

WETLAND AND WATER RESOURCE DELINEATION REPORT

16.40-Acre (Approximate) Portion of a 369.1-Acre Parcel 4240 Ira Road
Akron, Summit County, Ohio
(Parcel ID 0406882)

Prepared For:

Oxbow and River Restoration, Inc. 2905 Klondike Road Delaware, Ohio 43015 ATTN: Ms. Nancy Seger, PE

April 27, 2023

Prepared by:

Alexander Kozak

Prepared and reviewed by:

Cynthia a Pasckhe

Alexander Kozak, WPIT Project Scientist

Prepared by:

repared by.

Cynthia Paschke, M.Ed., Senior PWS Principal



Melia DeJongh Staff Scientist

TABLE OF CONTENTS

1.0	INTRODUCTION1						
2.0	SITE	DESCRIPTION1					
	2.1	Purpose1					
3.0	MET	HODS1					
	3.1	Field Practices and Global Positioning System2	<u>-</u>				
4.0	REVI	IEW OF EXISTING DOCUMENTATION	•				
	4.1	National Wetlands Inventory Map	}				
	4.2	Topography and Drainage	}				
	4.3	Soil Survey for Summit County, Ohio	}				
	4.4	Aerial Imagery	}				
5.0	RES	ULTS AND DISCUSSION4	-				
	5.1	Findings of Field Investigation2	F				
	5.2	Wetlands	,				
	5.3	Uplands6	;				
	5.4	Streams and Other Waters6	;				
6.0	CON	CLUSIONS	į				
7.0	DISC	CLAIMER	,				
8.0	LITE	RATURE CITED8	}				
		TABLES					
		ta Point Summary	4				
lable	2: Su	mmary of Wetlands	6				
		APPENDICES					
APPENDIX A:		A: Figures Figure 1: Project Location Map Figure 2: National Wetland Inventory Map Figure 3: Topographical Map Figure 4: Soil Survey Map Figure 5: Aerial Imagery Figure 6: Field Data Location Map Figure 7: 2013 and 2023 Wetland Delineation Overlay Comparison					
APPENDIX B: APPENDIX C:		B: Wetland Determination Data Form					

1.0 INTRODUCTION

This wetland and water resource delineation report provides documentation regarding the habitat characteristics and the associated locations at a 16.40-acre (approximate) portion of a 369.1-acre parcel located at the Bath Township Nature Preserve at 4240 Ira Road, Akron, Summit County, Ohio (herein referred to as the "Project Area"). The study and report were completed by Land Solutions, LLC (herein referred to as "Consultant") on behalf of Oxbow and River Restoration, Inc., herein referred to as the "Client". A wetland delineation of this area was completed in 2013, so this report is provided as an update. The data collected includes non-wetland areas, as well as wetlands, streams, and open water (pond) habitats. The following information outlines the review of the background and existing resource materials, existing site conditions, and results of the field investigation.

2.0 SITE DESCRIPTION

The Project Area is currently undeveloped. The vegetative habitat largely consists of mixedage forest with shrub and emergent understory. The surrounding land use consists of passive recreation including dirt, gravel, and paved trails within the 411-acre Bath Nature Preserve. A site location map is included in **Appendix A** as **Figure 1**.

2.1 Purpose

The purpose of this report is to present the results of a wetland and water resource delineation of areas considered "Waters of the United States (US)" or "Waters of the State of Ohio". Qualified wetland scientists conducted a site visit in order to determine if any wetland areas were present and to mark the boundaries. Additionally, any water resources such as streams or open water areas (ponds) were identified and located.

3.0 METHODS

The on-site routine criteria were utilized as outlined in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) in conjunction with the United States Army Corps of Engineers (USACE) *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)* (August 2010). This approach recognizes the three parameters of vegetation, soils, and hydrology to identify and delineate wetlands. Data on soils, vegetation, and hydrology were collected on April 19, 2023, during an on-site investigation conducted by qualified wetland scientists.

Hydrology was considered present if a minimum of one (1) primary indicator or two (2) secondary indicators were identified. Indicators of wetland hydrology (saturated or inundated soils) along with signs of previous prolonged inundation in the upper 12 inches were measured from the ground surface. Consistent with the 1987 Manual and appropriate Regional Supplement, the primary and secondary indicators of hydrology during the growing season were also noted at each sampling location.

Dominant species were determined by visually estimating the percent cover of each species within a plot of an approximately 30-foot (ft) radius for trees, 15-ft radius for saplings/shrubs, 5-ft radius for herbs, and a 30-ft radius for woody vines. Species nomenclature and wetland indicator status follows that of the USACE *National Wetland Plant List* (2021). Hydrophytic species are those wetland plants with an indicator status of OBL (obligate wetland), FACW (facultative wetland), or FAC (facultative). Species listed as FACU (facultative upland) or UPL (upland) are more indicative of upland areas and generally do not occur in wetlands. All wetland and water resource habitats were classified according to definitions provided by the United States Fish and Wildlife Service (USFWS), and *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979).

Soils were examined by using a sharp-shooter shovel to excavate to a depth of approximately 12 to 20 inches or to refusal based on methods outlined in the National Technical Committee for Hydric Soils (1991). Soil colors were determined using a 2010 Munsell® Soil Color Chart and hydric soils were determined using the Hydric Soils Technical Manual Version 8.2 (2018) when soils were moist or wetted. Redoximorphic concentrations (the apparent accumulation of iron and manganese oxides within the soil profile) were noted if observed. Redox depletions where Fe-Mn oxides have been stripped and consist of a low chroma of two (2) or less and a value of four (4) or higher were also noted if observed. These features are usually an indication of periodically, seasonally, or permanently saturated soil conditions (Vepraskas 2015). Indicators of hydric soils characteristics were based on the USDA textures. Hydric soils were considered present if one or more indicators were identified.

A drainage feature is considered jurisdictional if the feature has a continuous bed, bank, and ordinary high-water mark (OHWM). This criterion is put forth by the definitions in Title 33, Codified Federal Regulation 328.8 (Navigation and Navigable Waters 1986) and USACE Regulatory Guidance Letter 05-05 (RGL 2005).

3.1 Field Practices and Global Positioning System

At each data point, information pertaining to vegetation, soils and hydrology were recorded on separate United States Army Corps of Engineers (USACE) wetland determination data forms. Data points were documented via photographs and marked in the field with flagging. If any data point met all three (3) criteria, the wetland was designated with a letter, and the boundaries were delineated. At the Client's request, flagging was not used to mark wetland boundaries or stream locations.

During the site visit, the upland or non-wetland data points, wetland/upland boundaries, streams, erosional features, overland flows, ditches and other features within the Project Area were geolocated using Trimble® Global Positioning System (GPS) Geo 7x receiver. GPS Pathfinder Office software was used to improve the accuracy of the collected positions via differential correction. Corrected files were obtained from a local dedicated base station. The acquired data taken with the GPS receiver and post-processed provides locations within sub-meter accuracy. AutoCAD software was used to prepare the field data mapping. Available topographic data is incorporated into the data analysis to ensure recorded geolocations are accurate.

4.0 REVIEW OF BACKROUND RESOURCES AND EXISTING DOCUMENTATION

4.1 National Wetlands Inventory Map

A review of the USFWS National Wetlands Inventory (NWI) map of West Richfield, Ohio indicated the presence of one (1) PFO1C wetland within the Project Area (**Appendix A, Figure 2**). PFO1C is defined as a palustrine system dominated by broad-leaved, forested vegetation that is seasonally flooded. No streams are indicated on NWI mapping. Note that NWI maps were derived from aerial photo interpretation and are designed for general planning purposes only.

4.2 Topography and Drainage

The Project Area is comprised of a bowl-shaped topography. Review of the West Richfield, Ohio USGS 7.5-minute Topographic Quadrangle map (2019) and the Summit County Geographic Information System (GIS) mapping indicates that the existing topography on the site ranges between 996 to 1022 feet in elevation above the National Geodetic Vertical Datum (NGVD). The portion of the USGS Topographic map showing the Project Area is included in **Appendix A** as **Figure 3**.

The hydrology on-site is generally directed in a southeasterly direction towards a culvert that conveys hydrology off-site. The Project Area is located within the drainage area of North Fork Yellow Creek. Prior to entering Yellow Creek, North Fork Yellow Creek drains 6.24 square miles of Summit County and is located within the Cuyahoga watershed, designated with the 8-digit Hydrologic Unit Code (HUC-8) 04110002.

4.3 Soil Survey

The Soil Survey of Summit County, Ohio (http://websoilsurvey.aspx) indicates that four (4) soils are mapped within the Project Area: Carlisle muck (Cg); Ellsworth silt loam, 6 to 12% slopes, eroded (ElC2); Ellsworth silt loam, 12 to 25% slopes, eroded (ElE2); and Sebring silt loam, 0 to 2% slopes (Sb). ElC2 and ElE2 are considered moderately well drained soils. Sb is considered poorly drained, and Cg is considered very poorly drained. The Summit County Natural Resource Conservation Service (NRCS) designates ElC2 and ElE2 as non-hydric, and Cg and Sb as hydric. The area designated as Cg on the soil survey corresponds with the bowl-shape observed on topographic mapping. The portion of the soil survey showing the Project Area is included in **Appendix A** as **Figure 4**.

4.4 Aerial Imagery

A review of aerial imagery from the Summit County GIS and Google Earth shows that the Project Area is undeveloped and primarily comprised of mixed-age forest with shrub and emergent understory. The Project Area has remained undeveloped since before 1952. A large dark spot (an indicator of potential wetlands) in the central portion is apparent throughout all of the historical aerial imagery reviewed. Aerial imagery from 1952 and 1962 show an open water habitat and an associated stream in the southeastern portion of the Project Area. This open water habitat and stream are no longer apparent on aerial

imagery after 1962. A maintained trail (likely a gas easement) separating the northern and southern portions appears in 1962 and is apparent on current imagery. Aerial imagery from 1969 shows apparent ditching within the dark spot in the central portion. A boardwalk was constructed in 2015 in the southern portion of the Project Area. Aerial imagery from OSIP III (2021) is provided in **Appendix A** as **Figure 5**.

5.0 RESULTS AND DISCUSSION

The Project Area is located within the physiographic region of the Glaciated Allegheny Plateaus, Killbuck-Glaciated Pittsburgh Plateau (Brockman 1998); and the Erie/Ontario Drift and Lake Plain, Low Lime Drift Plain Level IV Ecoregion (Woods et al. 1998). The field investigation was conducted on April 19, 2023. The weather at the time of the investigation was partly cloudy with an average temperature of 40° Fahrenheit (F). There was a total of 0.60 inches of precipitation in the five days prior to the field visit.

The background resources indicate the potential for wetlands within the Project Area. A PFO1C wetland is apparent on NWI mapping. Additionally, the topography of the Project Area is bowl-shaped, indicative of a concentration of hydrology being conveyed to one central area. Furthermore, two (2) of the four (4) mapped soil types (Cg and Sb) are designated as hydric. This designation is an indicator of potential wetlands. Lastly, aerial imagery shows a large dark spot within the Project Area.

5.1 Findings of the Field Investigation

Ten (10) data points (designated as "DP1" to "DP10") were collected within the Project Area. The Field Data Location Map depicting the surveyed data point locations and photograph locations with directions is provided in **Appendix A**, **Figure 6**. A comparison drawing of the previous wetland delineation overlaid with the current data is provided as **Appendix A**, **Figure 7**. The data points collected within the Project Area were each recorded on a Wetland Determination Data Form provided in **Appendix B**. Site photographs are located in **Appendix C**. The following descriptions provide a summary of each data point, including the location and characteristics.

Table 1. Data Point Summary							
Data	Hydrology	Hydrophytic	Hydric Soils	Wetland	Photo		
Point		Vegetation		Designation	Numbers		
DP1					1		
DP2	X	X	X	Wetland A	2		
DP3			X		3		
DP4	X	X	X	Wetland A	4		
DP5					5		
DP6	X	X	X	Wetland A	6		
DP7					7		
DP8	X	X	X	Wetland A	8		
DP9					9		
DP10	X	X	X	Wetland A	10		

5.2 Wetlands

Five (5) data points met all three (3) criteria of a wetland, and the characteristics are discussed below.

Wetland A

Wetland A was designated as Palustrine Forested which is consistent with the Cowardin (1979) classification of PFO. Minor components of Palustrine Emergent (PEM) and Palustrine Scrub-Shrub (PSS) were also present. Wetland A totals 8.79 acres on-site and is located in the central portion of the Project Area.

At data point DP2, the dominant tree stratum consisted of *Acer rubrum* (red maple) and *Crataegus crus-galli* (cockspur hawthorn). The shrub stratum consisted of *Ligustrum vulgare* (European privet). The herbaceous stratum consisted of *Floerkea proserpinacoides* (false mermaidweed) and *Lysimachia nummularia* (creeping jenny). A positive primary hydrology indicator of saturation (A3) was present. The hydric soil criterion was met with redox dark surface (F6).

