Assured Wetland Delineation Report

Moore Property

Town of York, Dane County, Wisconsin

August 9, 2021

Project Number: 20210467

506 Springdale Street | Mount Horeb, WI 53572 | www.heartlandecological.com

Moore Property

Town of York, Dane County, Wisconsin

August 9, 2021

Prepared for:

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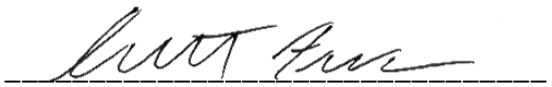
Jeff Kraemer, Principal



Scott Fuchs, Environmental Scientist

Table of Contents

1.0 Introduction

Heartland Ecological Group, Inc. ("Heartland") completed an assured wetland determination and delineation on the Moore Property site on May 5, 2021 at the request of Shirley and Peter Moore. Fieldwork was completed by Jeff Kraemer, an assured delineator qualified via the Wisconsin Department of Natural Resources (WDNR) Wetland Delineation Assurance Program (Appendix E, Qualifications). The 3.32-acre site (the "Study Area") is northeast of Krause Road, approximately one mile north of the U.S. Highway 151 and County Road V interchange, in the northwest ¼ of Section 5, T9N, R12E, Town of York, Dane County, WI (Figure 1, Appendix A). The purpose of the wetland delineation was to determine the location and extent of wetlands within the Study Area and to determine whether an area where gravel for a parking lot was placed was wetland prior to its construction.

One (1) wetland area totaling approximately 2.12 acres was delineated and mapped within the Study Area (Figure 6, Appendix A). This acreages includes a portion of the gravel parking lot that was likely wetland prior to its construction. Wetlands discussed in this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers (USACE), state regulation under the jurisdiction of the WDNR, and local zoning authorities. Heartland recommends this report be submitted to local authorities, the WDNR, and USACE for final jurisdictional review and concurrence.

2.0 Methods

2.1 Wetlands

Wetlands were determined and delineated using the criteria and methods described in the USACE Wetlands Delineation Manual, T.R. Y-87-1 ("1987 Corps Manual") and the applicable *Regional Supplement to the Corps of Engineers Wetland Delineation Manual*. In addition, the *Guidance for Submittal of Delineation Reports to the St. Paul District USACE and the WDNR* (WDNR, 2015) was followed in completing the wetland delineation and report.

Determinations and delineations utilized available resources including the U.S. Geological Survey's (USGS) *WI 7.5 Minute Series (Topographic) Map* (Figure 2, Appendix A), the Natural Resource Conservation Service's (NRCS) Soil Survey Geographic Database (SSURGO), U.S. Department of Agriculture's (USDA) *Web Soil Survey* (Figure 3, Appendix A), the Wisconsin Department of Natural Resources' *Surface Water Data Viewer's* wetland indicator data layer (Figure 4, Appendix A), the WDNR's *Wisconsin Wetland Inventory* data layer (Figure 5, Appendix A), and aerial imagery available through the USDA Farm Service Agency's (FSA) National Agriculture Imagery Program (NAIP). The USGS *National Hydrography Dataset* is included on Figures 2 and 5, Appendix A.

Wetland determinations were completed on-site at sample points, often along transects, using the three (3) criteria (vegetation, soil, and hydrology) approach per the 1987 Corps Manual and the Regional Supplement. Procedures in these sources were followed to demonstrate that, under normal circumstances, wetlands were present or not present based on a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology.

Recent weather conditions influence the visibility or presence of certain wetland hydrology indicators. An assessment of recent precipitation patterns helps to determine if climatic/hydrologic conditions were typical when the field investigation was completed. Therefore, a review of the antecedent precipitation in the three (3) months leading up to the field investigation was completed. Using a WETS analysis developed by the NRCS, the amounts of precipitation in these three (3) months were compared to averages and standard deviation thresholds over the past 30 years to generally represent if conditions encountered during the investigation were normal, wet, or dry. Recent precipitation events

in the week prior to the investigation were considered while interpreting wetland hydrology indicators. In some cases, the Palmer Drought Index was checked for long-term drought or moist conditions (NOAA, 2018).

The uppermost wetland boundary and sample points were identified and marked with wetland flagging and located with a Global Positioning System (GPS) capable of sub-meter accuracy. In some cases, wetland flagging was not utilized to mark the boundary and the location was only recorded with a GPS unit, particularly in active agricultural areas. The GPS data was then used to map the wetlands using ESRI ArcMap™ 10.6 software.

3.0 Results and Discussion

3.1 Desktop Review

Climatic Conditions

According to the WETS analysis using the previous three (3) months of precipitation data, conditions encountered at the time of the fieldwork were expected to be dry for the time of year (Appendix B). The Palmer Drought Index was checked on line and the long-term conditions at the time of the fieldwork were in the mild wetness range. Fieldwork was completed outside the dry-season based on long-term regional hydrology data utilized in the WebWIMP Climatic Water Balance web site.

General Topography and Land Use

The topography within the Study Area was generally sloping downhill to the east. A topographic high of approximately 962 feet above mean sea level (msl) is present along the western boundary of the Study Area, and a topographic low of approximately 948 feet above msl is present near the southeastern corner (Figures 2 and 6, Appendix A). Land uses within the Study Area consist primarily of mowed turf and wet meadow vegetation. An outbuilding, shed, gravel parking lot, and a garden are also within the Study Area. Surrounding areas are primarily agricultural row cropping with woodlands and additional wetlands also present. General drainage within the Study Area is to the east.

Soil Mapping

Soils mapped by the NRCS Soil Survey within the Study Area and their hydric status are summarized in Table 1. Wetlands identified during the field investigation are located primarily within areas mapped as predominantly hydric soils including wetland indicator soils (Figures 3 and 4, Appendix A).

Table 1. Summary of NRCS Mapped Soils within the Study Area

Soil symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
DnB: Dodge silt loam, 2 to 6 percent slopes	Dodge	80-95	Drumlins	No
	St. Charles	3-10	Drumlins	No
	Mayville	2-7	Drumlins	No
	Lamartine	0-3	Drumlins	No
MdD2: McHenry silt loam, 12 to 20 percent slopes, eroded	McHenry-Eroded	85-95	Moraines	No
	Dodge-Eroded	3-6	Moraines	No
	Wyocena	1-5	Moraines	No
	Lapeer	1-4	Moraines	No
SaA: Sable silty clay loam, 0 to 2 percent slopes	Sable	85-100	Swales	Yes
	Ipava	0-7	Ground moraines	No
	Muscatune	0-6	Ground moraines	No
	Buckhart	0-4	Knolls	No
	Elburn	0-3	Outwash plains	No
VrB: Virgil silt loam, 1 to 4 percent slopes	Virgil	85-95	Interdrumlins	No
	St. Charles	2-7	Drumlins	No
	Sable	3-8	Interdrumlins	Yes

Wetland Mapping

The Wisconsin Wetlands Inventory (WWI) mapping (Figure 5, Appendix A) depicts one (1) wetland within the Study Area. One (1) complex of emergent (E1K) and forested (T3K) wetlands is depcted in the north-central and eastern portions of the Study Area.

3.2 Field Review

One (1) wetland was identified and delineated within the Study Area. Wetland determination data sheets (Appendix C) were completed at 8 sample points that were representative of the wetland and upland conditions near the boundary and where potential wetlands may be present based on the desktop review and field reconnaissance. Appendix D provides photographs, typically at the sample point locations of the wetlands and adjacent uplands. The wetland boundary and sample point locations are shown on Figure 6 (Appendix A) and the wetlands are summarized in Table 2 and detailed in the following sections.

