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APPLICATION TO THE OHIO POWER SITING BOARD FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED

OPSB CASE NO.
07-0171-EL-BTX

Geauga County 138 kV Transmission Line Supply Project

September 2007

Volume II (Wetland Delineation)

Prepared by:
URS Corporation

Prepared for:
American Transmission Systems, Incorporated and Cleveland Electric Illuminating Company

URS

ATSI

the Illuminating Company
A FirstEnergy Company

APPENDIX 07-1

Wetland Delineation, Stream Assessment, and Threatened and Endangered Species Habitat Survey, Preferred Route Geauga County 138 kV Electric Transmission Line, Geauga County, Ohio

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EXECUTIVE SUMMARY

American Transmission Systems, Inc. (ATSI) and The Cleveland Electric Illuminating Company (CEI), subsidiaries of FirstEnergy Corp, are proposing construction of a 138 kV electric transmission line from a proposed distribution substation in Huntsburg Township along US Route 322 in Geauga County, Ohio to an existing 138 kV transmission line located along the border of Geauga and Lake Counties in northeast Ohio. This jurisdictional wetland delineation, stream assessment, and threatened and endangered species survey was conducted along the 14.7-mile long, 200-foot wide corridor for the Preferred Route, and an approximately one-acre proposed distribution substation located in Geauga County, Ohio. Delineation and assessment work was conducted in May, June, July, and August 2007. A separate report has been prepared for the proposed alternate route corridor.

One hundred two (102) wetlands, totaling 55.6 acres, of 11 different wetland habitat types were identified along the corridor, including 20 palustrine emergent wetlands, four palustrine emergent/forested wetlands, 15 palustrine emergent/scrub-shrub wetlands, two palustrine emergent/scrub-shrub/forested wetlands, 15 palustrine forested wetlands, three palustrine forested/emergent wetlands, ten palustrine forested/scrub-shrub wetlands, three pond natural vernal-woodland wetlands, 13 palustrine scrub-shrub wetlands, 12 palustrine scrub-shrub/emergent wetlands, and five palustrine scrub-shrub/forested wetlands (Cowardin et al. 1979, Heber 2007). These wetlands are summarized in Table ES-1.

Identified wetlands were evaluated utilizing the Ohio Rapid Assessment Method (ORAM) v5.0 for categorizing wetlands. Wetland ORAM scores indicated the following: 23 Category I wetlands and 79 Category II palustrine wetlands. All of the wetlands are considered non-isolated and jurisdictional. No Category III wetlands were identified during the field investigations.

Sixty streams were identified, eight with a drainage basin area greater than one square mile, and 52 streams with a drainage basin area less than one square mile. The streams with a drainage basin greater than one square mile were scored using qualitative habitat evaluations (QHEI). Using the QHEI method, the survey rated one "fair" warmwater habitat stream and "seven" good warmwater habitat streams. There were seven ephemeral streams, four intermittent streams, and 41 perennial streams identified with a drainage basin less than one square mile. These streams are summarized in Tables ES-2 and ES-3.

The USFWS literature review indicated that the proposed project is located within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the once threatened Bald eagle *(Haliaeetus leucocephalus)*. No species of concern were identified during field investigations. However, potential habitat for the Indiana bat was identified during the field investigation.

TABLE ES-1

EXECUTIVE SUMMARY TABLE OF WETLANDS LOCATED IN THE GEAUGA COUNTY PREFERRED ROUTE ELECTRIC TRANSMISSION LINE CORRIDOR

Wetland Identifier	Cowardin Wetland Type	Wetland Acreage in 200ft Corridor	ORAM Score	ORAM Category	Linear Feet Crossed	Wetland Acreage in 60ft Construction Corridor
Pr-w001	PSS	<0.1	16	I	0	0
Pr-w002	PEM/PSS	0.1	31	II	39	0.1
Pr-w003	PEM/PSS	0.3	31	II	54	0.1
Pr-w004	PEM/PSS/PFO	1.0	54	II	251	0.3
Pr-w005	PEM	<0.1	28	I	0	0
Pr-w006	PEM	<0.1	10	I	0	<0.1
Pr-w007	PEM/PSS	0.4	52	II	116	0.2
Pr-w008	PFO	<0.1	27	I	0	0
Pr-w009	PSS	<0.1	27	I	0	<0.1
Pr-w010	PSS	<0.1	22	I	0	<0.1
Pr-w011	PEM/PSS	0.3	51	II	88	0.1
Pr-w012	PEM/PSS	0.4	51	II	98	0.1
Pr-w013	PSS/PEM	0.1	38.5	II	0	0
Pr-w014	PEM	<0.1	31	II	0	<0.1
Pr-w015	PEM/PFO	<0.1	45	II	0	<0.1
Pr-w016	PSS/PEM	<0.1	44.5	II	8	<0.1
Pr-w017	PSS/PEM	<0.1	44.5	II	0	0
Pr-w018	PEM/PSS	0.1	36.5	II	0	<0.1
Pr-w019	PSS/PEM	0.2	33.5	II	101	0.1
Pr-w020	PSS/PFO	0.1	39.5	II	0	<0.1
Pr-w021	PSS/PFO	0.2	39.5	II	36	0.1
Pr-w022	PSS/PFO	0.4	39.5	II	112	0.2
Pr-w023	PSS	0.3	34.5	II	94	0.1
Pr-w024	PFO/PSS	0.4	45.5	II	101	0.1
Pr-w025	PFO/PSS	1.3	45.5	II	108	0.2
Pr-w026	PFO	0.3	52	II	0	<0.1
Pr-w027	PEM	0.1	20	I	0	0
Pr-w028	PFO	0.9	41	II	170	0.2
Pr-w029	PFO	1.2	39.5	II	313	0.4
Pr-w030	PEM/PSS	2.6	39.5	II	564	0.8
Pr-w031	PSS/PEM	0.4	38	II	84	0.1
Pr-w032	PEM/PFO	1.1	44	II	332	0.5
Pr-w033	PD1m	0.1	47	II	4	<0.1
Pr-w034	PEM/PSS	1.5	54	II	422	0.6

TABLE ES-1

EXECUTIVE SUMMARY TABLE OF WETLANDS LOCATED IN THE GEAUGA COUNTY PREFERRED ROUTE ELECTRIC TRANSMISSION LINE CORRIDOR

Wetland Identifier	Cowardin Wetland Type	Wetland Acreage in 200ft Corridor	ORAM Score	ORAM Category	Linear Feet Crossed	Wetland Acreage in 60ft Construction Corridor
Pr-w035	PSS/PFO	2.1	55	II	583	0.8
Pr-w036	PFO/PSS	1.7	55	II	411	0.6
Pr-w037	PFO/PSS	1.1	55	II	323	0.4
Pr-w038	PFO/PSS	0.1	55	II	20	<0.1
Pr-w039	PFO/PSS	1.3	55	II	399	0.5
Pr-w040	PSS/PEM	1.2	28	I	0	0
Pr-w041	PSS	0.3	28	I	107	0.1
Pr-w042	PSS	0.4	28	I	173	0.2
Pr-w043	PEM	0.7	20	I	194	0.3
Pr-w044	PSS	0.8	24	I	292	0.4
Pr-w045	PEM	0.7	33	II	231	0.3
Pr-w046	PFO/PEM	<0.1	57	II	0	0
Pr-w047	PFO	0.4	57.5	II	85	0.1
Pr-w048	PD1m	1.3	57.5	II	337	0.5
Pr-w049	PEM/PSS/PFO	2.6	57.5	II	854	1.2
Pr-w050	PFO/PSS	1.2	57.5	II	362	0.5
Pr-w051	PEM	<0.1	53.5	II	0	<0.1
Pr-w052	PFO/PSS	0.3	53.5	II	68	0.1
Pr-w053	PFO/PSS	1.1	53.5	II	382	0.4
Pr-w054	PFO	0.8	53.5	II	146	0.2
Pr-w055	PFO	<0.1	53.5	II	0	0
Pr-w056	PFO	0.2	53.5	II	132	0.2
Pr-w057	PFO	<0.1	53.5	II	0	<0.1
Pr-w058	PFO	4.1	53.5	II	1045	1.4
Pr-w059	PFO/PSS	1.8	42	II	519	0.7
Pr-w060	PSS/PEM	0.8	45.5	II	222	0.3
Pr-w061	PEM	0.1	16	I	0	<0.1
Pr-w062	PSS	0.4	32	II	115	0.2
Pr-w063	PSS/PFO	0.9	51	II	263	0.4
Pr-w064	PEM/PSS	0.2	43.5	II	0	0
Pr-w065	PSS/PEM	0.7	59	II	176	0.2
Pr-w066	PSS/PEM	1.1	35	II	264	0.4
Pr-w067	PSS/PEM	1.1	57	II	198	0.3
Pr-w068	PSS	0.6	55.5	II	59	0.1
Pr-w069	PSS	0.1	45	II	0	0
Pr-w070	PFO	0.8	59	II	72	0.1
Pr-w071	PSS	1.5	46	II	456	0.6
Pr-w072	PEM/PSS	0.2	43	II	0	0
Pr-w073	PSS	<0.1	32	II	0	0
Pr-w074	PSS	0.2	32	II	27	0.1
Pr-w075	PEM/PSS	0.1	24	I	28	<0.1
Pr-w076	PEM/PSS	0.1	24	I	4	<0.1

TABLE ES-1

EXECUTIVE SUMMARY TABLE OF WETLANDS LOCATED IN THE GEAUGA COUNTY PREFERRED ROUTE ELECTRIC TRANSMISSION LINE CORRIDOR

Wetland Identifier	Cowardin Wetland Type	Wetland Acreage in 200ft Corridor	ORAM Score	ORAM Category	Linear Feet Crossed	Wetland Acreage in 60ft Construction Corridor
Pr-w077	PSS/PEM	0.2	39.5	II	53	0.1
Pr-w078	PEM/PSS	0.1	34	II	0	0
Pr-w079	PEM/PFO	<0.1	52.5	II	0	<0.1
Pr-w080	PSS/PEM	0.2	34	II	0	0
Pr-w081	PEM	<0.1	41	II	0	<0.1
Pr-w082	PFO/PEM	0.2	36	II	0	<0.1
Pr-w083	PEM/PSS	<0.1	27	I	0	0
Pr-w084	PEM	0.8	24	I	216	0.3
Pr-w085	PEM	1.1	27	I	272	0.4
Pr-w086	PFO	0.1	47	II	94	0.1
Pr-w087	PFO	0.3	49	II	0	<0.1
Pr-w088	PEM	<0.1	25	I	0	<0.1
Pr-w089	PEM	<0.1	46	II	5	<0.1
Pr-w090	PEM	<0.1	45	II	0	0
Pr-w091	PEM	<0.1	34	II	0	0
Pr-w092	PFO	<0.1	41	II	0	0
Pr-w093	PD1m	<0.1	57	II	0	0
Pr-w094	PFO/PEM	1.9	55	II	449	0.6
Pr-w095	PEM	1.2	30	II	291	0.4
Pr-w096	PEM/PSS	0.1	22	I	0	0
Pr-w097	PEM	0.6	41.5	II	215	0.3
Pr-w098	PEM	0.1	23	I	0	0
Pr-w099	PEM/PFO	0.2	36	II	126	0.1
Pr-w100	PEM	0.1	28	I	12	<0.1
Pr-w101	PFO	1.2	29	I	338	0.4
Pr-w102	PEM	<0.1	32	I	32	<0.1
Totals:		**55.6**			**13,744**	**18.7**

TABLE ES-2

EXECUTIVE SUMMARY TABLE OF STREAMS LOCATED IN THE GEAUGA COUNTY PREFERRED ROUTE ELECTRIC TRANSMISSION LINE CORRIDOR

OHEI STREAMS

Stream Identifier	Score	Flow Regime	Bank Full Width (feet)	Narrative Description	Stream Length (feet) within 200ft Corridor
Pr-s030	59	Perennial	13	Good Warmwater Habitat	229
Pr-s034	58	Perennial	10	Good Warmwater Habitat	290
Pr-s044	55	Perennial	13	Good Warmwater Habitat	308
Pr-s049	43	Perennial	13	Fair Warmwater Habitat	243
Pr-s051	61	Perennial	13	Good Warmwater Habitat	235
Pr-s053	61	Perennial	13	Good Warmwater Habitat	313
Pr-s054	64	Perennial	13	Good Warmwater Habitat	342
Pr-s057	64.5	Perennial	23	Good Warmwater Habitat	444
Subtotal: 8			**112**		**2,405**

TABLE ES-3

EXECUTIVE SUMMARY TABLE OF STREAMS LOCATED IN THE GEAUGA COUNTY PREFERRED ROUTE ELECTRIC TRANSMISSION LINE CORRIDOR STREAMS WITH A DRAINAGE BASIN LESS THAN ONE SQUARE MILE

Stream ID	Flow Regime	Bank Full Width (feet)	Maximum Pool Depth (centimeters)	Stream Length (feet) within 200ft Corridor
Pr-s001	Perennial	4	10	259
Pr-s002	Perennial	2	5	176
Pr-s003	Perennial	4	7	218
Pr-s004	Perennial	4	7	305
Pr-s005	Perennial	4	5	230
Pr-s006	Perennial	4	7	290
Pr-s007	Perennial	3	4	251
Pr-s008	Intermittent	2	1	240
Pr-s009	Perennial	4	6	245
Pr-s009b	Perennial	5	6	92
Pr-s010	Perennial	2	4	244
Pr-s011	Perennial	4	8	278
Pr-s012	Perennial	4	4	210
Pr-s013	Perennial	4	4	163
Pr-s014	Perennial	7	15	271
Pr-s015	Perennial	10	20	264
Pr-s016	Perennial	2	12	237
Pr-s017	Perennial	10	20	266
Pr-s018	Perennial	7	15	214
Pr-s019	Perennial	10	7	220
Pr-s020	Perennial	8	4	200
Pr-s021	Perennial	11	5	226
Pr-s022	Perennial	7	4	207
Pr-s023	Perennial	8	6	202
Pr-s024	Perennial	5	4	200
Pr-s025	Intermittent	5	7	128
Pr-s026	Ephemeral	3	0	227
Pr-s027	Perennial	8	11	330
Pr-s028	Perennial	10	18	345
Pr-s029	Perennial	5	8	1015
Pr-s031	Ephemeral	2	0	280
Pr-s032	Perennial	7	10	249
Pr-s033	Ephemeral	1	0	205
Pr-s035	Ephemeral	2	0	202
Pr-s036	Perennial	10	6	229
Pr-s037	Ephemeral	2	0	406
Pr-s038	Perennial	2	3	228
Pr-s038b	Perennial	2	3	119
Pr-s039	Intermittent	5	12	290
Pr-s040	Ephemeral	2	0	427
Pr-s041	Perennial	11	12	971

TABLE ES-3

EXECUTIVE SUMMARY TABLE OF STREAMS LOCATED IN THE GEAUGA COUNTY PREFERRED ROUTE ELECTRIC TRANSMISSION LINE CORRIDOR STREAMS WITH A DRAINAGE BASIN LESS THAN ONE SQUARE MILE

Stream ID	Flow Regime	Bank Full Width (feet)	Maximum Pool Depth (centimeters)	Stream Length (feet) within 200ft Corridor
Pr-s042	Perennial	4	7	203
Pr-s043	Perennial	7	10	201
Pr-s045	Perennial	4	4	279
Pr-s046	Perennial	8	9	550
Pr-s047	Perennial	3	10	629
Pr-s048	Perennial	7	10	230
Pr-s050	Ephemeral	3	0	47
Pr-s052	Perennial	3	25	107
Pr-s055	Perennial	4	5	626
Pr-s056	Perennial	8	15	370
Pr-s058	Intermittent	3	0	200
Subtotal: 52		**258**	**375**	**14,806**
Total of all Streams: 60		**370**		**17,211**

Wetland Delineation, Stream Assessment, and Threatened and Endangered Species Habitat Survey, Preferred Route Geauga County 138 kV Electric Transmission Line, Geauga County, Ohio

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1.0 INTRODUCTION

American Transmission Systems, Inc. (ATSI) and the Cleveland Electric Illuminating Company (CEI) are proposing construction of a 138 kV electric transmission line. For the proposed Preferred Route, the transmission line would start at a proposed distribution substation which would be located east of Huntsburg along Mayfield Road (U.S. 322), to the existing Mayfield-Ashtabula 138 kV transmission line, approximately 14.71 miles to the north, in southern Lake County, Ohio. A project vicinity map is provided as Figures 1A through 1C. ATSI and CEI retained URS to conduct wetland delineation, stream assessment, and a threatened and endangered species habitat survey along the proposed transmission line corridor. This field work was conducted between May 7, 2007 and August 2, 2007. Data from this report will be used to support an Application to the Ohio Power Siting Board for a Certificate of Environmental Compatibility and Public Need, address U.S. Army Corps of Engineers (ACOE) 404 permitting, and Ohio Environmental Protection Agency (Ohio EPA) 401 Water Quality Certification permitting. A separate report has been prepared for the proposed Alternate Route of the transmission line.

2.0 METHODS

The project corridor was investigated for the presence of wetlands using the procedures outlined in the *1987 U.S. Army Corps of Engineers (ACOE) Wetlands Delineation Manual* (Environmental Laboratory, 1987. URS biologists walked the entire 200-foot wide study corridor of the proposed transmission line. Completed ACOE wetland delineation forms are provided in Appendix A. In addition, URS prepared a functional wetland analysis for each delineated wetland in the corridor using the regionally specific *Ohio Rapid Assessment Method (ORAM) version 5.0 (ORAM v5.0 Manual, 2001)* qualitative wetland evaluation forms. Completed ORAM forms are provided in Appendix B.

The perennial, intermittent, and ephemeral stream channels within the study corridor were assessed based upon the Ohio EPA's Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI), 2006. The QHEI method was used for streams with a drainage basin greater than one square mile and provides a method for assessing streams, in a manner similar to the ORAM forms for wetlands, under the same Section 401 regulatory program. Completed QHEI forms are included in Appendix C. For streams with a drainage basin less than one square mile, flow regime, bankfull width, class, stream length within the 200 foot corridor and 60 foot construction right of way was collected along with a review of aquatic life use designations found in the Administrative Code.

The project corridor was investigated for the presence of threatened and endangered species habitat by qualified URS biologists with appropriate knowledge of habitat requirements for species of concern likely to be found within the project corridor. The survey was conducted primarily for identification of species potentially present within the project corridor listed as special concern by the United States Fish and Wildlife Service (USFWS) and the Ohio Department of Natural Resources (ODNR).

Details of each specific methodology are provided in the following wetland delineation, stream assessment, and endangered species habitat survey conducted by URS in May through August, 2007.

3.0 RESULTS

3.1 U.S. ARMY CORPS OF ENGINEERS WETLAND DELINEATION PROCEDURE

The extent and locations of wetlands in the study area generally correlated with predictions based upon the preliminary soils evaluation, a review of USGS topographic contours for the site vicinity, aerial photography, OWI map review, and NWI map review. The field wetland delineation, conducted after the preliminary literature review, identified 102 wetlands within the project corridor.

3.1.1 Preliminary Soils Evaluation

According to the *Soil Survey of Geauga County, Ohio,* (U.S.D.A Soil Conservation Service, 1982), 32 soil phases from 17 soil series are mapped within the limits of the study area and include Chili-loam (CnB, CnC), Chili-Oshtemo complex (CyD), Darien silt loam (DrA, DrB), Ellsworth silt loam (EhB, EhB2, EhC, EhC2, EhD, EhE, EmC, EmD), Holly silt loam (Ho), Haskins loam (HsA, HsB), Jimtown silt loam (JtA), Lordstown loam (LrB), Lordstown-Rock outcrop complex (LxD), Mahoning silt loam (MgA, MgB, MsA, MsB), Mitiwanga silt loam (MtA), Orrville silt loam (Or), Pits, quarry (Pq), Platea silt loam (PsA, PsB), Rawson silt loam (RmB), Sebring silt loam (Sb), and Sheffield silt loam (Sf). Three of these soil phases are listed as hydric: Ho, Sb, and Sf. Nine soil phases are known to contain mapped inclusions of hydric soil in depressions. These are CyD, DrA, JtA, MgA, MgB, MsA, MsB, MtA, and Or.

According to the *Soil Survey of Lake County, Ohio,* (Natural Resource Conservation Service, 1979) there is one soil series (Darien silt loam) with two soil phases (DaA, DaB) mapped within the limits of the study area in Lake County, Ohio. The Lake County Soil Survey lists DaA as mapped with known inclusions of hydric soils in depressions. Maps with soil phases within 1,000 feet of the project centerline can be found on Figure 5A through 5C. Details of soil types are discussed as follows:

Chili loam, 6 to 12 percent slopes (CnC)

This is a deep, sloping, well-drained soil typically found on stream terraces, outwash plains, and kames (short, steep hills formed by meltwater of a retreating glacier). The surface layer is a dark brown friable loam about 7 inches thick. The subsoil is usually about 35 inches thick with an upper portion that is brown and reddish brown friable loam and a lower portion that is dark brown firm gravelly sandy clay loam and gravelly sandy loam. The permeability is moderately rapid, runoff is medium, and water capacity varies from moderate to low. This soil is suited to cultivated crops, hay, and pasture, though erosion and droughtiness are hazards for these applications. Woodland, buildings, local roads and streets, septic tank absorption field, and recreation uses are all suited to this soil.

Chili-Oshtemo complex, 6 to 18 percent slopes (CyD)

This complex consists of deep, well-drained, rolling and hilly Chili and Oshtemo soils on kames. Soil composition of this complex is about 55 percent Chili gravelly loam, 30 percent Oshtemo sandy loam, and 15 percent included soils. In general, the surface layer of the Chili soil is a dark grayish brown, friable gravelly loam about 6 inches thick. The subsoil is about 42 inches thick with the upper part consisting of dark yellowish brown, friable loam and clay loam and a lower portion consisting of dark brown, friable gravelly loam, gravelly clay loam, and gravelly sandy loam. The surface layer of the Oshtemo soil is dark grayish brown, friable sandy loam about 6 inches thick. The subsoil is about 44 inches thick with an upper portion consisting of dark brown, friable sandy loam and a lower portion consisting of brown, loose loamy sand. The included soils in this complex are generally small areas of more droughty soil that are 50 to 70 percent gravel in the subsoil. They are found near the crest of hills.

Unmapped inclusions of poorly drained hydric Sebring and Candice soils are found in depressions that receive runoff and sediment. In the Chili soil, permeability is moderately rapid. In the Oshtemo soil, it is moderately rapid in the upper part of the subsoil. Runoff is rapid in both soils, and both soils have a low to moderate available water capacity. These soils are used for pasture, woodland, and cultivated crops, though they are poorly suited to cultivated crops. Erosion can be severe in steep, cultivated areas. These soils are better suited to use as woodland and as habitat for woodland wildlife. Use of these soils as building sites is a moderately well-suited use if measures are taken to protect against erosion during construction.

Darien silt loam, 0 to 1 percent slopes (DaA)

This is a deep, nearly level, somewhat poorly drained soil on broad flats. The surface layer is typically dark grayish brown, friable silt loam about 11 inches thick. The subsoil is about 26 inches thick. The upper part of the subsoil is grayish brown, mottled, firm silt loam; and the lower part is light olive brown, mottle, firm silty clay loam. In undrained areas, this soil has a perched seasonal high water table near the surface during winter, spring, and other excessively wet periods. Some areas are ponded during these periods. Permeability is slow, and runoff is very slow. Organic matter content is moderately low.

This soil is used mainly for woodland, hay, and pasture. This soil contains unmapped inclusion of hydric soils in depressions.

Darien silt loam, 1 to 4 percent slopes (DaB)

This is a deep, nearly level and gently sloping, somewhat poorly drained soil on slightly convex side slopes. The surface layer is typically dark grayish brown, friable silt loam about 7 inches thick. The subsoil is about 33 inches thick. The upper part of the subsoil is yellowish brown, mottled, firm silt loam; the middle part is brown and dark yellowish brown, mottled, firm silty clay loam; and the lower part is brown, mottled, firm silty clay loam. In undrained areas, this soil has a perched seasonal high water table near the surface during winter, spring, and other excessively we periods. Permeability is slow and runoff is slow or medium. Available water capacity is moderate, and organic matter content is moderately low. This soil is used mainly for woodland, hay, and pasture.

Darien silt loam, bedrock substratum, 0 to 2 percent slopes (DrA)

This is a deep, nearly level, somewhat poorly drained soil found in broad areas of uplands. The surface layer is typically dark grayish brown, friable silt loam about 8 inches thick. The subsurface layer is light yellowish brown, friable silt loam about 4 inches thick. The subsoil is about 28 inches thick and consists of an upper portion of grayish brown, mottled, friable loam and middle and lower portions consisting of dark yellowish brown, mottled, firm clay loam. The water table is perched between 6 and 18 inches during winter, spring, and other extended wet periods. Permeability and runoff are slow and the available water capacity is moderate. Seasonal wetness limits the use of this soil for cultivated crops, use as septic tank absorption fields, and as sites for buildings. This soil is moderately well suited to use as woodland. This soil contains unmapped inclusion of hydric soils in depressions.

Darien silt loam, bedrock substratum, 2 to 6 percent slopes (DrB)

This is a deep, gently sloping, somewhat poorly drained soil on broad convex slopes on uplands. The surface layer is typically dark grayish brown, friable silt loam about 7 inches thick. The subsoil is about 33 inches thick. The upper part is light olive brown, mottled, firm loam and silt loam; and the middle and lower parts are gray, mottled, firm

clay loam. A water table is perched between depths of 6 and 18 inches in winter and spring and during other periods of extending wetness. Permeability is slow, and runoff is slow or medium. This soil is used as cropland, woodland, and pasture.

Ellsworth silt loam, 2 to 6 percent slopes (EhB)

This is a deep, gently sloping, moderately well drained soil found on knolls and side slopes at the heads of drainages in uplands. The surface layer is generally grayish brown, friable silt loam about 9 inches thick. The subsoil is about 29 inches thick with an upper portion that is brown, mottled, firm silty clay loam, a middle portion that is brown, mottled, firm clay, and a lower portion that is dark brown, mottled, firm silty clay loam. A perched water table is present between depths of 24 and 36 inches in winter, spring, and during extended wet periods. Permeability is slow to very slow, runoff is medium, and the available water capacity is moderate. This soil is suited to cultivated crops, hay, pasture, and orchards.

Ellsworth silt loam, 2 to 6 percent slopes (EhB2)

This is a deep, gently sloping, moderately drained soil on knolls and side slopes parallel to drainages on uplands. The surface is susceptible to erosion. The surface layer is typically a brown, friable silt loam about 6 inches thick. The subsoil is about 25 inches thick, the upper part is dark yellowish brown, firm silty clay loam; and the lower part is dark brown and dark yellowish brown, mottled, firm clay and silty clay loam. The water table is perched between depths of 24 and 36 inches in winter, spring, and during extended wet periods. The content of organic material is moderately low. Permeability is slow to very slow. Runoff and water capacity is moderate. This soil is well suited to use as woodland.

Ellsworth silt loam, 2 to 6 percent slopes (EhC)

This is a deep, sloping, moderately well drained soil found on ridgetops, uneven shoulder slopes, and along well defined waterways. The surface layer is dark grayish brown, friable silt loam about 7 inches thick. The subsoil is about 26 inches thick with an upper part consisting of dark yellowish brown and dark brown, firm silty clay loam and a lower portion that is dark brown and dark yellowish brown, mottled, firm clay. A perched water

table occurs between 24 and 36 inches in depth during winter and spring. Permeability is slow to very slow, runoff is rapid, and the available water capacity is moderate. This soil is suited to hay and pasture, moderately well suited to use as woodland and as a site for buildings, and poorly suited for use as septic tank absorption fields.

Ellsworth silt loam, 6 to 12 percent slopes (EhC2)

This is a deep, sloping, moderately well drained soil on ridgetops and uneven shoulder slopes and along well defined waterways in uplands. This surface is susceptible to erosion, and in uneroded areas the surface layer is very dark grayish brown. The surface layer is typically a brown, friable silt loam about 5 inches thick. The subsoil is 26 inches thick, the upper part is dark yellowish brown and dark brown, firm silty clay loam; and the lower part is dark brown and dark yellowish brown, mottled, firm clay. The water table is perched between depths of 24 and 36 inches in winter and spring. Permeability is slow or very slow, and runoff is rapid. This soil is suited to hay, pasture, and woodland. Erosion is a serious hazard where the slopes are long.

Ellsworth silt loam, 12 to 18 percent slopes (EhD)

This is a deep, moderately steep, moderately well drained soil on convex hillsides and side slopes. The surface layer is dark grayish brown, friable silt loam about 7 inches thick. The subsoil is about 26 inches thick, the upper part is dark yellowish brown and dark brown, firm silty clay loam; and the lower part is dark brown and dark yellowish brown, mottled, firm clay. The water table is perched between depths of 24 and 36 inches in winter and spring. Permeability is slow or very slow, and runoff is rapid. Soil generally found in woodlands. Slope and the hazard of erosion severely limit the use of this soil for cultivated crops, housing developments, and logging.

Ellsworth silt loam, 18 to 25 percent slopes (EhE)

This is a deep, steep, moderately well drained soil on side slopes. The surface layer is typically dark grayish brown, friable silt loam about 5 inches thick. The subsoil is about 24 inches thick, the upper part is dark yellowish brown and dark brown, firm silty clay loam; and the lower part is dark yellowish brown, mottled, firm clay. The water table is perched between depths of 24 and 36 inches during wet periods. Permeability is slow or

very slow, and runoff is very rapid. The soil is mostly used for woodland; however this soil is too steep for cultivated crops. Erosion is a serious hazard when vegetative cover is not present.

Ellsworth silt loam, 12 to 18 percent slopes (EmD)

This is a deep, moderately steep, moderately well drained soil on side slopes. The surface layer is very dark grayish brown, friable silt loam about 3 inches thick. The subsurface layer is brown, friable silt loam about 4 inches thick. The water table is perched between depths of 24 and 36 inches in winter and spring. Permeability is slow and runoff is very rapid. In most areas this soil is used as pasture or woodland. Slope and the hazard of erosion severely limit the use of this soil for cultivated crops.

Ellsworth silt loam, shale substratum, 6 to 12 percent slopes (EmC)

This is a deep, sloping, moderately well drained soil on ridgetops and along well defined waterways. The surface layer is typically dark brown, friable silt loam about 8 inches thick. The subsoil is about 34 inches thick. The upper part is yellowish brown, firm silty clay loam; and the lower part is yellowish brown, mottled, firm silty clay. A water table is perched between depths of 24 and 36 inches in winter and spring. Permeability is slow, and runoff is rapid. In most areas this soil is used as cropland, but it is also suited for hay and pasture.

Holly silt loam, frequently flooded (Ho)

This is a deep, nearly level, poorly drained soil on flood plains. It is frequently flooded for long periods in fall, winter, and spring. The surface layer is dark grayish brown, friable silt loam about 9 inches thick. The subsoil is about 12 inches thick. It is dark gray, firm silt loam and clay loam that has mottles below a depth of about 12 inches. The water table is near the soil surface in winter, spring, and during extended wet periods. Permeability is moderate or moderately slow, and runoff is very slow, with water ponded in some areas. In most areas the soil is in wetland vegetation and woodland. Flooding and wetness limit the use of this soil for cultivated crops, hay, and pasture. Holly silt loam is on the hydric soils list.

Haskins loam, 0 to 2 percent slopes (HsA)

This is a deep, nearly level, somewhat poorly drained soil found on uplands and outwash plains. The surface layer is typically dark brown, friable loam about 9 inches thick. The subsoil is about 37 inches thick with upper and middle portions consisting of yellowish brown and dark brown, mottled, firm loam, clay loam, sandy clay loam, and gravelly sandy clay loam and lower portions consisting of dark brown, mottled, firm clay loam. A perched water table occurs between 12 and 30 inches in depth in winter, spring, and extended wet periods. Permeability is moderate in the upper and middle parts of the subsoil and slow to very slow in the lower part of the subsoil. Runoff is slow and the available water capacity is moderate. Seasonal wetness and slow permeability limit this soil's use for farming and septic tank absorption fields. Drained areas are suited to corn, hay, and pasture and undrained areas can be used for hay and pasture. This soil is well suited for use as woodland.

Haskins loam, 2 to 6 percent slopes (HsB)

This is a deep, gently sloping, somewhat poorly drained soil on uplands and outwash plains. The surface layer is dark brown, friable loam about 7 inches thick. The subsurface is about 37 inches thick with upper and middle parts consisting of yellowish brown and dark brown, mottled, firm loam, clay loam, sandy clay loam, and gravelly sandy clay loam and lower portions consisting of dark brown, mottled, firm clay loam. A perched water table is present between depths of 12 and 30 inches in winter, spring, and extended wet periods. Permeability is moderate in the upper and middle portions of the subsoil and slow or very slow in the lower part of the subsoil. Runoff is slow and the available water capacity is moderate. In drained areas, this soil is suited to cultivated crops, small grains, and hay, though erosion is a hazard on long cultivated slopes. In undrained areas, this soil is well suited to use as woodland. This soil is poorly suited to septic tank absorption fields and moderately well suited to houses without basements.

Jimtown silt loam, 0 to 3 percent slopes (JtA)

This is a deep, nearly level, somewhat poorly drained soil on stream terraces and outwash plains. The surface layer is dark grayish brown, friable silt loam about 9 inches thick. The subsoil is about 31 inches thick with an upper portion consisting of yellowish brown,

mottled, friable, and firm loam and sandy clay loam. The lower portion consists of yellowish brown, mottled, friable fine sandy loam and firm gravelly loam. The water table is located between depths of 12 and 30 inches in winter, spring, and extended wet periods. Permeability is moderate, runoff is slow, and the available water capacity is moderate. In drained areas, this soil is suited to corn, hay, and pasture. Homes without basements may be constructed in drained areas. In undrained areas this soil is suited to use as woodland and as habitat for openland and woodland wildlife. This soil contains unmapped inclusion of hydric soils in depressions.

Lordstown-Rock outcrop complex, 12 to 18 percent slopes (LxD)

This complex consists of moderately deep, well drained; moderately steep Lordstown channery loam and areas of exposed bedrock on hillsides. The surface layer of the Lordstown soil is very dark grayish brown, friable channery loam about 4 inches thick. The subsoil is dark yellowish brown and yellowish brown, friable channery loam and channery fine sandy loam about 24 inches thick. Sandstone bedrock is at a depth of about 28 inches. The available water capacity is low, and runoff is very rapid. This complex is used as woodland and pasture.

