

Wetland Delineation

UNBRIDLED SPIRITS LLC PROPOSED ROAD IMPROVEMENTS

OCTOBER 17, 2019

#190682

PRESENTED TO

UNBRIDLED SPIRITS LLC

2782 White Crossing Road
Verona, WI 53593

SUBMITTED BY

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REPORT CERTIFICATION

The material and data in this report were prepared by the undersigned.



10-17-19

Luke Specketer
Scientist

Date

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1.0 INTRODUCTION

On behalf of Unbridled Spirits LLC, Tetra Tech performed a wetland delineation at the property located at 2782 White Crossing Road, Verona, WI 53593. The purpose of the delineation was to identify any wetland areas within the defined Wetland Project Area (see Figures 1 and 2) to improve a road accessing the southeast portion of the property.

Site Name/ID:	Unbridled Spirits LLC Proposed Road Improvements
Property Ownership:	Unbridled Spirits LLC
Site Address:	2782 White Crossing Road, Verona, WI 53593
Authorized Facility Contact:	Ms. Stacy Bean, Unbridled Spirits LLC Phone: (608) 577-6683
Assessed Area:	The assessed area consists of approximately 20 acres located in SE 1/4 of Section 7, Township 6 North, Range 8 East. The Wetland Project Area is located northeast of the Sugar River adjacent to the Ice Age Trail.
Current Property Use:	The property is currently utilized as an equine center and agricultural land; the area of the property where the proposed access road improvements are is currently utilized for agricultural purposes.
Proposed Site Redevelopment:	The proposed road improvements would connect an elevated upland area in back of the property to the White Crossing Road at the front of the property.
Surrounding Land Use Features:	Land uses adjacent to and near the property primarily consist of rural residential and agricultural land, with the Ice Age Trail directly adjacent to the southwest of the property. The proposed driveway is not located within 300 feet of any navigable stream or river. The Sugar River ordinary high-water mark is approximately 450 feet southwest of the property line. The WDNR's Surface Water Data Viewer shows no mapped wetlands on the property, but it does show an intermittent stream running across the property from NE to SW. The proposed road improvements would be constructed within the 100-year floodplain.
Field Date:	October 10, 2019
Field Staff:	Luke Specketer - Luke Specketer has a Bachelor of Science Degree (Geology) from Colorado State University and has completed 24 hr. Basic Wetland Delineation Training through the University of Wisconsin – LaCrosse and 16 hr. Advanced Wetland Delineation Training through the University of Wisconsin – LaCrosse.

2.0 METHODS

Wetland delineation activities were completed according to the criteria and methods outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (NC/NE Regional Supplement, 2012), *United States Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1* (USACE 1987), subsequent guidance documents (USACE 1991, 1992), and *Guidance for Submittal Delineation Reports to the St. Paul District Army Corps of Engineers and the Wisconsin Department of Natural Resources* (USACE 2015).

2.1 FIELD METHODS

On-site wetland areas were identified using the three criteria (vegetation, soil and hydrology) and technical guidelines defined in the NC/NE Regional Supplement. According to procedures described in the NC/NE Regional Supplement, areas that under normal circumstances reflect a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology (e.g., inundated or saturated soils) are considered wetlands.

2.2 SOURCES REVIEWED

Source materials reviewed for the wetland delineation included:

- United States Geological Survey (USGS) topographic maps;
- Natural Resources Conservation Service (NRCS) soil survey;
- WDNR Surface Water Data Viewer;
- United State Fish and Wildlife Service (USFWS) National Wetlands Inventory;
- Aerial photography;
- Farm Service Agency (FSA) slides;
- National Weather Service (NWS) data was analyzed for antecedent precipitation conditions to characterize field observations;
- Dane County GIS

A full list of references and citations is included in Section 5.