Table 2. Summary of Wetlands Identified within the Study Area

Wetland ID	Wetland Description	*Surface Water Connections	*NR151 Protective Area	Acreage (on-site)
W-1	Wet Meadow	Potentially Isolated	Less susceptible, 10-30 feet	2.12
				2.12

**Classification based on Heartland's professional opinion. Jurisdictional authority of wetland and waterway protective areas under NR 151 lies with the WDNR. Local zoning authorities may have additional restrictions. USACE has authority for determining federal jurisdiction of wetlands and waterways.*

Wetland 1 (W-1)

Wetland 1 (W-1) is a 2.12-acre wet meadow present within the north-central and eastern portions of the Study Area.

Dominant vegetation observed in W-1 included reed canary grass (*Phalaris arundinacea,* FACW) and Kentucky bluegrass (*Poa pratensis,* FACU*)*. Vegetation within the Study Area was composed mostly of a combination of mowed wet meadow and turf grass vegetation.

The Depleted Below Dark Surface (A11), Depleted Matrix (F3) and Redox Dark Surface (F6) hydric soil indicators were observed at sample points completed within W-1.

The primary wetland hydrology indicators of Surface Water (A1), High Water Table (A2), and Saturation (A3) were observed within W-1, while secondary indicators included Geomorphic Position (D2).

Wetland W-1 continues outside of the Study Area to the east, however, W-1 and the offsite wetlands that it is contiguous with appear to be isolated from Waters of the United States. The boundary of W-1 generally followed a poorly-defined topographic break.

An area where gravel was introduced for the construction of a parking lot and shed was evaluated to determine if the gravel was placed within wetland W-1. Hydric soils were found to be present underneath the gravel, indicating that this area was wetland prior to the parking lots construction. The area of fill measures approximately 8,657 square feet and is depicted on Figure 6, Appendix A. This was consistent with wetland signatures identified on historic aerial photographs reviewed prior to the disturbance (Appendix A).

3.3 Other Considerations

This report is limited to the identification and delineation of wetlands within the Study Area. Other regulated environmental resources that result in land use restrictions may be present within the Study Area that were not evaluated by Heartland (e.g. navigable waterways, floodplains, cultural resources, and threatened or endangered species).

Wisconsin Act 183 provides exemptions to permitting requirements for certain nonfederal wetlands. Nonfederal wetlands are wetlands that are not subject to federal jurisdiction. Exemptions apply to projects in urban areas with wetland impacts up to 1-acre per parcel. An urban area is defined as an incorporated area; an area within ½ mile of an incorporated area; or an area served by a sewerage system. Exemptions for nonfederal wetlands also apply to projects in rural areas with wetland impacts up to three (3) acres per parcel. Exemptions in rural areas only apply to structures with an agricultural purpose such as buildings, roads, and driveways. The determination of federal and nonfederal wetlands MUST be made by the USACE through an Approved Jurisdictional Determination (AJD). This report may be submitted to the USACE to assist with their determination.

Wis. Adm. Code NR 151 (“NR 151”) requires that a “protective area” (buffer) be determined from the Ordinary High-Water Mark (OHWM) of lakes, streams and rivers, or at the delineated boundary of wetlands. Per NR 151.12, the protective area width for “less susceptible” wetlands is determined by using 10% of the average wetland width, no less than 10 feet or more than 30 feet. “Moderately susceptible” wetlands, lakes, and perennial and intermittent streams identified on recent mapping require a protective area width of 50

feet; while “highly susceptible wetlands” are associated with outstanding or exceptional resource waters in areas of special natural resource interest and require protective area width of 75 feet. Table 2 above lists the potential wetland buffers per NR 151 for each wetland identified based on Heartland’s professional opinion. Please note that jurisdictional authority on wetland and waterway protective areas under NR 151 lies with the WDNR. Local zoning authorities and regional planning organizations may have additional land use restrictions within or adjacent to wetlands.

4.0 Conclusion

Heartland completed an assured wetland determination and delineation within the Moore Property on May 5, 2021 at the request of Peter and Shirley Moore. Fieldwork was completed by Jeff Kraemer, an assured delineator qualified via the WDNR Wetland Delineation Assurance Program. The Study Area lies in Section 5, T9N, R12E, Town of York, Dane County, WI.

One (1) wetland area was delineated and mapped within the 3.32-acre Study Area. The wetland, which may be classified as a wet meadow, totals approximately 2.12 acres within the Study Area. The wetland appears to be isolated from Waters of the United States.

Wetlands and waterways discussed in this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers (USACE), state regulation under the jurisdiction of the WDNR, and the local zoning authority. Heartland recommends this report be submitted to the USACE for final jurisdictional review and concurrence. Review by local authorities may be necessary for determination of any applicable zoning and setback restrictions.

Heartland recommends that all applicable regulatory agency reviews and permits are obtained prior to beginning work within the Study Area or within or adjacent to wetlands or waterways. Heartland can assist with evaluating the need for additional environmental reviews, surveys, or regulatory agency coordination in consideration of the proposed activity and land use as requested but is outside of the scope of the wetland delineation.

Experienced and qualified professionals completed the wetland determination and delineation using standard practices and professional judgment. Wetland boundaries may be affected by conditions present within the Study Area at the time of the fieldwork. All final decisions on wetlands and their boundaries are made by the USACE, the WDNR, and/or sometimes a local unit of government. Wetland determination and boundary reviews by regulatory agencies may result in modifications to the findings presented to the Client. These modifications may result from varying conditions between the time the wetland delineation was completed and the time of the review. Factors that may influence the findings may include but not limited to precipitation patterns, drainage modifications, changes or modification to vegetation, and the time of year.

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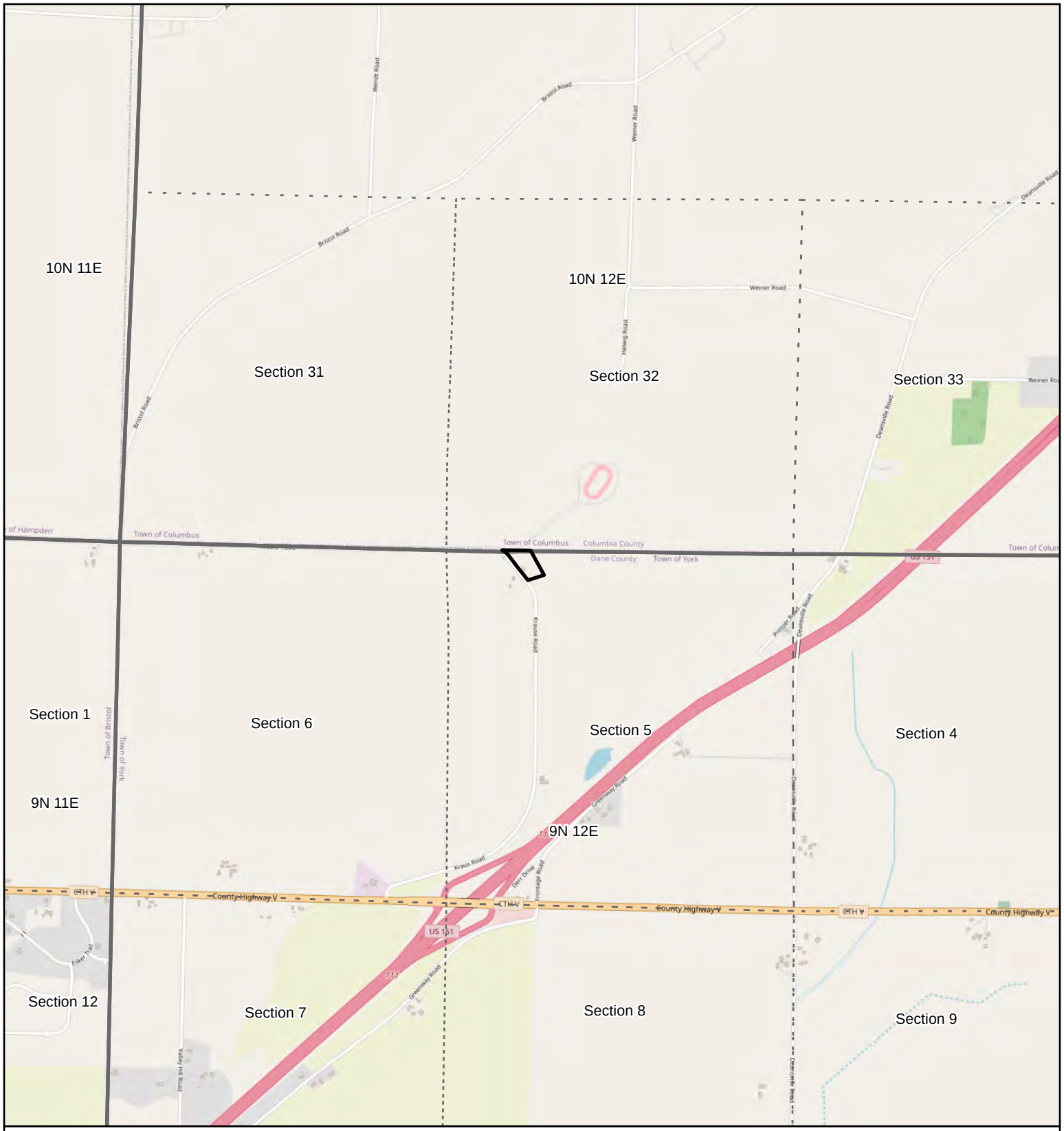
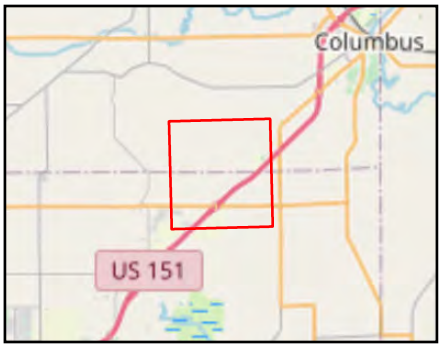
Appendix A | Figures





