Appendix M

Wetland Delineation Reports

- M1 Wetland and Waterway Delineation Report by TRC Environmental Corporation (12/8/21)
- M2 Wetland Determination Summary Report by Heartland Ecological Group Inc. (5/23/22)

M1 Wetland and Waterway Delineation Report by TRC Environmental Corporation (12/8/21)



Wetland and Waterway Delineation Report

Date: December 8, 2021

TRC Project No. 275981.00004

Yahara Hills Golf Course

6701 US-12 Madison, WI 53718

Prepared For:

Dane County, Waste & Renewables 7102 U.S. Hwy 12 & 18 Madison, WI 53718

Prepared By:

Amanda Larsen and Ron Londré WDNR Assured Wetland Delineators TRC Environmental Corporation 6737 W Washington St., Suite 2100 West Allis, WI 53214





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1.0 Introduction

On behalf of Dane County, Waste & Renewables, TRC Environmental Corporation (TRC) conducted a wetland and waterway delineation within a designated Study Area at Yahara Hills Golf Course (Figure 1, Appendix A). The Study Area was an approximately 157 acres portion of the Yahara Hills Golf Course, located in Section 25, Township 07 North, Range 10 East in the City of Madison, Dane County, Wisconsin.

Landowner Information: City of Madison Parks – Yahara Hills Golf Course 4422 Brandt Road Madison, WI 53718

The purpose of this wetland and waterway delineation was to determine the current location and extent of wetlands and waterways within a designated Study Area for the purpose of future land use changes. Our study is presented here in terms of methodology, results, and conclusions.

The wetland and waterway delineation field investigation was conducted by TRC scientists Amanda Larsen and Ron Londré on November 9, 2021. Amanda Larsen and Ron Londré were lead investigators and the authors of this report.

1.1 Statement of Qualifications

TRC has extensive experience managing and conducting wetland delineations across the United States. TRC's biologists and ecologists have been trained to properly and consistently apply the methods set forth in the 1987 Corps of Engineers Wetland Delineation Manual and applicable regional supplements. They have direct experience identifying and documenting indicators of hydrophytic vegetation, wetland hydrology, and hydric soil and are experienced in dealing with naturally problematic and disturbed conditions.

TRC's large natural resources staff have the capability to coordinate wetland survey teams to meet fast-track project schedules and satisfy the challenges of complex or controversial projects.

Ms. Amanda Larsen, WDNR Assured Wetland Delineator and Senior Biologist with TRC and has over ten years of experience working on a variety of natural resource projects throughout the United States. She specializes in conducting wetland delineations and assessments, biological surveys, water monitoring, habitat restoration, and invasive species control. Ms. Larsen has a B.S. degree in Conservation and Environmental Science from UW-Milwaukee with a focus on water resources. She has taken the following technical trainings related to wetland delineation: Problematic Wetland Delineation (2018) provided by the Wetland Training Institute; Advanced Wetland Delineation (2019), Hydric Soils (2017), Basic Wetland Delineation (2013), provided by UW-La Crosse; and Significant Nexus Determination (2014) provided by the Swamp School. She also attends the Annual UW La Crosse one-day Critical Methods in wetland delineation class. Ms. Larsen is a part of the Wetland Delineation Professional Assurance Initiative of the Wisconsin Department of Natural Resources (WDNR). This means her work is assured for purposes of State of Wisconsin wetland delineations.

Mr. Ron Londré, PWS, WDNR Assured Wetland Delineator, is a Senior Ecologist at TRC with over 14 years of professional experience in wetland ecology. He is certified by the Society of Wetland Scientists



Professional Certification Program as a Professional Wetland Scientist (PWS # 2436) and is certified by the Ecological Society of America as a Senior Ecologist. His academic studies, from which he earned M.S. and B.S. Degrees in Biological Science, focused on plant community ecology and restoration ecology. Mr. Londré has completed the following wetland delineation technical training workshops provided by UW-La Crosse: Advanced Wetland Delineation; Basic Wetland Delineation; Critical Methods in Wetland Delineation; Hydric Soils; and Grasses, Sedges, and Rushes. Additionally, he has completed the Regional Supplement Seminar and Field Practicum training and Advanced Hydrology for Jurisdictional Determinations provided by the Wetland Training Institute and the Wetland Delineation Training Workshop provided by the University of Wisconsin-Milwaukee. Mr. Londré is a part of the Wetland Delineation Professional Assurance Initiative of the Wisconsin Department of Natural Resources (WDNR). This means his work is assured for purposes of State of Wisconsin wetland delineations.

1.2 Agency Regulatory Authority

The wetlands and/or waterways identified 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 Wisconsin Department of Natural Resources (WDNR), and local jurisdiction under county, town, city, or village.

2.0 Methods

This wetland and waterway delineation was conducted in accordance with the guidelines of the 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0, 2012) and in general accordance with Wisconsin Department of Natural Resources guidelines. National Wetland Indicator status and taxonomic nomenclature is referenced from 2020 Corps of Engineers National Wetland Plant List Version 3.5. National Wetland Indicator status is based on the Northcentral and Northeast Region, Northern Great Lakes sub-region. Indicators of hydric soil are based on the Field Indicators of Hydric Soils in the United States guide Version 8.2 (USDA NRCS 2018). This report has also been prepared in accordance with the guidelines set forth in the "Guidance for Submittal of Delineation Reports to the St. Paul District Corps of Engineers and the Wisconsin Department of Natural Resources" document issued March 4, 2015.

2.1 Off-Site Review

Prior to conducting fieldwork, several maps were reviewed including the United States Geological Survey (USGS) 7.5' Quadrangle Map, Natural Resource Conservation Service (NRCS) Soil Survey Map, Wisconsin Wetland Inventory (WWI) Map, and aerial imagery. These sources were used to identify areas likely to contain wetlands and waterways.

Precipitation data from approximately 90 days prior to the field investigation were obtained from a weather station near the Study Area and compared with 30-year average precipitation data obtained from a NRCS WETS Table for the County where the Study Area was located to determine if antecedent hydrologic conditions at the time of the site visit were normal, wetter, or drier than the normal range.



2.2 On-Site Field Investigation

Areas having wetland indicators within the Study Area were evaluated in the field by TRC wetland scientists Amanda Larsen and Ron Londré on November 9, 2021. Sample points were located in areas exhibiting wetland and upland characteristics to document the presence and/or absence of wetlands and to provide support for the delineated wetland boundaries. At each sample point, data were collected to document the vegetation and hydrophytic vegetation indicators, soil profile and hydric soil indicators, and wetland hydrology indicators.

Plant species were identified at each sample point and their wetland indicator status; obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), or upland (UPL); was determined by referencing the 2020 Corps of Engineers National Wetland Plant List Version 3.5; Northcentral and Northeast Region, Northern Great Lakes sub-region. Soil pits were dug to the depth needed to document a hydric soil indicator or confirm the absence of indicators. Soil color was determined using a Munsell soil color chart. The sample point plots and soil pits were evaluated for presence of wetland hydrology indicators.

The wetland boundaries were delineated using a hand-held GPS unit with sub-meter accuracy. Wetland boundaries were generally determined by distinct to subtle differences in the abundance of hydrophytic vegetation and non-hydrophytic vegetation, presence versus absence of hydric soil indicators, and presence versus absence of wetland hydrology indicators.

3.0 Results

3.1 Off-Site Review

The 2-Foot Contour Map (Appendix A, Figure 2) shows elevations ranging from 872 to 924 above sea level. Based on the Contour Map, site topography is sloped, and surface water would flow from higher elevations in the south and west to lower elevations to the north.

According to the NRCS Soil Survey map (Appendix A, Figure 3) nine mapped soil units are located within the Study Area. The soils mapped within the Study Area are listed on Table 1 below.

Map Unit Symbol	Soil Series Name	Drainage Class	Hydric Rating	% of Study Area
DnB	Dodge silt loam, 2 to 6 percent slopes	Well drained	0	39.6
DnC2	Dodge silt loam, 6 to 12 percent slopes, eroded	Well drained	0	0.3
MdC2	McHenry silt loam, 6 to 12 percent slopes, eroded	Well drained	0	12.0
Os	Orion silt loam, wet	Poorly drained	100	6.0
RaA	Radford silt loam, 0 to 3 percent slopes	Well drained	10	2.0
SaA	Sable silty clay loam, 0 to 2 percent slopes	Somewhat poorly drained	85	5.0

Table 1 Mapped Soils



Table 1 Mapped Soils

ScB	St. Charles silt loam, 2 to 6 percent slopes	Well drained	3	6.2
VwA	Virgil silt loam, gravelly substratum, 0 to 3 percent slopes	Somewhat poorly drained	10	28.0
Wa	Wacousta silty clay loam, 0 to 2 percent slopes	Very poorly drained	100	0.9

The Wisconsin Wetland Inventory (WWI) map (Appendix A, Figure 4) depicts three wetlands within the Study Area. Two of the wetlands depicted are shown as symbols which indicate a wetland too small to delineate. The third wetland is mapped as an open waterbody, subclass unknown, with standing water, palustrine that has been excavated (WOHx).

A review of aerial imagery from 2000, 2005, 2010, 2014, and 2020 (Appendix A, Figures 5-9) shows the Study Area as a maintained golf course with no noticeable changes between 2000 and 2020. The golf course continues south and west of the Study Area, a paved two-lane road boarder the Study Area to the east and a divided highway borders the Study Area to the north.

Prior to conducting the field visit, antecedent precipitation data were analyzed. Data were obtained from the same weather station and WETS station (UW Arboretum - Madison, WI). The precipitation data for the 90-day period prior to the field visit (Appendix B, Table 2) were entered into a WETS analysis worksheet (Appendix B, Table 3) to weight the information from each preceding month to analyze hydrologic conditions. Based on this analysis, the antecedent hydrologic conditions were considered to be above a normal range, suggesting that climatic/hydrologic conditions were not normal for this time of year. The most recent rainfall event prior to the site visit was 0.15 inches, which occurred on November 8, 2021. Precipitation for the 14 days prior to the site visit was 0.65 inches.

3.2 On-Site Field Investigation

3.2.1 Site Description

The Study Area is an active golf course. The majority of the course is maintained through frequent mowing. Areas that are unmanaged separate managed areas and were observed to be primarily old field and upland woodland, as well as some wetland. The site generally had hilly topography with the highest elevations to the south and west, and generally sloped down to lower elevations in the north and northeast. It is assumed that there is an active, functioning drain tile system throughout much of the golf course. This was communicated to TRC by City of Madison Parks Department staff and there were drain tiles observed at the pond where it is expected the drain tiles would discharge to.

Vegetation managed through mowing is considered to be disturbed (atypical) and circumstances would not be normal for any data collected in areas were vegetation was mowed.



3.2.2 Uplands

Upland plant communities observed in the Study Area included old field, shrub dominated upland, and upland woodland. Sample point SP-12 was located in an upland area where there was a mapped wetland indicator soil based on review of the DNR Surface Water Data Viewer. The remaining upland sample points discussed below were paired with wetland sample points to document the delineated wetland boundaries.

3.2.3 Wetlands

Five wetlands (W-1 through W-5) were delineated. The delineated wetland boundaries and sample points are shown on a map (Exhibit A) in Appendix C. Data, including photographs, were collected and recorded on Wetland Determination Data Forms at 17 sample points to document wetland and upland locations (Appendix D). The five delineated wetlands are summarized below in Table 4.

3.2.4 Other Aquatic Resources

One pond (P-1) totaling 2.02 acres was delineated within the Study Area and is shown on the wetland delineation map (Appendix D, Exhibit A). Photographs of pond P-1, as well as additional site photographs, can be found in Appendix E.

3.2.5 Professional Opinion On Wetland Susceptibility Per NR 151

Table 5 in Appendix F lists a professional opinion on wetland susceptibility, based on a request by the WDNR, to do so per revised NR 151 guidance (Guidance #3800-2015-02). Please note that the final determination of wetland susceptibility rests with the WDNR.

-	T	1	Table 4 Delineated Wetlands Summa	ry	
Wetland ID, Sampling Points, & Size (Acres)	Wetland Type	Hydrology Indicators	Dominant Plant Species (stratum not listed indicates no species were present at sample point(s) for that stratum)	Hydric Soil Indicator(s)	Commer
W-1 <u>Wetland</u> SP-02, SP-04, SP-06, SP-11 <u>Upland</u> SP-01, SP-03, SP-05, SP-10 3.66-ac	Fresh (wet) Meadow / Shrub-Carr / Floodplain Forest	B8 – Sparsely Vegetated Concave Surface B10 – Drainage Patterns D2 - Geomorphic Position D5 - Positive FAC-Neutral Test	Tree Quercus bicolor (swamp white oak) Sapling/Shrub Fraxinus pennsylvanica (green ash) Cornus racemosa (grey dogwood) Herbaceous Phalaris arundinacea (reed canary grass)	A11 - Depleted Below Dark Surface F3 - Depleted Matrix	Wetland the Stud on chang hydric sc
W-2 <u>Wetland</u> SP-09 <u>Upland</u> SP-07 0.08-ac	Floodplain Forest	D2 - Geomorphic Position D5 - Positive FAC-Neutral Test	Tree Fraxinus pennsylvanica Herbaceous Phalaris arundinacea Carex lacustris (lakebank sedge) Woody Vine Vitis riparia (riverbank grape)	A11 - Depleted Below Dark Surface F6 – Redox Dark Surface	Wetland Area to t topograp
W-3 <u>Wetland</u> SP-08 <u>Upland</u> SP-07 0.01-ac	Fresh (wet) Meadow	D2 - Geomorphic Position D5 - Positive FAC-Neutral Test	Tree Acer negundo (boxelder) Sapling/Shrub Acer negundo Rhamnus cathartica (common buckthorn) Herbaceous Phalaris arundinacea	A12 – Thick Dark Surface F6 – Redox Dark Surface	Wetland Area to t changes hydric sc
W-4 <u>Wetland</u> SP-13 <u>Upland</u> SP-14 0.18-ac	Fresh (wet) Meadow	D2 - Geomorphic Position D5 - Positive FAC-Neutral Test	<u>Tree</u> Acer saccharinum (silver maple) Juglans nigra (black walnut) <u>Herbaceous</u> Phalaris arundinacea	A11 - Depleted Below Dark Surface F3 - Depleted Matrix F6 – Redox Dark Surface	Wetland depression of wetlar abundan
W-5 <u>Wetland</u> SP-15, SP-17 <u>Upland</u> SP-16 0.11-ac	Fresh (wet) Meadow / Shrub-Carr	D2 - Geomorphic Position D5 - Positive FAC-Neutral Test	<u>Sapling/Shrub</u> Salix interior (sandbar willow) <u>Herbaceous</u> Phalaris arundinacea Agrostis stolonifera (spreading bentgrass)	F6 – Redox Dark Surface	Wetland excavate prevents associate therefore possible. berm.

nts

d W-1 is located in a depressional swale that extends out of dy Area to the north and east. The boundary of W-1 was based ges in topography, abundance of hydrophytic vegetation, and oils.

d W-2 is located within a swale and extends out of the Study the north. The boundary of W-2 was based on changes in phy, abundance of hydrophytic vegetation, and hydric soils.

d W-3 is located within a swale and extends out of the Study the north and west. The boundary of W-3 was based on is in topography, abundance of hydrophytic vegetation, and oils.

d W-4 is an isolated wetland contained within a shallow ion and does not extend out of the Study Area. The boundary and W-4 was based on slight changes in topography, nce of hydrophytic vegetation, and hydric soils.

d W-5 is located around the edge of pond P-1, which is an ed feature and has a slight berm around the perimeter which s W-5 from expanding further away from the edge of P-1. Fill ed with the pond prevented digging below 5-6 inches, re determination of a water table within 12 inches was not the boundary of wetland W-5 was based on the toe of the



4.0 Conclusions

Based on the wetland delineation completed by TRC, five wetlands (W-1, W-2, W-3, W-4 and W-5) were delineated totaling 4.04 acres of wetland within the 157-acre Study Area. One other aquatic resource, pond P-1, totaling 2.02 acres was also delineated within the Study Area.

Wetlands and other aquatic resources delineated and identified in this report are a professional finding based on current regulatory guidelines published by the USACE and WDNR at the time the resources were delineated. Unknown and future conditions that affect observations of field indicators or change in interpretation of regulatory policy or methods may modify future findings.

The ultimate authority to determine the location of the wetland boundary and jurisdictional authority over the wetlands and other aquatic resources identified in this report resides with the USACE and WDNR. Decisions made by staff of these regulatory agencies may result in modifications to the location of the wetland or other aquatic resource boundaries shown in this report. In addition, the USACE and WDNR have jurisdictional authority to determine which features are exempt from regulation or non-jurisdictional. If the client proposes to modify a potentially exempt or non-jurisdictional feature, a WDNR Artificial Determination Exemption and USACE Approved Jurisdictional Determination (AJD) would be needed. Furthermore, municipalities, townships and counties may have local zoning authority over certain areas or types of wetlands and waterways. The determination that a wetland or waterway is subject to regulatory jurisdiction is made independently by the agencies.

Any activity in a delineated wetland or below the Ordinary High-Water Mark of other aquatic resources may require USACE and WDNR permits, and local government permits. If the Client proceeds to change, modify or utilize the property in question without obtaining authorization from the appropriate regulatory agency, it will be done at the Client's own risk and TRC Environmental Corporation shall not be responsible or liable for any resulting damages.