3.0 RESULTS AND DISCUSSION

3.1 ANTECEDENT HYDROLOGIC CONDITION ANALYSIS

ANTECEDENT PRECIPITATION DOCUMENTATION (NRCS Method)

DATE OF DELINEATION: 10/10/2019

WEATHER STATION: Madison, WI

	LONGTERM PRECIPITATION RECORDS			Actual Precip	Condition	Condition Value	Monthly Weight	product of previous two columns
	3 in 10 years less than	Normal Precip	3 in 10 years more than					
1st month prior								
2nd month prior								
3rd month prior								
	September	2.65	3.13	4.68	6.8	W	3	3
	August	2.85	4.27	4.1	2.85	N	2	2
	July	4	4.18	5.24	5.77	W	3	1
								Sum:
								16

Conclusion: **Wetter than Normal**

Condition Value	Note: if sum is
Dry=1	6-9 prior period has been drier than normal
Normal=2	10-14 prior period has been normal
Wet=3	15-18 prior period has been wetter than normal

Precipitation data from: National Weather Service - Madison, WI Weather Station

Using precipitation data from the nearest NWS Station in Madison, Wisconsin and the NRCS Antecedent Precipitation Method (shown in image above), the antecedent precipitation for the site was determined to be "Wetter than Normal." The "Wetter than Normal" finding was taken in account when considering hydrology and hydrophytic vegetation within the Wetland Project Area.

3.2 PREVIOUS WETLAND DELINEATION

Tetra Tech and the property owner are not aware of any previous wetland delineations on the property.

3.3 FSA SLIDE REVIEW

The FSA slide review for the horse pasture area within the Wetland Project Area covered 7 of 13 years (2005 through 2018), and followed the methods described in the flow chart from *Guidance for Submittal Delineation Reports to the St. Paul District Army Corps of Engineers and the Wisconsin Department of Natural Resources Appendix E State Mapping Conventions for Wisconsin* (USACE 2015). FSA slides were examined by Luke Specketer of Tetra Tech for the presence of wetland signatures. A wetland signature is the indication of ponding, flooding, or impacts of saturation for sufficient duration as observed on aerial photographs that meets wetland hydrology and possibly wetland vegetation criteria. Wetland signatures in Wisconsin cropland include:

- Hydrophytic Vegetation (seen as a different shade of green);
- Surface water (usually black or white);
- Drowned-out crops (bare soil or mud flats);
- Difference in color due to different planting dates or isolated areas not farmed with the rest of the field;
- Inclusion of wet areas set-aside program;
- Patches of greener color in "dry" years;
- Crop stress (yellow) or sparse canopy (light green);
- Changes in vegetation (light to dark, density)
- Saturated soil visible on infrared (IR) slides or photos.

Areas within the horse pastures were identified as potential wetland if they contained hydric soils and 50% or more of the aerial photographs showed any of the wetland signatures described. Field observations were weighed more heavily than the FSA slide review.

The FSA slide review resulted in an area within the horse pasture that showed wetland signatures in 50% or more (4 out of 7) of the aerial photograph years reviewed and contained hydric soils. This was confirmed in the field with evidence of hydric soils in the area.

Copies of available FSA slides are included in Appendix D.

3.4 ENVIRONMENTAL MAPPING

The NRCS Soil Survey was used to identify mapped hydric soils and soils with possible hydric inclusions within the Wetland Project Area, see Figure 3.

The WDNR Surface Water Data Viewer wetland inventory and wetland indicator mapping layers were used to identify mapped wetlands and areas with wetland indicators within the Wetland Project Area.

3.5 WETLANDS LOCATED WITHIN THE WETLAND PROJECT AREA

The wetland/upland boundary was delineated by first establishing and confirming a data point in a wetland area. Data point observations were documented on wetland determination data forms, see Appendix A. Since landscape position and microtopography were the driving factors for wetlands at this site, a nearby upland point was then established by moving up in elevation or out of depressions. Then the wetland boundary was surveyed between the two points along a transect, excluding areas as upland where the one of the three wetland parameters (hydrology, hydric soil or hydrophytic vegetation) dropped out, and including areas within the wetland where all three parameters were met. This boundary line was then marked and surveyed along the edge of the wetland. At this site, the FSA slide review was also a factor in determining the wetland investigation areas within the horse pastures. Representative photos are shown in Appendix B.

