Northern Columbus Loop Natural Gas Pipeline Project (Phase VII) – Alternate Route

Wetland and Waterbody Delineation Report

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Sign-off Sheet

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1.0 INTRODUCTION

1.1 PURPOSE

Columbia Gas of Ohio (COH) plans to construct a new 16.5 mile 24-inch high pressure transmission class natural gas steel pipeline with associated 16-inch distribution class steel pipeline, a launcher and receiver, and one district regulation station (The Project). An alternate route and preferred route were surveyed to determine the best route option for the Project. This delineation report includes the features delineated in reference to the Alternate Route. The length of the survey corridor is 16.5 miles with a 200 foot right-of-way (ROW). The Project is located north of the City of Powell and runs west/southwest towards New California and travels through Liberty and Concord Townships in Delaware County, and Millcreek and Jerome Townships in Union County, Ohio (Appendix A, Figure 1).

Stantec Consulting Services Inc. (Stantec) was retained by COH to conduct a delineation of potential waters of the United States (WOUS), including wetlands, waterbodies, and potentially isolated wetlands within the Project area. The purpose of this delineation was to identify potential jurisdictional features present within the Project area.

Stantec completed the delineation of wetlands and waterbodies on January 14, 15, 16, 30 and 31, and February 11, 18, and 20, and April 21 and 27, 2020. The information contained in this report reflects the current site conditions that were observed during the field delineation. Datasheets and photographs of features delineated within the Project area are included in Appendices B and C, respectively.

1.2 LOCATION OF PROJECT

The Project is located in Liberty and Concord Townships, Delaware County and Millcreek and Jerome Townships, Union County, Ohio (Appendix A, Figure 1). The Project area is depicted on the Powell and Shawnee Hills, Ohio U.S. Geological Survey (USGS) 7.5-minute series topographic maps and the approximate end points of the Project in latitude and longitude coordinates are 40.216431˚N, -83.091807˚W and 40.151049˚N, -83.182773˚W, respectively. The Project area is located in the Deep Run – Olentangy River watershed (HUC 12: 050600011101) that drains into the Olentangy River, the O'Shaughnessy Dam – Scioto River watershed (HUC12: 050600011202) that drains into the Scioto River, the Eversole Run watershed (HUC12: 050600011201) that drains into the Scioto River, the Indian Run watershed (HUC12: 050600011203) that drains into the Scioto River, and the Sugar Run watershed (HUC 12: 050600011904) that drains into Big Darby Creek.

2.0 METHODS

2.1 WETLAND DELINEATION

Prior to completing the survey, a desktop review of the Project area was conducted using the Powell and Shawnee Hills, Ohio USGS 7.5 Minute Series topographic maps (Appendix A, Figure 1), U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey of Delaware and Union Counties, Ohio (USDA 1969, USDA 1975; Appendix A, Figure 2), the National Wetlands Inventory map (USFWS 2019) (Appendix A, Figure 3), and

aerial imagery mapping were reviewed to assess the likelihood of occurrence and probable location of wetlands and waterbodies within the Project area.

Following this desktop review, Stantec conducted field surveys within the Project area on January 14, 15, 16, 30 and 31, and February 11, 18, and 20, and April 21 and 27, 2020. Wetland boundaries were assessed using the "Routine On-site Determination Method" as described in the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual (USACE Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (USACE 2010). As of August 17, 1991, the USACE was directed to utilize the USACE Wetland Delineation Manual (USACE Environmental Laboratory 1987) to identify and delineate wetlands potentially subject to regulation under Section 404 of the Clean Water Act (CWA). Wetlands were classified according to "Classification of Wetlands and Deepwater Habitats of the United States" (Cowardin et al. 1979). In this classification system, wetland habitats are divided into five major systems including: (1) Marine, (2) Estuarine, (3) Lacustrine, (4) Palustrine, and (5) Riverine. Each of these systems is further divided into subsystems, classes, and subclasses. Vegetative communities were inventoried to assess the dominant plant species in each of four vegetative layers: trees, saplings/shrubs, herbs, and woody vines. The wetland indicator status for each of the dominant species was obtained using the 2016 National Wetland Plant List (Lichvar et al. 2016). The wetland soil indicators were obtained using the Munsell soil-color chart (Munsell Color 2009) and the hydric soil field indicators (USDA, NRCS 2010). The uppermost wetland boundary and sampling points were identified and surveyed using a handheld Global Positioning System (GPS) unit and mapped with Geographical Information System (GIS) software. Stantec collected data and completed relevant assessment forms, which included: USACE Wetland Determination Forms (WDF), and Ohio Rapid Assessment Method v 5.0 forms (ORAM; Mack 2001). Datasheets are provided in Appendix B.

2.2 STREAM DELINEATION

Streams that demonstrated a continuously defined channel (bed and bank), ordinary high water mark (OHWM), and the disturbance of terrestrial vegetation were delineated within the Project area, per the protocols outlined in the USACE's Guidance on Ordinary High Water Mark Identification (Regulatory Guidance Letter, No. 05-05; USACE 2005). Delineated streams were classified as ephemeral, intermittent, or perennial per definition in the Federal Register/Vol. 67, No. 10 (2002). Functional assessment of streams within the Project area was based on completion of the Ohio Environmental Protection Agency's (OEPA) Headwater Habitat Evaluation Index (HHEI; OEPA 2012) and/or Qualitative Habitat Evaluation Index (QHEI; OEPA 2006). Datasheets are provided in Appendix B. The centerline of each waterway, or both banks for streams 15 feet or wider, were identified and surveyed using a sub-meter accurate handheld GPS unit and mapped with GIS software.

2.3 OPEN WATER DELINEATION

Open water boundaries were assessed using the definition described in the "Classification of Wetlands and Deepwater Habitats of the United States" (Cowardin et al. 1979) which includes wetland and deepwater habitats with most of the following characteristics: (1) situated in a topographic depression or a dammed river channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30 percent areal coverage; and (3) total area exceeds 20 acres (8 hectares [ha]). Similar wetland and deepwater habitats totaling less than 20 acres (8 ha) are also included in the Lacustrine System if an active wave-formed or bedrock shoreline feature makes up most or part of the boundary, or if the water depth in the deepest part of the basin exceeds 6.6 feet (2 meters) at low water (estimated).

3.0 OVERVIEW OF PROJECT AREA

3.1 GEOLOGY AND TOPOGRAPHY

The Project is located in Union and Delaware Counties, Ohio and lies within the Till Plains section of the Central Lowlands physiographic province. The Project lies within the Central Ohio Clayey Till Plain region, which is characterized by: (1) a surface of clayey till; (2) well-defined moraines with intervening flat-lying ground moraine and intermorainal lake basins; (3) no boulder belts; (4) silt-, clay-, and till-filled lake basins; and (5) few large streams and limited sand and gravel outwashes. The geology of the region consists of clayey, high-lime Wisconsinan-age till from a northeastern source and lacustrine materials over Lower Paleozoic-age carbonate rocks. The eastern side of the region is more shales. Elevation ranges from 700 – 1,150 feet with moderate relief (ODGS 1998).

3.2 CLIMATE

The average winter temperature in Delaware County is 27ºF, and the average daily minimum temperature is 18ºF. The average summer temperature is 70ºF, and the average daily maximum temperature is 82ºF. Precipitation in Delaware County averages 37.23 inches per year but varies widely from year to year. Generally, precipitation is adequate and well distributed, but most frequently occurs from April through September. The average winter temperature in Union County is 29°F, and the average winter daily minimum temperature is 20°F. The average summer temperature is 71°F and the average daily maximum temperature is 83°F. Precipitation in Union County averages 36.58 inches per year but varies widely from year to year. Generally, precipitation is adequate and well distributed, but most frequently occurs from March to August (USDA 1969, USDA 1975).

3.3 SOILS

The Soil Survey of Delaware and Union Counties, Ohio (USDA 1969, USDA 1975) and the Natural Resources Conservation Service (NRCS) Web Soil Survey were consulted to assess soil types within the Project area (USDA, NRCS 2010). A copy of the soil map is included in Appendix A, Figure 2. Soils within the Project area with respective acreages and percentages are included in Table 1. Four soils listed within the Project area were considered to be hydric as shown in Table 1.

Table 1. Soil Types Known to Occur within the Northern Columbus Loop Natural Gas Pipeline Project (Phase VIII) Alternate Route Area, Delaware and Union Counties, Ohio

Map Unit Symbol	Map Unit Name	Hydric?	Acres in the Project Area	Percent within Project Area
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	No*	35.51	8.73%
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	No*	46.86	11.52%
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	No*	143.39	35.25%

Map Unit Symbol	Map Unit Name	Hydric?	Acres in the Project Area	Percent within Project Area
Blg1B1	Blount silt loam, ground moraine, 2 to 4 percent slopes	No*	36.59	9.00%
Bs	Brookston silty clay loam, fine texture, 0 to 2 percent slopes	Yes	5.08	1.25%
Gwe1B1	Glynwood silt loam, end moraine, 2 to 6 percent slopes	No*	12.11	2.98%
Gwe1B2	Glynwood silt loam, end moraine, 2 to 6 percent slopes, eroded	No*	4.86	1.20%
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	No*	28.17	6.93%
Gwg1B2	Glynwood silt loam, ground moraine, 2 to 6 percent slopes, eroded	No*	0.88	0.22%
Gwg5C2	Glynwood clay loam, ground moraine, 6 to 12 percent slopes, eroded	No*	8.28	2.04%
MoB	Milton silt loam, 2 to 6 percent slopes	No*	0.54	0.13%
MoC2	Milton silt loam, 6 to 12 percent slopes, eroded	No*	3.20	0.79%
MpD2	Milton-Lybrand complex, 12 to 18 percent slopes, eroded	No*	5.04	1.24%
Pk	Pewamo silty clay loam, 0 to 1 percent slopes	Yes	46.85	11.52%
PwA	Pewamo silty clay loam, 0 to 1 percent slopes	Yes	20.16	4.96%
W	Water	No*	4.77	1.17%
We	Wetzel silty clay loam	Yes	4.43	1.09%
		Total	**406.72**	**100.00%**

