GEI Consultants

Consulting Engineers and Scientists

Wetland Delineation Report

RBF Storage

Atlas Township Parcel

Genesee County, Michigan

January 8, 2024

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Consulting
Engineers and
Scientists

Submitted to:
Brett Jory
RBF Storage
4140 Morrish Road
Swartz Creek, MI 48473

Submitted by:
GEI Consultants, Inc.
5225 Edgewater Drive
Allendale, Michigan 49401

January 8, 2024

Project 2304983

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1. Introduction

At the request of Mr. Brett Jory of RBF Storage, GEI Consultants of Michigan, P.C. (GEI) conducted a wetland delineation and assessment of wetlands as regulated pursuant to Part 303, Wetlands, of Natural Resources and Environmental Protection Act, P.A. 451 of 1994, as amended (NREPA) and waters (streams) regulated pursuant to Part 301, Inland Lakes and Streams, of NREPA for the Atlas Township Parcel located near S State Road and Coolidge Road in Atlas Township, Genessee County, Michigan (Figure 1). The subject property, referred to as the Atlas Township Parcel is parcel #25-02-10-300-018. The purpose for the delineation and assessment was to determine the presence or absence of wetlands and waters (lakes, ponds, streams, etc…) within the assessment area and, if present, to delineate and map their boundaries.

2. Methods

2.1 Desktop Review

Before conducting a site visit, GEI reviewed several resource databases and reference maps encompassing the assessment area. These included the U.S. Geologic Survey (USGS) Topographic Map Series and National Hydrography Dataset (NHD), U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS) Soil Survey, Michigan Wetland Mapper, and Federal Emergency Management Act (FEMA) Floodplain Data. These maps assist in identifying potential drainageways, wetlands, streams, and wetland soil units in the project area.

2.2 Field Assessments

GEI walked throughout the entire subject property, to determine the extent and regulatory status of any wetlands and waters present. Wetland areas were identified and delineated in accordance with the United States Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual (Environmental Laboratory 1987) and the Northcentral and Northeast (NENC) Regional Supplement (USACE 2011). Changes to Part 303 of NREPA now has the Michigan Department of Environment, Great Lakes, and Energy (EGLE) utilizing those procedures for identifying and

delineating wetlands in Michigan. Streams were identified and delineated according to the standards under Part 301 (NREPA) which defines a stream as a waterbody with definite banks, a bed, and evidence of a continued occurrence of water.

Wetland and water body boundaries were located with a global positioning system (GPS). GPS mapping was conducted with the ArcGIS Field Maps application and a Trimble Da2 GNSS receiver to facilitate sub-meter accuracy. Wetland boundaries were also flagged and sequentially labeled alphanumerically in the field with pink flagging tape. A dominance of wetland rated plants, and soils with field indicators of hydric soils coupled with visual signs of hydrology at the surface or within the soil profile were used to confirm the presence of wetlands. A dominance of upland rated plants, soils lacking field indicators of hydric soils, and/or visual signs of hydrology were used to confirm the presence of upland. Plant observations were recorded following the nomenclature of Michigan Flora Online (Reznicek 2011).

USACE Wetland Determination Data Forms were completed to document the delineated wetland boundaries of the various wetland types encountered on the property. Representative photographs of all delineated wetlands and data point locations were taken.

3. Results

On October 26, 2023, GEI investigated the entire assessment area to determine the presence or absence of wetlands and waters. Upon investigation, GEI identified and delineated two wetlands within the assessment area. The wetlands are labeled as Wetland A and Wetland B (Figure 2).

3.1 Wetland A

Wetland A is a Palustrine Emergent (PEM) wetland (Cowardin et al, 1979) which occupies a low basin area surrounded by upland slopes and fields. A linear ditch extends east to west along the southern parcel boundary, and Wetland A occupies only a small area on the north side of it. Wetland A also extends beyond the subject property to the southwest across a wider basin area (Figure 2).

One set of representative wetland data points were recorded along the boundary of Wetland A. Wetland data point 01 (DP01) was recorded within Wetland A and wetland data point 02 (DP02) was recorded above the Wetland A boundary within the upland field area (Appendix A).

Several indicators of wetland hydrology were observed in Wetland A. Soil saturation (A3), High Water Table (A2), and geomorphic position (D2) were all observed at DP01. The dominant vegetation observed in Wetland A was reed canary (*Phalaris arundinacea*), Canada goldenrod (*Solidago canadensis*), and smooth goldenrod (*Solidago gigantea*). These three species were by far the most dominant in relative cover within the portion of Wetland A on the subject property. Additional species were observed in this area, but in far lower abundance.