5.0 References

- Charts, Munsell Soil Color. 1994. "Munsell color." Macbeth Division of Kollmorgen Instruments Corporation, New Windsor, NY 12553.
- cli-MATE: Online Data Portal. Midwestern Regional Climate Center. Purdue University. <u>cli-MATE: MRCC Application Tools Environment (purdue.edu)</u> accessed on: 11/09/2021
- Eggers, Steve D. and Donald M. Reed. 1997. Wetland Plants and Plant Communities of Minnesota and Wisconsin. 2nd Ed. U.S. Army Corps of Engineers, St. Paul District.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
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- U.S. Army Corps of Engineers 2020. National Wetland Plant List, version 3.5 (Web address: <u>http://wetland-plants.usace.army.mil/</u>) U.S. Army Corps of Engineers, Engineer Research and Development Center Cold Regions Research and Engineering Laboratory, Hanover, NH
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 4, 2015. Guidance for Submittal of Delineation Reports to the St. Paul District Army Corps of
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 W. Lichvar, C.V. Noble, and J.F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
- USDA Natural Resources Conservation Service Web Soil Survey (Web Address: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)
- USDA NRCS Climate Analysis by County Web Site (WETS). (Web Address: <u>http://www.wcc.nrcs.usda.gov/climate/wetlands.html</u>)
- Wisconsin Department of Natural Resources, 2016. Surface Water Data Viewer: http://dnrmaps.wi.gov/sl/?Viewer=SWDV.

Appendix A: Figures



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2' MINOR CONTOUR

✓ 10' MAJOR CONTOUR



- 1. BASE MAP IMAGERY FROM DANE COUNTY, 2020.
- 2. CONTOURS FROM DANE COUNTY.

DANE COUNTY WASTE & RENEWABLES DEPARTMENT YAHARA HILLS GOLF COURSE DELINEATION MADISON, DANE COUNTY, WISCONSIN

CONTOUR MAP

DRAWN BY:	R. SUEMNICHT	PROJ. NO.:	27598
CHECKED BY:	A. LARSEN		
APPROVED BY:	R. LONDRE	FIGURE 2	
DATE:	DECEMBER 2021	1	

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275981-002.mxd



Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet (Foot US) Map Rotation:

Not Date: 12/7/2021, 14:56:29 PM by RSUEMNICHT -- LAYOUT: ANSI B(11"x17")

lydric ting %	% Of Study Area
0	39.6
0	0.3
0	12.0
100	6.0
10	2.0
85	5.0
3	6.2
10	28.0
100	0.9
SKE	1

LEGEND

STUDY AREA

SOIL CLASSIFICATION

DODGE SILT LOAM, 2 TO 6 PERCENT SLOPES DODGE SILT LOAM, 6 TO 12 PERCENT SLOPES, ERODED MCHENRY SILT LOAM, 6 TO 12 PERCENT SLOPES, ERODED

ORION SILT LOAM, WET

RADFORD SILT LOAM, 0 TO 3 PERCENT SLOPES

SABLE SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES

ST. CHARLES SILT LOAM, 2 TO 6 PERCENT SLOPES VIRGIL SILT LOAM, GRAVELLY SUBSTRATUM, 0 TO 3 PERCENT SLOPES WACOUSTA SILTY CLAY LOAM, 0 TO 2 PERCENT SLOPES

<u>NOTES</u>

DnB

KrE2

MdD2

KeB

MdC2

- 1. BASE MAP IMAGERY FROM DANE COUNTY, 2020.
- 2. SOILS DATA ACQUIRED FROM USDA/NRCS SSURGO DATABASE.



DANE COUNTY WASTE & RENEWABLES DEPARTMENT YAHARA HILLS GOLF COURSE DELINEATION MADISON, DANE COUNTY, WISCONSIN

TITLE:

NRCS SOILS MAP

DRAWN BY:	R. SUEMNICHT	PROJ. NO.:	27598
CHECKED BY:	A. LARSEN		
APPROVED BY:	R. LONDRE	FIGURE 3	
DATE:	DECEMBER 2021		
		•	



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275981-003.mxd







DRAWN BY:	R. SUEMNICHT	PROJ. NO.:	27598
CHECKED BY:	A. LARSEN		
APPROVED BY:	R. LONDRE	FIGURE 4	
DATE:	DECEMBER 2021	1	

275981-004.mxd



1. BASE MAP IMAGERY FROM DANE COUNTY, 2000.

DANE COUNTY WASTE & RENEWABLES DEPARTMENT YAHARA HILLS GOLF COURSE DELINEATION MADISON, DANE COUNTY, WISCONSIN

2000 AERIAL IMAGERY

DRAWN BY:	R. SUEMNICHT	PROJ. NO.:	27598
CHECKED BY:	A. LARSEN		
APPROVED BY:	R. LONDRE	FIGURE 5	
DATE:	DECEMBER 2021		
			0.100

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275981-005.mxd





1. BASE MAP IMAGERY FROM DANE COUNTY, 2005.

ROJECT: DANE COUNTY WASTE & RENEWABLES DEPARTMENT YAHARA HILLS GOLF COURSE DELINEATION MADISON, DANE COUNTY, WISCONSIN

2005 AERIAL IMAGERY

DRAWN BY:	R. SUEMNICHT	PROJ. NO.:	2	7598
CHECKED BY:	A. LARSEN			
APPROVED BY:	R. LONDRE		FIGURE 6	
DATE:	DECEMBER 2021			
			6727 W Washington St. Suito 21	100

Ashington St., Suite 2100 West Allis, WI 53214 Phone: 262.879.1212 www.trccompanies.com

275981-006.mxd





1. BASE MAP IMAGERY FROM DANE COUNTY, 2010.

ROJECT: DANE COUNTY WASTE & RENEWABLES DEPARTMENT YAHARA HILLS GOLF COURSE DELINEATION MADISON, DANE COUNTY, WISCONSIN

2010 AERIAL IMAGERY

DRAWN BY:	R. SUEMNICHT	PROJ. NO.:	27598
CHECKED BY:	A. LARSEN		
APPROVED BY:	R. LONDRE	FIGURE 7	
DATE:	DECEMBER 2021		

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275981-007.mxd







STUDY AREA

<u>NOTES</u>

1. BASE MAP IMAGERY FROM DANE COUNTY, 2014.



PROJECT: DANE COUNTY WASTE & RENEWABLES DEPARTMENT YAHARA HILLS GOLF COURSE DELINEATION MADISON, DANE COUNTY, WISCONSIN

TITLE:

2014 AERIAL IMAGERY

DRAWN BY:	R. SUEMNICHT	PROJ. NO.:	27598
CHECKED BY:	A. LARSEN		
APPROVED BY:	R. LONDRE	FIGURE 8	
DATE:	DECEMBER 2021		



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FILE NO.

275981-008.mxd





1. BASE MAP IMAGERY FROM DANE COUNTY, 2020.

DANE COUNTY WASTE & RENEWABLES DEPARTMENT YAHARA HILLS GOLF COURSE DELINEATION MADISON, DANE COUNTY, WISCONSIN

2020 AERIAL IMAGERY

DRAWN BY:	R. SUEMNICHT	PROJ. NO.:	27598
CHECKED BY:	A. LARSEN		
APPROVED BY:	R. LONDRE	FIGURE 9	
DATE:	DECEMBER 2021		
		6727 W Washington St	Suito 2100

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Appendix B: Antecedent Precipitation Data / WETS Analysis

Table 2. Antecedent Precipitation Data										
August 1, 2021 - October 31, 2021										
Precipitation Data Source Location										
UW Arboretum - Madison, WI USC00470273										
3rd Month Prior 2nd Month Prior 1st Month Prior										
Date	PPT	Date	PPT	Date	PPT					
8/1/2021	0.01	9/1/2021	0.00	10/1/2021	0.00					
8/2/2021	0.00	9/2/2021	0.00	10/2/2021	0.00					
8/3/2021	0.00	9/3/2021	0.00	10/3/2021	0.05					
8/4/2021	0.00	9/4/2021	0.20	10/4/2021	0.29					
8/5/2021	0.00	9/5/2021	0.00	10/5/2021	0.04					
8/6/2021	0.09	9/6/2021	0.00	10/6/2021	0.00					
8/7/2021	0.06	9/7/2021	0.00	10/7/2021	0.16					
8/8/2021	1.40	9/8/2021	0.15	10/8/2021	1.27					
8/9/2021	0.79	9/9/2021	0.00	10/9/2021	0.02					
8/10/2021	0.37	9/10/2021	0.00	10/10/2021	0.00					
8/11/2021	0.47	9/11/2021	0.00	10/11/2021	0.11					
8/12/2021	0.02	9/12/2021	0.00	10/12/2021	0.35					
8/13/2021	0.00	9/13/2021	2.11	10/13/2021	0.00					
8/14/2021	0.00	9/14/2021	0.10	10/14/2021	0.20					
8/15/2021	0.00	9/15/2021	0.00	10/15/2021	0.01					
8/16/2021	0.00	9/16/2021	0.00	10/16/2021	0.01					
8/17/2021	0.00	9/17/2021	0.00	10/17/2021	0.00					
8/18/2021	0.00	9/18/2021	0.00	10/18/2021	0.00					
8/19/2021	0.00	9/19/2021	0.00	10/19/2021	0.00					
8/20/2021	0.00	9/20/2021	0.00	10/20/2021	Т					
8/21/2021	0.40	9/21/2021	0.65	10/21/2021	0.10					
8/22/2021	0.02	9/22/2021	0.00	10/22/2021	0.09					
8/23/2021	Т	9/23/2021	0.00	10/23/2021	0.00					
8/24/2021	0.23	9/24/2021	0.00	10/24/2021	0.00					
8/25/2021	0.35	9/25/2021	0.03	10/25/2021	0.55					
8/26/2021	0.00	9/26/2021	0.00	10/26/2021	0.03					
8/27/2021	0.00	9/27/2021	0.00	10/27/2021	0.00					
8/28/2021	0.30	9/28/2021	0.00	10/28/2021	0.01					
8/29/2021	0.00	9/29/2021	0.00	10/29/2021	0.31					
8/30/2021	0.00	9/30/2021	0.00	10/30/2021	0.05					
8/31/2021	0.00			10/31/2021	0.00					
Total =	4.51	Total =	3.24	Total =	3.65					

PPT - Precipitation in inches

T - Trace

M - Missing



Table 3. WETS Ana	lysis									
Project Site: Period of interest: County:	Yahara Hil August - C Dane	ls Golf Course October, 2021								
Long-term rainfall records (from WETS table) Site determination										
U	Month	3 years in 10 less than	Average	3 years in 10 greater than		Site Rainfall (in)	Condition Dry/Normal*/Wet	Condition** Value	Month Weight	Product
1st month prior:	Oct	1.72	2.73	3.29		3.65	Wet	3	3	9
2nd month prior:	Sept	2.42	3.72	4.48		3.24	Normal	2	2	4
3rd month prior:	August	2.91	4.24	5.05		4.51	Normal	2	1	2
		Sum =	10.69		Sum =	11.40			Sum*** =	15
	*Normal p	precipitation wi	th 30% to	70% probabilit	y of occurr	ence		Determination	ו:	Wet
	Condition	on value:		*If sum is:						
	Dry =	1		6 to 9	then perio	d has been d	rier than normal			
	Normal =	2		10 to 14	then perio	d has been n	ormal			
	Wet =	3		15 to 18	then perio	d has been w	etter than normal			
Precipitation data source: UW Arboretum - Madison, WI USC00470273 WETS Station: UW Arboretum - Madison, WI (1981 - 2010)										
Reference:	Donald E. Handbook	Woodward, ed U.S. Departm	. 1997. <i>Hyd</i> ent of Agri	drology Tools f culture, Natur	<i>for Wetland</i> al Resource	<i>Determinati</i> s Conservations	on , Chapter 19. Eng on Service, Fort Wor	ineering Field th, TX.		



Appendix C: Wetland and Waterway Delineation Map





LEGEND

- WETLAND SAMPLE LOCATION
- UPLAND SAMPLE LOCATION

O CULVERT

----- OFFSITE WETLAND BOUNDARY



- WETLAND POND
- STUDY AREA

<u>NOTES</u>

1. BASE MAP IMAGERY FROM DANE COUNTY, 2020.



DANE COUNTY WASTE & RENEWABLES DEPARTMENT YAHARA HILLS GOLF COURSE DELINEATION MADISON, DANE COUNTY, WISCONSIN

TITLE:

WETLAND AND WATERWAY DELINEATION MAP

DRAWN BY:	R. SUEMNICHT	PROJ. NO.: 27598
CHECKED BY:	A. LARSEN	
APPROVED BY:	R. LONDRE	
DATE:	DECEMBER 2021	
∂ 1	RC	6737 W Washington St., Suite 2100 West Allis, WI 53214 Phone: 262.879.1212 www.trccompanies.com

275981-010.mxd

Appendix D: Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Yahara Hills Golf Course City/County: Madisor			, Dane			Sampling Date:	2021-Nov-09	
Applicant/Owner: Dane County Waste & Renewables			Sta	te: Wisconsii	n	Sampling Point: S	P-01	
Investigator(s): Ron Londre			Secti	on, Township,	Range: 25	-T7N-R10E		
Landform (hillslope, terrace, etc.): Back slope			Local relief (concave, convex, none): Convex Slope (%): 3-6			Slope (%): 3-6		
Subregion (LRR or MLR	A): LRR	К		Lat:	43.04013	Long:	-89.2481	Datum: WGS84
Soil Map Unit Name:	Dodge silt lo	am, 2 to 6 percen	it slopes				WWI classifica	ation: None
Are climatic/hydrologic	conditions o	n the site typical fo	or this time of year?		Yes No	o 🟒 (lf no,	explain in Remark	s.)
Are Vegetation, Are Vegetation,	Soil, Soil,	or Hydrology or Hydrology	_ significantly disturk _ naturally problema	oed? atic?	Are "Norm (If needed,	al Circumst explain an	ances" present? y answers in Rema	Yes 🟒 No Irks.)

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

Hydrophytic Vegetation Present?	Yes No									
Hydric Soil Present?	Yes 🟒 No	Is the Sampled Area within a Wetland?	Yes No 🟒							
Wetland Hydrology Present?	Yes No 🟒	lf yes, optional Wetland Site ID:								
Remarks: (Explain alternative procedures he	Remarks: (Explain alternative procedures here or in a separate report)									
Based on the absence of two of three parar	Based on the absence of two of three parameters, this area is an upland.									

HYDROLOGY

Wetland Hydrology Indicators:				
Primary Indicators (minimum of	one is required; check all	Secondary Indicators (minimum of two required)		
 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) 		Stained Leaves (B9) c Fauna (B13) peposits (B15) gen Sulfide Odor (C1) ed Rhizospheres on Living Roots (C3) nce of Reduced Iron (C4) t Iron Reduction in Tilled Soils (C6) luck Surface (C7) (Explain in Remarks)	 	
Field Observations:				
Surface Water Present?	Yes No 🟒	Depth (inches):	_	
Water Table Present?	Yes No 🟒	Depth (inches):	Wetland Hydrology Present? Yes No	
Saturation Present?	Yes No 🟒	Depth (inches):	_	
(includes capillary fringe)				
Describe Recorded Data (strean	n gauge, monitoring well, a	erial photos, previous inspections), if	⁻ available:	
Topo maps, soils map, WWI map	o, aerial imagery			

Remarks:

The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

VEGETATION -- Use scientific names of plants.

Sampling Point: SP-01

Tree Stratum (Plot size: 30' r)	Absolute	Dominant	Indicator	Dominance Test worksheet:		
	% Cover	Species?	Status	Number of Dominant Species That	1	(A)
1				Are OBL, FACW, or FAC:		
2				Iotal Number of Dominant Species	3	(B)
3				- Percent of Dominant Species That		
4				- Are OBL FACW or FAC:	33.3	(A/B)
5				Prevalence Index worksheet:		
6				- Total % Cover of:	Multiply	Bv:
7				– OBL species 0	x 1 =	- 0
	0	= Total Cov	er	FACW species 15	x 2 =	30
Sapling/Shrub Stratum (Plot size: <u>15' r</u>)				FAC species 0	x 3 =	0
1. <i>Fraxinus pennsylvanica</i>	5	Yes	FACW	- FACU species 120	×4=	/80
2				- LIPI species 0	× 5 =	0
3				- Column Totals	(A) (A)	E10 (P)
4.					(A)	510 (B)
5.						
6.				Hydrophytic Vegetation Indicators:		
7.				- 1- Rapid Test for Hydrophytic	√egetation	
	5	= Total Cov	er	2 - Dominance Test is > 50%		
Herb Stratum (Plot size: 5' r)		_		$3 - Prevalence Index is \le 3.0^{1}$		
1. Poa pratensis	90	Yes	FACU	4 - Morphological Adaptations	¹ (Provide :	supporting
2. Cirsium arvense	30	Yes	FACU	- data in Remarks or on a separate si	ieet)	un la iur)
3. <i>Phalaris arundinacea</i>	10	No	FACW	 Problematic Hydrophytic Vege Indicators of budyic coil and wetland 	d budrolou	piain) Tromustika
4.				- Indicators of hydric soil and wellar	a nyarolog	gy must be
5.	·			Definitions of Vegetation Strata:	matic	
6.	·			Tree - Woody plants 3 in (7.6 cm) of	r more in (hismotor st
7.		· ·		breast height (DBH), regardless of h	neight.	
8	·			Sapling/shrub – Woody plants less t	:han 3 in. D)BH and
9				greater than or equal to 3.28 ft (1 m	ı) tall.	
10				 Herb – All herbaceous (non-woody) 	plants, reg	gardless of
11	·	<u> </u>		size, and woody plants less than 3.2	28 ft tall.	
12		·		- Woody vines – All woody vines grea	ter than 3.	28 ft in
12	130	- Total Cov	or	height.		
Woody Vine Stratum (Plot size: 20' r)	150		CI	Hydrophytic Vegetation Present?	Yes N	lo 🖌
1						
י. כ		·		-		
2		<u> </u>		-		
S				-		
4.		- Total Cau				
	0		er			
Remarks: (Include photo numbers here or on a separa	e sheet.)					
The criterion for hydrophytic vegetation is not met. Fal	ow field.					

