESULTS



**TABLE 5. ARCHAEOLOGICAL SITES IDENTIFIED WITHIN THE PROJECT AREA**

Site No.	Parcel	Township/Municipality	Description	Recommendation
<b>New Archaeological Sites Recommended Not Eligible</b>				
<b>33LN0278</b>	96	Elyria City	Lithic Isolate	Not Eligible
<b>33LN0279</b>	125	North Ridgeville City	Historic-Period Features	Not Eligible
<b>33LN0280</b>	197	Carlisle Township	Lithic Scatter	Not Eligible
<b>33LN0281</b>	208	Carlisle Township	Isolated Scatter	Not Eligible
<b>33LN0282</b>	216.2	LaGrange Township	Isolated Lithic	Not Eligible
<b>Previously Identified Archaeological Sites – Portion within Project Area Recommended Not Eligible</b>				
<b>33LN0076</b>	167 & 168	Eaton Township	Lithic Scatter	Not Eligible (Portion within Project Area)

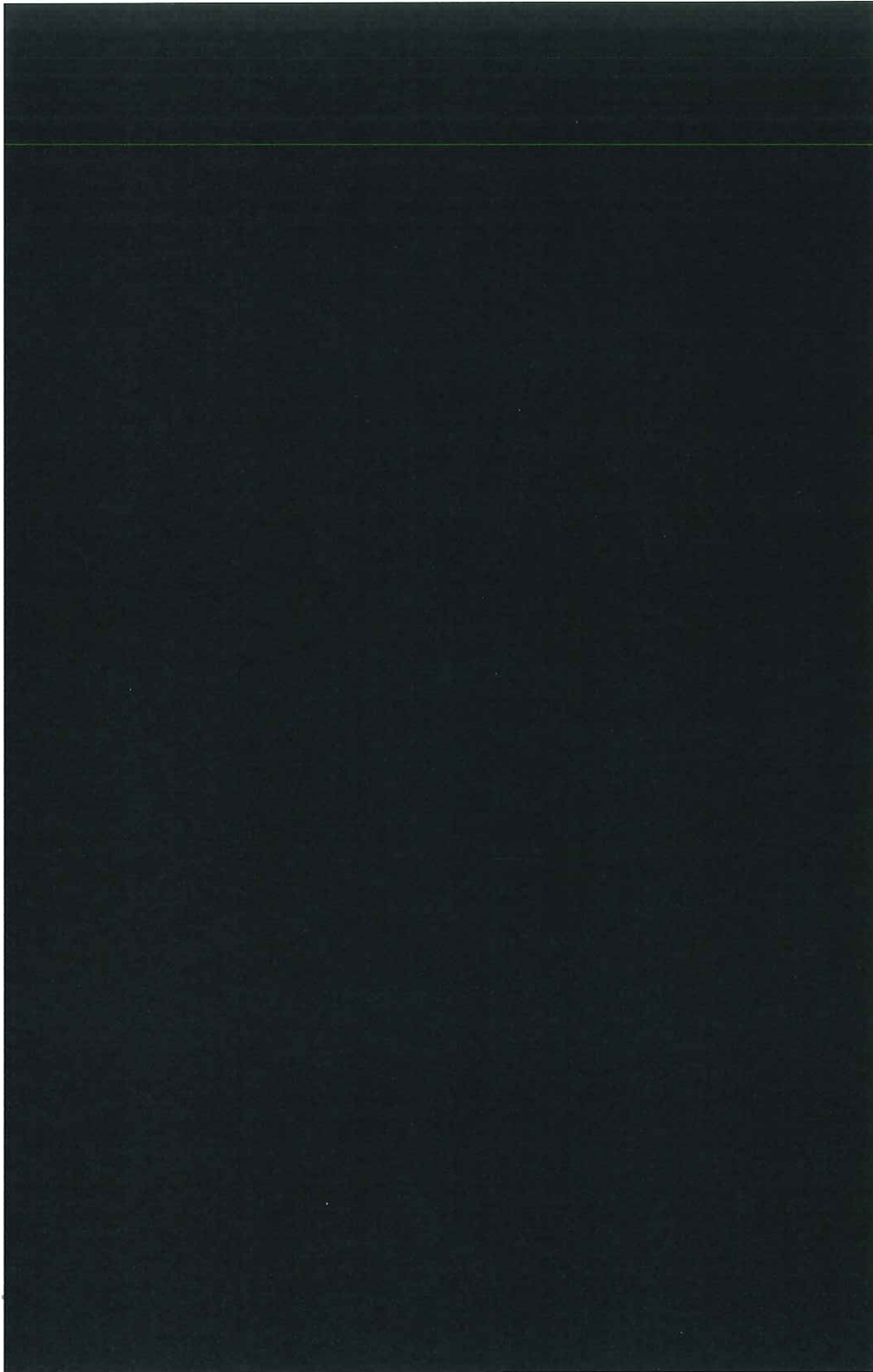
### ***6.1.1 New Archaeological Sites Recommended as Not Eligible***