*Contains Hydric Inclusions

4.0 RESULTS

4.1 EXISTING CONDITIONS

Upland habitat within the Project area consists of maintained lawn, maintained right-of-way, developed/urban, old field habitat, early successional habitat, fencerow, second growth deciduous forest, cropland, and pasture. The maintained lawn, maintained right-of-way, new field and pasture habitats consist of Kentucky bluegrass (*Poa pratensis*), common dandelion (*Taraxacum officinale*), great plantain (*Plantago major*), English plantain (*Plantago lanceolata*), Canada thistle (*Cirsium arvense*), wild strawberry (*Fragaria vesca*), and ground ivy (*Glechoma hederacea*). The old field and early successional habitat was dominated by, Canada goldenrod (*Solidago canadensis*), tall goldenrod (*Solidago altissima*), big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), Queen Anne's lace (*Daucus carota*), Fuller's teasel (*Dipsacus fullonum*), blackberry (*Rubus allegheniensis*), nodding foxtail (*Setaria faberi*), health aster

(*Symphyotrichum ericoides*), common milkweed (*Asclepias syriaca*), and reed canary grass (*Phalaris arundinacea*). The fence row habitat was dominated by shagbark hickory (*Carya ovata*), common hackberry (*Celtis occidentalis*), and white oak (*Quercus alba*). The overstory of the second growth deciduous forest habitat was dominated by common hackberry (*Celtis occidentalis*), sugar maple (*Acer saccharum*), silver maple (*Acer saccharinum*), American elm (*Ulmus Americana*), American beech (*Fagus grandifolia*), northern red oak (*Quercus rubra*), white oak (*Quercus alba*), and pin oak (*Quercus palustris*). The shrub layer of the second growth deciduous forest consisted of honeysuckle (*Loniceria maackii*), raspberry (*Rubus idaeus*), blackberry, poison ivy (*Toxidendron radicans*), American elm, silver maple, white oak, northern red oak, and pin oak. The agriculture habitat was dominated by corn (*Zea mays*), soybeans (*Glycene max*), green foxtail, horse nettle (*Solanum carolinense*), and barnyard grass (*Echinochloa crus-galli*).

4.2 WETLAND HABITAT

Twenty-three wetlands were identified within the Project area, totaling approximately 2.71 acres (Appendix A, Figure 4). Appendix B contains the WDF and ORAM forms for the wetlands identified within the Project area. Representative photographs of the wetlands are provided in Appendix C. The wetlands are described below and summarized in Table 2.

Wetland 1

Wetland 1 is a palustrine forested (PFO) wetland approximately 0.60 acres in size within the Project area. The functional assessment (ORAM) of Wetland 1 yielded a score of 46 and identifies this wetland as a Category 2 wetland, indicating it is a wetland of “moderate” quality. Wetland 1 is potentially jurisdictional due to its potential hydrological connection with Open Water 1 and Stream 1. A WDF (SP04) was completed, and the first soil horizon was 2 inches of silty clay loam with a chroma matrix of 10YR 3/2. The next 7 inches was silty clay loam with a chroma matrix of 10YR 3/1 and redox concentrations in the matrix (7.5YR 5/6), meeting the Redox Dark Surface Matrix (F6). Primary hydrological indicators included high water table and saturation. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including pin oak (FACW), shellbark hickory (*Carya laciniosa;* FACW), spicebush (*Lindera benzoin*; FACW) and Gary’s sedge (*Carex grayi*; FACW).

Wetland 2

Wetland 2 is a palustrine emergent (PEM) wetland approximately 0.03 acre in size within the Project area. The functional assessment (ORAM) of Wetland 2 yielded a score of 23 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of “poor” quality. Wetland 2 is potentially jurisdictional due to its potential hydrological connection to the Scioto River. A WDF (SP08) was completed, and the first soil horizon was 15 inches of silty clay loam with a low chroma matrix (10YR 4/2) and redox concentrations in the matrix (5YR 4/4), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water and a high water table. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including narrowleaf cattail (*Typha angustifolia*; OBL) and barnyard grass (FACW).

Wetland 3

Wetland 3 is a PEM wetland approximately 0.29 acre in size within the Project area. The functional assessment (ORAM) of Wetland 3 yielded a score of 17 and identifies this wetland as a Category 1 wetland,

indicating it is a wetland of “poor” quality. Wetland 3 is potentially jurisdictional due to its proximity to Stream 2. A WDF (SP10) was completed, and the first soil horizon was 6 inches of silty clay loam with a chroma matrix 10YR 4/2 and redox concentrations in the pore linings and the matrix (5YR 4/6; 5Y 4/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, a high water table and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including fox sedge (*Carex vulpinoidea*; FACW) and path rush (*Juncus tenuis*; FAC)

Wetland 4

Wetland 4 is approximately 0.20 acre in size within the Project area and is comprised of both a PEM and PFO wetland communities. The functional assessment (ORAM) of Wetland 4 yielded a score of 36 and identifies this wetland as a Category 2 wetland, indicating it is a wetland of “fair-moderate” quality. Wetland 4 is potentially jurisdictional due to its proximity to Stream 2. A WDF was collected in each wetland community. The PEM WDF (SP12) included a first soil horizon that was 3 inches of silty clay loam with a chroma matrix 10YR 5/2, and redox concentrations in pore linings (7.5YR 4/6). The following 4 inches consisted of a lower chroma matrix 10YR 4/2, and redox concentrations found in the pore linings (7.5YR 4/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, a high water table, and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including Kentucky bluegrass (*Poa pretensis*; FAC) and dark green bulrush (*Scirpus atrovirens*; OBL).

The PFO WDF (SP13) included a first soil horizon that was 6 inches of silty clay loam with a chroma matrix of 10YR 4/2, followed by 4 inches of the chroma matrix 10YR 4/2, and redox concentrations in the matrix (7.5YR 4/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, a high water table, and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including pin oak (FACW).

Wetland 5

Wetland 5 is a PFO wetland approximately 0.27 acres in size within the Project area. The functional assessment (ORAM) of Wetland 5 yielded a score of 36 and identifies this wetland as a Category 2 wetland, indicating it is a wetland of “fair-moderate” quality. Wetland 5 is potentially jurisdictional due to its proximity to Stream 2. A WDF (SP17) was completed, the first soil horizon was 5 inches of loam with a chroma matrix of 10YR 4/3. The next 13 inches were silty clay loam with chroma matrix of 10YR 6/2, and redox concentrations in the matrix (10YR 5/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, a high water table, water marks, sparsely vegetated concave surface, and water-stained leaves. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including red maple (*Acer rubrum*; FAC) and pin oak (FACW) in the tree stratum.

Wetland 6

Wetland 6 is a PEM wetland approximately 0.09 acres in size within the Project area. The functional assessment (ORAM) of Wetland 6 yielded a score of 39.5 and identifies this wetland as a Category 2 wetland, indicating it is a wetland of “fair-moderate” quality. Wetland 6 is potentially jurisdictional due to its proximity to Open Water 3 and 4. A WDF (SP18) was completed, the first soil horizon was 7 inches of clay loam with a

chroma matrix of 10YR 4/2, and redox concentrations in the matrix (10YR 5/8), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, a high water table and saturation. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including reed canary gras (*Phalaris arundinacea*; FACW).

Wetland 7

Wetland 7 is a PFO wetland approximately 0.32 acres in size within the Project area. The functional assessment (ORAM) of Wetland 7 yielded a score of 39 and identifies this wetland as a Category 2 wetland, indicating it is a wetland of "fair-moderate" quality. Wetland 7 is potentially jurisdictional due to its proximity to Open Water 3 and 4. A WDF (SP20) was completed, the first soil horizon was 9 inches of clay loam with a chroma matrix of 10YR 4/2, and redox concentrations in the matrix (7.5YR 6/8), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included a high water table. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including pin oak (FACW) and slippery elm (*Ulmus rubra*; FAC) in the tree stratum.

Wetland 8

Wetland 8 is a PEM wetland approximately 0.07 acre in size within the Project area. The functional assessment (ORAM) of Wetland 8 yielded a score of 24 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 8 is potentially jurisdictional due to its potential hydrological connections to the Scioto River. A WDF (SP22) was completed, the first soil horizon was 6 inches of loam with a chroma matrix of 10YR 4/2, and redox concentrations in the pore linings (7.5YR 4/6). The next 2 inches were loam with a chroma matrix (5Y 4/1) and redox concentrations in the pore linings (7.5YR 4/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, high water table, saturation, and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including reed canary grass (FACW).

Wetland 9

Wetland 9 is a PEM wetland approximately 0.06 acre in size within the Project area. The functional assessment (ORAM) of Wetland 9 yielded a score of 19 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 9 is potentially jurisdictional due to its hydrological connection to Stream 8. A WDF (SP25) was completed, the first soil horizon was 6 inches of silty clay loam with a chroma matrix of 10YR 3/2. The next 8 inches were silty clay loam with a chroma matrix of 10YR 4/1, and redox concentrations in the matrix and pore lining (10YR 5/8 and 5YR 4/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, high water table, saturation, and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including reed canary grass (FACW).