SOIL

(inches)	Matrix		Redox	(Feat	ures		
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ² Textu	re Remarks
0 - 22	10YR 4/1	90	10YR 4/4	10	С	M Silt Lo	am
22 - 26	10YR 5/1	80	10YR 4/6	20	С	M Silt Lo	am
				·			
				·			
				·			
				·		·	
				·			
				·		·	
				·		·	
<u> </u>				· —			
 [vpe: C = Co	oncentration. D =	Depleti	ion. RM = Reduce	d Mat	rix. MS =	Masked Sand Grains.	² Location: PL = Pore Lining. M = Matrix.
vdric Soil Ir	ndicators:	1					Indicators for Problematic Hydric Soils ³ :
Histosol	(A1)		Polyvalue Br	elow S	urface (S	8) (LRR R, MLRA 149B)	
Histic Epi	ipedon (A2)		Thin Dark Si	urface	(S9) (LRR	R, MLRA 149B)	Coast Prairie Redoy (A16) (LPD K 1 P)
Black His	tic (A3)		Loamy Mucl	ky Mir	neral (F1)	(LRR K, L)	5 cm Mucky Peat or Peat (S3) (I RR K I D)
Hydrogei	n Sulfide (A4)		Loamy Gley	ed Ma	trix (F2)		Dark Surface (S7) (LRR K. L)
Stratified	l Layers (A5)		_✓ Depleted M	atrix (F3)		Polyvalue Below Surface (S8) (LRR K, L)
Depleted	Below Dark Surfa	ace (A1	1) Redox Dark	Surfa	ce (F6)		Thin Dark Surface (S9) (LRR K, L)
_ Thick Dai	rk Surface (A12)		Depleted Da	ark Su	rface (F7)		Iron-Manganese Masses (F12) (LRR K, L, R)
_ Sandy IVI	ucky Mineral (ST)		Redox Depr	essior	IS (F8)		Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy Gi	eyed Matrix (S4)						Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy Re	Matrix (SC)						Red Parent Material (F21)
Stripped	face (57) (LDD D		40D)				Very Shallow Dark Surface (TF12)
Dark Sur	Tace (57) (LKK K, N	ILKA 14	+9D)				Other (Explain in Remarks)
Indicators o	of hydrophytic veg	etatior	and wetland hyc	Irolog	y must be	e present, unless distu	rbed or problematic.
	ayer (if observed):	:					
estrictive La			None	_		Hydric Soil Present?	Yes 🟒 No
estrictive La	Гуре:						
estrictive La	Гуре: Depth (inches):		NA				
estrictive La	Гуре: Depth (inches):		NA			•	
estrictive La	Гуре: Depth (inches): n for hydric soil is	met.	NA				
estrictive La [emarks: ne criterior	Гуре: Depth (inches): n for hydric soil is	met.	NA				
estrictive La [emarks: ne criterior	Гуре: Depth (inches): n for hydric soil is	met.	NA				
estrictive La	Гуре: Depth (inches): n for hydric soil is	met.	NA				
estrictive La	Гуре: Depth (inches): n for hydric soil is	met.	NA				
estrictive La	Гуре: Depth (inches): n for hydric soil is	met.	NA				
estrictive La	Гуре: Depth (inches): n for hydric soil is	met.	NA				
estrictive La	Гуре: Depth (inches): n for hydric soil is	met.	NA				
estrictive La	Гуре: <u>Depth (inches):</u> n for hydric soil is	met.	NA				
estrictive La	Гуре: <u>Depth (inches):</u> n for hydric soil is	met.	NA				
estrictive La	Гуре: <u>Depth (inches):</u> n for hydric soil is	met.	NA				
estrictive La	Гуре: <u>Depth (inches):</u> n for hydric soil is	met.	NA				
emarks: he criterior	Гуре: <u>Depth (inches):</u> n for hydric soil is	met.	NA				
emarks: he criterior	Гуре: <u>Depth (inches):</u> n for hydric soil is	met.	NA				
Restrictive La remarks: The criterior	Гуре: <u>Depth (inches):</u> n for hydric soil is	met.	NA				
estrictive La	Гуре: <u>Depth (inches):</u> n for hydric soil is	met.	NA				

Photo of Sample Plot



Southwest

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Yahara Hills Golf Course City/County: Madisor			ty/County: Madison, D	n, Dane			Sampling Date: 2021-Nov-09	
Applicant/Owner: Dane County Waste & Renewables			S	State:	Wisconsin	<u> </u>	Sampling Point: S	P-02
Investigator(s): Ron Londre				Section,	, Township,	Range: 25	-T7N-R10E	
Landform (hillslope, terrace, etc.): Foot slope			L	ocal relie	f (concave,	convex, no	ne): Concave	Slope (%): 1-3
Subregion (LRR or MLRA): LRR K				Lat: 43.	04016	Long:	-89.24794	Datum: WGS84
Soil Map Unit Name:	Virgil silt loa	m, gravelly substra	atum, 0 to 3 percent slo	pes			WWI classifica	ation: None
Are climatic/hydrologi	c conditions o	n the site typical fo	r this time of year?	Y	es No	(If no,	explain in Remark	s.)
Are Vegetation, Are Vegetation,	Soil, Soil,	or Hydrology or Hydrology	_ significantly disturbee _ naturally problematic	1? ?	Are "Norma (If needed,	al Circumst explain any	ances" present? / answers in Rema	Yes 🟒 No rks.)

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

Hydrophytic Vegetation Present?	Yes 🟒 No								
Hydric Soil Present?	Yes 🟒 No	Is the Sampled Area within a Wetland?	Yes 🟒 No						
Wetland Hydrology Present?	Yes No	If yes, optional Wetland Site ID:	W-01						
Remarks: (Explain alternative procedures he	re or in a separate report)							
Based on the presence of all three paramete	Based on the presence of all three parameters, this area is a wetland. Wetland ID: W-01								

HYDROLOGY

Wetland Hydrology Indicators:				
Primary Indicators (minimum o	of one is requ	ired; check al	<u>l that apply)</u>	Secondary Indicators (minimum of two required)
 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 Sparsely Vegetated Concave 	Imagery (B7) e Surface (B8)	Wate Aqua Marl Hydro Oxidi Prese Recer Thin 1 Other	r-Stained Leaves (B9) tic Fauna (B13) Deposits (B15) ogen Sulfide Odor (C1) zed Rhizospheres on Living Roots (C3) ence of Reduced Iron (C4) nt Iron Reduction in Tilled Soils (C6) Muck Surface (C7) r (Explain in Remarks)	 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 🟒	Depth (inches):	_
Water Table Present?	Yes	_ No 🟒	Depth (inches):	Wetland Hydrology Present? Yes _ No
Saturation Present?	Yes	_ No 🟒	Depth (inches):	
(includes capillary fringe)				
Describe Recorded Data (strea	m gauge, mo	nitoring well,	aerial photos, previous inspections), if	available:

Topo maps, soils map, WWI map, aerial imagery

Remarks:

The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

VEGETATION -- Use scientific names of plants.

Sampling Point: SP-02

<u>Tree Stratum</u> (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species Tha	t 2	(A)
1.				Are OBL, FACW, or FAC:		
2.				Total Number of Dominant Specie Across All Strata:	s 2	(B)
4.				Percent of Dominant Species That	100	(A/B)
5						<u> </u>
6.					Maria de la compañía de com	D
7.						<u>ру.</u>
	0	= Total Cov	er	- OBL species 0	- x I	0
Sapling/Shrub Stratum (Plot size: 15' r)		-		FACW species 105	- ×2= -	210
1. Fraxinus pennsylvanica	5	Yes	FACW	FAC species 5	x 3 =	15
2				- FACU species 0	x 4 =	0
3	<u> </u>			- UPL species 0	x 5 =	0
J				- Column Totals 110	(A)	225 (B)
4.	<u> </u>			Prevalence Index = B/A	=	
5.				- Hydrophytic Vegetation Indicators	:	
6.		<u> </u>		- 1- Rapid Test for Hydrophyti	Vegetation	
7				- 2 - Dominance Test is >50%	U	
	5	= Total Cov	er	\checkmark 3 - Prevalence Index is \leq 3.0		
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)				4 - Morphological Adaptation	is ¹ (Provide	supporting
1. <i>Phalaris arundinacea</i>	100	Yes	FACW	- data in Remarks or on a separate	sheet)	subber m.8
2. Symphyotrichum lateriflorum	5	No	FAC	Problematic Hydrophytic Ve	etation ¹ (Ex	(plain)
3				Indicators of hydric soil and wetl	nd hydrolo	ev must be
4.				present, unless disturbed or prob	ematic	5)
5.				Definitions of Vegetation Strata:		
6.				Tree - Woody plants 3 in (7.6 cm)	or more in (diameter at
7.				breast height (DBH), regardless of	height.	
8.				Sapling/shrub – Woody plants less	than 3 in. D	OBH and
9				greater than or equal to 3.28 ft (1	m) tall.	
10				Herb – All herbaceous (non-wood	/) plants, reg	gardless of
11				size, and woody plants less than 3	.28 ft tall.	-
12				- Woody vines – All woody vines gre	ater than 3.	.28 ft in
12	105	- Total Cov	or	height.		
Weedy Vine Stratum (Plat size) 201 r)	105	_ 10tai C0v		Hydrophytic Vegetation Present?	Yes 🖌 N	10
<u>woody vine stratum</u> (Plot size. <u>30 1</u>)				, , , , , , , , , , , , , , , , , , , ,		
1	<u> </u>			-		
2.				-		
3		<u> </u>		-		
4		<u> </u>		-		
	0	= Total Cov	er			
Remarks: (Include photo numbers here or on a separate	sheet.)					
The criterion for hydrophytic vegetation is met. Fresh (w	et) Mead	ow plant co	mmunity.			
	-		2			

SOIL

(inches) Cr 0 - 15 15 - 24 	olor (moist) 10YR 4/2 10YR 4/1	% 95 80	Color (moist) 10YR 4/6 10YR 4/6	<u>%</u> 5 20	Type1 C C	Loc² Tex M Silt M Silt — —	tture Loam Loam	Remarks
0 - 15	10YR 4/2 10YR 4/1		10YR 4/6 10YR 4/6	5 20	С С	M Silt M Silt	Loam Loam	
15-24	10YR 4/1		10YR 4/6	20		M Silt	Loam	
				_				
Type: C = Conce	entration, D = D	Pepletio	on, RM = Reduced	d Mati	rix, MS =	Masked Sand Grain	s. ² Location:	PL = Pore Lining, M = Matrix.
ydric Soil Indica	ators:						Indicat	cors for Problematic Hydric Soils ³ :
Histosol (A1)	$lan(\Lambda 2)$		Polyvalue Be	elow S	urtace (S	8) (LRR R, MLRA 149	ЭВ) 2 с	m Muck (A10) (LRR K, L, MLRA 149B)
Histic Epiped	Ion (A2) A3)		Thin Dark Su	irface	(S9) (LRR	(R, MLRA 149B)	Co	ast Prairie Redox (A16) (LRR K, L, R)
Hydrogen Su	nlfide (A4)		Loamy Gleve	vd Ma	trix (F2)		5 c	m Mucky Peat or Peat (S3) (LRR K, L, R)
Stratified Lay	/ers (A5)		Depleted Ma	atrix (I	=3)		Da	rk Surface (S7) (LRR K, L)
Depleted Bel	ow Dark Surfa	ce (A11) Redox Dark	Surfa	ce (F6)		P0 Th	in Dark Surface (SQ) (LRR K, L)
Thick Dark Sι	urface (A12)		Depleted Da	rk Su	rface (F7)		III Iro	n-Manganese Masses (E12) (I RR K R)
Sandy Mucky	/ Mineral (S1)		Redox Depre	essior	is (F8)		NO Pie	dmont Floodplain Soils (F19) (MLRA 149B)
Sandy Gleyed	d Matrix (S4)						Me	esic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy Redox	(S5)						Re	d Parent Material (F21)
Stripped Mat	trix (S6)						Ve	ry Shallow Dark Surface (TF12)
Dark Surface	e (S7) (LRR R, M	LKA 14	9B)				Ot	her (Explain in Remarks)
Indicators of hy	drophytic vege	tation	and wetland hyd	rolog	y must be	e present, unless dis	sturbed or pro	blematic.
Restrictive Layer	(if observed):							
Туре	2:		None			Hydric Soil Presen	t?	Yes 🟒 No
Dept	th (inches):		NA					
Remarks: The criterion for	hydric soil is n	net.				1		

Photo of Sample Plot



Northeast
Project/Site: Yahara Hills Golf Course City/County: Madise				on, Dane Sampling Date:			2021-Nov-09	
Applicant/Owner: Dane County Waste & Renewables			State	: Wiscons	in	Sampling Point: S	P-03	
Investigator(s): Ron Londre			Section, Township, Range: 25-T7N-R10E					
Landform (hillslope, terrace, etc.): Back slope			Local relief (concave, convex, none): Convex Slope (%)			Slope (%): 3-6		
Subregion (LRR or MLRA): LRR K				Lat: 43	.03834	Long:	-89.24775	Datum: WGS84
Soil Map Unit Name:	Virgil silt loa	m, gravelly substra	atum, 0 to 3 percent s	lopes			WWI classifica	ation: None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)						s.)		
Are Vegetation, Are Vegetation,	Soil, Soil,	or Hydrology or Hydrology	_ significantly disturbo _ naturally problemat	ed? ic?	Are "Norr (If needeo	nal Circumst d, explain an	ances" present? / answers in Rema	Yes 🟒 No arks.)

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

Hydrophytic Vegetation Present?	Yes No 🟒							
Hydric Soil Present?	Yes No 🟒	Is the Sampled Area within a Wetland?	Yes No 🟒					
Wetland Hydrology Present?	Yes No 🟒	If yes, optional Wetland Site ID:						
Remarks: (Explain alternative procedures here or in a separate report)								
Based on the absence of all three parameters, this area is an upland.								

HYDROLOGY

Wetland Hydrology Indicators:				
Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	f one is required; check all Water Aquat Marl E Hydro Oxidiz	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)		
 Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Sparsely Vegetated Concave 	OAUZ Preser Recen Thin M Imagery (B7) Other : Surface (B8)	nce of Reduced Iron (C4) t Iron Reduction in Tilled Soils (C6) Auck Surface (C7) (Explain in Remarks)	 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 🟒	Depth (inches):	_	
Water Table Present?	Yes No 🟒	Depth (inches):	Wetland Hydrology Present? Yes No	
Saturation Present?	Yes No 🟒	Depth (inches):		
(includes capillary fringe)				
Describe Recorded Data (strear	n gauge, monitoring well, a	aerial photos, previous inspections),	f available:	
Topo maps, soils map, WWI ma	p, aerial imagery			

Remarks:

The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

Tree Stratum (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant	Indicator	Dominance Test workshee	t: ries That		
1 Fravinus poppeylyapica	15	Voc	EACW	Are OBL, FACW, or FAC:		1	(A)
2		103	TACW	Total Number of Dominan	t Species		(5)
2		·		Across All Strata:		3	(B)
		<u> </u>		Percent of Dominant Spec	ies That	22.2	(A/D)
4	·	<u> </u>		Are OBL, FACW, or FAC:			(A/B)
с	·	<u> </u>		Prevalence Index workshe	et:		
o		·		Total % Cover of:		Multiply	<u>By:</u>
7		Tabal Car		- OBL species	0	x 1 =	0
	15		er	FACW species	15	x 2 =	30
Sapling/Shrub Stratum (Plot size: <u>15' r</u>)				FAC species	0	x 3 =	0
1		·		- FACU species	90	x 4 =	360
2	. <u> </u>			UPL species	50	x 5 =	250
3				Column Totals	155	(A)	640 (B)
4				Prevalence Index	x = B/A =	4.1	
5					dicators		
6				1 Banid Test for Hud	rophytic V	logotation	
7				2 Dominance Test is		egetation	
	0	= Total Cov	er	2 - Dominance Test is	5 > 50%		
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)		_		5 - Prevalence index i	IS ≤ 3.0'	(Duessiele	
1. Poa pratensis	90	Yes	FACU	4 - Morphological Add	aplations'	(Provide	supporting
2. Securigera varia	50	Yes	UPL	Problematic Hydroph	parate si	tation1 (Ev	(niclor
3.				11ndicators of hydric soil ar	nd wotland		piani) numust bo
4.				nresent unless disturbed	or probler	u Hyuroloj matic	gy must be
5.	·			Definitions of Vegetation S	trata:	nacie	
6		·		Trop Woody plants 2 in (7 6 cm) or	moroin	diamotor at
7		<u> </u>		hreast height (DBH) regard	dless of h	≏ight	alameter at
8				Sanling/shrub - Woody pla	ants less th	han 3 in T)BH and
0		<u> </u>		greater than or equal to 3.	28 ft (1 m) tall.	birana
5		<u> </u>		Herb – All herbaceous (nor	n-woodv)	, sants, reg	ardless of
10				size, and woody plants less	s than 3.2	8 ft tall.	J
12		·		Woody vines – All woody v	ines great	er than 3.	28 ft in
12				height.	U		
	140	= lotal Cov	er	Hydrophytic Vegetation P	resent? \	/es N	lo ./
<u>Woody Vine Stratum</u> (Plot size: <u>30' r</u>)						C5 IV	<u> </u>
1				-			
2	. <u> </u>			-			
3				-			
4				-			
	0	= Total Cov	er				
Remarks: (Include photo numbers here or on a separa	te sheet.)						
The criterion for hydrophytic vegetation is not met. Fal	low field.						