Lordstown loam, 2 to 6 percent slopes (LrB)

This is a moderately deep, gently sloping, well drained soil on side slopes and ridgetops. The surface layer is typically very dark grayish brown friable loam about 5 inches thick. The subsoil is dark yellowish brown and yellowish brown, friable channery loam and channery fine sandy loam about 30 inches thick. Permeability is moderate, and runoff is medium. In most areas this soil is used as pasture or woodland. It is also suited for corn, small grains, and hay.

Mahoning silt loam, 0 to 2 percent slopes (MgA)

This is a deep, nearly level, somewhat poorly drained soil found on uplands. The surface layer is dark grayish brown, friable silt loam about 8 inches thick. The subsoil is dark yellowish brown and brown, mottled, firm silty clay loam and clay about 30 inches thick. A perched water table occurs between depths of 12 to 30 inches in winter, spring, and extended periods of wetness. Permeability is slow to very slow, runoff is slow, and

available water capacity is moderate. Wetness and slow permeability limit this soil's use for cultivated crops, septic tank absorption fields, houses with basements, and other buildings. If used as farmland, soil must be drained to increase planting times and crop choice. This soil is well suited to use as woodland. This soil contains unmapped inclusion of hydric soils in depressions.

Mahoning silt loam, 2 to 6 percent slopes (MgB)

This is a deep, gently sloping, somewhat poorly drained soil found in broad areas on uplands. The surface layer is dark grayish brown, friable silt loam about 8 inches thick. The subsoil is dark yellowish brown, yellowish brown and grayish brown, mottled, firm silty clay loam about 28 inches thick. A perched water table occurs between 12 and 30 inches in winter, spring, and extended wet periods. Permeability is slow to very slow, runoff is medium, and available water capacity is moderate. Because of this soil's wetness and slow permeability, its use for crops, homesites, and septic tank absorption fields are limited. Draining this soil increases its potential uses. This soil contains unmapped inclusion of hydric soils in depressions.

Mahoning silt loam, shale substratum, 0 to 2 percent slopes (MsA)

This is a deep, nearly level, somewhat poorly drained soil found on flats on uplands. The surface layer is dark grayish brown, friable silt loam about 9 inches thick. The subsoil is about 42 inches thick with an upper portion consisting of yellowish brown, mottled, firm silty clay loam and a lower portion consisting of dark yellowish brown and brown, mottled, firm silty clay loam and silty clay. A perched water table is present between 12 to 30 inches in winter, spring, and extended wet periods. Permeability and runoff are slow and the available water capacity is moderate. Seasonal wetness and slow permeability limit the use of this soil for farming, septic tank absorption fields, homesites, and local road construction. This soil is suited to use as woodland. This soil contains unmapped inclusion of hydric soils in depressions.

Mahoning silt loam, shale substratum, 2 to 6 percent slopes (MsB)

This is a deep, gently sloping, somewhat poorly drained soil found in depressional areas between drainages. The surface layer is grayish brown, friable silt loam about 9 inches

thick. The subsoil is about 39 inches thick with an upper portion consisting of yellowish brown, mottled, firm silty clay loam and a lower portion consisting of dark yellowish brown and brown, mottled, firm silty clay loam and silty clay. A perched water table occurs between 12 to 30 inches in winter, spring, and extended wet periods. Permeability is slow, runoff is medium, and the available water capacity is moderate. Seasonal wetness and slow permeability limit farming, septic tank absorption field use, and use for homesites. In addition, erosion is a hazard when this soil is cultivated. This soil is suited to use as woodland. This soil contains unmapped inclusion of hydric soils in depressions.

Mitiwanga silt loam, 0 to 3 percent slopes (MtA)

This is a moderately deep, nearly level, somewhat poorly drained soil found on bedrock-controlled landforms on uplands. The surface layer is dark grayish brown, friable silt loam about 9 inches thick. The subsoil is about 22 inches thick with an upper portion consisting of yellowish brown and grayish brown, mottled, firm silt loam and silty clay loam and a lower portion consisting of dark yellowish brown, mottled, firm clay loam. A perched water table can be found between 12 and 30 inches in winter, spring, and extended periods of wetness. Permeability is moderate, runoff is slow, and the available water capacity is low. Seasonal wetness and the moderate depth to bedrock limit the use of this soil for farming, building sites, and septic tank absorption fields. This soil is suited to use as woodland.

Orrville silt loam, frequently flooded (Or)

This is a deep, nearly level, somewhat poorly drained soil on flood plains. It is frequently flooded for very brief to brief periods in fall, winter, and spring. Typically, the surface layer is dark grayish brown, friable silt loam about 6 inches thick. The subsoil is about 25 inches thick, and it is yellowish brown and grayish brown, friable silt loam and loam that has mottles in the upper part. The water table is between depths of 12 and 30 inches in winter, spring, and during other extended wet periods. Permeability is moderate, and runoff is slow. In most areas this soil is used as pasture or woodland. Flooding and seasonal wetness limit farming and house construction. Orrville silt loam is known to contain unmapped hydric compounds or depressions and drainage ways.

Pits, quarry (Pq)

This map unit consists of open excavations from which sandstone bedrock has been removed by strip mining. These quarries are commonly in areas where the layer of soil material is relatively thin over sandstone bedrock.

Platea silt loam, 0 to 2 percent slopes (PsA)

This is a deep, nearly level, somewhat poorly drained soil on broad flats on uplands. The surface layer is typically dark grayish brown, friable silt loam about 8 inches thick. The subsoil is about 37 inches thick. The upper part is yellowish brown, mottled, friable silt loam and firm silty clay loam; the middle part is a dark yellowish brown, very firm and brittle, silty clay loam fragipan that has mottles between depths of about 17 and 34 inches; and the lower part is dark yellowish brown, firm silt loam. A water table is perched between depths of 6 and 24 inches in winter and spring and during other extended wet periods. Permeability is moderately slow in the upper part of the subsoil and very slow in the fragipan. Runoff is slow. In most areas this soil is used as woodland or pasture. In a few areas it is used for cultivated crops.

Platea silt loam, 2 to 6 percent slopes (PsB)

This is a deep, gently sloping, somewhat poorly drained soil on a slightly convex low knolls and side slopes on uplands. The surface layer is typically dark grayish brown, friable silt loam about 7 inches thick. The subsoil is about 27 inches thick. The upper part is yellowish brown and light olive brown, mottled, firm silt loam and silty clay loam; and the lower part is a brown and dark yellowish brown, mottled, very firm and brittle silty clay loam fragipan. A water table is perched above the very slowly permeable fragipan in winter and spring and during extended wet periods. Runoff is medium. In most areas this soil is used for cultivated crops and hay. In drained areas the soil is suited for corn, hay and pasture.

Rawson silt loam, 2 to 6 percent slopes (RmB)

This is a deep gently sloping, moderately well drained soil on terraces and uplands. The surface layer is dark brown loam about 7 inches thick. The subsoil is about 26 inches

thick with an upper portion consisting of brown, friable loam, a middle portion consisting of yellowish brown and dark yellowish brown, mottled, firm, gravelly sandy clay loam, and a lower portion consisting of dark yellowish brown, firm clay loam. A perched water table occurs between 30 to 48 inches in winter, spring, and other extended periods of wetness. Permeability is moderate in the upper and middle portion of the subsoil and slow to very slow in the lower portion of the soil. Runoff is medium and the available water capacity is moderate. Though this soil is primarily used as and suited to corn, small grains, hay, and pasture, erosion is a hazard. This soil is moderately well suited to grazing in the early spring, sites for buildings without basements, septic tank absorption fields, and recreation uses. This soil is well suited to trees, and can be found in native hardwoods.

Sebring silt loam (Sb)

This is a deep, nearly level, poorly drained soil in basins of former glacial lakes and on terraces. It receives runoff from adjacent higher lying soils and is subject to ponding. Typically, the surface layer is very dark grayish brown, friable silt loam about 3 inches thick. The subsurface layer is grayish brown, mottled, friable silt loam about 5 inches thick. A water table is perched near or above the soil surface in winter, spring, and during other extended wet periods. Permeability is moderately slow. In most undrained areas this soil is in woodland and brush. Seasonal wetness severely limits the use of this soil for cultivated crops. Sebring silt loam is on the hydric soils list.

Sheffield silt loam (Sf)

This is a deep, nearly level, poorly drained soil in low-lying or depressional areas and at the heads of drainages on uplands. It receives runoff from adjacent higher lying soils and is subject to ponding. Typically, the surface layer is dark gray, friable silt loam about 8 inches thick. The subsoil is about 32 inches thick, the upper part is light brownish gray, mottled, firm silt loam and silty clay loam; and the lower part is grayish brown and yellowish brown, mottled, firm, dense silty clay loam fragipan. A seasonal high water table is near or above the surface in winter, spring, and during other extended wet periods. Permeability is very slow in the fragipan and moderately slow in the upper part of the subsoil above the fragipan and in the substratum. Runoff is very slow or ponded, and the available water capacity of this zone is low. This soil is mainly used for

woodland and pasture. The major limitations for farming are the very slowly permeable fragipan and seasonal wetness. Sheffield silt loam is on the hydric soils list.

3.1.2 National Wetland Inventory (NWI) Map Review

NWI wetlands are areas of potential wetland that have been identified from USFWS aerial photograph interpretation which have typically not been confirmed by field investigation. Forested and heavy scrub/shrub wetlands are often not shown on NWI maps as foliage effectively hides the visual signature that indicates the presence of standing water and moist soils from an aerial view. As a result NWI maps may not show all the wetlands found in a particular area nor do they necessarily provide accurate wetland boundaries. NWI maps are useful for providing indications of potential wetland areas, which are often supported by soil mapping and hydrologic predictions, based upon topographical analysis using USGS topographic maps.

According to the NWI maps of the Thompson and East Claridon, Ohio quadrangles, 32 NWI wetlands are located within the 200-foot project transmission line corridor, as shown on Figure 2A through 2C. Eight of the NWI wetlands were identified as Palustrine, Forested, Broad-Leaved Deciduous, Saturated/ Semipermanent/ Seasonal Wetlands (PFO1Y). Six areas were identified as Palustrine, Forested/Scrub-Shrub, Broad-Leaved Deciduous, Saturated/ Semipermanent/ Seasonal Wetlands (PFO/SS1Y). Six areas were designated as Palustrine, Scrub-Shrub, Broad-Leaved Deciduous/Emergent Saturated/ Semipermanent/ Seasonal Wetlands (PSS1/EMY). Five areas were identified as Palustrine, Shrub-Scrub, Broad-Leaved Deciduous, Saturated/ Semipermanent/ Seasonal Wetlands (PSS1Y). Three areas were designated Palustrine, Open Water, Intermittently Exposed/ Permanent Wetlands (POWZ). Three areas were designated Palustrine, Emergent, Saturated/ Semipermanent/ Seasonal Wetlands (PEMY). One area was designated Palustrine, Open Water, Permanently Flooded Wetland (POWH) (U.S. Fish & Wildlife Service, 1977).

3.1.3 Ohio Wetland Inventory (OWI) Map Review

OWI wetlands, like NWI wetlands, are areas of potential wetland that have been identified from ODNR aerial photograph interpretation which have typically not been confirmed by field investigation. OWI maps are useful tools for providing indications of potential wetland areas, which are often supported by comparison to NWI maps, soil

mapping and hydrologic predictions, based upon topographical analysis using USGS topographic maps.

According to OWI maps of the Thompson and East Claridon, Ohio quadrangles, 104 OWI wetlands are located within the 200-foot project transmission line corridor, as shown on Figure 3A through 3C. One of these OWI wetlands was identified as Palustrine, Open Water (excludes Lake Erie) (POW). Two areas were identified as Palustrine, Wet Meadow (PEM), nine areas were designated as Palustrine, Woods on Hydric Soil (PFO), 39 areas were identified as Palustrine, Shrub/scrub Wetland (PSS), and 44 areas were designated Palustrine, Shallow Marsh (PEM) (Ohio Department of Natural Resources).

The following describes the OWI Wetland classification of the OWI wetlands located within the project corridor. The naming system can be found in: *Classification of Wetlands and Deepwater Habitats of the United States*, 1979, by Cowardin, Lewis M. et al.

(P) Palustrine - The Palustrine System includes all non-tidal wetlands dominated by trees, shrubs, emergents, mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0.5%. Wetlands lacking such vegetation are also included if they exhibit all of the following characteristics:

1. Are less than 8 hectares (20 acres);
2. Do not have an active wave-formed or bedrock shoreline feature;
3. Have at low water a depth less than 2 meters (6.6 feet) in the deepest part of the basin;
4. Have salinity, due to ocean-derived salts, of less than 0.5%.

The limitation of a Palustrine System is that they are bounded by upland or by any of the other systems.

Class - Class describes the general appearance of the habitat in terms of either the dominant life form of the vegetation or the physiography and composition of the substrate. Life forms (e.g. trees, shrubs, emergents) are used to define classes because they are easily recognizable, do not change distribution rapidly, and have traditionally been used to classify wetlands.

(EM) Emergent - Emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

(SS) Scrub Shrub – Scrub Shrub wetlands include areas dominated by woody vegetation less than 6 m (20 ft) tall. The species include tree shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. All water regimes are included except subtidal.

(FO) Forested – Woody vegetation is 6m tall or taller. Normally possess an overstory of trees, an understory of young trees or shrubs, and herbaceous layer.

3.1.4 Delineated Wetlands

The field wetland delineation conducted for this project identified 102 wetlands, totaling 55.6 acres, within the Preferred Route 200 foot wide study corridor. The location and approximate extents of these wetlands are shown on Figures 4A through 4Y. Copies of the ACOE wetland delineation data sheets for these wetlands are provided in Appendix A. Selected color photographs are provided in Appendix D. A comprehensive list of wetland and upland plant species in the vicinity of the study site is shown in Table 2.

By definition, the hydrologic regime of a wetland ranges from irregularly inundated or saturated (5 percent to 12.5 percent of the growing season) to seasonally inundated or saturated (>12.5 percent to 25 percent of the growing season) (Environmental Laboratory, 1987). As quantitative data were not available for any of the delineated wetlands, URS utilized the method described in the *1987 Manual* that consists of a pedestrian site reconnaissance including identifying the vegetation communities, soils identification, a geomorphologic assessment of hydrology, and notation of disturbance. To determine the wetland boundaries, site vegetation, soils and hydrology were closely examined. Summary information for each delineated wetland is presented in Table 3.

3.1.5 Wetland Habitat Description

Wetland Habitat Descriptions: The wetlands identified within the project corridor are classified as one of the following types (per the classification system developed by Cowardin *et al.*, [1979]).

Each identified wetland habitat is discussed below. The wetland habitat description given below identifies the dominant observed species by common name and scientific name with Region 1 indicator status (Reed, 1988) following in parentheses. Also described is the observed hydrologic regime. Individual wetland and upland test plot data forms given in Appendix A provide support for the wetland/upland boundary determinations.

Palustrine Emergent Habitat (PEM): Wetlands identified as palustrine emergent are characterized by having grasslike plants, true grasses, rushes and broad-leaved plants (Cowardin *et al.*, 1979). These areas are generally dominated by reed canarygrass (*Phalaris arundinacea*; FACW+), sensitive fern (*Onoclea sensibilis*; FACW), common rush (*Juncus effusus*; FACW+), common reed (*Phragmites australis*, FACW), jewelweed (*Impatiens capensis*; FACW), southern arrowwood (*Viburnum dentatum*; FAC), woolgrass (*Scirpus cyperinus*; FACW+), and other herbaceous vegetation. The hydrologic regime of these wetlands range from irregularly inundated or saturated (≥5 percent-12.5 percent of the growing season) to seasonally inundated or saturated (>12.5 percent-25 percent of the growing season) (Environmental Laboratory, 1987). All of these PEM wetlands reveal at least one primary indicator of hydrology and the majority of these wetlands also reveal at least one secondary indicator.

Palustrine Emergent/Forested (PEM/PFO): Wetlands classified as palustrine emergent/forested are characterized by grasslike plants, true grasses, broad-leaved plants, rushes, and trees at least 20 feet in height (Cowardin *et al.*, 1979). These areas are generally dominated by wetland plants such as jewelweed (FACW), sensitive fern (FACW), southern arrowwood (FAC), red maple (*Acer rubrum*; FAC), American elm (*Ulmus americana*; FACW-), and other herbaceous plants and trees. The hydrologic regime of these wetlands range from irregularly inundated or saturated (5 percent to 12.5 percent of the growing season) to seasonally inundated or saturated (>12.5 percent to 25 percent of the growing season) (Environmental Laboratory, 1987). All of these PEM wetlands reveal at least one primary and one secondary indicator of hydrology.

Palustrine Emergent/Scrub-Shrub (PEM/PSS): Wetlands classified as palustrine emergent/scrub-shrub are characterized by grasslike plants, true grasses, broad-leaved plants, rushes, and woody vegetation less than 20 feet in height (Cowardin *et al.*, 1979). These areas are generally dominated by wetland plants such as sensitive fern (FACW), southern arrowwood (*V. recognitum*; FACW-), common rush (FACW+), jewelweed (FACW), silky dogwood (*Cornus amomum*; FACW), southern arrowwood (FAC), and other woody and herbaceous plants. The hydrologic regime of these wetlands range from irregularly inundated or saturated (5 percent to 12.5 percent of the growing season) to seasonally inundated or saturated (>12.5 percent to 25 percent of the growing season) (Environmental Laboratory, 1987). All of these PEM/PSS wetlands have at least one primary indicator of hydrology and most have at least two secondary indicators.

Palustrine Emergent/Scrub-Shrub/Forested (PEM/PSS/PFO): Wetlands classified as palustrine emergent/scrub-shrub/forested are characterized by grasslike plants, true grasses, broad-leaved plants, rushes, woody vegetation less than 20 feet in height, and trees greater than 20 feet in height (Cowardin *et al.*, 1979). Two wetlands were identified with this designation and are dominated by sensitive fern (FACW), jewelweed (FACW), both species of southern arrowwood (FAC and FACW-), an unknown *Carex* species, common reed (FACW), common rush (FACW+), eastern narrowleaf sedge (*Carex amphibola*; FAC), red osier dogwood (*Cornus stolonifera*; FACW+), red maple (FAC), eastern cottonwood (*Populus deltoides*; FAC), and white meadowsweet (*Spiraea alba*; FACW+). The hydrologic regime of these wetlands range from irregularly inundated or saturated (5 percent to 12.5 percent of the growing season) to seasonally inundated or saturated (>12.5 percent to 25 percent of the growing season) (Environmental Laboratory, 1987). Both wetlands have at least one primary indicator of hydrology and one wetland has two secondary indicators.

Palustrine Forested (PFO): Wetlands classified as palustrine forested are characterized by having trees greater than 20 feet in height (Cowardin *et al.*, 1979). Wetlands with this designation were generally dominated by red maple (FAC), sugar maple (*A. saccharum*; FACU-), black cherry (*Prunus serotina*; FACU), slippery elm (*U. rubra*; FAC), and other tree and woody species. The hydrologic regime of these wetlands range from irregularly inundated or saturated (5 percent to 12.5 percent of the growing season) to seasonally inundated or saturated (>12.5 percent to 25 percent of the growing season) (Environmental Laboratory, 1987). All of these PFO wetlands have at least one primary indicator of hydrology and most have at least two secondary indicators.

Palustrine Forested/Emergent (PFO/PEM): Wetlands classified as palustrine forested/emergent are characterized by having trees greater than 20 feet in height and grasslike plants, true grasses, broad-leaved plants, and rushes (Cowardin *et al.*, 1979). The three wetlands in this category are dominated by red maple (FAC), pin oak (*Quercus palustris*; FACW), tuliptree (*Liriodendron tulipifera*; FACU), American beech (*Fagus grandifolia*; FACU), sugar maple (FACU-), southern arrowwood (FAC), American witchhazel (*Hamamelis virginiana*; FAC-), flowering dogwood (*Cornus florida*; FACU-), multiflora rose (*Rosa multiflora*; FACU), owlfruit sedge (*Carex stipata*; OBL), sensitive fern (FACW), an unknown *Carex* species, marsh violet (*Viola palustris*; FACW+), common reed (FACW), jewelweed (FACW), common rush (FACW+), reed canarygrass (FACW+), fox sedge (*Carex vulpinoidea*; OBL), longhair sedge (*C. comosa*; OBL), nodding sedge (*C. gynandra*; OBL), whitegrass (*Leersia virginica*; FACW), and harlequin blueflag (*Iris versicolor*; OBL). The hydrologic regime of these wetlands range from irregularly inundated or saturated (5 percent to 12.5 percent of the growing season) to seasonally inundated or saturated (>12.5 percent to 25 percent of the growing season) (Environmental Laboratory, 1987). All of these PFO/PEM wetlands have at least two primary indicators of hydrology and at least one secondary indicator.

Palustrine Forested/Scrub-Shrub (PFO/PSS): Wetlands classified as palustrine forested/scrub-shrub are characterized by having trees greater than 20 feet in height and woody vegetation less than 20 feet in height (Cowardin *et al.*, 1979). Wetlands within this category are generally dominated by red maple (FAC), green ash (*Fraxinus pennsylvanica*; FACW), black willow (*Salix nigra*; FACW+) southern arrowwood (FACW-), eastern poison ivy (*Toxicodendron radicans*; FAC), swamp rose (*Rosa palustris*; OBL), and other tree and ligneous species. The hydrologic regime of these wetlands range from irregularly inundated or saturated (5 percent to 12.5 percent of the growing season) to seasonally inundated or saturated (>12.5 percent to 25 percent of the growing season) (Environmental Laboratory, 1987). All of these PFO/PSS wetlands have at least one primary indicator of hydrology, with most having at least two indicators, and at least one secondary indicator.

Palustrine Shrub-Scrub (PSS): Wetlands classified as palustrine scrub-shrub are characterized by having woody vegetation less than 20 feet in height (Cowardin *et al.*, 1979). These wetlands are dominated by silky dogwood (FACW), both species of southern arrowwood (FAC and FACW-), glossy buckthorn (*Frangula alnus*; FAC), black willow (FACW+), and other woody species. The hydrologic regime of these wetlands

range from irregularly inundated or saturated (5 percent to 12.5 percent of the growing season) to seasonally inundated or saturated (>12.5 percent to 25 percent of the growing season) (Environmental Laboratory, 1987). All of these PSS wetlands have at least one primary indicator of hydrology, with most having at least two indicators, and most have at least one secondary indicator.

Palustrine Scrub-Shrub/Emergent (PSS/PEM): Wetlands classified as palustrine scrub-shrub/emergent are characterized by having woody vegetation less than 20 feet in height and grasslike plants, true grasses, broad-leaved plants, and rushes (Cowardin *et al.,* 1979). They are dominated by silky dogwood (FACW), both species of southern arrowwood (FAC and FACW+), glossy buckthorn (FAC), swamp rose (OBL), American elm (FACW-), sensitive fern (FACW), jewelweed (FACW), common rush (FACW+), whitegrass (FACW), and other woody and herbaceous plants. The hydrologic regime of these wetlands range from irregularly inundated or saturated (5 percent to 12.5 percent of the growing season) to seasonally inundated or saturated (>12.5 percent to 25 percent of the growing season) (Environmental Laboratory, 1987). All of these PSS/PEM wetlands have at least one primary and secondary indicator of hydrology.

Palustrine Scrub-Shrub/Forested (PSS/PFO): Wetlands classified as palustrine scrub-shrub/forested are characterized by having woody vegetation less than 20 feet in height and trees greater than 20 feet in height (Cowardin *et al.,* 1979). Wetlands are generally dominated by silky dogwood (FACW), southern arrowwood (FAC), blackgum (*Nyssa sylvatica*; FAC), and other woody and tree species. The hydrologic regime of these wetlands range from irregularly inundated or saturated (5 percent to 12.5 percent of the growing season) to seasonally inundated or saturated (>12.5 percent to 25 percent of the growing season) (Environmental Laboratory, 1987). All of these PSS/PFO wetlands have at least one primary indicator of hydrology, with most having two, and one secondary indicator.

Vernal Pool Wetlands: Vernal pools are wetlands occurring in primarily forested upland areas. The Ohio Administrative Code 3745-1-50 (as effective May 1, 1998) defines them as being shallow, temporarily flooded, depressional wetlands that are typically dry for most of the summer and fall. When flooded during spring, these wetlands act as important sites for amphibian breeding, among other biological processes.

Three vernal pools were identified within the project corridor. The Federal Geographic Data Committee *Working Draft* Wetland Mapping Standard labels these areas as Pond, natural, vernal-woodland, PD1m (Heber 2007). All three were located within upland forests composed of tree species such as American beech (FACU) and red maple (FAC). These wetlands each had one primary indicator of hydrology and one wetland had one secondary indicator.

3.1.6 U.S. Army Corps of Engineers Section 404 Requirements

Section 404 of the Clean Water Act requires authorization from the Secretary of the Army, acting through the ACOE, for the discharge of dredged or fill material into all waters of the United States. All wetlands delineated at the project site are considered non-isolated and therefore subject to ACOE jurisdiction as waters of the United States.

3.2 OEPA ORAM V5.0 WETLAND EVALUATION

The ORAM scores for the wetlands identified within the limits of the project corridor ranged from a low of 10/100 (Wetland Pr-w006) to a high of 59/100 (Wetland Pr-w065 and Pr-w070). Both wetlands that had a score of 59/100 were formed along surface drainage ways, in areas of surface water retention, and in areas of depressional forest. Copies of the ORAM scoring sheets for each delineated wetland are provided in Appendix B.

Twenty-three Category I wetlands totaling 7.4 acres were delineated along the 200-foot study corridor. Size ranged from 0.01 to 1.17 acres. Approximately 1,634 linear feet of Category I wetlands will be crossed by the proposed transmission line. Three Category I wetlands scored below 19 totaling 0.2 acres. Twenty Category I wetlands scored between 20 to 29 totaling 7.2 acres. The Category I wetlands exhibited low to moderate quality plant communities with several invasive species, low to moderate plant community interspersion, moderate to high intensity anthropogenic impact of surrounding land (i.e. farming, residential use, urban infrastructure, etc.), and recovering and/or recovered modification to natural hydrology and habitat.

Seventy-nine Category II wetlands totaling 48.2 acres were delineated along the 200-foot study corridor. Size of Category II wetlands ranged from 0.002 to 4.06 acres. Approximately 12,111 linear feet of Category II wetlands will be crossed by the proposed

transmission line. Twenty-six Category II wetlands scored between 30 to 39 totaling 10.5 acres. Twenty-one Category II wetlands scored between 40 to 49 totaling 9.5 acres. Thirty-two Category II wetlands scored between 50 to 59 totaling 28.2 acres. The Category II wetlands exhibited moderate to high quality plant communities with few invasive species, moderate to good plant community interspersion, low to high intensity anthropogenic impact of surrounding land (i.e. farming, residential use, urban infrastructure, etc.), and recovered and/or no modification to natural hydrology and habitat.

No Category III wetlands were identified within the project corridor.

3.3 STREAM EVALUATIONS

Methodology for evaluating streams was dependent on drainage basin size. Streams that have a drainage basin greater than one square mile were assessed using the QHEI method, and streams with a drainage basin less than one square mile were examined by recording several physical parameters.

QHEI

Eight qualitative habitat evaluations (QHEI) were conducted on the streams identified within the project corridor. The evaluations were conducted at or near the proposed transmission line crossing of each stream. These streams were identified using USGS topographic maps, aerial photography, and field reconnaissance. The locations of the evaluation areas are shown on Figures 3A through 3C. Copies of the QHEI data sheets are provided in Appendix C. Selected color photographs are provided in Appendix D. Summary information for each stream is presented in Table 4.

The QHEI is designed to provide a qualitative measure of habitat that generally corresponds to those physical factors that affect fish communities and which are generally important to other aquatic life (*e.g.*, invertebrates). The quantitative measure of habitat used to calibrate the QHEI score are Indices (or Index) of Biotic Integrity (IBI) for fishes. In most instances the QHEI is sufficient to give an indication of habitat quality, and the intensive qualitative analysis is not necessary to measure the IBI. However, the IBI, rather than the QHEI, is directly correlated with the aquatic life use designation for a particular surface water. The QHEI is designed to provide a qualitative measure of

habitat that generally corresponds to those physical factors that affect fish communities and which are generally important to other aquatic life (*e.g.,* macroinvertebrates).

The QHEI method is generally considered appropriate for streams with drainage basins greater than one square mile, if natural pools are greater than 40 cm, or if the water feature is shown as blue-line waterways on USGS 7.5-minute topographic quadrangle maps. In order to convey general stream habitat quality to the regulated public, the Ohio EPA has assigned narrative ratings to QHEI scores. The scores vary slightly for headwater streams with a watershed area less than or equal to 20 square miles (**h**) or larger streams (**l**) with a watershed area greater than 20 square miles. Narrative ratings include Very Poor (<30 **h** and **l**), Poor (30 to 42 **h**, 30 to 44 **l**), Fair (43 to 54 **h**, 45 to 59 **l**), Good (55 to 69 **h**, 60 to 74 **l**) and Excellent (70+ **h**, 75+ **l**). The field surveys identified one crossing of fair warmwater habitat (WWH) stream and seven crossings of good WWH streams, all in headwater watersheds.

Fair Warmwater Habitat Streams – The single fair warmwater habitat stream identified received a score of 43. The substrate was generally dominated by silt, cobble, and gravel pool depth did not exceed one foot

Good Warmwater Habitat Streams – The seven good warmwater habitat streams identified range in score from 55 to 64.5. The substrates of these streams are generally dominated by boulder, cobble, and hardpan. Silt, gravel, and detritus comprise a significant component of some of the streams. Pool depth does not exceed three feet and bankfull width generally does not exceed 13 feet, with the exception of stream Pr-s057 with a bankfull width of 23 feet.

STREAMS WITH A DRAINAGE BASIN LESS THAN ONE SQUARE MILE

Streams with a drainage basin of less than one square mile were evaluated for flow regime, bankfull width, maximum pool depth, and stream length within the 200 foot corridor and 60 foot construction right of way.

Field evaluations identified seven ephemeral streams, four intermittent streams, and 41 perennial streams.

Ephemeral Streams: Seven ephemeral streams were identified during field investigations. The substrate composition of these streams is generally comprised of silt, leaf pack/woody debris, and cobble. At the time of observation, none of the streams had water in their channels. The bank full width generally does not exceed three feet.

Intermittent Streams: Four intermittent streams were identified during field investigations. The substrate composition of these streams is generally comprised of silt, sand, and leaf pack/woody debris. At the time of observation, maximum pool depth is less than four inches. The bank full width generally does not exceed five feet.

Perennial Streams: Forty-one perennial streams were identified during field investigations. The substrate composition of these streams is generally comprised of cobble, gravel, sand, and silt. At the time of observation, maximum pool depth is less than four inches. The bank full width generally does no exceed 11 feet.

NON-JURISDICTIONAL ROADSIDE DITCHES

Several non-jurisdictional roadside ditches were identified during the field investigation. Although these upland ditches satisfy the three mandatory USACOE requirements to be considered jurisdictional wetlands (i.e. hydric soils, wetland hydrology, and a predominance of hydrophytic vegetation), these areas do not exhibit an ordinary high water mark, a defined bed and bank, or stream flow. According to the *Soil Survey of Geauga County, Ohio*, and *Soil Survey of Lake County, Ohio*, the mapped soil units for the roadside ditches identified along the project route are generally non-hydric. Periodic and routine maintenance, including mowing, was noted for a few of the upland ditches. The field determination regarding the potential regulation of ditches identified along the length of the project route was based upon the U.S. Army Corps of Engineers Standard Operating Procedures, 1982 and Ohio Department of Transportation's (ODOT) Technical Guidance Document, 2002.

3.5 THREATENED AND ENDANGERED SPECIES HABITAT SURVEY

The Ohio Department of Natural Resources – Division of Natural Areas and Preserves (ODNR-DNAP) was contacted regarding the potential for occurrence of rare, threatened, and endangered species within the project study area. URS also performed a literature review of available USFWS resources regarding species of concern in the project vicinity.

In a letter response dated August 9, 2007, the ODNR-DNAP reported no records of rare or endangered species within 1,000 feet of the project centerline.

The USFWS literature review indicated that the proposed project is located within the range of the federally endangered Indiana bat (*Myotis sodalis*).

A discussion of each state and federally listed species that could possibly be within 1,000 feet of the project centerline will be presented in the following sections. A list of animal species identified or likely to occur in the vicinity of the study site is shown in Table 1. A comprehensive list of plant species in the vicinity of the study site is shown in Table 2.

3.5.1 Plants

No records of plant species of concern were identified within 1,000 feet of the project centerline by agency correspondence or literature review.

3.5.2 Aquatic species

Habitats for aquatic species of concern including fish, crustaceans, and mussels were not assessed during this survey. ODNR-DNAP records showed no threatened or endangered species were known to exist within 1,000 feet of the project centerline.

3.5.3 Amphibians

No amphibian species of concern were identified in any agency correspondence.

3.5.4 Reptiles

No reptile species of concern were identified in any agency correspondence.

3.5.5 Birds

No bird species of concern were identified in any agency correspondence.

3.5.6 Mammals

Indiana bat (*Myotis sodalis*): The Indiana bat is considered to be an endangered species by the federal government and the State of Ohio. Records of this species exist for Geauga

and Lake Counties, Ohio, but none of the records are within 1,000 feet of the project centerline. The Indiana bat is a migratory species, wintering in a few limestone cave hibernacula principally located in Indiana, Kentucky and Missouri. Summer roosting and foraging areas are typically farther north in the glaciated regions of Indiana, Illinois, and Ohio. Males and gravid females may arrive in northern regions in April and remain until October. The bat typically roosts under the exfoliating (loose) bark of live or dead trees of various rough-barked tree species. The 8- to 10-inch size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), and elm (*Ulmus* spp.) are utilized in live form as roost trees. These tree species and many others may be used when dead, if there are adequately sized patches of loosely adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes; (1) a mixture of favored loose-barked trees with 60 to 80 percent canopy closure and (2) a low density sub-canopy (less than 30 percent between about 6 feet high and the base canopy).