Study Area (3.32 ac)

Township

Section

0 1,000 2,000 Ft

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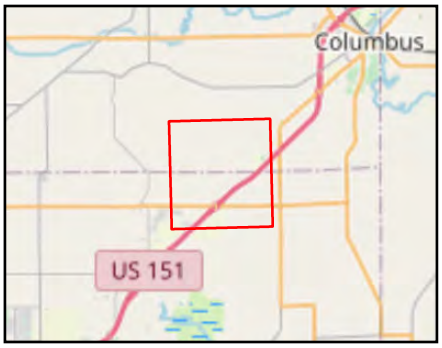
Figure 1. Project Location

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

OpenStreetMap
ESRI



Study Area (3.32 ac)

Township

Section

0 1,000 2,000 Ft

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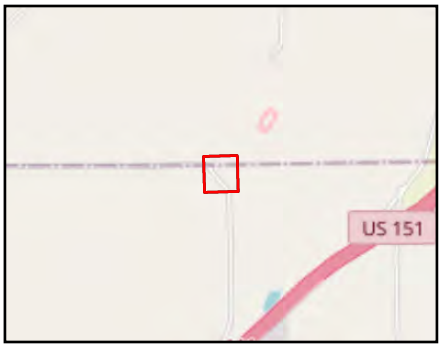
Figure 2. USGS Topography

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

USGSTopo
USGS



Study Area (3.32 ac)

NRCS Soil Survey Data

- Predominantly Hydric (85-100%)
- Partially Hydric (15-84%)
- Predominantly Non-Hydric (1-14%)
- Non-Hydric (0%)

0 50 100 Ft

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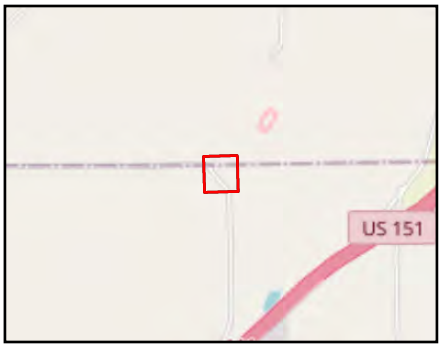
Figure 3. NRCS Hydric Soils

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2020 NAIP
NRCS



Study Area (3.32 ac)

Maximum Extent Wetland Indicators

0 50 100 Ft

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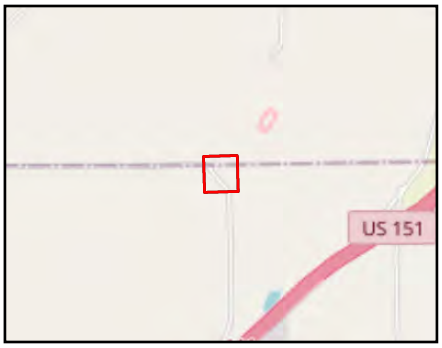
Figure 4. SWDV Wetland Indicators

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2020 NAIP
WDNR



Study Area (3.32 ac)
WWI Wetlands
NHD Waterway (No Features in Map Extent)

0 50 100 Ft

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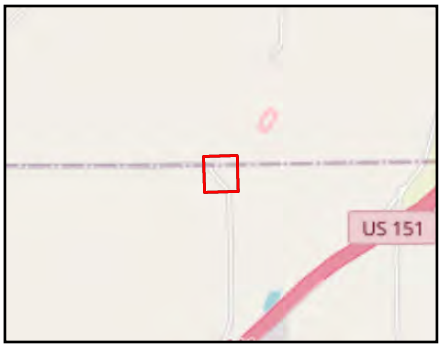
Figure 5. Wisconsin Wetland Inventory

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2020 NAIP
WDNR, USGS



Study Area (3.32 ac)

Dane Co 1' Contours

Extent of Fill (8,657 sq ft)

Field Delineated Wetlands (2.12 ac)

Sample Points

Upland

Wetland

0 50 100 Ft

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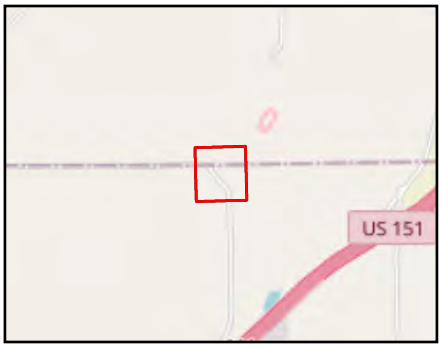
Figure 6. Field Delineated Wetlands

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2020 NAIP
Dane Co, HEG



Study Area (3.32 ac)

0 75 150 Ft

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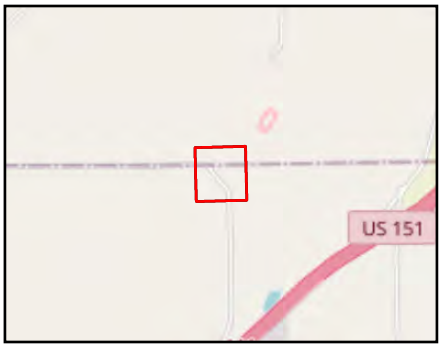
Appendix: 2004-06-22
NAIP Aerial Imagery

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2004 NAIP
USDA



Study Area (3.32 ac)

0 75 150 Ft

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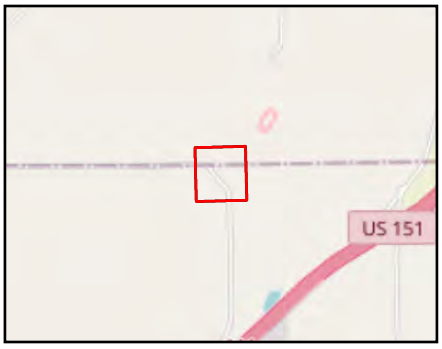
Appendix: 2005-06-23
NAIP Aerial Imagery

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2005 NAIP
USDA



Study Area (3.32 ac)