Clay and sandy clay soils were observed in Wetland A. The USGS soil maps showed that the surface soil complex in Wetland A is Sloan silt loam. The soil profile at DP01 revealed a dark surface layer from 0-12” in depth above a depleted matrix layer reaching below the bottom of the profile at 20”. The soil profile at DP01 met the Depleted Below Dark Surface (A11) hydric soil indicator.

3.2 Wetland B

Wetland B is a Palustrine Emergent (PEM) wetland (Cowardin et al, 1979) located along the northern edge of the subject property. Wetland B is primarily located on the neighboring parcel north of the subject property, but a small piece of it extends southward into the subject property. This area of Wetland B is north of the mowed path and continues downslope northeast toward the S State Road shoulder. Wetland B is defined by its position within a topographic depression and its dominant wetland vegetation of reed canary grass, willow species, and dogwood species. Our parcel layer shows a narrow piece of Wetland B within the subject property, but it’s possible all of Wetland B is within the neighboring parcel and outside the subject property.

3.3 Water Bodies

The National Hydrologic Dataset (NHD) shapefile showed a mapped stream feature in the southeast corner of the subject property. The mapped stream path travels from the southern border to the northeast corner and connects the Wetland A and Wetland B polygons shown on Figure 2. GEI’s field investigation revealed no stream path on the subject property nor stream characteristics in the topographic depression between Wetland A and Wetland B. The topographic depression was populated by upland vegetation and neither hydrologic or geomorphic evidence of a stream were observed.

4. Summary and Conclusions

GEI determined that two wetlands (Wetlands A and B) are present within the subject property. Wetland A is less than 5 acres in size within the subject property, however, it appears to be contiguous with a larger wetland system on the neighboring property to the south which is either adjacent to or within 500 feet of a regulated waterbody. Wetland B is neither 5 acres in size nor within 500 feet of a regulated waterbody. It is GEI's professional opinion that Wetland A would be considered regulated by EGLE pursuant to Part 303 of NREPA since it is within 500 feet of a defined water body pursuant to Part 301 of NREPA. Wetlands are considered contiguous and regulated by Part 303 of NREPA if they meet any of the following criteria:

1. A permanent surface water connection or other direct physical contact with an inland lake or stream, a pond, a river, one of the Great Lakes, or the connecting waters of the Great Lakes;

2. A seasonal or intermittent direct surface water connection to an inland lake or stream, a pond, river, one of the Great Lakes, or the connecting waters of the Great Lakes;

3. Partially or entirely located within 500 feet of the ordinary high watermark of an inland lake or stream, a pond, or a river or is within 1,000 feet of the ordinary high watermark of one of the Great Lakes or the connecting waters of the Great Lakes, unless it is determined by EGLE that there is no surface water or groundwater connection to these waters; or

4. Two or more areas of wetland separated only by barriers, such as dikes, roads, berms, or other similar features, but with any of the wetland areas contiguous under the criteria described in this definition. The connecting waters of the Great Lakes shall be considered part of the Great Lakes for purposes of this definition.

5. The wetland is not connected to one of the Great Lakes or Lake St. Clair, or an inland lake, pond, stream, or river, but is more than 5 acres in size.

6. The wetland is not connected to one of the Great Lakes or Lake St. Clair, or an inland lake, pond, stream, or river, and less than 5 acres in size, but EGLE has determined that these wetlands are essential

to the preservation of the state's natural resources and has notified the property owner.

It is GEI's opinion that a permit is required from EGLE for any proposed dredging, filling, draining, or maintained use or development within a regulated wetland pursuant to Part 303 of NREPA. A permit from EGLE would not be required if the regulated wetland is avoided and none of the forementioned activities are proposed within the regulated wetland.

Due to the dynamic nature of wetland resources, this study reflects wetland boundaries as they existed during the time the delineation was completed. Please be advised this regulatory delineation represents our professional opinion based on application of established regulatory methodologies. EGLE is the state agency charged with wetland regulatory oversight within the State of Michigan.

5. Literature Cited and Reference Materials

Cohen, J.G., Kost, M.A., Slaughter, B.S., and Albert, D.A. 2015. *A Field Guide to the Natural Communities of Michigan*. East Lansing, Michigan: Michigan State University Press.