At data point DP4, the tree stratum consisted of *Acer rubrum* (red maple). The shrub stratum consisted of *Acer rubrum* (red maple) and *Ligustrum vulgare* (European privet). The dominant herbaceous stratum consisted of *Floerkea proserpinacoides* (false mermaidweed) and *Lysimachia nummularia* (creeping jenny). A positive primary hydrology indicator of saturation (A3) was present. The hydric soil criterion was met with depleted below dark surface (A11), depleted matrix (F3), and redox dark surface (F6).

At data point DP6, the tree stratum consisted of *Ulmus americana* (American elm). The shrub stratum consisted of a *Malus* species. The dominant herbaceous stratum consisted of *Juncus effusus* (soft rush), *Carex bromoides* (brome sedge), and *Dulichium arundinaceum* (three-way sedge). Positive primary hydrology indicators of high water table (A2), saturation (A3), and hydrogen sulfide odor (C1) were present. The hydric soil criterion was met with depleted matrix (F3).

At data point DP8, the tree stratum did not consist of any plants. The shrub stratum consisted of *Rosa palustris* (swamp rose) and *Lonicera tatarica* (Tatarian honeysuckle). The dominant herbaceous stratum consisted of *Phalaris arundinacea* (reed canary grass) and *Typha X glauca* (hybrid cattail). Positive primary hydrology indicators of surface water (A1), high water table (A2), saturation (A3), water marks (B1), and water-stained leaves (B9) were present. The hydric soil criterion was met with histosol (A1).

At data point DP10, the tree stratum consisted of *Acer rubrum* (red maple). The shrub stratum did not consist of any plants. The herbaceous stratum consisted of *Floerka proserpinacoides* (false mermaidweed) and *Persicaria sagittata* (arrow-leaved tearthumb). A positive primary hydrology indicator of saturation (A3) was present. The hydric soil criterion was met with redox dark surface (F6).

5.3 Uplands

Several portions of the Project Area exhibited upland characteristics. One (1) data point lacked two (2) of the three (3) wetland criteria, and four (4) data points lacked all of the three (3) wetland criteria. Five (5) data points were considered non-wetland.

5.4 Streams and Other Waters

Streams were observed within the Project Area. However, based on the focus of this study, stream location data was not collected and is not indicated on the Field Data Location Map (**Appendix A, Figure 6**).

6.0 CONCLUSIONS

There was one (1) wetland identified within the Project Area. The data points and delineated boundaries are shown on the Field Data Location Map (**Appendix A, Figure 6**). A summary of the wetland features and the preliminary jurisdictional status is provided in **Table 2**.

Table 2. Summary of Wetlands						
Wetland Type Designation		Jurisdictional Status	Size (Acres)			
Wetland A	PFO	Jurisdictional	8.79			
		Total Area (Acres)	8.79			

Data on which this report is based are on file with the Consultant. The wetland resources may be regulated under federal or state jurisdiction. No filling or disturbance (including restoration or enhancement) may occur in jurisdictional areas without verification by the USACE and obtaining a permit prior to activity. The USACE, Buffalo District should be contacted by either the Consultant or the Client before working in any wetlands or streams.

Based on the findings of the field investigation, the Consultant presents the following recommendations for consideration at the Project Area.

- Submit a copy of this report to the USACE, Buffalo District to have the wetland boundaries and water resources verified and to determine jurisdiction of all of the features.
- 2) If the regulated features such as wetlands or streams cannot be avoided, submit and obtain a federal and/or state permit application prior to conducting any impacts, including restoration or enhancement.

7.0 DISCLAIMER

The terms "wetlands" and "waters of the United States" and "waters of the State of Ohio" as used in this report are the Consultant's interpretation of state and federal laws concerning wetlands and water resource identification.

The definition and delineation of wetlands on any specific site are subject to interpretation by various regulatory agencies. The Consultant has, to the best of its ability, accurately delineated any jurisdictional limits based on current regulations and the experience with the regulatory agencies. There is no guarantee that the regulatory agencies involved will agree with those limits. All jurisdictional boundaries are based on the accuracy of the GPS equipment that was used to collect the data.

All mention of regulations and laws are the Consultant's interpretation of state and federal regulations and/or laws and should not be taken as legal advice.

The report was prepared by the Consultant solely for the use of the Client in accordance with an approved contract and scope of work. The Client's use of the reliance on this report is limited by the terms and conditions of the contract between the Consultant and the Client, and by the qualifications and limitations stated in the report. It is also acknowledged that the Client's use of and reliance on this report is limited because: actual site conditions may change with time; hidden conditions, not discoverable within the scope of the assessment, may exist at the site; and the scope of the investigation may have been limited by time, budget, and other constraints imposed by the Client. Neither the report nor its contents are intended for the use or conclusions, or recommendations by such unauthorized use, or else the intended user is at the risk of said user and the Consultant and the Client assume no liability for any reliance placed on this report by such user. Any party other than the Client who uses or relies upon this report or its content is not covered by the contract between the Consultant or the Client and the party by such use or reliance. The rights of the Client under its contract with the Consultant may not be assigned to any person or entity, without the consent of the Consultant which consent shall not be unreasonably withheld. Regardless of the findings stated in the report, the Consultant and the Client make no warranty that the site is free from existing or threatened pollution, and the Consultant and the Client are not responsible for consequences or conditions arising from facts that were concealed, withheld, or not fully disclosed at the time the assessment was conducted. No other warranties are made, either expressed or implied.

8.0 LITERATURE CITED

- Brockman, CS. 1998. *Physiographic Regions of Ohio*. Department of Natural Resources. Division of Geologic Survey, Columbus, Ohio.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. United States Department of Interior, Fish and Wildlife Service, Biological Services Program FWS/OBS-79/31, 103 pp.
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi 39180-0631.
- Google Earth. (n.d.-b). [Bath, Oh]. Retrieved April 2023, from https://earth.google.com/static/9.172.0.0/app_min.html
- Munsell Color. 2010. Munsell Color Charts. Kollmorgen Corporation, Baltimore, MD.
- National Technical Committee for Hydric Soils. 1991. *Hydric Soils of the United States*. United States Department of Agriculture. Soil Conservation Service. Washington, DC
- Navigation and Navigable Waters, 33 C.F.R. § 328.3(e). 1986.
- Navigation and Navigable Waters, 33 C.F.R. § 329.11(a). 1986.
- Ohio Department of Administrative Services. 2021 OSIP III Imagery. Columbus, Ohio: Ohio Office of Information Technology, 2023.
- Summit County Geographical Information System. Viewed April 2023. https://summitmaps.summitoh.net/ParcelViewer/
- United States Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region Version 2.0, ed. J.F. Berkowitz, J.S. Wakeley, R. W. Lichvar, C. V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- United States Army Corps of Engineers. 2021. *National Wetland Plant List*, version 3.5 http://wetland-plants.usace.army.mil/ U.S. Army Corps of Engineer, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH
- United States Department of Agriculture, Natural Resources Conservation Service. 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

- United States Department of Agriculture: Natural Resources Conservation Service (NRCS). "List of Hydric Soils of Summit County, Ohio." Viewed April 2023. http://www.nrcs.usda.gov
- United States Department of Agriculture: NRCS. *Web Soil Survey*. Viewed April 2023. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.
- United States Department of Interior. 2023. *National Wetland Inventory Mapper. West Richfield, Ohio.*
- United States Geologic Survey. 2019. 7.5-Minute Topographic Map. West Richfield, Ohio Quadrangle.
- Vepraskas, M. J. 2015. *Redoximorphic Features for Identifying Aquic Conditions*. North Carolina Agricultural Research Service. North Carolina State University. Raleigh, North Carolina. Technical Bulletin 301. 12 pp.
- Woods A.J., Omernick JM, Brockman CS, Gerber TD, Hoster WD, and Azevedo SH. 1998. *Ecological Regions of Indiana and Ohio*. United States Geologic Survey, Denver, CO.

APPENDIX A

FIGURES

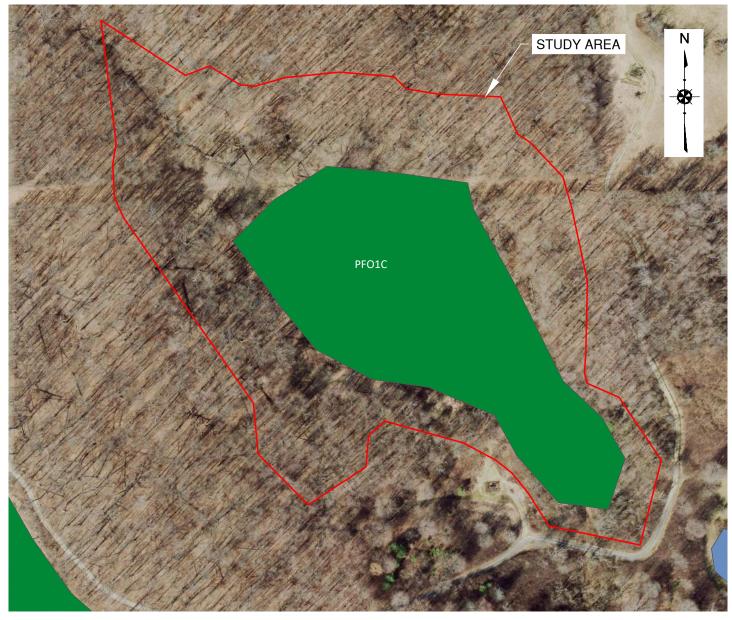


Land Solutions, LLC 34600 Chardon Road, Suite C Willoughby Hills, Ohio 44094 FIGURE 1
SITE LOCATION MAP
OXBOW AND RIVER RESTORATION, INC.
4240 IRA RD., AKRON, SUMMIT COUNTY, OHIO

Date: <u>2023-04-26</u> Scale: <u>AS SHOWN</u>

Drawn by: SRE

U.S. Fish and Wildlife Service National Wetlands Inventory



WATERSHED - HUC 04110002 - CUYAHOGA

Wetlands

Estuarine and Marine Deepwater

Estuarine and Marine Wetland

0 200 Scale 1"=200'

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

Lake

Other

Riverine



Land Solutions, LLC 34600 Chardon Road, Suite C Willoughby Hills, Ohio 44094 FIGURE 2
NATIONAL WETLANDS INVENTORY MAP
OXBOW AND RIVER RESTORATION, INC.
4240 IRA RD., AKRON, SUMMIT COUNTY, OHIO

 Date:
 2023-04-26

 Scale:
 AS SHOWN

 Filename:
 23013

SRB



Land Solutions, LLC 34600 Chardon Road, Suite C Willoughby Hills, Ohio 44094

FIGURE 3 USGS TOPOGRAPHIC MAP OXBOW AND RIVER RESTORATION, INC. 4240 IRA RD., AKRON, SUMMIT COUNTY, OHIO

2023-04-26 AS SHOWN SRB



L\2023 PROJECTS\23013 OXBOW AND RIVER RESTORATION, INC. - 4240 IRA ROAD - AKRONIMAPPING\CAD\23013 6 FIGURES.DWG

34600 Chardon Road, Suite C Willoughby Hills, Ohio 44094

FIGURE 4 NRCS SOIL SURVEY MAP OXBOW AND RIVER RESTORATION, INC. 4240 IRA RD., AKRON, SUMMIT COUNTY, OHIO

2023-04-26

SRB

Land Solutions, LLC

L\2023 PROJECTS\23013 OXBOW AND RIVER RESTORATION, INC. - 4240 IRA ROAD - AKRONIMAPPING\CAD\23013 6 FIGURES.DWG

Scale 1"=175'