Color 0 - 15 10Y 5 - 24 10Y	(moist) % R 3/2 100 R 4/3 100	Color (moist)	<u>%</u>	ype ¹	Loc ² Te Sil Silty (exture	Remarks
D-15 10Y 5-24 10Y	R 3/2 100 R 4/3 100				Sil Silty (t Loam	
5 - 24 10Y	R 4/3 100				Silty	Clay Loam	
pe: C = Concentra	tion, D = Deple	tion, RM = Reduced	Matrix,	MS = N	Masked Sand Grains.	² Location: PL = Pore Lining, N	/l = Matrix.
dric Soil Indicator	s:					Indicators for Problemat	ic Hydric Soils ³ :
Histosol (A1)		Polyvalue Bel	ow Surfa	ace (S8	3) (LRR R, MLRA 149B)	2 cm Muck (A10) (LRF	R K, L, MLRA 149B)
Histic Epipedon (A2)	Thin Dark Sur	face (S9) (LRR	R, MLRA 149B)	Coast Prairie Redox (A16) (LRR K, L, R)
Black Histic (A3)		Loamy Mucky	Minera	II (F1) (LRR K, L)	5 cm Mucky Peat or F	Peat (S3) (LRR K, L, R)
Hydrogen Sulfide	e (A4)	Loamy Gleyed	1 Matrix	(F2)		Dark Surface (S7) (LR	R K, L)
Depleted Below	Dark Surface (A	11) Redox Dark S	urface (F6)		Polyvalue Below Surf	ace (S8) (LRR K, L)
Thick Dark Surfa	ce (A12)	Depleted Dar	k Surfac	:e (F7)		Thin Dark Surface (S9	9) (LRR K, L)
Sandy Mucky Mi	neral (S1)	Redox Depres	ssions (F	-8)		Iron-Manganese Mas	ses (F12) (LRR K, L, R)
Sandy Gleyed M	atrix (S4)					Piedmont Floodplain	Soils (F19) (MLRA 149B)
Sandy Redox (S5)					Mesic Spodic (TA6) (N	1LKA 144A, 145, 149B)
Stripped Matrix	S6)						rZI) rface (TE12)
Dark Surface (S7) (LRR R, MLRA 1	49B)				Other (Explain in Ren	narks)
dicators of hydro	obytic vogotatio	n and wotland bydr	مامهرس	ust bo	procent uplace distur	hed or problematic	
strictive Laver (if (bserved).	IT and wettand hydr	ology III	ust be	present, unless distur		
Type	bserveu).	None			Hydric Soil Present?	Ves	No /
Denth (i		NA			nyune son resent:	105	
marke:	ichesj.	INA					
e criterion for hyc	ric soil is not m	et.					



Northwest

Project/Site: Yahara Hills Golf Course City/County: Madisc				n, Dane			Sampling Date: 2021-Nov-09	
Applicant/Owner: D	ane County W	aste & Renewable	S	State:	Wisconsi	n s	Sampling Point: SF	P-04
Investigator(s): Ron Londre			Section, Township, Range: 25-T7N-R10E					
Landform (hillslope, terrace, etc.): Foot slope			Local relie	f (concave	, convex, nor	ne): Concave	Slope (%): 1-3	
Subregion (LRR or MLRA): LRR K				Lat: 43.	0382	Long:	-89.2476	Datum: WGS84
Soil Map Unit Name:	Virgil silt loa	m, gravelly substra	atum, 0 to 3 percent s	slopes			WWI classifica	tion: None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)						5.)		
Are Vegetation, Are Vegetation,	Soil, Soil,	or Hydrology or Hydrology	_ significantly disturb _ naturally problema	ed? tic?	Are "Norm (If needed	nal Circumsta , explain any	ances" present? / answers in Remar	Yes 🟒 No ˈks.)

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

Hydrophytic Vegetation Present?	Yes 🟒 No							
Hydric Soil Present?	Yes 🟒 No	Is the Sampled Area within a Wetland?	Yes 🟒 No					
Wetland Hydrology Present?	Yes No	If yes, optional Wetland Site ID:	W-01					
Remarks: (Explain alternative procedures here or in a separate report)								
Based on the presence of all three parameters, this area is a wetland. Wetland ID: W-01								

HYDROLOGY

Wetland Hydrology Indicators:					
Primary Indicators (minimum	of one is required; check all	that apply)	Secondary Indicators (minimum of two required)		
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)		Stained Leaves (B9) c Fauna (B13) reposits (B15) gen Sulfide Odor (C1) ed Rhizospheres on Living Roots (C3) nce of Reduced Iron (C4) t Iron Reduction in Tilled Soils (C6) luck Surface (C7) (Explain in Remarks)	 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 🟒	Depth (inches):	_		
Water Table Present?	Yes No 🟒	Depth (inches):	Wetland Hydrology Present? Yes No		
Saturation Present?	Yes No 🟒	Depth (inches):			
(includes capillary fringe)					
Describe Recorded Data (strea	am gauge, monitoring well, a	erial photos, previous inspections), if	available:		
Topo maps, soils map, WWI m	ap, aerial imagery				

Remarks:

The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

<u>Tree Stratum</u> (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species Th	^{at} 1	(Δ)
1.				Are OBL, FACW, or FAC:	•	(~)
2.				Total Number of Dominant Speci	es 1	(B)
4.				Percent of Dominant Species Tha	t 100	(A/B)
5.				Are OBL, FACW, OF FAC.		
6.				Prevalence index worksneet:		_
7.				lotal % Cover of:	Multiply	<u>By:</u>
		= Total Cov	er	OBL species 0	x 1 =	0
Sapling/Shrub Stratum (Plot size: 15' r)				FACW species 103	x 2 =	206
	2	Nie		FAC species 0	x 3 =	0
	3	INO	FACW	- FACU species 0	x 4 =	0
2				UPL species 0	x 5 =	0
3				Column Totals 103	(A)	206 (B)
4				Prevalence Index = B/A		
5						
6.				Hydrophytic Vegetation Indicator	S:	
7.				1- Rapid Test for Hydrophyt	c Vegetatior	ו
	3	= Total Cov	er	2 - Dominance Test is >50%		
Herb Stratum (Plot size: 5'r)		-		\checkmark 3 - Prevalence Index is \leq 3.0	1	
1 Bhalaris arundinasea	100	Voc		4 - Morphological Adaptatic	ns¹ (Provide	supporting
	100	165	FACI	- data in Remarks or on a separate	sheet)	
2				Problematic Hydrophytic Ve	getation ¹ (Ex	xplain)
3				¹ Indicators of hydric soil and wet	and hydrolo	gy must be
4				present, unless disturbed or prol	lematic	
5				Definitions of Vegetation Strata:		
6.				Tree – Woody plants 3 in. (7.6 cm	or more in	diameter at
7.				breast height (DBH), regardless o	f height.	
8.				Sapling/shrub – Woody plants les	s than 3 in. I	DBH and
9				greater than or equal to 3.28 ft (1	m) tall.	
10				Herb – All herbaceous (non-wood	v) plants, re	gardless of
10		<u> </u>		size, and woody plants less than	3.28 ft tall.	Baraicos er
11				Woody vines - All woody vines gr	eater than 3	28 ft in
12				height		.2010111
	100	= Total Cov	/er			
<u>Woody Vine Stratum</u> (Plot size: <u>30' r</u>)				Hydrophytic Vegetation Present	Yes 🟒 N	NO
··				-		
2.		<u> </u>		-		
3				-		
4				-		
	0	= Total Cov	rer			
Remarks: (Include photo numbers here or on a sepa The criterion for hydrophytic vegetation is met. Fres	arate sheet.) ih (wet) Mead	ow plant co	mmunity.	_		

nches)	Color (moist) 10YR 2/2 10YR 4/2 10YR 5/1	% 100 75 80	Color (moist) 10YR 4/6 10YR 5/6	% 25 20	Type ¹ C C	Loc ² M M	Textu Silt Lo Silty Clay	pam Remarks
0 - 3 3 - 15 15 - 24 	10YR 2/2 10YR 4/2 10YR 5/1	100 75 80	10YR 4/6 10YR 5/6	25 20	C C	<u>M</u> M	Silt Lo Silty Clay	Dam
3 - 15 15 - 24 	10YR 4/2 10YR 5/1	75 80	10YR 4/6 10YR 5/6	25 20	C C	<u>M</u>	Silty Clay	/ Loam
15 - 24	10YR 5/1	80	10YR 5/6	20	С	М		
/pe: C = Cc							Clay L	oam
/pe: C = Cc								
		·						
/pe: C = Cc								
/pe: C = Cc		·						
/pe: C = Cc								
/pe: C = Cc		. <u> </u>						
ype: C = Cc		·						
ype: C = Cc		·						
ype: C = Co		·						
uluia Cail Iu	oncentration. D =	 Depletic	on. RM = Reduced	d Matr	ix. MS =	Masked S	and Grains. 21 o	ocation: PI = Pore Lining, M = Matrix
aric Soii in	ndicators:	- spice						Indicators for Problematic Hydric Soils ³
Histosol ((A1)		Polyvalue Be	low S	urface (S	8) (LRR R.	MLRA 149B)	
_ Histic Epi	ipedon (A2)		Thin Dark Su	irface	(S9) (LRR	R, MLRA	149B)	2 CHI MUCK (ATU) (LKK K, L, MLKA 149B)
_ Black His	tic (A3)		Loamy Muck	y Min	eral (F1)	(LRR K, L)	-	5 cm Mucky Peat or Peat (S3) (I RR K I P)
_ Hydroger	n Sulfide (A4)		Loamy Gleye	ed Mat	trix (F2)			Dark Surface (S7) (I RR K 1)
_ Stratified	l Layers (A5)		_✓ Depleted Ma	atrix (F	3)			Polyvalue Below Surface (S8) (LRR K, L)
_ Depleted	Below Dark Surf	ace (A11) Redox Dark !	Surfac	:e (F6)			Thin Dark Surface (S9) (LRR K, L)
_ Thick Dar	rk Surface (A12)		Depleted Da	rk Sur	Tace (F7)			Iron-Manganese Masses (F12) (LRR K, L, R)
	ucky Mineral (ST)		Redox Depre	ession	S (F8)			Piedmont Floodplain Soils (F19) (MLRA 149B)
_ Sandy Gi	eyed Matrix (S4)							Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
_ Sanuy Re	Matrix (SG)							Red Parent Material (F21)
Dark Sur	faco (S7) (I DD D N		0B)					Very Shallow Dark Surface (TF12)
_ Durk Suri			56)					Other (Explain in Remarks)
dicators o	of hydrophytic veg	getation	and wetland hyd	rology	/ must be	e present,	unless disturbe	d or problematic.
strictive La	ayer (if observed)	:						
Т	уре:		None	-		Hydric S	oil Present?	Yes 🟒 No
D	Depth (inches):		NA					
e criterion	n for hydric soil is	met.						



Northeast

Project/Site: Yahara Hills Golf Course City/County: Madisc				on, Dane Sampling Date:			2021-Nov-09	
Applicant/Owner: D	ane County W	aste & Renewables	S	State:	Wisconsi	n	Sampling Point: S	P-05
Investigator(s): Ron Londre				Section, Township, Range: 25-T7N-R10E				
Landform (hillslope, terrace, etc.): Back slope			Lo	ocal relie	f (concave,	convex, no	ne): Convex	Slope (%): 6-9
Subregion (LRR or MLRA): LRR K				Lat: 43.	03653	Long:	-89.24872	Datum: WGS84
Soil Map Unit Name:	Virgil silt loa	m, gravelly substra	tum, 0 to 3 percent slo	pes			WWI classifica	ation: None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)						s.)		
Are Vegetation, Are Vegetation,	Soil, Soil,	or Hydrology or Hydrology	significantly disturbed naturally problematic	1? ?	Are "Norm (If needed	nal Circumst , explain an <u>y</u>	ances" present? / answers in Rema	Yes 🟒 No rks.)

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

Hydrophytic Vegetation Present?	Yes No 🟒							
Hydric Soil Present?	Yes No 🟒	Is the Sampled Area within a Wetland?	Yes No 🟒					
Wetland Hydrology Present?	Yes No 🟒	If yes, optional Wetland Site ID:						
Remarks: (Explain alternative procedures here or in a separate report)								
Based on the absence of all three parameters, this area is an upland.								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	f one is required; check all Water Aquat Marl E Hydro Oxidiz	<u>that apply)</u> -Stained Leaves (B9) ic Fauna (B13) Deposits (B15) gen Sulfide Odor (C1) ed Rhizospheres on Living Roots (C3	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)
 Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Sparsely Vegetated Concave 	OAUZ Preser Recen Thin M Imagery (B7) Other : Surface (B8)	nce of Reduced Iron (C4) t Iron Reduction in Tilled Soils (C6) Auck Surface (C7) (Explain in Remarks)	 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 🟒	Depth (inches):	_
Water Table Present?	Yes No 🟒	Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present?	Yes No 🟒	Depth (inches):	
(includes capillary fringe)			
Describe Recorded Data (strear	n gauge, monitoring well, a	aerial photos, previous inspections),	f available:
Topo maps, soils map, WWI ma	p, aerial imagery		

Remarks:

The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

<u>Tree Stratum</u> (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That		
1. <i>Tilia americana</i>	5	Yes	FACU	Are OBL, FACW, or FAC:	2	(A)
2.				Total Number of Dominant Species	5	(P)
3.				Across All Strata:		(0)
4.				Percent of Dominant Species That	40	(A/B)
5.				Are OBL, FACW, or FAC:		
6.				Prevalence Index worksheet:		
7.				- <u>Total % Cover of:</u>	Multiply	<u>By:</u>
	5	= Total Cov	er	OBL species 0	x 1 =	0
Sapling/Shrub Stratum (Plot size: 15' r)		_		FACW species 50	x 2 = _	100
1. Fraxinus pennsylvanica	30	Yes	FACW	FAC species 5	x 3 = _	15
2. Lonicera tatarica	10	Yes	FACU	FACU species 95	× 4 = _	380
3. Cornus racemosa	5	No	FAC	UPL species 0	x 5 = _	0
4.				Column Totals 150	(A) _	495 (B)
5.				Prevalence Index = B/A =	3.3	
6.				Hydrophytic Vegetation Indicators:		
7.				1- Rapid Test for Hydrophytic \	/egetation	ı
	45	= Total Cov	er	2 - Dominance Test is > 50%		
Herb Stratum (Plot size: 5' r)		-		3 - Prevalence Index is $\leq 3.0^{1}$		
1. Solidago altissima	40	Yes	FACU	4 - Morphological Adaptations	¹ (Provide	supporting
2. Phalaris arundinacea	20	Yes	FACW	- data in Remarks or on a separate sh	ieet)	
3. Alliaria petiolata	15	No	FACU	Problematic Hydrophytic Vege	tation' (Ex	(plain)
4. Symphyotrichum pilosum	10	No	FACU	Indicators of hydric soil and wetlan	a nyaroloj matic	gy must be
5. Nepeta cataria	5	No	FACU	Definitions of Vegetation Strata:	matic	
6. Rubus alumnus	5	No	FACU	Tree - Woody plants 3 in (7.6 cm) of	r more in	diameter at
7. Arctium minus	5	No	FACU	breast height (DBH), regardless of h	eight.	diameter at
8				Sapling/shrub – Woody plants less t	han 3 in. [OBH and
9.				greater than or equal to 3.28 ft (1 m) tall.	
10				Herb – All herbaceous (non-woody)	plants, re	gardless of
11.				size, and woody plants less than 3.2	8 ft tall.	
12				Woody vines – All woody vines grea	ter than 3	.28 ft in
	100	= Total Cov	er	height.		
Woody Vine Stratum (Plot size: 30' r)		-		Hydrophytic Vegetation Present?	Yes N	No 🔽
1.						
2				-		
3				-		
۵				-		
	0	= Total Cov	er	-		
		-	-			
Remarks: (Include photo numbers here or on a se	parate sheet.)	dominated	plant com-	nunity		
The chilehon for hydrophylic vegetation is not me	i. opiano snrub	uominated	plant comh	nunnty.		

(inches) Color (mails) 0 - 13 10YR 2/ 13 - 24 10YR 4/ 14 - 10 10YR 4/ 14 - 10 10YR 4/ 15 - 10 10YR 4/ 16 - 10 10YR 4/ 17 - 10 10YR 4/ 18 - 10 10YR 4/ 17 - 10 10YR 4/ 18 - 10 10YR 4/ 17 - 10 10YR 4/ 18 - 10 10YR 4/ 10 - 10	Dist) <u>%</u> /2 <u>100</u> /4 <u>98</u> _	Color (moist) 10YR 4/4	<u>%</u> <u>1</u> 	ype1 C	Loc² Te	xture Remarks
0 - 13 10YR 2/ 13 - 24 10YR 4/ 10YR	/2 100 /4 98 	10YR 4/4	2	C	Silty C M Clay	ilay Loam y Loam
13 - 24 10YR 4, 10YR 4, 10YR 4, 10Yge: C = Concentration 10YR 4, Histosol (A1) 10YR 4, Histosol (A1) 10YR 4, Histosol (A1) 10YR 4, Black Histic (A3) Hydrogen Sulfide (A:	14 98 98 98 98 98 98 98 98 98 98 98 98 98 9	10YR 4/4	2	C	M Clay	y Loam
Type: C = Concentratio Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A	n, D = Depletio	n, RM = Reduced				
Type: C = Concentratio Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A	n, D = Depletio	n, RM = Reduced				
Type: C = Concentratio Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A		n, RM = Reduced				
Type: C = Concentratio Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A	n, D = Depletio	n, RM = Reduced				
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lydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A	· .			MS =	Masked Sand Grains.	² Location: PL = Pore Lining, M = Matrix.
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A						Indicators for Problematic Hydric Soils ³ :
Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A		Polyvalue Bel	ow Sur	face (S	8) (LRR R, MLRA 149B)	2 cm Muck (A10) (I RR K I MI RA 149R)
Black Histic (A3) Hydrogen Sulfide (A		Thin Dark Sur	face (S	9) (LRR	R, MLRA 149B)	Coast Prairie Redox (A16) (I RR K. I. R)
Hydrogen Sulfide (A		Loamy Mucky	/ Miner	al (F1)	(LRR K, L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
	4)	Loamy Gleyed	d Matrix	< (F2)		Dark Surface (S7) (LRR K, L)
Stratified Layers (A5)	Depleted Mat	rix (F3)			Polyvalue Below Surface (S8) (LRR K, L)
_ Depleted Below Dar Thick Dark Surface (K SURTACE (ATT) 412)	Redox Dark S Doploted Dar	urtace k Surfa	(F6) co (E7)		Thin Dark Surface (S9) (LRR K, L)
Sandy Mucky Miner	ATZ) al (S1)	Depieted Dan	k Sulla	E8)		Iron-Manganese Masses (F12) (LRR K, L, R)
Sandy Gleved Matrix	x (SA)		3310113 (10)		Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy Redox (S5)	(34)					Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Stripped Matrix (S6)						Red Parent Material (F21)
Dark Surface (S7) (I)B)				Very Shallow Dark Surface (TF12)
Duint Duintace (07) (,				Other (Explain in Remarks)
Indicators of hydrophy	tic vegetation a	and wetland hydro	ology n	nust be	e present, unless disturk	ped or problematic.
Restrictive Layer (if obse	erved):					
Туре:		None			Hydric Soil Present?	Yes No
Depth (inch	es):	NA				
emarks: he criterion for hydric	soil is not met.					