3.5.1 Wetland Area

The Wetland Area shows the characteristics of a fresh wet meadow. It is located along the southwest portion of the Wetland Project Area and cuts across to the northeast along the mapped intermittent stream. The Wetland Area is approximately 5.28 acres (within the Wetland Project Area seen on Figure 4). Dominant vegetation in the Wetland Area is hydrophytic and includes *Phalaris arundinacea* along with non-dominant sedges and rushes. Hydric soil indicators observed were A11 – depleted below a dark surface, A12 – thick dark surface, F1 – loamy mucky mineral, F3 – depleted matrix and F6 – redox dark surface. Both primary and secondary wetland hydrology indicators were present. Wetland hydrology indicators, hydric soil indicators and hydrophytic vegetation were observed indicating wetland history. The wetland boundary, shown on Figure 4, was drawn based upon a vegetation and topographic change separating the wetland and upland areas.

3.6 DISTURBED AND PROBLEMATIC AREAS

There were no problematic areas encountered during the investigation. Data points DP-2, DP-3 and DP-4 and had been cut for hay this year DP-1 was not cut for hay this year because it has been too wet.

3.7 OTHER WATER RESOURCES LOCATED ON THE PROPERTY

3.7.1 Streams

There is a mapped intermittent stream that runs from northeast to southwest across the property. The Dane County Assistant Zoning Administrator Hans Hilbert has determined that the stream on the property is NOT navigable. A copy of the letter can be found in Appendix E.

4.0 CONCLUSION

Tetra Tech completed a wetland delineation for the Unbridled Spirits LLC proposed driveway. One wetland area was identified within the Wetland Project Area; see Figure 4. Tetra Tech recommends that Unbridled Spirits LLC obtain all necessary permits, regulatory review and regulatory concurrence to comply with applicable regulations regarding the proposed driveway project; the WDNR Wetland Delineation Confirmation Checklist is included as Appendix D.

5.0 REFERENCES

Dane County GIS

<https://dcimapapps.countyofdane.com/dcmapviewer/>

Munsell Soil Color. 2009. Munsell® Soil Color Charts. Grand Rapids, MI.

National Oceanic and Atmospheric Administration, Climate Data

<https://www.ncdc.noaa.gov/cdo-web/>

USACE (U.S. Army Corps of Engineers). 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

USACE. 1990. "Clarification of the Phrase "Normal Circumstances" as it pertains to Cropped Wetlands," Regulatory Guidance Letter (RGL) 90-7 dated 26 September 1990.

USACE. 1991. "Implementation of the 1987 Corps Wetland Delineation Manual," memorandum from John P. Elmore dated 27 August 1991.

USACE. 1991. "Questions & Answers on the 1987 Manual," memorandum from John F. Studt dated 7 October 1991.

USACE. 1992. "Clarification and Interpretation of the 1987 Manual," memorandum from Major General Arthur E. Williams dated 6 March 1992.

USACE. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region.

USACE. 2015. Guidance for Submittal Delineation Reports to the St. Paul District Army Corps of Engineers and the Wisconsin Department of Natural Resources.

USDA, Soil Conservation Service, Web Soil Survey

<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.

United States Geological Survey (USGS), Wisconsin 7.5 Minute Series (Topographic) Maps

USGS, Earth Explorer FSA Slides, <https://earthexplorer.usgs.gov/>

WDNR (Wisconsin Department of Natural Resources), Wisconsin Surface Water Data Viewer - Wisconsin Wetlands Inventory, <https://dnrmaps.wi.gov/H5/?Viewer=SWDV&runWorkflow=Wetland>.

U.S. Fish and Wildlife Service, National Wetlands Inventory, <https://www.fws.gov/wetlands/Data/Mapper.html>.

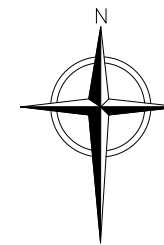
6.0 LIMITATIONS

The work product included in the attached was undertaken in full conformity with generally accepted professional consulting principles and practices and to the fullest extent as allowed by law we expressly disclaim all warranties, express or implied, including warranties of merchantability or fitness for a particular purpose. The work product was completed in full conformity with the contract with our client and this document is solely for the use and reliance of our client (unless previously agreed upon that a third party could rely on the work product) and any reliance on this work product by an unapproved outside party is at such party's risk.

The work product herein (including opinions, conclusions, suggestions, etc.) was prepared based on the situations and circumstances as found at the time, location, scope and goal of our performance and thus should be relied upon and used by our client recognizing these considerations and limitations. Tetra Tech shall not be liable for the consequences of any change in environmental standards, practices, or regulations following the completion of our work and there is no warrant to the veracity of information provided by third parties, or the partial utilization of this work product.