IMAGERY SOURCE - OSIP III **IMAGERY YEAR - 2021**

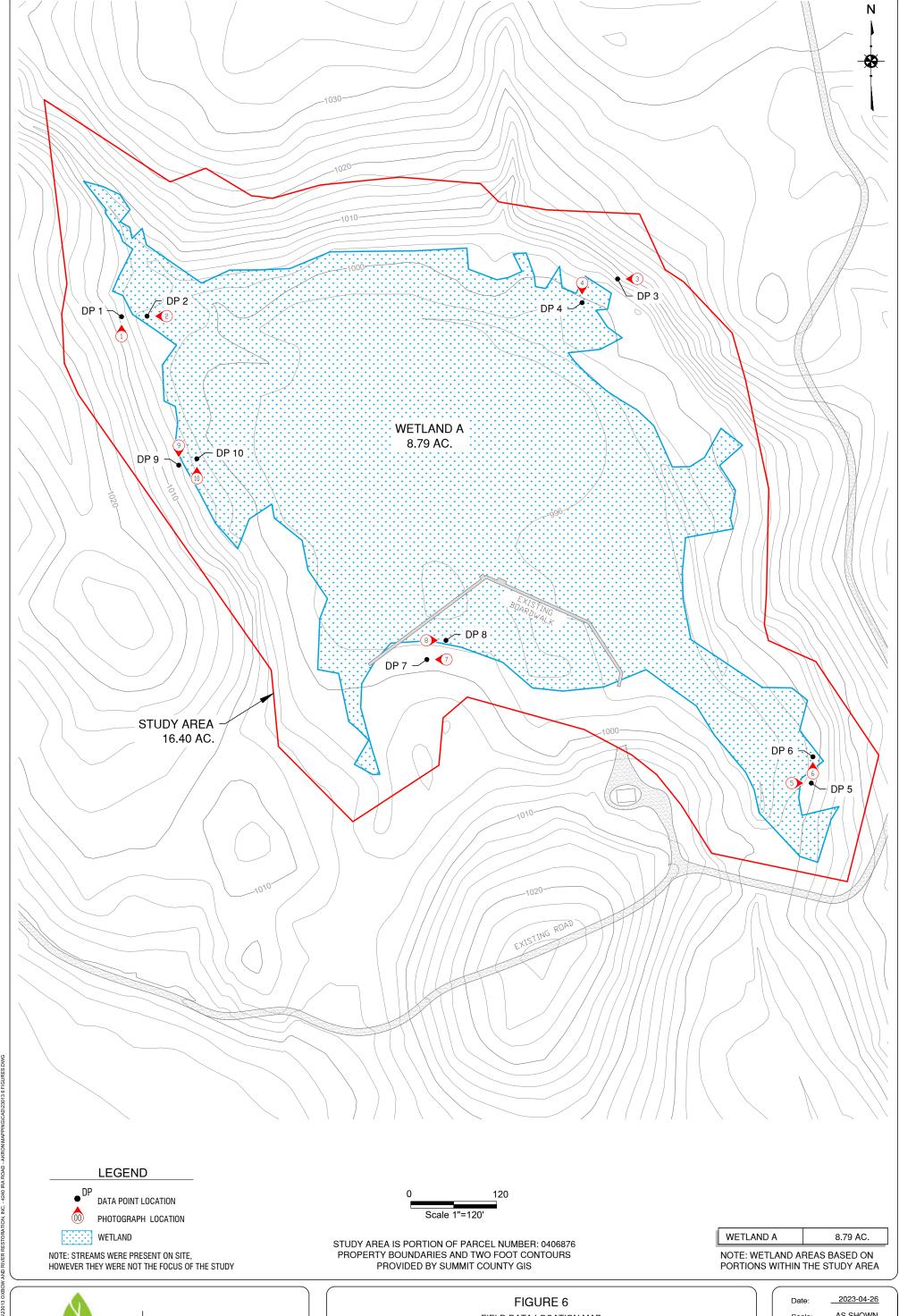


Land Solutions, LLC 34600 Chardon Road, Suite C Willoughby Hills, Ohio 44094

FIGURE 5 **AERIAL PHOTOGRAPH MAP** OXBOW AND RIVER RESTORATION, INC. 4240 IRA RD., AKRON, SUMMIT COUNTY, OHIO

2023-04-26

SRB



Land Solutions

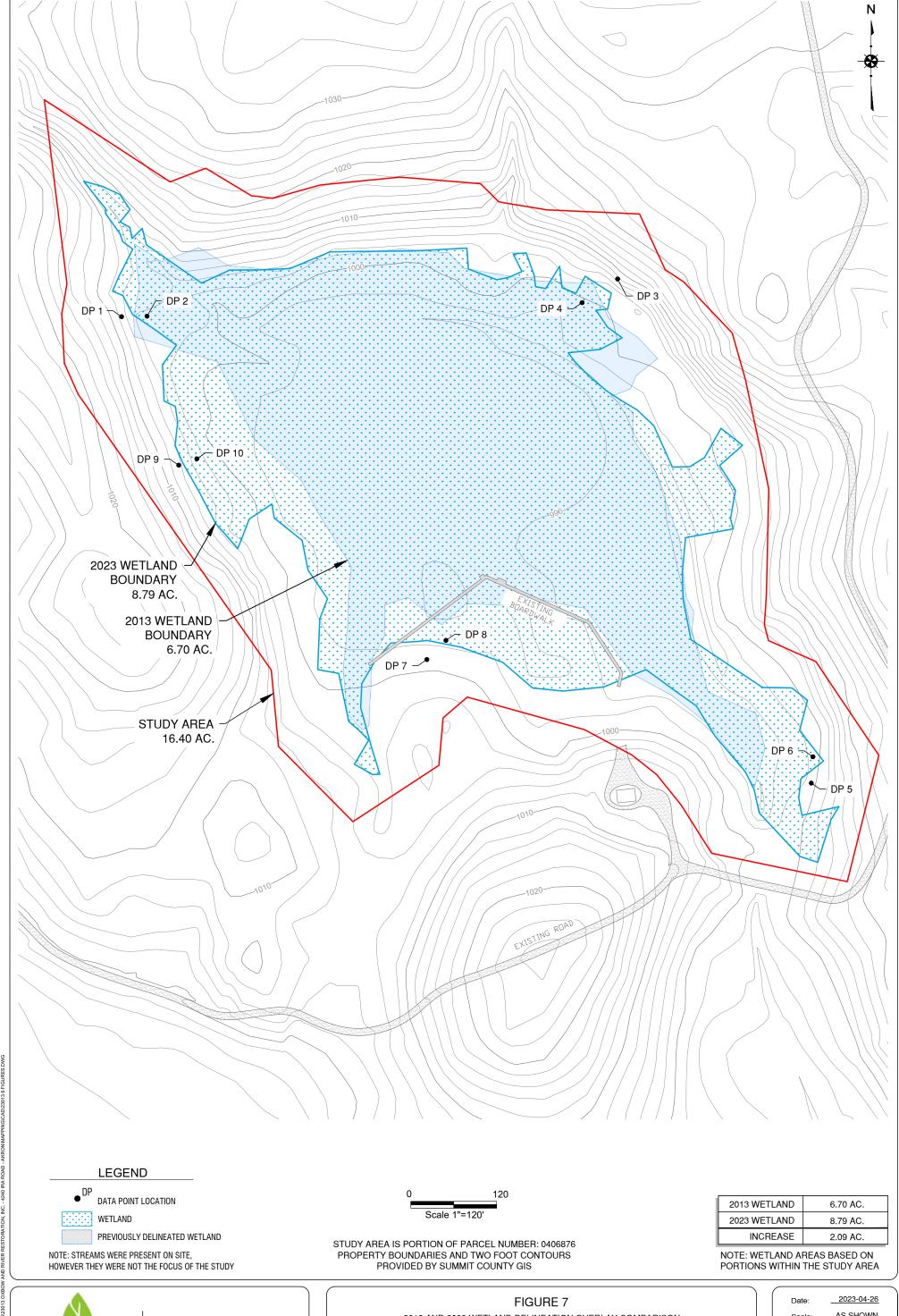
Land Solutions, LLC 34600 Chardon Road, Suite C Willoughby Hills, Ohio 44094 FIGURE 6
FIELD DATA LOCATION MAP
OXBOW AND RIVER RESTORATION, INC.
4240 IRA RD., AKRON, SUMMIT COUNTY, OHIO

 Date:
 2023-04-26

 Scale:
 AS SHOWN

 Filename:
 23013

 Drawn by:
 SRB



Land Solutions

Land Solutions, LLC 34600 Chardon Road, Suite C Willoughby Hills, Ohio 44094 FIGURE 7
2013 AND 2023 WETLAND DELINEATION OVERLAY COMPARISON
OXBOW AND RIVER RESTORATION, INC.
4240 IRA RD., AKRON, SUMMIT COUNTY, OHIO

 Date:
 2023-04-26

 Scale:
 AS SHOWN

 Filename:
 23013

 Drawn by:
 SRB

APPENDIX B WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 23013 Tamarack Bog	City/County: Akron/Sur	nmit	Sampling Date: 2023-04-19				
Investigator(s): Alexander Kozak, Melia DeJongh Section, Township, Range:							
Landform (hillslope, terrace, etc.): Terrace			Slope (%):				
Subregion (LRR or MLRA): R 139 Lat: 41.1780							
Soil Map Unit Name: EIC2 - Ellsworth silt loam, 6 to 12 pe							
Are climatic / hydrologic conditions on the site typical for this time							
Are Vegetation, Soil, or Hydrology signific							
Are Vegetation, Soil, or Hydrology natura	lly problematic? (If need	ed, explain any answer	rs in Remarks.)				
SUMMARY OF FINDINGS – Attach site map show	wing sampling point loo	ations, transects	, important features, etc.				
Hydrophytic Vegetation Present? Yes No	/ Is the Sampled A	rea					
Hydric Soil Present? Yes No	within a Wetland	? Yes	No				
Wetland Hydrology Present? Yes No	If yes, optional We	etland Site ID:					
Remarks: (Explain alternative procedures here or in a separate							
A non-wetland point located in a forest	ed habitat and near	the northwest	ern portion of the				
Project Area.							
Troject / tred.							
HYDROLOGY							
Wetland Hydrology Indicators:		Secondary Indica	tors (minimum of two required)				
Primary Indicators (minimum of one is required; check all that a		Surface Soil Cracks (B6)					
	ained Leaves (B9)	Drainage Patterns (B10)					
High Water Table (A2) Aquatic F		Moss Trim Li					
Saturation (A3) Marl Depo			Water Table (C2)				
	Sulfide Odor (C1)	Crayfish Burr					
	Rhizospheres on Living Roots (of Reduced Iron (C4)		s ble on Aerial Imagery (C9)				
	on Reduction in Tilled Soils (C6		tressed Plants (D1)				
	k Surface (C7)	Shallow Aqui					
	plain in Remarks)		phic Relief (D4)				
Sparsely Vegetated Concave Surface (B8)	pram m remaine)	FAC-Neutral					
Field Observations:			,				
Surface Water Present? Yes No Depth (ir	nches):						
Water Table Present? Yes No Depth (ir	nches):						
Saturation Present? Yes No Depth (ir	nches): Wetla	and Hydrology Presen	t? Yes No				
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial	photos, previous inspections), i	f available:					
33.,	,,						
Demode							
Remarks:							
No positive indication of wetland hydrol	ogy was observed.						

VEGETATION -	 Use scientific names of 	plants.
---------------------	---	---------

/EGETATION - Use scientific names of plants	S.			Sampling Point: DP1
Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?		Dominance Test worksheet:
1. Quercus alba	20		FACU	Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
2. Acer saccharum	10		FACU	Total Number of Dominant
3				Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 0 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Cov	/er	OBL species $0 \times 1 = 0$
Sapling/Shrub Stratum (Plot size: 15 ft r)				FACW species $0 x 2 = 0$
1. Lonicera tatarica	7	~	FACU	FAC species $0 \times 3 = 0$
2. Euonymus alatus	_	~	UPL	FACU species $\frac{37}{10}$ $\times 4 = \frac{148}{50}$
3.				UPL species $\frac{10}{47}$ $x = \frac{50}{198}$
4.				Column Totals: <u>47</u> (A) <u>198</u> (B)
5				Prevalence Index = B/A = 4.21
6.				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
	400/	= Total Cov	/er	2 - Dominance Test is >50%
Herb Stratum (Plot size: 5 ft r				3 - Prevalence Index is ≤3.0¹
1. Erythronium americanum	5	V	UPL	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
2.				Problematic Hydrophytic Vegetation ¹ (Explain)
3.				
4				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than or equal to 3.28 ft (1 m) tall.
10				Herb - All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12				Woody vines – All woody vines greater than 3.28 ft in height.
	5%	= Total Cov	/er	neight.
Woody Vine Stratum (Plot size: 30 ft r)				
1	_			
2				
3				Hydrophytic
4				Vegetation Present? Yes No
		= Total Cov	/er	
Remarks: (Include photo numbers here or on a separate	sheet.)			•
The hydrophytic vegetation criterio	n has no	ot been	met. E	. alatus assumed UPL

SOIL Sampling Point: DP1

Depth	Matrix	e to the de	pth needed to docur Redo	x Featur			ii uie abseiice	or indicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0 - 10	7.5YR 3/2	100					Clay Loam		
10 - 18	10YR 4/2	80	10YR 5/3	20	С	М	Clay Loam		
-									
				-					
_				-					
				-					
		-							
			. 				2		
Type: C=Co		pletion, RN	M=Reduced Matrix, M	S=Maske	ed Sand G	irains.		: PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :	
Histosol			Polyvalue Belo	w Surfac	e (S8) (LF	RR R,		Muck (A10) (LRR K, L, MLRA 149B)	
	oipedon (A2)		MLRA 149B)			Coast	Prairie Redox (A16) (LRR K, L, R)	
Black His	stic (A3) en Sulfide (A4)		Thin Dark Surfa					Mucky Peat or Peat (S3) (LRR K, L, R)	
	d Layers (A5)		Loamy Gleyed			K, L)		Surface (S7) (LRR K, L) Ilue Below Surface (S8) (LRR K, L)	
Depleted	d Below Dark Surfa	ce (A11)	Depleted Matrix		,		Thin D	ark Surface (S9) (LRR K, L)	
	ark Surface (A12)		Redox Dark Su					anganese Masses (F12) (LRR K, L, R)	
	Mucky Mineral (S1) Gleyed Matrix (S4)		Depleted Dark Redox Depress					ont Floodplain Soils (F19) (MLRA 149B) Spodic (TA6) (MLRA 144A, 145, 149B)	
	Redox (S5)		Redox Depress	710113 (1 O	,		Red Parent Material (F21)		
	Matrix (S6)							hallow Dark Surface (TF12)	
Dark Sui	rface (S7) (LRR R,	MLRA 149)B)				Other ((Explain in Remarks)	
3Indicators of	f hydrophytic veget	ation and w	vetland hydrology mus	st be pres	sent, unle	ss disturbed	d or problemation	<u> </u>	
	Layer (if observed			<u> </u>				_	
Type:									
Depth (inc	ches):						Hydric Soil	Present? Yes No	
Remarks:							· ·		
No posit	ive indication	n of h	dric soil was	obse	rved.				
			,						
1									
İ									