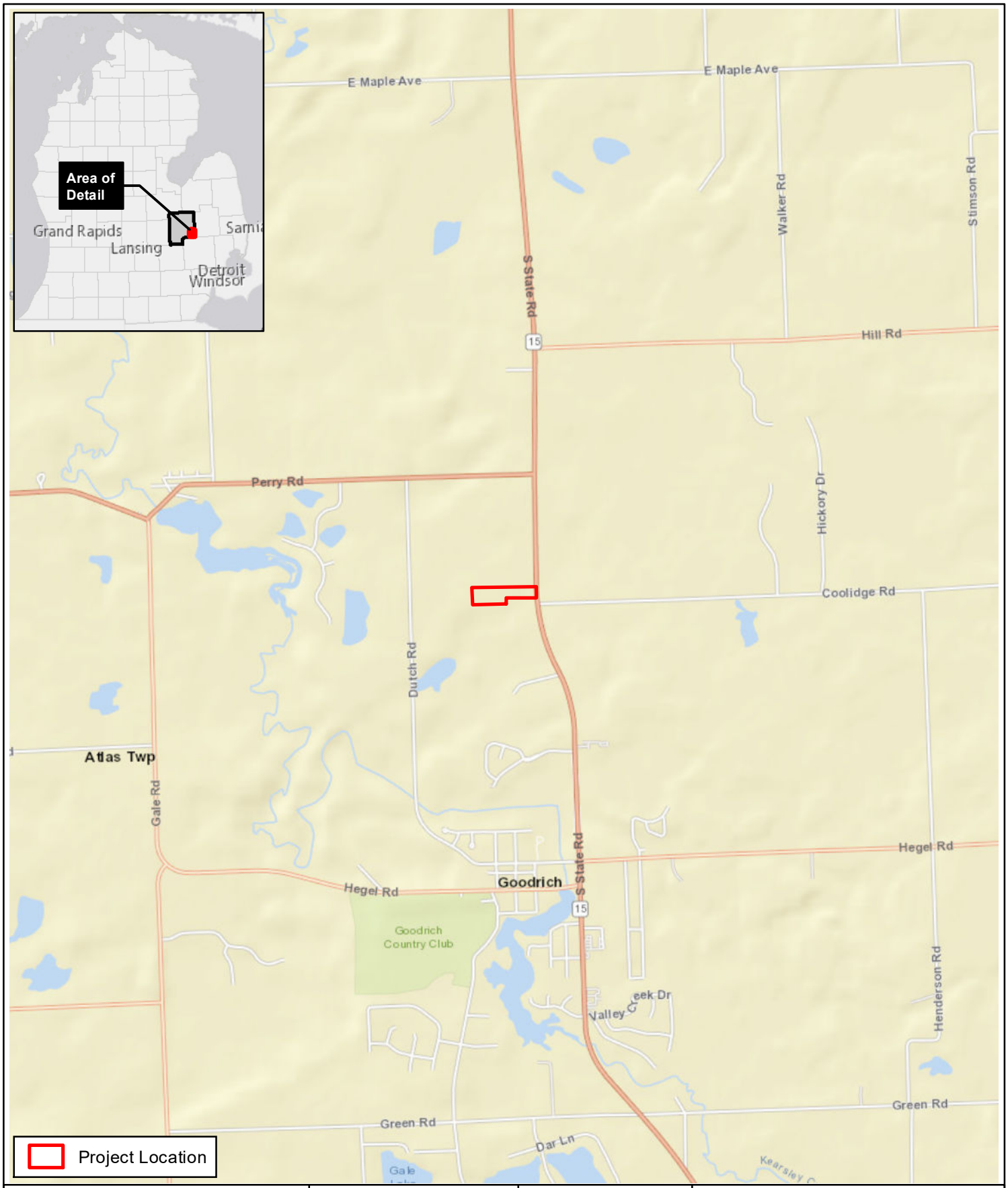
Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish and Wildlife Service. FWS/OBS-79/31. Washington, DC.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Reznicek, A.A., Voss E.G., and Walters B.S. 2011. Michigan Flora Online. University of Michigan. Web. http://michiganflora.net/home.aspx.