FIGURES

- Figure 1 – Topographic Map
- Figure 2 – Wetland Inventory Map
- Figure 3 – NRCS Soil Survey
- Figure 4 – Wetland Delineation Map

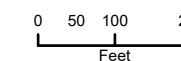


Legend

- Wetland Project Area
- WDNR Mapped Wetlands
- Stream
- Intermittent Stream



SOURCES:
 1. Wetlands source is the U.S. Fish & Wildlife National Wetlands Inventory



Coordinate System: NAD 1983 2011 WISCRS Dane Feet
 Datum: NAD 1983 2011

X:\PROJECTS\UNBRIDLED SPIRITS LLC\190682 Wetland Delineation\Map\Wetland Inventory Map.dwg

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DATE OF ISSUE	DESIGNED BY	LS	CHECKED BY	MT
10/18/2019	DRAWN BY	LS	APPROVED BY	MT

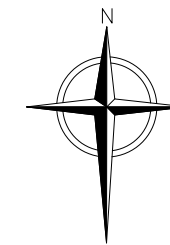
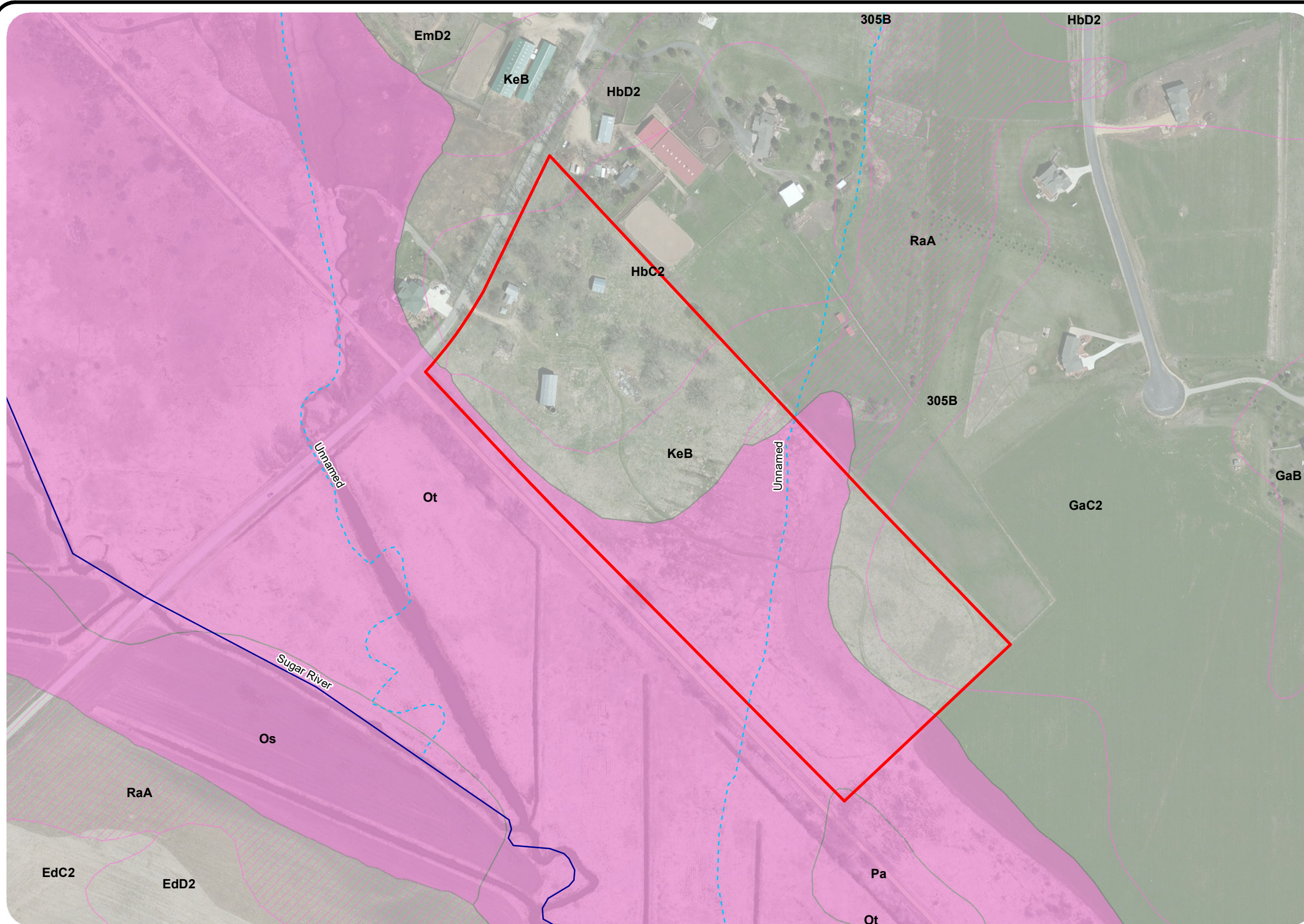
Tt TETRA TECH