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 23013 Tamarack Bog		City/County: Akr	on/Summit	Sampling Date: 2023-04-19			
Applicant/Owner: Oxbow and River Re				Sampling Point: DP2 WLA			
Investigator(s): Alexander Kozak, Mel							
Landform (hillslope, terrace, etc.): Depres				Slope (%):			
Subregion (LRR or MLRA): R 139							
Soil Map Unit Name: EIC2 - Ellsworth silt loam, 6 to 12 percent slopes, eroded NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)							
Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No							
Are Vegetation, Soil, or Hy							
SUMMARY OF FINDINGS – Atta	ich site map sh	owing sampling po	int locations, transects	s, important features, etc.			
Hydrophytic Vegetation Present?	Yes No		npled Area				
I	Yes No _		<u></u>	No			
Wetland Hydrology Present?	Yes No _		onal Wetland Site ID: Wetlar	nd A			
Remarks: (Explain alternative procedure							
A wetland point taken in t	he PFO portio	on of Wetland A	located near the n	orthwestern portion			
of the Project Area.							
•							
LIVEROLOGY							
HYDROLOGY Wetland Hydrology Indicators:			Secondary Indica	ators (minimum of two required)			
	quirod: chock all that	apply)		Secondary Indicators (minimum of two required)			
Primary Indicators (minimum of one is red	•			Surface Soil Cracks (B6) Drainage Patterns (B10)			
Surface Water (A1) High Water Table (A2)		Stained Leaves (B9) Fauna (B13)		Moss Trim Lines (B16)			
Saturation (A3)		eposits (B15)		Water Table (C2)			
Water Marks (B1)		en Sulfide Odor (C1)	Crayfish Bur				
Sediment Deposits (B2)		d Rhizospheres on Living		is ble on Aerial Imagery (C9)			
Drift Deposits (B3)		ce of Reduced Iron (C4)					
Algal Mat or Crust (B4)		, ,	educed Iron (C4) Stunted or Stressed Plants (D1) eduction in Tilled Soils (C6) Geomorphic Position (D2)				
Iron Deposits (B5)		uck Surface (C7)					
Inundation Visible on Aerial Imagery		Explain in Remarks)	 -	aphic Relief (D4)			
Sparsely Vegetated Concave Surfac			FAC-Neutra				
Field Observations:							
	No V Depth						
	No Depth			_			
	No Depth	(inches): <u>7</u>	Wetland Hydrology Preser	nt? Yes / No			
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							
, , ,			,.				
Remarks:							
A positive indication of we	etland hydrol	ogy was observ	ed.				
•	•	0,					

/EGETATION – Use scientific names of plants	S.			Sampling Point: DP2 WLA
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u>) 1. Acer rubrum	Absolute % Cover	Dominant Species? ✓		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
2. Crataegus crus-galli	10	~	FAC	
3. Fraxinus americana	5		FACU	Total Number of Dominant Species Across All Strata: 5 (B)
4				Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	30%	= Total Co	ver	OBL species $0 \times 1 = 0$
Sapling/Shrub Stratum (Plot size: 15 ft r)				FACW species $\frac{20}{55}$ $\times 2 = \frac{40}{105}$
1. Ligustrum vulgare	_ 5		FACU	FAC species $\frac{55}{10}$ $x 3 = \frac{165}{40}$
2				7766 366663
3				OF L species X 3 =
4				(2)
5				Prevalence Index = B/A = 2.88
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
	- 0/	= Total Cov	ver	✓ 2 - Dominance Test is >50%
Herb Stratum (Plot size: 5 ft r)				3 - Prevalence Index is ≤3.0 ¹
1. Floerkea proserpinacoides	30		FAC	 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
2. Lysimachia nummularia	15		FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
3. Carex bromoides	5		FACW	¹ Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than or equal to 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12				Woody vines – All woody vines greater than 3.28 ft in
		= Total Co	ver	height.
Woody Vine Stratum (Plot size: 30 ft r				
1				
2.				
3				Hydrophytic
4				Hydrophytic Vegetation
		= Total Cov	·or	Present? Yes No
Remarks: (Include photo numbers here or on a separate		= 10(a) C0	vei	
·	,		_	
The hydrophytic vegetation criterio	n nas be	een me	τ.	

SOIL Sampling Point: DP2 WLA

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth	Matrix			x Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks	
0 - 5	10YR 2/1	100			_		Clay Loam	
5 - 13	10YR 2/1	90	10YR 4/4	10	С	M	Clay	
13 - 18	10YR 3/2	80	10YR 4/6	20	С	М	Clay	
-		-			-		-	
-		_			_			
-								
		- · ·			- · ·	·		
					_			
		- ·						
					_			
		oletion, RM	l=Reduced Matrix, MS	S=Maske	d Sand G	rains.	² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil							Indicators for Problematic Hydric Soils ³ :	
Histosol	(A1) pipedon (A2)		Polyvalue Belov MLRA 149B)		e (S8) (LR	R R,	2 cm Muck (A10) (LRR K, L, MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, R)	
Black Hi			Thin Dark Surfa		IRRR.N	II RA 149B		
	en Sulfide (A4)		Loamy Mucky N				Dark Surface (S7) (LRR K, L)	
	d Layers (A5)		Loamy Gleyed I			, ,	Polyvalue Below Surface (S8) (LRR K, L)	
Depleted	d Below Dark Surfac	e (A11)	Depleted Matrix	(F3)			Thin Dark Surface (S9) (LRR K, L)	
Thick Da	ark Surface (A12)		✓ Redox Dark Su	rface (F6)		Iron-Manganese Masses (F12) (LRR K, L, R	
	lucky Mineral (S1)		Depleted Dark S				Piedmont Floodplain Soils (F19) (MLRA 149)	
	Sleyed Matrix (S4)		Redox Depress	ions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149E	
	Redox (S5)						Red Parent Material (F21)	
	l Matrix (S6) rface (S7) (LRR R, I	MLRA 149	B)				Very Shallow Dark Surface (TF12) Other (Explain in Remarks)	
						P 4 1 1		
	f hydrophytic vegeta L ayer (if observed)		etland hydrology mus	st be pres	ent, unles	s disturbed	d or problematic.	
Type:		-						
Depth (in	ches):						Hydric Soil Present? Yes No	
Remarks:								
A positiv	e indication	of hyd	lric soil was o	bserv	ed.			
		,			-			

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 23013 Tamarack Bog	City/County: _F	Akron/Summit	Sampling Date: 2023-04-19		
Applicant/Owner: Oxbow and River Restoration, I					
Investigator(s): Alexander Kozak, Melia DeJongh					
Landform (hillslope, terrace, etc.): Terrace					
Subregion (LRR or MLRA): R 139 Lat:		Long: -81.6429397			
Soil Map Unit Name: EIC2 - Ellsworth silt loam, 6					
Are climatic / hydrologic conditions on the site typical fo	r this time of year? Yes	No (If no, explain in Re	emarks.)		
Are Vegetation, Soil, or Hydrology	significantly disturbed?	Are "Normal Circumstances" p	resent? Yes No		
Are Vegetation, Soil, or Hydrology	naturally problematic?	(If needed, explain any answer	rs in Remarks.)		
SUMMARY OF FINDINGS - Attach site ma	ap showing sampling	point locations, transects	, important features, etc.		
Hydrophytic Vegetation Present? Yes		Sampled Area			
Hydric Soil Present? Yes	No within	a Wetland? Yes	No		
Wetland Hydrology Present? Yes	No V If yes, o	optional Wetland Site ID:			
Remarks: (Explain alternative procedures here or in a					
A non-wetland point located in a f	orested habitat an	d near the northeaste	ern portion of the		
Project Area.			•		
110,001700.					
HYDROLOGY					
Wetland Hydrology Indicators:			tors (minimum of two required)		
Primary Indicators (minimum of one is required; check			Surface Soil Cracks (B6)		
1	Water-Stained Leaves (B9)		Drainage Patterns (B10)		
	Aquatic Fauna (B13)	Moss Trim Li			
	Marl Deposits (B15)		Water Table (C2)		
	Hydrogen Sulfide Odor (C1)	Crayfish Burr			
	Oxidized Rhizospheres on Liv	= : :	s ble on Aerial Imagery (C9)		
	Presence of Reduced Iron (C4		ressed Plants (D1)		
	Recent Iron Reduction in Tille				
	Thin Muck Surface (C7)	Shallow Aqui			
	Other (Explain in Remarks)	Microtopogra			
Sparsely Vegetated Concave Surface (B8)		FAC-Neutral	Test (D5)		
Field Observations:					
	Depth (inches):				
	Depth (inches):				
Saturation Present? Yes No No	Depth (inches):	Wetland Hydrology Presen	t? Yes No		
Describe Recorded Data (stream gauge, monitoring w	ell, aerial photos, previous ins	pections), if available:			
Demonstration.					
Remarks:					
No positive indication of wetland h	nydrology was obs	erved.			
·					

VEGETATION -	 Use scientific names of 	plants.
---------------------	---	---------

				Sampling Point: DP3
Tree Stratum (Plot size: 30 ft r	Absolute % Cover	Dominant Species?		Dominance Test worksheet:
1. Quercus alba	20		FACU	Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
2. Carya ovata	10		FACU	Total Number of Dominant
3				Species Across All Strata: 5 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 0 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	30%	= Total Cov	/er	OBL species <u>0</u> x 1 = <u>0</u>
Sapling/Shrub Stratum (Plot size: 15 ft r)				FACW species $\frac{0}{2}$ $\times 2 = \frac{0}{2}$
1. Carya ovata	5		FACU	FAC species $0 \times 3 = 0$
2				FACU species $\frac{40}{7}$ $x = \frac{160}{35}$ UPL species $\frac{7}{35}$
3				UPL species $\frac{7}{47}$ $x = \frac{35}{195}$ (B)
4				
5				Prevalence Index = B/A = 4.15
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
	5%	= Total Cov	/er	2 - Dominance Test is >50%
Herb Stratum (Plot size: 5 ft r)				3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting
1. Erythronium americanum	7		UPL	data in Remarks or on a separate sheet)
2. Podophyllum peltatum	5		FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
3				¹ Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than or equal to 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12				Woody vines – All woody vines greater than 3.28 ft in
	12%	= Total Cov	/er	height.
Woody Vine Stratum (Plot size: 30 ft r)				
1				
2				
3				Hydrophytic
				Vegetation Present? Yes No
4		= Total Cov	or.	
4		= Total Cov	/EI	

SOIL Sampling Point: DP3

Profile Desc	cription: (Describe	to the de	pth needed to docur	nent the	indicator	or confirn	n the absence of indi	cators.)
Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type'	Loc ²	<u>Texture</u>	Remarks
0 - 7	10YR 4/2	100					Silty Clay Loam	
7 - 18	2.5Y 6/2	70	10YR 6/8	30	С	М	Clay Loam	
-								
		<u> </u>						
-								
	-	<u> </u>		. ———				
			· 				2	
Type: C=Ce Hydric Soil		oletion, RN	1=Reduced Matrix, MS	S=Masked	d Sand Gr	ains.	Location: PL=P	Pore Lining, M=Matrix. Oblematic Hydric Soils ³ :
Histosol			Polyvalue Belov	w Surface	(S8) (I R I	R R		10) (LRR K, L, MLRA 149B)
	oipedon (A2)		MLRA 149B)		(00) (211	,		Redox (A16) (LRR K, L, R)
Black Hi	stic (A3)		Thin Dark Surfa) 5 cm Mucky P	Peat or Peat (S3) (LRR K, L, R)
	en Sulfide (A4)		Loamy Mucky N			(, L)		(S7) (LRR K, L)
	d Layers (A5) d Below Dark Surfac	ο (Λ11)	Loamy GleyedDepleted Matrix		2)		·	ow Surface (S8) (LRR K, L) face (S9) (LRR K, L)
	ark Surface (A12)	e (ATT)	Redox Dark Su		١			ese Masses (F12) (LRR K, L, R)
	Mucky Mineral (S1)		Depleted Dark				-	odplain Soils (F19) (MLRA 149B)
	Gleyed Matrix (S4)		Redox Depress		,			(TA6) (MLRA 144A, 145, 149B)
	Redox (S5)						Red Parent M	
	l Matrix (S6)							Dark Surface (TF12)
Dark Su	rface (S7) (LRR R, I	MLRA 149	9B)				Other (Explain	n in Remarks)
³ Indicators o	f hydrophytic vegeta	ition and v	etland hydrology mus	st be pres	ent, unles	s disturbed	l or problematic.	
	Layer (if observed)		, ,,	•	-			
Туре:								
	ches):						Hydric Soil Preser	nt? Yes No
Remarks:								
A positiv	e indication	of hyd	dric soil was o	bserv	ed.			
		•						