U.S. Army Corps of Engineers. 2011. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northeast Northcentral Region (Version 2.0)* ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

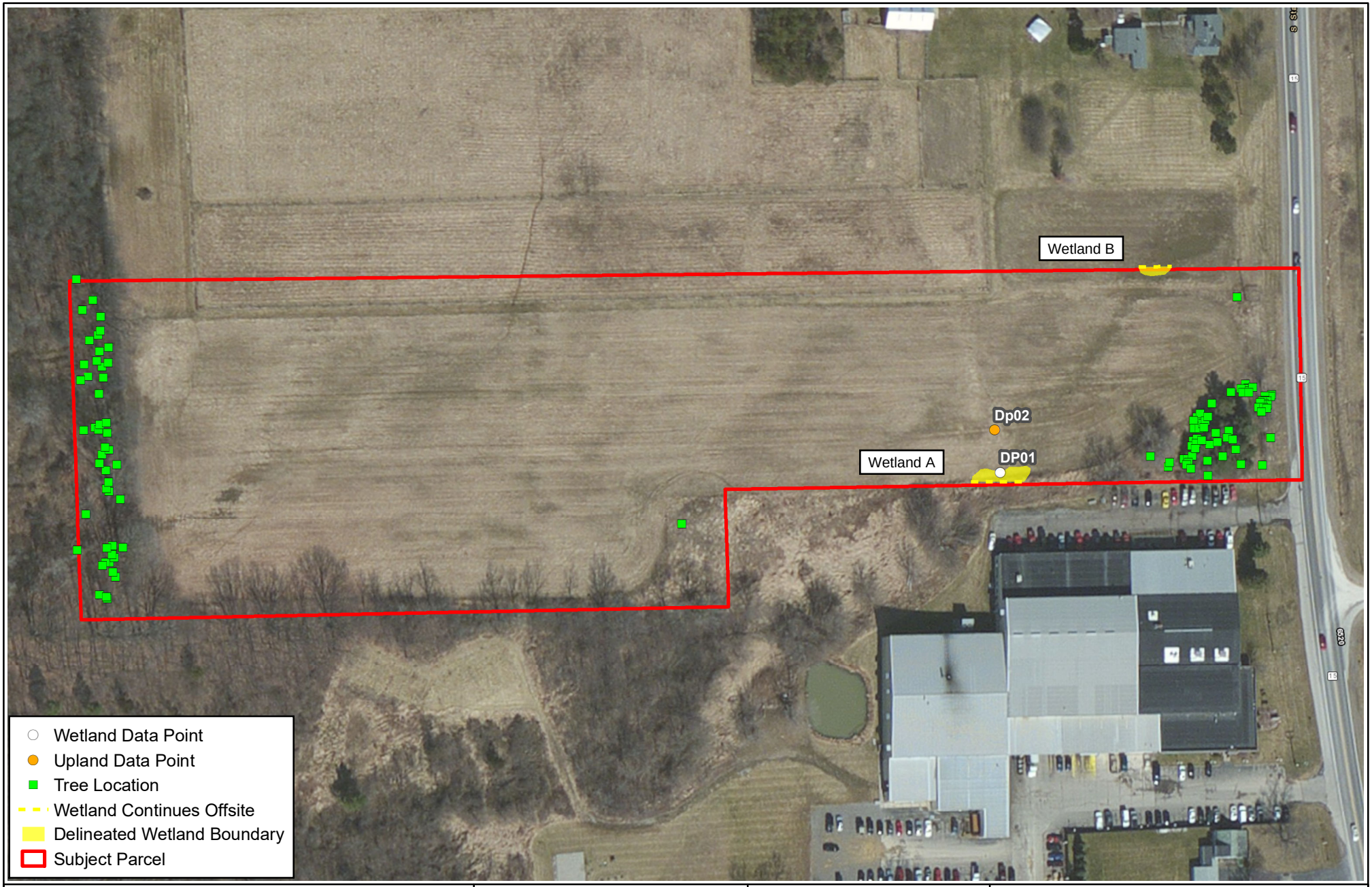
Figures



Wetland Delineation Atlas Township Parcel Genesee County, Michigan	0 0.25 0.5 Miles 1 inch = 0.5 miles	GEI Consultants	**PROJECT LOCATION**
RBF Storage		Project: 2304983	Figure: 1

B:\Working\RBF STORAGE\2304983 Atlas Township Parcel Wetland Delineation\05_GIS\MXD\20231218_Fig1_Location.mxd
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri

December 2023



Wetland Delineation
Atlas Township Parcel
Genesee County, Michigan

RBF Storage

0 50 100 150 200 Feet

1 inch = 140 feet

GEI Consultants

WETLAND DELINEATION AND TREE SURVEY

Project: 2304983 Figure: 2

B:\Working\RBF STORAGE\2304983 Atlas Township Parcel Wetland Delineation\05_GIS\MXD\20231218_Fig2_Wetland_Delineation.mxd

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community

December 2023

Appendix A – USACE/EGLE Wetland Determination Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Atlas Township Parcel City/County: Genesee County Sampling Date: 10/26/2023