0 75 150 Ft

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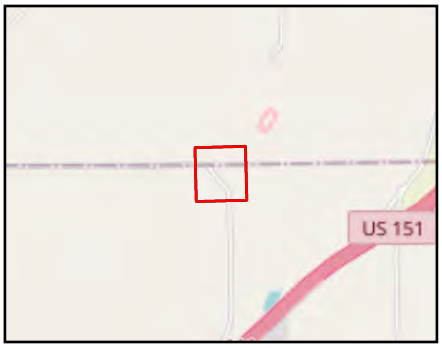
Appendix: 2006-07-09
NAIP Aerial Imagery

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2006 NAIP
USDA



Study Area (3.32 ac)

0 75 150 Ft

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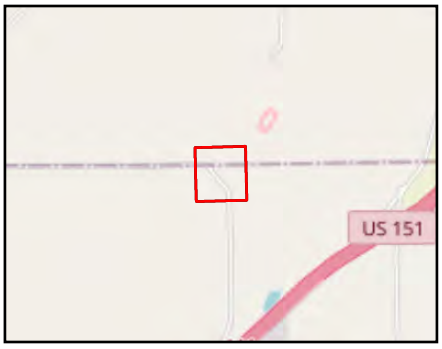
Appendix: 2008-07-23
NAIP Aerial Imagery

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2008 NAIP
USDA



Study Area (3.32 ac)

0 75 150 Ft

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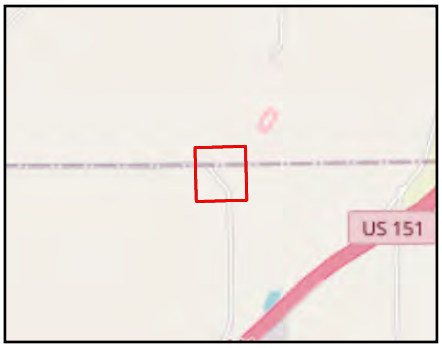
Appendix: 2010-07-01
NAIP Aerial Imagery

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2010 NAIP
USDA



Study Area (3.32 ac)

0 75 150 Ft

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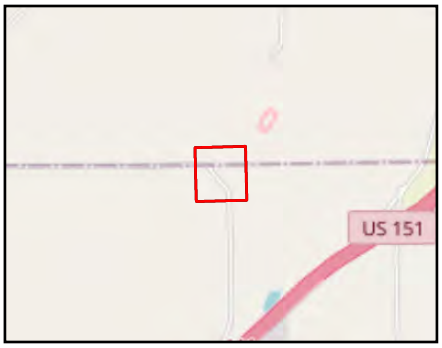
Appendix: 2013-06-19
NAIP Aerial Imagery

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2013 NAIP
USDA



Study Area (3.32 ac)

0 75 150 Ft

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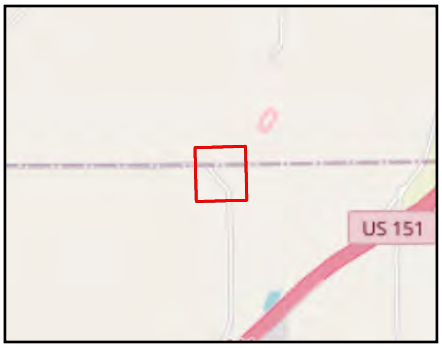
Appendix: 2015-10-11
NAIP Aerial Imagery

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2015 NAIP
USDA



Study Area (3.32 ac)

0 75 150 Ft

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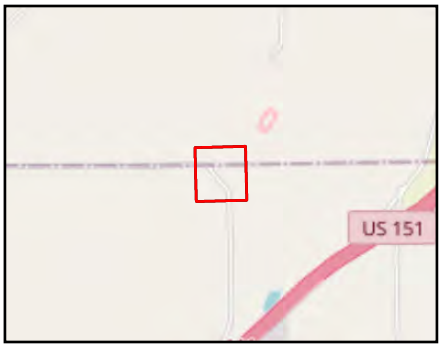
Appendix: 2017-07-30
NAIP Aerial Imagery

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2017 NAIP
USDA



Study Area (3.32 ac)

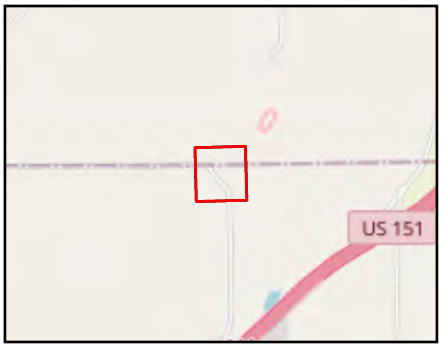
0 75 150 Ft

Heartland
ECOLOGICAL GROUP INC

Appendix: 2018-10-04
NAIP Aerial Imagery

Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2018 NAIP
USDA



Study Area (3.32 ac)

0 75 150 Ft

Heartland
ECOLOGICAL GROUP INC

Appendix: 2020-08-30
NAIP Aerial Imagery

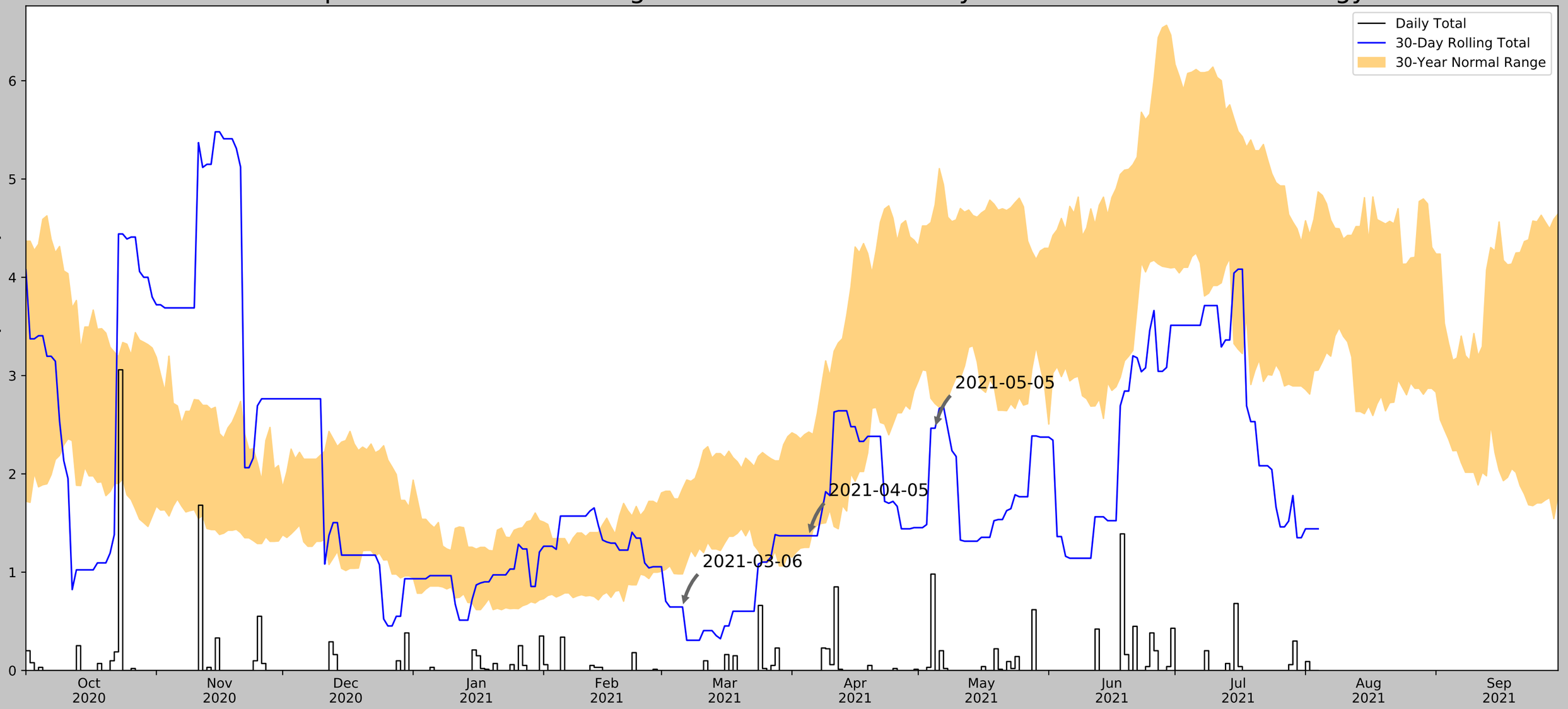
Moore Property
Project #20210467
T9N, R12E, S05
T York, Dane Co