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 23013 Tamarack Bog		City/County: Al	kron/Summit	Sampling Date: 2023-04-19			
Applicant/Owner: Oxbow and River R				Sampling Point: DP4 WLA			
	Investigator(s): Alexander Kozak, Melia DeJongh Section, Township, Range:						
Landform (hillslope, terrace, etc.): Depre							
Subregion (LRR or MLRA): R 139							
Soil Map Unit Name: EIC2 - Ellsworth							
Are climatic / hydrologic conditions on the							
Are Vegetation, Soil, or H	* *	-					
Are Vegetation, Soil, or H							
_	-						
SUMMARY OF FINDINGS – Att	ach site map sh	lowing sampling p	oint locations, transects	s, important features, etc.			
Hydrophytic Vegetation Present?	Yes No _	Is the Sa	ampled Area				
Hydric Soil Present?	Yes No _		Wetland? Yes				
Wetland Hydrology Present?		, , ,	otional Wetland Site ID:				
Remarks: (Explain alternative procedur							
A wetland point taken in	the PEM port	ion of Wetland	A located near the r	northeastern portion			
of the Project Area.							
-							
HYDROLOGY							
Wetland Hydrology Indicators:			Secondary Indic	ators (minimum of two required)			
Primary Indicators (minimum of one is re	equired: check all tha	t apply)	Surface Soi				
Surface Water (A1)	•	Stained Leaves (B9)		Drainage Patterns (B10)			
High Water Table (A2)		c Fauna (B13)		Moss Trim Lines (B16)			
Saturation (A3)		eposits (B15)		Nicss Film Elifes (BTo) Dry-Season Water Table (C2)			
Water Marks (B1)		gen Sulfide Odor (C1)	Crayfish Bu				
Sediment Deposits (B2)		ed Rhizospheres on Livir		is ble on Aerial Imagery (C9)			
Drift Deposits (B3)		ice of Reduced Iron (C4)		Stressed Plants (D1)			
Algal Mat or Crust (B4)	Recent	Iron Reduction in Tilled		Position (D2)			
Iron Deposits (B5)	Thin M	uck Surface (C7)	Shallow Aqu	uitard (D3)			
Inundation Visible on Aerial Imager	y (B7) Other (Explain in Remarks)	Microtopogr	aphic Relief (D4)			
Sparsely Vegetated Concave Surfa	ce (B8)		<u>✓</u> FAC-Neutra	l Test (D5)			
Field Observations:	No. V Double	(' l) ·					
	No <u>'</u> Depth _ No Depth		-				
· · · · · · · · · · · · · · · · · · ·	No Depth No Depth	, ,	– │ _ │ Wetland Hydrology Prese	nt? Yes No			
(includes capillary fringe)		· · ·		iit: 165 NO			
Describe Recorded Data (stream gauge	, monitoring well, aer	ial photos, previous insp	ections), if available:				
Remarks:							
A positive indication of w	atland bydrai	logy was absor	vod				
A positive indication of w	etianu nyurui	logy was obser	veu.				

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute	Dominant Species?		Dominance Test worksheet:		
Acer rubrum	20	Species:	FAC	Number of Dominant Species		
I		-		That Are OBL, FACW, or FAC: 4 (A)		
2				Total Number of Dominant Species Across All Strata: 5 (B)		
3				Species Across All Strata: 5 (B)		
4				Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)		
5				That Are OBE, I ACW, OF I AC.		
6				Prevalence Index worksheet:		
7				Total % Cover of: Multiply by:		
	20%	= Total Co	ver	OBL species $\frac{10}{42}$ $\times 1 = \frac{10}{24}$		
Sapling/Shrub Stratum (Plot size: 15 ft r)				FACW species $\frac{42}{65}$ $x_2 = \frac{84}{195}$		
1. Acer rubrum	10		FAC	1 AO species X 3 =		
2. Ligustrum vulgare	_ <u>5</u>		FACU	FACU species $\frac{9}{0}$ $x = 4 = \frac{36}{0}$ UPL species $\frac{9}{0}$ $x = 5 = \frac{36}{0}$		
3				UPL species 0 $x = 0$ 0 0 0 0 0 0 0 0 0		
4						
5				Prevalence Index = B/A = 2.58		
6				Hydrophytic Vegetation Indicators:		
7				1 - Rapid Test for Hydrophytic Vegetation		
	450/	= Total Co	ver	✓ 2 - Dominance Test is >50%		
Herb Stratum (Plot size: 5 ft r)				✓ 3 - Prevalence Index is ≤3.0 ¹		
1. Floerkea proserpinacoides	30	~	FAC	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
2. Lysimachia nummularia	20		FACW	Problematic Hydrophytic Vegetation ¹ (Explain)		
3. Carex bromoides	 15		FACW			
4. Solidago patula	10		OBL	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
5. Phragmites australis	- 	-	FACW	·		
6. Penstemon digitalis	5		FAC	Definitions of Vegetation Strata:		
7. Claytonia virginica	4		FACU	Tree – Woody plants 3 in. (7.6 cm) or more in diameter		
	- 	-	1700	at breast height (DBH), regardless of height.		
8				Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.		
9						
10				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.		
11		-				
12	040/			Woody vines – All woody vines greater than 3.28 ft in height.		
00.5	91%	= Total Co	ver			
Woody Vine Stratum (Plot size: 30 ft r)						
1						
2	_					
3				Hydrophytic		
4				Vegetation Present? Yes No No		
		= Total Co	ver			
Remarks: (Include photo numbers here or on a separate	sheet.)					
The hydrophytic vegetation criterior	n has be	een me	t.			

Sampling Point: DP4 WLA

SOIL Sampling Point: DP4 WLA

Depth	Matrix			x Featur	es			or indicators.)	
(inches)	Color (moist)	<u>%</u>	Color (moist)	%_	Type ¹	Loc ²	<u>Texture</u>	Remarks	
0 - 10	10YR 3/1	85	10YR 3/6	15	_ <u>C</u>	<u> </u>	Silty Clay Loam		
10 - 20	10YR 5/1	80	10YR 5/6	20	<u>C</u>	<u>M</u>	Clay Loam		
							<u> </u>		
			- <u></u>				<u> </u>		
-									
		_		-		_	-		
		_		_		_			
				_			· ——		
							· ——		
						-			
						_	<u> </u>		
			<u></u> -						
		pletion, RN	M=Reduced Matrix, M	S=Maske	ed Sand G	rains.		: PL=Pore Lining, M=Matrix.	
Hydric Soil I			Dobarduo Polo	w Curfoo	o (SS) (LE	D D		for Problematic Hydric Soils ³ :	
Histosol Histic Ep	oipedon (A2)		Polyvalue Belo MLRA 149B		e (56) (Lr	KK K,		Muck (A10) (LRR K, L, MLRA 149B) Prairie Redox (A16) (LRR K, L, R)	
Black Hi	stic (A3)		Thin Dark Surfa				3) 5 cm M	flucky Peat or Peat (S3) (LRR K, L, R)	
	en Sulfide (A4) d Layers (A5)		Loamy Mucky I Loamy Gleyed			K, L)		urface (S7) (LRR K, L) lue Below Surface (S8) (LRR K, L)	
	d Below Dark Surfa	ce (A11)	<u>✓</u> Depleted Matrix		_,			ark Surface (S9) (LRR K, L)	
	ark Surface (A12)		✓ Redox Dark Su					anganese Masses (F12) (LRR K, L, R)	
	Mucky Mineral (S1) Gleyed Matrix (S4)		Depleted Dark Redox Depress				 Piedmont Floodplain Soils (F19) (MLRA 149B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
	Redox (S5)		<u> </u>		,		Red Parent Material (F21)		
	Matrix (S6)	MI DA 446)				Very Shallow Dark Surface (TF12)		
Dark Sui	rface (S7) (LRR R,	WILKA 149	IB)				Other (Explain in Remarks)	
			vetland hydrology mus	st be pre	sent, unle	ss disturbe	d or problematic		
	Layer (if observed)):							
Type:							Uvdria Cail	Present? Yes V No No	
	ches):						Hydric Soil	Present? Yes V No No	
Remarks:									
A positiv	e indication	of hyc	dric soil was c	bserv	ved.				
1									
1									

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 23013 Tamarack Bog (City/County: Akron/Summit	Sampling Date: 2023-04-19			
	State: Of				
Investigator(s): Alexander Kozak, Melia DeJongh					
Landform (hillslope, terrace, etc.): Terrace Loc					
Subregion (LRR or MLRA): R 139 Lat: 41.1762163					
Soil Map Unit Name: EIC2 - Ellsworth silt loam, 6 to 12 percent					
Are climatic / hydrologic conditions on the site typical for this time of year		·			
Are Vegetation, Soil, or Hydrology significantly of					
Are Vegetation, Soil, or Hydrology naturally prof	olematic? (If needed, explain any a	answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map showing	sampling point locations, trans	ects, important features, etc.			
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area				
Hydric Soil Present? Yes No	within a Wetland? Yes _	No			
Wetland Hydrology Present? Yes No	If yes, optional Wetland Site ID:				
Remarks: (Explain alternative procedures here or in a separate report					
A non-wetland point located in a forested ha	abitat and near the southe	eastern portion of the			
Project Area.		,			
1 Toject Allea.					
HYDROLOGY					
Wetland Hydrology Indicators:	Secondary	Indicators (minimum of two required)			
Primary Indicators (minimum of one is required; check all that apply)		Surface Soil Cracks (B6)			
Surface Water (A1) Water-Stained L		Drainage Patterns (B10)			
High Water Table (A2) Aquatic Fauna (Moss Trim Lines (B16)			
Saturation (A3) Marl Deposits (B		Dry-Season Water Table (C2)			
Water Marks (B1) Hydrogen Sulfid		h Burrows (C8)			
		tion Vis ble on Aerial Imagery (C9)			
Drift Deposits (B3) Presence of Rec Algal Mat or Crust (B4) Recent Iron Red		d or Stressed Plants (D1)			
Iron Deposits (B5) Thin Muck Surfa		s (C6) Geomorphic Position (D2) Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7) Other (Explain in		ppographic Relief (D4)			
Sparsely Vegetated Concave Surface (B8)	•	eutral Test (D5)			
Field Observations:	<u>_</u>	edital Fost (50)			
Surface Water Present? Yes No Depth (inches):					
Water Table Present? Yes No Depth (inches):					
Saturation Present? Yes No Depth (inches):		resent? Yes No			
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos					
Describe Necorded Data (Stream gauge, monitoring well, aerial photos	s, previous inspections), ii available.				
Remarks:					
No positive indication of wetland hydrology	was observed.				

VEGETATION - U	Jse scientific names	of plants.
----------------	----------------------	------------

EGETATION – Use scientific names of plants				Sampling Point: DP5
Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?		Dominance Test worksheet:
1. Prunus serotina	20		FACU	Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
2. Acer saccharum	10		FACU	Total Number of Dominant
3				Species Across All Strata: 7 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 0 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	30%	= Total Cov	/er	OBL species $0 x 1 = 0$
Sapling/Shrub Stratum (Plot size: 15 ft r)				FACW species $0 x 2 = 0$
1. Acer saccharum	10		FACU	FAC species $0 \times 3 = 0$
2. Rosa multiflora	5	~	FACU	FACU species 67 $x 4 = 268$
3				UPL species $\frac{0}{67}$ $x = \frac{0}{268}$
4.				Column Totals: <u>67</u> (A) <u>268</u> (B)
5				Prevalence Index = $B/A = 4.00$
6.				Hydrophytic Vegetation Indicators:
7.				1 - Rapid Test for Hydrophytic Vegetation
	450/	= Total Cov	/er	2 - Dominance Test is >50%
Herb Stratum (Plot size: 5 ft r				3 - Prevalence Index is ≤3.0¹
1. Festuca rubra	10	V	FACU	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
2. Trifolium repens	7 7		FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
3. Fragaria virginiana	5	~	FACU	
4.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5.				Definitions of Vegetation Strata:
6.				
7				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8.				
9.				Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
10.				Herb – All herbaceous (non-woody) plants, regardless
11.				of size, and woody plants less than 3.28 ft tall.
12				Woody vines – All woody vines greater than 3.28 ft in
		= Total Cov	/er	height.
Woody Vine Stratum (Plot size: 30 ft r				
1				
2.				
3				Hydrophytic
4				Vegetation
**		= Total Cov		Present? Yes No
Remarks: (Include photo numbers here or on a separate		- 10101 001	701	
The hydrophytic vegetation criterion	•	ot been	met.	