The vegetation along portions of the study corridor consists of mature, second growth tree species. This general area contains many maples (*Acer* spp.), oaks (*Quercus* spp.) and elms (*Ulmus* spp.) of an appropriate class size along with exfoliating Hickories (*Carya* spp.), American sycamore (*Platanus occidentalis*) and black cherry (*Prunus serotina*) individuals. Additional Indiana bat habitat advantages in this area include snags, numerous tree cavities or hollow portions of tree boles and limbs, a generally open subcanopy, and close proximity to several mapped streams.

There are several areas along the study corridor not suitable as habitats for Indiana bats due to either no forest cover or a thick subcanopy. Specific Indiana Bat surveys were not performed during the field reconnaissance.

3.5.7 Insects

ODNR-DNAP had no previous records of threatened or endangered insects within 1,000 feet of the project centerline.

4.0 SUMMARY

One hundred two wetlands, totaling 55.6 acres, of 12 different Cowardin wetland types were identified within the project study area. Identified wetlands were evaluated utilizing

ORAM v5.0 qualitative evaluation method for categorizing wetlands. The ORAM scores for the wetlands indicated that 23 wetlands are Category I, and 79 wetlands are classified as Category II wetlands. All of the wetlands are considered non-isolated and jurisdictional.

Sixty streams were identified along the project corridor, eight with a drainage basin greater than one square mile, and 52 with a drainage basin less than one square mile. Streams with a drainage basin greater than one square mile were assessed using the QHEI methodology, resulting in one fair warmwater habitat stream and seven good warmwater habitat stream. There were seven ephemeral streams, four intermittent streams, and 41 perennial streams identified with a drainage basin less than one square mile.

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TABLE 1
ANIMAL SPECIES IDENTIFIED OR LIKELY TO OCCUR IN THE STUDY AREA

Birds	*Reptiles and Amphibians*	*Mammals*
American crow	*American toad*	*Coyote*
American kestrel	*Dusky salamander*	*Deer mouse*
American robin	*Eastern box turtle*	*Eastern cottontail rabbit*
American woodcock	*Eastern garter snake*	*Feral cat*
Black-capped chickadee	*Eastern wood frog*	*Fox squirrel*
Blue jay	*Northern green frog*	*House mouse*
Brown-headed cowbird	*Northern leopard frog*	*Long-tailed weasel*
Canada goose	*Northern spring peeper*	*Meadow vole*
Common grackle	*Smallmouth salamander*	*Opossum*
Common snipe	*Snapping turtle*	*Raccoon*
Cooper's hawk	*Spotted salamander*	*Red squirrel*
Downy woodpecker	*Western chorus frog*	*Red squirrel*
Eastern kingbird		*Short-tailed shrew*
Eastern meadowlark		*Striped skunk*
European starling		*White-tailed deer*
Great blue heron		*Woodchuck*
Hairy woodpecker		*Woodland vole*
House finch		
Killdeer		
Mallard		
Northern cardinal		
Northern flicker		
Northern harrier		
Northern mockingbird		
Red-eyed vireo		
Red-tailed hawk		
Red-winged blackbird		
Rock dove		
Rose-breasted grosbeak		
Song sparrow		
Turkey vulture		
Wild turkey		
Wood duck		
Woodcock		

TABLE 2
MAJOR PLANT SPECIES OBSERVED OR EXPECTED TO OCCUR IN THE STUDY AREA

Acer negundo	*Dipsacus fullonum*	*Populus deltoides*
Acer rubrum	*Dipsacus sylvestris*	*Prunus serotina*
Acer saccharum	*Echinochloa muricata*	*Quercus alba*
Acer saccharinum	*Eleocharis obtusa*	*Quercus bicolor*
Achillea millefolium	*Epilobium coloratum*	*Quercus palustris*
Acorus calamus	*Epilobium hirsutum*	*Quercus rubra*
Aesculus glabra	*Equisetum arvense*	*Rosa multiflora*
Ageratina altissima	*Equisetum hyemale*	*Rosa palustris*
Alisma subcordatum	*Erythronium americanum*	*Rubus occidentalis*
Alliaria petiolata	*Eupatoriadelphus maculatus*	*Rumex crispus*
Allium canadense	*Eupatorium perfoliatum*	*Rumex orbiculatus*
Alnus rugosa	*Eupatorium rugosum*	*Salix amygdaloides*
Andropogon virginicus	*Fagus grandifolia*	*Salix discolor*
Apocynum cannabinum	*Festuca arundinacea*	*Salix nigra*
Asclepias incarnata	*Fraxinus pennsylvanica*	*Sambucus canadensis*
Asclepias syriaca	*Gleditsia triacanthos*	*Scirpus cyperinus*
Aster ericoides	*Glyceria striata*	*Setaria faberi*
Aster lateriflorus	*Juncus canadensis*	*Setaria glauca*
Aster pilosus	*Juncus effusus*	*Setaria pumila*
Caltha palustris	*Juncus torreyi*	*Solidago altissima*
Carex intumescens	*Leersia oryzoides*	*Solidago canadensis*
Carex lupulina	*Leersia virginica*	*Solidago gigantea*
Carex stricta	*Liriodendron tulipifera*	*Spiraea tomentosa*
Carpinus caroliniana	*Lonicera japonica*	*Symphyotrichum lateriflorum*
Carya ovata	*Ludwigia alternifolia*	*Symphyotrichum pilosum*
Cephalanthus occidentalis	*Lysimachia nummularia*	*Symplocarpus foetidus*
Chelone glabra	*Lythrum salicaria*	*Taraxacum officinale*
Cichorium intybus	*Mimulus ringens*	*Thlaspi arvense*
Cinna arundinacea	*Onoclea sensibilis*	*Toxicodendron radicans*
Cirsium arvense	*Penthorum sedoides*	*Typha angustifolia*
Conyza canadensis	*Phalaris arundinacea*	*Typha latifolia*
Cornus amomum	*Phragmites australis*	*Ulmus americana*
Cornus foemina	*Plantago lanceolata*	*Ulmus rubra*
Cornus stolonifera	*Plantago major*	*Verbena hastata*
Cornus racemosa	*Poa palustris*	*Viburnum recognitum*
Crataegus mollis	*Poa pratensis*	*Vitis aestivalis*
Cyperus esculentus	*Polygonum lapathifolium*	
Cyperus strigosus	*Polygonum pensylvanicum*	
Daucus carota	*Polygonum sagittatum*	
Dactylis glomerata	*Polystichum acrostichoides*	
Dichanthelium clandestinum	*Rhamnus frangula*	

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w001	This PSS wetland is dominated by *Populus heterophylla*, *Salix nigra*, *Salix* spp., *Cornus amomum*, *Juncus effusus*, *Carex blanda*, *Carex lurida*, *Carex vulpinoidea*, and *Typha angustifolia*. It has water marks, drainage patterns in wetland, oxidized root channels in upper 12", and has water-stained leaves. Soil is silty clay 2.5Y 6/2 with mottles (many/distinct) of 7.5YR 5/8 in the A horizon and rock in the B horizon.	16	1	0.03	0	0	0
Pr-w002	This PEM/PSS wetland is dominated by *Juncus effusus*, *Salix rigida*, *Cornus amomum*, *Juncus tenuis*, *Carex vulpinoidea*, and *Populus deltoides*. It is saturated in the upper 12", has oxidized root channels in the upper 12", and passes the FAC-neutral test. Soil is silty clay 10YR 5/1 with mottles of 7.5YR 5/8 (5%) in the A horizon.	31	2	0.08	39.3	0.05	0
Pr-w003	This PEM/PSS wetland is dominated by *Juncus effusus*, *Salix rigida*, *Cornus amomum*, *Juncus tenuis*, *Carex vulpinoidea*, and *Populus deltoides*. It is saturated in the upper 12", has oxidized root channels in the upper 12", and passes the FAC-neutral test. Soil is silty clay 10YR 5/1 with mottles of 7.5YR 5/8 (5%) in the A horizon.	31	2	0.29	53.9	0.07	0
Pr-w004	This PEM/PSS/PFO wetland is dominated by *Onoclea sensibilis*, *Impatiens capensis*, *Viburnum dentatum*, *Carex* sp., and *Phragmites australis*. It is saturated in the upper 12". Soil is silty clay 10YR 5/1 in the A/B horizon.	54	2	0.97	250.9	0.34	0.11
Pr-w005	This PEM wetland is dominated by *Phragmites australis*. It is saturated in the upper 12" with water-stained leaves. The A horizon is silty clay 10YR 4/2 and the B horizon is silty clay 10YR 3/1.	28	1	0.01	0	0	0
Pr-w006	This PEM wetland is dominated by *Phragmites australis*. It is saturated in the upper 12" with water-stained leaves. The A horizon is silt 10YR 3/2 and the B horizon is silty clay 10YR 6/8.	10	1	0.02	0	0.001	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w007	This PEM/PSS wetland is dominated by *Typha angustifolia, Acorus calamus, Impatiens capensis, Onoclea sensibilis,* and *Cornus amomum.* It is inundated up to 2" with water-stained leaves. The A horizon is silty clay 10YR 4/1 and the B horizon is silty loam 10YR 4/1.	52	2	0.38	116.1	0.15	0
Pr-w008	This PFO wetland is dominated by *Ulmus americana, Rhus radicans,* and *Tilia americana.* It is saturated in the upper 12", has water-stained leaves, and passes the FAC-neutral test. Soil is silty loam 10YR 4/2 in the A horizon and silty clay 10YR 4/1 with mottles (many/distinct) of 10YR 5/6 in the B horizon.	27	1	0.0002	0	0	0
Pr-w009	This PSS wetland is dominated by *Cornus amomum.* It is saturated in the upper 12" and has water-stained leaves. Soil is silty loam 10YR 4/2 in the A horizon and silty clay 10YR 4/2 with mottles (many/distinct) of 10YR 5/6 in the B horizon.	24	1	0.03	0	0.003	0
Pr-w010	This PSS wetland is dominated by *Cornus amomum.* It is saturated in the upper 12", has water-stained leaves, and passes the FAC-neutral test. Soil is silty loam 10YR 5/2 in the A horizon and silty clay 10YR 6/2 with mottles (many/distinct) of 10YR 6/6 in the B horizon.	22	1	0.04	0	0.01	0
Pr-w011	This PEM/PSS wetland is dominated by *Acorus americanus, Onoclea sensibilis, Impatiens capensis, Cornus amomum,* and *Viburnum recognitum.* It is saturated in the upper 12", has drainage patterns in wetland, water-stained leaves, and passes the FAC-neutral test. Soil is silty clay 10YR 4/2 with mottles (few/distinct) of 10YR 4/4 in the A horizon and silty clay 10YR 5/1 with mottles (many/distinct) of 7.5YR 4/6 in the B horizon.	51	2	0.28	87.7	0.12	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w012	This PEM/PSS wetland is dominated by *Acorus americanus*, *Onoclea sensibilis*, *Impatiens capensis*, *Cornus amomum*, and *Viburnum recognitum*. It is saturated in the upper 12", has drainage patterns in wetland, water-stained leaves, and passes the FAC-neutral test. Soil is silty clay 10YR 4/2 with mottles (few/distinct) of 10YR 4/4 in the A horizon and silty clay 10YR 5/1 with mottles (many/distinct) of 7.5YR 4/6 in the B horizon.	51	2	0.38	98.0	0.13	0
Pr-w013	This PSS/PFO wetland is dominated by *Viburnum dentatum*, *Onoclea sensibilis*, *Typha angustifolia*, *Carex* sp., *Cornus amomum*, and *Rosa palustris*. It is saturated in upper the 12" with water-stained leaves. Soil is silty loam 10YR 2/1 in the A/B horizon.	38.5	2	0.12	0	0	0
Pr-w014	This PEM wetland is dominated by *Acorus calamus* and an unknown grass. There are drainage patterns in wetland and water-stained leaves. Soil is silty clay 10YR 3/1 in the A/B horizon.	31	2	0.03	0	0.001	0
Pr-w015	This PEM/PFO wetland is dominated by *Viburnum dentatum*, *Impatiens capensis*, *Onoclea sensibilis*, and *Ulmus americana*. It is saturated in the upper 12" with water-stained leaves. The A horizon is silty loam 10YR 4/1 and the B horizon is silty clay 10YR 6/1.	45	2	0.04	0	0.001	0.001
Pr-w016	This PSS/PEM wetland is dominated by *Viburnum dentatum*, *Onoclea sensibilis*, *Impatiens capensis*, and *Ulmus americana*. It is saturated in the upper 12" with water-stained leaves. Soil is silty clay 10YR 3/1 in the A/B horizon.	44.5	2	0.02	7.9	0.01	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w017	This PSS/PEM wetland is dominated by *Viburnum dentatum*, *Onoclea sensibilis*, *Impatiens capensis*, and *Ulmus americana*. It is saturated in the upper 12" with water-stained leaves. Soil is silty clay 10YR 3/1 in the A/B horizon.	44.5	2	0.02	0	0	0
Pr-w018	This PEM/PSS wetland is dominated by *Viburnum dentatum*, *Cornus amomum*, *Onoclea sensibilis*, *Juncus effusus*, an unknown grass, and *Toxicodendron radicans*. It is inundated up to 1" with water-stained leaves. Soil is silty clay 10YR 5/1 in the A/B horizon.	36.5	2	0.07	0	0.02	0
Pr-w019	This PSS/PEM wetland is dominated by *Impatiens capensis*, *Viburnum dentatum*, *Rosa palustris*, *Onoclea sensibilis*, and *Cornus amomum*. It is saturated in the upper 12" with water-stained leaves. The A horizon is loam 10YR 3/2 and the B horizon is silty clay 10YR 5/1.	33.5	2	0.20	101.0	0.11	0
Pr-w020	This PSS/PFO wetland is dominated by *Nyssa sylvatica*, *Viburnum dentatum*, *Carex* sp., and *Cornus amomum*. It is inundated up to 1" with water-stained leaves. The soil is silty clay 10YR 5/1 in the A/B horizon.	39.5	2	0.15	0	0.02	0.01
Pr-w021	This PSS/PFO wetland is dominated by *Nyssa sylvatica*, *Viburnum dentatum*, *Carex* sp., and *Cornus amomum*. It is inundated up to 1" with water-stained leaves. The soil is silty clay 10YR 5/1 in the A/B horizon.	39.5	2	0.17	36.3	0.07	0.03
Pr-w022	This PSS/PFO wetland is dominated by *Nyssa sylvatica*, *Viburnum dentatum*, *Carex* sp., and *Cornus amomum*. It is inundated up to 1" with water-stained leaves. The soil is silty clay 10YR 5/1 in the A/B horizon.	39.5	2	0.44	111.6	0.15	0.06
Pr-w023	This PSS wetland is dominated by *Viburnum dentatum*, *Impatiens capensis*, *Onoclea sensibilis*, and *Salix* sp. It is inundated up to 1 inch. Soil is silt 10YR 3/1 in A/B horizon.	34.5	2	0.31	94.2	0.12	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w024	This PFO/PSS wetland is dominated by *Salix nigra*, *Cornus amomum*, *Viburnum recognitum*, *Ribes americanum*, *Vitis aestivalis*, *Toxicodendron radicans*, *Rosa palustris*, *Glyceria striata*, *Impatiens capensis*, and *Onoclea sensibilis*. It has water marks and drift lines. The A horizon is silty loam 10YR 5/1.	45.5	2	0.38	100.8	0.11	0.07
Pr-w025	This PFO/PSS wetland is dominated by *Viburnum recognitum*, *Salix nigra*, *Glyceria striata*, *Impatiens capensis*, *Leersia oryzoides*, and *Carex lurida*. It has drainage patterns in wetlands. The A horizon is 10YR 5/1.	45.5	2	1.26	108.0	0.16	0.10
Pr-w026	This PFO wetland is dominated by *Cornus amomum*, *Cornus sericea*, *Viburnum recognitum*, *Ribes americanum*, *Fraxinus pennsylvanica*, *Geum aleppicum*, *Salix nigra*, *Sium suave*, *Equisetum arvense*, and *Ranunculus acris*. It has drainage patterns in wetlands, oxidized root channels in upper 12" and water-stained leaves. The B horizon is silt 2.5YR 5/2.	52	2	0.26	0	0.03	0.03
Pr-w027	This PEM wetland is dominated by *Juncus effusus*, *Carex* sp. 1, *Carex* sp. 2, *Trifolium pratense*, and *Poa pratensis*. It has water marks, drainage patterns in wetlands, and oxidized root channels in upper 12". The Ap horizon is silty loam 10YR 4/1.	20	1	0.07	0	0	0
Pr-w028	This PFO wetland is dominated by *Acer saccharum*, *Viburnum recognitum*, *Ulmus rubra*, *Populus deltoides*, *Potentilla simplex*, *Acer rubrum*, *Carex vulpinoidea*, and *Prunus serotina*. It is saturated in upper 12". Soil is silty loam 10YR 5/1 in the A/B horizon.	41	2	0.89	169.6	0.22	0.22

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w029	This PFO wetland is dominated by *Acer rubrum* and *Viburnum recognitum*. It is saturated in the upper 12", has water marks, and has drainage patterns in wetland. The A horizon is loam 10YR 5/8.	39.5	2	1.16	313.4	0.45	0.45
Pr-w030	This PEM/PSS wetland is dominated by *Viburnum recognitum*, *Phragmites australis*, and *Phalaris arundinacea*. It is saturated in the upper 12", has sediment deposits, water marks, drainage patterns, and oxidized root channels in the upper 12". The A horizon is loamy sand 10YR 5/1.	39.5	2	2.60	563.8	0.79	0
Pr-w031	This PSS/PEM wetland is dominated by *Viburnum recognitum* and *Phalaris arundinacea*. It is inundated with drainage patterns in wetland. The A horizon is loam 10YR 6/1.	38	2	0.37	83.8	0.12	0
Pr-w032	This PEM/PFO wetland is dominated by *Carex* sp., *Juncus effusus*, *Ranunculus acris*, *Viburnum recognitum*, and *Acer rubrum*. It is inundated up to 6", has sediment deposits, and has drainage patterns in wetland. Soil is 10YR 5/1 in the A horizon and silt loam 2.5Y 3/1 with mottles (common/distinct) of 10YR 5/8 in the B horizon.	44	2	1.06	332.2	0.45	0.18
Pr-w033	This POW wetland is a vernal pool with no vegetation. It is inundated up to 12". Soil is silt 10YR 6/1 with mottles (few/distinct) of 10YR 5/8.	47	2	0.06	4.3	0.03	0
Pr-w034	This PEM/PSS wetland is dominated by *Viburnum recognitum*, *Ulmus rubra*, *Toxicodendron radicans*, *Typha latifolia*, *Phalaris arundinacea*, and *Salix nigra*. It is saturated in the upper 12", has drainage patterns in wetland, and has water-stained leaves. Soil is 10YR 5/1 in the A horizon and silt loam 2.5Y 3/1 with mottles (common/distinct) of 10YR 5/8 in the B horizon.	54	2	1.48	421.8	0.58	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w035	This PSS/PFO wetland is dominated by *Viburnum recognitum*, *Cornus amomum*, *Rubus allegheniensis*, *Fraxinus pennsylvanica*, *Salix nigra*, *Carex crinita*, *Carex amphibola*, and *Impatiens capensis*. It is saturated in the upper 12", has drainage patterns in wetland, and has oxidized root channels in upper 12". Soil is 10YR 3/1 in the A horizon and silty loam 2.5Y 5/1 with mottles (common/distinct) of 10YR 5/8 in the B horizon.	55	2	2.13	583.0	0.83	0.33
Pr-w036	This PFO/PSS wetland is dominated by *Acer rubrum*, *Fraxinus pennsylvanica*, *Toxicodendron radicans*, and *Vitis vulpina*. It is saturated in the upper 12" with sediment deposits, has drainage patterns, oxidized root channels in the upper 12", and water-stained leaves. The A horizon is 10YR 3/1 and the B horizon is loam 2.5YR 5/1.	55	2	1.71	410.8	0.61	0.37
Pr-w037	This PFO/PSS wetland is dominated by *Acer rubrum*, *Fraxinus pennsylvanica*, *Toxicodendron radicans*, and *Vitis vulpina*. It is saturated in the upper 12" with sediment deposits, has drainage patterns, oxidized root channels in the upper 12", and water-stained leaves. The A horizon is 10YR 3/1 and the B horizon is loam 2.5YR 5/1.	55	2	1.06	323.0	0.43	0.26
Pr-w038	This PFO/PSS wetland is dominated by *Populus deltoides*, *Viburnum recognitum*, *Onoclea sensibilis*, *Acer rubrum*, *Toxicodendron radicans*, and *Fraxinus pennsylvanica*. It is saturated in the upper 12" with drainage patterns and oxidized root channels in the upper 12". The A horizon is 10YR 3/1 and B horizon is silty loam 2.5YR 5/1.	55	2	0.12	20.5	0.04	0.02

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w039	This PFO/PSS wetland is dominated by *Populus deltoides*, *Viburnum recognitum*, *Onoclea sensibilis*, *Acer rubrum*, *Toxicodendron radicans*, and *Fraxinus pennsylvanica*. It is saturated in the upper 12" with drainage patterns and oxidized root channels in the upper 12". The A horizon is 10YR 3/1 and B horizon is silty loam 2.5YR 5/1.	55	2	1.30	398.5	0.54	0.33
Pr-w040	This PSS/PEM wetland is dominated by *Viburnum recognitum*, *Salix nigra*, *Carex tribuloides*, *Cornus stolonifera*, *Juncus effusus*, *Carex amphibola*, *Equisetum arvense*, *Impatiens capensis*, *Onoclea sensibilis*, and *Euthamia graminifolia*. It is saturated in the upper 12" with oxidized root channels in upper 12" and water-stained leaves. The A horizon is 10YR 3/1 and the B horizon is loam 10YR 5/2.	28	1	1.17	0	0	0
Pr-w041	This PSS wetland is dominated by *Carex amphibola*, *Viburnum recognitum*, and *Euthamia graminifolia*. It has drainage patterns in wetland. The A horizon is 2.5YR 3/3 and the B horizon is silt 2.5YR 5/2.	28	1	0.27	106.7	0.12	0
Pr-w042	This PSS wetland is dominated by *Carex amphibola*, *Viburnum recognitum*, and *Euthamia graminifolia*. It has drainage patterns in wetland. The A horizon is 2.5YR 3/3 and the B horizon is silt 2.5YR 5/2.	28	1	0.41	172.6	0.24	0
Pr-w043	This PEM wetland is dominated by *Juncus effusus*, *Phalaris arundinacea*, *Ranunculus acris*, and *Carex* sp. It is saturated in the upper 12", has drainage patterns in wetland, has water-stained leaves, and passes the FAC-neutral test. Soil is silty clay 2.5Y 4/2 in the A horizon and silty clay 2.5Y 5/1 with mottles (common/distinct) of 10YR 5/8 in the B horizon.	20	1	0.71	193.6	0.26	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w044	This PSS wetland is dominated by *Juncus effusus*, *Viburnum dentatum*, *Fraxinus pennsylvanica*, *Quercus palustris*, *Salix nigra*, *Salix lucida*, *Impatiens capensis*, *Carex vulpinoidea*, *Onoclea sensibilis*, and *Cornus amomum*. It is saturated in the upper 12", has drainage patterns in wetland, has oxidized root channels in upper 12", has water-stained leaves, and passes the FAC-neutral test. Soil is silty clay 2.5Y 5/1 with mottles (common/distinct) of 10YR 6/8 in the A/B horizon.	24	1	0.83	291.6	0.40	0
Pr-w045	This PEM wetland is dominated by *Viburnum dentatum*, *Onoclea sensibilis*, *Cornus amomum*, *Fraxinus pennsylvanica*, *Prunus serotina*, *Acer rubrum*, *Juncus effusus*, and *Typha angustifolia*. It is saturated in the upper 12", has water marks, has drainage patterns in wetland, has water-stained leaves, and passes the FAC-neutral test. Soil is silty clay 10YR 3/2 in the A horizon and silty clay 2.5Y 4/1 with mottles (few/distinct) of 10YR 5/6 in the B horizon.	33	2	0.73	230.9	0.31	0
Pr-w046	This PFO/PEM wetland is dominated by *Liriodendron tulipifera*, *Fagus grandifolia*, *Acer saccharum*, *Juncus effusus*, *Viburnum dentatum*, *Acer rubrum*, *Hamamelis virginiana*, *Onoclea sensibilis*, *Phalaris arundinacea*, and *Cornus florida*. It is saturated in the upper 12", has water marks, and has water-stained leaves. Soil is silty clay 7.5YR 5/1 with mottles (common/distinct) of 7.5YR 4/6 in the A/B horizon.	57	2	0.04	0	0	0
Pr-w047	This PFO wetland is dominated by *Acer rubrum*, *Viburnum recognitum*, *Lycopodium clavatum*, and *Lindera benzoin*. It is inundated up to 12". Soil is silt loam 10YR 3/1 with mottles (few/distinct) in the A horizon.	57.5	2	0.41	85.4	0.13	0.13

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w048	This is a vernal pool POW/PFO wetland. It is dominated by *Acer rubrum*, *Viburnum recognitum*, *Lycopodium clavatum*, and *Lindera benzoin*. It is inundated up to 12". Soil is silt loam 10YR 3/1 with mottles (few/distinct) in the A horizon.	57.5	2	1.32	337.0	0.48	0.19
Pr-w049	This PEM/PSS/PFO wetland is dominated by *Onoclea sensibilis*, *Juncus effusus*, *Carex amphibola*, *Cornus stolonifera*, *Viburnum recognitum*, *Acer saccharum*, *Populus deltoides*, and *Spiraea alba*. It is saturated in the upper 12" and has drainage patterns in wetland. Soil is 10YR 6/1 with mottles (many) of 10YR 5/8 in the A horizon.	57.5	2	2.59	853.9	1.15	0.38
Pr-w050	This PFO/PSS is dominated by *Viburnum recognitum*, *Impatiens capensis*, *Erythronium americanum*, *Geum aleppicum*, *Crataegus* sp., *Salix nigra*, *Cornus stolonifera*, *Onoclea sensibilis*, and *Carex tribuloides*. It is saturated in the upper 12", has water marks, has drift lines, and drainage pattern in wetland. Soil is 10YR 4/1 with mottles of 10YR 4/6 in the A horizon and silt loam 10YR 6/1 with mottles (many/distinct) of 10Y 4/6 in the B horizon.	57.5	2	1.25	362.2	0.50	0.30
Pr-w051	This PEM wetland is dominated by *Boehmeria cylindrica*, *Carex* sp., *Lindera benzoin*, *Lysimachia ciliata*, and *Rudbeckia laciniata*. It is saturated in the upper 12", has drainage patterns in wetlands, has water-stained leaves, and passes the FAC-neutral test. Soil is silty loam 10YR 5/1 with mottles (5%) of 7.5YR 5/8	53.5	2	0.02	0	0.0001	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w052	This PFO/PSS wetland is dominated by *Carex lupulina*, an unknown grass, *Rhamnus frangula*, *Acer rubrum*, and *Rosa palustris*. It is saturated in the upper 12", has drainage patterns in wetland, has water-stained leaves, and passes the FAC-neutral test. Soil is silty clay 10YR 6/1 with mottles (20%) of 10YR 6/1 in the A horizon and silty clay 10YR 4/1 with mottles (5%) of 10YR 5/6 in the B horizon.	53.5	2	0.30	68.3	0.10	0.06
Pr-w053	This PFO/PSS wetland is dominated by *Carex lupulina*, an unknown grass, *Rhamnus frangula*, *Acer rubrum*, and *Rosa palustris*. It is saturated in the upper 12", has drainage patterns in wetland, has water-stained leaves, and passes the FAC-neutral test. Soil is silty clay 10YR 6/1 with mottles (20%) of 10YR 6/1 in the A horizon and silty clay 10YR 4/1 with mottles (5%) of 10YR 5/6 in the B horizon.	53.5	2	1.13	382.2	0.36	0.22
Pr-w054	This PFO wetland is dominated by *Acer rubrum*, *Acer saccharum*, *Ulmus rubra*, *Viburnum recognitum*, *Erythronium americanum*, *Onoclea sensibilis*, *Prunus serotina*, and *Toxicodendron radicans*. It is inundated up to 5", has water marks, has drift lines, and has drainage patterns in wetlands. Soil is 10YR 3/1 in the A horizon and silt loam 10YR 5/1 with mottles (many/distinct) in the B horizon.	53.5	2	0.82	146.2	0.21	0.21
Pr-w055	This PFO wetland is dominated by *Acer rubrum*, *Acer saccharum*, *Ulmus rubra*, *Viburnum recognitum*, *Erythronium americanum*, *Onoclea sensibilis*, *Prunus serotina*, and *Toxicodendron radicans*. It is inundated up to 5", has water marks, has drift lines, and has drainage patterns in wetlands. Soil is 10YR 3/1 in the A horizon and silt loam 10YR 5/1 with mottles (many/distinct) in the B horizon.	53.5	2	0.01	0	0	0

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Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w056	This PFO wetland is dominated by *Acer rubrum, Acer saccharum, Ulmus rubra, Viburnum recognitum, Erythronium americanum, Onoclea sensibilis, Prunus serotina,* and *Toxicodendron radicans.* It is inundated up to 5", has water marks, has drift lines, and has drainage patterns in wetlands. Soil is 10YR 3/1 in the A horizon and silt loam 10YR 5/1 with mottles (many/distinct) in the B horizon.	53.5	2	0.16	131.9	0.16	0.16
Pr-w057	This PFO wetland is dominated by *Acer rubrum, Acer saccharum, Ulmus rubra, Viburnum recognitum, Erythronium americanum, Onoclea sensibilis, Prunus serotina,* and *Toxicodendron radicans.* It is inundated up to 5", has water marks, has drift lines, and has drainage patterns in wetlands. Soil is 10YR 3/1 in the A horizon and silt loam 10YR 5/1 with mottles (many/distinct) in the B horizon.	53.5	2	0.03	0	0.03	0.03
Pr-w058	This PFO wetland is dominated by *Acer rubrum, Acer saccharum, Ulmus rubra, Viburnum recognitum, Erythronium americanum, Onoclea sensibilis, Prunus serotina,* and *Toxicodendron radicans.* It is inundated up to 5", has water marks, has drift lines, and has drainage patterns in wetlands. Soil is 10YR 3/1 in the A horizon and silt loam 10YR 5/1 with mottles (many/distinct) in the B horizon.	53.5	2	4.06	1045.2	1.43	1.43
Pr-w059	This PFO/PSS wetland is dominated by *Viburnum recognitum, Fraxinus pennsylvanica, Carex amphibola, Impatiens capensis, Rosa multiflora, Ulmus rubra, Cornus sericea,* and *Phalaris arundinacea.* It is inundated up to 1", has sediment deposits, and drainage patterns in wetland. Soil is silt loam 2.5Y 3/1 with mottles (many/distinct) of 10YR 3/6 in the A horizon.	42	2	1.84	518.9	0.72	0.43