Wetland 10

Wetland 10 is a PEM wetland approximately 0.03 acres in size within the Project area. The functional assessment (ORAM) of Wetland 10 yielded a score of 21.5 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 10 is potentially jurisdictional due to its hydrological connection to Stream 10. A WDF (SP27) was completed, the first soil horizon was 3 inches of sandy loam

with a chroma matrix of 10YR 4/3. The next 18 inches were sandy loam with a chroma matrix of 5Y 3/1, and redox concentrations of 7.5 YR 5/8 in the pore linings and matrix, meeting the Sandy Redox Matrix (S5) hydric soil indicator. Primary hydrological indicators included surface water, high water table, saturation, and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including reed canary grass (FACW).

Wetland 11

Wetland 11 is a PEM wetland approximately 0.03 acre in size within the Project area. The functional assessment (ORAM) of Wetland 11 yielded a score of 21 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 11 is potentially jurisdictional due to its proximity to Wetland 12 and Stream 11. A WDF (SP29) was completed, the first soil horizon was 4 inches of clay loam with a chroma matrix of 10YR 4/2, and redox concentrations in the matrix (5YR 5/8). The next 17 inches were clay loam with a chroma matrix of 10YR 4/1, and redox concentrations in the matrix (5YR 5/8), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including reed canary grass (FACW).

Wetland 12

Wetland 12 is a PEM wetland approximately 0.07 acre in size within the Project area. The functional assessment (ORAM) of Wetland 12 yielded a score of 24 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 12 is potentially jurisdictional due to its hydrological connection to Stream 11. A WDF (SP31) was completed, the first soil horizon was 6 inches of silt loam with a chroma matrix of 10YR 4/2, and redox concentrations in the pore linings (5YR 5/8). The next 4 inches were silt loam with a chroma matrix of 10YR 4/1, and redox concentrations in the pore linings and matrix (5YR 4/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, high water table, saturation, and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including reed canary grass (FACW), rice cutgrass (*Leersia oryzoides*; OBL), and late goldenrod (*Solidago gigantea*; FACW).

Wetland 13

Wetland 13 is a PEM wetland approximately 0.004 acre in size within the Project area. The functional assessment (ORAM) of Wetland 13 yielded a score of 15.5 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 13 is potentially jurisdictional due to its potential hydrological connection to Sugar Run. A WDF (SP32) was completed, the first soil horizon was 10 inches of silt loam with a chroma matrix of 10YR 3/3, and redox concentrations in the pore linings (10YR 3/4). The next 10 inches were silty clay with a chroma matrix of 10YR 4/1, and redox concentrations in the matrix (7.5YR 5/8), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, a high water table, and saturation, oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including reed canary grass (FACW) and broadleaf cattail (*Typha latifolia*; OBL).

Wetland 14

Wetland 14 is a PFO wetland approximately 0.10 acre in size within the Project area. The functional assessment (ORAM) of Wetland 14 yielded a score of 41 and identifies this wetland as a Category 2 wetland, indicating it is a wetland of "fair-moderate" quality. Wetland 14 is potentially jurisdictional due to its potential hydrological connection to Sugar Run. A WDF (SP35) was completed, the first soil horizon was 3 inches of silty clay with a chroma matrix of 10YR 3/2 and redox concentrations in the matrix (7.5YR 5/8). The next 14 inches were clay with a chroma matrix of 10YR 5/1 and redox concentrations in the matrix (10YR 5/8), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included water marks, sparsely vegetated concave surface, water-stained leaves, and buttressed trees. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including pin oak (FACW) and slippery elm (FACW).

Wetland 15

Wetland 15 is a PEM wetland approximately 0.03 acre in size within the Project area. The functional assessment (ORAM) of Wetland 15 yielded a score of 25.5 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 15 is potentially jurisdictional due to its hydrological connection to Stream 12. The WDF (SP37) included a first soil horizon was 5 inches of clay loam with a chroma matrix of 10YR 4/2. The next 15 inches were silty clay with a chroma matrix of 10YR 4/2 and redox concentrations in the matrix (7.5YR 4/6 and 7.5YR 5/8), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, high water table, and saturation. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including narrowleaf cattail (OBL) and reed canary grass (FACW).

Wetland 16

Wetland 16 is a PEM wetland approximately 0.11 acre in size within the Project area. The functional assessment (ORAM) of Wetland 16 yielded a score of 15 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 16 is potentially jurisdictional due to its hydrological connection to Stream 13. The WDF (SP39) included a first soil horizon was 7 inches of clay loam with a chroma matrix of 10YR 4/2 and redox concentrations in the pore linings (5YR 4/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, high water table, and saturation. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including narrowleaf cattail (OBL).

Wetland 17

Wetland 17 is a PEM wetland approximately 0.07 acre in size within the Project area. The functional assessment (ORAM) of Wetland 17 yielded a score of 14 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 17 is potentially jurisdictional due to its potential hydrological connection to North Fork Indian Run. The WDF (SP41) included a first soil horizon was 7 inches of clay loam with a chroma matrix of 10YR 4/2 and redox concentrations of 10YR 5/8 in the matrix and 5YR 4/6 in the pore linings, meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, a high water table, and saturation. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including narrowleaf cattail (OBL).

Wetland 18

Wetland 18 is a PEM wetland approximately 0.05 acre in size within the Project area. The functional assessment (ORAM) of Wetland 18 yielded a score of 15.5 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 18 is potentially jurisdictional due to its potential hydrological connections to North Fork Indian Run. The WDF (SP43) included a first soil horizon of 4 inches of silt loam with a chroma matrix of 10YR 4/3 and redox concentrations of 5YR 4/6 in the matrix and pore linings. The next 2 inches were silty loam with 40% gravel, and a chroma matrix (10YR 4/3). The next 8 inches were silty clay with a chroma matrix of 5YR 5/1 and redox concentrations in the matrix (10YR 5/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, high water table, and saturation. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including narrowleaf cattail (OBL).

Wetland 19

Wetland 19 is a PEM wetland approximately 0.06 acre in size within the Project area. The functional assessment (ORAM) of Wetland 19 yielded a score of 17 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 19 is potentially jurisdictional due to its potential hydrological connections to North Fork Indian Run. The WDF (SP45) included a first soil horizon of 4 inches of silt loam with a chroma matrix of 10YR 3/1 and redox concentrations of 7.5YR 5/8 in the matrix and 5YR 5/8 in the pore linings. The next 14 inches were silty clay with a chroma matrix (10YR 5/1) and redox concentrations in the matrix (10YR 5/6), meeting the Depleted Dark Surface (F7) hydric soil indicator. Primary hydrological indicators included surface water. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including narrowleaf cattail (OBL).

Wetland 20

Wetland 20 is a PEM wetland approximately 0.08 acre in size within the Project area. The functional assessment (ORAM) of Wetland 20 yielded a score of 19.5 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 20 is potentially jurisdictional due to its potential hydrological connections with to North Fork Indian Run. The WDF (SP47) included a first soil horizon of 7 inches of silt loam with a chroma matrix of 10YR 4/3 and redox concentrations in the matrix (7.5YR 4/6). The next 14 inches were silty clay loam with a chroma matrix (10YR 4/2) and redox concentrations in the matrix (7.5YR 4/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water and high water table. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including narrowleaf cattail (OBL).

Wetland 21

Wetland 21 is a PEM wetland approximately 0.11 acre in size within the Project area. The functional assessment (ORAM) of Wetland 21 yielded a score of 27.5 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 21 is potentially jurisdictional due to its potential hydrological connection to North Fork Indian Run. The WDF (SP49) included a first soil horizon of 17 inches of silty clay loam with a chroma matrix of 10YR 4/2 and redox concentrations in the pore linings (5YR 5/8), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, high water

table, saturation, and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including reed canary grass (FACW)

Wetland 22

Wetland 22 is a PEM wetland approximately 0.01 acre in size within the Project area. The functional assessment (ORAM) of Wetland 22 yielded a score of 15 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 22 is potentially jurisdictional due to its potential hydrological connections to North Fork Indian Run. The WDF (SP52) included a first soil horizon of 7 inches of silty clay loam with a chroma matrix of 10YR 4/2 and redox concentrations in the matrix (5YR 5/8). The next 13 inches were silty clay with a chroma matrix of 10YR 4/2 and redox concentrations in the pore linings (5YR 5/8), meeting the Depleted Matrix (F3). Primary hydrological indicators included surface water, high water table, and saturation. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including dark green bulrush (OBL.

Wetland 23

Wetland 23 is a PEM wetland approximately 0.03 acre in size within the Project area. The functional assessment (ORAM) of Wetland 23 yielded a score of 26 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 23 is potentially jurisdictional due to its potential hydrological connections with North Fork Indian Run. The WDF (SP53) included a first soil horizon of 6 inches of silty clay with a chroma matrix of 10YR 4/2 and redox concentrations in the pore linings (7.5YR 4/6), meeting the Depleted Matrix (F3). Primary hydrological indicators included high water table, saturation, and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including narrowleaf cattail (OBL) and reed canary grass (FACW).