SOIL Sampling Point: DP5

Profile Desc	ription: (Describe	to the de	oth needed to docun	nent the	indicator	or confirm	n the absence of indicators.)	
Depth	Matrix			x Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks	
0 - 4	10YR 4/2	100			_		Silty Clay Loam	
4 - 14	10YR 4/3	100			_		Silty Clay Loam	
14 - 18	10YR 5/1	80	7.5YR 4/6	20	С	М	Clay Loam	
					_		<u> </u>	
					_		. <u></u>	
-								
-								
¹ Type: C=Co	oncentration, D=Dep	letion, RM	l=Reduced Matrix, MS	S=Maske	d Sand G	ains.	² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil							Indicators for Problematic Hydric Soils ³ :	
Histosol			Polyvalue Belov		(S8) (LR	R R,	2 cm Muck (A10) (LRR K, L, MLRA 14	
-	oipedon (A2)		MLRA 149B)			I D A 440D)	Coast Prairie Redox (A16) (LRR K, L,	
Black Hi	stic (A3) n Sulfide (A4)		Thin Dark Surfa Loamy Mucky M				5 cm Mucky Peat or Peat (S3) (LRR K) Dark Surface (S7) (LRR K, L)	, L, R)
	d Layers (A5)		Loamy Gleyed N			K, L)	Polyvalue Below Surface (S8) (LRR K,	1.)
	d Below Dark Surfac	- (Δ11)	Depleted Matrix		<u>~)</u>		Thin Dark Surface (S9) (LRR K, L)	L)
	ark Surface (A12)	C (ATT)	Redox Dark Sur		١		Iron-Manganese Masses (F12) (LRR K	(IR)
	fucky Mineral (S1)		Depleted Dark S				Piedmont Floodplain Soils (F19) (MLR	
-	Gleyed Matrix (S4)		Redox Depressi				Mesic Spodic (TA6) (MLRA 144A, 145	
-	ledox (S5)			.00 (. 0)			Red Parent Material (F21)	, ,
-	Matrix (S6)						Very Shallow Dark Surface (TF12)	
	rface (S7) (LRR R, I	VILRA 149	B)				Other (Explain in Remarks)	
³ Indicators of	f hydrophytic vegeta	tion and w	etland hydrology mus	t be pres	ent, unles	s disturbed	d or problematic.	
	_ayer (if observed)			<u> </u>				
Type:								
	ches):						Hydric Soil Present? Yes No	
Remarks:								
No posit	ive indicatio	n of hy	dric soil was	obser	ved.			
-		_						

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: 23013 Tamarack Bog City/C	County: Akron/Summit	Sampling Date: 2023-04-19					
Applicant/Owner: Oxbow and River Restoration, Inc. State: Ohio Sampling Point: DP6 WLA							
Investigator(s): Alexander Kozak, Melia DeJongh Section							
Landform (hillslope, terrace, etc.): Depression Local rel	ief (concave, convex, none): Concave	Slope (%):					
Subregion (LRR or MLRA): R 139 Lat: 41.1763172 Long: -81.6419716 Datum: WGS 84							
Soil Map Unit Name: EIC2 - Ellsworth silt loam, 6 to 12 percent slopes, eroded NWI classification: PFO1C							
Are climatic / hydrologic conditions on the site typical for this time of year? Y	es No (If no, explain in R	emarks.)					
Are Vegetation, Soil, or Hydrology significantly distur	rbed? Are "Normal Circumstances" p	resent? Yes No					
Are Vegetation, Soil, or Hydrology naturally problems	atic? (If needed, explain any answer	rs in Remarks.)					
SUMMARY OF FINDINGS - Attach site map showing san	npling point locations, transects	, important features, etc.					
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes No	Is the Sampled Area within a Wetland? Yes If yes, optional Wetland Site ID: Wetland	No d A					
Remarks: (Explain alternative procedures here or in a separate report.)							
A wetland point taken in the PEM portion of We	etland A located near the se	outheastern portion					
of the Project Area.							
HYDROLOGY							
Wetland Hydrology Indicators:	·	tors (minimum of two required)					
Primary Indicators (minimum of one is required; check all that apply)		Surface Soil Cracks (B6)					
Surface Water (A1) Water-Stained Leave		Drainage Patterns (B10)					
High Water Table (A2) Aquatic Fauna (B13) Mad Barasita (B45)		Moss Trim Lines (B16)					
✓ Saturation (A3) Marl Deposits (B15) Water Marks (B1) Hydrogen Sulfide Od		Dry-Season Water Table (C2) Crayfish Burrows (C8)					
Water Marks (B1) Sediment Deposits (B2) Oxidized Rhizospher		s ble on Aerial Imagery (C9)					
Oxidized Knizospiler		ressed Plants (D1)					
Algal Mat or Crust (B4) Recent Iron Reduction	· · ·						
Iron Deposits (B5) Thin Muck Surface (0							
Inundation Visible on Aerial Imagery (B7) Other (Explain in Rer		phic Relief (D4)					
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral						
Field Observations:	T AC-INEULIAI	Test (D3)					
Surface Water Present? Yes No Depth (inches):							
Water Table Present? Yes V No Depth (inches): 12							
Saturation Present? Yes No Depth (inches): 7		t? Yes No					
(includes capillary fringe)							
Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre	evious inspections), if available:						
Remarks:							
A positive indication of wetland hydrology was	observed.						
I and the second							

Absolute			Sampling Point: DP6 WLA
	Dominant Species?		Dominance Test worksheet:
10	✓	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
			Total Number of Dominant
			Species Across All Strata: 5 (B)
			Percent of Dominant Species
			That Are OBL, FACW, or FAC: 80 (A/B)
			Prevalence Index worksheet:
			Total % Cover of: Multiply by:
	= Total Cov	/er	OBL species 33 x 1 = 33
			FACW species 25 $x 2 = 50$
15	V	UPL	FAC species 10 x 3 = 30
			FACU species $0 x 4 = 0$
			UPL species $\frac{15}{200}$ $x = \frac{75}{100}$
			Column Totals: <u>83</u> (A) <u>188</u> (B)
			Prevalence Index = B/A = 2.27
			Hydrophytic Vegetation Indicators:
			1 - Rapid Test for Hydrophytic Vegetation
150/	= Total Cov	/er	✓ 2 - Dominance Test is >50%
	_ 10tai 00		3 - Prevalence Index is ≤3.0¹
20		OBL	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
15		FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
13		OBL	1
10		FAC	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
58%	= Total Cov	/er	height.
			Hydrophytic
			Vegetation
	= Total Cov		Present? Yes No
sheet.)		-	
	10% 15 15% 20 15 13 10	10% = Total Cov 15	10% = Total Cover 15

SOIL Sampling Point: DP6 WLA

Profile Desc	ription: (Describe	to the de	pth needed to docur	ment the	indicator	or confirn	n the absence of ind	licators.)
Depth	Matrix			x Feature				
(inches) 0 - 8	Color (moist) 10YR 4/1	- <u>%</u> 90	Color (moist) 10YR 4/6	<u>%</u> 10	<u>Type¹</u> C	Loc ²	Texture Clay Loam	Remarks
8 - 19	10YR 5/8	90	10YR 5/2	10	<u>D</u>	M	Clay	
-		_						
			- <u></u>		_			
					_			
-								
-								
-		_						
-				-	_			_
			-	-	-			
		-			-			
1Typo: C-C	ancontration D-Dor	olotion PA	/=Reduced Matrix, M	S-Macka	d Sand G	raine	² l ocation: Pl –	Pore Lining, M=Matrix.
Hydric Soil		DIELIOII, IXII	/i=Neduced Matrix, Mi	3-IVIASKE	u Sanu Gi	airis.		roblematic Hydric Soils ³ :
Histosol			Polyvalue Belo		e (S8) (LR	R R,		A10) (LRR K, L, MLRA 149B)
	oipedon (A2)		MLRA 149B	,		I D A 440D		Redox (A16) (LRR K, L, R)
Black Hi Hydroge	en Sulfide (A4)		Thin Dark Surfa					Peat or Peat (S3) (LRR K, L, R) e (S7) (LRR K, L)
	d Layers (A5)		Loamy Gleyed			, ,		elow Surface (S8) (LRR K, L)
	d Below Dark Surfac	e (A11)	✓ Depleted Matrix		_			urface (S9) (LRR K, L)
	ark Surface (A12)		Redox Dark Su				-	ese Masses (F12) (LRR K, L, R)
	Mucky Mineral (S1) Bleyed Matrix (S4)		Depleted Dark Redox Depress					oodplain Soils (F19) (MLRA 149B) c (TA6) (MLRA 144A, 145, 149B)
	Redox (S5)		<u> </u>	(. 0)				Material (F21)
	Matrix (S6)							Dark Surface (TF12)
Dark Su	rface (S7) (LRR R, I	MLRA 149	9B)				Other (Explain	in in Remarks)
			vetland hydrology mus	st be pres	ent, unles	s disturbed	d or problematic.	
	Layer (if observed)	:						
Type:	ah aa\.						Hydric Soil Prese	ent? Yes V No No
Remarks:	ches):						Tiyano con Trese	100
		٠.						
A positiv	e indication	of hyd	dric soil was o	bserv	ed.			

Project/Site: 23013 Tamarack	ct/Site: 23013 Tamarack Bog City/County: Akron/Summit Sampling Date: 2023-04-19						
· ·		ration, Inc. State: Ohio Sampling Point: DP7					
nvestigator(s): Alexander Kozak, Melia DeJongh Section, Township, Range:							
Landform (hillslope, terrace, etc.):	andform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear Slope (%):						
Subregion (LRR or MLRA): R 139							
Soil Map Unit Name: EIC2 - EIIst							
Are climatic / hydrologic conditions	on the site typical fo	or this time of year? Y	es No	(If no, explain in Rem	narks.)		
Are Vegetation, Soil	_, or Hydrology	significantly distur	bed? Are "Norma	l Circumstances" pres	sent? Yes No		
Are Vegetation, Soil							
SUMMARY OF FINDINGS	 Attach site m 	ap showing sam	pling point location	ons, transects, i	mportant features, etc.		
Hydrophytic Vegetation Present?	Vec	No	Is the Sampled Area				
Hydric Soil Present?	Yes	No V	within a Wetland?	Yes	No		
Wetland Hydrology Present?	Yes	No 🔽	If yes, optional Wetland	Site ID:			
Remarks: (Explain alternative pro			n you, optional troubin				
A non-wetland point			at and near the	e southweste	rn portion of the		
•	located iii a i		at and near the	2 30dtiiwe3te	in portion of the		
Project Area.							
HYDROLOGY							
Wetland Hydrology Indicators:				Secondary Indicator	s (minimum of two required)		
Primary Indicators (minimum of o	ne is required; check	call that apply)		Surface Soil Cracks (B6)			
Surface Water (A1)		Water-Stained Leave		Drainage Patterns (B10)			
High Water Table (A2)		Aquatic Fauna (B13)	` ,	Moss Trim Lines			
Saturation (A3)		Marl Deposits (B15)		Dry-Season Wa			
Water Marks (B1)		Hydrogen Sulfide Ode	or (C1)	Crayfish Burrow			
Sediment Deposits (B2)			es on Living Roots (C3)				
Drift Deposits (B3)		Presence of Reduced	- · · · · · · · · · · · · · · · · · · ·	Stunted or Stres	= : : :		
Algal Mat or Crust (B4)		Recent Iron Reductio		Geomorphic Po			
Iron Deposits (B5)		Thin Muck Surface (C		Shallow Aquitar			
Inundation Visible on Aerial I		Other (Explain in Ren	,	Microtopograph			
Sparsely Vegetated Concave	e Surface (B8)	, ,	•	FAC-Neutral Te			
Field Observations:							
Surface Water Present? Y	es No	Depth (inches):					
		Depth (inches):					
	es No <u></u>	Depth (inches):	Wetland H	Hydrology Present?	Yes No		
(includes capillary fringe) Describe Recorded Data (stream	gauge monitoring w	vell aerial photos pre	vious inspections) if ava	ailahle:			
Describe Recorded Data (stream	gauge, monitoring w	veii, aeriai priotos, pre	vious irispections), ii ave	madic.			
Remarks:							
No positive indication	of wetland	hydrology wa	s observed				
Two positive indication	TOT WCtiana	ilyarology wa	3 ODSCI VCa.				

VEGETATION - Us	se scientific names	of plants.
-----------------	---------------------	------------

EGETATION – Use scientific names of plants	Sampling Point: DP7			
Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?		Dominance Test worksheet:
1. Acer saccharum	15	<u> </u>	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
2. Quercus rubra	10	~	FACU	
3. Quercus alba	7		FACU	Total Number of Dominant Species Across All Strata: 4 (B)
4. Crataegus crus-galli	5 5		FAC	Percent of Dominant Species
5.				That Are OBL, FACW, or FAC: 50 (A/B)
6.				
7				Prevalence Index worksheet:
··-	070/	Total Cav		
0 11 (0) 1 0 1 (0) 1 15 ft r	37 70	= Total Cov	er	OBL species $\frac{0}{5}$ $x = \frac{0}{10}$ FACW species $\frac{1}{2}$ $x = \frac{1}{2}$
Sapling/Shrub Stratum (Plot size: 15 ft r)	10		EAC	FAC species $\frac{1}{15}$ $\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{3}$
1. Cornus racemosa			FAC	FACU species 32 x 4 = 128
2				UPL species 0 $x = 0$
3				Column Totals: 52 (A) 183 (B)
4				
5				Prevalence Index = B/A = $\frac{3.52}{}$
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
	10%	= Total Cov	ver.	2 - Dominance Test is >50%
Herb Stratum (Plot size: 5 ft r		- Total Cov	Ci	3 - Prevalence Index is ≤3.0¹
1. Impatiens capensis	5		E A C\A/	4 - Morphological Adaptations (Provide supporting
			FACW	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain)
2				Problematic Hydrophytic Vegetation (Explain)
3				¹ Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than or equal to 3.28 ft (1 m) tall.
10.				Herb – All herbaceous (non-woody) plants, regardless
11.				of size, and woody plants less than 3.28 ft tall.
12.				Woody vines – All woody vines greater than 3.28 ft in
12.	- 0/	Total Cau		height.
20 ft r	370	= Total Cov	er	
Woody Vine Stratum (Plot size: 30 ft r)				
1				
2				
3				Hydrophytic
4				Vegetation Present? Yes No
		= Total Cov	er	
Remarks: (Include photo numbers here or on a separate	sheet.)			1
The hydrophytic vegetation criterion	n has no	ot been	met.	