2020 NAIP
USDA

Shiley and Peter Moore
Moore Property
Project #: 20210467
August 9, 2021

Appendix B | WETS Analysis

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	43.282075, -89.104119
Observation Date	2021-05-05
Elevation (ft)	955.15
Drought Index (PDSI)	Mild wetness
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-05-05	2.714567	4.737402	2.464567	Dry	1	3	3
2021-04-05	1.251575	2.425984	1.370079	Normal	2	2	4
2021-03-06	0.98189	1.847244	0.645669	Dry	1	1	1
Result							Drier than Normal - 8

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ARLINGTON	43.3042, -89.3453	1051.837	12.225	96.687	6.683	10901	90
SUN PRAIRIE 3 W	43.1936, -89.2822	950.131	8.275	101.706	4.565	7	0
LODI	43.3217, -89.5311	824.147	9.419	227.69	6.383	127	0
MADISON DANE RGNL AP	43.1406, -89.3453	866.142	11.304	185.695	7.186	318	0

Shiley and Peter Moore
Moore Property
Project #: 20210467
August 9, 2021

Appendix C | Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Moore Property City/County: T York/Dane Co Sampling Date: 5/5/2021

Applicant/Owner: Shirley and Peter Moore State: WI Sampling Point: P1

Investigator(s): Jeff Kraemer, Heartland Ecological Group Section, Township, Range: T9N, R12E, S05

Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): None Slope %: 0 - 1

Subregion (LRR or MLRA): LRR K Lat: Long: Datum:

Soil Map Unit Name: McHenry silt loam (MdD2) NWI classification: E1K (WWI)

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded on a gravel parking pad installed in approx 2015. Not normal circumstances due to disturbed soils and vegetation. This area was likely wetland prior to the construction of the gravel parking pad as evidenced by the soils observed underneath the gravel and previous topography. This area was determined to be filled wetland.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 30
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 28

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

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

Remarks:
No wetland hydrology indicators observed.

VEGETATION – Use scientific names of plants. Sampling Point: P1

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	=Total Cover		
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

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

Remarks: (Include photo numbers here or on a separate sheet.)
No vegetation present within the gravel parking area.

SOIL

Sampling Point: P1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 20	10YR 4/4	50						Mixed Gravel Fill
	10YR 5/1	20						
	10YR 3/1	20						
	10YR 4/6	20						
20 - 25	10YR 2/1	100					Loamy/Clayey	SiCL
25 - 32	5Y 4/1	90	5Y 5/6	10	C	M	Loamy/Clayey	SiC

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

No hydric soil indicators observed, however the soils contain recent fill material in the upper 20". The native soils underlying the fill material are hydric (A11 & F3).

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Moore Property City/County: T York/Dane Co Sampling Date: 5/5/2021

Applicant/Owner: Shirley and Peter Moore State: WI Sampling Point: P2

Investigator(s): Jeff Kraemer, Heartland Ecological Group Section, Township, Range: T9N, R12E, S05

Landform (hillside, terrace, etc.): Gentle Sideslope Local relief (concave, convex, none): None/Linear Slope %: 1 - 3

Subregion (LRR or MLRA): LRR K Lat: Long: Datum:

Soil Map Unit Name: McHenry silt loam (MdD2) NWI classification: N/A (WWI)

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded within mowed turf vegetation at the edge of the gravel parking lot - not normal circumstances.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:

No wetland hydrology indicators observed.

VEGETATION– Use scientific names of plants. Sampling Point: P2

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Trifolium pratense*	20	Yes	FACU
2. *Taraxacum officinale*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35 =Total Cover		
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	35	x 4 =	140
UPL species	0	x 5 =	0
Column Totals:	35 (A)		140 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

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

Remarks: (Include photo numbers here or on a separate sheet.)
Mowed turf vegetation with 60% Poa pratensis cover.

SOIL

Sampling Point: P2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 13	10YR 3/2	100					Loamy/Clayey	SiCL
13 - 29	2.5Y 5/3	95	2.5Y 5/6	5	C	M	Loamy/Clayey	SiC
29 - 36	2.5Y 5/2	88	2.5Y 5/6	12	C	M	Loamy/Clayey	SiC

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Moore Property City/County: T York/Dane Co Sampling Date: 5/5/2021

Applicant/Owner: Shirley and Peter Moore State: WI Sampling Point: P3

Investigator(s): Jeff Kraemer, Heartland Ecological Group Section, Township, Range: T9N, R12E, S05

Landform (hillside, terrace, etc.): Base of Rock Wall / Toe of Slope Local relief (concave, convex, none): Concave Slope %: 0 - 1

Subregion (LRR or MLRA): LRR K Lat: Long: Datum:

Soil Map Unit Name: Virgil silt loam (VrB) NWI classification: E1K (WWI)

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded within a flat mowed field near the base of a stone wall and the toe of slope of the gravel parking area. This area is regularly mowed grasses - not normal circumstances.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches): 1
Water Table Present?	Yes X	No ___	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

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

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

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: P3

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Phalaris arundinacea*	80	Yes	FACW
2. *Poa pratensis*	5	No	FACU
3. *Eleocharis palustris*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90 =Total Cover		
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	80	x 2 =	160
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	90 (A)		185 (B)

Prevalence Index = B/A = 2.06

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

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

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

SOIL

Sampling Point: P3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 15	10YR 3/1	95	10YR 5/6	5	C	M	Loamy/Clayey	SiCL
15 - 20	10YR 4/1	90	10YR 5/6	10	C	M	Loamy/Clayey	SiC

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Moore Property City/County: T York/Dane Co Sampling Date: 5/5/2021

Applicant/Owner: Shirley and Peter Moore State: WI Sampling Point: P4

Investigator(s): Jeff Kraemer, Heartland Ecological Group Section, Township, Range: T9N, R12E, S05

Landform (hillside, terrace, etc.): Sideslope Local relief (concave, convex, none): None/Linear Slope %: 3 - 5

Subregion (LRR or MLRA): LRR K Lat: Long: Datum:

Soil Map Unit Name: Virgil silt loam (VrB) NWI classification: E1K (WWI)

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded on a mowed shoulder of a roadside slope. Turf/lawn vegetation present - not normal circumstances.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:
No wetland hydrology indicators observed.

VEGETATION – Use scientific names of plants. Sampling Point: P4

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus macrocarpa*	25	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 5ft)			
1. *Taraxacum officinale*	15	Yes	FACU
2. *Elymus repens*	10	Yes	FACU
3. *Trifolium pratense*	10	Yes	FACU
4. *Phalaris arundinacea*	2	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	37	=Total Cover	
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	0	x 3 =	0
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	62 (A)		244 (B)

Prevalence Index = B/A = 3.94

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

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

Remarks: (Include photo numbers here or on a separate sheet.)
Upland mowed turf/lawn vegetation present.

SOIL

Sampling Point: P4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 21	10YR 3/2	60					Loamy/Clayey	SiCL
	10YR 2/1	40						
21 - 25	10YR 5/2	85	10YR 5/8	15	C	M	Loamy/Clayey	SiC

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

No hydric soil indicators observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Moore Property City/County: T York/Dane Co Sampling Date: 5/5/2021

Applicant/Owner: Shirley and Peter Moore State: WI Sampling Point: P5

Investigator(s): Jeff Kraemer, Heartland Ecological Group Section, Township, Range: T9N, R12E, S05

Landform (hillside, terrace, etc.): Sideslope Local relief (concave, convex, none): Linear/None Slope %: 3 - 5

Subregion (LRR or MLRA): LRR K Lat: Long: Datum:

Soil Map Unit Name: McHenry silt loam (MdD2) NWI classification: N/A (WWI)

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded on a gentle sideslope in the southwestern portion of the study area. Mowed lawn/turf vegetation present - not normal circumstances.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:
No wetland hydrology indicators observed.