Southeast

Project/Site: Yahara Hills G	Golf Course	City/County: Madison, Dane		Sampling Date: 20	21-Nov-09
Applicant/Owner: Dane	County Waste & Renewal	bles St	ate: Wisconsin	Sampling Point: SP-0	6
Investigator(s): Ron Long	dre	Sec	tion, Township, Range:	25-T7N-R10E	
Landform (hillslope, terrace	e, etc.): Toe slope	Local ı	elief (concave, convex,	none): Concave	Slope (%): 1-3
Subregion (LRR or MLRA):	LRR K	Lat:	43.03662 Long	g: -89.24878	Datum: WGS84
Soil Map Unit Name: Vir	rgil silt loam, gravelly subs	stratum, 0 to 3 percent slopes		WWI classification	n: None
Are climatic/hydrologic cor	nditions on the site typica	l for this time of year?	Yes No 🟒 (If r	o, explain in Remarks.)	
Are Vegetation, Soil Are Vegetation, Soil	l, or Hydrology l, or Hydrology	significantly disturbed? naturally problematic?	Are "Normal Circun (If needed, explain a	nstances" present? any answers in Remarks	Yes 🟒 No)

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

Hydrophytic Vegetation Present?	Yes 🟒 No										
Hydric Soil Present?	Yes 🖌 No	Is the Sampled Area within a Wetland?	Yes 🯒 No								
Wetland Hydrology Present?	Yes 🟒 No	If yes, optional Wetland Site ID:	W-01								
Remarks: (Explain alternative procedures here or in a separate report)											
Based on the presence of all three parameters, this area is a wetland. Wetland ID: W-01											

HYDROLOGY

Wetland Hydrology Indicators:					
Primary Indicators (minimum of	one is required; check all t	<u>:hat apply)</u>	Secondary Indicators (minimum of two required)		
 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 I Sparsely Vegetated Concave 	r (A1) Water-Stained Leaves (B9) able (A2) Aquatic Fauna (B13) 3) Marl Deposits (B15) (B1) Hydrogen Sulfide Odor (C1) posits (B2) Oxidized Rhizospheres on Living Root s (B3) Presence of Reduced Iron (C4) Crust (B4) Recent Iron Reduction in Tilled Soils (Given Science) s (B5) Thin Muck Surface (C7) isible on Aerial Imagery (B7) Other (Explain in Remarks)		 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 🟒	Depth (inches):	_		
Water Table Present?	Yes No 🟒	Depth (inches):	Wetland Hydrology Present? Yes No		
Saturation Present?	Yes No 🟒	Depth (inches):			
(includes capillary fringe)					
Describe Recorded Data (stream	n gauge, monitoring well, a	erial photos, previous inspections), if	available:		

Topo maps, soils map, WWI map, aerial imagery

Remarks:

The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

<u>Tree Stratum</u> (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species	Гhat	1	(A)
1				Total Number of Dominant Sp Across All Strata:	ecies	1	(B)
3 4				Percent of Dominant Species That1			(A/B)
5				 Prevalence Index worksheet: 			
o				- <u>Total % Cover of:</u>	<u>Mu</u>	ultiply I	<u>By:</u>
7		- Total Cau		OBL species 10	x 1	1 =	10
	0		er	FACW species 100	x 2	2 =	200
Sapling/Shrub Stratum (Plot size: <u>15' r</u>)				FAC species 0	хЭ	3 =	0
1				- FACU species 0	x 4	4 =	0
2				UPL species 0	x 5	5 =	0
3				- Column Totals 110	(/	A) —	210 (B)
4				Prevalence Index = E	A = 1	, <u> </u>	
5					ore:		
6				- 1 Papid Test for Hydroph	utic Vogo	tation	
7				2 Dominance Test is >50	1911C VEBE	ation	
	0	= Total Cov	er	2 - Dominance Test is >50	2 01		
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)				3 - Frevalence index is ≤	5.0" tional (Dr.	ovido d	upporting
1. Phalaris arundinacea	100	Yes	FACW	4 - Morphological Adapta	uons' (Pri	ovide s	supporting
2. Typha X glauca	10	No	OBL	Problematic Hydrophytic	Vogotatic) nn1 (Evi	olain)
3.				1 Indicators of hydric soil and w	otland by		piairi)
4.				present, unless disturbed or problematic			
5.				Definitions of Vegetation Strat	··		
6				Tree Woody plants 3 in (7.6	m) or mo	oro in d	liamotor at
7				Iree – woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height			
8				Dreast neight (DBH), regardless of neight.			
9				greater than or equal to 3.28 f	: (1 m) tall	l.	birana
10				- Herb – All herbaceous (non-wo	odv) plan	nts. reg	ardless of
11				size, and woody plants less that	in 3.28 ft	tall.	
12				Woody vines – All woody vines	greater t	han 3.	28 ft in
12		Tabal Car		height.	-		
	110	= 10tai Cov	er	Hydrophytic Vegetation Prese	nt? Yes	ΖN	0
Woody Vine Stratum (Plot size: <u></u>)						<u> </u>	
1				-			
2				-			
3				-			
4				-			
	0	= Total Cov	er				
Remarks: (Include photo numbers here or on a separate The criterion for hydrophytic vegetation is met. Fresh (w	e sheet.) vet) Meado	ow plant co	mmunity.	_			

Color (moist) % 10YR 2/2 10 10YR 4/2 71 10YR 4/1 81 10YR 4/1 91 10YY 4/1 91 10YY	Kolor (moist) 200 201 202 203 204 205 205 206 207 208 209 209 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200 200	% 30 20 20 20 20 20 30 20 30 20 30 20 30 20 30 20 30 20 30 20 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30 30	Type ¹ C C C 	Loc ² M M M M M M M M M M M M M	Texture Loam Clay Loam Clay Loam Grains. ² Loc RA 149B) B)	Remarks
10YR 2/2 1C 10YR 4/2 71 10YR 4/1 81 10YR 4/1 91 10YR 4/1 91 10YR 4/1 91 10Y 91	200 200 200 200 200 200 200 200	30 20 20 20 20 20 20 20 20 20 20 20 20 20	C C C 	M M M M M Masked Sanc 8) (LRR R, ML R, MLRA 149 (LRR K, L)	Loam Clay Loam Clay Loam Grains. ² Loc RA 149B) B)	ation: PL = Pore Lining, M = Matrix. 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) Dark Surface (S7) (LRR K, L)
10YR 4/2 7/ 10YR 4/1 8/ 10YR 4/1 8/ 	10 7.5YR 4/6 10YR 5/6 10YR 5/6 1	30 20 20 20 20 20 20 20 20 20 20 20 20 20	C C C C C C C C C C C C C C C C C C C	M M M M Masked Sanc 8) (LRR R, ML R, MLRA 149 (LRR K, L)	Clay Loam Clay Loam Grains. ² Loc RA 149B) B)	ation: PL = Pore Lining, M = Matrix. 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) Dark Surface (S7) (LRR K, L)
10YR 4/1 8 10YR 4/1 9 10Y 9 <td>0 10YR 5/6</td> <td>20 20 20 20 20 20 20 20 20 20 20 20 20 2</td> <td>C </td> <td>M</td> <td>Clay Loam Grains. ²Loc RA 149B) B)</td> <td>ation: PL = Pore Lining, M = Matrix. Indicators for Problematic Hydric Soils³: 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)</td>	0 10YR 5/6	20 20 20 20 20 20 20 20 20 20 20 20 20 2	C 	M	Clay Loam Grains. ² Loc RA 149B) B)	ation: PL = Pore Lining, M = Matrix. 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) Dark Surface (S7) (LRR K, L)
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(A3) (A3) Sulfide (A4) ayers (A5) elow Dark Surface (Surface (A12) (y Mineral (S1) ed Matrix (S4) (x (S5)	Polyvalue Be Thin Dark Su Loamy Mucky Loamy Gleye Depleted Ma (A11) Redox Dark S Depleted Dar Redox Depre	elow Su urface y Mine ed Mat atrix (F Surfac rk Surf	urface (S (S9) (LRR eral (F1) (trix (F2) :3) :e (F6)	8) (LRR R, ML R, MLRA 149 (LRR K, L)	RA 149B) B)	 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)
(A2) (A3) Sulfide (A4) Ayers (A5) elow Dark Surface (Surface (A12) (y Mineral (S1) ed Matrix (S4) (x (S5)	Thin Dark Su Loamy Muck Loamy Gleye Depleted Ma (A11) Redox Dark S Depleted Dar Redox Depre	urface cy Mine ed Mat atrix (F Surfac rk Surf	(S9) (LRR eral (F1) trix (F2) 	R, MLRA 149 (LRR K, L)	B)	 2 cm Muck (ATO) (LRK N, L, MILKA 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)
(A3) Sulfide (A4) ayers (A5) elow Dark Surface (Surface (A12) sy Mineral (S1) ed Matrix (S4) ax (S5)	Loamy Muck Loamy Gleye Depleted Ma (A11) Redox Dark S Depleted Dar Redox Depre	ky Mine ed Mat atrix (F Surfac rk Surf	eral (F1) trix (F2) 3) te (F6)	(LRR K, L)		5 cm Mucky Peat or Peat (S3) (LRR K, L, R) Dark Surface (S7) (LRR K, L)
sulfide (A4) ayers (A5) elow Dark Surface (Surface (A12) ky Mineral (S1) ed Matrix (S4) xx (S5)	Loamy Gleye Depleted Ma (A11) Redox Dark S Depleted Dar Redox Depre	ed Mat atrix (F Surfac rk Sur	trix (F2) ⁻ 3) :e (F6)			Dark Surface (S7) (LRR K, L)
ayers (A5) elow Dark Surface (Surface (A12) ky Mineral (S1) ed Matrix (S4) ix (S5)	Depleted Ma (A11) Redox Dark S Depleted Dar Redox Depre	atrix (F Surfac rk Sur	[:] 3) :e (F6)			
elow Dark Surface (Surface (A12) ‹y Mineral (S1) ed Matrix (S4) ›x (S5)	(A11) Redox Dark S Depleted Dar Redox Depre	Surfac rk Sur	:e (F6)			Polyvalue Below Surface (S8) (LRR K, L)
surface (ATZ) ky Mineral (S1) ed Matrix (S4) xx (S5)	Redox Depre	rk Sur	6			Thin Dark Surface (S9) (LRR K, L)
ed Matrix (S4) xx (S5)	Redox Depre	200100	Tace (F7)			Iron-Manganese Masses (F12) (LRR K, L, R)
eu Matrix (54))x (S5)		essions	S (F8)			Piedmont Floodplain Soils (F19) (MLRA 149B)
12 (22)						Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
atrix (S6)						Red Parent Material (F21)
-e (S7) (I RR R MI R#	∆ 149B)					Very Shallow Dark Surface (TF12)
	(11)0)					Other (Explain in Remarks)
ydrophytic vegetat	ion and wetland hydr	rology	/ must be	e present, un	ess disturbed	or problematic.
er (if observed):						
e:	None	_		Hydric Soil I	resent?	Yes 🟒 No
oth (inches):	NA					
r hydric soil is met.						
	r (if observed): :: th (inches): r hydric soil is met	r (if observed): :: <u>None</u> th (inches): NA r hydric soil is met.	r (if observed): :: <u>None</u> th (inches): NA r hydric soil is met.	r (if observed): e: <u>None</u> th (inches): NA	r (if observed): e: <u>None</u> Hydric Soil F th (inches): NA	r (if observed): e: <u>None</u> Hydric Soil Present? th (inches): NA



West

Project/Site: Yahara H	ills Golf Cours	e Cit	ty/County: Madison	, Dane			Sampling Date:	2021-Nov-09
Applicant/Owner: D	ane County W	aste & Renewables	S	Stat	e: Wisconsin		Sampling Point: S	SP-07
Investigator(s): Ron Londre					n, Township,	Range: 25	-T7N-R10E	
Landform (hillslope, terrace, etc.): Toe slope, ditch					ief (concave, d	convex, no	ne): Concave	Slope (%): 3-6
Subregion (LRR or MLF	RA): LRR	К		Lat:4	3.04259	Long:	-89.2566	Datum: WGS84
Soil Map Unit Name:	Wacousta si	lty clay loam, 0 to 2	2 percent slopes				WWI classific	ation: None
Are climatic/hydrologic	c conditions o	n the site typical fo	r this time of year?		Yes No	🟒 (lf no,	explain in Remark	<s.)< td=""></s.)<>
Are Vegetation, Are Vegetation,	Soil, Soil,	or Hydrology or Hydrology	_ significantly disturb _ naturally problema	oed? itic?	Are "Norma (If needed,	al Circumst explain an <u>y</u>	ances" present? / answers in Rema	Yes 🟒 No arks.)

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

Hydrophytic Vegetation Present?	Yes No 🟒								
Hydric Soil Present?	Yes 🟒 No	Is the Sampled Area within a Wetland?	Yes No 🟒						
Wetland Hydrology Present?	Yes No 🟒	If yes, optional Wetland Site ID:							
Remarks: (Explain alternative procedures here or in a separate report)									
Based on the absence of two of three parameters, this area is an upland.									

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	f one is required; check all Water Aquat Marl E Hydro Oxidiz	<u>that apply)</u> -Stained Leaves (B9) ic Fauna (B13) Deposits (B15) gen Sulfide Odor (C1) ed Rhizospheres on Living Roots (C3	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)
 Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Sparsely Vegetated Concave 	OAUZ Preser Recen Thin M Imagery (B7) Other : Surface (B8)	nce of Reduced Iron (C4) t Iron Reduction in Tilled Soils (C6) Auck Surface (C7) (Explain in Remarks)	 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 🟒	Depth (inches):	_
Water Table Present?	Yes No 🟒	Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present?	Yes No 🟒	Depth (inches):	
(includes capillary fringe)			
Describe Recorded Data (strear	n gauge, monitoring well, a	aerial photos, previous inspections),	f available:
Topo maps, soils map, WWI ma	p, aerial imagery		

Remarks:

The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

<u>Tree Stratum</u> (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksh Number of Dominant S	n eet: pecies That	1	(4)
1. Fraxinus pennsylvanica	50	Yes	FACW	Are OBL, FACW, or FAC:			(A)
2				Total Number of Domir Across All Strata:	ant Species	4	(B)
3 4				Percent of Dominant Sp	oecies That	25	(A/B)
5.				ATE OBL, FACVV, OF FAC.			
6.				Tatal % Cause	afe	N 4 141	D. a
7.				OPL spacies	01:	<u>Multiply</u>	ву:
	50	= Total Cove	er		50	x I -	0
Sapling/Shrub Stratum (Plot size: 15' r)		-		FACW species	50	x 2 =	100
1. Lonicera tatarica	40	Yes	FACU	FAC species	0	x 3 =	0
2 Sambucus racemosa	5		FACU	FACU species	165	x 4 =	660
3			17.00	UPL species	0	x 5 =	0
				Column Totals	215	(A)	760 (B)
4				Prevalence In	dex = B/A =	3.5	
5.				Hydrophytic Vegetation	Indicators:		
6				1- Rapid Test for H	lydrophytic V	egetation	r
7				2 - Dominance Tes	5 = 50%	-8	
	45	= Total Cove	er	3 - Prevalence Ind	$ex is < 3.0^{1}$		
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)				9 • Morphological	Adaptations1	(Provide	supporting
1. <i>Glechoma hederacea</i>	80	Yes	FACU	data in Remarks or on a	a senarate sh	(FTOVICE eet)	supporting
2. Poa pratensis	25	Yes	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)			
3. Solidago altissima	10	No	FACU	Indicators of hydric soil and wetland hydrology must be			
4. Symphyotrichum pilosum	5	No	FACU	nresent unless disturb	ed or probler	natic	gy must be
5.				Definitions of Vegetatio	n Strata	nacie	
6				Tree Woody plants 3 i	n (7.6 cm) or	moro in	diamotor at
7		<u> </u>		hreast height (DBH) reg	ardless of h	nore in ≏iσht	ulameter at
°				Sanling/shrub - Woody	nlants loss ti	han 3 in	DBH and
o		·		greater than or equal to	3 28 ft (1 m) tall	DDITAIL
9	·	<u> </u>		Herb - All herbaceous (non-woody)	nlants re	gardless of
10				size and woody plants	less than 3.2	8 ft tall	gar diess of
11				Woody vines - All wood	ly vines great	or than 3	28 ft in
12				height	ly villes great		.201111
	120	= Total Cove	er				
<u>Woody Vine Stratum</u> (Plot size: <u>30' r</u>)				Hydrophytic Vegetation	n Present?	es l	No _
1							
2.							
3.							
4.							
	0	= Total Cove	er	•			
	<u> </u>	-					
Remarks: (Include photo numbers here or on a separate	e sheet.)						
The criterion for hydrophytic vegetation is not met. Upla	and wood	land.					