Table 2. Potential Wetlands Identified in the Northern Columbus Loop Natural Gas Pipeline Project (Phase VIII) Alternate Route Area, Delaware and Union Counties, Ohio

Wetland Name	Latitude	Longitude	Classification	ORAM Score	ORAM Regulatory Category	Total Acreage in Project Area
Wetland 1	40.221186	-83.106301	PFO	46	CAT 2	0.60
Wetland 2	40.221746	-83.114655	PEM	23	CAT 1	0.03
Wetland 3	40.221478	-83.116816	PEM	17	CAT 1	0.29
Wetland 4	40.221591	-83.120232	PFO/PEM	36	CAT 2	0.20
Wetland 5	40.222487	-83.122029	PFO	36	CAT 2	0.27
Wetland 6	40.223591	-83.126367	PEM	39.5	CAT 2	0.09
Wetland 7	40.22391	-83.127736	PFO	39	CAT 2	0.32
Wetland 8	40.202383	-83.188804	PEM	24	CAT 1	0.07
Wetland 9	40.196255	-83.196444	PEM	19	CAT 1	0.06
Wetland 10	40.16996	-83.222986	PEM	21.5	CAT 1	0.03
Wetland 11	40.166156	-83.226675	PEM	21	CAT 1	0.03

Wetland Name	Latitude	Longitude	Classification	ORAM Score	ORAM Regulatory Category	Total Acreage in Project Area
Wetland 12	40.166109	-83.226846	PEM	24	CAT 1	0.07
Wetland 13	40.163696	-83.228767	PEM	15.5	CAT 1	0.004
Wetland 14	40.156638	-83.222405	PFO	41	CAT 2	0.10
Wetland 15	40.150831	-83.217515	PEM	25.5	CAT 1	0.03
Wetland 16	40.149256	-83.215996	PEM	15	CAT 1	0.11
Wetland 17	40.146771	-83.212827	PEM	14	CAT 1	0.07
Wetland 18	40.14437	-83.209745	PEM	15.5	CAT 1	0.05
Wetland 19	40.140259	-83.205494	PEM	17	CAT 1	0.06
Wetland 20	40.140306	-83.204427	PEM	19.5	CAT 1	0.08
Wetland 21	40.13959	-83.200191	PEM	27.5	CAT 1	0.11
Wetland 22	40.139349	-83.198663	PEM	15	CAT 1	0.01
Wetland 23	40.139193	-83.197891	PEM	26	CAT 1	0.03
					Total Delineated Wetland	**2.71**

4.3 STREAM HABITAT

Seventeen streams were identified within the Project area, totaling approximately 4,039 linear feet (Appendix A, Figure 4). Appendix B contains the QHEI and HHEI datasheets. Representative photographs of the streams are provided in Appendix C. The streams are described below and summarized in Table 3.

Stream 1

Stream 1 is an intermittent stream with approximately 319 linear feet within the Project area. The functional assessment (HHEI) of Stream 1 yielded a score of 40, indicating it is a Class II PHWH stream. The stream had a bankfull width of 5.5 feet and a bankfull depth of 0.8 feet and was flowing at the time of site visit. Substrates observed were primarily silt and clay. Stream 1 drains into the Olentangy River outside the Project area.

Stream 2

Stream 2 is an ephemeral stream with approximately 347 linear feet within the Project area. The functional assessment (HHEI) of Stream 2 yielded a score of 30, indicating it is a Modified Class II PHWH stream. The stream had a bankfull width of 3 feet and a bankfull depth of 0.8 feet and was flowing at the time of site visit. Substrates observed were primarily hardpan and leaf pack. Stream 2 drains into the Scioto River outside the Project area.

Stream 3

Stream 3 is an ephemeral stream with approximately 9 linear feet within the Project area. The functional assessment (HHEI) of Stream 3 yielded a score of 36, indicating it is a Modified Class II PHWH stream. The stream had a bankfull width of 3 feet and a bankfull depth of 0.5 feet and had isolated shallow pools at the time of site visit. The substrate observed was primarily hardpan and leaf pack. Stream 3 drains into the Scioto River outside Project area.

Stream 4

Stream 4, the Scioto River is a perennial stream with approximately 205 linear feet within the Project area. The functional assessment (QHEI) of Stream 4 yielded a score of 51.5, indicating it as a "fair" quality stream. The stream had a bankfull width of 1,011 feet and a bankfull depth of 20 feet and was flowing at the time of site visit. The substrate observed was primarily hardpan and silt. Stream 4 drains into the Ohio River outside Project area.

Stream 5

Stream 5 is an ephemeral stream with approximately 126 linear feet within the Project area. The functional assessment (HHEI) of Stream 5 yielded a score of 30, indicating it is a Modified Class II PHWH stream. The stream had a bankfull width of 2.5 feet and a bankfull depth of 0.7 feet and was flowing at the time of site visit. The substrate observed was primarily hardpan and sand. Stream 5 drains into the Scioto River outside Project area.

Stream 6

Stream 6 is an ephemeral stream with approximately 162 linear feet within the Project area. The functional assessment (HHEI) of Stream 6 yielded a score of 36, indicating it is Modified Class II PHWH stream. The stream had a bankfull width of 2.5 feet and a bankfull depth of 0.8 feet and had subsurface flow with isolated pools at the time of site visit. The substrate observed was primarily hardpan. Stream 6 drains into Eversole Run outside the Project area.

Stream 7

Stream 7 is an intermittent stream with approximately 101 linear feet within the Project area. The functional assessment (HHEI) of Stream 7 yielded a score of 39, indicating it is a Modified Class II PHWH stream. The stream had a bankfull width of 3 feet and a bankfull depth of 1 foot and was flowing at the time of site visit. The substrate observed was primarily hardpan and sand. Stream 7 drains into Stream 6 which eventually drains into Eversole Run outside Project area.

Stream 8

Stream 8 is an intermittent stream with approximately 36 linear feet within the Project area. The functional assessment (HHEI) of Stream 8 yielded a score of 50, indicating it is a Modified Class II PHWH stream. The stream had a bankfull width of 5 feet and a bankfull depth of 1.5 feet and was flowing at the time of site visit.

The substrate observed was primarily silt and hardpan. Stream 8 drains into Eversole Run outside Project area.

Stream 9

Stream 9, Eversole Run, is an intermittent stream with approximately 901 linear feet within the Project area. The functional assessment (HHEI) of Stream 9 yielded a score of 57, indicating it is a Modified Class II PHWH stream. The stream had a bankfull width of 4.5 feet and a bankfull depth of 1.5 feet and was flowing at the time of site visit. The substrate observed was primarily sand and silt. Stream 9 drains into the Scioto River outside Project area.

Stream 10

Stream 10 is an intermittent stream with approximately 127 linear feet within the Project area. The functional assessment (HHEI) of Stream 10 yielded a score of 48, indicating it is a Modified Class II PHWH stream. The stream had a bankfull width of 4 feet and a bankfull depth of 1 foot and was flowing at the time of site visit. The substrate observed was primarily silt and fine detritus. Stream 10 drains into Sugar Run outside Project area.

Stream 11

Stream 11 is an intermittent stream with approximately 197 linear feet within the Project area. The functional assessment (HHEI) of Stream 11 yielded a score of 48, indicating it is a Modified Class II PHWH stream. The stream had a bankfull width of 4 feet and a bankfull depth of 1 foot and was flowing at the time of site visit. The substrate observed was primarily silt and fine detritus. Stream 11 flows through Wetland 12 and drains into Sugar Run outside Project area.

Stream 12

Stream 12 is an intermittent stream with approximately 160 linear feet within the Project area. The functional assessment (HHEI) of Stream 12 yielded a score of 41, indicating it is a Modified Class II PHWH stream. The stream had a bankfull width of 2.5 feet and a bankfull depth of 0.5 feet and was flowing at the time of site visit. The substrate observed was primarily hardpan and gravel. Stream 12 flows through Wetland 15, drains to Stream 17 which eventually drains into Sugar Run outside Project area.

Stream 13

Stream 13 is an intermittent stream with approximately 204 linear feet within the Project area. The functional assessment (HHEI) of Stream 13 yielded a score of 35, indicating it is a Modified Class II PHWH stream. The stream had a bankfull width of 3 feet and a bankfull depth of 1 foot and was flowing at the time of site visit. The substrate observed was primarily hardpan and leaf pack. Stream 13 drains into Sugar Run outside Project area.

Stream 14

Stream 14 is a perennial stream with approximately 259 linear feet within the Project area. The functional assessment (HHEI) of Stream 14 yielded a score of 58, indicating it is a Modified Class II PHWH stream. The

stream had a bankfull width of 5 feet and a bankfull depth of 1 foot and was flowing at the time of site visit. The substrate observed was primarily sand and silt. Stream 14 drains into Indian Run outside Project area.

Stream 15

Stream 15 is an ephemeral stream with approximately 20 linear feet within the Project area. The functional assessment (HHEI) of Stream 15 yielded a score of 15, indicating it is a Modified Class I PHWH stream. The stream had a bankfull width of 2.5 feet and a bankfull depth of 0.3 feet and had a moist channel with isolated pools at the time of site visit. The substrate observed was primarily leaf pack and hardpan. Stream 15 drains into Indian Run outside Project area.

Stream 16

Stream 16 is an intermittent stream with approximately 192 linear feet within the Project area. The functional assessment (HHEI) of Stream 16 yielded a score of 36, indicating it is a Modified Class II PHWH stream. The stream had a bankfull width of 2.5 feet and a bankfull depth of 1 foot and had subsurface flow with isolated pools at the time of site visit. The substrate observed was primarily hardpan and fine detritus. Stream 16 drains into Indian Run outside Project area.

Stream 17

Stream 17 is an intermittent stream with approximately 674 linear feet within the Project area. The functional assessment (HHEI) of Stream 17 yielded a score of 64, indicating it is a Modified Class II PHWH stream. The stream had a bankfull width of 5 feet and a bankfull depth of 1.5 feet and was flowing at the time of site visit. The substrate observed was primarily gravel and sand. Stream 17 drains into Indian Run outside Project area.