#### ***6.1.1.1 Site 33LN0278***

Site 33LN0278 consists of a single piece of shatter on an indeterminate chert material. The artifact was identified during subsurface testing on a slightly undulating elevated wooded terrace overlooking Ridgeway Ditch to the southwest (see Figures 3, 4, and 5; Appendix A: Map 8).



**FIGURE 4. OVERVIEW OF SITE 33LN0278; FACING SOUTH**



**FIGURE 5. SITE MAP: 33LN0278**



At the time of survey, the area exhibited deciduous woodland vegetation providing little to no surface visibility. Pedestrian survey was conducted at 10-m intervals across this portion of the Survey Area; however, no artifacts or features were identified. Due to the poor surface visibility shovel testing was conducted at 15-m intervals. Nine shovel tests were placed at 15-m intervals within this portion of the Survey Area. One shovel test was found to contain archaeological resources. Shovel test 3 contained one piece of shatter of an indeterminate chert material at 0 to 10 cmbs. Additional shovel tests were excavated at 5-meter intervals in all four cardinal directions from the positive test until two consecutive negative tests were encountered in all directions. No additional archaeological resources were identified.

A total of 17 shovel tests were excavated within this portion of the Survey Area. Soils were moderately well developed revealing two layers, and were excavated to an average depth of 29 cmbs. The initial layer consisted of silt clay soil and ranged in color from very dark grayish brown (10YR3/2) to brown (10YR4/3). The initial layer extended to depths ranging from 6 to 30 cmbs overlying a second layer consisting of dark grayish brown (10YR4/2) to light brownish gray (10YR6/2) clay mottled by yellowish brown (10YR5/6) to brownish yellow (10YR6/6) clay oxidation channels.

A boundary was drawn around a 5-m buffer of the single positive shovel test (see Figure 5). The 0.02-acre area was designated Site 33LN0278.

#### **Site Eligibility Status and Recommendations**

Site 33LN0278 consists of an isolated lithic artifact. Intensive pedestrian surface reconnaissance as well as subsurface testing was conducted at the site; however, no additional archaeological resources were identified. The potential for this site to yield further information important in history has been exhausted. ERM recommends the site not eligible for listing in the NRHP as the site is unlikely to provide additional information important to history and therefore cannot satisfy NRHP Criterion D. No further archaeological investigation of Site 33LN0278 is recommended.

#### ***6.1.1.2 Site 33LN0279***

Site 33LN0279 consists of a historic-period brick-lined well shaft capped with a 20 inch by 20 inch metal housing and an associated drainage ditch system. A large boulder, measuring approximately 1 m by 0.75 m, has been placed on top of the well, presumably to prevent accidental entry into the well shaft. A system of ditches, likely associated with the well shaft feature, was noted within the wooded lowland area surrounding the well shaft. The historic-period features were identified within a wooded area exhibiting saturated soils and providing little to no surface visibility (see Figures 3, 6, 7, and 8; Appendix A: Map 11).