VEGETATION – Use scientific names of plants. Sampling Point: P5

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Trifolium repens*	25	Yes	FACU
2. *Taraxacum officinale*	12	Yes	FACU
3. *Glechoma hederacea*	5	No	FACU
4. *Phalaris arundinacea*	1	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	43 =Total Cover		
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	1	x 2 =	2
FAC species	0	x 3 =	0
FACU species	42	x 4 =	168
UPL species	0	x 5 =	0
Column Totals:	43 (A)		170 (B)

Prevalence Index = B/A = 3.95

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

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

Remarks: (Include photo numbers here or on a separate sheet.)
Mowed lawn/turf vegetation present with 60% Poa pratensis cover.

SOIL

Sampling Point: P5

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 13	10YR 3/2	100					Loamy/Clayey	SiL
13 - 15	10YR 3/2	82	10YR 5/6	3	C	M	Loamy/Clayey	SiL
	10YR 4/2	15						
15 - 24	10YR 4/2	88	10YR 5/8	12	C	M	Loamy/Clayey	SiCL

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

No hydric soil indicators observed.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Moore Property City/County: T York/Dane Co Sampling Date: 5/5/2021

Applicant/Owner: Shirley and Peter Moore State: WI Sampling Point: P6

Investigator(s): Jeff Kraemer, Heartland Ecological Group Section, Township, Range: T9N, R12E, S05

Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): None Slope %: 1 - 3

Subregion (LRR or MLRA): LRR K Lat: Long: Datum:

Soil Map Unit Name: McHenry silt loam (MdD2) NWI classification: N/A (WWI)

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)
A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded within a filled garden with no vegetation present - not normal circumstances.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:
No wetland hydrology indicators observed.

VEGETATION – Use scientific names of plants. Sampling Point: P6

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	=Total Cover		
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

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

Remarks: (Include photo numbers here or on a separate sheet.)
No vegetation present. Area near the sample point consists of an unplanted vegetable garden.

SOIL

Sampling Point: P6

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 3	10YR 3/2	100					Loamy/Clayey	SiCL
3 - 10	10YR 4/2	92	10YR 5/6	8	C	M	Loamy/Clayey	SiCL
10 - 20	10YR 2/1	100						
20 - 28	5Y 4/1	88	5Y 5/6	12	C	M	Loamy/Clayey	SiC

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Moore Property City/County: T York/Dane Co Sampling Date: 5/5/2021

Applicant/Owner: Shirley and Peter Moore State: WI Sampling Point: P7

Investigator(s): Jeff Kraemer, Heartland Ecological Group Section, Township, Range: T9N, R12E, S05

Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): None/Linear Slope %: 0 - 1

Subregion (LRR or MLRA): LRR K Lat: Long: Datum:

Soil Map Unit Name: Sable silty clay loam (SaA) NWI classification: E1K (WWI)

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded within mowed wet meadow / turf vegetation southeast of the gravel parking area. Combination of mowed wet meadow and turf vegetation - not normal circumstances.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 16
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 10

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

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

Remarks:

VEGETATION– Use scientific names of plants. Sampling Point: P7

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	5	Yes	FAC
2. *Salix amygdaloides*	2	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	7	=Total Cover	

Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	

Herb Stratum (Plot size: 5ft)			
1. *Phalaris arundinacea*	20	Yes	FACW
2. *Taraxacum officinale*	5	No	FACU
3. *Plantago major*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	=Total Cover	

Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	22	x 2 =	44
FAC species	5	x 3 =	15
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	37 (A)		99 (B)

Prevalence Index = B/A = 2.68

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

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

Remarks: (Include photo numbers here or on a separate sheet.)
Combination of wet meadow and mowed turf vegetation present. Poa pratensis cover is 50%.

SOIL

Sampling Point: P7

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	100					Loamy/Clayey	SiCL
8 - 20	10YR 5/1	88	10YR 5/8	12	C	M	Loamy/Clayey	SiC

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Moore Property City/County: T York/Dane Co Sampling Date: 5/5/2021

Applicant/Owner: Shirley and Peter Moore State: WI Sampling Point: P8

Investigator(s): Jeff Kraemer, Heartland Ecological Group Section, Township, Range: T9N, R12E, S05

Landform (hillside, terrace, etc.): Toe of Slope Local relief (concave, convex, none): Concave Slope %: 1 - 3

Subregion (LRR or MLRA): LRR K Lat: Long: Datum:

Soil Map Unit Name: Sable silty clay loam (SaA) NWI classification: E1K (WWI)

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

A WETS analysis was performed and indicates that conditions are in the drier than normal range. Sample point recorded within a combination of mowed wet meadow and turf vegetation at the toe of slope of the gravel parking area - not normal circumstances.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 20
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 12

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

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

Remarks:

VEGETATION– Use scientific names of plants. Sampling Point: P8

Tree Stratum (Plot size: 30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 5ft)			
1. *Phalaris arundinacea*	20	Yes	FACW
2. *Digitaria ischaemum*	5	No	FACU
3. *Eleocharis palustris*	5	No	OBL
4. *Veronica peregrina*	3	No	FAC
5. *Taraxacum officinale*	1	No	FACU
6. *Plantago major*	1	No	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	35 =Total Cover		
Woody Vine Stratum (Plot size: 30ft)			
1.			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	20	x 2 =	40
FAC species	3	x 3 =	9
FACU species	7	x 4 =	28
UPL species	0	x 5 =	0
Column Totals:	35 (A)		82 (B)

Prevalence Index = B/A = 2.34

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

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

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

Remarks: (Include photo numbers here or on a separate sheet.)
Mowed wet meadow / turf vegetation present. Poa pratensis cover of 50%

SOIL

Sampling Point: P8

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 8	10YR 2/1	97	10YR 4/6	3	C	M	Loamy/Clayey	SiCL
8 - 24	10YR 5/1	88	10YR 5/8	12	C	M	Loamy/Clayey	SiC

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Shiley and Peter Moore
Moore Property
Project #: 20210467
August 9, 2021