Applicant/Owner: RBF Storage State: MI Sampling Point: DP01

Investigator(s): S. Nyczak Section, Township, Range: T6N, R8W, S10

Landform (hillside, terrace, etc.): basin Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 42° 55' 59.86" N Long: 83° 30' 22.05" W Datum:

Soil Map Unit Name: Sloan Silt Loam, occaisionally flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation n, Soil n, or Hydrology n significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation n, Soil n, or Hydrology n naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No	**within a Wetland?**	**Yes** X **No**
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)
Survey done immediately following heavy rainfall.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No x	Depth (inches):	
Water Table Present?	Yes x	No	Depth (inches):	6
Saturation Present? (includes capillary fringe)	Yes x	No	Depth (inches):	0

Wetland Hydrology Present? **Yes** X **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: DP01

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Salix nigra*	2	No	OBL
2. *Acer negundo*	2	No	FAC
3.			
4.			
5.			
6.			
7.			
	4	=Total Cover	
Herb Stratum (Plot size:)			
1. *Solidago canadensis*	35	Yes	FACU
2. *Phalaris arundinacea*	35	Yes	FACW
3. *Solidago gigantea*	15	No	FACW
4. *Cirsium arvense*	2	No	FACU
5. *Symphyotrichum ericoides*	2	No	FACU
6. *Galium aparine*	2	No	FACU
7. *Alliaria petiolata*	2	No	FACU
8.			
9.			
10.			
11.			
12.			
	93	=Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	50	x 2 =	100
FAC species	7	x 3 =	21
FACU species	43	x 4 =	172
UPL species	0	x 5 =	0
Column Totals:	102 (A)		295 (B)
Prevalence Index = B/A =			2.89

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	75					Loamy/Clayey	Clay
	10YR 4/2	25						
12-20	10YR 4/2	70	10YR 3/4	5	C	M	Loamy/Clayey	Sandy Clay
	10YR 5/2	25						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Atlas Township Parcel City/County: Genesee County Sampling Date: 10/26/2023

Applicant/Owner: RBF Storage State: MI Sampling Point: DP02

Investigator(s): S. Nyczak Section, Township, Range: T6N, R8W, S10

Landform (hillside, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 1

Subregion (LRR or MLRA): LRR L, MLRA 98 Lat: 42° 55' 59.98" N Long: 83° 30' 21.81" W Datum:

Soil Map Unit Name: Sloan Silt Loam, occaisionally flooded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation n, Soil n, or Hydrology n significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation n, Soil n, or Hydrology n naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No x	**Is the Sampled Area**		
Hydric Soil Present?	Yes	No x	**within a Wetland?**	**Yes**	**No** X
Wetland Hydrology Present?	Yes	No x	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)
Survey done immediately following heavy rainfall.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	No x	Depth (inches):	
Water Table Present?	Yes	No x	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	No x	Depth (inches):	

Wetland Hydrology Present? **Yes** **No** x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: DP02

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size:)			
1. *Solidago canadensis*	60	Yes	FACU
2. *Achillea millefolium*	5	No	FACU
3. *Daucus carota*	15	Yes	UPL
4. *Cirsium arvense*	10	No	FACU
5. *Symphyotrichum ericoides*	5	No	FACU
6. *Galium aparine*	15	Yes	FACU
7. *Fragaria virginiana*	5	No	FACU
8. *Taraxacum officinale*	2	No	FACU
9. *Prunus serotina*	2	No	FACU
10. *Asclepias syriaca*	1	No	UPL
11.			
12.			
	120 =Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	104	x 4 =	416
UPL species	16	x 5 =	80
Column Totals:	120 (A)		496 (B)
Prevalence Index = B/A =			4.13

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** x

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/2	60					Loamy/Clayey	Loamy Clay
	10YR 3/2	40						
4-16	10YR 4/2	20					Loamy/Clayey	Clay
	10YR 3/2	80						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** x

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Appendix B – Representative Site Photographs

Photograph 1. View of subject property, facing east toward topographic depression.

Photograph 2. View of Wetland B, facing East. Wetland B is located along the subject property boundary and at the middle of the topographic depression.

Photograph 3. View of linear topographic depression in eastern half of the subject property, facing South.

Photograph 4. View of subject property, facing West.

Photograph 5. View of Wetland A, facing East.

Photograph 6. View of DP01, from Wetland A.

Photograph 7. View of DP02, from uplands adjacent to Wetland A.