Depth	Matrix		Redox	Fea	tures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 - 11	10YR 2/1	100					Clay Loar	m
11 - 24	10YR 5/2	98	10YR 5/6	2	С	М	Clay	
<u> </u>								
				-				
<u> </u>								
		Develoption		N. 4 = 4	-	Maaliad	Canal Craina 21	esetien: DL - Deve Lining M - Metric
ype: C = C	oncentration, D =	Depletic	n, kivi = Keaučea	wat	11X, IVIS =	wasked	Sanu Grains. ² L	Location. PL = Pore Lining, M = Matrix.
yarıc Soil I	ndicators:		Debastis		·	· 0) // PP ·		indicators for Problematic Hydric Solls ³ :
Histosol	(AI)		Polyvalue Bel	ow S	ourrace (S	oo)(LKK I	K, MILKA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Black Hi	stic (A3)			i ace 7 Mir	(29) (LKF Deral (E1)	(IRP 17 1	4 149D) 1	Coast Prairie Redox (A16) (LRR K, L, R)
Hydroge	n Sulfide (A4)		Loamy Gleve	d Ma	trix (F2)		-)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
Stratifie	d Lavers (A5)		Depleted Mat	trix (F3)			Dark Surface (S7) (LRR K, L)
✓ Deplete	d Below Dark Surf	ace (A11) Redox Dark S	urfa	ce (F6)			Polyvalue Below Surface (S8) (LRR K, L)
Thick Da	ark Surface (A12)		Depleted Dar	k Su	rface (F7))		Thin Dark Surface (S9) (LRR K, L)
Sandy N	lucky Mineral (S1)		Redox Depre	ssior	ns (F8)			Iron-Manganese Masses (F12) (LRR K, L, R)
Sandy G	ileyed Matrix (S4)							Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy R	edox (S5)							Mesic Spoalc (1A6) (MLRA 144A, 145, 149B)
Stripped	d Matrix (S6)							Red Parent Material (F21)
Dark Su	rface (S7) (LRR R, N	MLRA 14	9B)					Very Shallow Dark Surface (TFT2)
Indicators	of hydrophytic veg	getation	and wetland hydr	olog	y must b	e presen	it, unless disturbe	ed or problematic.
Restrictive L	ayer (if observed)	:						
	Туре:		None			Hydric	Soil Present?	Yes 🟒 No
	Depth (inches):		NA					
Remarks: The criterio	n for hydric soil is	met.						



Southeast

Project/Site: Yahara Hi	e City	//County: Madison, [on, Dane Sampling			Sampling Date:	2021-Nov-09	
Applicant/Owner: Da	ane County W	aste & Renewables		State: Wisconsin Sampling Point: SP-08				P-08
Investigator(s): Amai	nda Larsen			Section,	Township, Rai	nge: 25-	T7N-R10E	
Landform (hillslope, ter	rrace, etc.):	Swale	L	ocal relief	(concave, con	ivex, nor	ne): Flat	Slope (%): 0-1
Subregion (LRR or MLR	A): LRR	<		Lat: 43.0	4264	Long:	-89.25693	Datum: WGS84
Soil Map Unit Name:	Wacousta sil	ty clay loam, 0 to 2	percent slopes				WWI classifica	ation: None
Are climatic/hydrologic	conditions or	n the site typical for	this time of year?	Ye	s No 🟒	' (lf no, e	explain in Remark	s.)
Are Vegetation, Are Vegetation,	Soil, Soil,	or Hydrology s or Hydrology i	significantly disturbe naturally problematic	d? A c? (re "Normal C f needed, exp	ircumsta plain any	ances" present? answers in Rema	Yes 🟒 No rks.)

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

Hydrophytic Vegetation Present?	Yes 🟒 No		
Hydric Soil Present?	Yes 🟒 No	Is the Sampled Area within a Wetland?	Yes 🯒 No
Wetland Hydrology Present?	Yes 🟒 No	If yes, optional Wetland Site ID:	W-3
Remarks: (Explain alternative procedures he	re or in a separate report)	
Based on the presence of all three parameter	ers, this area is a wetland.	Wetland ID: W-3	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of	one is required; check all t	hat apply)	Secondary Indicators (minimum of two required)
 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 I Sparsely Vegetated Concave 	Water- Aquati Marl D Hydrog Oxidize Presen Recent Thin M magery (B7) Other (Surface (B8)	Stained Leaves (B9) c Fauna (B13) eposits (B15) gen Sulfide Odor (C1) ed Rhizospheres on Living Roots (C3) ice of Reduced Iron (C4) I ron Reduction in Tilled Soils (C6) uck Surface (C7) (Explain in Remarks)	 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 🟒	Depth (inches):	
Water Table Present?	Yes No 🟒	Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present?	Yes No 🟒	Depth (inches):	
(includes capillary fringe)			
Describe Recorded Data (stream	n gauge, monitoring well, a	erial photos, previous inspections), if	available:

Topo maps, soils map, WWI map, aerial imagery

Remarks:

The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

<u>Tree Stratum</u> (Plot size: <u>30' r</u>)	Absolute	Dominant	Indicator	Dominance Test worksheet:		
1 Acoustication	10	Species		Are OBL_FACW or FAC	4	(A)
	10	res	FAC	Total Number of Dominant Species		
2.				Across All Strata:	4	(B)
3				Percent of Dominant Species That	400	
4				Are OBL, FACW, or FAC:	100	(A/B)
5.				Prevalence Index worksheet:		
6.				Total % Cover of:	Multiply I	<u>By:</u>
7				OBL species 0	x 1 =	0
	10	= lotal Cove	er	FACW species 100	x 2 =	200
Sapling/Shrub Stratum (Plot size: <u>15' r</u>)				FAC species 30	x 3 =	90
1. <u>Acer negundo</u>	5	Yes	FAC	FACU species 0	x 4 =	0
2. <u>Rhamnus cathartica</u>	5	Yes	FAC	UPL species 0	x 5 =	0
3				Column Totals 130	(A)	290 (B)
4				Prevalence Index = B/A =	2.2	
5						
6				1 Danid Test for Ludrophytic	logatation	
7				1- Rapid Test for Hydrophytic V	regetation	
	10	= Total Cove	er	2 - Dominance Test is >50%		
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)		-		3 - Prevalence index is $\leq 3.0^{\circ}$	1 (Duessiele e	
1. Phalaris arundinacea	100	Yes	FACW	4 - Morphological Adaptations	' (Provide s	supporting
2. Solanum dulcamara	10	No	FAC	Broblematic Hydrophytic Vege	tation1 (Evi	olain)
3.				1 Indicators of bydric soil and wetlan		v must bo
4.				present unless disturbed or proble	u nyurolog matic	sy must be
5.				Definitions of Vegetation Strata:	matic	
б. 				Tree Woody plants 3 in (7.6 cm) of	r moro in d	liamotor at
7				breast height (DBH) regardless of h	eight	
8				Sapling/shrub – Woody plants less t	han 3 in. D	BH and
9				greater than or equal to 3.28 ft (1 m) tall.	
10				Herb – All herbaceous (non-woody)	plants, reg	ardless of
11				size, and woody plants less than 3.2	8 ft tall.	
12		<u> </u>		Woody vines – All woody vines great	ter than 3.	28 ft in
12	110	- Tatal Cau		height.		
	110		er	Hydrophytic Vegetation Present?	res 🖌 N	0
<u>woody vine Stratum (Piot size:)</u>					· · · · ·	
1				-		
2				-		
3				-		
4						
	0	= Total Cove	er			
Remarks: (Include photo numbers here or on a separate	e sheet.)					
The criterion for hydrophytic vegetation is met. Fresh (w	et) Mead	ow plant cor	nmunity.			
			-			

Color (moist) % 0 - 10 10YR 3/1 80 10 - 15 10YR 2/1 85 15 - 24 10YR 5/1 60 15 - 24 5G 6/1 40	Color (moist) 10YR 5/8 10YR 5/8 00, RM = Reduced	% 20 15	Type1 C C 	Loc ² Loc ² Texture M Clay Loa M Loam Clay Clay Output Clay Masked Sand Grains. 2	e Remarks
0 - 10 10YR 3/1 80 10 - 15 10YR 2/1 85 15 - 24 10YR 5/1 60 15 - 24 5G 6/1 40 	10YR 5/8 10YR 5/8 0, RM = Reduced 	20 15 	C C	M Clay Loam M Loam Clay Clay Masked Sand Grains. 2	Am Mixed
10 - 15 10YR 2/1 85 15 - 24 10YR 5/1 60 15 - 24 5G 6/1 40 16 - 20	10YR 5/8	15 	C	M Loam Clay	Location: PL = Pore Lining, M = Matrix.
15 - 24 10YR 5/1 60 15 - 24 5G 6/1 40 16 - 24 5G 6/1 40 17 - 24 5G 6/1 40 10 - 24	on, RM = Reduced Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye	d Matri elow Su	 ix, MS =	Clay	Location: PL = Pore Lining, M = Matrix.
15 - 24 5G 6/1 40 16 - 20	on, RM = Reduced Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye	d Matri Below Su	ix, MS = 1	Masked Sand Grains. 2	Location: PL = Pore Lining, M = Matrix.
Type: C = Concentration, D = Depleti sydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A1	on, RM = Reduced Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye	d Matri elow Su	ix, MS =	Masked Sand Grains. 2	Location: PL = Pore Lining, M = Matrix.
Type: C = Concentration, D = Depleti ydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A1	on, RM = Reduced Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye	d Matri elow Su	ix, MS = l	Masked Sand Grains. 2	Location: PL = Pore Lining, M = Matrix.
Type: C = Concentration, D = Depleti Jydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A1	on, RM = Reduced Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye	d Matri elow Su	ix, MS = l	Masked Sand Grains. 2	Location: PL = Pore Lining, M = Matrix.
Type: C = Concentration, D = Depleti lydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A1	on, RM = Reduced Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye	d Matri elow Su	ix, MS = 1	Masked Sand Grains. ²	Location: PL = Pore Lining, M = Matrix.
Type: C = Concentration, D = Depleti ydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A1	on, RM = Reduced Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye	d Matri d Matri	ix, MS = I	Masked Sand Grains. ²	Location: PL = Pore Lining, M = Matrix.
Type: C = Concentration, D = Depleti Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A1)	on, RM = Reduced Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye	d Matri elow Su	ix, MS = urface (Si	Masked Sand Grains. 2	Location: PL = Pore Lining, M = Matrix.
Type: C = Concentration, D = Depleti lydric Soil Indicators: _ Histosol (A1) _ Histic Epipedon (A2) _ Black Histic (A3) _ Hydrogen Sulfide (A4) _ Stratified Layers (A5) _ Depleted Below Dark Surface (A1	on, RM = Reduced Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye	d Matri elow Su	ix, MS = l	Masked Sand Grains. 2	Location: PL = Pore Lining, M = Matrix.
Type: C = Concentration, D = Depleti Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A1	on, RM = Reduced Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye	d Matri elow Su	ix, MS = l	Masked Sand Grains. ²	Location: PL = Pore Lining, M = Matrix.
Type: C = Concentration, D = Depleti Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A1	on, RM = Reduced Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye	d Matri elow Su	ix, MS = l	Masked Sand Grains. ²	Location: PL = Pore Lining, M = Matrix.
ydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11)	Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye	elow Su urface (urface (S		
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11	Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye	elow Su urface (urface (S		Indicators for problematic Hydric Solica
Histosof (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11	Thin Dark Su Loamy Muck Loamy Gleye	urface	unace (S		
Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11	Loamy Muck	anace	(59) /I PP		2 cm Muck (A10) (LRR K, L, MLRA 149B)
Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11	Loamy Gleye	v Mine	eral (F1)	(LRR K. L)	Coast Prairie Redox (A16) (LRR K, L, R)
Stratified Layers (A5) Depleted Below Dark Surface (A1		ed Mat	rix (F2)	(5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
Depleted Below Dark Surface (A1	Depleted Ma	atrix (F	3)		Dark Surface (S7) (LKK K, L)
	1) Redox Dark	Surfac	e (F6)		This Dark Surface (SQ) (LRK K, L)
🖌 Thick Dark Surface (A12)	Depleted Da	rk Sur	face (F7)		Iron-Manganese Masses (E12) (I RR K R)
Sandy Mucky Mineral (S1)	Redox Depre	essions	s (F8)		Piedmont Floodplain Soils (F19) (MI RA 1498)
Sandy Gleyed Matrix (S4)					Mesic Spodic (TA6) (MI RA 144A, 145, 149B)
Sandy Redox (S5)					Red Parent Material (F21)
Stripped Matrix (S6)					Very Shallow Dark Surface (TF12)
Dark Surface (S7) (LRR R, MLRA 1 4	19B)				Other (Explain in Remarks)
Indicators of hydrophytic vegetation	and wetland hyd	rology	must he	nresent unless disturb	ed or problematic
estrictive Laver (if observed):		nonogy	masebe		
Type.	None			Hydric Soil Present?	Ves / No
Donth (inches):	NA			riyune son resent.	
Deptil (inches).	NA				



East

Project/Site: Yahara Hills Golf Course	City/County: Madison, Dane		Sampling Date: 202	21-Nov-09	
Applicant/Owner: Dane County Waste & Renewa	bles St	State: Wisconsin Sampling Point: SP-09			
Investigator(s): Ron Londre, Amanda Larsen	Sect	ion, Township, Range: 2	5-T7N-R10E		
Landform (hillslope, terrace, etc.): Toe slope, ditch	Local r	elief (concave, convex, no	one): Concave	Slope (%): 1-3	
Subregion (LRR or MLRA): LRR K	Lat:	43.04254 Long:	-89.25643	Datum: WGS84	
Soil Map Unit Name: Wacousta silty clay loam, 0	to 2 percent slopes		WWI classification	n: None	
Are climatic/hydrologic conditions on the site typica	l for this time of year?	Yes No 🟒 (If no	explain in Remarks.)		
Are Vegetation, Soil, or Hydrology _ Are Vegetation, Soil, or Hydrology _	significantly disturbed? naturally problematic?	Are "Normal Circums (If needed, explain ar	tances" present? ly answers in Remarks.	Yes _ 🖌 No .)	

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

Hydrophytic Vegetation Present?	Yes 🟒 No		
Hydric Soil Present?	Yes 🟒 No	Is the Sampled Area within a Wetland?	Yes 🟒 No
Wetland Hydrology Present?	Yes 🟒 No	If yes, optional Wetland Site ID:	W-02
Remarks: (Explain alternative procedures he	re or in a separate report)	
Based on the presence of all three parameter	ers, this area is a wetland.	Wetland ID: W-02	

HYDROLOGY

Wetland Hydrology Indicators:				
Primary Indicators (minimum c	of one is requi	ired; check al	<u>l that apply)</u>	Secondary Indicators (minimum of two required)
 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 Sparsely Vegetated Concave 	l Imagery (B7) e Surface (B8)	Wate Aqua Marl Hydro Prese Recer Thin Other	r-Stained Leaves (B9) tic Fauna (B13) Deposits (B15) ogen Sulfide Odor (C1) zed Rhizospheres on Living Roots (C3) ence of Reduced Iron (C4) nt Iron Reduction in Tilled Soils (C6) Muck Surface (C7) r (Explain in Remarks)	 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 🟒	Depth (inches):	
Water Table Present?	Yes	_ No 🟒	Depth (inches):	Wetland Hydrology Present? Yes _ No
Saturation Present?	Yes	_ No 🟒	Depth (inches):	
(includes capillary fringe)				
Describe Recorded Data (strea	m gauge, mo	nitoring well,	aerial photos, previous inspections), if	available:

Topo maps, soils map, WWI map, aerial imagery

Remarks:

The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

<u>Tree Stratum</u> (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksh	eet: pecies That	_	
1 Fravinus pennsylvanica	40	Ves	FACW	Are OBL, FACW, or FAC:		4	(A)
2		105	incii	Total Number of Domin	ant Species		(D)
3	·			Across All Strata:		4	(B)
	·	·		Percent of Dominant Sp	ecies That	100	(A/D)
ч	·	<u> </u>		Are OBL, FACW, or FAC:			(A/ D)
5				Prevalence Index works	heet:		
0	·			Total % Cover of	of:	<u>Multiply</u>	<u>By:</u>
7		- Tatal Cau		OBL species	40	x 1 =	40
	40		er	FACW species	110	x 2 =	220
Sapling/Shrub Stratum (Plot size:15' r)				FAC species	15	x 3 =	45
I	·			FACU species	5	x 4 =	20
2.		·		UPL species	0	x 5 =	0
3.	·			Column Totals	170	(A)	325 (B)
4				Prevalence In	dex = B/A =	1.9	
5				Hydrophytic Vegetation	Indicators:		
6	·			1- Rapid Test for H	vdrophytic V	egetatior	1
7	·			✓ 2 - Dominance Tes	t is >50%	U	
	0	= Total Cov	er	✓ 3 - Prevalence Inde	ex is $\leq 3.0^1$		
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)				4 - Morphological	Adaptations	(Provide	supporting
1. <i>Phalaris arundinacea</i>	70	Yes	FACW	data in Remarks or on a	separate sh	leet)	0
2. Carex lacustris	40	Yes	OBL	Problematic Hydro	ophytic Vege	tation ¹ (Ex	(plain)
3. Cirsium arvense	5	No	FACU	¹ Indicators of hydric soil	l and wetlan	d hydrolo	gy must be
4				present, unless disturbe	ed or problei	matic	
5	·			Definitions of Vegetation	n Strata:		
6				Tree – Woody plants 3 ir	า. (7.6 cm) oเ	r more in	diameter at
7				breast height (DBH), reg	ardless of h	eight.	
8.				Sapling/shrub - Woody	plants less t	han 3 in. I	OBH and
9.				greater than or equal to	9 3.28 ft (1 m) tall.	
10.				Herb – All herbaceous (r	non-woody)	plants, re	gardless of
11.				size, and woody plants l	ess than 3.2	8 ft tall.	
12.	·			Woody vines – All wood	y vines great	ter than 3	.28 ft in
	115	= Total Cov	er	height.			
Woody Vine Stratum (Plot size: 30' r)		-		Hydrophytic Vegetation	Present?	/es 🟒 N	lo
1. Vitis riparia	15	Yes	FAC				
2							
3	·	·					
4	·						
¬т	15	= Total Cov	ar				
	15	- 10tai COV		<u>]</u>			
Remarks: (Include photo numbers here or on a separa The criterion for hydrophytic vegetation is met. Floodp	t e sheet.) lain Forest	plant comm	iunity.				