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**UNBRIDLED SPIRITS LLC
 VERONA, WISCONSIN
 WETLAND DELINEATION
 Wetland Inventory Map**

FIGURE NO.
2
 PROJECT NO.
 190682

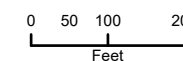


Legend

- Wetland Project Area
- Hydric Inclusions
- Possible Hydric Inclusions
- No Hydric Inclusions



SOURCES:
 1. Soil Data from United States Department of Agriculture
 Natural Resources Conservation Service



Coordinate System: NAD 1983 2011 WISCRS Dane Feet
 Datum: WGS 1984

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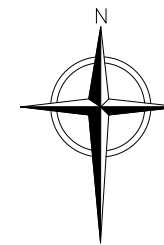
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**UNBRIDLED SPIRITS LLC
 VERONA, WISCONSIN
 WETLAND DELINEATION
 NRCS Soil Survey Map**

FIGURE NO.
3
 PROJECT NO.
 190682



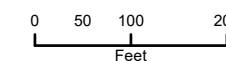
Legend

- Wetland Project Area
- Delineated Wetland
- Wetland Data Point
- Upland Data Point
- Existing Road Through Wetland Area



SOURCES:

1. Wetland Boundaries and Data Points were surveyed on 10/10/2019



Coordinate System:
Datum:

NAD 1983 2011 WISCRS Dane Feet
NAD 1983 2011

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UNBRIDLED SPIRITS LLC
VERONA, WISCONSIN

WETLAND DELINEATION

Wetland Delineation Map

FIGURE NO.

4

PROJECT NO.
190682

VEGETATION - Use scientific names of plants

Sampling Point: DP-4

Tree Stratum	Plot Size ()	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

50/20 Thresholds		
	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	22	55
Herb Stratum	0	0
Woody Vine Stratum	0	0

Sapling/Shrub Stratum	Plot Size ()	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Phalaris arundinacea</i>	90	Y	FACW
2	<i>Poa pratensis</i>	20	N	FACU
3				
4				
5				
6				
7				
8				
9				
10				

Dominance Test Worksheet	
Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	

Herb Stratum	Plot Size ()	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Prevalence Index Worksheet		
Total % Cover of:		
OBL species	<u>0</u> x 1 =	<u>0</u>
FACW species	<u>90</u> x 2 =	<u>180</u>
FAC species	<u>0</u> x 3 =	<u>0</u>
FACU species	<u>20</u> x 4 =	<u>80</u>
UPL species	<u>0</u> x 5 =	<u>0</u>
Column totals	<u>110</u> (A)	<u>260</u> (B)
Prevalence Index = B/A =	<u>2.36</u>	

Woody Vine Stratum	Plot Size ()	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				

Hydrophytic Vegetation Indicators:	
<u> </u> Rapid test for hydrophytic vegetation	
<input checked="" type="checkbox"/> Dominance test is >50%	
<input checked="" type="checkbox"/> Prevalence index is ≤3.0*	
<u> </u> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
<u> </u> Problematic hydrophytic vegetation* (explain)	
*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 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?	<u>Y</u>
--	----------

Remarks: (Include photo numbers here or on a separate sheet)
 Hayfield was cut two times this year. Wetter than normal antecedent precipitation.