US Army Corps of Engineers

SOIL Sampling Point: DP7

Profile Desc	ription: (Describe	to the de	pth needed to docum	nent the	indicator	or confirm	n the absence of indicators.)	
Depth	Matrix			x Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks	
0 - 13	10YR 2/1	100	· 				Silty Clay Loam	
13 - 18	10YR 5/1	75	10YR 5/6	25	<u>C</u>	M	Clay	
				· 				
	-		· -					
			. <u>.</u>		_			
-								
	-					· ——		
¹ Type: C=Co	oncentration, D=Dep	letion, RN	/=Reduced Matrix, MS	S=Maske	d Sand G	rains.	² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil							Indicators for Problematic Hydric Soils ³ :	
Histosol			Polyvalue Belov		e (S8) (LR	R R,	2 cm Muck (A10) (LRR K, L, MLRA 149I	,
Histic Ep	oipedon (A2)		MLRA 149B) Thin Dark Surfa		LDD D M	II D A 440B	Coast Prairie Redox (A16) (LRR K, L, R)5 cm Mucky Peat or Peat (S3) (LRR K, L	
	en Sulfide (A4)		Loamy Mucky N				Dark Surface (S7) (LRR K, L)	., K)
	d Layers (A5)		Loamy Gleyed I			-, -,	Polyvalue Below Surface (S8) (LRR K, L	.)
	d Below Dark Surfac	e (A11)	Depleted Matrix		,		Thin Dark Surface (S9) (LRR K, L)	•
Thick Da	ark Surface (A12)		Redox Dark Su	rface (F6)		Iron-Manganese Masses (F12) (LRR K,	L, R)
	lucky Mineral (S1)		Depleted Dark S				Piedmont Floodplain Soils (F19) (MLRA	149B)
	Bleyed Matrix (S4)		Redox Depress	ions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 1	49B)
-	tedox (S5)						Red Parent Material (F21)	
	Matrix (S6) rface (S7) (LRR R, N	/ILRA 149	9B)				Very Shallow Dark Surface (TF12)Other (Explain in Remarks)	
			vetland hydrology mus	et ha proc	ont unloc	e dieturbod		
	Layer (if observed):		venana nyarology mas	it be pies	ent, unies	s disturbed	of problematic.	
Type:								
Depth (inc	ches):						Hydric Soil Present? Yes No	<u> </u>
Remarks:								
No posit	ive indication	n of hy	dric soil was	obsei	rved.			
•		•						

Project/Site: 23013 Tamarack Bog	City/County: Akro	n/Summit	Sampling Date: 2023-04-19		
Applicant/Owner: Oxbow and River Restoration, Inc.			Sampling Point: DP8 WLA		
Investigator(s): Alexander Kozak, Melia DeJongh					
Landform (hillslope, terrace, etc.): Depression			Slope (%):		
Subregion (LRR or MLRA): R 139 Lat: 41.1					
Soil Map Unit Name: EIC2 - Ellsworth silt loam, 6 to 12					
Are climatic / hydrologic conditions on the site typical for this	_				
Are Vegetation, Soil, or Hydrology sig					
Are Vegetation, Soil, or Hydrology na					
SUMMARY OF FINDINGS - Attach site map s					
SOMMANT OF FINDINGS - Attach site map's		<u> </u>	, important leatures, etc.		
Hydrophytic Vegetation Present? Yes No	within a Ma		No		
Hydric Soil Present? Yes V		' 			
Wetland Hydrology Present? Yes No		nal Wetland Site ID: Wetlan	<u>a A</u>		
Remarks: (Explain alternative procedures here or in a sepa					
A wetland point taken in the PEM por	tion of Wetland A	located near the s	outhwestern		
portion of the Project Area.					
HYDROLOGY					
Wetland Hydrology Indicators:		Secondary Indica	tors (minimum of two required)		
Primary Indicators (minimum of one is required; check all th	at apply)	Surface Soil			
✓ Surface Water (A1) Water	r-Stained Leaves (B9)		Drainage Patterns (B10)		
High Water Table (A2) Aquat	tic Fauna (B13)		Moss Trim Lines (B16)		
	Deposits (B15)		Water Table (C2)		
✓ Water Marks (B1) — Hydro	ogen Sulfide Odor (C1)	Crayfish Bur	Crayfish Burrows (C8)		
	zed Rhizospheres on Living R	Roots (C3) Saturation V	s ble on Aerial Imagery (C9)		
	ence of Reduced Iron (C4)	Stunted or S	ressed Plants (D1)		
Algal Mat or Crust (B4) Recei	nt Iron Reduction in Tilled Soi	ls (C6) Geomorphic	Position (D2)		
	Muck Surface (C7)	Shallow Aqu			
	(Explain in Remarks)		phic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)		<u>✓</u> FAC-Neutral	Test (D5)		
Field Observations:	sh (inabaa). 1				
Surface Water Present? Yes No Dept Water Table Present? Yes No Dept					
		Wetland Hydrology Preser	12 Van V Na		
Saturation Present? Yes Ves No Dept (includes capillary fringe)	in (inches): 0	wetiand Hydrology Preser	t? Yes No		
Describe Recorded Data (stream gauge, monitoring well, as	erial photos, previous inspecti	ons), if available:			
Remarks:					
A positive indication of wetland hydro	ology was observe	d.			

EGETATION – Use scientific names of plants	S.			Sampling Point: DP8 WLA
Tree Stratum (Plot size: 30 ft r)	Absolute	Dominant Species?		Dominance Test worksheet:
1			Status	Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
2				Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 75 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Co	ver	OBL species 32 x 1 = 32
Sapling/Shrub Stratum (Plot size: 15 ft r)				FACW species $\frac{20}{2}$ $\times 2 = \frac{40}{2}$
_{1.} Rosa palustris	15		OBL	FAC species $\frac{0}{5}$ $\times 3 = \frac{0}{30}$
_{2.} Lonicera tatarica	5		FACU	FACU species $\frac{5}{0}$ $x = 4 = \frac{20}{0}$
3				UPL species 0 $x = 0$ (B) Column Totals: $\frac{0}{57}$ (A) $\frac{92}{92}$
4				
5				Prevalence Index = B/A = 1.61
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
	200/	= Total Co	ver	✓ 2 - Dominance Test is >50%
Herb Stratum (Plot size: 5 ft r)				✓ 3 - Prevalence Index is ≤3.0 ¹
1. Phalaris arundinacea	15		FACW	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
_{2.} Typha X glauca	10		OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
3. Symplocarpus foetidus	7	-	OBL	1
4. Onoclea sensibilis	5		FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				
7		-		Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9.				and greater than or equal to 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12				Woody vines - All woody vines greater than 3.28 ft in
	37%	= Total Co	ver	height.
Woody Vine Stratum (Plot size: 30 ft r				
1				
1				
				Hedronbedo
1 2 3				HVGrophytic
2 3				Hydrophytic Vegetation
2				1

SOIL Sampling Point: DP8 WLA

	Matrix			Features	. 2	_	
(inches)	Color (moist)	<u>%</u>	Color (moist)	% Type ¹	Loc ²	<u>Texture</u>	Remarks
0 - 20	10YR 2/1	100				Muck	
-							
	-						
_							
-							
_							
						2	
Type: C=Co		pletion, RM	=Reduced Matrix, MS=	=Masked Sand G	Brains.		_=Pore Lining, M=Matrix. Problematic Hydric Soils ³ :
<u>✓</u> Histosol			Polyvalue Below	Surface (S8) (I I	2R R		(A10) (LRR K, L, MLRA 149B)
	oipedon (A2)		MLRA 149B)	Currace (CO) (EI	viv iv,		rie Redox (A16) (LRR K, L, R)
Black Hi			Thin Dark Surface	e (S9) (LRR R, I	VILRA 149B		y Peat or Peat (S3) (LRR K, L, R)
	en Sulfide (A4)		Loamy Mucky Mir		K , L)		ce (S7) (LRR K, L)
	d Layers (A5) d Below Dark Surfac	oo (A11)	Loamy Gleyed Matrix (Below Surface (S8) (LRR K, L) Surface (S9) (LRR K, L)
	а веюж Dark Surfac ark Surface (A12)	ce (ATT)	Redox Dark Surfa				anese Masses (F12) (LRR K, L, R
	Mucky Mineral (S1)		Depleted Dark Su			_	Floodplain Soils (F19) (MLRA 149
	Gleyed Matrix (S4)		Redox Depressio	ons (F8)			dic (TA6) (MLRA 144A, 145, 149I
	Redox (S5)						t Material (F21)
	Matrix (S6) rface (S7) (LRR R,	MI DA 440	B\				ow Dark Surface (TF12) lain in Remarks)
Dark Su	nace (S7) (LKK K,	WILKA 149	b)			Other (Exp	iaiii iii Reiliaiks)
³ Indicators o	f hydrophytic vegeta	ation and w	etland hydrology must	be present, unle	ss disturbed	d or problematic.	
Restrictive I	Layer (if observed)):					
Type:			<u></u>				
Depth (in	ches):					Hydric Soil Pre	sent? Yes 🔽 No
Remarks:							
A nocitiv	o indication	of byd	ric soil was ob	served			
A positiv	re maication	OI IIyu	ilic soli was ob	osei ved.			

Project/Site: 23013 Tamarack B	ct/Site: 23013 Tamarack Bog City/County: Akron/Summit Sampling Date: 2023-04-19						
•		ation, Inc. State: Ohio Sampling Point: DP9					
nvestigator(s): Alexander Kozak, Melia DeJongh Section, Township, Range:							
Landform (hillslope, terrace, etc.): T							
Subregion (LRR or MLRA): R 139	Lat:	41.1774601	Long: -81	.6451793	Datum: WGS 84		
Soil Map Unit Name: EIC2 - Ellsw							
Are climatic / hydrologic conditions of	on the site typical fo	or this time of year? Y	es No	(If no, explain in Rem	narks.)		
Are Vegetation, Soil,	, or Hydrology	significantly disturb	bed? Are "Norma	l Circumstances" pres	sent? Yes No		
Are Vegetation, Soil,							
SUMMARY OF FINDINGS -	Attach site m	ap showing sam	npling point location	ons, transects, ir	mportant features, etc.		
Hydrophytic Vegetation Present?	Vos	No	Is the Sampled Area				
Hydric Soil Present?	Yes	No	within a Wetland?	Yes	No		
Wetland Hydrology Present?	Yes	No V	If yes, optional Wetland	d Site ID:			
Remarks: (Explain alternative prod			ii yee, optional wettane	Z GRO ID.			
A non-wetland point t Area.	aken in a fo	rested habitat	t and near the v	western portio	on of the Project		
HYDROLOGY							
Wetland Hydrology Indicators:				Secondary Indicator	s (minimum of two required)		
Primary Indicators (minimum of one	e is required; check	call that apply)		Surface Soil Cra			
Surface Water (A1)		Water-Stained Leaves	s (B9)	Drainage Patterns (B10)			
High Water Table (A2)		Aquatic Fauna (B13)		Moss Trim Lines			
Saturation (A3)		Marl Deposits (B15)		Dry-Season Wa			
Water Marks (B1)		Hydrogen Sulfide Odd	or (C1)	Crayfish Burrows (C8)			
Sediment Deposits (B2)		Oxidized Rhizosphere	es on Living Roots (C3)	Saturation Vis b	le on Aerial Imagery (C9)		
Drift Deposits (B3)		Presence of Reduced		Stunted or Stres			
Algal Mat or Crust (B4)		Recent Iron Reduction		Geomorphic Pos			
Iron Deposits (B5)		Thin Muck Surface (C		Shallow Aquitare			
Inundation Visible on Aerial Im	- · · · —	Other (Explain in Rem	narks)	Microtopographi			
Sparsely Vegetated Concave S	Surface (B8)			FAC-Neutral Te	st (D5)		
Field Observations:	🗸	5 (1 . 1 .)					
		Depth (inches):					
		Depth (inches):		hadaada aa Baasaa 10	V N- V		
Saturation Present? Yes (includes capillary fringe)	s No_ -	Depth (inches):	wetland i	lydrology Present?	Yes No		
Describe Recorded Data (stream g	jauge, monitoring w	vell, aerial photos, prev	vious inspections), if ava	ailable:			
Remarks:							
No positive indication	of wetland I	hydrology wa	s observed.				