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w060	This PSS/PEM wetland is dominated by *Cornus amomum, Ulmus americana, Rosa palustris, Impatiens capensis,* and *Carex* sp. It is saturated in the upper 12" with water-stained leaves. The soil is silty clay 10YR 4/6 in the A/B horizon.	45.5	2	0.76	221.6	0.31	0
Pr-w061	This PEM wetland is dominated by *Juncus effusus, Ranunculus* sp., and *Carex* sp. It is saturated in upper 12" with oxidized root channels in upper 12". The A horizon is silty loam 10YR 4/1 and the B horizon is silty loam 2.5YR 6/2.	16	1	0.12	0	0.01	0
Pr-w062	This PSS wetland is dominated by *Cornus amomum, Viburnum dentatum, Rosa palustris,* and *Juncus effusus.* It is saturated in upper 12", has water-stained leaves, and passed the FAC-neutral test. The A horizon is silty loam 10YR 4/1 and the B horizon is silty clay 10YR 5/1.	32	2	0.37	114.9	0.16	0
Pr-w063	This PSS/PFO wetland is dominated by *Viburnum dentatum, Nyssa sylvatica, Cornus amomum,* and *Acer rubrum.* It is saturated in the upper 12", has water-stained leaves, and passes the FAC-neutral test. The A horizon is silt 10YR 4/1 and the B horizon is clay 10YR 5/1.	51	2	0.88	263.0	0.36	0.15
Pr-w064	This PEM/PSS wetland is dominated by *Impatiens capensis, Viburnum dentatum,* and *Carex* sp. It is inundated up to 1" with water-stained leaves. Soil in the A horizon is silt 10YR 3/1.	43.5	2	0.18	0	0	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w065	This PSS/PEM wetland is dominated by Glyceria striata, Carex lupulina, Onoclea sensibilis, Leersia oryzoides, Rhamnus frangula, Viburnum recognitum, and Impatiens capensis. It has water marks, drift lines, sediment deposits, and drainage patterns in wetland, oxidized root channels in upper 12", and water-stained leaves. Soil is silt clay 10YR 4/1 with mottles (few/distinct) of 10YR 5/6 in the A horizon and loamy clay 10YR 5/1 with mottles (many/distinct) of 10Y 4/6 in the B horizon.	59	2	0.73	176.4	0.21	0
Pr-w066	This PSS/PEM wetland is dominated by *Populus deltoides, Salix nigra, Cornus amomum, Juncus effusus, Rosa palustris, Toxicodendron radicans, Viburnum recognitum, Spiraea tomentosa, Carya lacinosa*, and *Leersia oryzoides*. It has drainage patterns in wetland, has oxidized root channels in the upper 12", and passes the FAC-neutral test. Soil is silt loam 10YR 3/1 with mottles (few/distinct) of 10YR 6/8 in the A horizon.	35	2	1.10	264.1	0.37	0
Pr-w067	This PSS/PEM wetland is dominated by *Cornus amomum, Rhamnus frangula, Viburnum recognitum, Epilobium hirsutum, Leersia oryzoides, Onoclea sensibilis, Lysimachia ciliata*, and *Polygonum persicaria*. It is saturated in upper 12" and has oxidized root channels. Soil is silty clay 10YR 4/1 with mottles (many/faint) of 10YR 5/6 in the A horizon.	57	2	1.06	197.8	0.28	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w068	This PSS wetland is dominated by *Cephalanthus occidentalis*, *Viburnum recognitum*, *Cornus amomum*, *Onoclea sensibilis*, *Leersia oryzoides*, *Acer rubrum*, *Rhamnus frangula*, *Rosa palustris*, *Spiraea tomentosa*, and *Scirpus atrovirens*. It is saturated in the upper 12", has water marks, and has water-stained leaves. Soil is muck 10YR 6/1 in the A horizon.	55.5	2	0.35	59.1	0.08	0
Pr-w069	This PSS wetland is dominated by *Toxicodendron radicans*, *Rhamnus frangula*, *Viburnum recognitum*, *Carex intumescens*, and *Onoclea sensibilis*. It has water marks, drift lines, and water-stained leaves. Soil is silt loam 10YR 4/1 with mottles of 10YR 5/8 in the A horizon.	45	2	0.11	0	0	0
Pr-w070	This PFO wetland is dominated by Carex intumescens, Cephalanthus occidentalis, Cornus amomum, Onoclea sensibilis, Viburnum recognitum, Acer rubrum, Toxicodendron radicans, and Rhamnus frangula. It is saturated in the upper 12", has water marks, sediment deposits, and drainage patterns in wetland. Soil is 10YR 2/1 in the A horizon.	59	2	0.56	71.8	0.11	0.11
Pr-w071	This PSS wetland is dominated by *Populus tremuloides*, *Viburnum recognitum*, *Rhamnus frangula*, *Acer rubrum*, *Glyceria striata*, and *Phragmites australis*. It has drainage patterns in the wetland, oxidized root channels in the upper 12", and water-stained leaves. Soil is	46	2	1.51	456.3	0.62	0
Pr-w072	This PEM/PSS wetland is dominated by *Juncus effusus*, *Scirpus atrovirens*, *Carex lurida*, *Rhamnus frangula*, and *Viburnum recognitum*. It has drainage patterns in wetland, oxidized root channels in the upper 12", water-stained leaves, and passes the FAC-neutral test. Soil is silty loam 2.5Y 5/1 with mottles (many/distinct) of 10YR 5/8 in the A horizon.	43	2	0.21	0	0	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w073	This PSS wetland is dominated by *Phalaris arundinacea*, *Cornus amomum*, *Viburnum recognitum*, *Cornus amomum*, and *Carex vulpinoidea*. It is saturated in the upper 12", has water-stained leaves, and passes the FAC-neutral test. The B horizon is 10.5YR 4/6.	32	2	0.02	0	0	0
Pr-w074	This PSS wetland is dominated by *Phalaris arundinacea*, *Cornus amomum*, *Viburnum recognitum*, *Cornus amomum*, and *Carex vulpinoidea*. It is saturated in upper 12 inches with water-stained leaves and passes the FAC-Neutral Test. The B horizon is .5YR 4/6.	32	2	0.15	27.5	0.06	0
Pr-w075	This PEM/PSS wetland is dominated by *Juncus effusus*, *Cornus amomum*, *Carex vulpinoidea*, and *Scirpus cyperinus*. It is saturated in the upper 12". The A horizon is 2.5YR 4/1 and the B horizon is 2.5YR 5/6.	24	1	0.12	28.2	0.04	0
Pr-w076	This PEM/PSS wetland is dominated by *Onoclea sensibilis*, *Juncus effusus*, *Carex vulpinoidea*, *Cornus amomum*, and *Viburnum recognitum*. It is saturated in the upper 12". The A horizon is 10YR 4/3 and the B horizon is 2.5YR 5/2.	24	1	0.10	3.5	0.02	0
Pr-w077	This PSS/PEM wetland is dominated by *Onoclea sensibilis*, *Viburnum dentatum*, *Cornus amomum*, and an unknown grass. It is inundated up to 1", has water-stained leaves, and passes the FAC-Neutral test. Soil is silty clay 10YR 5/1 in the A/B horizon.	39.5	2	0.16	52.5	0.06	0
Pr-w078	This PEM/PSS wetland is dominated by *Onoclea sensibilis*, *Viburnum dentatum*, and unknown grass, with *Nyssa sylvatica* at the edges of wetland. It is inundated up to 1" and has water-stained leaves. The A horizon is silt 10YR 5/1 and the B horizon is silty clay 10YR 5/1.	34	2	0.11	0	0	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w079	This PEM/PFO wetland is dominated by *Impatiens capensis*, *Toxicodendron radicans*, and *Betula allegheniensis*. It is inundated up to 2", has drainage patterns in wetland, has water-stained leaves, and is listed as a hydric soil on local soil survey data. Soil in the A horizon is silt 10YR 2/1 and the B horizon is silty clay 10YR 5/1.	52.5	2	0.02	0	0.002	0.001
Pr-w080	This PSS/PEM wetland is dominated by *Juncus effusus*, *Viburnum dentatum*, and *Rhamnus frangula*. It is inundated up to 1". A horizon is silty clay 10YR 4/1 and the B horizon is silty clay 10YR 6/1.	34	2	0.19	0	0	0
Pr-w081	This PEM wetland is dominated by *Onoclea sensibilis*, *Polygonum persicaria*, *Toxicodendron radicans*, *Carex stipata*, *Scirpus* spp., *Juncus effusus*, and *Typha angustifolia*. It is saturated in the upper 12", has oxidized root channels in the upper 12", has water-stained leaves, and passes the FAC-neutral test. Soil is silt loam 10YR 4/2 in the A horizon and silt loam 5Y 5/2 with mottles (common) of 5Y 5/3 in the B horizon.	41	2	0.04	0	0.01	0
Pr-w082	This PFO/PEM wetland is dominated by *Carex stipata*, *Onoclea sensibilis*, *Carex* spp., *Viola palustris*, *Phragmites australis*, *Acer rubrum*, *Impatiens capensis*, and *Quercus palustris*. It is inundated up to 2", has water marks, drainage patterns in wetland, and passes the FAC-neutral test. Soil is 2.5Y 3/2 in the A horizon and silty clay 5Y 6/2 with mottles (many) of 5Y 3/2 in the B horizon.	36	2	0.19	0	0.03	0.02

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w083	This PEM/PSS wetland is dominated by *Impatiens capensis, Onoclea sensibilis*, and *Viburnum dentatum.* It is saturated in the upper 12", has water-stained leaves, and passes the FAC-Neutral test. Soil in the A horizon is silt 10YR 5/2 and 10YR 4/1 with mottles of 10YR 5/8 in the B horizon.	27	1	0.03	0	0	0
Pr-w084	This PEM wetland is dominated by *Phragmites australis.* It is saturated in the upper 12", has oxidized root channels in upper 12", has water-stained leaved, and passes the FAC-neutral test.	24	1	0.79	216.0	0.27	0
Pr-w085	This PEM wetland is dominated by *Phragmites australis* and *Impatiens capensis.* It has drainage patterns in wetland. Soil is 10YR 6/1 with mottles (many) of 10Y 4/4 in the A horizon.	27	1	1.14	272.3	0.37	0
Pr-w086	This PFO wetland is dominated by *Acer rubrum, Onoclea sensibilis, Toxicodendron radicans, Carex amphibola*, and *Glyceria striata.* It is saturated in the upper 12", has oxidized root channels in the upper 12", and has water-stained leaves. Soil is loam 10YR 4/1 with mottles (few) of 10YR 5/5 in the A horizon.	47	2	0.14	93.7	0.12	0.12
Pr-w087	This PFO wetland is dominated by *Acer rubrum, Onoclea sensibilis, Toxicodendron radicans, Carex amphibola, Rhamnus frangula, Viburnum recognitum, Impatiens capensis*, and *Ulmus americana.* It is saturated in the upper 12", has sediment deposits, and has water-stained leaves. Soil is 10YR 4/1 with mottles of 10YR 5/5.	49	2	0.35	0	0.00001	0.00001

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w088	This PEM wetland is dominated by *Onoclea sensibilis*, *Juncus* effusus, *Carex* spp., *Acer rubrum*, and *Viburnum dentatum*. It is inundated, has water marks, drift lines , sediment deposits, oxidized root channels, and water-stained leaves. Soil is 5Y 5/2 with mottles of 10YR 3/6 in the A horizon and 5Y 7/1 with mottles (many) of 2.5Y 6/8 in the B horizon.	25	1	0.02	0	0.01	0
Pr-w089	This PEM wetland is dominated by *Carex stipata*, *Glyceria* spp., *Impatiens capensis*, *Rosa multiflora*, and *Lindera benzoin*. It is saturated in the upper 12", has water marks, drift lines, sediment deposits, drainage patterns in wetland, oxidized root channels, water-stained leaves, and passes the FAC-neutral test. Soil is silty clay 5Y 4/2 with mottles (common) of 2.5Y 6/2 in the A/B horizon.	46	2	0.01	5.5	0.01	0
Pr-w090	This PEM wetland is dominated by *Onoclea sensibilis* and *Viburnum dentatum*. It is inundated up to 1", has water marks, sediment deposits, drainage patterns in wetland, oxidized root channels, water-stained leaves, and passes the FAC-neutral test. Soil is 10YR 3/1 in the A horizon and 2.5Y 4/2 with mottles of 10YR 5/6 in the B horizon.	45	2	0.002	0	0	0
Pr-w091	This PEM wetland is dominated by *Carex stipata*, *Impatiens capensis*, *Juncus effusus*, *Rosa multiflora*, *Acer rubrum*, and *Onoclea sensibilis*. It is inundated up to 2", has water marks, has sediment deposits, has oxidized root channels in upper 12", has water-stained leaves, and passes the FAC-neutral test. Soil is sandy loam 10YR 4/1 with mottles (many/distinct) of 10YR 6/8 in the A/B horizon.	34	2	0.03	0	0	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w092	This PFO wetland is dominated by *Acer rubrum*, *Pinus strobus*, *Fagus grandifolia*, *Liriodendron tulipifera*, *Onoclea sensibilis*, and *Rosa multiflora*. It is saturated in upper 12", has water marks, and has water-stained leaves. Soil is silty clay 10YR 4/1 with mottles (few/distinct) of 10YR 3/6 in the A horizon and silty clay 2.5Y 6/1 with mottles (common/distinct) of 10YR 3/3 in the B horizon.	41	2	0.02	0	0	0
Pr-w093	This PEM/POW wetland is a vernal pool. It is dominated by *Fagus grandifolia*, *Acer rubrum*, and *Podophyllum peltatum*. It is inundated up to 6" and has water-stained leaves. Soil is clay loam Gley1 3/N with mottles (few/discrete) of 10YR 3/6 in the A horizon and clay loam Gley1 5/N in the B horizon.	57	2	0.04	0	0	0
Pr-w094	This PFO/PEM wetland is dominated by *Onoclea sensibilis*, *Impatiens capensis*, *Phalaris arundinacea*, *Carex vulpinoidea*, *Carex comosa*, *Carex gynandra*, *Leersia virginica*, *Juncus effusus*, *Rosa multiflora*, *Iris versicolor*, and *Viburnum dentatum*. It is inundated up to 2", has water marks, has water-stained leaves, and passes the FAC-neutral test. Soil is clay loam 10YR 3/1 with mottles (few/faint) of 10YR 3/3 in the A/B horizon.	55	2	1.88	449.2	0.62	0.37
Pr-w095	This PEM wetland is dominated by *Juncus effusus* and *Scirpus cyperinus*. It is saturated in the upper 12" and has drainage patterns in wetland. Soil is silty clay 10YR 5/1 with mottles (10%) of 10YR 5/7 in the A horizon and silty clay 10YR 6/1 with mottles (10%) of 10YR 5/7 in the B horizon.	30	2	1.19	291.4	0.37	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w096	This PEM/PSS wetland is dominated by *Salix* sp., *Cornus amomum*, *Impatiens capensis*, *Onoclea sensibilis*, and an unknown fern. It is saturated in the upper 12", has water-stained leaves, and passes the FAC-neutral test. Soil is silt loam 10YR 3/1 in the A horizon, and silt clay 10YR 5/1 in the B horizon.	22	1	0.08	0	0	0
Pr-w097	This PEM wetland is dominated by *Typha angustifolia*, *Carex* sp. 1, an unknown mustard, *Eupatorium perfoliatum*, *Carex* sp. 2, and *Impatiens capensis*. It is inundated up to 2". Soil is silt 10YR 2/1 in the A horizon and silty sand 10YR 6/1 with mottles (few) of 10YR 5/6 in the B horizon.	41.5	2	0.61	215.4	0.28	0
Pr-w098	This PEM wetland is dominated by *Juncus effusus* and *Scirpus cyperinus*. It is saturated in upper 12" and has water-stained leaves. Soil is loam 10YR 3/2 in the A horizon and loamy clay 10YR 6/2 with mottles (many) of 10Y 5/8.	23	1	0.14	0	0	0
Pr-w099	This PEM/PFO wetland is dominated by *Impatiens capensis*, *Toxicodendron radicans*, *Carpinus caroliniana*, *Sambucus canadensis*, and *Cardamine douglassii*. It is inundated up to 1", has water-stained leaves, and passes the FAC-neutral test. Soil in A/B horizon is clay 10YR 4/1.	36	2	0.19	125.7	0.10	0.04
Pr-w100	This PEM wetland is dominated by *Onoclea sensibilis* and *Juncus effusus*. It is inundated up to 1" and has water-stained leaves. The A horizon is silty clay 10YR 5/2 with mottles (common) of 10YR 5/6 and the B horizon is clay 10YR 5/1 with mottles (common) of 7.5YR 4/4.	28	1	0.10	11.7	0.02	0

TABLE 3. DETAILED WETLAND DESCRIPTIONS

Identifier	Wetland Description	ORAM Score	ORAM Category	Wetland Acreage	Linear Feet Crossed	Impacted Acreage	Acres of Forested Wetland that will be Converted
Pr-w101	This PFO wetland is dominated by *Acer rubrum*, *Juncus effusus*, *Viburnum dentatum*, *Carex stipata*, *Carex* sp., and *Rhamnus frangula*. It is saturated in the upper 12", has water marks, has water-stained leaves, and passes the FAC-neutral test. Soil is clay 10YR 4/1 with mottles of 10YR 6/8 (common/distinct) in the A/B horizon.	29	1	1.17	337.5	0.40	0.40
Pr-w102	This PEM wetland is dominated by *Phalaris arundinacea*, *Impatiens capensis*, and *Acer rubrum*. It is saturated in the upper 12", has water marks and oxidized root channels, and passes the FAC-neutral test. Soil is sandy silt 10YR 3/1 with mottles (few/fine) of 10YR 4/6 in the A horizon and silty clay Gley1 5/1 5GY in the B horizon.	32	2	0.04	32.4	0.02	0

Table 4. Detailed Stream Table								
Identifier	Stream Description	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (centimeters)	Length (feet) within 200-foot Corridor	Length (feet) within 60-foot Corridor	QHEI Score	Narrative Description
Pr-s001	Stream Pr-s001 has a moderate (5-10m) riparian width to the left , and a narrow (<5m) riparian width to the right of the channel. The riparian corridor is comprised of deciduous woods to the left, and old field to the right.	Perennial	4	10	259	62	N A	_
Pr-s002	Stream Pr-s002 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods in wetland Pr-w004.	Perennial	16	5	176	0	N A	_
Pr-s003	Stream Pr-s003 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods and empties into wetland Pr-w004.	Perennial	4	7	218	55	N A	_
Pr-s004	Stream Pr-s004 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods and empties into wetland Pr-w005.	Perennial	4	7	305	129	N A	_
Pr-s005	Stream Pr-s005 has a wide (>10m) riparian width to the left, and a narrow (<5m) riparian width to the right. The riparian corridor is comprised of deciduous woods to the left and an agricultural field to the right.	Perennial	4	5	230	67	N A	_
Pr-s006	Stream Pr-s006 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w011 which is in a deciduous woodlot.	Perennial	4	7	290	87	N A	_

Table 4. Detailed Stream Table								
Identifier	Stream Description	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (centimeters)	Length (feet) within 200-foot Corridor	Length (feet) within 60-foot Corridor	QHEI Score	Narrative Description
Pr-s007	Stream Pr-s007 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w012 which is in a deciduous woodlot.	Perennial	3	4	251	63	N A	–
Pr-s008	Stream Pr-s008 has a wide (>10m) riparian width on both sides. The stream flows between wetlands Pr-w014 and Pr-w015, and through Pr-w017. The stream is surrounded by scrub shrub vegetation.	Intermittent	2	1	240	66	N A	–
Pr-s009	Stream Pr-s009 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods.	Perennial	4	6	245	65	N A	–
Pr-s009b	Stream Pr-s009b has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods and into Pr-s009.	Perennial	5	6	92	19	N A	–
Pr-s010	Stream Pr-s010 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w019 which is in a deciduous woodlot.	Perennial	2	4	244	92	N A	–
Pr-s011	Stream Pr-s011 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w022 which is in a deciduous woodlot.	Perennial	4	8	278	102	N A	–
Pr-s012	Stream Pr-s012 has a moderate (5-10m) riparian width on both sides. The stream flows through wetland Pr-w023 which is in a deciduous woodlot.	Perennial	4	4	210	61	N A	–

Table 4. Detailed Stream Table								
Identifier	Stream Description	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (centimeters)	Length (feet) within 200-foot Corridor	Length (feet) within 60-foot Corridor	QHEI Score	Narrative Description
Pr-s013	Stream Pr-s013 has a moderate (5-10m) riparian width on both sides. The stream flows out of a pond and through wetland Pr-w024 which is in a deciduous woodlot.	Perennial	4	4	163	88	N A	–
Pr-s014	Stream Pr-s014 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w028 which is in a deciduous woodlot.	Perennial	7	15	271	78	N A	–
Pr-s015	Stream Pr-s015 has a wide (>10m) riparian width on both sides. The stream flows through wetlands Pr-w029 and Pr-s030 which are in a deciduous woodlot.	Perennial	10	20	264	62	N A	–
Pr-s016	Stream Pr-s016 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w034, and flows through old field and scrub shrub vegetation communities.	Perennial	2	12	237	72	N A	–
Pr-s017	Stream Pr-s017 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w035 which is in a bottom land forest community.	Perennial	10	20	266	65	N A	–
Pr-s018	Stream Pr-s018 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w035 which is in a bottom land forest community.	Perennial	7	15	214	64	N A	–
Pr-s019	Stream Pr-s019 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w036 which is in a deciduous	Perennial	10	7	220	68	N A	–

Table 4. Detailed Stream Table								
Identifier	Stream Description[1]	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (centimeters)	Length (feet) within 200-foot Corridor	Length (feet) within 60-foot Corridor	QHEI Score	Narrative Description
	woodlot.							
Pr-s020	Stream Pr-s020 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods.	Perennial	8	4	200	60	N A	_
Pr-s021	Stream Pr-s021 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods.	Perennial	11	5	226	63	N A	_
Pr-s022	Stream Pr-s022 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w038 which is in a deciduous woodlot.	Perennial	7	4	207	63	N A	_
Pr-s023	Stream Pr-s023 has a narrow (<5m) riparian width on both sides. The stream flows through residential pasture, deciduous forest, and agricultural vegetation communities. The stream also flows through wetland Pr-w040 before crossing under Sun Road.	Perennial	8	6	202	60	N A	_
Pr-s024	Stream Pr-s024 has a narrow (<5m) riparian width on both sides. The stream flows through deciduous forest and scrub shrub vegetation communities. The stream also flows through wetland Pr-w040 before crossing under Sun Road, and then through wetland Pr-w042.	Perennial	5	4	200	60	N A	_

Table 4. Detailed Stream Table								
Identifier	Stream Description[1]	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (centimeters)	Length (feet) within 200-foot Corridor	Length (feet) within 60-foot Corridor	QHEI Score	Narrative Description
Pr-s025	Stream Pr-s025 has a narrow (<5m) riparian width on both sides. The stream flows between a deciduous woodlot and an agricultural field.	Intermittent	5	7	128	58	N A	–
Pr-s026	Stream Pr-s026 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods.	Ephemeral	16	0	227	63	N A	–
Pr-s027	Stream Pr-s027 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods and into Pr-s028.	Perennial	8	11	330	87	N A	–
Pr-s028	Stream Pr-s028 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w049 which is in deciduous woods.	Perennial	10	18	345	172	N A	–
Pr-s029	Stream Pr-s029 flows along side U.S. 6 and has no riparian width.	Perennial	5	8	1015	60	N A	–
Pr-s030	Stream Pr-s030 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w050 in deciduous woods.	Perennial	13	-	229	69	59	Good warmwater habitat
Pr-s031	Stream Pr-s031 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w050 in deciduous woods and eventually connects with stream Prs-032.	Ephemeral	2	0	280	86	N A	–
Pr-s032	Stream Pr-s031 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods and eventually connects with stream Prs-031.	Perennial	7	10	249	79	N A	–

Table 4. Detailed Stream Table								
Identifier	Stream Description	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (centimeters)	Length (feet) within 200-foot Corridor	Length (feet) within 60-foot Corridor	QHEI Score	Narrative Description
Pr-s033	Stream Pr-s033 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w053 in deciduous woods.	Ephemeral	1	0	205	62	NA	–
Pr-s034	Stream Pr-s034 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w054 in deciduous woods.	Perennial	10	-	290	79	58	Good warmwater habitat
Pr-s035	Stream Pr-s035 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w058 in scrub shrub vegetation and also through deciduous woods.	Ephemeral	2	0	202	60	NA	–
Pr-s036	Stream Pr-s036 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w059 in deciduous woods.	Perennial	10	6	229	68	NA	–
Pr-s037	Stream Pr-s037 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w059 in deciduous woods.	Ephemeral	2	0	406	252	NA	–
Pr-s038	Stream Pr-s038 has a wide (>10m) riparian width on the left side, and a narrow (<5m) riparian width on the right side. The stream flows through wetland Pr-w060 in deciduous woods.	Perennial	2	3	228	75	NA	–
Pr-s038b	Stream Pr-s038b has a wide (>10m) riparian width on the left side, and a narrow (<5m) on the right side. The stream flows into stream Pr-s038 while passing through wetland Pr-w060 in deciduous woods.	Perennial	2	3	119	38	NA	–

Table 4. Detailed Stream Table								
Identifier	Stream Description[1]	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (centimeters)	Length (feet) within 200-foot Corridor	Length (feet) within 60-foot Corridor	QHEI Score	Narrative Description
Pr-s039	Stream Pr-s039 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w060 in deciduous woods.	Intermittent	5	12	290	60	N A	_
Pr-s040	Stream Pr-s040 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w063 in deciduous woods.	Ephemeral	2	0	427	179	N A	_
Pr-s041	Stream Pr-s041 has no riparian corridor on both sides. The stream flows through residential pasture, wetland Pr-w066, and deciduous woods.	Perennial	11	12	971	534	N A	_
Pr-s042	Stream Pr-s042 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w067 in scrub shrub vegetation.	Perennial	4	7	203	60	N A	_
Pr-s043	Stream Pr-s043 has a wide (>10m) riparian width on both sides. The stream flows through recently clear cut woods, and the vegetation is now scrub shrub.	Perennial	7	10	201	61	N A	_
Pr-s044	Stream Pr-s044 has a wide (>10m) riparian width on both sides. The stream flows through scrub shrub vegetation, deciduous woods, and wetland Pr-w073.	Perennial	13	-	308	116	55	_
Pr-s045	Stream Pr-s045 has a wide (>10m) riparian width on both sides. The stream flows through wetland Pr-w078 in deciduous woods.	Perennial	4	4	279	70	N A	_

Table 4. Detailed Stream Table								
Identifier	Stream Description[1]	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (centimeters)	Length (feet) within 200-foot Corridor	Length (feet) within 60-foot Corridor	QHEI Score	Narrative Description
Pr-s046	Stream Pr-s046 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods and eventually forks into two branches.	Perennial	8	9	550	120	N A	–
Pr-s047	Stream Pr-s047 has a wide (>10m) riparian width on both sides. The stream flows through scrub shrub vegetation, deciduous woods, and wetland Pr-w084.	Perennial	3	10	629	125	N A	–
Pr-s048	Stream Pr-s048 has a wide (>10m) riparian width on both sides. The stream flows through old field vegetation, deciduous woods, and wetland Pr-w085.	Perennial	7	10	230	92	N A	–
Pr-s049	Stream Pr-s049 has a narrow (<5m) riparian width on both sides. The stream flows through wetland Pr-w089 in deciduous woods.	Perennial	13	-	243	74	43	Fair warmwater habitat
Pr-s050	Stream Pr-s050 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods.	Ephemeral	16	0	47	0	N A	
Pr-s051	Stream Pr-s051 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods.	Perennial	13	-	235	60	61	Good warmwater habitat
Pr-s052	Stream Pr-s052 has a wide (>10m) riparian width on both sides. The stream flows out of wetland Pr-w091and into Pr-s051 in deciduous woods.	Perennial	16	25	107	82	N A	–

Table 4. Detailed Stream Table								
Identifier	Stream Description[1]	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (centimeters)	Length (feet) within 200-foot Corridor	Length (feet) within 60-foot Corridor	QHEI Score	Narrative Description
Pr-s053	Stream Pr-s053 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods.	Perennial	13	-	313	122	61	Good warmwater habitat
Pr-s054	Stream Pr-s054 has a wide (>10m) riparian width on both sides. The stream flows through scrub shrub vegetation, recreational pasture, and wetland Pr-w094.	Perennial	13	-	342	143	64	Good warmwater habitat
Pr-s055	Stream Pr-s055 has a wide (>10m) riparian width on both sides. The stream flows through scrub shrub vegetation, deciduous woods, wetland Pr-w096, and wetland Pr-w097.	Perennial	4	5	626	64	N A	_
Pr-s056	Stream Pr-s056 has a wide (>10m) riparian width on both sides. The stream flows through scrub shrub vegetation and deciduous woods.	Perennial	8	15	370	65	N A	_
Pr-s057	Stream Pr-s057 has a wide (>10m) riparian width on both sides. The stream flows through deciduous woods and scrub shrub vegetation.	Perennial	23	-	444	74	64.5	Good warmwater habitat
Pr-s058	Stream Pr-s058 has a moderate (5-10m) riparian width on both sides. The stream flows through deciduous woods.	Intermittent	16	0	200	60	N A	_
Pr-s059	Stream Pr-s059 has a wide riparian width on both sides. The stream flows between a corn field to the left and an old field to the right.	Ephemeral	2	0	210	65	N A	_
Pr-s060	Stream Pr-s060 has a moderate riparian width	Ephemeral	3	0	320	85	N A	_

Table 4. Detailed Stream Table									
Identifier	Stream Description[1]	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (centimeters)	Length (feet) within 200-foot Corridor	Length (feet) within 60-foot Corridor	QHEI Score	Narrative Description
Totals:			438		17741	5294		

[1] Steams described as river left and right as looking downstream.

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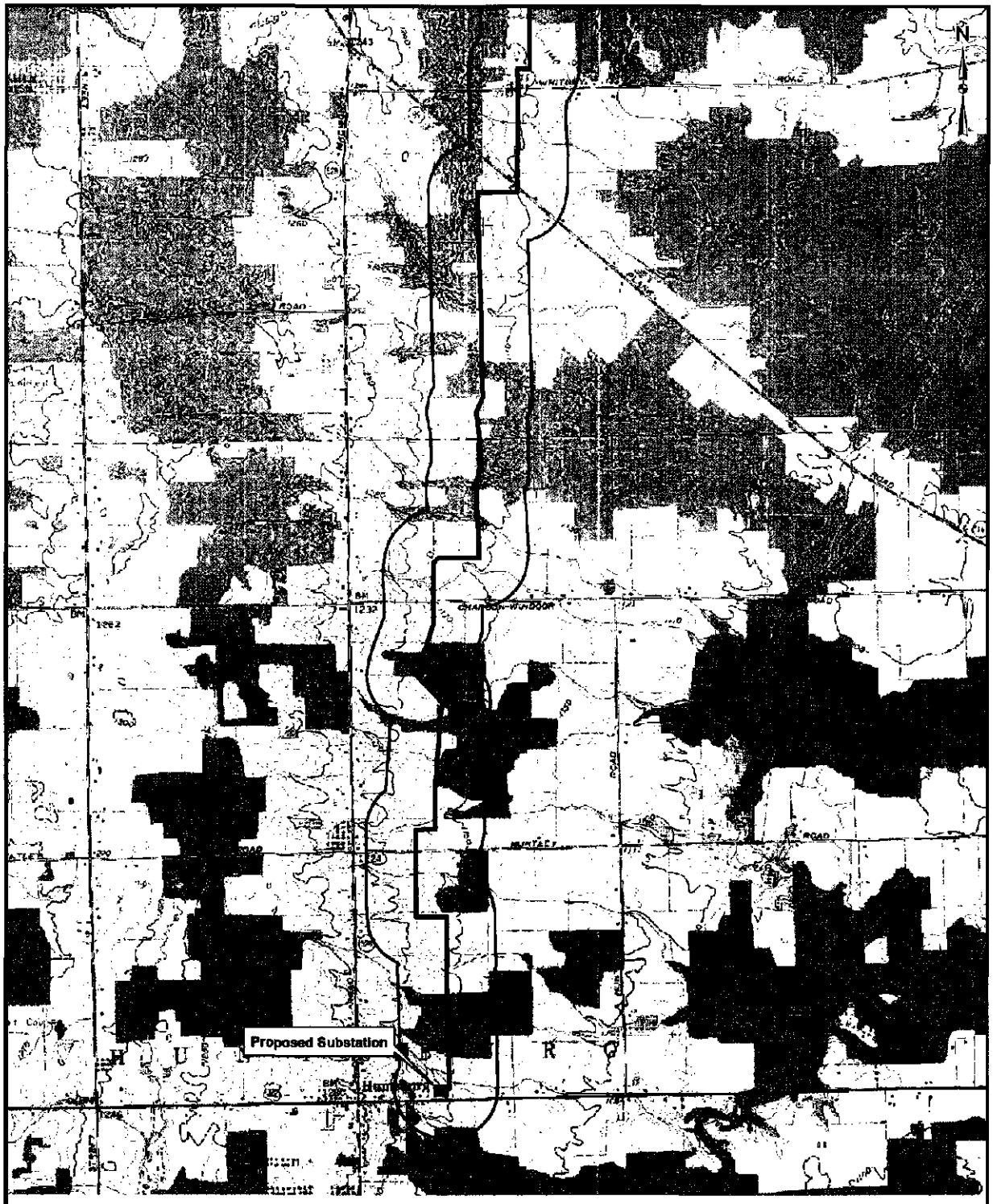


LEGEND:

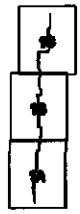
- Preferred Route
- 2000 ft Corridor
- Proposed Substation
- Existing Transmission Line

0 2,000 4,000

Scale in Feet

BASE MAP SOURCE:
USGS 7.5-minute Topographic Maps
Thompson, Ohio (1971);
and East Claridon, Ohio (1970)

Figure Key



ATSI. Allegheny Company

Geauga County 138 kV Electric Transmission Line

FIGURE 1A
PREFERRED ROUTE VICINITY MAP

JOB NO. 14946398

URS

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LEGEND:

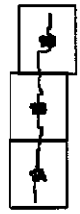
- Preferred Route
- 2000 ft Corridor
- Proposed Substation
- Existing Transmission Line

0 2,000 4,000

Scale in Feet

BASE MAP SOURCE:
USGS 7.5-minute Topographic Maps
Thompson, Ohio (1971);
and East Claridon, Ohio (1970)

Figure Key



ATSI. | Illuminating Company | Geauga County 138 kV Electric Transmission Line

FIGURE 1B
PREFERRED ROUTE VICINITY MAP

JOB NO. 14946398

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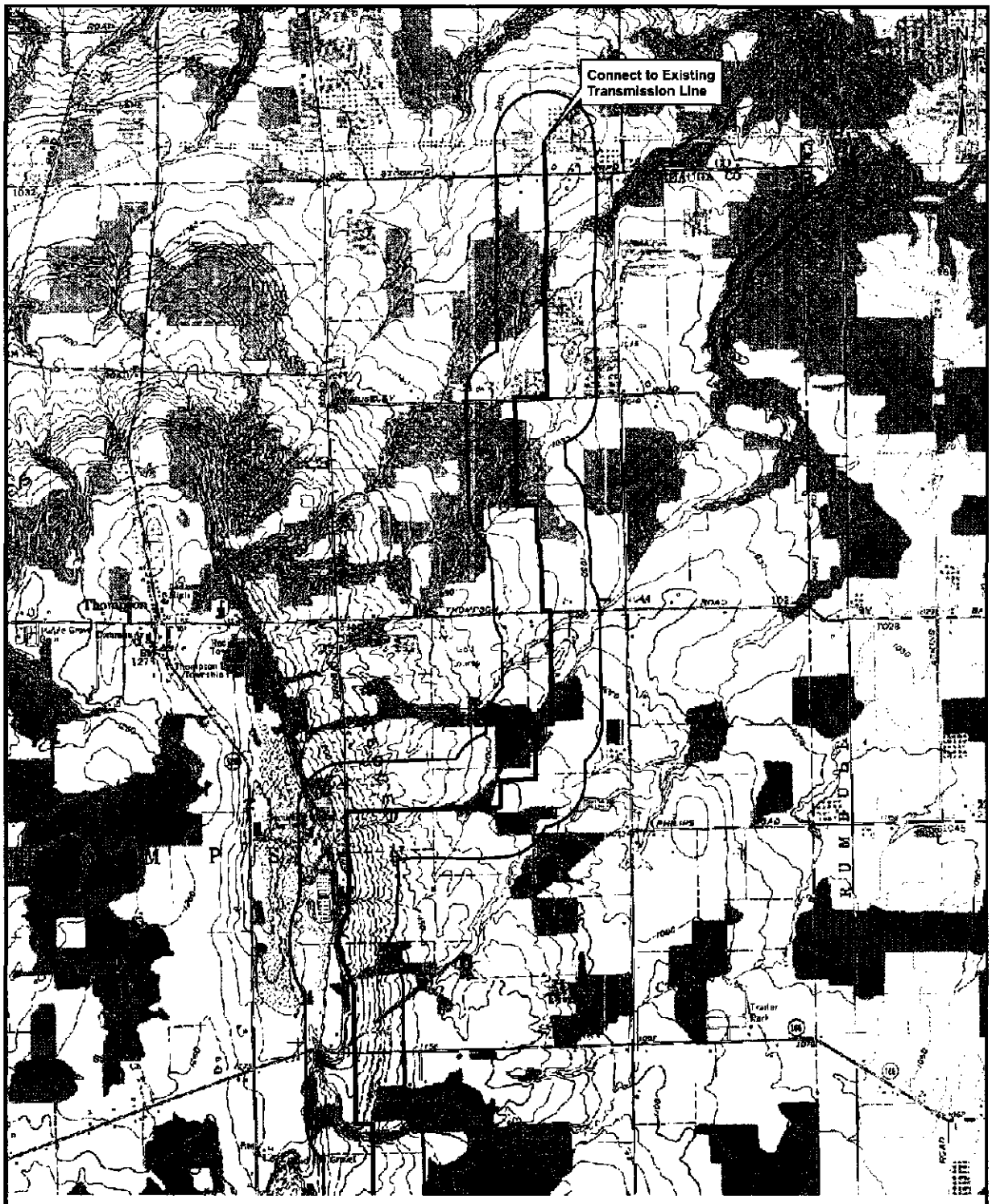


LEGEND:

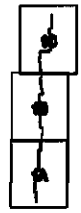
- Preferred Route
- 2000 ft Corridor
- Proposed Substation
- Existing Transmission Line

0 2,000 4,000

Scale in Feet

BASE MAP SOURCE:
USGS 7.5-minute Topographic Maps
Thompson, Ohio (1971);
and East Claridon, Ohio (1970)

Figure Key



ATSI. American Transmission Systems, Inc. a subsidiary of FirstEnergy Corp.