Profile Des	cription: (Describe	to the	depth needed to o	docun	nent the i	indicator	or confirm the a	bsence of indicators.)
Depth	Matrix		Redox	(Feat	ures		- .	
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Туре	LOC ²	lexture	Remarks
0 - 9	10YR 3/1	90	10YR 5/8	10		M	Loam	
9 - 12	10YR 2/1	95	10YR 5/8	5	C	M	Clay Loar	m
12 - 24	10YR 4/1	90	10YR 6/6	10	C	М	Clay	
				·				
				·				
				·				
1Type: C = C	Concontration D -		ion BM - Boduco	d Mat	riv MC -	Maskod	Sand Crains 2	ocation: DL - Doro Lining M - Matrix
Ludric Coll		Depiet		u Widl	117, 1412 =	wasked		
			Dobastico D		urface (C	·0) /I PP 7		mulcators for Problematic Hydric Solis ² :
HISTOSO	(AI)		Polyvalue Be	elow S	(SO)		(, IVILKA 1498)	2 cm Muck (A10) (LRR K, L, MLRA 149B)
HISUC E	Sipedon (AZ)				(59) (LKF	(R, MLK)	а 149В) \	Coast Prairie Redox (A16) (LRR K, L, R)
	n Sulfide (A/)			d Ma	triv (E2)		.)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
Tiyurugo Stratifie	d Lavers (A5)		Loany Gleye	atrix (F3)			Dark Surface (S7) (LRR K, L)
✓ Deplete	d Below Dark Surfa	ace (A1	1) ✓ Redox Dark	Surfa	ce (F6)			Polyvalue Below Surface (S8) (LRR K, L)
Thick Da	ark Surface (A12)		Depleted Da	ark Su	rface (F7))		Thin Dark Surface (S9) (LRR K, L)
 Sandy N	lucky Mineral (S1)		Redox Depr	essior	ns (F8)			Iron-Manganese Masses (F12) (LRR K, L, R)
Sandy (Gleved Matrix (S4)							Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy F	Redox (S5)							Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Strinne	d Matrix (S6)							Red Parent Material (F21)
Dark Su	urface (S7) (I RR R M		49R)					Very Shallow Dark Surface (TF12)
Durk 50			150)					Other (Explain in Remarks)
³ Indicators	of hydrophytic veg	etatior	n and wetland hyd	Irolog	y must b	e presen	t, unless disturbe	ed or problematic.
Restrictive	Layer (if observed):							
	Туре:		None			Hydric	Soil Present?	Yes 🟒 No
	Depth (inches):		NA					
Remarks:								
The criteric	n for hydric soil is	met.						
	, , , , , , , , , , , , , , , , , , ,							
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1								



East

Project/Site: Yahara Hil	<u> </u>	City/County: Madison,	Dane			Sampling Date:	2021-Nov-09	
Applicant/Owner: Da	ine County Wa	aste & Renewable	es	State:	Wisconsir	<u> </u>	Sampling Point: S	P-10
Investigator(s): Aman	ida Larsen, Ar	nanda Larsen		Section,	Township,	Range: 25	-T7N-R10E	
Landform (hillslope, teri	race, etc.): S	ihoulder slope		Local relie	f (concave,	convex, no	ne): Convex	Slope (%): 3-6
Subregion (LRR or MLRA): LRR K					04112	Long:	-89.25109	Datum: WGS84
Soil Map Unit Name:	Virgil silt loar	n, gravelly substr	ratum, 0 to 3 percent s	slopes			WWI classific	ation: None
Are climatic/hydrologic	conditions on	the site typical f	or this time of year?	Y	es No	(If no,	explain in Remark	(S.)
Are Vegetation, S	Soil, Soil,	or Hydrology or Hydrology	significantly disturb naturally problema	ed? tic?	Are "Norma (If needed,	al Circumst explain any	ances" present? / answers in Rema	Yes 🟒 No arks.)

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

Hydrophytic Vegetation Present?	Yes _ 🖌 _ No		
Hydric Soil Present?	Yes No _	Is the Sampled Area within a Wetland?	Yes No 🟒
Wetland Hydrology Present?	Yes No 🟒	lf yes, optional Wetland Site ID:	
Remarks: (Explain alternative procedures he	re or in a separate report)		
Based on the absence of the wetland hydro	logy and hydric soil param	eters, this area is an upland.	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of o	one is required; check all t	that apply)	Secondary Indicators (minimum of two required)
 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 In Sparsely Vegetated Concave S 	Water- Aquati Marl D Hydrog Oxidizi Preser Recent Thin M nagery (B7) Other urface (B8)	Stained Leaves (B9) c Fauna (B13) reposits (B15) gen Sulfide Odor (C1) ed Rhizospheres on Living Roots (C3) nce of Reduced Iron (C4) t Iron Reduction in Tilled Soils (C6) luck Surface (C7) (Explain in Remarks)	 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 🟒	Depth (inches):	
Water Table Present?	Yes No 🟒	Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present?	Yes No 🟒	Depth (inches):	
(includes capillary fringe)			
Describe Recorded Data (stream	gauge, monitoring well, a	erial photos, previous inspections), if a	available:
Topo maps, soils map, WWI map,	aerial imagery		

Remarks:

The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

<u>Tree Stratum</u> (Plot size: <u>30' r</u>)	Absolute	Dominant	Indicator	Dominance Test workshe	et:		
1 Accessories	% Cover	Species?	Status	Are OBL_EACW_or_EAC	ecles That	6	(A)
1. Acer negunao		Yes .	FAC	Total Number of Domina	nt Species		
2. Quercus bicolor	5	Yes	FACW	Across All Strata:	in openeo	7	(B)
3.		<u> </u>		Percent of Dominant Spe	cies That	05.7	(1 (2)
4		·		Are OBL, FACW, or FAC:		85.7	(A/B)
5.		<u> </u>		Prevalence Index worksh	eet:		
b		·		Total % Cover of	<u>:</u>	<u>Multiply</u>	<u>By:</u>
7				OBL species	0	x 1 =	0
	25	= lotal Cov	er	FACW species	5	x 2 =	10
Sapling/Shrub Stratum (Plot size: <u>15' r</u>)			FACIL	FAC species	45	x 3 =	135
1. Lonicera tatarica	20	Yes	FACU	FACU species	20	x 4 =	80
2. <u>Acer negundo</u>	5	Yes	FAC	UPL species	0	x 5 =	0
3		·		Column Totals	70	(A)	225 (B)
4				Prevalence Inde	ex = B/A =	3.2	
5		·		Hydronbytic Vegetation I	ndicators:		
6				1- Rapid Test for Hv	dronhytic V	egetation	
7				1- Rapid Test for Hy	is >50%	egetation	I
	25	= Total Cov	er	3 - Prevalence Index	$is < 3.0^{10}$		
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)				J - Morphological A	dantations1	(Provide	supporting
1. <i>Rhamnus cathartica</i>	10	Yes	FAC	data in Remarks or on a s	senarate sh	(FTOVICE	Supporting
2. <i>Solanum dulcamara</i>	5	Yes	FAC	Problematic Hydror	phytic Vege	tation ¹ (Ex	(plain)
3. <i>Geum canadense</i>	5	Yes	FAC	¹ Indicators of hydric soil a	and wetland	d hydrolo	ev must be
4.				present, unless disturbed	d or probler	natic	5) 111051 50
5.				Definitions of Vegetation	Strata:		
6.				Tree – Woody plants 3 in.	(7.6 cm) or	· more in a	diameter at
7.		·		breast height (DBH), rega	rdless of h	eight.	
8.				Sapling/shrub - Woody p	lants less tl	han 3 in. E	OBH and
9.				greater than or equal to 3	3.28 ft (1 m) tall.	
10		·		Herb – All herbaceous (no	on-woody)	plants, reg	gardless of
11		·		size, and woody plants le	ss than 3.2	8 ft tall.	
12				Woody vines - All woody	vines great	er than 3.	.28 ft in
12	20	- Total Cov	or	height.			
Weady Vine Stratum (Plat size, 201 r.)	20	- 10tai COV		Hydrophytic Vegetation	Present?	res 🖌 N	10
1							
2.		·					
3		<u> </u>					
4							
	0	= lotal Cov	er				
Remarks: (Include photo numbers here or on a separate The criterion for hydrophytic vegetation is met. Upland	e sheet.) woodland	l.					

olor (moist) 10YR 3/2 2.5Y 4/3	<u>%</u>		i cai	ures			
10YR 3/2 2.5Y 4/3	100	Color (moist)	%	Type ¹	Loc ² Tex	ure	Remarks
2.5Y 4/3	100				Lo	m	
	95	10YR 6/6	5	С	M Lo	m	
			·				
				<u> </u>			
			· —		·		
	<u> </u>						
ntration, D = D	Depletio	n, RM = Reduced	Mat	rix, MS =	Masked Sand Grair	s. ² Location: PL = Pore L	ining, M = Matrix.
ators:						Indicators for Pro	olematic Hydric Soils ³ :
		Polyvalue Bel	low S	urface (S	8) (LRR R, MLRA 14	B) 2 cm Muck (A1	
on (A2)		Thin Dark Su	rface	(S9) (LRR	R, MLRA 149B)	Coast Prairie F	(1430)
43)		Loamy Mucky	y Mir	eral (F1)	(LRR K, L)	5 cm Muchy P	at or Peat (S3) (I DD K I D)
lfide (A4)		Loamy Gleye	d Ma	trix (F2)		5 cm Mucky F	$(1 \text{ PP } \mathbf{K} 1)$
ers (A5)		Depleted Mat	trix (l	-3)		Polyvalue Belo	w Surface (S8) (LRR K 1)
ow Dark Surfac	ce (A11)) Redox Dark S	urfa	ce (F6)		T biyvalde Beld	
urface (A12)		Depleted Dar	'k Su	rface (F7)			ace (35) (EKK K, E)
[,] Mineral (S1)		Redox Depre	ssior	ns (F8)			delain Soils (E10) (MI DA 140B)
d Matrix (S4)						Fledmont Flot	
(S5)						Mesic Spould (1A0) (MILKA 144A, 143, 149B)
rix (S6)							alerial (FZT)
(S7) (LRR R, MI	LRA 149	9B)				Very Sitaliow L	in Romarks)
							in Kennarks)
	etation a	and wetland hydr	olog	y must be	e present, unless di	turbed or problematic.	
drophytic vege							
drophytic vege (if observed):		None			Hydric Soil Presen	? Yes No)
drophytic vege (if observed): :		NA					
<u>drophytic vege</u> (if observed): : h (inches):							
dropl (if ot : h (inc	ches): ic soil is r	ic soil is not met.	ic soil is not met.	ic soil is not met.			



West

Project/Site: Yahara H	ills Golf Cours	e Ci	ity/County: Madison,	Dane			Sampling Date:	2021-Nov-09
Applicant/Owner: D	ane County W	aste & Renewable	25	State:	Wisconsir	<u>n </u>	Sampling Point: S	P-11
Investigator(s): Ron	Londre			Section,	Township,	Range: 25	-T7N-R10E	
Landform (hillslope, te	rrace, etc.):	Toe slope		Local relief	f (concave,	convex, no	ne): Concave	Slope (%): 1-3
Subregion (LRR or MLF	RA): LRR	К		Lat: 43.	04102	Long:	-89.25106	Datum: WGS84
Soil Map Unit Name:	Virgil silt loa	m, gravelly substra	atum, 0 to 3 percent s	lopes			WWI classifica	ation: None
Are climatic/hydrologic	c conditions o	n the site typical fo	or this time of year?	Y	es No	o 🟒 (lf no,	explain in Remark	s.)
Are Vegetation, Are Vegetation,	Soil, Soil,	or Hydrology or Hydrology	_ significantly disturbo _ naturally problemat	ed? ic?	Are "Norm (If needed,	al Circumst explain any	ances" present? / answers in Rema	Yes 🟒 No arks.)

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

Hydrophytic Vegetation Present?	Yes 🟒 No		
Hydric Soil Present?	Yes 🟒 No	Is the Sampled Area within a Wetland?	Yes 🯒 No
Wetland Hydrology Present?	Yes 🟒 No	lf yes, optional Wetland Site ID:	W-01
Remarks: (Explain alternative procedures he	re or in a separate report)	
Based on the presence of all three parameter	ers, this area is a wetland.	Wetland ID: W-01	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of on	e is required; check all t	<u>:hat apply)</u>	Secondary Indicators (minimum of two required)
 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 Ima Sparsely Vegetated Concave Sur 	Water- Aquati Marl D Hydrog Oxidize Presen Recent Thin M agery (B7) Other (rface (B8)	Stained Leaves (B9) c Fauna (B13) eposits (B15) gen Sulfide Odor (C1) ed Rhizospheres on Living Roots (C3) ice of Reduced Iron (C4) : Iron Reduction in Tilled Soils (C6) luck Surface (C7) (Explain in Remarks)	 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 🟒	Depth (inches):	
Water Table Present?	Yes No 🟒	Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present?	Yes No 🟒	Depth (inches):	
(includes capillary fringe)			
Describe Recorded Data (stream ga	auge, monitoring well, a	erial photos, previous inspections), if a	available:

Topo maps, soils map, WWI map, aerial imagery

Remarks:

The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

<u>Tree Stratum</u> (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant	Indicator	Dominance Test worksheet:		
1 Quarcus bisolar	50	Voc		Are OBL, FACW, or FAC:	2	(A)
1. Quercus bicolor	<u>50</u>	No	FACT	Total Number of Dominant Species		
2. Acel negulido		NU	FAC	Across All Strata:	2	(B)
3		·		Percent of Dominant Species That	100	
4		<u> </u>		Are OBL, FACW, or FAC:	100	(A/ B)
6		<u> </u>		 Prevalence Index worksheet: 		
7				- <u>Total % Cover of:</u>	Multiply E	<u>By:</u>
/		- Total Cov	or	- OBL species 0	x 1 =	0
Sanling/Shrub Stratum (Blot size: 15'r)		- 10tai COV	CI	FACW species 50	x 2 =	100
<u>Saping/Shrub Stratum</u> (Flot Size, <u>151</u>)	5	Voc	EAC	FAC species 10	x 3 =	30
		163	FAC	- FACU species 0	x 4 =	0
2.		·		- UPL species 0	x 5 =	0
3		<u> </u>		- Column Totals 60	(A)	130 (B)
4		<u> </u>		Prevalence Index = B/A =	2.2	
5				Hydrophytic Vegetation Indicators:		
o		·		1- Rapid Test for Hydrophytic \	/egetation	
7		- Tatal Cau		2 - Dominance Test is >50%		
	5	= lotal Cov	er	\checkmark 3 - Prevalence Index is ≤ 3.0 ¹		
Herb Stratum (Plot size: <u>5' r</u>)				4 - Morphological Adaptations	¹ (Provide s	supporting
1		<u> </u>		- data in Remarks or on a separate sh	neet)	
2.		·		– Problematic Hydrophytic Vege	tation¹ (Exp	plain)
3		·		Indicators of hydric soil and wetlan	d hydrolog	y must be
4				_ present, unless disturbed or proble	matic	
5				_ Definitions of Vegetation Strata:		
6		<u> </u>		Tree – Woody plants 3 in. (7.6 cm) or	r more in d	liameter at
7				breast height (DBH), regardless of h	eight.	
8				Sapling/shrub – Woody plants less t	han 3 in. D	BH and
9				greater than or equal to 3.28 ft (1 m) tall.	
10				Herb – All herbaceous (non-woody)	plants, reg	ardless of
11					o IL Lall.	00 ft in
12				- height	ter than 5.2	201111
	0	= Total Cov	er			
<u>Woody Vine Stratum</u> (Plot size: <u>30' r</u>)				Hydrophytic Vegetation Present?	Yes 🟒 N	0
1				_		
2				_		
3				_		
4						
	0	= Total Cov	er			
Remarks: (Include photo numbers here or on a senar	to sheet)					
The criterion for hydrophytic vegetation is met Floodr	lain Forest	nlant comm	nunity			
	ann ruiest		ianity.			