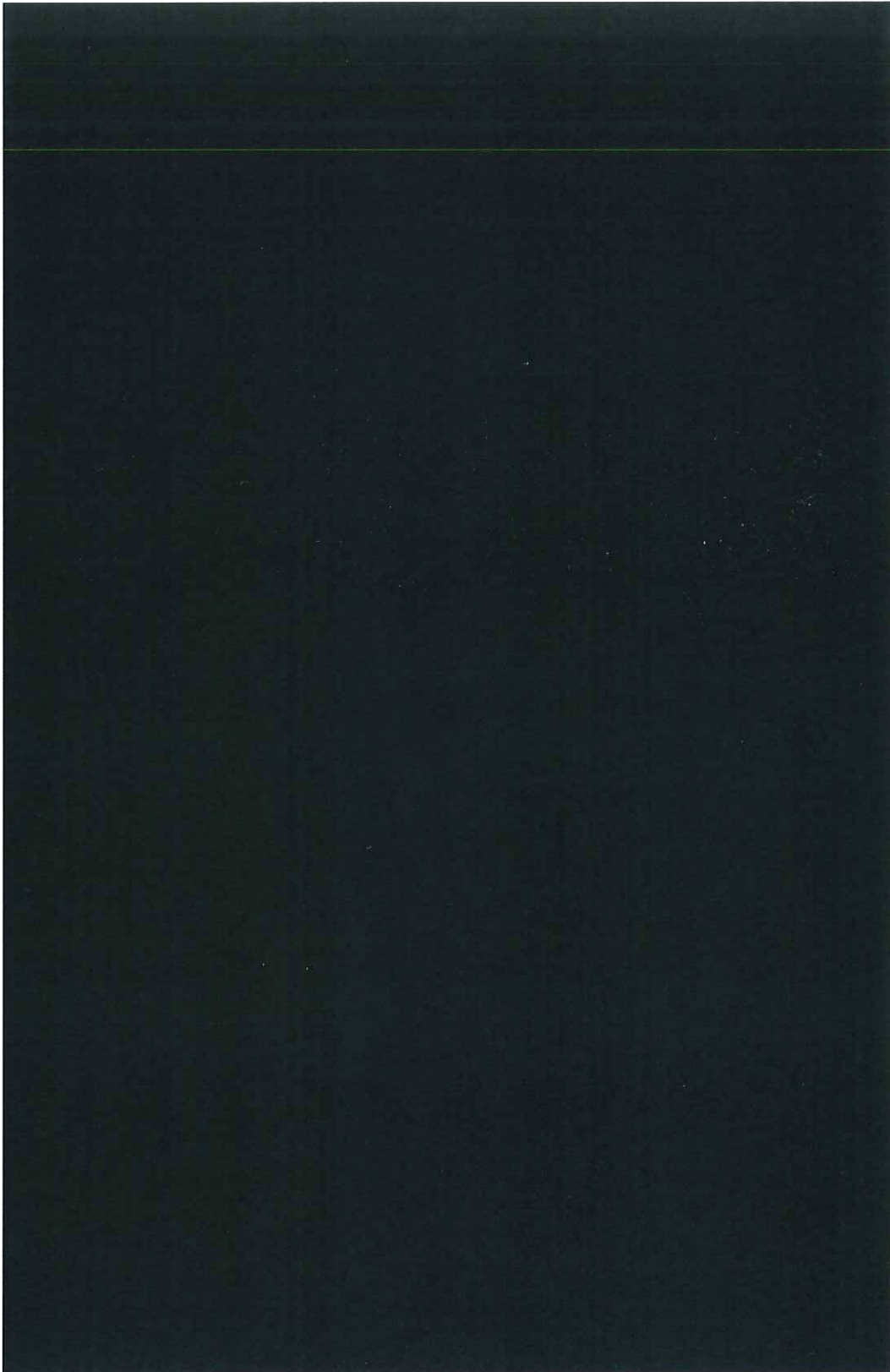




**FIGURE 6. HISTORIC-PERIOD WELL FEATURE IDENTIFIED AT SITE 33LN0279; FACING SOUTH**



**FIGURE 7. EXAMPLE OF DITCH SYSTEM FEATURES IDENTIFIED AT 33LN0279; FACING NORTHWEST**



**FIGURE 8. SITE MAP: 33LN0279**

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Summary: Application of NRG Ohio Pipeline Company LLC continued - Attachment C (Part 1)  
electronically filed by Teresa Orahod on behalf of Sally Bloomfield