Illuminating Company. An FirstEnergy Company

Geauga County 138 kV Electric Transmission Line

FIGURE 1C
PREFERRED ROUTE VICINITY MAP

JOB NO. 14946398

URS

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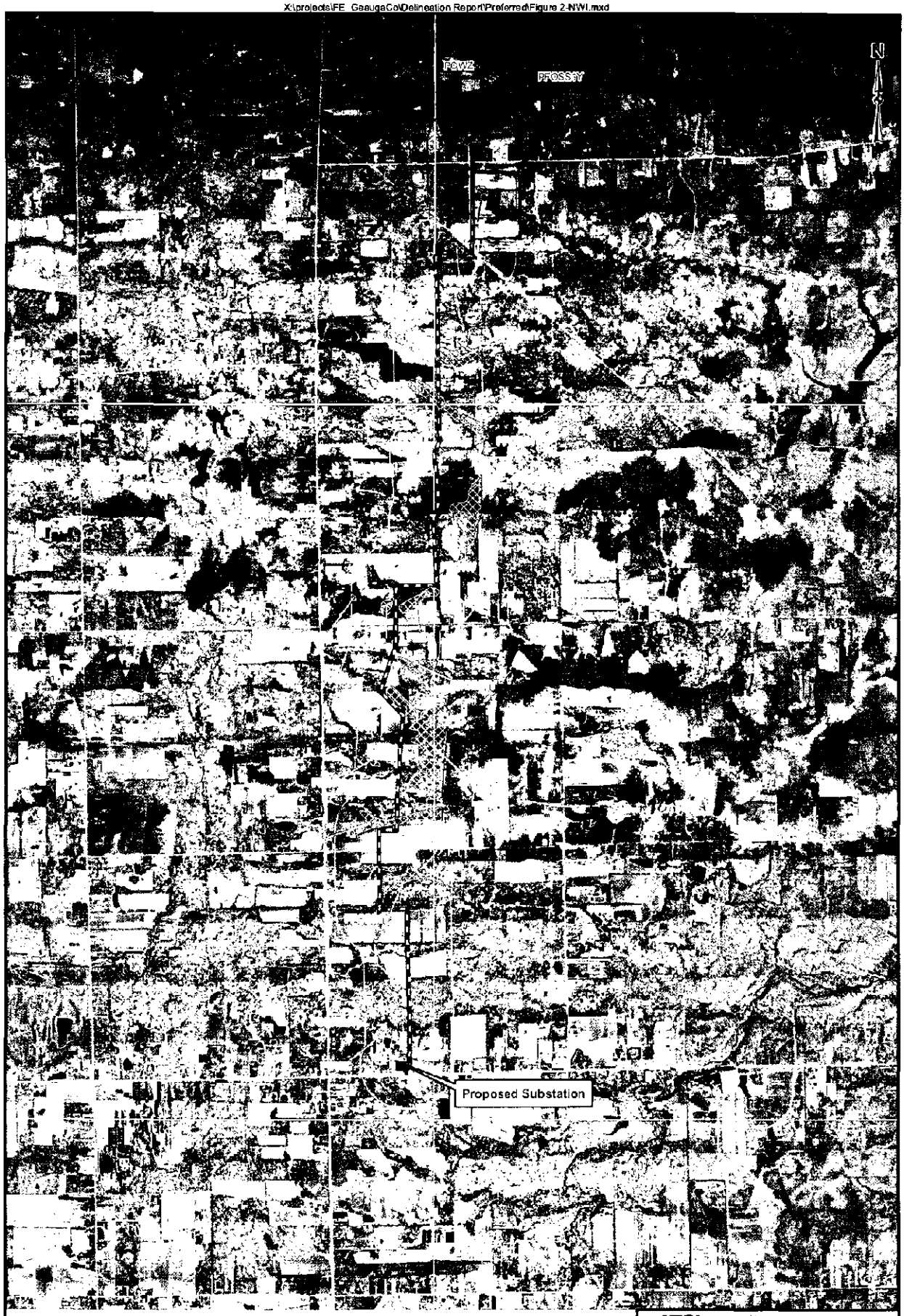
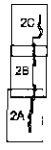


LEGEND:

- Preferred Route
- 2000 ft. Corridor
- Proposed Substation
- Existing Transmission Line
- NWI Designation

Figure Key



0 2,000 4,000

Scale in Feet

BASE MAP SOURCE
Geauga Co. Auditor Aerials, 2006
NWI Wetlands Georeferenced and Digitized from
USFWS 7.5 minute East Claridon and Thompson
Ohio NWI Quadrangles.

ATSI — Illuminating Company — Geauga County 138 kV Electric Transmission Line

FIGURE 2A
NATIONAL WETLAND INVENTORY MAP

JOB NO. 14946398

URS

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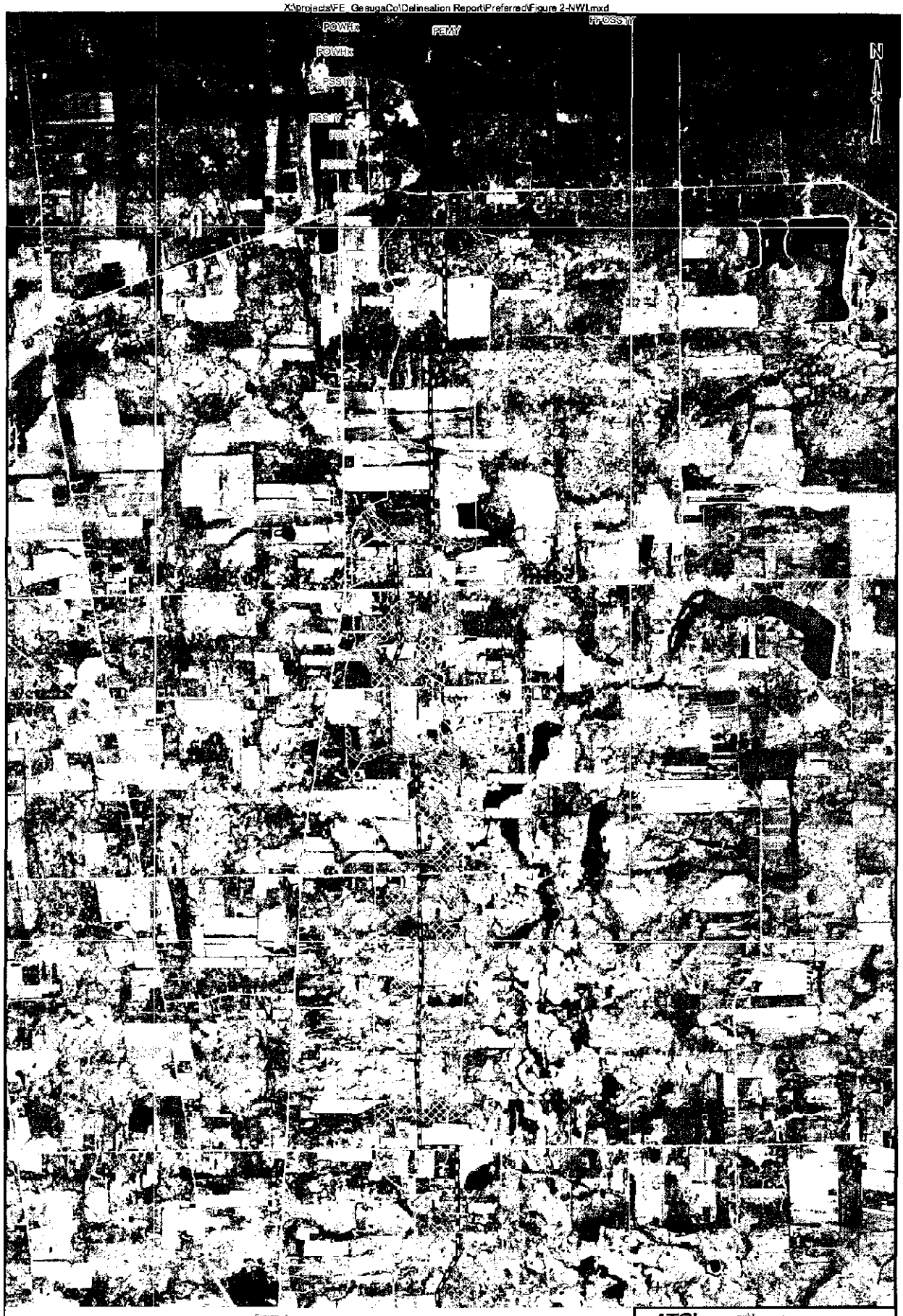
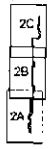


LEGEND:

- Preferred Route
- 2000 ft. Corridor
- Proposed Substation
- Existing Transmission Line
- NWI Designation

Figure Key



0 2,000 4,000

Scale in Feet

BASE MAP SOURCE
Geauga Co. Auditor Aerials, 2006
NWI Wetlands Georeferenced and Digitized from
USFWS 7.5 minute East Claridon and Thompson
Ohio NWI Quadrangles.

ATSI Illuminating Company Geauga County 138 kV Electric Transmission Line

FIGURE 2B
NATIONAL WETLAND INVENTORY MAP

JOB NO. 14946398

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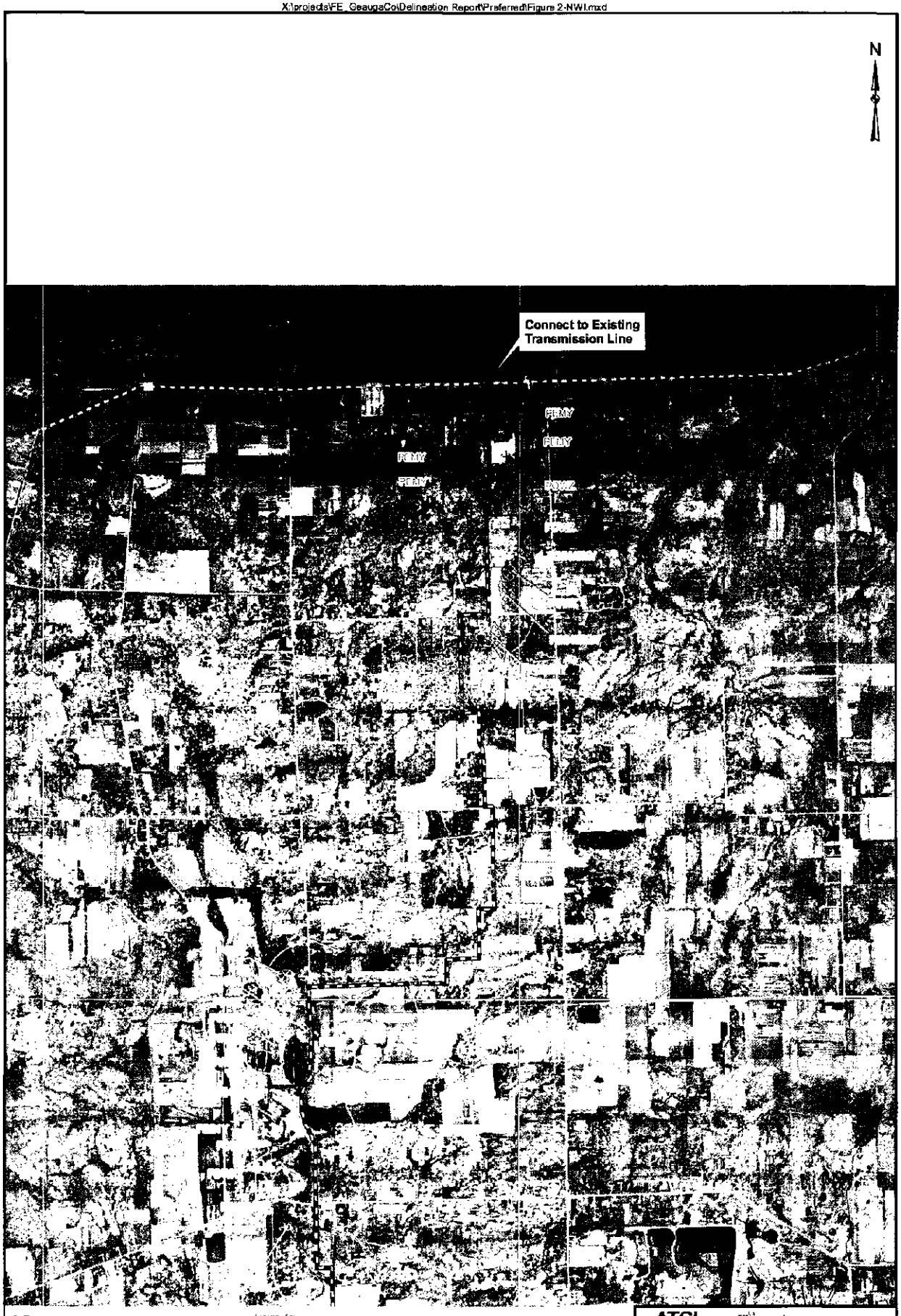
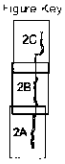


LEGEND:

- Preferred Route
- 2000 ft. Corridor
- Proposed Substation
- Existing Transmission Line
- NWI Designation

Figure Key



0 2,000 4,000

Scale in Feet

BASE MAP SOURCE:
Geauga Co. Auditor Aerials, 2006
NWI Wetlands Georeferenced and Digitized from USFWS 7.5 minute East Claridon and Thompson, Ohio NWI Quadrangles

ATSI Illuminating Company Geauga County 138 kV Electric Transmission Line

FIGURE 2C
NATIONAL WETLAND INVENTORY MAP

JOB NO 14946398

URS

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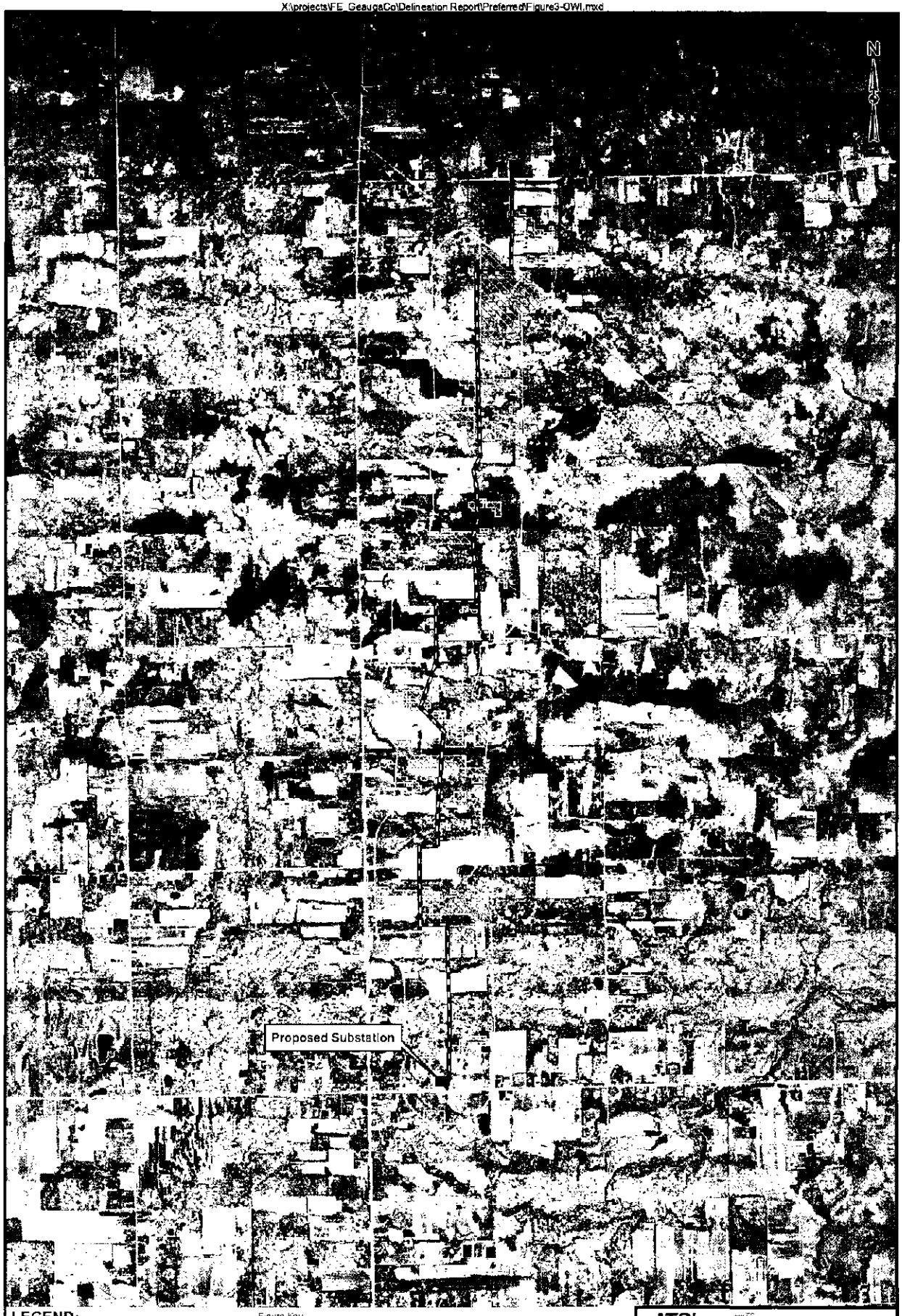

LEGEND:

- Existing Transmission Line
- Proposed Substation
- Preferred Route
- 2000 ft Corridor
- OWI Designation

Figure Key

0 2,000 4,000

Scale in Feet

BASE MAP SOURCE:
Geauga Co. Auditor Aerials, 2006

ATSI — The Illuminating Company — Geauga County 138 kV Electric Transmission Line

FIGURE 3A
OHIO WETLAND INVENTORY MAP

JOB NO 14946398

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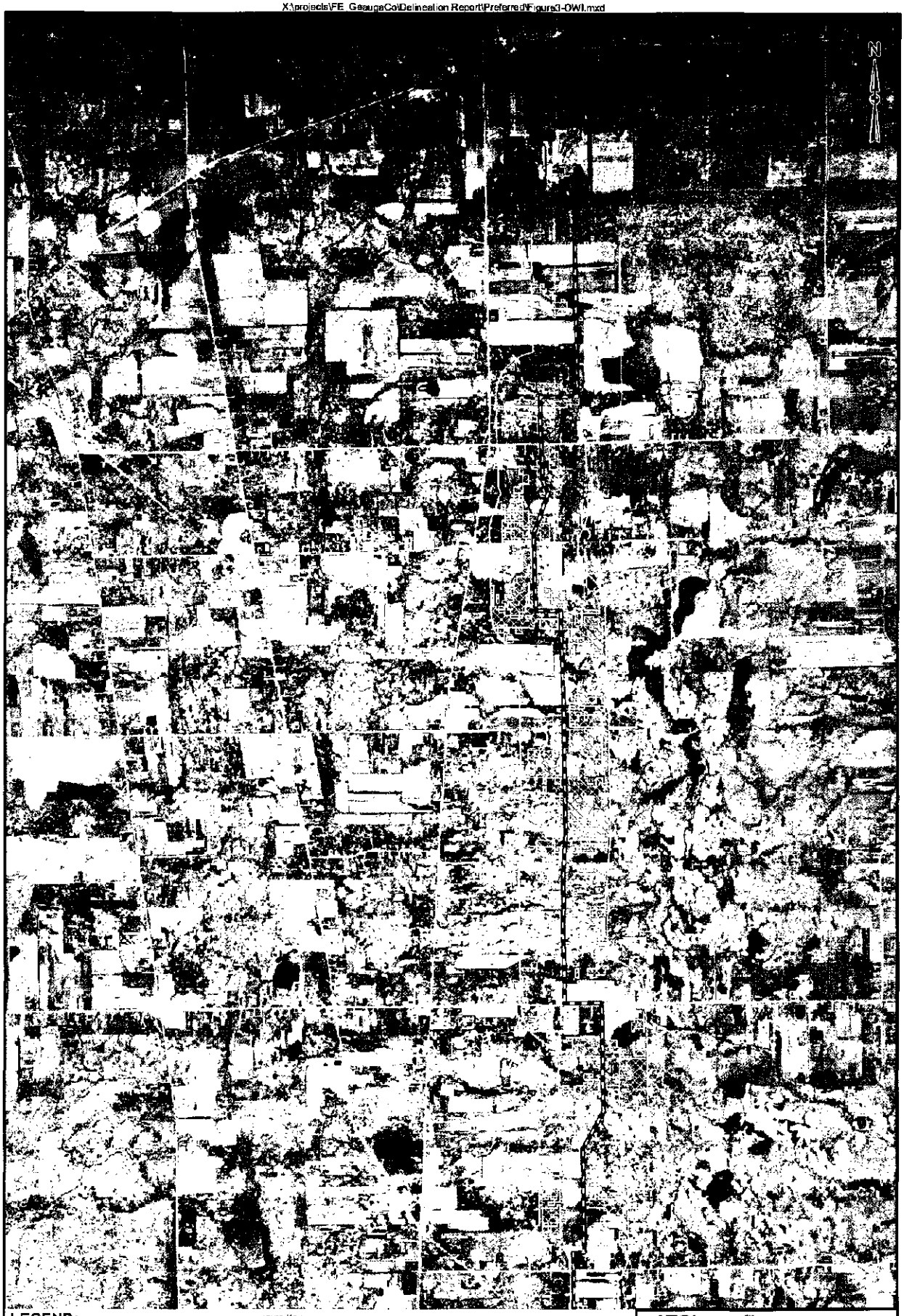

LEGEND:

- Existing Transmission Line
- Proposed Substation
- Preferred Route
- 2000 ft. Corridor
- OWI Designation

Figure Key

0 2,000 4,000

Scale in Feet

BASE MAP SOURCE:
Geauga Co. Auditor Aerials, 2006

ATSI | Illuminating Company | Berkshire County 138 kV | Sierra Transmission, LLC

FIGURE 3B
OHIO WETLAND INVENTORY MAP

JOB NO. 14946398

URS

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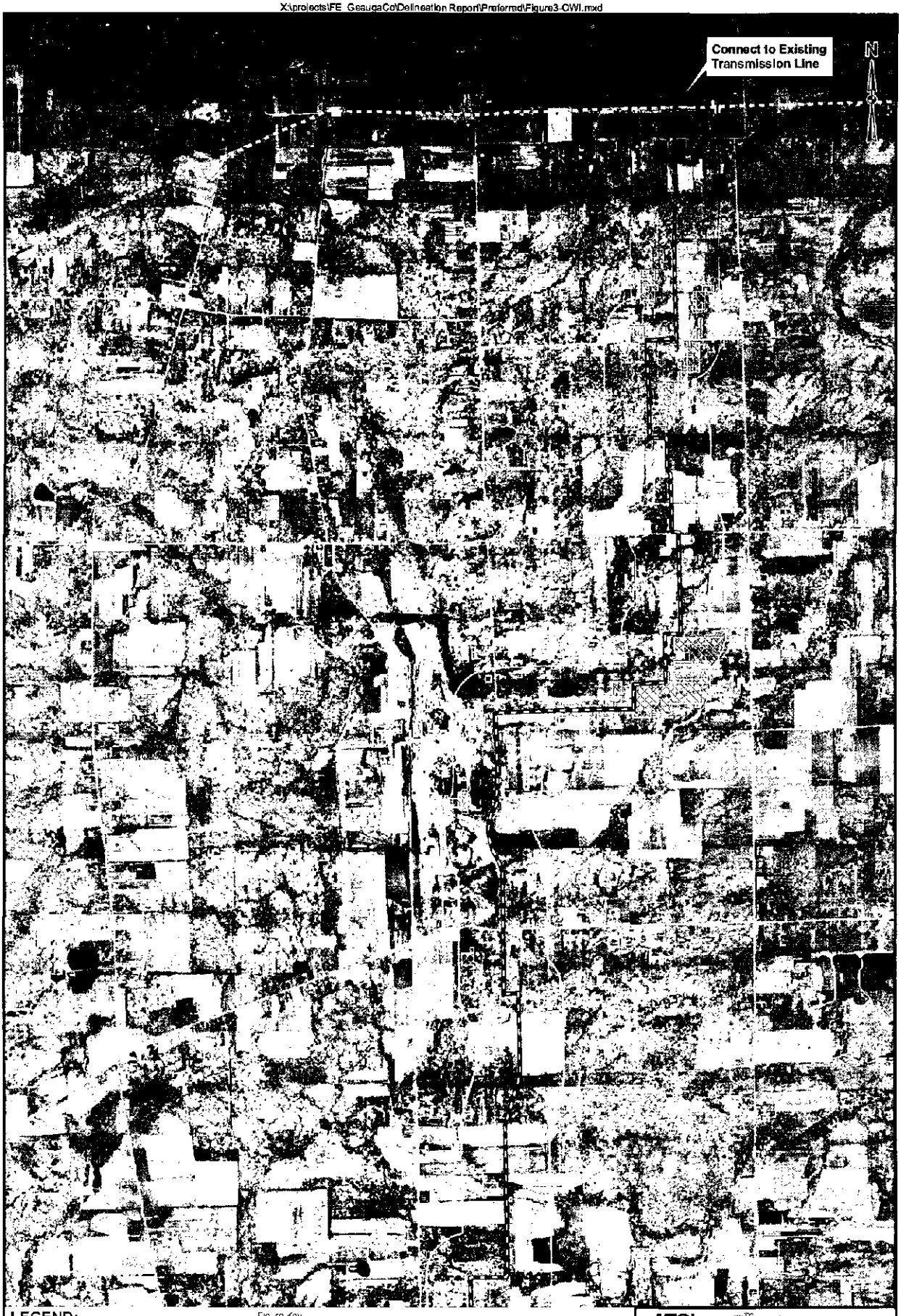
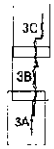


LEGEND:

- Existing Transmission Line
- Proposed Substation
- Preferred Route
- 2000 ft. Corridor
- OWI Designation

Figure Key



0 2,000 4,000

Scale in Feet

BASE MAP SOURCE
Geauga Co. Auditor Aerials, 2006

ATSI — The Illuminating Company — Geauga County 138 kV Electric Transmission Line

FIGURE 3C
OHIO WETLAND INVENTORY MAP

JOB NO. 14946398

URS

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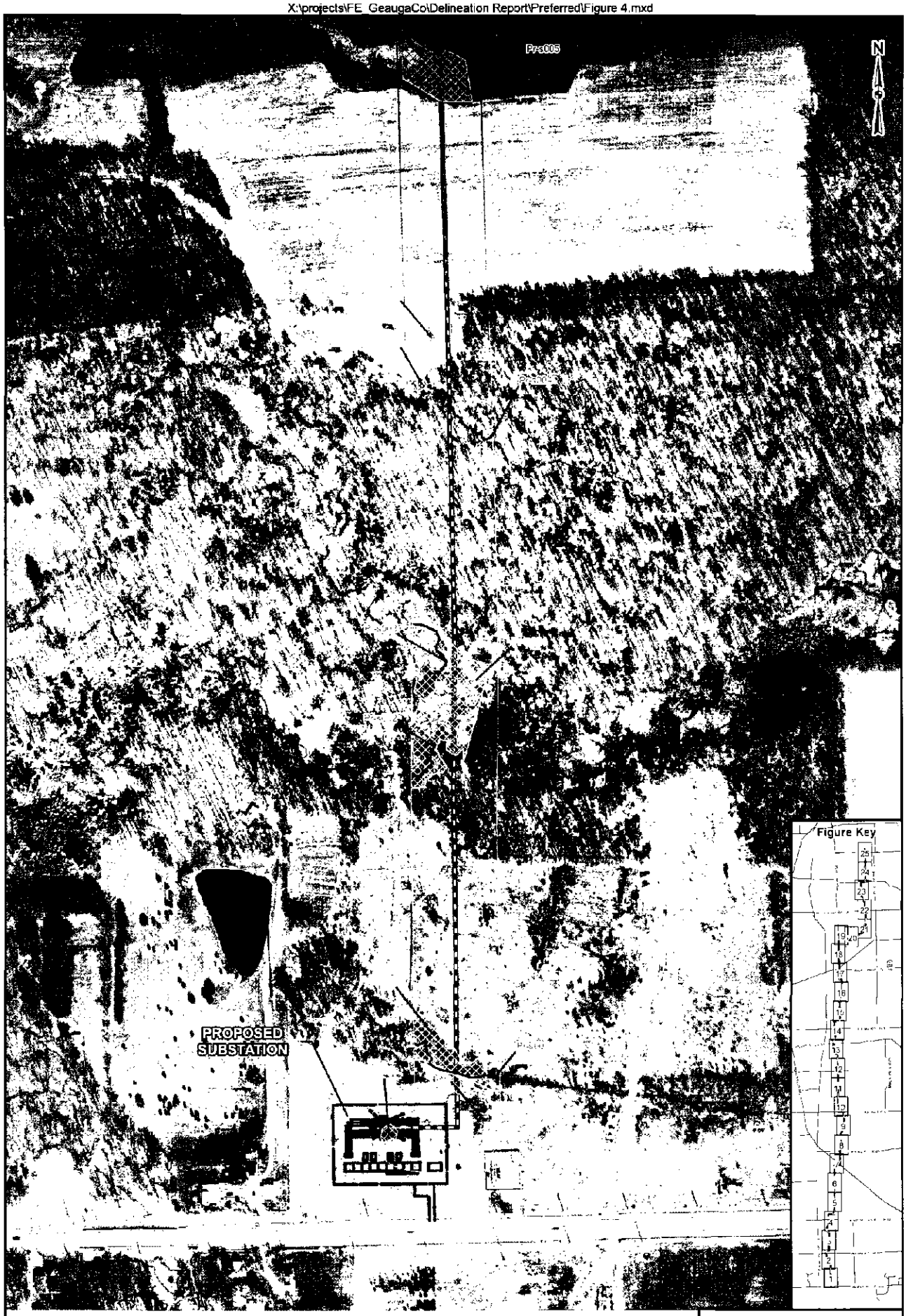

LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE:
Geauga County Auditor
2006 Aerial Photography

ATSI | Illuminating Company | Geauga County 138 kV Electric Transmission Line

FIGURE 4A
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14946356

URS

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LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE
Geauga County Auditor
2006 Aerial Photography

ATSI | Illuminating Company | Geauga County 138 kV Short Circuit Assessment

FIGURE 4B
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14946398

URS

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LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- *Delineated Stream*
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE
Geauga County Auditor
2006 Aerial Photography

ATSI Illuminating Company Geauga County, 115 kV Seismic Transmission Line

FIGURE 4C
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

URS

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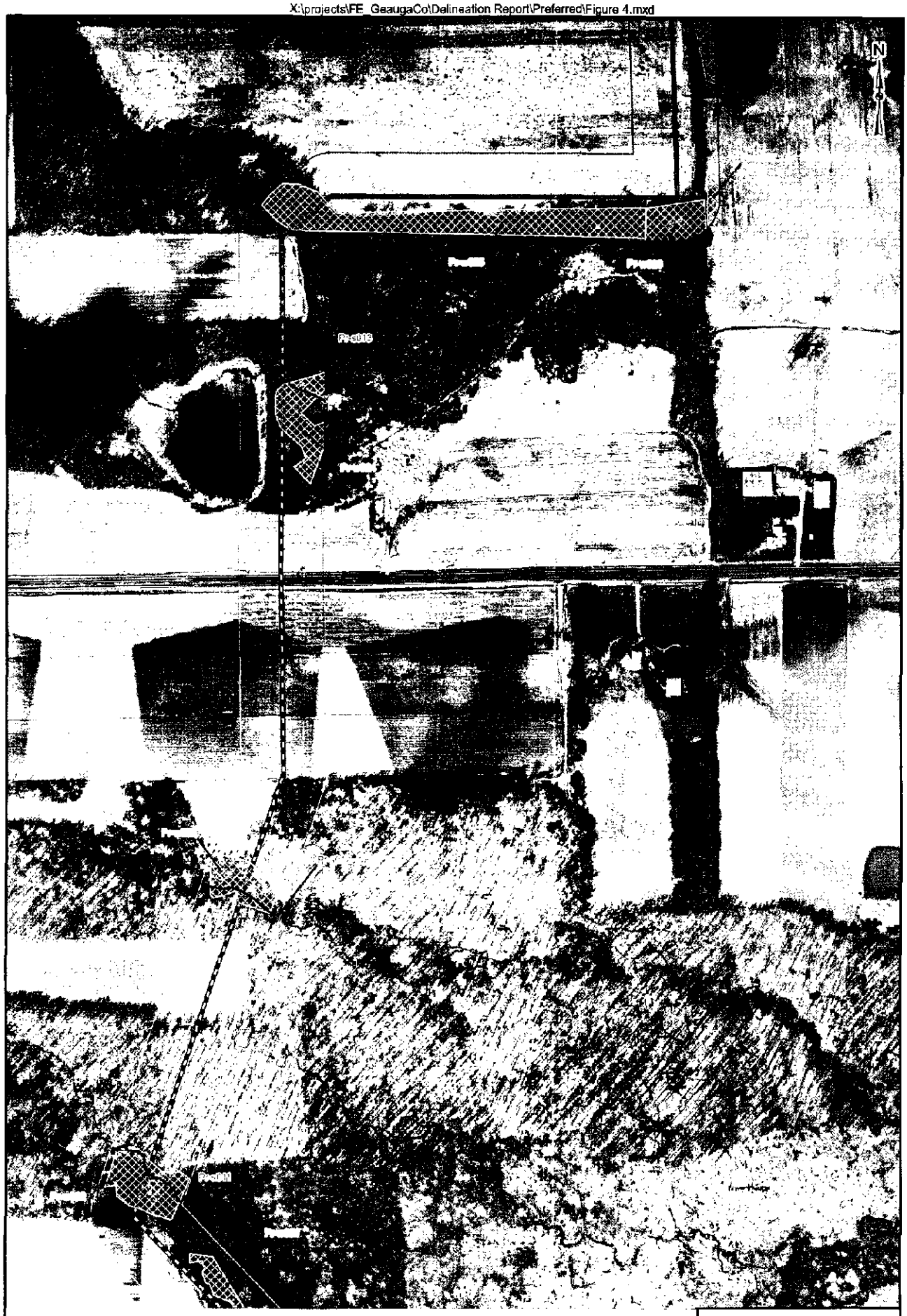

LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE:
Geauga County Auditor
2006 Aerial Photography

ATSI Transmission Company — Geauga County 138 kV Section Transmission Line

FIGURE 4D
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14946398

URS

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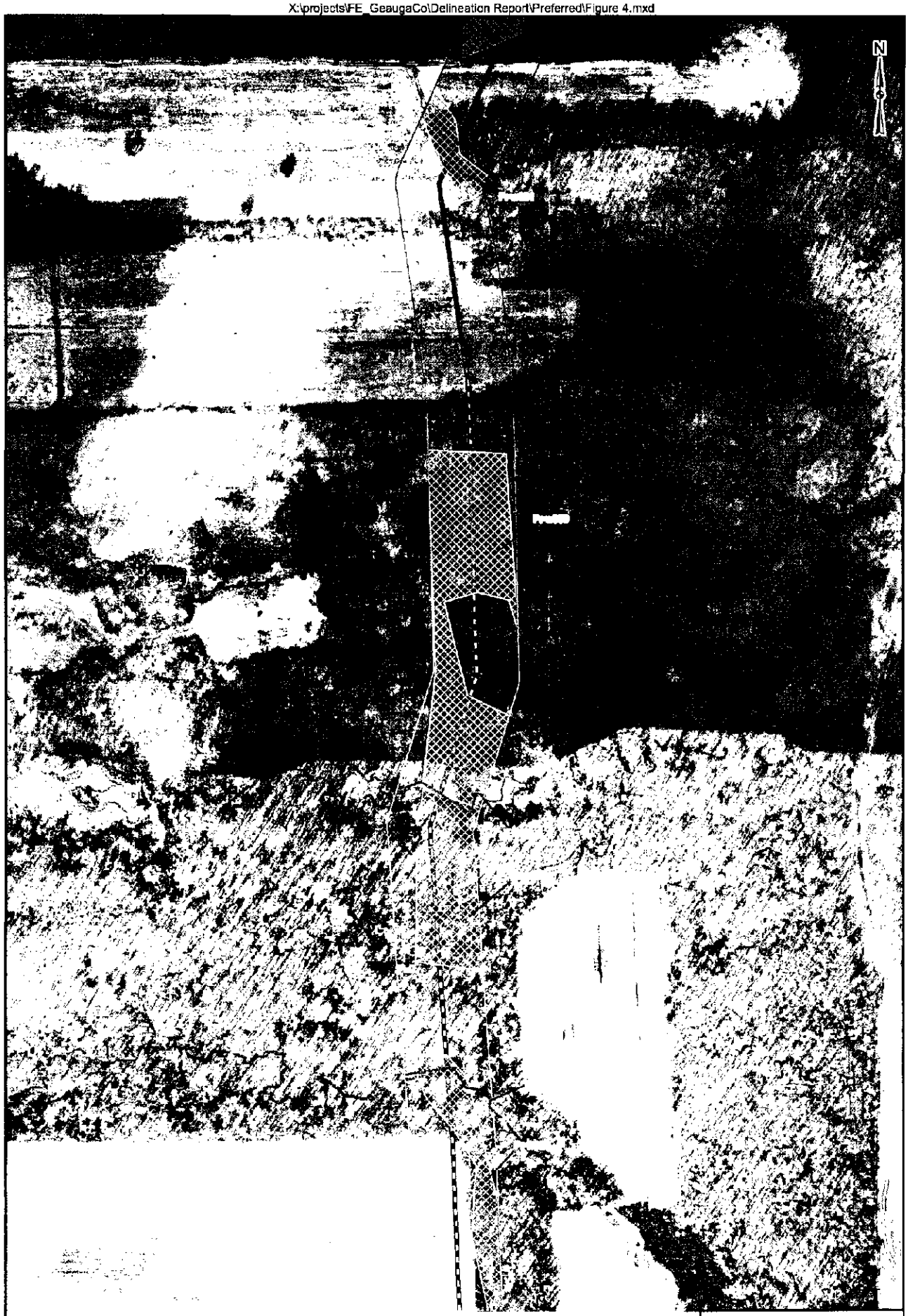

LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE
Geauga County Auditor
2006 Aerial Photography

ATSI | Illuminating Company | Geauga County 138 kV Double Circuit Loop

FIGURE 4E
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14946398

URS

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LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE
Geauga County Auditor
2006 Aerial Photography

ATSI Transmission Company — Geauga County 138 kV Electric Transmission Line

FIGURE 4F
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14946398

URS

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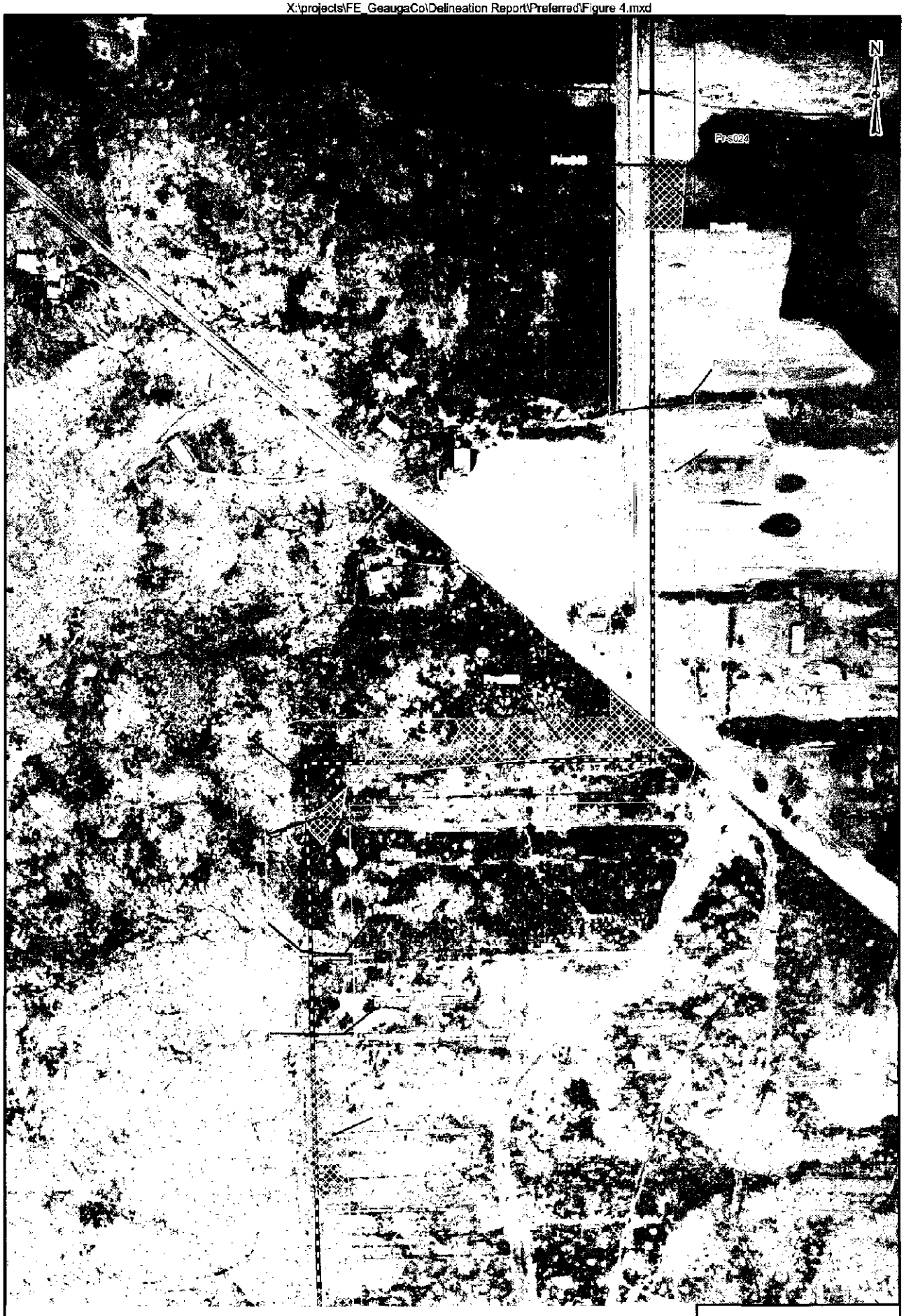

LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE:
Geauga County Auditor
2006 Aerial Photography

ATSI Illuminating Company Geauga County 138 kV Electric Transmission Line

FIGURE 4G
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14946-08

URS

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LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE
Geauga County Acc for
2006 Aerial Photography

ATSI Transmission Company Geauga County 138 kV Electric Transmission Line

FIGURE 4H
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 13948396

URS

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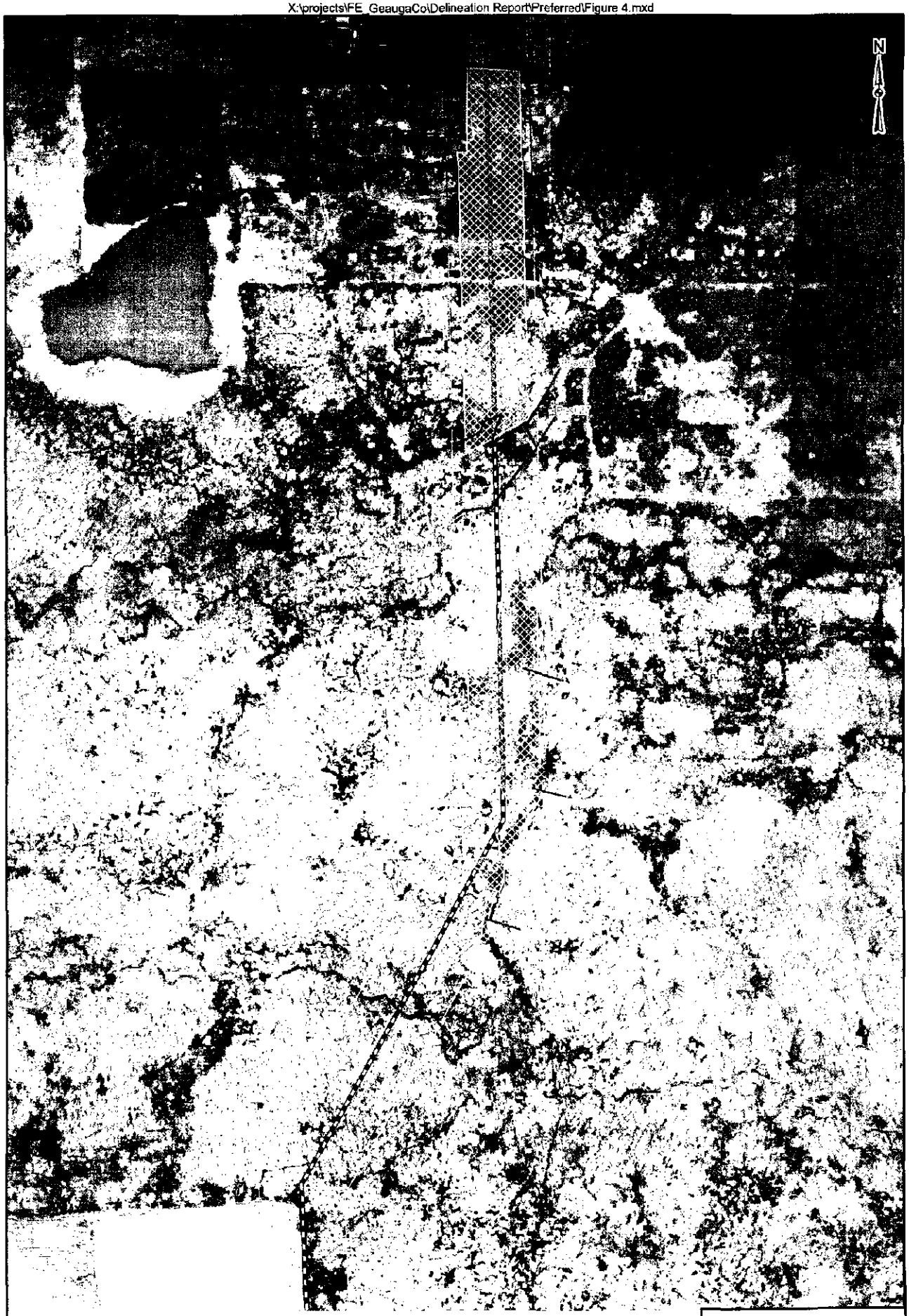

LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE:
Geauga County Auditor
2006 Aerial Photography

ATSI Transmission Company Geauga County 138 kV Electric Transmission Line

FIGURE 4I
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14646328

URS

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LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE
Geauga County Auditor
2006 Aerial Photography

ATSI | Illuminating Company | Geauga County 138 kV Electric Transmission Line

FIGURE 4J
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14946058

URS

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LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE:
Geauga County Auditor
2006 Aerial Photography

ATSI Illuminating Company Geauga County 138 kV Electric Transmission Line

FIGURE 4K
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14946396

URS

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LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE:
Geauga County Auditor
2006 Aerial Photography

ATSI Illuminating Company Geauga County 138 kV Electric Transmission Line

FIGURE 4L
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14548-8

URS

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LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE:
Geauga County Auditor
2006 Aerial Photography

ATSI | Illuminating Company | Geauga County 138 kV Electric Transmission Line

FIGURE 4M
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14965398

URS

X:\projects\FE_GeaugaCo\Delineation Report\Preferred\Figure 4.mxd

LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE
Geauga County Auditor
2006 Aerial Photography

ATSI Transmitting Company — Geauga County 138 kV Electric Transmission Line

FIGURE 4N
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

JOB NO. 14946398

URS

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LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE
Geauga County Auditor
2006 Aerial Photography

ATSI Illuminating Company Geauga County 138 kV Loop Transmission Line

FIGURE 4O
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14946396

URS

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LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE:
Geauga County Auditor
2006 Aerial Photography

ATSI Illuminating Company Geauga County 138 kV Electric Transmission Line

FIGURE 4P
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

OB NO. 14948198

URS

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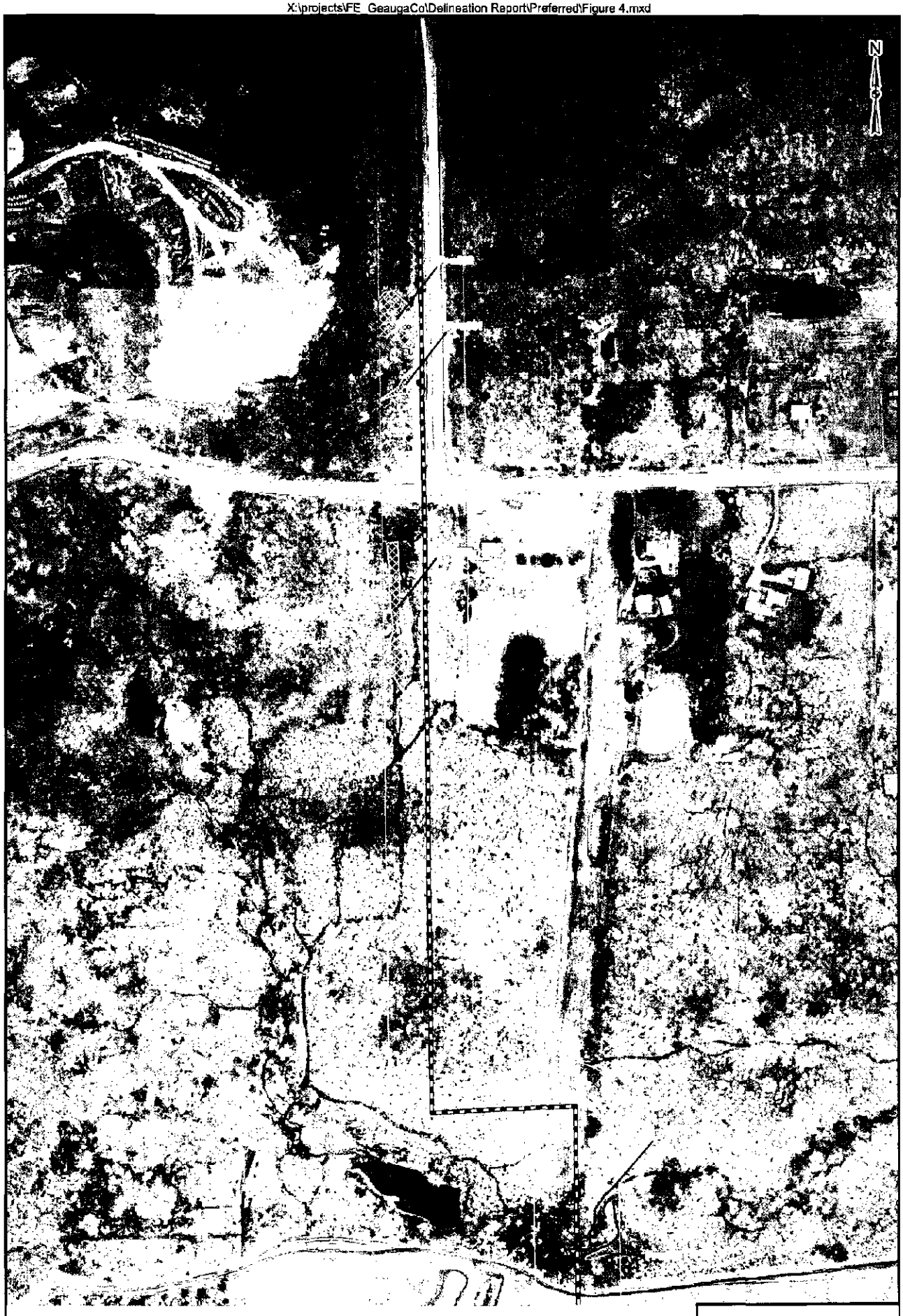


LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE:
Geauga County Auditor
2006 Aerial Photography

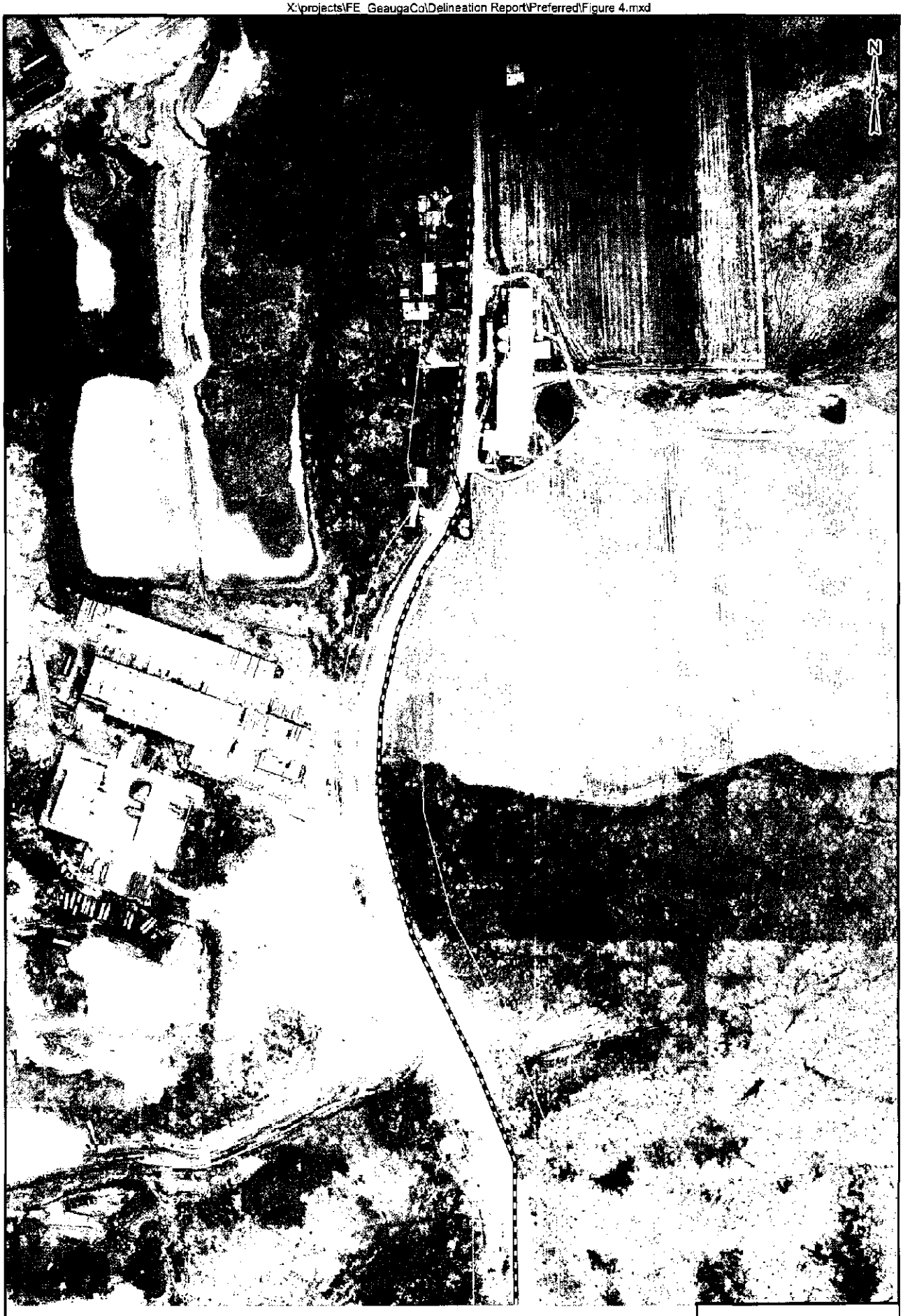
ATSI | Illuminating Company | Proposed 345kV Ashtabula-Perry Transmission Line

FIGURE 4Q
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14918398

URS

X:\projects\FE_GeaugaCo\Delineation Report\Preferred\Figure 4.mxd



LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE
Geauga County Aerial for
2006 Aerial Photography

ATSI | Illuminating Company | Geauga County Portion of Existing Transmission Line

FIGURE 4R
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 1945396

URS

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LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE
Geauga County Auditor
2008 Aerial Photography

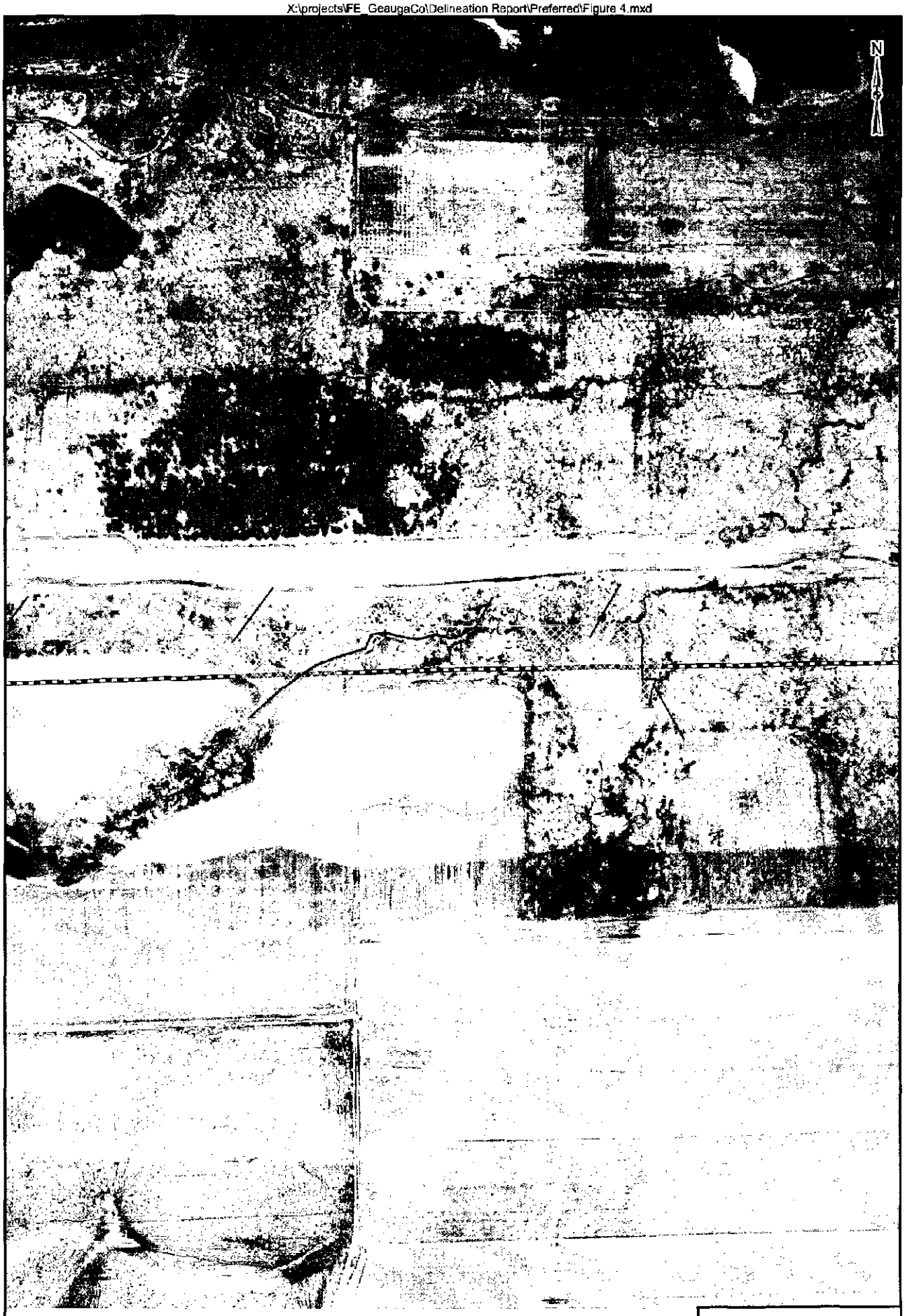
ATSI Transmission Company Geauga County 138 kV Electric Transmission Line

FIGURE 4S
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14494-008

URS

X:\projects\FE_GeaugaCo\Delineation Report\Preferred\Figure 4.mxd



LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE:
Geauga County Auditor
2006 Aerial Photography

ATSI | Illuminating Company | Cleveland Electric Illuminating Company | Ohio Edison Company | Pennsylvania Power Company | Toledo Edison Company | American Transmission Systems, Incorporated

FIGURE 4T
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14948398

URS

X:\projects\FE_GeaugaCo\Delineation Report\Preferred\Figure 4.mxd

LEGEND:

- Preferred Route
- *Preferred Route 200ft. Corridor*
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE
Geauga County Auditor
2006 Aerial Photography

ATSI — Illuminating Company — Geauga County 138 kV Existing Transmission Line

FIGURE 4U
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14944398

URS

X:\projects\FE_GeaugaCo\Delineation Report\Preferred\Figure 4.mxd

LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE:
Geauga County Auditor
2006 Aerial Photography

ATSI Illuminating Company Geauga County 138 kV Electric Transmission Line

FIGURE 4V
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14946308

URS

X:\projects\FE_GeaugaCo\Delineation Report\Preferred\Figure 4.mxd

LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE
Geauga County Auditor
2006 Aerial Photography

ATSI Illuminating Company Geauga County 138 kV Electric Transmission Line

FIGURE 4W
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14944-098

URS

X:\projects\FE_GeaugaCo\Delineation Report\Preferred\Figure 4.mxd

LEGEND:

- Preferred Route
- Preferred Route 200ft. Corridor
- Delineated Stream
- Delineated Wetland
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE:
Geauga County Auditor
2006 Aerial Photography

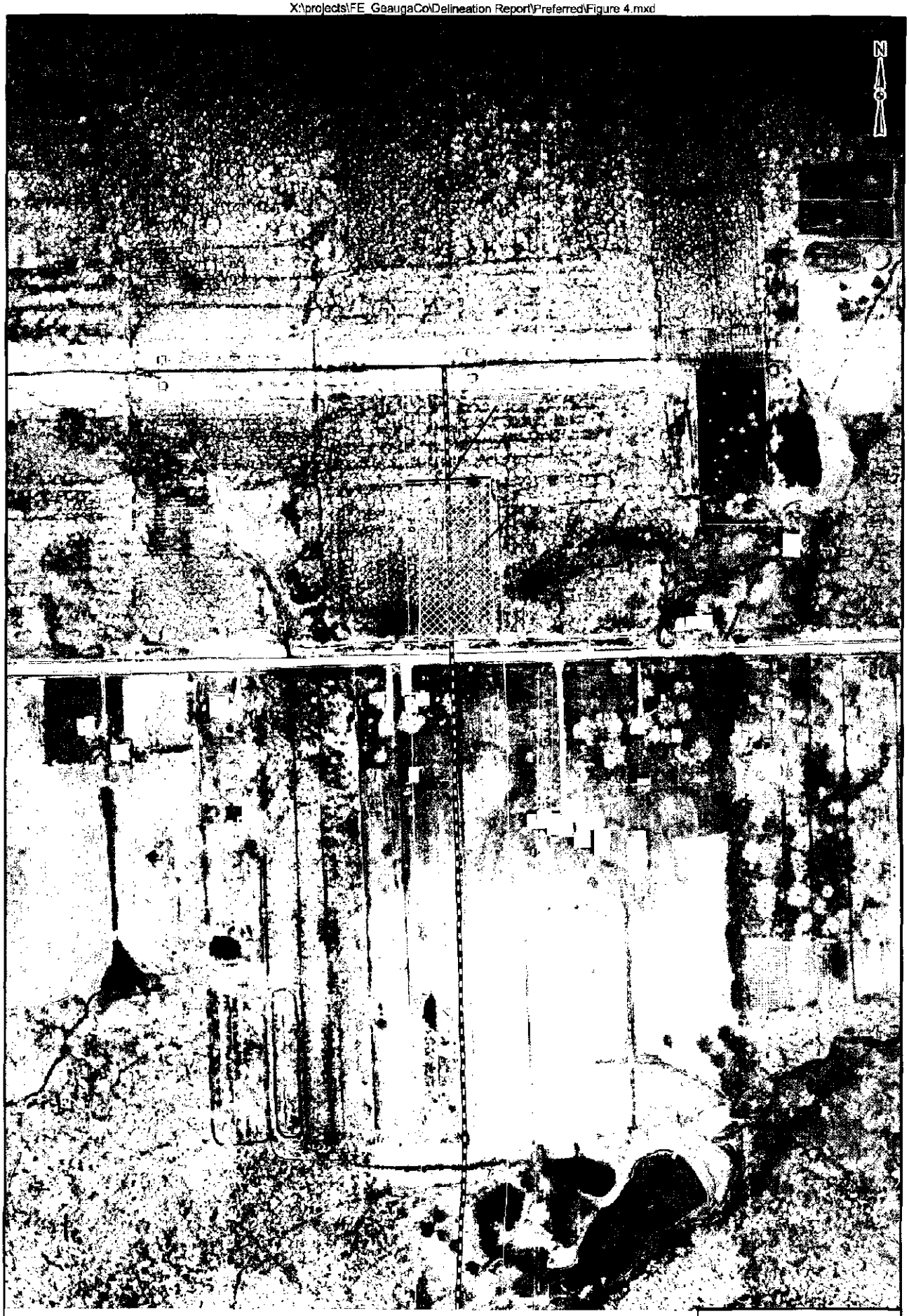
ATSI Transmission Company — Geauga County 138 kV Electric Transmission Line

FIGURE 4X
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 14946308

URS

X:\projects\FE_GeaugaCo\Delineation Report\Preferred\Figure 4.mxd



LEGEND:

- *Preferred Route*
- Preferred Route 200ft. Corridor
- Delineated Stream
- *Delineated Wetland*
- Proposed Substation
- Existing Transmission Line

0 200 400

Feet

BASE MAP SOURCE:
Geauga County Auditor
2009 Aerial Photography

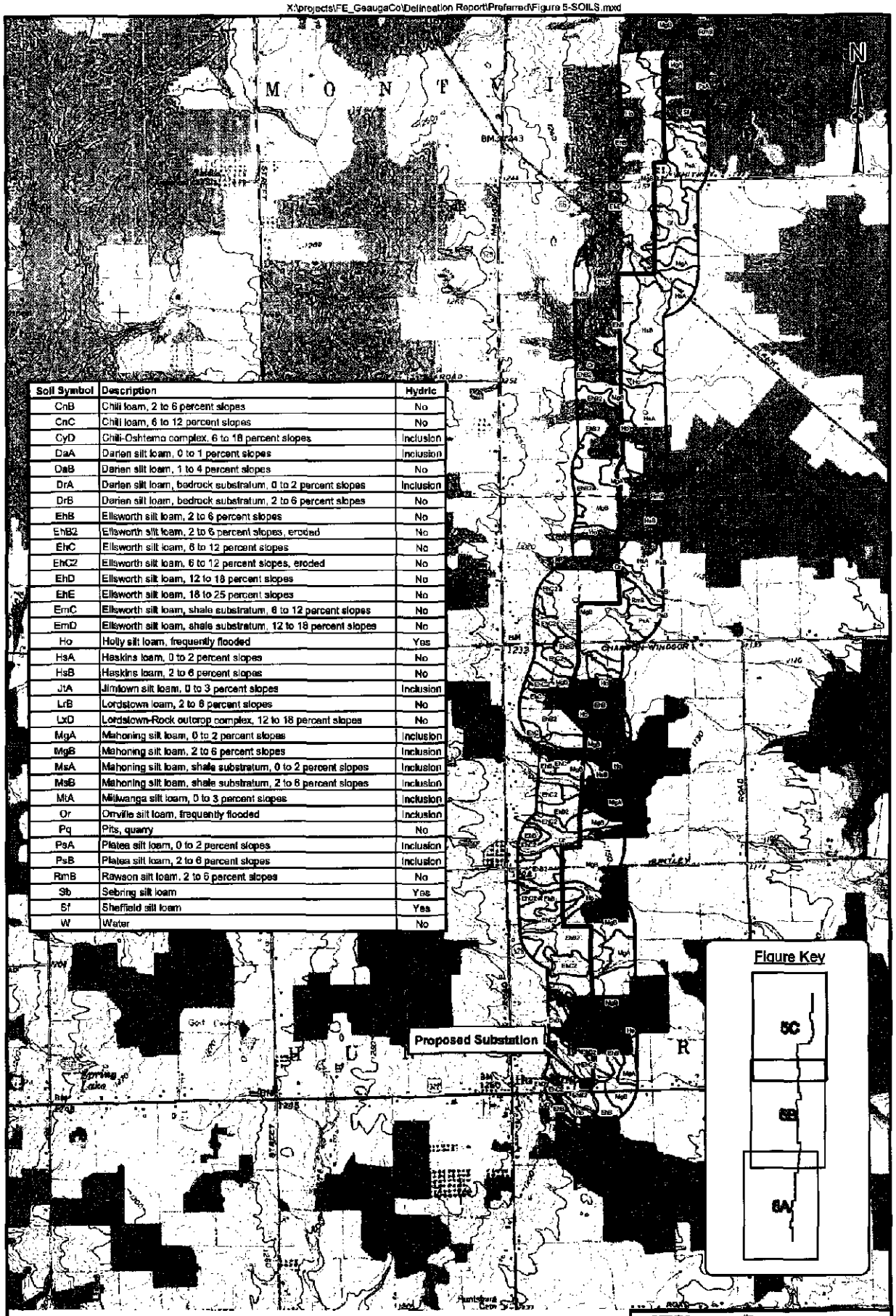
ATSI | The Illuminating Company | Geauga County 138 kV Loop Transmission Line