Table 3. Potential Streams Identified in the Northern Columbus Loop Natural Gas Pipeline Project (Phase VIII) Alternate Route Area, Delaware and Union Counties, Ohio

Stream Name	Latitude	Longitude	OHWM Width (feet)	OHWM Depth (feet)	Classification	Evaluation Method	Score	Total Linear Feet in Project Area
Stream 1	40.21905	-83.0939	4.5	0.5	Intermittent	HHEI	40	319
Stream 2	40.22187	-83.1209	1.5	0.2	Ephemeral	HHEI	30	347
Stream 3	40.22394	-83.1372	2.0	0.2	Ephemeral	HHEI	36	9
Stream 4 (Scioto River)	40.21937	-83.1433	1,011	20	Perennial	QHEI	51.5	205
Stream 5	40.2187	-83.1465	1.0	0.2	Ephemeral	HHEI	30	126
Stream 6	40.21014	-83.1655	1.5	0.6	Ephemeral	HHEI	36	162
Stream 7	40.21013	-83.1671	2.0	0.5	Intermittent	HHEI	39	101
Stream 8	40.19595	-83.196	2.5	1.0	Intermittent	HHEI	50	36

Stream Name	Latitude	Longitude	OHWM Width (feet)	OHWM Depth (feet)	Classification	Evaluation Method	Score	Total Linear Feet in Project Area
Stream 9 (Eversole Run)	40.18499	-83.2136	2.5	1.0	Intermittent	HHEI	57	901
Stream 10	40.16995	-83.223	2.5	0.6	Intermittent	HHEI	48	127
Stream 11	40.16607	-83.2268	2.5	0.6	Intermittent	HHEI	48	197
Stream 12	40.15096	-83.2176	1.5	0.4	Intermittent	HHEI	41	160
Stream 13	40.15028	-83.2168	2.5	0.5	Intermittent	HHEI	35	204
Stream 14	40.1423	-83.1934	3.5	0.6	Perennial	HHEI	58	259
Stream 15	40.14499	-83.1941	2.0	0.1	Ephemeral	HHEI	15	20
Stream 16	40.14982	-83.1891	1.5	0.7	Intermittent	HHEI	36	192
Stream 17	40.14996	-83.1886	3.5	0.8	Intermittent	HHEI	64	674
							Total Linear Footage in Project Area	**4,039**

5.0 CONCLUSION

Stantec conducted a delineation of potential WOUS within the Project area located in Liberty and Concord Townships, Delaware County and Millcreek and Jerome Townships, Union County, Ohio. The purpose and objective of the wetland and waterbody delineation was to identify the extent and spatial arrangement of potential jurisdictional wetlands and waterbodies within the Project area. Twenty-three potentially jurisdictional wetlands and seventeen potentially jurisdictional streams were identified within the Project area. A total of approximately 1.42 acre of delineated Category 2 PFO wetlands, 0.16 acre of Category 2 PEM, and 1.13 acre of delineated Category 1 PEM wetlands were identified in the Project area. A total of 464 linear feet of perennial stream, 2,911 linear feet of intermittent stream, and 664 linear feet of ephemeral stream for a total length of 4,039 linear feet of potentially jurisdictional stream were identified within the Project area.

Stantec's opinion regarding the presence/absence of jurisdictional WOUS and isolated wetlands is preliminary. Only the USACE can provide an official determination of the presence and extent of jurisdictional WOUS. Wetlands that are considered WOUS are subject to regulation under Section 404 of the CWA and the jurisdictional regulatory authority lies with the USACE. Additionally, the OEPA has regulatory authority over isolated wetlands under Ohio Revised Code 61111.021. Stantec recommends that Columbia Gas of Ohio/NiSource contact the USACE for final jurisdictional review and concurrence with Stantec's opinion regarding the presence/absence of WOUS within the Project area prior to construction activities associated with this Project.

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APPENDICES

Appendix A FIGURES

A.1 FIGURE 1 – PROJECT LOCATION AND TOPOGRAPHY MAP

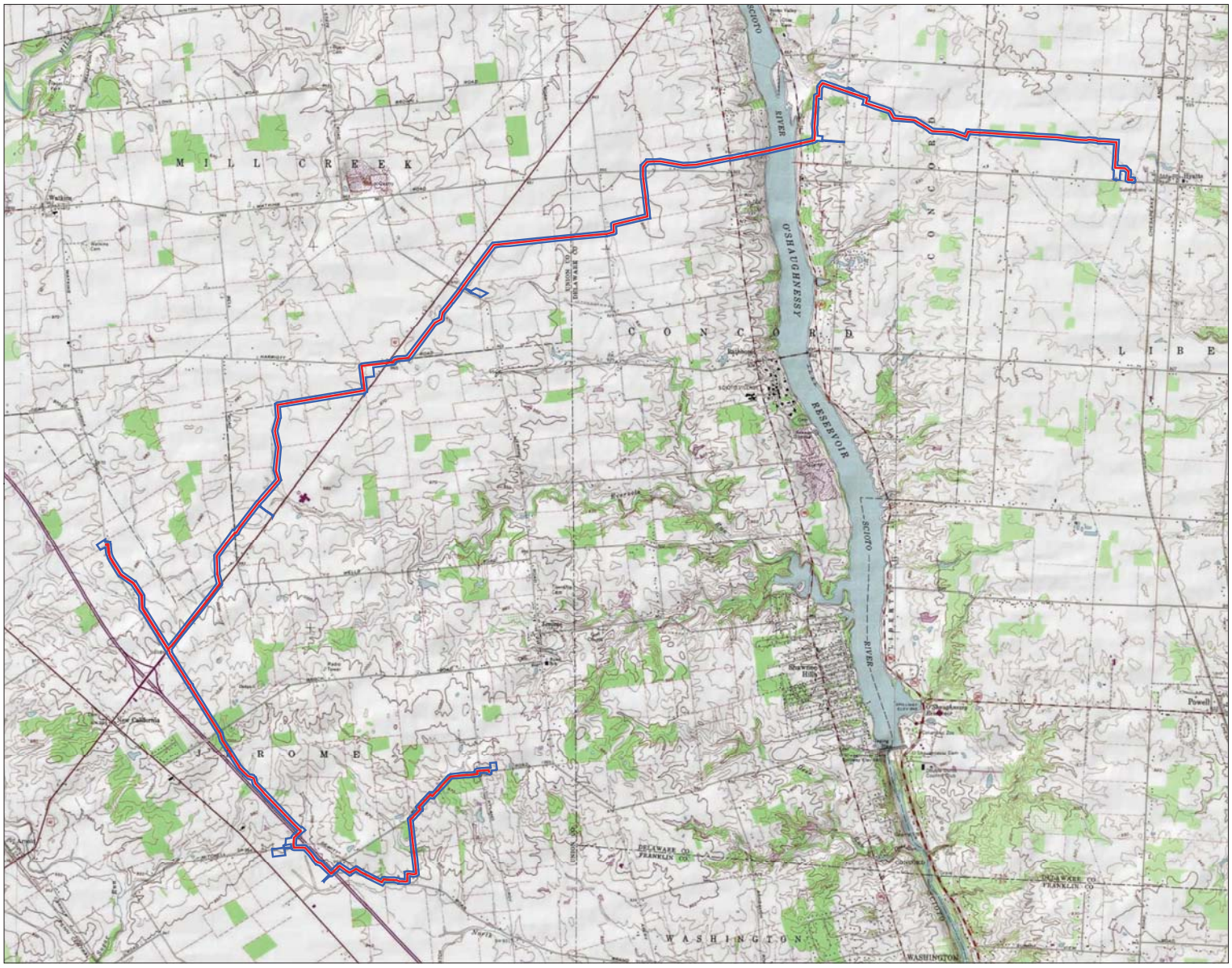

Figure No.

1

Title

Project Location and Topography

Client/Project

Columbia Gas of Ohio
Northern Columbus Loop Natural Gas Pipeline Project (Phase VII)
Alternate Route Wetland and Waterbody Delineation

Project Location 193707055

Union and Delaware Counties
Ohio

Prepared by JD on 2020-02-27
Technical Review by MK on 2020-03-25
Independent Review by MT on 2020-04-13

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Legend

Approximate Proposed Pipeline - Alternate Route
Survey Corridor

Notes

1. Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
2. Data Sources include: Stantec, Columbia Gas, USGS, NADS
3. Background: USGS 7.5' Topographic Quadrangles