SOIL

Sampling Point: DP-4

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-6	10YR 3/2	60	10YR 4/1	35	D	M	Silty Loam	Numerous Roots
			7.5YR 5/8	5	C	M	Silty Loam	rusty concentration
6-20	10YR 3/2	50	10YR 4/1	30	D	M	Silty Loam	
			7.5YR 5/8	5	D	M	Silty Loam	rusty concentration
			10YR 2/1	5	C	M	Silty Loam	Black Concentraion

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- Histisol (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) (LRR R, MLRA 149B)
- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- 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)

Indicators for Problematic Hydric Soils:

- 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)
- Dark Surface (S7) (LRR K, L)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:
 Wetter than normal antecedent precipitation.

VEGETATION - Use scientific names of plants

Sampling Point: DP-2

Tree Stratum	Plot Size ()	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		<u>0</u>	= Total Cover	

Sapling/Shrub Stratum	Plot Size ()	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Poa pratensis</i>	80	Y	FACU
2	<i>Elymus repens</i>	20	N	FACU
3	<i>Trifolium pratense</i>	15	N	FACU
4	<i>Daucus Carota</i>	10	N	NI
5	<i>Sonchus oleraceus</i>	5	N	FACU
6	<i>Ambrosia trifida</i>	5	N	FAC
7				
8				
9				
10				
		<u>135</u>	= Total Cover	

Herb Stratum	Plot Size ()	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		<u>0</u>	= Total Cover	

Woody Vine Stratum	Plot Size ()	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		<u>0</u>	= Total Cover	

50/20 Thresholds		
	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	27	68
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet	
Number of Dominant Species that are OBL, FACW, or FAC:	<u>0</u> (A)
Total Number of Dominant Species Across all Strata:	<u>1</u> (B)
Percent of Dominant Species that are OBL, FACW, or FAC:	<u>0.00%</u> (A/B)

Prevalence Index Worksheet		
Total % Cover of:		
OBL species	<u>0</u> x 1 =	<u>0</u>
FACW species	<u>0</u> x 2 =	<u>0</u>
FAC species	<u>5</u> x 3 =	<u>15</u>
FACU species	<u>120</u> x 4 =	<u>480</u>
UPL species	<u>0</u> x 5 =	<u>0</u>
Column totals	<u>125</u> (A)	<u>495</u> (B)
Prevalence Index = B/A =	<u>3.96</u>	

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*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 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? N

Remarks: (Include photo numbers here or on a separate sheet)
 Wetter than normal antecedent precipitation. Hayfield was cut 2 times this year.

VEGETATION - Use scientific names of plants

Sampling Point: DP-3

Tree Stratum	Plot Size ()	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
		<u>0</u>	= Total Cover	

Sapling/Shrub Stratum	Plot Size ()	Absolute % Cover	Dominant Species	Indicator Status
1	<i>Poa pratensis</i>	70	Y	FACU
2	<i>Trifolium pratense</i>	20	N	FACU
3	<i>Sonchus oleraceus</i>	15	N	FACU
4	<i>Polygonum pensylvanicum</i>	5	N	NI
5	<i>Phalaris arundinacea</i>	5	N	FACW
6	<i>Ambrosia trifida</i>	5	N	FAC
7				
8				
9				
10				
		<u>120</u>	= Total Cover	

Herb Stratum	Plot Size ()	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
		<u>0</u>	= Total Cover	

Woody Vine Stratum	Plot Size ()	Absolute % Cover	Dominant Species	Indicator Status
1				
2				
3				
4				
5				
		<u>0</u>	= Total Cover	

50/20 Thresholds		
	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	24	60
Herb Stratum	0	0
Woody Vine Stratum	0	0

Dominance Test Worksheet	
Number of Dominant Species that are OBL, FACW, or FAC:	<u>0</u> (A)
Total Number of Dominant Species Across all Strata:	<u>1</u> (B)
Percent of Dominant Species that are OBL, FACW, or FAC:	<u>0.00%</u> (A/B)

Prevalence Index Worksheet		
Total % Cover of:		
OBL species	<u>0</u> x 1 =	<u>0</u>
FACW species	<u>5</u> x 2 =	<u>10</u>
FAC species	<u>5</u> x 3 =	<u>15</u>
FACU species	<u>105</u> x 4 =	<u>420</u>
UPL species	<u>0</u> x 5 =	<u>0</u>
Column totals	<u>115</u> (A)	<u>445</u> (B)
Prevalence Index = B/A =	<u>3.87</u>	

Hydrophytic Vegetation Indicators:

Rapid test for hydrophytic vegetation

Dominance test is >50%

Prevalence index is ≤3.0*

Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Hydrophytic vegetation present? N

Remarks: (Include photo numbers here or on a separate sheet)
 Wetter than normal antecedent precipitation. Hayfield was cut 2 times this year.