Appendix D | Site Photographs

Photo #1 Sample point P1

Photo #2 Sample point P1

Photo #3 Sample point P1

Photo #4 Sample point P1

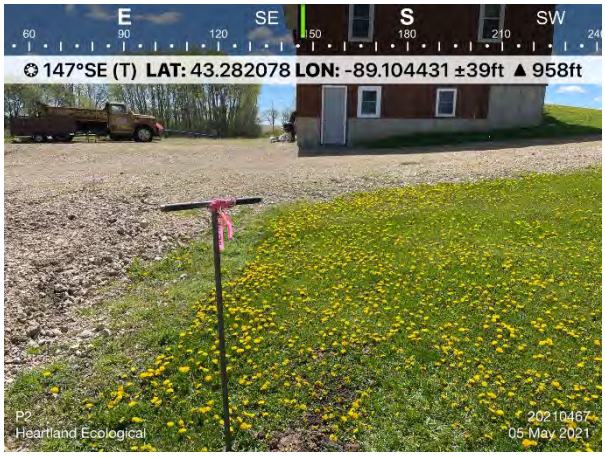

Photo #5 Sample point P2

Photo #6 Sample point P2

Photo #7 Sample point P2

Photo #8 Sample point P2

Photo #9 Sample point P3

Photo #10 Sample point P3

Photo #11 Sample point P3

Photo #12 Sample point P3

Photo #13 Sample point P4

Photo #14 Sample point P4

Photo #15 Sample point P4

Photo #16 Sample point P4

Photo #17 Sample point P5

Photo #18 Sample point P5

Photo #19 Sample point P5

Photo #20 Sample point P5

Photo #21 Sample point P6

Photo #22 Sample point P6

Photo #23 Sample point P6

Photo #24 Sample point P6

Photo #25 Sample point P7

Photo #26 Sample point P7

Photo #27 Sample point P7

Photo #28 Sample point P7

Photo #29 Sample point P8

Photo #30 Sample point P8

Photo #31 Sample point P8

Photo #32 Sample point P8

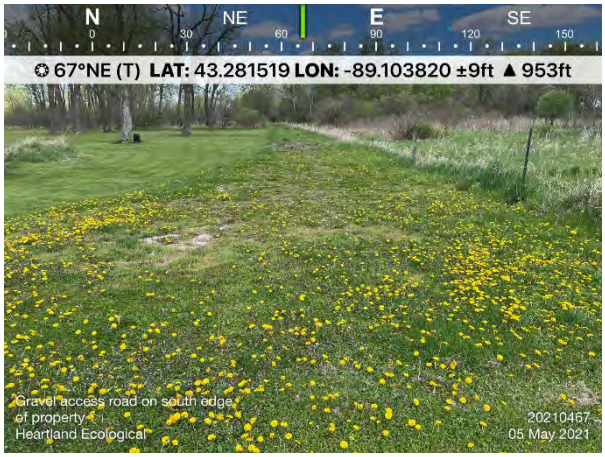

Photo #33 Gravel access road on southern edge of property

Photo #34 Gravel access road on southern edge of property

Photo #35 Gravel access road on southern edge of property

Photo #36 Gravel access road on southern edge of property

Appendix E | Delineator Qualifications

Jeff Kraemer

Principal Scientist
506 Springdale Street
Mount Horeb, WI 53572
jeff@heartlandecological.com
(608) 490-2450

Jeff is the founder of Heartland Ecological Group, Inc. With over 16 years of experience as an environmental consultant, ecological and regulatory policy practitioner, and managing business leader, Jeff provides proven value to clients with his vast experience guiding often complex projects through environmental regulatory and technical challenges applied throughout a diversity of industry sectors. Jeff is recognized by the Wisconsin Department of Natural Resources Wetland Delineation Assurance Program and is the longest standing assured wetland delineator in the state of Wisconsin.

Jeff is a recognized expert in the field of wetland ecology and delineation; wetland restoration and mitigation banking; and regulatory policy and permitting associated with wetlands and waterways. His experience includes: Wetland Determination, Delineation & Functional Assessment; Wetland Restoration, Mitigation, Banking & Monitoring; Botanical / Biological Surveys & Natural Resource Inventories; Rare Species Surveys, Conservation Plans & Monitoring; Habitat Restoration, Wildlife Surveys, SCAT surveys, Environmental Assessments; Local, state, federal permit applications; Expert Witness testimony; and Regulatory permit compliance.

Education

MS, Biological Sciences (Emphasis in Wetland Ecology), University of Wisconsin – Milwaukee, WI, 2003

BS, Biological Sciences (Emphasis in Aquatic Biology) University of Wisconsin – La Crosse, WI, 1999

Regional Supplement Field Practicum
Wetland Training Institute (WTI)
Portage, WI, 2017

Basic and Advanced Wetland Delineation Training, Continuing Education and Extension, UW-La Crosse, WI, 2001

Identification of Sedges Workshop, UW-Milwaukee, Saukville, WI, 2001

Vegetation of Wisconsin Workshop, UW-Milwaukee, Saukville, WI 2000

Environmental Corridor Delineation Workshop, Southeastern Wisconsin Regional Planning Commission (SEWRPC), 2004

Wetland Soils and Hydrology Workshop, Wetland Training Institute, Toledo, OH, 2003

Critical Methods in Wetland Delineation
University of Wisconsin - La Crosse Continuing Education and Extension
Madison, WI, 2006 - 2018

Federal Wetland Regulatory Policy Course
Wetlands Training Institute (WTI)
Cottage Grove, WI, 2010

Registrations

Professionally Assured Wetland Delineator, Wisconsin Department of Natural Resources (2005-Present)

Wetland Professional in Training (WPIT), Society of Wetland Scientists Certification Programs

Project Experience

Energy

Ameren Corporation Transmission Line Projects: LaSalle-Ottawa, LaSalle Co., IL; Wood River Refinery, Madison Co., IL; Rockwood-Big River, Jefferson Co., MO; Saddle Creek 73, Franklin Co., MO.; Havana Rebuild, Mason Co., IL*
Managed support for environmental and GIS services to gain regulatory approvals for various new transmission lines. Provided project support for: transmission line siting; critical issues analysis; route matrices; GIS data acquisition and mapping services, coordination of regulatory agency meetings, completion of field wetland delineations; threatened and endangered species; biological assessment and Section 404 permitting, CPCN approvals; community advisory and public workshop support, and expert witness testimony.

Alliant Energy, Nelson Dewey Power Generation Facility Expansion Project, Cassville, WI
Completed field evaluations and delineations of wetlands in preparation of the National Environmental Policy Act (NEPA) documentation for a proposed expansion of the facility.

Enbridge, Inc., Southern Access Expansion Project, Crude Petroleum Pipeline Project, WI
Completed wetland delineations and habitat assessments along a 343-mile proposed crude petroleum pipeline corridor through Wisconsin as part of Enbridge Energy's Southern Access Expansion Program.

American Transmission Company, Arrowhead to Weston, WI, 345 kV Transmission Line Project
Completed wetland delineations, threatened and endangered plant surveys, and habitat assessments along a 208-mile proposed new electric transmission line.

Midwest Generation, Waukegan Power Generation Facility Expansion Project, Lake County, IL
Completed field evaluations of wetlands and threatened and endangered species in coordination with Section 404 permitting requirements for expansion of the power generation facility.

Commonwealth Edison Co. (ComEd), Prairie Program, Greater Chicago Area, IL
Managed ComEd's Prairie Program for over 10 years that involved nearly 200 acres of prairie restoration and management within their transmission line rights-of-way throughout the greater Chicago area.

Alliant Energy, Hydroelectric Dam, Prairie Du Sac, WI
Conducted purple loosestrife surveys on Lake Wisconsin shorelines and wetlands to develop a purple loosestrife management plan in support of the hydroelectric facility FERC licensing.

Alliant Energy, Edgewater Generation Facility, Sheboygan, WI
Managed and coordinated environmental regulatory process for expansion of existing fly ash disposal facility which required approvals from the USACE and WDNR for wetland impacts associated with the project.

Guardian, Pipeline Wetland Mitigation, Winnebago County, WI
Managed and lead the site selection, design, construction oversight, and long-term monitoring and management of a 30-acre wetland mitigation project consisting of prairie, wetland, and forested wetland restoration. The mitigation successfully compensated for wetland impacts associated with the Guardian gas pipeline construction.

Transportation

Canadian National Railroad, Stanberry Subdivision, Douglas County, WI
Supported CN with gaining approval to construct an approximate 2.5-mile new railroad siding track in Douglas County, WI. Completed wetland delineations and threatened and endangered resources assessments. Completed permit applications and gained approval for approximately 2-acres of wetland impacts and construction of bridges over navigable waterways.

Canadian National Railroad, Hawthorne Hill Phase 2, Douglas County, WI
Supported CN with gaining approval to construct new railroad siding track in Douglas County, WI. Completed assured wetland delineations along six miles of existing track. Completed permit applications for wetland impacts.

Canadian National Railroad, Stone Lake to Big Foot, Washburn County, WI
Completed assured wetland delineations along three miles of existing track and associate wetland delineation reports.

Canadian National Railroad, Nestle to Burlington, Racine County, WI
Completed assured wetland delineations along three miles of existing track and associate wetland delineation reports.

Wisconsin Department of Transportation (WisDOT), Neptune Wetland Mitigation Monitoring, Richland County WI
Completed annual comprehensive vegetation surveys, mapping, performance evaluations, and reporting of a 50-acre wetland mitigation site.