Stantec

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A.2 FIGURE 2 – NRCS SOIL SURVEY DATA AND HYDRIC RATINGS MAP

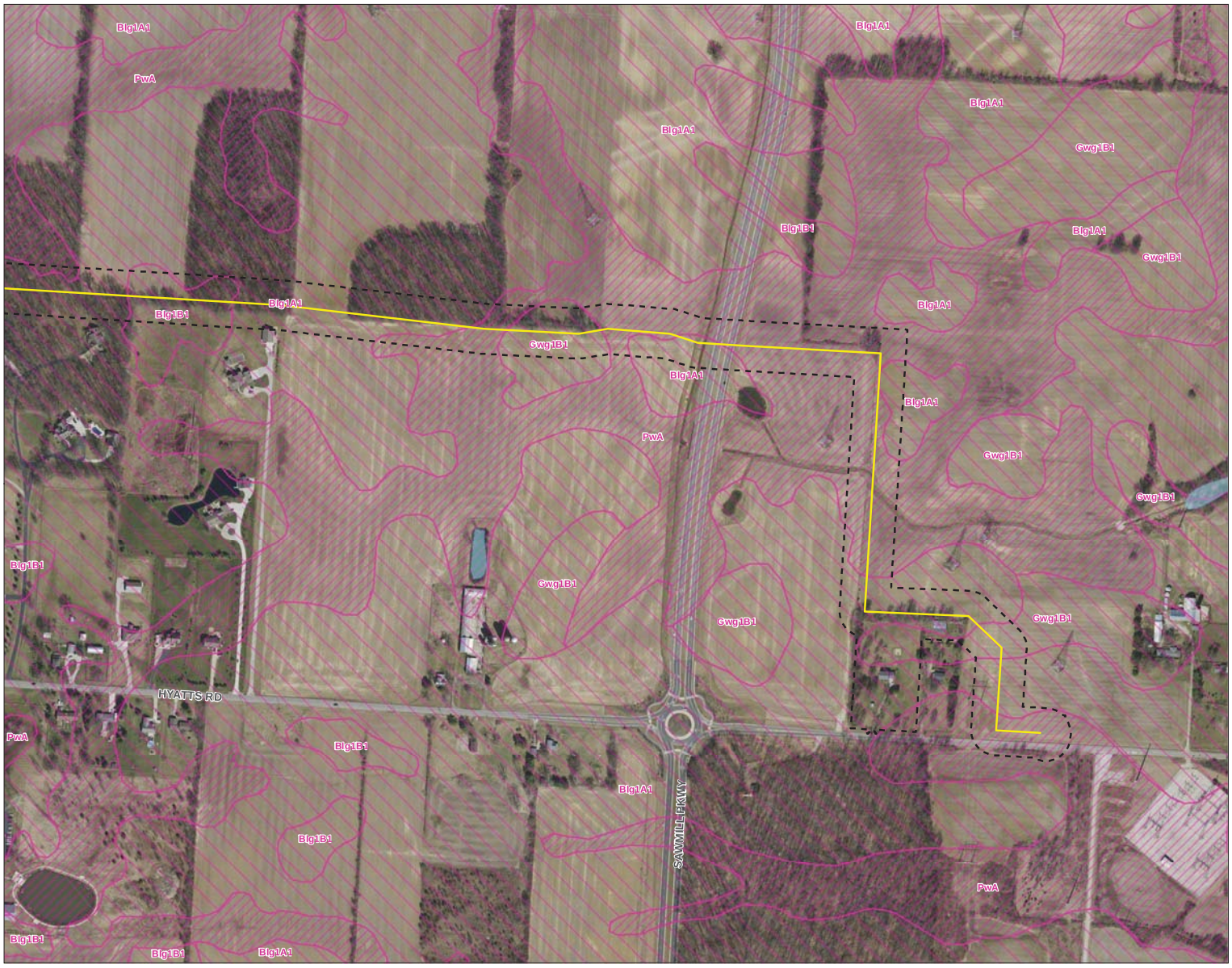

Figure No.
2

Title
NRCS Soil Survey Data and Hydric Ratings

Client/Project

Columbia Gas of Ohio
Northern Columbus Loop Natural Gas Pipeline Project (Phase VII)
Alternate Route Wetland and Waterbody Delineation

Project Location
Union and Delaware Counties
Ohio

193707055

Prepared by JD on 2020-02-27
Technical Review by MK on 2020-03-25
Independent Review by MT on 2020-04-13

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Legend

- Survey Corridor
- Approximate Proposed Pipeline - Alternate Route

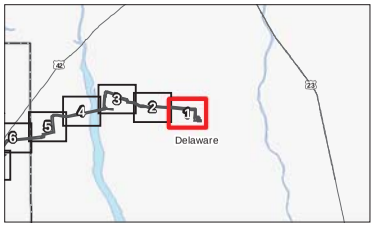
NRCS Soil Survey Data

Hydric Ratings

- Predominantly Hydric Soil
- Partially Hydric Soil
- Non-Hydric Soil

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Waterbody



Notes

1. Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
2. Data Sources include: Stantec, Columbia Gas, USGS, NADS, OGRIP, NRCS
3. Orthophotography: 2018 OGRIP

Stantec

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Figure No.

2

Title

NRCS Soil Survey Data and Hydric Ratings

Client/Project

Columbia Gas of Ohio
Northern Columbus Loop Natural Gas Pipeline Project (Phase VII)
Alternate Route Wetland and Waterbody Delineation

Project Location — 193707055

Union and Delaware Counties
Ohio

Prepared by JD on 2020-02-27
Technical Review by MK on 2020-03-25
Independent Review by MT on 2020-04-13

0 200 400 Feet
1:4,800 (At original document size of 11x17)

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Legend

- Survey Corridor
- Approximate Proposed Pipeline - Alternate Route

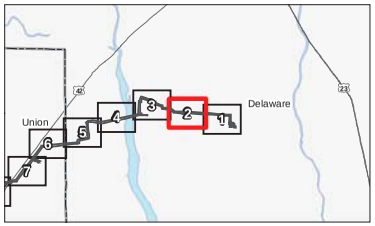
NRCS Soil Survey Data

Hydric Ratings

- Predominantly Hydric Soil
- Partially Hydric Soil
- Non-Hydric Soil

National Hydrography Dataset

- Perennial Stream
- Intermittent Stream
- Waterbody



Notes

1. Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
2. Data Sources Include: Stantec, Columbia Gas, USGS, NADS, OGRIP, NRCS
3. Orthophotography: 2018 OGRIP

Stantec

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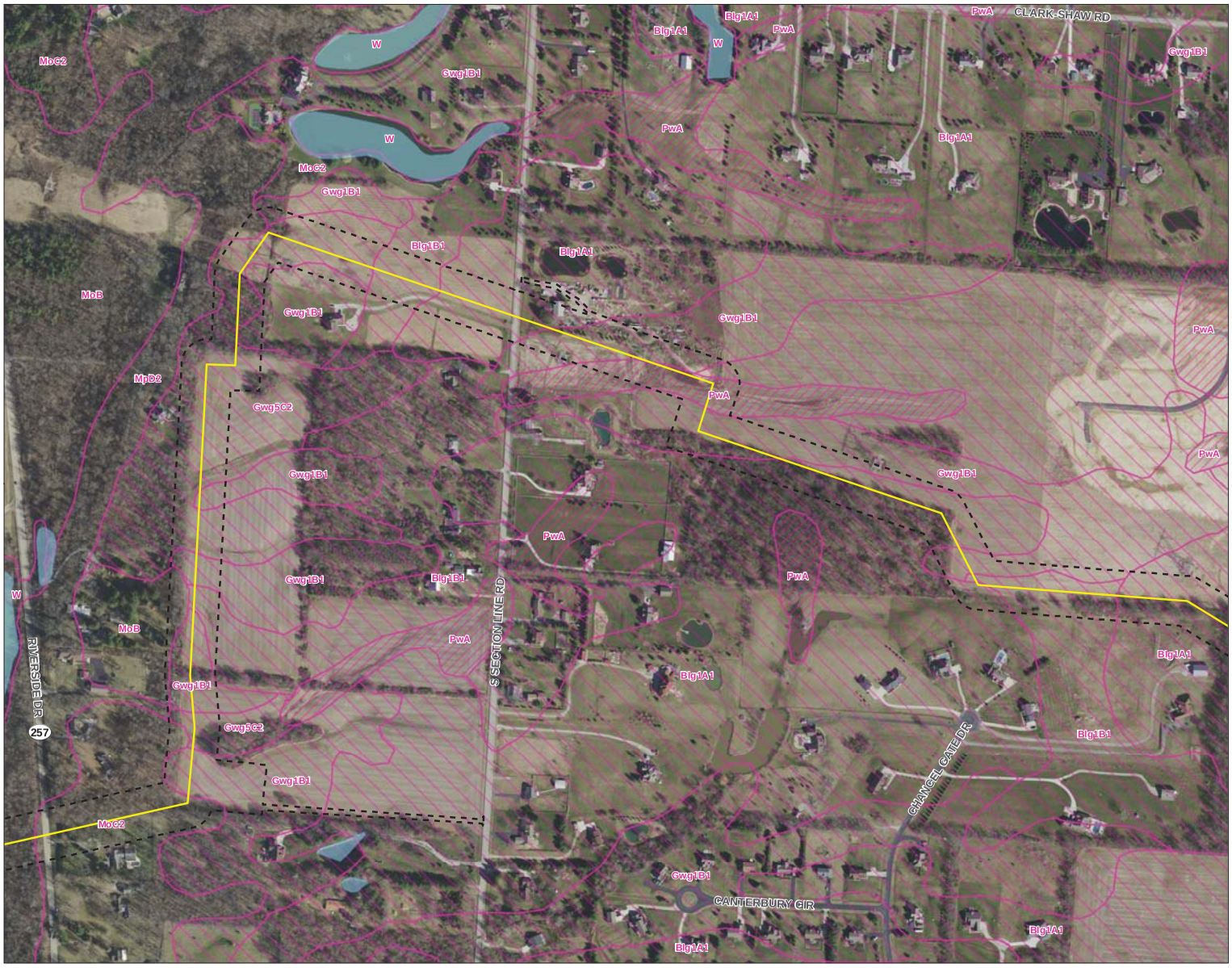

Figure No.