DP-1 Looking northwest



DP-1 Soil and test hole



DP-2 Looking northwest



DP-2 Soil and test hole



DP-3 Looking northwest



DP-3 Soil and test hole



DP-4 Looking northwest



DP-4 Soil and test hole



Typical wetland area



Typical wetland area



Wet area in horse pasture



hydric soil within southeastern end of horse pasture



Wetland Boundary



Wetland boundary

2005



2008



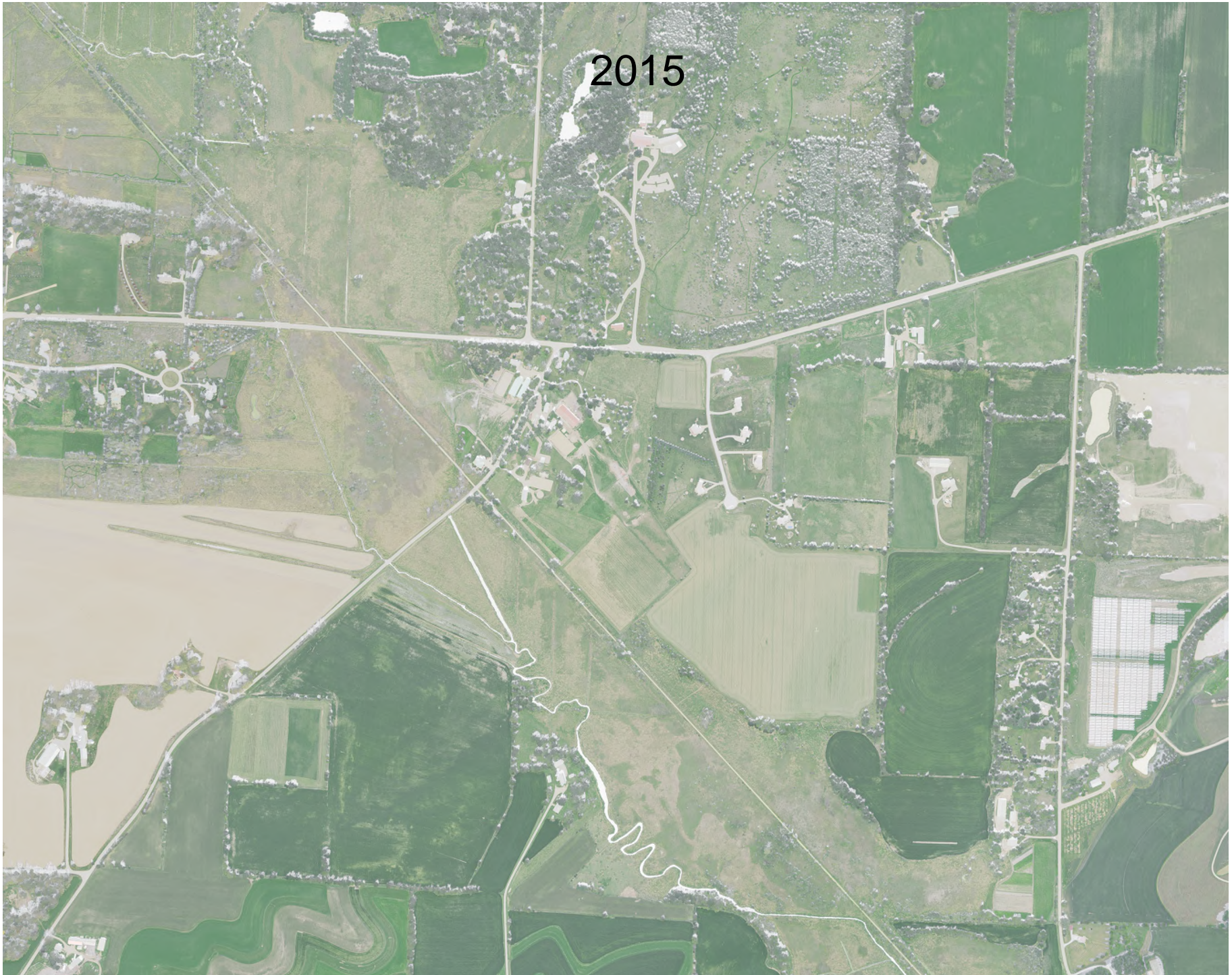
2010



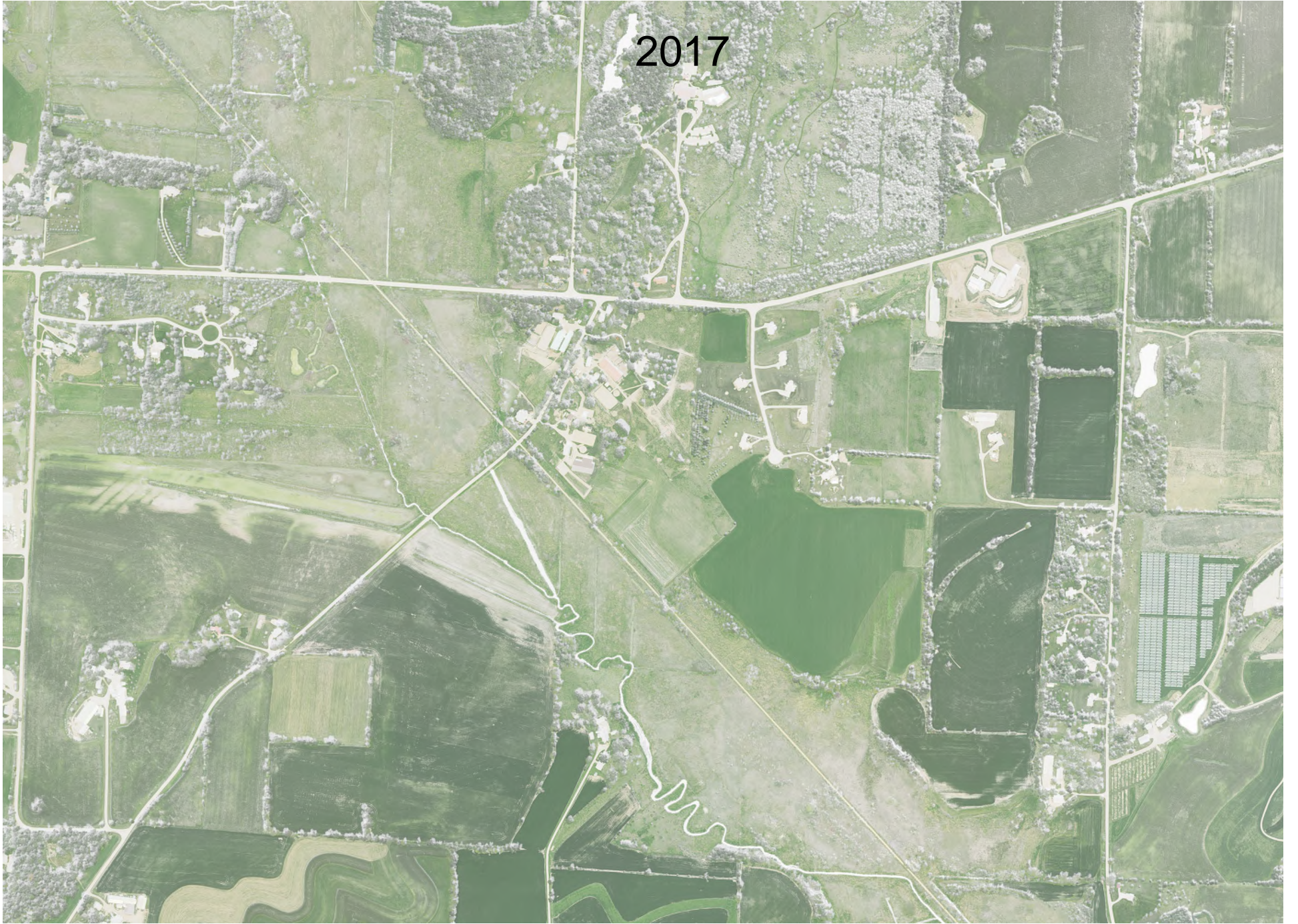
2013



2015



2017



2018