WisDOT, Threatened Plant Species Consultation, Port Wing, WI
Completed comprehensive study of a threatened plant species population in support of STH 13 Reconstruction project including preparation of relocation and monitoring plan, physical relocation of plants, and follow-up annual monitoring.

WisDOT, Wildcat Mountain Wetland Mitigation Monitoring, Vernon County, WI
Completed comprehensive vegetation surveys, mapping, performance evaluations, and reporting of 38-acre wetland mitigation site.

WisDOT, World Dairy Center Wetland Mitigation Bank, Madison, WI
Led the baseline studies, design and approval of an approximate 200-acre compensatory wetland mitigation bank on behalf of the WisDOT. The project involved lengthy stakeholder coordination, detailed hydrology evaluations and assessments, complex wetland determinations. The mitigation plan consisted of restoration of farmed and drained organic soils utilizing drain tile valves to wet meadow, sedge meadow, shallow marsh and mesic prairie.

City of Stoughton, Academy Street Reconstruction, Stoughton, WI
Completed wetland assessments and delineations within the study area of the Academy Street reconstruction project.

City of Tomah, Gopher Avenue Reconstruction, Tomah, WI
Completed wetland assessments and delineations within the project area of the Gopher Avenue reconstruction project.

Residential & Commercial Development

Veridian Homes, Smiths Crossing, Sun Prairie, WI
Completed wetland delineations on the approximate 50-acre portion of the proposed residential development project. Completed wetland permit applications and gained approval for impacts to jurisdictional wetlands. Completed and gained approval for artificial wetland exemptions per WI Act 183.

Hovde Properties, Sprecher Road Property, Madison, WI
Completed wetland delineations on the approximate 100-acre property proposed for residential and commercial development. Completed and gained approval for artificial wetland exemptions per WI Act 183.

Ruedebusch Development and Construction, Packers Avenue Parcel, Madison, WI
Completed wetland delineations on the approximate 30-acre property proposed for development. Completed and gained approval for artificial wetland exemptions per WI Act 183.

Newport Development Corp., Briarwoods Condominiums, Caledonia, WI
Completed wetland delineations on the approximate 10-acre property proposed for development. Completed and gained approval for artificial wetland exemptions per WI Act 183.

William Ryan Homes, West Prairie Village, Sun Prairie, WI
Completed wetland delineations throughout the approximate 80-acre property proposed for development. Completed and gained approval for artificial wetland exemptions per WI Act 183 and NR103.06.

Bielinski Homes, Chapman Property, Mukwonago, WI
Completed wetland delineations throughout the approximate 65-acre property proposed for residential development.

Logistics Property Company, Nelson-Heckel Properties, Kenosha County, WI
Completed wetland delineations throughout the approximate 105-acre property proposed for commericial development.

Country View Estates Development Project, DeForest, WI
Completed wetland delineation/evaluation, wetland permitting, and mitigation planning in support of a 400-acre mixed residential/commercial/recreational development project.

Industrial, Manufacturing & Institutional Facilities

Berlon Industries Expansion Project, Hustisford, WI
Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation planning in support of the expansion of the industrial facility.

Ashley Furniture Industries Expansion Project, Arcadia, WI
Developed and gained WDNR/USACE approval for 35-acre wetland mitigation plan in support of wetland impact application for expansion of the manufacturing facility; Managed the construction of the wetland bank and completed over 10 years of monitoring and management through project close-out.

AllEnergy Proposed Sand Mine, Trempealeau County, WI
Completed wetland delineations, wetland permitting support, and wetland mitigation support for a proposed sand mine in Trempealeau County. The project consisted of over 500 acres of wetland delineation and wetland and waterway permitting associated with a rail spur expansion. Supported community engagement through presentations at various town hall meetings.

Conway Central Express Expansion Wetland Permitting, Franklin, WI
Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation design for expansion of the trucking facility.

Morrison Creek Cranberry Company, Wetland Mitigation Bank Monitoring and Remediation, Oakdale, WI
Completed annual mitigation site monitoring, vegetation surveys, and performance evaluations of 60-

acre mitigation bank site. Completed mitigation remediation management plan for compliance with USACE performance standards.

Northwestern Mutual Campus Facility, Native Landscape Management, Franklin, WI
Managed and coordinated the development of a native landscape plan for the 50 acres of open space surrounding Northwestern Mutual's campus facility. The plan consisted of wetland, woodland, and prairie restoration. Managed and coordinate the implementation of the native landscape installation and long-term management.

Daybreak Foods, Proposed Facility Expansion, Lake Mills, WI
Completed wetland assessment and delineations on over 175 acres of various properties of DayBreak Foods. Provided wetland regulatory guidance to support the expansion of the egg production and processing facilities.

Sinsinawa Dominican Sisters, Grant County, WI
Completed wetland delineations on the 57-acre Sinsinawa Dominican Sisters property in support of a land use planning study.

Government & Non-Government Organizations

City of Fitchburg, Fitchburg Northeast Neighborhood Plan, Fitchburg, WI
Completed wetland mapping and assessment and developed wetland protection standards for the City of Fitchburg's NE Neighborhood Plan.

Lake Koshkonong Wetlands Association, Lake Koshkonong Water Level and Wetland Studies, Lake Koshkonong, WI
Developed and conducted various scientific wetland studies for development of a water level management plan: E. prairie fringed orchid hydrology study; Floodplain forest/hydrology study; Floristic quality assessment/vegetation mapping within 4000 acres of wetlands on behalf of the Lake Koshkonong Wetlands Association.

Richland Center Utilities, New Force Main Project, Richland Center, WI
Supported the planning and approval of a new force main utility corridor on behalf of Richland Center Utilities. Completed wetland delineations and threatened and endangered species assessments along the approximate 3.5-mile project corridor. Completed and wetland and waterway permit applications, wetland restoration plans, and completed annual monitoring of restored wetland areas.

Portage Parks Department, Samuelson Fen Restoration, Portage, IN
Developed a restoration plan to restore a degraded 30-acre fen, conducted vegetation surveys, floristic quality assessments and hydrology monitoring.

Badger Prairie Health Care Center Expansion, Verona, WI
Completed wetland delineation/evaluations and wetland permitting in support of the expansion of the healthcare facility.

City of Fitchburg, Native Restoration Support, Fitchburg, WI
Assisted the City of Fitchburg with restoration activities on multiple projects involving incorporating native restoration within various regional stormwater and outlot facilities.

City of Tomah, Proposed Bike Trail Project, Tomah, WI
Completed wetland delineations along an approximate 1-mile proposed bike trail path on behalf of the City of Tomah.

City of Sun Prairie, Sheehan Park, Sun Prairie, WI
Completed wetland delineations throughout the 50-acre Sheehan Park on behalf of the City of Sun Prairie.

City of Madison, Various Projects, Madison, WI
Completed numerous wetland delineations on behalf the City of Madison in support of stormwater improvement and other facility improvement projects.

Private Landowners & Recreational Properties

Erin Hills Golf Course, Washington County, WI
Completed wetland delineations throughout the approximate 200-acre golf course property. Provided wetland regulatory guidance in support of the renovation of Erin Hills in preparation for hosting the 2017 U.S. Open championships.

La Belle Golf Course, The Prestwick Group, Inc., Lac La Belle, WI
Completed wetland delineations throughout the approximate 250-acre golf course property. Provided wetland regulatory guidance in support of the renovation of the La Belle Golf Course.

Big Hollow Wetland Mitigation Bank, Spring Green, WI
Completed wetland delineations on the approximate 200-acre property and evaluated the potential for developing a private wetland mitigation bank. Coordinated detailed hydrology monitoring and modeling to address potential off-site water impacts and support the development of the hydrology restoration plan. Completed the prospectus documents and submittals to the Interagency Review Team. Organized and led public informational meetings, and various stakeholder meetings to address local concerns.

The Farm Golf Course, Cottage Grove, WI
Completed wetland delineations throughout the approximate 100-acre golf course property. Provided wetland regulatory guidance in support of residential development adjacent to the golf course.