2

Title

NRCS Soil Survey Data and Hydric Ratings

Client/Project

Columbia Gas of Ohio
Northern Columbus Loop Natural Gas Pipeline Project (Phase VII)
Alternate Route Wetland and Waterbody Delineation

Project Location

Union and Delaware Counties
Ohio

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Prepared by JD on 2020-02-27
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0 200 400 Feet
1:4,800 (At original document size of 11x17)

N

Legend

- Survey Corridor
- Approximate Proposed Pipeline - Alternate Route

NRCS Soil Survey Data

Hydric Ratings

- Predominantly Hydric Soil
- Partially Hydric Soil
- Non-Hydric Soil

National Hydrography Dataset

- Perennial Stream
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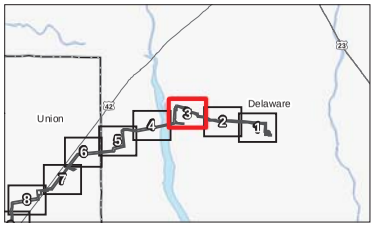
- Waterbody



Notes

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Figure No.
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Title
NRCS Soil Survey Data and Hydric Ratings

Client/Project

Columbia Gas of Ohio
Northern Columbus Loop Natural Gas Pipeline Project (Phase VII)
Alternate Route Wetland and Waterbody Delineation

Project Location
Union and Delaware Counties
Ohio

193707055

Prepared by JD on 2020-02-27
Technical Review by MK on 2020-03-25
Independent Review by MT on 2020-04-13

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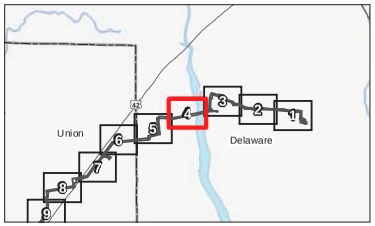

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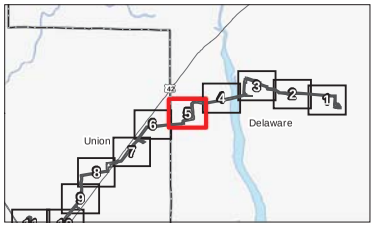

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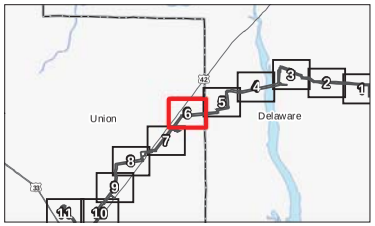

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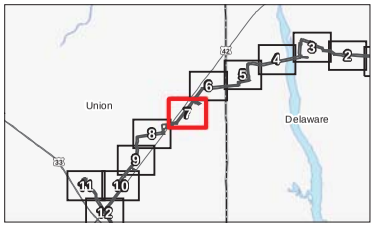

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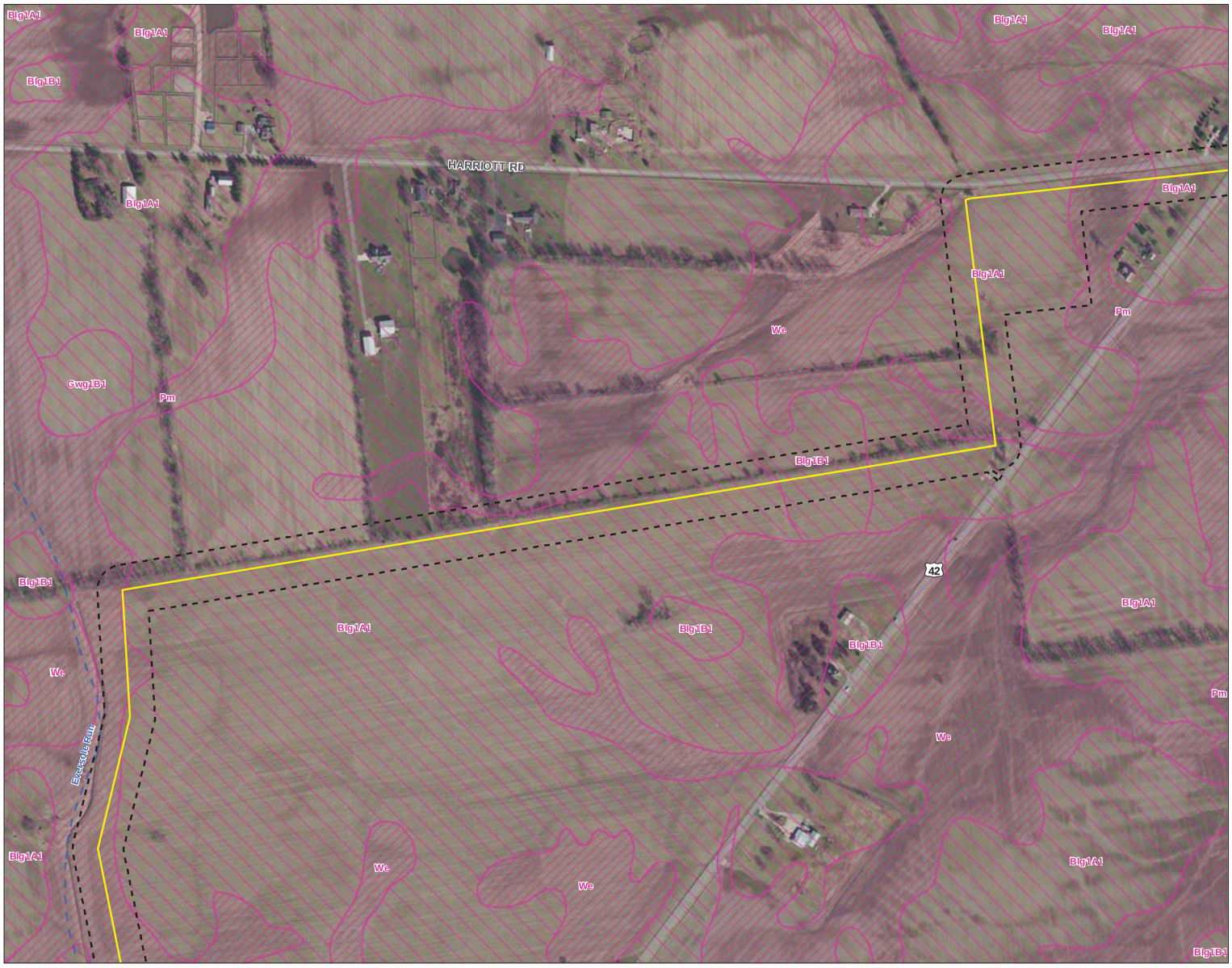

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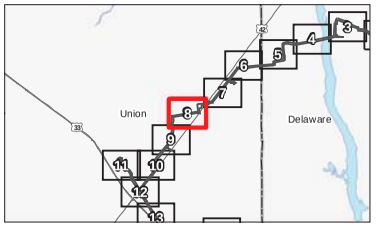

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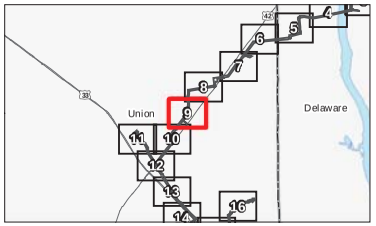

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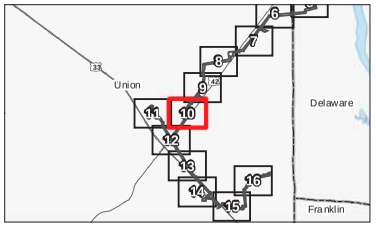

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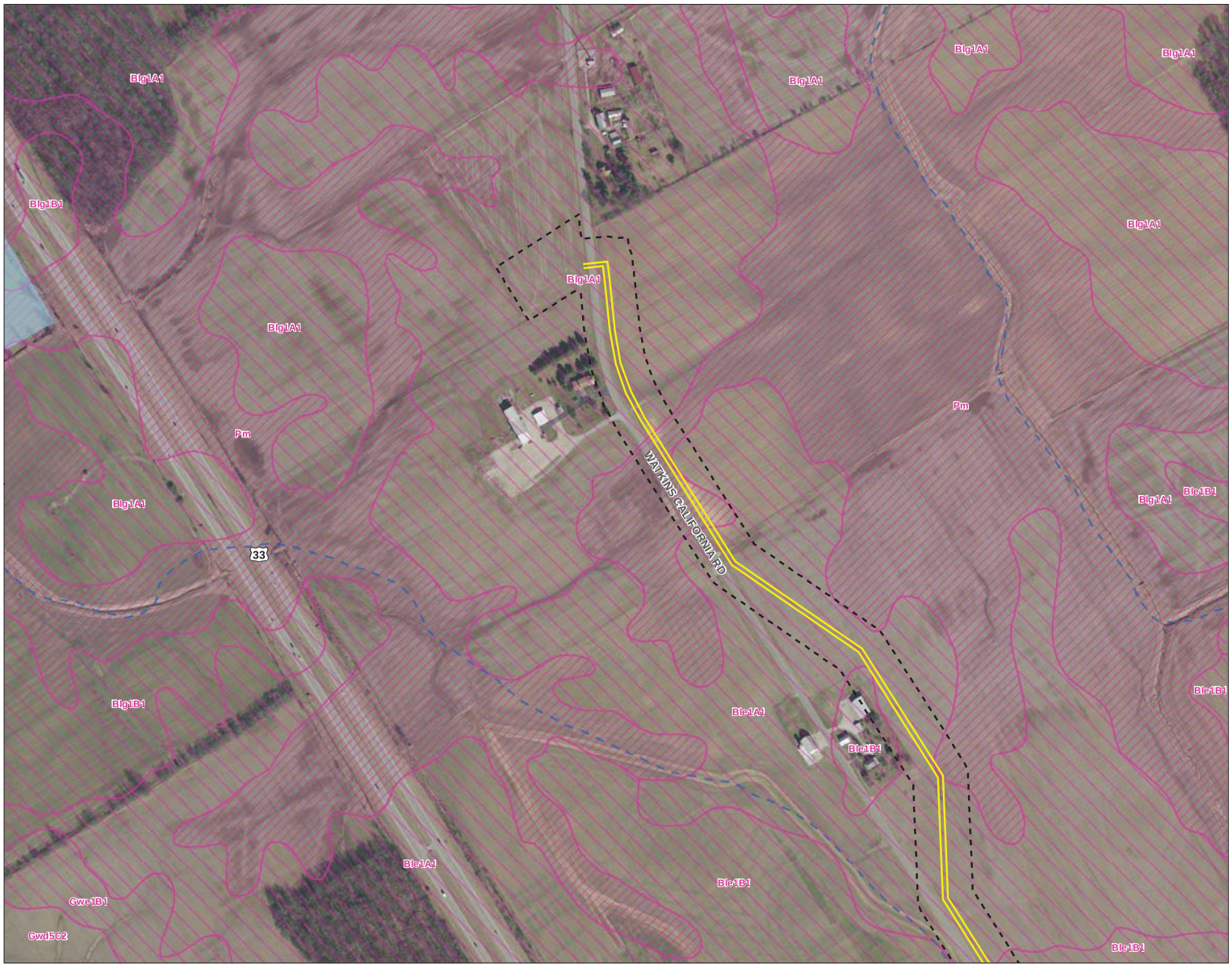