FIGURE 4Y
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

JOB NO. 49482.00

URS

X:\projects\FE_GeaugaCo\Delineation Report\Prefarred\Figure 5-SOILS.mxd



Soil Symbol	Description	Hydric
CnB	Chili loam, 2 to 6 percent slopes	No
CnC	Chili loam, 6 to 12 percent slopes	No
CyD	Chili-Oshtemo complex, 6 to 18 percent slopes	Inclusion
DaA	Darien silt loam, 0 to 1 percent slopes	Inclusion
DaB	Darien silt loam, 1 to 4 percent slopes	No
DrA	Darien silt loam, bedrock substratum, 0 to 2 percent slopes	Inclusion
DrB	Darien silt loam, bedrock substratum, 2 to 6 percent slopes	No
EhB	Ellsworth silt loam, 2 to 6 percent slopes	No
EhB2	Ellsworth silt loam, 2 to 6 percent slopes, eroded	No
EhC	Ellsworth silt loam, 6 to 12 percent slopes	No
EhC2	Ellsworth silt loam, 6 to 12 percent slopes, eroded	No
EhD	Ellsworth silt loam, 12 to 18 percent slopes	No
EhE	Ellsworth silt loam, 18 to 25 percent slopes	No
EmC	Ellsworth silt loam, shale substratum, 6 to 12 percent slopes	No
EmD	Ellsworth silt loam, shale substratum, 12 to 18 percent slopes	No
Ho	Holly silt loam, frequently flooded	Yes
HsA	Haskins loam, 0 to 2 percent slopes	No
HsB	Haskins loam, 2 to 6 percent slopes	No
JtA	Jimtown silt loam, 0 to 3 percent slopes	Inclusion
LrB	Lordstown loam, 2 to 6 percent slopes	No
LxD	Lordstown-Rock outcrop complex, 12 to 18 percent slopes	No
MgA	Mahoning silt loam, 0 to 2 percent slopes	Inclusion
MgB	Mahoning silt loam, 2 to 6 percent slopes	Inclusion
MsA	Mahoning silt loam, shale substratum, 0 to 2 percent slopes	Inclusion
MsB	Mahoning silt loam, shale substratum, 2 to 6 percent slopes	Inclusion
MtA	Millwanga silt loam, 0 to 3 percent slopes	Inclusion
Or	Orrville silt loam, frequently flooded	Inclusion
Pq	Pits, quarry	No
PsA	Platea silt loam, 0 to 2 percent slopes	Inclusion
PsB	Platea silt loam, 2 to 6 percent slopes	Inclusion
RmB	Rawson silt loam, 2 to 6 percent slopes	No
Sb	Sebring silt loam	Yes
Sf	Sheffield silt loam	Yes
W	Water	No

LEGEND:
- Preferred Route
- 2000 ft Corridor
- Proposed Substation
- Soil Series (within 1000 ft)
- Existing Transmission Line

0 2,000 4,000
Scale in Feet

BASE MAP SOURCE:
USGS 7.5-minute Topographic Maps
Thompson, Ohio (1971);
and East Claridon, Ohio (1970)

ATSI. | FirstEnergy Company | Geauga County 138 kV Electric Transmission Line

FIGURE 5A
PREFERRED ROUTE SOILS MAP

JOB NO. 14946398

URS

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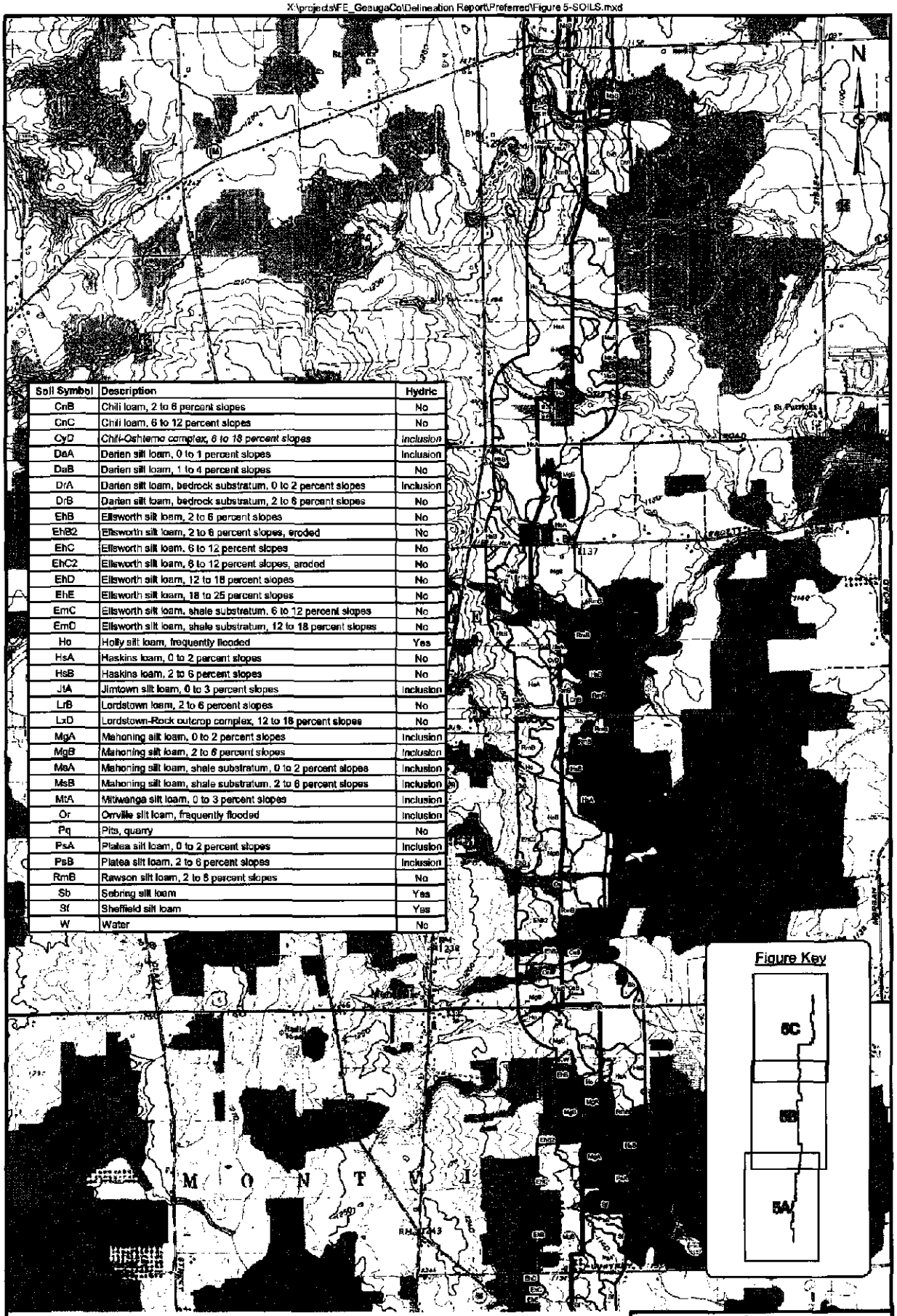

Soil Symbol	Description	Hydric
CnB	Chili loam, 2 to 6 percent slopes	No
CnC	Chili loam, 6 to 12 percent slopes	No
CyD	*Chili-Oshtemo complex, 6 to 18 percent slopes*	*Inclusion*
DaA	Darien silt loam, 0 to 1 percent slopes	Inclusion
DaB	Darien silt loam, 1 to 4 percent slopes	No
DrA	Darien silt loam, bedrock substratum, 0 to 2 percent slopes	Inclusion
DrB	Darien silt loam, bedrock substratum, 2 to 6 percent slopes	No
EhB	Ellsworth silt loam, 2 to 6 percent slopes	No
EhB2	Ellsworth silt loam, 2 to 6 percent slopes, eroded	No
EhC	Ellsworth silt loam, 6 to 12 percent slopes	No
EhC2	Ellsworth silt loam, 6 to 12 percent slopes, eroded	No
EhD	Ellsworth silt loam, 12 to 18 percent slopes	No
EhE	Ellsworth silt loam, 18 to 25 percent slopes	No
EmC	Ellsworth silt loam, shale substratum, 6 to 12 percent slopes	No
EmD	Ellsworth silt loam, shale substratum, 12 to 18 percent slopes	No
Ho	Holly silt loam, frequently flooded	Yes
HsA	Haskins loam, 0 to 2 percent slopes	No
HsB	Haskins loam, 2 to 6 percent slopes	No
JtA	Jimtown silt loam, 0 to 3 percent slopes	Inclusion
LrB	Lordstown loam, 2 to 6 percent slopes	No
LxD	Lordstown-Rock outcrop complex, 12 to 18 percent slopes	No
MgA	Mahoning silt loam, 0 to 2 percent slopes	Inclusion
MgB	Mahoning silt loam, 2 to 6 percent slopes	Inclusion
MsA	Mahoning silt loam, shale substratum, 0 to 2 percent slopes	Inclusion
MsB	Mahoning silt loam, shale substratum, 2 to 6 percent slopes	Inclusion
MtA	Mitiwanga silt loam, 0 to 3 percent slopes	Inclusion
Or	Orrville silt loam, frequently flooded	Inclusion
Pq	Pits, quarry	No
PsA	Platea silt loam, 0 to 2 percent slopes	Inclusion
PsB	Platea silt loam, 2 to 6 percent slopes	Inclusion
RmB	Rawson silt loam, 2 to 6 percent slopes	No
Sb	Sebring silt loam	Yes
Sf	Sheffield silt loam	Yes
W	Water	No

LEGEND:
- Preferred Route
- 2000 ft Corridor
- Proposed Substation
- Soil Series (within 1000 ft)
- Existing Transmission Line

0 2,000 4,000
Scale in Feet

BASE MAP SOURCE:
USGS 7.5-minute Topographic Maps
Thompson, Ohio (1971);
and East Claridon, Ohio (1970)

ATSI. Wilmington Company Geauga County 138 kV Electric Transmission Line

FIGURE 5B
PREFERRED ROUTE SOILS MAP

JOB NO. 14946396 URS

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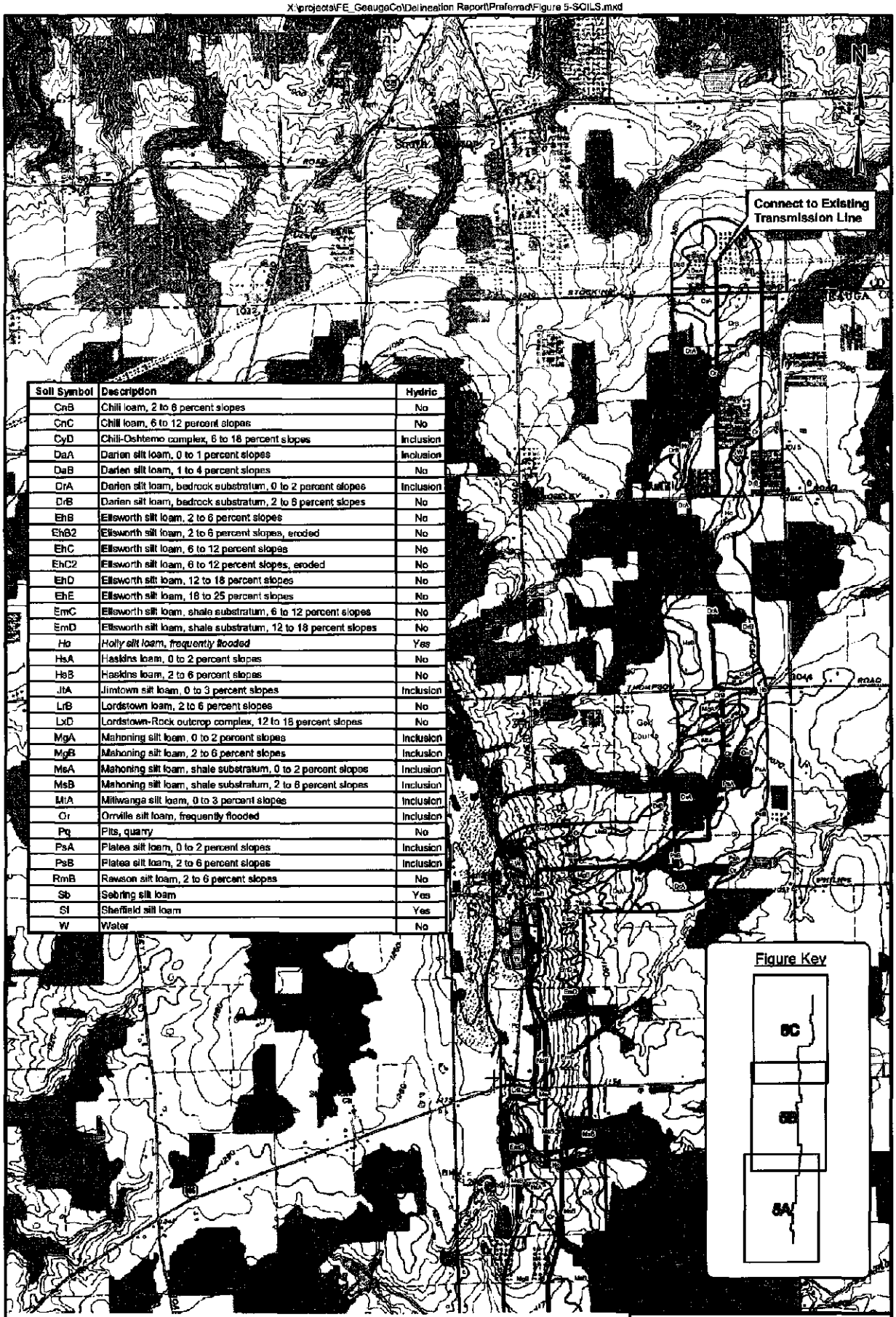

Soil Symbol	Description	Hydric
CnB	Chili loam, 2 to 6 percent slopes	No
CnC	Chili loam, 6 to 12 percent slopes	No
CyD	Chili-Oshtemo complex, 6 to 18 percent slopes	Inclusion
DaA	Darien silt loam, 0 to 1 percent slopes	Inclusion
DaB	Darien silt loam, 1 to 4 percent slopes	No
DrA	Darien silt loam, bedrock substratum, 0 to 2 percent slopes	Inclusion
DrB	Darien silt loam, bedrock substratum, 2 to 6 percent slopes	No
EhB	Ellsworth silt loam, 2 to 6 percent slopes	No
EhB2	Ellsworth silt loam, 2 to 6 percent slopes, eroded	No
EhC	Ellsworth silt loam, 6 to 12 percent slopes	No
EhC2	Ellsworth silt loam, 6 to 12 percent slopes, eroded	No
EhD	Ellsworth silt loam, 12 to 18 percent slopes	No
EhE	Ellsworth silt loam, 18 to 25 percent slopes	No
EmC	Ellsworth silt loam, shale substratum, 6 to 12 percent slopes	No
EmD	Ellsworth silt loam, shale substratum, 12 to 18 percent slopes	No
Ho	*Holly silt loam, frequently flooded*	*Yes*
HsA	Haskins loam, 0 to 2 percent slopes	No
HsB	Haskins loam, 2 to 6 percent slopes	No
JtA	Jimtown silt loam, 0 to 3 percent slopes	Inclusion
LrB	Lordstown loam, 2 to 6 percent slopes	No
LtD	Lordstown-Rock outcrop complex, 12 to 18 percent slopes	No
MgA	Mahoning silt loam, 0 to 2 percent slopes	Inclusion
MgB	Mahoning silt loam, 2 to 6 percent slopes	Inclusion
MsA	Mahoning silt loam, shale substratum, 0 to 2 percent slopes	Inclusion
MsB	Mahoning silt loam, shale substratum, 2 to 6 percent slopes	Inclusion
MtA	Mitiwanga silt loam, 0 to 3 percent slopes	Inclusion
Or	Orrville silt loam, frequently flooded	Inclusion
Pq	Pits, quarry	No
PsA	Platea silt loam, 0 to 2 percent slopes	Inclusion
PsB	Platea silt loam, 2 to 6 percent slopes	Inclusion
RmB	Rawson silt loam, 2 to 6 percent slopes	No
Sb	Sebring silt loam	Yes
Sl	Sheffield silt loam	Yes
W	Water	No

LEGEND:
- Preferred Route
- 2000 ft Corridor
- Proposed Substation
- Soil Series (within 1000 ft)
- Existing Transmission Line

0 2,000 4,000
Scale in Feet

BASE MAP SOURCE:
USGS 7.5-minute Topographic Maps
Thompson, Ohio (1971);
and East Claridon, Ohio (1970)

ATSI. American Transmission Systems, Inc. a subsidiary of FirstEnergy Corp.
Illuminating Company. A FirstEnergy Company
Geauga County 138 kV Electric Transmission Line

FIGURE 5C
PREFERRED ROUTE SOILS MAP

JOB NO. 14946398
URS

APPENDIX A

U.S. ARMY CORPS OF ENGINEERS
WETLAND DELINEATION FORMS

ROUTINE WETLAND DETERMINATION-DATA FORM 1987 MANUAL

Project/Site: Middle Field Detail Survey

Applicant/Owner: First Energy

Investigator(s): Reasby / Brower

Date: 6-24-02 Community ID: PSS

County: Geauga Transect ID:

State: OH Plot ID: RBW001

Do Normal Circumstances exist on the site? (YES) NO

Is the site significantly & recently disturbed?(Atypical Situation) YES (NO)

Is the area a potential Problem Area? (Explain in final remarks) YES (NO)

VEGETATION

Dominant Plant Species	Stratum	Indicator
1 Populus heterophylla	S	FACW+
2 Salix nigra	S	FACW+
3 Salix spp	S	—
4 Cornus Amomum	S	FACW
5 Juncus effusus	H	FACW+
6 Carex blandii	H	FAC
7 G. Lurida	H	OBL
8 C. vulpinoidea	H	OBL
9 Typha angustifolia	H	OBL
10		

Percent of Dominant Species that are OBL FACW or FAC (excluding FAC-) 100 %

Hydrophytic Vegetation Present? (Yes) No

REMARKS:

HYDROLOGY

RECORDED DATA (Describe in Remarks):
- ☐ Stream, Lake or Tide Gauge
- ☒ Aerial Photographs
- ☐ Other
- ☐ None Available

FIELD OBSERVATIONS:
- Depth of Surface Water: — (in.)
- Depth to Free Water in Pit: — (in.)
- Depth to Saturated Soil: — (in.)

Wetland Hydrology Present? (Yes) No

PRIMARY Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☒ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☒ Drainage Patterns in Wetlands

SECONDARY Indicators
- ☒ Oxidized Root Channels in UPPER 12"
- ☒ Water Stained leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

REMARKS:

SOILS

Map Unit Name (Series and Phase) Drainage Class:

Taxonomy (Subgroup): Field Observations Confirm Mapped Type: Yes No

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc
0-6	A	2.5Y 6/2	7.5YR 5/8	many/dist	silty clay
6-	B	Rock			

HYDRIC SOIL INDICATORS

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☒ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Streaking in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List

Hydric Soil Present? Yes No

REMARKS

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is this sampling point a Wetland? (Yes) No

REMARKS

ROUTINE WETLAND DETERMINATION-DATA FORM 1987 MANUAL

Project/Site: _____

Applicant/Owner: _____

Investigator(s): _____

Date: _____ Community ID _____

County: _____ Transect ID _____

State: _____ Plot ID _____

Do Normal Circumstances exist on the site? Yes No

Is the site significantly & recently disturbed? (Atypical Situation) Yes No

Is the area a potential Problem Area? (Explain in final remarks) Yes No

VEGETATION

Dominant Plant Species	Stratum	Indicator
1		
2.		
3		
4		
5		
6		
7.		
8		
9.		
10		

Percent of Dominant Species that are OBL FACW or FAC (excluding FAC-) _____ %

Hydrophytic Vegetation Present? Yes No

REMARKS:

SOILS

HYDRIC SOIL INDICATORS

WETLAND DETERMINATION

ROUTINE WETLAND DETERMINATION-DATA FORM 1987 MANUAL

Project/Site: Middlefield Delphi

Applicant/Owner: First Energy

Investigator(s): RPAsby, L. Brown

Date: 6-26-07 Community ID: Hay

County: Geauga Transect ID:

State: OH Plot ID: RB W-001 UPL

Do Normal Circumstances exist on the site? (YES) NO

Is the site significantly & recently disturbed?(Atypical Situation) YES (NO)

Is the area a potential Problem Area? (Explain in final remarks) YES (NO)

VEGETATION

Dominant Plant Species	Stratum	Indicator
1 Phleum pratense	H	FACU
2 Anthoxanthum odoratum	H	FACU
3 Lotus corniculatus	H	FACU-
4 Poa compressa	H	FACU
5 Andropogon virginicus	H	FACU
6 Danthonia spicata	H	UPL
7		
8		
9		
10		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 0 %

Hydrophytic Vegetation Present? Yes (No)

REMARKS

HYDROLOGY

RECORDED DATA (Describe in Remarks):
- ☐ Stream, Lake or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other
- ☐ None Available

FIELD OBSERVATIONS:
- Depth of Surface Water: _____ (in.)
- Depth to Free Water in Pit: _____ (in.)
- Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Present? Yes (No)

REMARKS

PRIMARY Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☒ Drainage Patterns ~~in Wetlands~~

SECONDARY Indicators
- ☐ Oxidized Root Channels in UPPER 12"
- ☐ Water Stained leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

SOILS

Map Unit Name (Series and Phase) _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type: Yes No

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc
0-6	A	10YR 5/3	—	—	

HYDRIC SOIL INDICATORS

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Streaking in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List

Hydric Soil Present? Yes (No)

REMARKS

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No)

Wetland Hydrology Present? Yes (No)

Hydric Soils Present? Yes (No)

REMARKS

Is this sampling point a Wetland? Yes (No)

ROUTINE WETLAND DETERMINATION-DATA FORM 1987 MANUAL

Project/Site: _____

Applicant/Owner: _____

Investigator(s) _____

Date _____ Community ID: _____

County: _____ Transect ID _____

State: _____ Plot ID _____

Do Normal Circumstances exist on the site? Yes No

Is the site significantly & recently disturbed? (Atypical Situation) Yes No

Is the area a potential Problem Area? (Explain in final remarks) Yes No

VEGETATION

Dominant Plant Species	Stratum	Indicator
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Percent of Dominant Species that are OBL FACW or FAC (excluding FAC-): _____ %

Hydrophytic Vegetation Present? Yes No

REMARKS:

SOILS

Mapped Type: _____

Drainage Class: _____

Field Observations

Taxonomy (Subgroup) Matches Type Yes No

Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size	Texture, Concretions, Structure, etc.

HYDRIC SOIL INDICATORS

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low Matrix Chroma
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Hydric Soil Present? Yes No

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No

Wetland Hydrology Present? Yes No

Hydric Soils Present? Yes No

Wetland Determination Yes No

Pr-W002

1987 USACE MANUAL ROUTINE WETLANDS DETERMINATION DATA FORM

PROJECT SITE:
COUNTY:
STATE:
INVESTIGATORS: Robert Repasky
DATE:

APPLICANT OWNER:
COMMUNITY ID: PEM / PSS
TRANSECT ID:
PLOT ID: RBW002

Do Normal Circumstances Exist On The Site?	(Yes)	No
Is The Site Significantly and Recently Disturbed? (Atypical Situation)	Yes	(No)
Is The Area A Potential Problem Area? (Explain in Remarks)	Yes	(No)

VEGETATION:

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Juncus effusus	Herb	FACW+	9.		
2. Salix rigida?	Shrub	OBL	10.		
3. Cornus amomum	Shrub	FACW	11.		
4. Juncus tenuis	Herb	FAC-	12.		
5. Carex vulpinoidea	Herb	OBL	13.		
6. Populus deltoides	Tree	FAC	14.		
7.			15.		
8.			16.		

Percent of Dominant Species That Are OBL, FACW, or FAC (Excluding FAC-): ~~80~~ 80
Hydrophytic Vegetation Present: (Yes) No
Remarks:

HYDROLOGY:
RECORDED DATA (Describe in Remarks):
___Stream, Lake, or Tide Gauge
___Aerial Photographs
___Other
___None Available

FIELD OBSERVATIONS:
Depth of Surface Water: none (inches)
Depth of Free Water in Pit: none (inches)
Depth to Saturated Soils: surface mpt (inches)

PRIMARY INDICATORS:
___Inundated
✓ Saturated in the Upper 12 inches
___Water Marks
___Drift Lines
___Sediment Deposits
___Drainage Patterns in Wetlands

SECONDARY INDICATORS:
✓ Oxidized Root Channels in Upper 12 inches
___Water Stained Leaves
___Local Soil Survey Data
✓ FAC-Neutral Test
___Other (Explain in Remarks)

Wetland Hydrology Present? (Yes) No
Remarks:

SOILS:
Map Unit Name (Series and Phase):
Taxonomy (Subgroup):
Drainage Class:
Field Observation Confirm Mapped Type: Yes No

PROFILE DESCRIPTION:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle (Abundance / Contrast)	Texture
0-4	A	10YR 5/1	7.5YR 5/6	5%	silty clay
Rock	B	rock			
	C				

HYDRIC SOIL INDICATORS:
___Histosol
___Histic Epipedon
___Sulfidic Odor
___Aquic Moisture Regime
___Reducing Conditions
✓ Gleyed/ Low-Chroma Soils
___Concretions
___Organic Streaking in Sandy Soils
___Listed on Local Hydric Soils List ?
___Listed on National Hydric Soils List
___Other (see Remarks)

Hydric Soils Present? Yes No
Remarks:

Hydrophytic Vegetation Present?	(Yes)	No
Wetland Hydrology Present?	(Yes)	No
Hydric Soils Present?	(Yes)	No
Is This Sampling Point a Wetland?	(Yes)	No

Remarks:

PROJECT:		CLIENT:	
TECHNICIAN:		WATER TABLE:	
LOCATION:		DATE:	COMPLETION DEPTH:
TYPE OF TEST:		TEST NUMBER:	

ELEV	DESCRIPTION	DEPTH (FT or IN)		REMARKS
		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16		

ROUTINE WETLAND DETERMINATION-DATA FORM 1987 MANUAL

Project/Site: Middlefield Detail

Applicant/Owner: First Energy

Investigator(s): RPASky, L. Brown

Date: 6-26-07 Community ID: Hay

County: Geauga Transect ID:

State: OH Plot ID: RB W-002 UPL

Do Normal Circumstances exist on the site? YES NO

Is the site significantly & recently disturbed?(Atypical Situation) YES NO

Is the area a potential Problem Area? (Explain in final remarks) YES NO

VEGETATION

Dominant Plant Species	Stratum	Indicator
1 Phleum pratense	H	FACU
2 Anthoxanthum odoratum	H	FACU
3 Lotus corniculatus	H	FACU-
4 Poa compressa	H	FACU
5 Andropogon virginicus	H	FACU
6 Danthonia sp. cata	H	UPL
7		
8		
9		
10		

Percent of Dominant Species that are OBL FACW or FAC (excluding FAC-) 0 %

Hydrophytic Vegetation Present? Yes No

REMARKS

HYDROLOGY

RECORDED DATA (Describe in Remarks):
- ☐ Stream, Lake or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other
- ☐ None Available

FIELD OBSERVATIONS:
- Depth of Surface Water: _____ (in.)
- Depth to Free Water in Pit _____ (in.)
- Depth to Saturated Soil _____ (in.)

Wetland Hydrology Present? Yes No

REMARKS

PRIMARY Indicators:
- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☒ Drainage Patterns ~~in Wetlands~~

SECONDARY Indicators
- ☐ Oxidized Root Channels in UPPER 12"
- ☐ Water Stained leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

SOILS

Map Unit Name (Series and Phase) _____ Drainage Class: _____

Taxonomy (Subgroup) _____ Field Observations Confirm Mapped Type: Yes No

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle (Munsell Moist)	Mottle Abundance/Contrast	Texture Concretions, Structure, etc.
0-6	A	10YR 5/3	—	—	

HYDRIC SOIL INDICATORS

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☐ Gleyed or Low-Chroma Colors
- ☐ Concretions
- ☐ High Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other (Explain in Remarks)

Hydric Soil Present? Yes No

REMARKS

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No

Wetland Hydrology Present? Yes No

Hydric Soils Present? Yes No

Is this sampling point a Wetland? Yes No

REMARKS

Pr-WL003

1987 USACE MANUAL ROUTINE WETLANDS DETERMINATION DATA FORM

PROJECT SITE:
COUNTY:
STATE:
INVESTIGATORS: Robert Repasky
DATE:

APPLICANT OWNER:
COMMUNITY ID: PEM/PSS
TRANSECT ID:
PLOT ID: RBW002

Do Normal Circumstances Exist On The Site?	(Yes)	No
Is The Site Significantly and Recently Disturbed? (Atypical Situation)	Yes	(No)
Is The Area A Potential Problem Area? (Explain in Remarks)	Yes	(No)

VEGETATION:

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Juncus effusus		FACW+	9.		
2. Salix rigida?		OBL	10.		
3. Cornus amomum		FACW	11.		
4. Juncus tenuis		FAC-	12.		
5. Carex vulpinoidea		OBL	13.		
6. Populus deltoid		FAC	14.		
7.			15.		
8.			16.		

Percent of Dominant Species That Are OBL, FACW, or FAC (Excluding FAC-): 80
Hydrophytic Vegetation Present: (Yes) No
Remarks:

HYDROLOGY:

RECORDED DATA (Describe in Remarks):
___Stream, Lake, or Tide Gauge
___Aerial Photographs
___Other
___None Available

FIELD OBSERVATIONS:
Depth of Surface Water: none (inches)
Depth of Free Water in Pit: none (inches)
Depth to Saturated Soils: surface in part (inches)

PRIMARY INDICATORS:
✓ Inundated
✓ Saturated in the Upper 12 inches
___Water Marks
___Drift Lines
___Sediment Deposits
___Drainage Patterns in Wetlands

SECONDARY INDICATORS:
✓ Oxidized Root Channels in Upper 12 inches
___Water Stained Leaves
___Local Soil Survey Data
✓ FAC-Neutral Test
___Other (Explain in Remarks)

Wetland Hydrology Present? (Yes) No
Remarks:

SOILS:
Map Unit Name (Series and Phase):
Taxonomy (Subgroup):
Drainage Class:
Field Observation Confirm Mapped Type: Yes No

PROFILE DESCRIPTION:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle (Abundance / Contrast)	Texture
0-4	A	10YR 5/1	7.5YR 5/8	5%	silty clay
4+	B	rock			
	C				

HYDRIC SOIL INDICATORS:
___Histosol
___Histic Epipedon
___Sulfidic Odor
___Aquic Moisture Regime
___Reducing Conditions
✓ Gleyed/ Low-Chroma Soils
___Concretions
___Organic Streaking in Sandy Soils
___Listed on Local Hydric Soils List
___Listed on National Hydric Soils List
___Other (see Remarks)

Hydric Soils Present? Yes No
Remarks:

Hydrophytic Vegetation Present?	(Yes)	No
Wetland Hydrology Present?	(Yes)	No
Hydric Soils Present?	(Yes)	No
Is This Sampling Point a Wetland?	(Yes)	No

Remarks:

PROJECT:	CLIENT:
TECHNICIAN:	WATER TABLE:
LOCATION:	DATE: COMPLETION DEPTH:
TYPE OF TEST:	TEST NUMBER:

ELEV	DESCRIPTION	DEPTH (FT or IN)	REMARKS
		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	

Pr-3003 2 of 3

ROUTINE WETLAND DETERMINATION-DATA FORM 1987 MANUAL

Project/Site: Middle Road Detail

Applicant/Owner: First Energy

Investigator(s): R. Apsley, L. Brown

Date: 6-26-02 Community ID: Hay

County: Geauga Transect ID:

State: OH Plot ID: RB W-002 UPL

Do Normal Circumstances exist on the site? (YES) NO

Is the site significantly & recently disturbed?(Atypical Situation) YES (NO)

Is the area a potential Problem Area? (Explain in final remarks) YES (NO)

VEGETATION

	Dominant Plant Species	Stratum	Indicator
1	Phleum pratense	H	FACU
2	Anthoxanthum odoratum	H	FACU
3	Lotus corniculatus	H	FACU-
4	Poa compressa	H	FACU
5	Andropogon virginicus	H	FACU
6	Danthonia spicata	H	UPL
7			
8			
9			
10			

Percent of Dominant Species that are OBL FACW or FAC (excluding FAC-): 0 %

Hydrophytic Vegetation Present? Yes (No)

REMARKS

HYDROLOGY

RECORDED DATA (Describe in Remarks)
- ☐ Stream, Lake or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other
- ☐ None Available

FIELD OBSERVATIONS
- Depth of Surface Water _____ (in)
- Depth to Free Water in Pit _____ (in)
- Depth to Saturated Soil _____ (in)

Wetland Hydrology Present? Yes (No)

REMARKS

PRIMARY Indicators
- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☑ Drainage Patterns ~~in Wetlands~~

SECONDARY Indicators
- ☐ Oxidized Root Channels in UPPER 12"
- ☐ Water Stained leaves
- ☐ Local Soil Survey Data
- ☐ FAC-Neutral Test
- ☐ Other (Explain in Remarks)

SOILS

Map Unit Name (Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type Yes No

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle (Munsell Moist)	Mottle Abundance/Contrast	Texture Concretions, Structure, etc.
0-6	A	10YR 5/3			

HYDRIC SOIL INDICATORS
- ☐ Histosol
- ☐ Reducing Conditions
- ☐ Organic Streaking in Sandy Soil
- ☐ Histic Epipedon
- ☐ Gleyed or Low-Chroma Colors
- ☐ Listed on Local Hydric Soils List
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Listed on National Hydric Soils List
- ☐ Aquic Moisture Regime
- ☐ High Organic Content in Surface Layer in Sandy Soil

Hydric Soil Present? Yes (No)

REMARKS

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No)

Wetland Hydrology Present? Yes (No)

Hydric Soils Present? Yes (No)

REMARKS

Is this sampling point a Wetland? Yes (No)

Pr-W004 wetland - 208c

ml-208c

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Middlefield
Applicant / Owner: First Energy
Investigator: ML, L.B.