VEGETATION -	Use	scientific names	of	plants
V L O L I A I I O I I	-		0.	piarito

/EGETATION – Use scientific names of plants	S.			Sampling Point: DP9
Tree Stratum (Plot size: 30 ft r)	Absolute			Dominance Test worksheet:
Tree Stratum (Plot size: 30 Tt r) 1. Quercus rubra	% Cover	Species? ✓	Status FACU	Number of Dominant Species
2. Acer saccharum	10		FACU	That Are OBL, FACW, or FAC: 0 (A)
- Illmus americana	_ 		FACW	Total Number of Dominant Species Across All Strata: 6 (B)
				eposico / torodo / tili etitata:
4				Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)
5				
6				Prevalence Index worksheet:
7	0.50/			Total % Cover of: Multiply by: OBL species 0 x 1 = 0
2 1 2 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1	33%	= Total Co	ver	OBL species $\frac{0}{5}$ $x = \frac{0}{10}$ FACW species $\frac{1}{2}$ $x = \frac{1}{2}$
Sapling/Shrub Stratum (Plot size: 15 ft r)	15		FACU	FAC species $\frac{3}{3}$ $x = \frac{3}{9}$
1. Acer saccharum				FACU species 67
2		·		UPL species $0 \times 5 = 0$
3				Column Totals: 75 (A) 287 (B)
4				2 2 3 23
5				Prevalence Index = B/A = 3.83
6	_			Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
	15%	= Total Co	ver	2 - Dominance Test is >50%
Herb Stratum (Plot size: 5 ft r)				3 - Prevalence Index is ≤3.0¹
1. Claytonia virginica	10		FACU	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
2. Rosa multiflora	7		FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
3. Taraxacum officinale	5	~	FACU	
4. Geum canadense	3		FAC	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5.				
6.				Definitions of Vegetation Strata:
7				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
•				
8				Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
9		·		
10				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11				
12				Woody vines – All woody vines greater than 3.28 ft in height.
20.5	25%	= Total Co	ver	
Woody Vine Stratum (Plot size: 30 ft r)				
1				
2				
3		·		Hydrophytic
4				Vegetation Present? Yes No
		= Total Co	ver	· · · · · · · · · · · · · · · · · · ·
Remarks: (Include photo numbers here or on a separate	sheet.)			-
The hydrophytic vegetation criterio	n has no	ot been	met.	
· · · · · ·				

SOIL Sampling Point: DP9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth <u>Matrix</u>		Redox Features							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks	
0 - 10	10YR 4/1	100					Clay Loam		
10 - 18	10YR 5/4	60	10YR 6/1	40	D	М	Clay		
_									
		- ·	·						
		_							
-									
				-					
	-								
		_	 				- <u></u>		
-									
¹Type: C=Ce	oncentration, D=Dep	oletion, RN	M=Reduced Matrix, MS	S=Maske	d Sand Gr	ains.	² Location: PL=	=Pore Lining, M=Matrix.	
Hydric Soil								Problematic Hydric Soils ³ :	
Histosol	` '		Polyvalue Belov		(S8) (LR	R R,		(A10) (LRR K, L, MLRA 149B)	
	oipedon (A2)		MLRA 149B)	,	I DD D M	I D A 440D		e Redox (A16) (LRR K, L, R)	
	istic (A3) en Sulfide (A4)		Thin Dark Surfa Loamy Mucky N					Peat or Peat (S3) (LRR K, L, R) e (S7) (LRR K, L)	
	d Layers (A5)		Loamy Gleyed			·, - /		elow Surface (S8) (LRR K, L)	
	d Below Dark Surfac	e (A11)	Depleted Matrix		,		Thin Dark Surface (S9) (LRR K, L)		
Thick Da	ark Surface (A12)		Redox Dark Su	rface (F6))		Iron-Manganese Masses (F12) (LRR K, L, R)		
	Mucky Mineral (S1)		Depleted Dark		- 7)		Piedmont Floodplain Soils (F19) (MLRA 149B)		
	Gleyed Matrix (S4)		Redox Depress	ions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
	Redox (S5)							Material (F21)	
	l Matrix (S6) rface (S7) (LRR R, l	MI RA 149	DR)				·	w Dark Surface (TF12) ain in Remarks)	
Baik 64	nace (Cr) (Errich,		,,,				Other (Expire	an in remaine)	
			vetland hydrology mus	st be pres	ent, unles	s disturbed	l or problematic.		
	Layer (if observed)	:							
Type:							Uvdria Cail Bras	ant2 Van Na V	
	ches):						nyuric Soil Pres	ent? Yes No	
Remarks:									
No posit	ive indicatio	n of hy	dric soil was	obser	ved.				

Project/Site: 23013 Tamarack Bog	City/County: Akro	n/Summit	Sampling Date: 2023-04-19					
Applicant/Owner: Oxbow and River Restoration, Inc.								
Applicant/Owner: Oxbow and River Restoration, Inc. State: Ohio Sampling Point: DP10 WLA Investigator(s): Alexander Kozak, Melia DeJongh Section, Township, Range:								
Landform (hillslope, terrace, etc.): Depression			Slope (%):					
Subregion (LRR or MLRA): R 139 Lat: 41.								
Soil Map Unit Name: EIC2 - Ellsworth silt loam, 6 to 1								
Are climatic / hydrologic conditions on the site typical for this								
	·							
Are Vegetation, Soil, or Hydrology significantly disturbed?								
Are Vegetation, Soil, or Hydrology 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 N	o Is the Samp							
	o within a We	tland? Yes	No					
Wetland Hydrology Present? Yes N		nal Wetland Site ID: Wetlan	d A					
Remarks: (Explain alternative procedures here or in a sep	parate report.)							
A wetland point taken in the PEM po	rtion of Wetland A	located near the w	estern portion of					
the Project Area.								
LIVEROLOGY								
HYDROLOGY Western Hydrology Indicators		Cocondon Indias	tora (minimum of two required)					
Wetland Hydrology Indicators:	hat anni. N	•	Secondary Indicators (minimum of two required)					
Primary Indicators (minimum of one is required; check all t			Surface Soil Cracks (B6)					
	er-Stained Leaves (B9)		Drainage Patterns (B10)					
l a	atic Fauna (B13)	Moss Trim Lines (B16)						
	Deposits (B15) rogen Sulfide Odor (C1)	Dry-Season Water Table (C2)Crayfish Burrows (C8)						
	lized Rhizospheres on Living R							
	sence of Reduced Iron (C4)							
	ent Iron Reduction in Tilled Soi		Position (D2)					
	Muck Surface (C7)	Shallow Aqu						
	er (Explain in Remarks)		aphic Relief (D4)					
Sparsely Vegetated Concave Surface (B8)	er (Explain in Nemarks)	<u>✓</u> FAC-Neutral						
Field Observations:		I AO Neullai	1631 (150)					
Surface Water Present? Yes No Dep	oth (inches):							
Water Table Present? Yes No Dep	oth (inches):							
Saturation Present? Yes No Dep	oth (inches): 8	Wetland Hydrology Preser	t? Yes No					
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, a	aerial photos, previous inspecti	ons), if available:						
	, , , , , , , , , , , , , , , , , , ,							
Remarks:								
A positive indication of wetland hydrology was observed.								

/EGETATION – Use scientific names of plants.				Sampling Point: DP10 WLA
Tree Stratum (Plot size: 30 ft r)	Absolute	Dominant		Dominance Test worksheet:
1. Acer rubrum	10	Species?	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
2				Total Number of Dominant Species Across All Strata: 3 (B)
3				
4 5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	10%	= Total Cov	ver	OBL species $\frac{12}{x}$ $x = \frac{12}{x}$
Sapling/Shrub Stratum (Plot size: 15 ft r)				FACW species $\frac{12}{40}$ $\times 2 = \frac{24}{100}$
1				FAC species $\frac{40}{0}$ $\times 3 = \frac{120}{0}$
2.				FACU species 0 $x = 0$
3				0FL species
4				Column Totals: <u>64</u> (A) <u>156</u> (B)
5				Prevalence Index = $B/A = 2.44$
6.				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
· ·		= Total Cov	ver	✓ 2 - Dominance Test is >50%
Herb Stratum (Plot size: 5 ft r)		- 10101 00	VOI	✓ 3 - Prevalence Index is ≤3.0 ¹
1. Floerkea proserpinacoides	20		FAC	4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
2. Persicaria sagittata	12		OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
3. Geum canadense	10		FAC	The disease of budgie only and model budget on any and
4. Epilobium ciliatum	7		FACW	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_{5.} Phalaris arundinacea	5		FACW	Definitions of Vegetation Strata:
6				
7				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8		·		Sapling/shrub – Woody plants less than 3 in. DBH
9		·		and greater than or equal to 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12				Woody vines – All woody vines greater than 3.28 ft in
	E 40/	= Total Cov	ver	height.
Woody Vine Stratum (Plot size: 30 ft r				
1				
2.				
3				Understade
				Hydrophytic Vegetation
4		= Total Cov		Present? Yes No
Remarks: (Include photo numbers here or on a separate s		= 10(a) Co	vei	
The hydrophytic vegetation criterion	ŕ	een me	t.	
The hydrophytic vegetation criterion	i nas be	een me	τ.	

SOIL Sampling Point: DP10 WLA

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth Matrix		Redox Features							
(inches) 0 - 10	Color (moist) 10YR 3/1	- <u>%</u> 95	Color (moist) 10YR 3/4	<u>%</u> 5	Type ¹	Loc ²	Texture Clay Loam	Remarks	
				-	-				
10 - 19	10YR 4/4	70	10YR 4/1	30	<u>D</u>	<u>M</u>	Clay		
		_	· -	_					
-									
-									
_		_							
		_							
				-					
			-						
		-		_	-				
1Typo: C-C	oncontration D-Dor	olotion PA	/I=Reduced Matrix, M	S-Maska	d Sand G		² Location: PL	=Pore Lining, M=Matrix.	
Hydric Soil		DIELIOII, IXII	i=Reduced Matrix, M	3=IVIASKE	u Sanu Gi	airis.		Problematic Hydric Soils ³ :	
Histosol			Polyvalue Belo	w Surface	(S8) (LR	R R,	2 cm Muck	(A10) (LRR K, L, MLRA 149B)	
	oipedon (A2)		MLRA 149B	,				e Redox (A16) (LRR K, L, R)	
	istic (A3) en Sulfide (A4)		Thin Dark Surfa					Peat or Peat (S3) (LRR K, L, R)	
	d Layers (A5)		Loamy Gleyed			., ∟)		e (S7) (LRR K, L) elow Surface (S8) (LRR K, L)	
	d Below Dark Surfac	e (A11)	Depleted Matrix		-/		·	surface (S9) (LRR K, L)	
	ark Surface (A12)	,	✓ Redox Dark Su)		Iron-Manganese Masses (F12) (LRR K, L, R)		
Sandy N	Mucky Mineral (S1)		Depleted Dark	Surface (I	F7)		Piedmont Floodplain Soils (F19) (MLRA 149B)		
-	Sleyed Matrix (S4)		Redox Depress	sions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
-	Redox (S5)							Material (F21)	
	l Matrix (S6) rface (S7) (LRR R, I	MLRA 149	9B)				Very Shallow Dark Surface (TF12)Other (Explain in Remarks)		
³ Indicators o	f hydrophytic vegeta	ition and v	vetland hydrology mus	st be pres	ent, unles	s disturbed	I or problematic.		
	Layer (if observed)		, 3,	<u> </u>			<u> </u>		
Type:									
	ches):						Hydric Soil Pres	ent? Yes V No No	
Remarks:									
A positiv	e indication	of hyd	dric soil was c	bserv	ed.				
,									

APPENDIX C SITE PHOTOGRAPHS



Photograph 1

View facing north showing the forested habitat at non-wetland data point DP1, captured in the northwestern portion of the Project Area.



Photograph 2

View facing west showing the forested habitat with emergent understory of Wetland A at data point DP2, captured in the northwestern portion of the Project Area.



Photograph 3

View facing west showing the forested habitat at non-wetland data point DP3, captured in the northeastern portion of the Project Area.



Photograph 4

View facing south showing the emergent habitat of Wetland A at data point DP4, captured in the northeastern portion of the Project Area.



Photograph 5

View facing east showing the forested habitat at non-wetland data point DP5, captured in the southeastern portion of the Project Area.



Photograph 6

View facing north showing the emergent habitat of Wetland A at data point DP6, captured in the southeastern portion of the Project Area.



Photograph 7

View facing west showing the forested habitat at non-wetland data point DP7, captured in the southwestern portion of the Project Area.



Photograph 8

View facing east showing the emergent habitat of Wetland A at data point DP8, captured in the southwestern portion of the Project Area.



Photograph 9

View facing south showing the forested habitat at non-wetland data point DP9, captured in the western portion of the Project Area.



Photograph 10

View facing north showing the emergent habitat of Wetland A at data point DP10, captured in the western portion of the Project Area.