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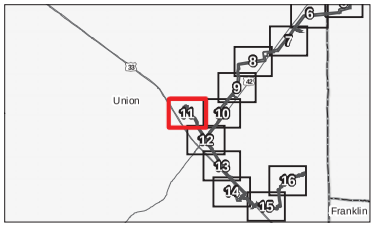

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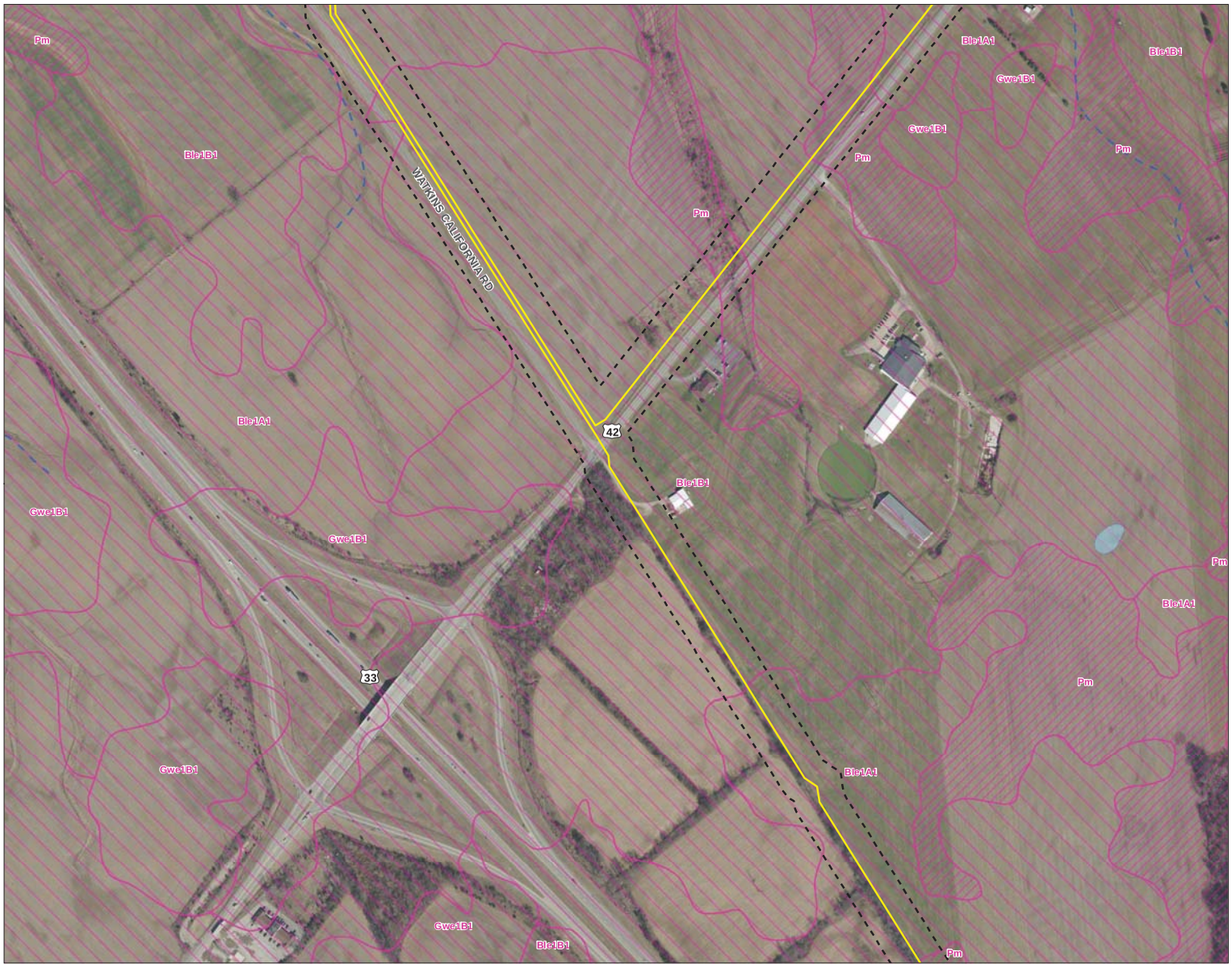

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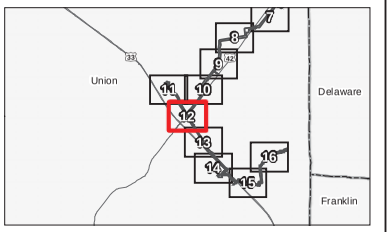

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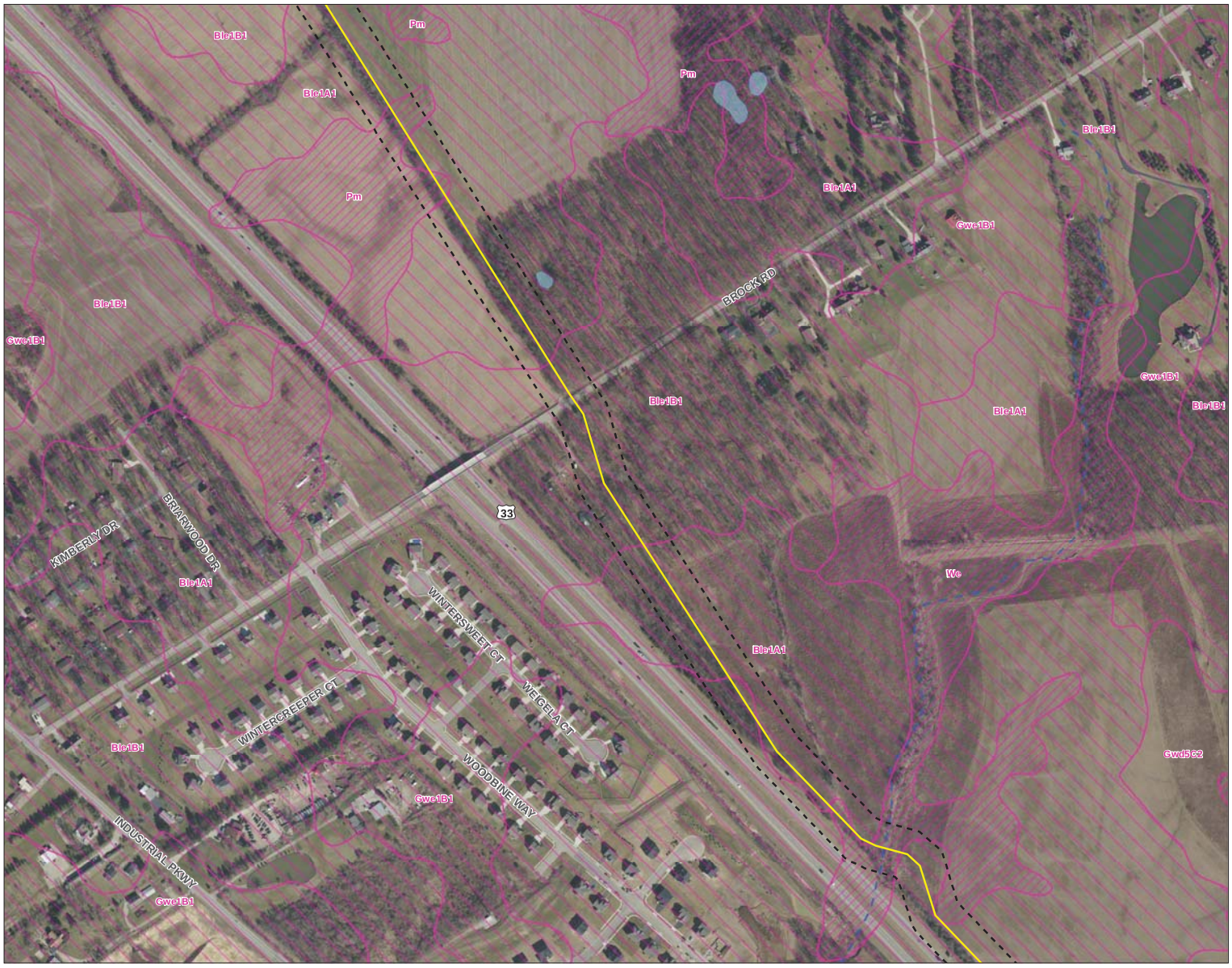

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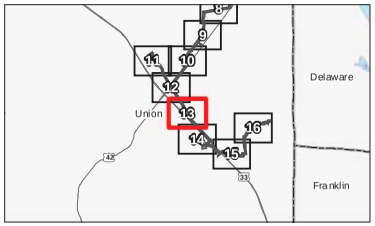

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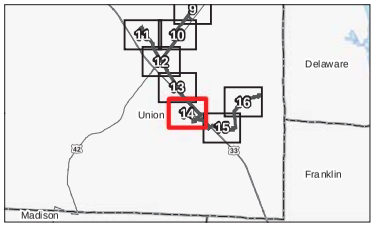

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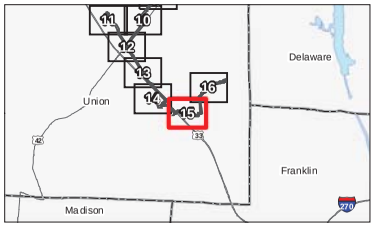

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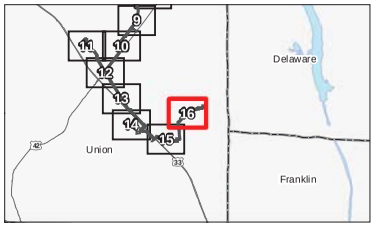

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