Date: 5/8/07
County: Geauga
State: Ohio

Do normal circumstances exist on the site? Yes X No ___
Is the site significantly disturbed (Atypical situation)? Yes ___ No X
Is the area a potential problem area? Yes ___ No X
(explain on reverse if needed)

Community ID: PEM/PSS/PFO
Transect ID: ___
Plot ID: ___

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Onoclea sensibilis	Herb	FACW
2. Impatiens capensis	Herb	FACW
3. Viburnum dentatum	Shrub	-
4. Carex sp	Herb	-
5. Phragmites australis	Herb	FACW
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: 6 (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12"
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators:
- ___ Oxidized Roots Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase):_____ Drainage Class:_____

Taxonomy (Subgroup):_____ Confirm Mapped Type? Yes___ No___

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-8	A1B	10YR 5/1	—	—	silty-clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ *Reducing Conditions*
✓ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed On Local Hydric Soils List
___ *Listed on National Hydric Soils List*
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes ✓ No ___
Wetland Hydrology Present? Yes ✓ No ___
Hydric Soils Present? Yes ✓ No ___

Is the Sampling Point Within a Wetland? Yes ✓ No ___

Remarks:

Pr-W0041
UPL

upland data point for 208B & 208C

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Determination Manual)

Project / Site: Middlefield Applicant / Owner: First Energy Investigator: MH, L.B	Date: 5/8/07 County: Geauga State: Ohio
Do normal circumstances exist on the site? Yes X No ___ Is the site significantly disturbed (Atypical situation)? Yes ___ No X Is the area a potential problem area? Yes ___ No X (explain on reverse if needed)	Community ID: ___ Transect ID: ___ Plot ID: ___

Upland mesic Hardwood

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Fragaria virginiana	Herb	FACU	9.		
2. Solidago canadensis	Herb	FACU	10.		
3. Viburnum dentatum	Shrub	FAC	11.		
4. Rubus sp	Herb	-	12.		
5. Parthenocissus quinquefolia	Vine	FACU	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW, or FAC excluding FAC-). 25%

Remarks:

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12"
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators:
- ___ Oxidized Roots Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase):_____ Drainage Class:_____

Taxonomy (Subgroup):_____ Confirm Mapped Type? Yes___ No___

Profile Description:

Depth (inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-8+	A/B	10YR 4/3	—	—	silty clay
8+	rock				

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed On Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes ___ No ✓
Wetland Hydrology Present? Yes ___ No ✓
Hydric Soils Present? Yes ___ No ✓

Is the Sampling Point Within a Wetland? Yes___ No ✓

Remarks:

Wetland 215

Pr-W005

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: ML, LB	Date: 5/18/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: PEm Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Phragmites australes	Herb	FACW	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: 8 (in.)

Depth to Saturated Soil: 6 (in.)

Wetland hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ✓ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-3	A	10YR 4/2	-	-	silty clay
3-12	B	10YR 3/1	10YR 5/8	-	silty clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
✓ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Upland point for wetlands 214 & 215

Pr-W005 UPL

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: M.L., L.B	Date: 5/8/07 County: _____ State: _____
Do Normal Circumstances Exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: PEM Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Festuca elatior	Herb	FACU	9.		
2. Solidagocanadensis	Herb	FACU	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0 %

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:
Primary Indicators:
____ Inundated
____ Saturated in Upper 12 Inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12"
____ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-6	A	10YR 4/3	-	-	silty clay
6+		rock			

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Wetland 214
Pr-W006

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield			Date: 5/18/07
Applicant/Owner: First Energy			County: Geauga
Investigator: ML, LB			State: OH
Do Normal Circumstances Exist on the site?	(Yes)	No	Community ID: PEM
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	(No)	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Phragmites australis	Herb	FACW	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	1-2	(in.)
Depth to Free Water in Pit:	0	(in.)
Depth to Saturated Soil:	0	(in.)

Wetland hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-2	A	10YR 3/2	-	-	Silt
2-12	B	10YR 6/1	10YR 6/8	5%	Silty clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Upland point for wetlands 214 & 215

Pr-W006 UPL

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: M.L.L.B	Date: 5/8/07 County: _____ State: _____
Do Normal Circumstances Exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: PEM Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Festuca elatior	Herb	FACU	9.		
2. Solidago canadensis	Herb	FACU	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0 %

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-6	A	10YR 4/3	–	–	silty clay
6+		rock			

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Wetland 212c

Pr-W007

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: mL, LB	Date: 5/8/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: PEM/PSS Transect ID: ____ Plot ID: ____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Typha angustifolia	Herb	OBL	9.		
2. Acorus calamus	Herb	OBL	10.		
3. Impatiens capensis	Herb	FACW	11.		
4. Onoclea sensibilis	Herb	OBL	12.		
5. Cornus amomum	Shrub	FACW	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:
- Depth of Surface Water: 1-2 (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil: 0 (in.)

Wetland hydrology Indicators:
Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ✓ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-6	A	10YR 4/1	~	-	silty clay
6-12	B	10YR 4/1	-	-	silty loam

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
✓ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Upland point for Wetland 212c

Pr-W007
UPL

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: ML, LB	Date: 5/18/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: 1 Transect ID: ____ Plot ID: ____

Upland Young Mesic Hardwood Forest

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Fraxinus americana	Tree	FACU	9.		
2. Potentilla simplex	Herb	FACU-	10.		
3. Solidago canadensis	Herb	UPL	11.		
4. Acer saccharum	Herb	FACU-	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks:

Herb layer sparse

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-6	A	10YR 4/3	-	-	silty clay
6-12	B	10YR 5/3	-	-	silty clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Dr-W008

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Geauga Co. Applicant/Owner: FirstEnergy Investigator: ml	Date: 5/7/2007 County: Geauga State: OH
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: pfo Transect ID: Plot ID: 203b

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Ulmus americana	T	FACW+
2. Rhus radicans	H	FAC+
3. Rhus radicans	V	FAC+
4. Tilia americana	T	FACU+
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 75

Remarks:

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: 8 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- X Other (Explain in Remarks)

Remarks: bare ground indicates sat., saturated above hardpan

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-12	a	10yr 4/2			silty loam
10-14	b	10yr 4/1	10yr 5/6	m/d	silt clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
X Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:
fragipan

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	Is this Sampling Point Within a Wetland? Yes No

Remarks:

Pr-W0091

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Geauga Co. Applicant/Owner: FirstEnergy Investigator: ml	Date: 5/7/2007 County: Geauga State: OH
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: pss Transect ID: Plot ID: 203a

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cornus amomum	S	FACW+	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: surfa (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____

Drainage Class: _____
Field Observations
Confirm Mapped Type? Yes No

Taxonomy (Subgroup): _____

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	a	10yr 4/2			silty loam
4-7	a2	10yr 4/2	10yr 5/6	m/d	silt clay
7-20	b	10yr6/1	10yr6/8	c/d	silt clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
_X_ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

Pr-w010

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Geauga Co. Applicant/Owner: FirstEnergy Investigator: ml	Date: 5/7/2007 County: Geauga State: OH
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: pss Transect ID: Plot ID: 202

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cornus amomum	S	FACW+	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: surfa (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-6	a	10yr 5/2			silty loam
6-20	b	10yr 6/2	10yr 6/6	m/d	silt clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
X Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Pr-wo11

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Geauga Co. Applicant/Owner: FirstEnergy Investigator: ml	Date: 5/7/2007 County: Geauga State: OH
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: pem/pss Transect ID: Plot ID: ml-201b

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Acorus americanus Calamus	H	OBL
2. Onoclea sensibilis	H	FACW+
3. Impatiens capensis	H	FACW+
4. Cornus amomum	S	FACW+
5. Viburnum recognitum	S	FACW+
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100

Remarks:

HYDROLOGY

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
X Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: well defined depression

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-20	a/b	10yr 4/1	7.5yr 4/6	f/d	silty clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- X Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	Is this Sampling Point Within a Wetland? Yes No

Remarks:

follows channel e-w out of corridor

Approved by HQUSACE 3/92

Pr-W012

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Geauga Co. Applicant/Owner: FirstEnergy Investigator: ml	Date: 5/7/2007 County: Geauga State: OH
Do Normal Circumstances exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: pem/pss Transect ID: Plot ID: 201a

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Acorus americanus	H	OBL
2. Onoclea sensibilis	H	FACW+
3. Impatiens capensis	H	FACW+
4. Cornus amomum	S	FACW+
5. Viburnum recognitum	S	FACW+
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: surfa (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- X Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- X Water-Stained Leaves
- ___ Local Soil Survey Data
- X FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: well defined depression

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-3	A	10yr 4/1	10yr 4/4	f/d	silty clay
3-20	B	10yr 5/1	7.5yr 4/6	m/d	silt clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
X Aquic Moisture Regime
X Reducing Conditions
X Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer in Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	Is this Sampling Point Within a Wetland? Yes No

Remarks:

follows channel e-w out of corridor

Approved by HQUSACE 3/92

W-218

Pr-W013

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Geauga	Date: 5/18/07
Applicant/Owner: First Energy	County: Geauga
Investigator: ML, LB	State: OH
Do Normal Circumstances Exist on the site? (Yes) No	Community ID: PSS1PFE
Is the site significantly disturbed (Atypical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID:
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Viburnum dentatum	Shrub	FAC	9.		
2. Onoclea sensibilis	Herb	OBL	10.		
3. Typha angustifolia	Herb	OBL	11.		
4. Carex sp	Herb	-	12.		
5. Cornus amomum	Shrub	FACW	13.		
6. Rosa palustris	Shrub	OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___✓ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: ½ (in.)

Depth to Free Water in Pit: 4th (in.)

Depth to Saturated Soil: 0 (in.)

Wetland hydrology Indicators:
Primary Indicators:
___ Inundated
___✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12"
___✓ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-12	A/B	10YR 2/1	—	—	Silty loam

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
✓ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Upland data point for Wetland 218

Pr-W013 UPL

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Geauga			Date: 5/8/07
Applicant/Owner: First Energy			County: Geauga
Investigator: MLy, LB			State: OH
Do Normal Circumstances Exist on the site?	(Yes)	No	Community ID:
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	(No)	Plot ID:

Upland Young mesic Hardwood

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Malus Malus	Tree	UPL	9.		
2. Fraxinus americana	Tree	FACU	10.		
3. Unknown grass	Herb	-	11.		
4. Prunus serotina	Tree	FACU	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-6	A	10YR4/3	—	—	silty clay
6+	B	rock	→	-	-

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
✓ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Wetland 217
Emergent
Pr-W014

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Seauga Applicant/Owner: First Energy Investigator: [illegible]	Date: 5/18/07 County: Seauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: PEM Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Acorus calamus	Herb	OBL	9.		
2. Unknown grass	Herb	–	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ✓ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:
- Depth of Surface Water: none (in.)
- Depth to Free Water in Pit: 8in (in.)
- Depth to Saturated Soil: 6in (in.)

Wetland hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ✓ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ✓ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-12	A/B	10YR 3/1	7.5YR 7/1	5%	silty clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks:

Wetland 217
upland data point

Pr-WOIH UPL

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Geauga Applicant/Owner: First Energy Investigator: MLy, LB,	Date: 5/8/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Unknown grass	Herb	—	9.		
2. Fragaria virginiana	Herb	UPL	10.		
3. Malus malus	Tree	UPL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___✓ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:
Depth of Surface Water: none (in.)
Depth to Free Water in Pit: none (in.)
Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12"
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
8	A	10YR 3/1	7.5YR 7/1	5%	silty clay
8-12	B	2.5Y 6/4	2.5Y 6/8	5%	silty clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Wetland 219

Pr-W015

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: ML, LB	Date: 5/9/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: PEM/PFO Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Impatiens capensis	Herb	FACW	9.		
2. Viburnum dentatum	Shrub	FAC	10.		
3. Onoclea sensibilis	Herb	FACW	11.		
4. Ulmus americana	Tree	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water:	0	(in.)
Depth to Free Water in Pit:	3	(in.)
Depth to Saturated Soil:	1	(in.)

Wetland hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ✓ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-6	A	10YR 4/1	–	–	Silty loam
6-12	B	10YR 6/1	10YR 5/2	5%	silty clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) Yes No

Remarks: Separated from wetland 17 by dry fence row & wetland 16 dry toe of a slope

Upland Site to Wetland 219

Pr-W015 UPL

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middle Field	Date: 5/9/07
Applicant/Owner: First Energy	County: Beaver
Investigator: ML, LB	State: OH

Do Normal Circumstances Exist on the site?	(Yes)	No	Community ID:
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	(No)	Plot ID:

Upland Young mesic Hardwood Forest

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Fragaria virginiana	Herb	FACU	9.		
2. Viburnum dentatum	Shrub	FACW	10.		
3. Rubus sp	Herb	–	11.		
4. Toxicodendron radicans	Herb	FAC	12.		
5. Fraxinus americana	Tree	FACU	13.		
6. Prunus serotina	Tree	FACU	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 30%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-10	A/B	10YR4/3	—	—	silty clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	(Circle)
Wetland Hydrology Present?	Yes	(No)	
Hydric Soils Present?	Yes	(No)	

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Pr-WQ6

W-21C

Scrub-shrub - Emergent - Forested

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield			Date: 5/8/07
Applicant/Owner: First Energy			County: Geauga
Investigator: m.L., J.B			State: OH
Do Normal Circumstances Exist on the site?	(Yes)	No	Community ID: PSS/PEM
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	(No)	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Viburnum dentatum	shrub	FAC	9.		
2. Onoclea sensibilis	Herb	OBL	10.		
3. Impatiens capensis	Herb	FACW	11.		
4. Ulmus americana	Tree	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0-½ in (in.)

Depth to Free Water in Pit: 0-6 (in.)

Depth to Saturated Soil: 3 in (in.)

Wetland hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ✓ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-12+	A/B	10YR3/1	—	—	silty clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
✓ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

upland data sheet for W-216
Pr-W016 UPL

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Geauga Applicant/Owner: First Energy Investigator: ML, L.B	Date: 5/8/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: _____

VEGETATION

Young upland mesic Hardwood Forest

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Prunus serotina	Tree	UPL	9.		
2. Acer rubrum	Tree	FAC	10.		
3. Toxicodendron radicans	Herb	FAC	11.		
4. Erythronium americanum	Herb	UPL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 25%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:
Depth of Surface Water: none (in.)
Depth to Free Water in Pit: none (in.)
Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12"
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-3	A	10YR 4/3	—	—	silty clay
3-+	B	rock	—	—	—

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
✓ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Pr-W017

W-21C

Scrub-shrub - Emergent - Ferns

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: M.L., J.B	Date: 5/8/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: PSS/PEM Transect ID: ____ Plot ID: ____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Viburnum dentatum	Shrub	FAC	9.		
2. Onoclea sensibilis	Herb	OBL	10.		
3. Impatiens capensis	Herb	FACW	11.		
4. Ulmus americana	Tree	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:
- Depth of Surface Water: 0-½ in (in.)
- Depth to Free Water in Pit: 0-6 (in.)
- Depth to Saturated Soil: 3 in (in.)

Wetland hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ✓ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-12 in	A/D	10YR3/1	—	—	silty clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
✓ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks:

Upland data sheet for W-21C

Pr-W017 UPL

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Geauga Applicant/Owner: First Energy Investigator: mL, L.B	Date: 5/8/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (NO) Is the area a potential Problem Area? Yes (NO) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: _____

VEGETATION

Young upland mesic Hardwood Forest

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Prunus serotina	Tree	UPL	9.		
2. Acer rubrum	Tree	FAC	10.		
3. Toxicodendron radicans	Herb	FAC	11.		
4. Eryngium americanum	Herb	UPL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 25%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ ✓ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12"
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-3	A	10YR 4/3	—	—	Silty clay
3-+	B	rock	—	—	—

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ *Aquic Moisture Regime*
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content In Surface Layer Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ *Listed on Local Hydric Soils List*
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Wetland 220
Pr-WOLB

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Geauga Applicant/Owner: First Energy Investigator: ML, LB	Date: 5/9/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: PEM/PSS Transect ID: Plot ID: ML-220

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Viburnum dentatum	shrub	FAC	9.		
2. Cornus amomum	Shrub	FACW	10.		
3. Onoclea sensibilis	Herb	OBL	11.		
4. Juncus effusus	Herb	FACW+	12.		
5. Grass	Herb	–	13.		
6. Toxicodendron radicans	Herb	FAC	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:
- Depth of Surface Water: 0-1 (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil: 0 (in.)

Wetland hydrology Indicators:
Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ✓ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-12	A/B	10YR 5/1	10YR 6/8	5%	silty clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ✓ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks:

upland site for wetland 220

Pr-W018 UPL

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Geauga Applicant/Owner: First Energy Investigator: ML, LR	Date: 5/9/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? Yes No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: _____

Young upland mesic hardwood

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Acer rubrum	Tree	FAC	9.		
2. Fraxinus americana	Tree	FACU	10.		
3. Erythronium americana	Herb	UPL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:
Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-3	A	10YR 2/2	—	—	loamy, clay
3-12	B	10YR C/2	10YR 5/8	4CF2(Comm)	loamy clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks:

Pr-WD19

Wetland-221

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: mL, LB	Date: 5/9/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (NO) Is the area a potential Problem Area? Yes (NO) (If needed, explain on reverse.)	Community ID: PSS1PEM Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Impatiens capensis	Herb	FACW	9.		
2. Viburnum dentatum	Shrub	FAC	10.		
3. Rosa palustris	Herb	OBL	11.		
4. Onoclea sensibilis	Herb	FACW	12.		
5. Cornus amomum	Herb	FACW	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:
- Depth of Surface Water: none (in.)
- Depth to Free Water in Pit: 1 in (in.)
- Depth to Saturated Soil: 11 in (in.)

Wetland hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ✓ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-4	A	10YR 3/2	—	—	loam
4-12	B	10YR 5/1	10YR 6/8	10%	silty clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
✓ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Upland point to W-22

Pr-W019 UPL

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: ML, LB	Date: 5/9/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) *(If needed, explain on reverse.)*	Community ID: ____ Transect ID: ____ Plot ID: ____

Young Upland Mesic Hardwood Forest

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Viburnum dentatum	Shrub	FAC	9.		
2. Erythronium americanum	Herb	UPL	10.		
3. Acer rubrum	Tree	FAC	11.		
4. Prunus serotina	Tree	FACU	12.		
5. Solidago canadensis	Herb	FACU	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 40%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

___ No Recorded Data Available

Field Observations:
- Depth of Surface Water: none (in.)
- Depth to Free Water in Pit: none (in.)
- Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:
Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-6	A	10YR4/3	-	-	clay loam
6-12	B	2.5Y 6/3	-	-	clay loam

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	(No)	(Circle)
Wetland Hydrology Present?	Yes	(No)	
Hydric Soils Present?	Yes	(No)	

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks:

Wetland 222

Pr-WOOO

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: ML LB	Date: 5/9/0 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes No Is the *area a potential* Problem Area? Yes No (If needed, explain on reverse.)	Community ID: PSS/PFO Transect ID: ____ Plot ID: ____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Nyssa sylvatica	Tree	FAC	9.		
2. Viburnum dentatum	Shrub	FAC	10.		
3. Carex sp	Herb	–	11.		
4. Cornus amomum	Shrub	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
____ Aerial Photographs
____ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1 in (in.)

Depth to Free Water in Pit: 2 in (in.)

Depth to Saturated Soil: 0 (in.)

Wetland hydrology Indicators:
Primary Indicators:
✓ Inundated
✓ Saturated in Upper 12 Inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
____ Oxidized Root Channels in Upper 12"
✓ Water-Stained Leaves
____ Local Soil Survey Data
____ FAC-Neutral Test
____ Other (Explain in Remarks)

Remarks:

Wetland 222

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-12	A/B	10YR5/1	10YR7/1	10%	silty clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
✓ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

on edge of wetland

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Pr-W020 UPL

Upland point for Wetland 222

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: MLB	Date: 5/9/0 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: 5 Transect ID: Plot ID:

Young Disturbed Forest

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Malus malus	Tree	UPL	9.		
2. Crataegus Sp	Shrub	FACU	10.		
3. Fraxinus americana	Shrub	FACU	11.		
4. Erythronium americanum	Herb	UPL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:
- Depth of Surface Water: none (in.)
- Depth to Free Water in Pit: none (in.)
- Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-14	A/B	10YR 4/3	—	—	silty loam
		rock	below		

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks:

Pr-W021
Wetland 222

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: ML LB	Date: 5/9/06 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: PSS/PFO Transect ID: ____ Plot ID: ____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Nyssa sylvatica	Tree	FAC	9.		
2. Viburnum dentatum	Shrub	FAC	10.		
3. Carex sp	Herb	–	11.		
4. Cornus amomum	Shrub	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1 in (in.)
Depth to Free Water in Pit: 2 in (in.)
Depth to Saturated Soil: 0 (in.)

Wetland hydrology Indicators:
Primary Indicators:
✓ Inundated
✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12"
✓ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

wetland 222

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-12	A/B	10YR5/1	10YR7/7	10%	silty clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
✓ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

on edge of wetland

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

Pr-W021
UPL
Upland point for
wetland 222

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: ML, LB	Date: 5/9/10 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: 5 Transect ID: Plot ID:

Young Disturbed Forest

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Malus Malus	Tree	UPL	9.		
2. Crataegus Sp	Shrub	FACU	10.		
3. Fraxinus americana	Shrub	FACU	11.		
4. Erythronium americanum	Herb	UPL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 0%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:
- Depth of Surface Water: none (in.)
- Depth to Free Water in Pit: none (in.)
- Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:
Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-14	A/B	10YR 4/3	—	—	silty loam
		rock	below		

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

Wetland 222
Pr-W022

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: ML LB	Date: 5/9/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes No Is the area a potential Problem Area? Yes No (If needed, explain on reverse.)	Community ID: PSS1PFO Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Nyssa sylvatica	Tree	FAC	9.		
2. Viburnum dentatum	Shrub	FAC	10.		
3. Carex sp	Herb	–	11.		
4. Cornus amomum	Shrub	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1 in (in.)

Depth to Free Water in Pit: 2 in (in.)

Depth to Saturated Soil: 0 (in.)

Wetland hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ✓ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

Wetland 222

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-12	A/B	10YR5/1	10YR7/7	10%	silty clay

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
✓ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

on edge of wetland

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (YES) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 3/92

Pr-W022 UPL

Upland point for Wetland 222

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: M.L.B.	Date: 5/9/0 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: 5 Transect ID: _____ Plot ID: _____

Young Disturbed Forest

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Malus Malus	Tree	UPL	9.		
2. Crataegus Sp	Shrub	FACU	10.		
3. Fraxinus americana	Shrub	FACU	11.		
4. Erythronium americanum	Herb	UPL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:

Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-14	A/B	10YR 4/3	—	—	silty loam
		rock	below		

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? (Circle) Yes (No)

Remarks:

Wetland 223

Pr-W023

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: MLB	Date: 5/9/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: PSS Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Viburnum dentatum	Shrub	FAC	9.		
2. Impatiens capensis	Herb	FACW	10.		
3. Onoclea sensibilis	Herb	FACW	11.		
4. Salix sp	Shrub	—	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:
- Depth of Surface Water: In (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil: 0 (in.)

Wetland hydrology Indicators:
Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12"
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
1-12	A/B	10YR 3/1	—	—	silt

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
✓ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Upland Data point for Wetland-223 Pr-W023 UPL

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Middlefield Applicant/Owner: First Energy Investigator: ML, LB	Date: 5/9/07 County: Geauga State: OH
Do Normal Circumstances Exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: _____

VEGETATION

Young Upland Disturbed Forest

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Fraxinus americana	Tree	FACW	9.		
2. Cornus florida	Tree	FACU-	10.		
3. Populus tremuloides	Tree	FACU	11.		
4. Rubus sp	Herb	—	12.		
5. Tussilago farfar	Herb	FACU	13.		
6. Toxicodendron radicans	Herb	FAC	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland hydrology Indicators:
Primary Indicators:
- ____ Inundated
- ____ Saturated in Upper 12 Inches
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ____ Oxidized Root Channels in Upper 12"
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name
(Series and Phase): _____ Drainage Class: _____

Field Observations

Taxonomy (Subgroup): _____ Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
5	A	10YR 4/3	—	—	Silty loam
5-12	B	10YR 5/4			Silty loam

Hydric Soil Indicators:

___ Histosol
___ Histic Epipedon
___ Sulfidic Odor
___ Aquic Moisture Regime
___ Reducing Conditions
___ Gleyed or Low-Chroma Colors
___ Concretions
___ High Organic Content in Surface Layer Sandy Soils
___ Organic Streaking in Sandy Soils
___ Listed on Local Hydric Soils List
___ Listed on National Hydric Soils List
___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

(Circle)
Is this Sampling Point Within a Wetland? Yes (No)

Remarks:

ROUTINE WETLAND DETERMINATION-DATA FORM 1987 MANUAL

Project/Site: Middle Field detail

Applicant/Owner: First Energy

Investigator(s): Reps by, LaSlee, L. Brewer

Date: 6-27-07 Community ID: PFO/SS

County: Geauga Transect ID:

State: OH Plot ID: RBW-003

Do Normal Circumstances exist on the site? (YES) NO

Is the site significantly & recently disturbed?(Atypical Situation) YES (NO)

Is the area a potential Problem Area? (Explain in final remarks) YES (NO)

VEGETATION

Dominant Plant Species	Stratum	Indicator
1 Salix nigra	T/S	FACW+
2 Cornus amomum	S	FACW
3 Viburnum recognitum	S	FACW+
4 Ribes Americana	S	FACW
5 Vitis Aestivalis	WV	FACU
6 Toxicodendron radicans	WV/H	FAC
7 Rosa palustris	WV	OBL
8 Glyceria striata	H	OBL
9 Impatiens capensis	H	FACW
10 Onoclea sensibilis	H	FACW

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 90 %

Hydrophytic Vegetation Present? (Yes) No

REMARKS:

HYDROLOGY

RECORDED DATA (Describe in Remarks):
- [x] Stream, Lake or Tide Gauge
- [ ] Aerial Photographs
- [ ] Other
- [ ] None Available

PRIMARY Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12"
- [x] Water Marks
- [x] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

FIELD OBSERVATIONS:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

SECONDARY Indicators
- [ ] Oxidized Root Channels in UPPER 12"
- [ ] Water Stained leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Wetland Hydrology Present? (Yes) No

REMARKS

Pond Out Soil

SOILS

Map Unit Name (Series and Phase) _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type: Yes No

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc
0-12	A	10YR 5/1			silt loam

HYDRIC SOIL INDICATORS
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Streaking in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List

Hydric Soil Present? (Yes) No

REMARKS

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is this sampling point a Wetland? (Yes) No

REMARKS

ROUTINE WETLAND DETERMINATION-DATA FORM 1987 MANUAL

Project/Site: _____

Applicant/Owner _____

Investigator(s) _____

Date: _____ Community ID _____

County _____ Transect ID _____

State _____ Plot ID _____

Do Normal Circumstances exist on the site? ___ ___

Is the site significantly & recently disturbed? Atypical Situation ___ ___

Is the area a potential Problem Area? (explain on final remarks) ___ ___

VEGETATION

Dominant Plant Species	Stratum	Indicator
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Percent of Dominant Species that are OBL FACW or FAC (excluding FAC-) _____ %

Hydrophytic Vegetation Present? Yes No

REMARKS:

SOILS

HYDRIC SOIL INDICATORS

WETLAND DETERMINATION

ROUTINE WETLAND DETERMINATION-DATA FORM 1987 MANUAL

Project/Site: FE Middlesex/Delta Retailed

Applicant/Owner: First Energy

Investigator(s): Reposky, LaSala, L. Brewer

Date: 6-27-02 Community ID: UPL-Po

County: Geauga Transect ID:

State: OH Plot ID: RBW-003 UpL

Do Normal Circumstances exist on the site? (YES) NO

Is the site significantly & recently disturbed?(Atypical Situation) YES (NO)

Is the area a potential Problem Area? (Explain in final remarks) YES (NO)

VEGETATION

Dominant Plant Species	Stratum	Indicator
1 Fraxinus americana	T/S	FACU
2 Rhus typhina	S	UPL
3 Ribes americanum	S	FACW
4 Geum canadense	H	FACU
5 Toxicodendron radicans	V/H	FAC
6		
7		
8		
9		
10		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 40 %

Hydrophytic Vegetation Present? Yes (No)

REMARKS:

HYDROLOGY

RECORDED DATA (Describe in Remarks):
- [x] Stream, Lake or Tide Gauge
- [ ] Aerial Photographs
- [ ] Other
- [ ] None Available

FIELD OBSERVATIONS:
Depth of Surface Water: N/A (in.)
Depth to Free Water in Pit: ½ (in.)
Depth to Saturated Soil: ½ (in.)

Wetland Hydrology Present?
Yes (No)

REMARKS:

PRIMARY Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12"
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [ ] Drainage Patterns in Wetlands

SECONDARY Indicators
- [ ] Oxidized Root Channels in UPPER 12"
- [ ] Water Stained leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

SOILS

Map Unit Name (Series and Phase) _____ Drainage Class: _____

Taxonomy (Subgroup): _____ Field Observations Confirm Mapped Type: Yes No

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc
0-12	A	10YR 3/3	—	—	

HYDRIC SOIL INDICATORS
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [ ] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Streaking in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soil
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils L

Hydric Soil Present? Yes (No)

REMARKS

WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes (No)

Wetland Hydrology Present? Yes (No)

Hydric Soils Present? Yes (No)

REMARKS

Is this sampling point a Wetland? Yes (No)

ROUTINE WETLAND DETERMINATION-DATA FORM 1987 MANUAL

Project Site: _____

Applicant/Owner: _____

Investigator(s) _____

Date _____ Community ID _____

County _____ Transect ID _____

State _____ Plot ID _____

Do Normal Circumstances exist on the site? Yes No

Is the site significantly & recently disturbed? (Atypical Situation) Yes No

Is the area a potential Problem Area? (Explain in final remarks) Yes No

VEGETATION

Dominant Plant Species	Stratum	Indicator
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) _____ %

Hydrophytic Vegetation Present? Yes No

REMARKS:

SOILS

HYDRIC SOIL INDICATORS

Yes No

WETLAND DETERMINATION

Yes No

Yes No

Yes No

Yes No

ROUTINE WETLAND DETERMINATION-DATA FORM **1987 MANUAL**

Project/Site: Middle Field Retail

Applicant/Owner: First Energy

Investigator(s): Rapp, Lasher, L. Brown

Date: 6-27-02 Community ID: PFO/SS

County: Geauga Transect ID:

State: OH Plot ID: RBW-004

Do Normal Circumstances exist on the site? (YES) NO

Is the site significantly & recently disturbed?(Atypical Situation) YES (NO)

Is the area a potential Problem Area? (Explain in final remarks) YES (NO)

VEGETATION

Dominant Plant Species	Stratum	Indicator
1 Viburnum recognitum	S	FACW+
2 Salix nigra	S/T	FACW
3 Leersia oryzoides	H	OBL
4 Glyceria striata	H	OBL
5 Impatiens capensis	H	FACW
6 Carex lurida	H	OBL
7		
8		
9		
10		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 100 %

Hydrophytic Vegetation Present? (Yes) No

REMARKS

Attached to Wetland RBW-003

HYDROLOGY

RECORDED DATA (Describe in Remarks):
- [x] Stream, Lake or Tide Gauge
- [x] Aerial Photographs
- [ ] Other
- [ ] None Available

PRIMARY Indicators:
- [ ] Inundated
- [ ] Saturated in Upper 12"
- [ ] Water Marks
- [ ] Drift Lines
- [ ] Sediment Deposits
- [x] Drainage Patterns in Wetlands

FIELD OBSERVATIONS:
Depth of Surface Water: N/A (in.)
Depth to Free Water in Pit: " (in.)
Depth to Saturated Soil: " (in.)

SECONDARY Indicators
- [ ] Oxidized Root Channels in UPPER 12"
- [ ] Water Stained leaves
- [ ] Local Soil Survey Data
- [ ] FAC-Neutral Test
- [ ] Other (Explain in Remarks)

Wetland Hydrology Present? (Yes) No

REMARKS

SOILS

Map Unit Name (Series and Phase): Drainage Class:

Taxonomy (Subgroup): Field Observations Confirm Mapped Type: Yes No

PROFILE DESCRIPTION

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc
0-12	A	10YR 5/1			

HYDRIC SOIL INDICATORS
- [ ] Histosol
- [ ] Histic Epipedon
- [ ] Sulfidic Odor
- [ ] Aquic Moisture Regime
- [ ] Reducing Conditions
- [x] Gleyed or Low-Chroma Colors
- [ ] Concretions
- [ ] High Organic Streaking in Surface Layer in Sandy Soils
- [ ] Organic Streaking in Sandy Soils
- [ ] Listed on Local Hydric Soils List
- [ ] Listed on National Hydric Soils List

Hydric Soil Present? (Yes) No

REMARKS

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is this sampling point a Wetland? (Yes) No

REMARKS