Color (moist) % Color (moist) % Type! Loc? Texture Remarks 0 - 13 10YR 4/1 90 7.5YR 4/6 10 C M Silty Clay Loam 13 - 24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 13 - 24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 13 - 24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 13 - 24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 14 10 0 C M Silty Clay Loam Interval 1000000000000000000000000000000000000	ks ks s ³ : 49B) , R) K, L, R) K, L) R K, L, R) 4LRA 149B 45, 149B)
0.13 10YR 4/1 90 7.5YR 4/6 10 C M Silty Clay Loam 13.24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 13.24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 13.24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 13.24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 13.24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 13.24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 13.24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 14 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 <td< th=""><th>s³: 49B) ,, R) K, L, R) K, L) R K, L, R) ALRA 149B 45, 149B)</th></td<>	s ³ : 49B) ,, R) K, L, R) K, L) R K, L, R) ALRA 149B 45, 149B)
13 - 24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 3 - 24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 3 - 24 10YR 5/1 90 10YR 5/6 10 C M Silty Clay Loam 90 10YR 5/6 10 C M Silty Clay Loam 90 10YR 5/1 90 10YR 5/6 10 C M 90 10YR 5/6 10 C M Silty Clay Loam 90 10YR 5/6 10 C M Silty Clay Loam 90 10YR 5/6 10 C M Silty Clay Loam 90 10YR 5/6 10 C M Silty Clay Loam 90 10/14 10/14 M Silty Clay Loam Matrix. 90/15 10/14 Polyvalue Below Surface (S9) (LRR R, MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, R) 91 11/15 2 cm Muck (A10) (LRR K, L, R) S cm Mucky Peat or Peat (S3) (LRR K, L) 91 11/16 2 cm Muck (A10) (LRK K, L, R) <t< td=""><td>s³: 49B) ,, R) : K, L, R) K, L) R K, L, R) ALRA 149B 45, 149B)</td></t<>	s ³ : 49B) ,, R) : K, L, R) K, L) R K, L, R) ALRA 149B 45, 149B)
ype: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. ² Location: PL = Pore Lining, M = Matrix. ydric Soil Indicators: Indicators for Problematic Hydric Soils*: Histosol (A1) Polyvalue Below Surface (S9) (LRR R, MLRA 149B) 2 cm Muck (A10) (LRR K, L, MLRA 149B) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, R) Black Histic (A3) Loamy Mucky Mineral (F1) (LRR K, L) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) Stratified Layers (A5) ✓ Depleted Matrix (F2) Dark Surface (S7) (LRR K, L) Stratified Layers (A5) ✓ Depleted Matrix (F2) Dark Surface (S9) (LRR K, L) Stratified Layers (A5) ✓ Depleted Matrix (F2) Dark Surface (S9) (LRR K, L) Stratified Layers (A5) ✓ Depleted Matrix (F2) Dark Surface (S9) (LRR K, L) Stratified Layers (A5) ✓ Depleted Dark Surface (F7) Thin Dark Surface (S9) (LRR K, L) Sandy Gleyed Matrix (S4) Piedmont Floodplain Soils (F19) (MLRA Mesic Spodic (TA6) (MLRA 144A, 145, 142, 142, 142, 142, 142, 142, 142, 142	s ³ : 49B) -, R) ! K, L, R) K, L) R K, L, R) ALRA 149B 45, 149B)
//pe: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. ²Location: PL = Pore Lining, M = Matrix. //pe: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. ²Location: PL = Pore Lining, M = Matrix. //dric Soil Indicators: Indicators for Problematic Hydric Soils ³ : //Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) 2 cm Muck (A10) (LRR K, L, MLRA 149B) // Biack Histic (A3) Loamy Mucky Mineral (F1) (LRR K, L) Coast Prairie Redox (A16) (LRR K, L) // Stratified Layers (A5) ✓ Depleted Matrix (F2) Dark Surface (S9) (LRR K, L) // Depleted Below Dark Surface (F6) — Thin Dark Surface (F6) — Thin Dark Surface (S9) (LRR K, L) // Thick Dark Surface (A11) Redox Dark Surface (F7) — Thin Dark Surface (S9) (LRR K, L) // Sandy Mucky Mineral (S1) Redox Depressions (F8) — Piedmont Floodplain Soils (F19) (MLRA 144A, 145, 145, 145, 145, 145, 145, 145, 145	s ³ : 49B) -, R) K, L, R) K, L, R) R K, L, R) R K, L, R) 100 100
mpe: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. ² Location: PL = Pore Lining, M = Matrix. dric Soil Indicators: Indicators for Problematic Hydric Soils ² : Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) Histosol (A2) Thin Dark Surface (S9) (LRR R, MLRA 149B) Black Histic (A3) Loamy Gleyed Matrix (F2) Stratified Layers (A5) Depleted Matrix (F3) Depleted Below Dark Surface (A12) Depleted Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) Sandy Redox (S5) Redox Depressions (F8) Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Very Shallow Dark Surface (TF12) Sandy Redox (S5) Coast Prairie Redox Cartial (F21) Stripped Matrix (S6) Very Shallow Dark Surface (TF12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks)	s ³ : 499B) -, R) : K, L, R) K, L) R K, L, R) ALRA 149B 45, 149B)
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Inite Epipedon (K2)	L, R) ₹ K, L, R) R K, L, R) ALRA 149B 45, 149B)
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Sandy Gleyed Matrix (S4)	45, 149B)
Sandy Redox (S5)	
_ Stripped Matrix (S6) _ Dark Surface (S7) (LRR R, MLRA 149B) dicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	
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dicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	
dicators of hydrophytic vegetation and wettand hydrology must be present, unless disturbed of problematic.	
strictive Lover (if observed):	
Tura: Nono Hudris Sail Procent? Yes (No	
TypeNo	
Depun (incres): NA	



East
WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Yahara Hills Golf Course City/County: Madise		unty: Madison, Dar	on, Dane		Sampling Date:	2021-Nov-09	
Applicant/Owner: D	ane County W	Vaste & Renewables		State: Wisconsin		Sampling Point: S	P-12
Investigator(s): Ron Londre			S	ection, Township, l	Range: 25	-T7N-R10E	
Landform (hillslope, te	errace, etc.):	Back slope	Loca	al relief (concave, c	onvex, no	ne): Convex	Slope (%): 3-6
Subregion (LRR or MLF	RA): LRR	К	Lá	at: 43.04033	Long:	-89.25411	Datum: WGS84
Soil Map Unit Name:	St. Charles s	silt loam, 2 to 6 percent s	slopes			WWI classific	ation: None
Are climatic/hydrologi	c conditions o	n the site typical for this	time of year?	Yes No	🖌 (lf no,	explain in Remark	s.)
Are Vegetation, Are Vegetation,	Soil, Soil,	or Hydrology sign or Hydrology natu	ificantly disturbed? arally problematic?	Are "Norma (If needed, e	l Circumst explain an	ances" present? y answers in Rema	Yes 🟒 No Irks.)

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

Hydrophytic Vegetation Present?	Yes No 🟒		
Hydric Soil Present?	Yes No 🟒	Is the Sampled Area within a Wetland?	Yes No 🟒
Wetland Hydrology Present?	Yes No _	If yes, optional Wetland Site ID:	
Remarks: (Explain alternative procedure	es here or in a separate repo	ort)	
Based on the absence of all three parar	meters, this area is an uplane	d.	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of c Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sadimart Departie (B2)	one is required; check all Water Aquati Marl D Hydro Urdro	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)	
Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial In Sparsely Vegetated Concave S	 		 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 🟒	Depth (inches):	_
Water Table Present?	Yes No 🟒	Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present?	Yes No 🟒	Depth (inches):	
(includes capillary fringe)			
Describe Recorded Data (stream Topo maps, soils map, WWI map,	gauge, monitoring well, a aerial imagery	ierial photos, previous inspections), if	available:

Remarks:

The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

VEGETATION -- Use scientific names of plants.

Sampling Point: SP-12

<u>Tree Stratum</u> (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test works Number of Dominant S	heet: Species That	0	(4)
1.				Are OBL, FACW, or FAC	:	0	(A)
2.				Total Number of Domir	nant Species	1	(B)
3				Percent of Dominant S	pecies That	0	(A/B)
5.				Are OBL, FACW, or FAC	:		(, ;; 2)
6				Prevalence Index work	sheet:		
7				Total % Cover	of:	<u>Multiply</u>	<u>' By:</u>
		= Total Cov	or	OBL species	0	x 1 =	0
Sapling/Shrub Stratum (Plot size: 15' r)		- 10001 000		FACW species	0	x 2 =	0
<u></u>				FAC species	0	x 3 =	0
۱۰				FACU species	105	x 4 =	420
				UPL species	0	x 5 =	0
3				Column Totals	105	(A)	420 (B)
4.				Prevalence Ir	ndex = B/A =	4	
5				Hydrophytic Vegetation	n Indicators:		
6				1- Rapid Test for H	Hydrophytic V	/egetatio	n
7				2 - Dominance Te	st is > 50%	0	
	0	= Total Cov	er	3 - Prevalence Ind	lex is $\leq 3.0^1$		
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)				4 - Morphological	Adaptations	¹ (Provide	supporting
1. <i>Poa pratensis</i>	70	Yes	FACU	data in Remarks or on	a separate sh	(eet)	sabberen.8
2. <i>Festuca rubra</i>	15	No	FACU	Problematic Hydr	ophytic Vege	tation ¹ (E	xplain)
3. <i>Glechoma hederacea</i>	15	No	FACU	¹ Indicators of hydric so	il and wetlan	d hydrolo	bgy must be
4. Cirsium arvense	5	No	FACU	present, unless disturb	ed or proble	matic	
5				Definitions of Vegetation	on Strata:		
6				Tree – Woody plants 3	in. (7.6 cm) oı	r more in	diameter at
7.				breast height (DBH), re	gardless of h	eight.	
8.				Sapling/shrub - Woody	/ plants less t	han 3 in.	DBH and
9.				greater than or equal t	o 3.28 ft (1 m) tall.	
10.				Herb – All herbaceous	(non-woody)	plants, re	gardless of
11.				size, and woody plants	less than 3.2	8 ft tall.	
12.				Woody vines – All wood	dy vines great	ter than 3	3.28 ft in
	105	= Total Cov	er	height.			
Woody Vine Stratum (Plot size: 30' r)		-		Hydrophytic Vegetatio	n Present?	ſes	No 🟒
1.							
2							
2							
4		- Total Cav	or.				
			er				
Remarks: (Include photo numbers here or on a separate The criterion for hydrophytic vegetation is not met. Dee	• sheet.) ρ rough.						

SOIL

Color (0 - 13 10YR 13 - 24 10YR	moist) % 2 4/3 100 2 5/3 95	Color (moist) 10YR 4/6	%	Type ¹	1 2		
0 - 13 10YR 13 - 24 10YR	4/3 100 5/3 95	10YR 4/6			LOC ²	Texture	Remarks
13 - 24 10YR	<u> </u>	10YR 4/6			Silty	/ Clay Loam	
			5	С	M Silty	/ Clay Loam	
 			_				
			—				
			—	. <u> </u>			
			—				
			—				
			—				
			—	<u> </u>	·		
Type: C = Concentrat	tion, D = Depletic	on, RM = Reduced	Mati	ix, MS =	Masked Sand Grains.	² Location: PL = Pore	Lining, M = Matrix.
lydric Soil Indicators	:					Indicators for Pr	oblematic Hydric Soils ³ :
Histosol (A1)		Polyvalue Bel	ow S	urface (S	8) (LRR R, MLRA 149B) 2 cm Muck (/	A10) (LRR K, L, MLRA 149B)
Histic Epipedon (A	(2)	Thin Dark Sur	face	(S9) (LRR	R, MLRA 149B)	Coast Prairie	Redox (A16) (LRR K, L, R)
Black Histic (A3)	(1)	Loamy Mucky	/ Min	eral (F1)	(LRR K, L)	5 cm Mucky	Peat or Peat (S3) (LRR K, L, R)
Stratified Lavers ((A4) A5)	Depleted Mat	rix (F			Dark Surface	e (S7) (LRR K, L)
Depleted Below D	ark Surface (A11) Redox Dark S	urfac	ce (F6)		Polyvalue Be	low Surface (S8) (LRR K, L)
Thick Dark Surfac	e (A12)	Depleted Dar	k Sui	face (F7)		Iron-Mangar	nace (59) (LKK K, L) nese Masses (F12) (I RR K R)
Sandy Mucky Min	eral (S1)	Redox Depres	ssior	is (F8)		Piedmont Flo	podplain Soils (F19) (MLRA 149B)
Sandy Gleyed Mat	trix (S4)					Mesic Spodio	: (TA6) (MLRA 144A, 145, 149B)
Sandy Redox (S5)						Red Parent N	laterial (F21)
Dark Surface (S7)		9B)				Very Shallow	Dark Surface (TF12)
		50)				Other (Expla	in in Remarks)
Indicators of hydrop	hytic vegetation	and wetland hydro	ology	/ must be	e present, unless distu	urbed or problematic.	
Restrictive Layer (if ol	oserved):						V N <i>i</i>
Type:		None			Hydric Soil Present?		Yes No 🟒
Depth (In	cnes):	NA					

Photo of Sample Plot



North

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Yahara H	lills Golf Cours	se C	ity/County: Madison	, Dane			Sampling Date:	2021-Nov-09
Applicant/Owner:	Dane County W	/aste & Renewable	es	State:	Wisconsin	<u> </u>	Sampling Point: SP	-13
Investigator(s): Amanda Larsen				Section,	Township,	Range: 25	-T7N-R10E	
Landform (hillslope, te	errace, etc.):	Depression		Local relief	f (concave,	convex, noi	ne): Flat	Slope (%): 1-3
Subregion (LRR or ML	RA): LRR	К		Lat: 43.	03589	Long:	-89.2486	Datum: WGS84
Soil Map Unit Name:	Virgil silt loa	m, gravelly substr	atum, 0 to 3 percent	slopes			WWI classificat	tion: None
Are climatic/hydrologi	c conditions o	n the site typical f	or this time of year?	Y	es No	(lf no,	explain in Remarks	.)
Are Vegetation,	Soil,	or Hydrology	_ significantly disturb	ed?	Are "Norma	al Circumst	ances" present?	Yes 🟒 No
Are Vegetation,	Soil,	or Hydrology	_ naturally problema	tic?	(If needed,	explain any	answers in Remar	ks.)

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

Hydrophytic Vegetation Present?	Yes 🟒 No		
Hydric Soil Present?	Yes 🟒 No	Is the Sampled Area within a Wetland?	Yes 🟒 No
Wetland Hydrology Present?	Yes 🟒 No	lf yes, optional Wetland Site ID:	W-4
Remarks: (Explain alternative procedures he	re or in a separate report)	
Based on the presence of all three paramete	ers, this area is a wetland.	Wetland ID: W-4	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of	one is required; check all t	hat apply)	Secondary Indicators (minimum of two required)
 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 I Sparsely Vegetated Concave 	 Surface Water (A1) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) Marl Deposits (B15) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Chartson (M2) 		 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 🟒	Depth (inches):	
Water Table Present?	Yes No 🟒	Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present?	Yes No 🟒	Depth (inches):	
(includes capillary fringe)			
Describe Recorded Data (stream	n gauge, monitoring well, a	erial photos, previous inspections), if	available:

Topo maps, soils map, WWI map, aerial imagery

Remarks:

The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

VEGETATION -- Use scientific names of plants.

Sampling Point: SP-13

Tree Stratum (Plot size: <u>30' r</u>)	Absolute	Dominant	Indicator	Dominance Test worksho	eet:		
	% Cover	Species?	Status		ecles I nat	2	(A)
1. Acer saccharinum		Yes	FACW	Total Number of Domina	ant Species		
2. Jugians nigra	3	Yes	FACU	Across All Strata:	in opecies	3	(B)
3				Percent of Dominant Spe	ecies That		
4.				Are OBL, FACW, or FAC:		66.7	(A/B)
5		<u> </u>		Prevalence Index worksh	neet:		
6		·		Total % Cover o	<u>f:</u>	Multiply	<u>By:</u>
/				OBL species	0	x 1 =	0
	8	= lotal Cov	er	FACW species	105	x 2 =	210
Sapling/Shrub Stratum (Plot size:15' r)				FAC species	0	x 3 =	0
1		·		FACU species	3	x 4 =	12
2.		·		UPL species	0	x 5 =	0
3		·		Column Totals	108	(A)	222 (B)
4		·		Prevalence Ind	ex = B/A =	2.1	
5		·		Hydrophytic Vegetation	ndicators:		
6		·		1- Rapid Test for Hy	drophytic V	egetation	
7		·		✓ 2 - Dominance Test	is >50%	0	
	0	= Total Cov	er	3 - Prevalence Inde	x is ≤ 3.0 ¹		
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)				4 - Morphological A	daptations	(Provide	supporting
1. <i>Phalaris arundinacea</i>	100	Yes	FACW	data in Remarks or on a	separate sh	ieet)	
2		·		Problematic Hydro	phytic Vege	tation ¹ (Ex	plain)
3		·		¹ Indicators of hydric soil	and wetlan	d hydrolog	gy must be
4				present, unless disturbe	d or problei	matic	
5				Definitions of Vegetation	Strata:		
6				Tree – Woody plants 3 in	. (7.6 cm) oı	r more in o	diameter at
7				breast height (DBH), rega	ardless of h	eight.	
8				Sapling/shrub – Woody p	olants less t	han 3 in. D	OBH and
9				greater than or equal to	3.28 ft (1 m) tall.	
10				Herb – All herbaceous (n	on-woody)	plants, reg	gardless of
11				size, and woody plants le	ess than 3.2	8 ft tall.	20.6
12				Woody vines - All woody	vines great	ter than 3.	28 ft in
	100	= Total Cov	er	neight.			
Woody Vine Stratum (Plot size: <u>30' r</u>)				Hydrophytic Vegetation	Present?	/es 🟒 N	lo
1							
2							
3							
4							
	0	= Total Cov	er				
Remarks: (Include photo numbers here or on a separat	e sheet)			<u> </u>			
The criterion for hydronhytic vegetation is met Fresh (v	vet) Mead	ow plant cor	nmunity				
			iunity.				

SOIL

Depth	Matrix		Redox	< Feat	ures				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Textu	ure	Remarks
0 - 4	10YR 3/2	90	10YR 5/8	10	C	М	Loa	m	
4 - 14	10YR 4/1	85	10YR 5/8	15	С	М	Silty Clay	/ Loam	
14 - 24	10YR 4/3	100					Cla	у	
				·					
· .		·							
						<u> </u>			
		·		·					
<u> </u>		<u> </u>							
				·					
		<u> </u>							
vno: C = C	oncontration D -	Doplatic	D DM - Doducoc			Macked Sc	and Crains 21	acation: DL - Doro L	ining M - Matrix
ype. c – c vdric Soil I		Depierio	n, rivi – reduced	i widli	ia, ivis -	IVIASKEU Sõ		Indicators for Pro	hlematic Hydric Soils3
Historol	(Δ1)		Polyvalue Bo		urface (S	8) (I PD D I			
Histic Fr	ipedon (A2)		Thin Dark Su	rface	(S9) (I RR	R. MI RA 1	49B)	2 cm Muck (A	10) (LRR K, L, MLRA 149B)
Black Hi	stic (A3)		Loamy Muck	y Min	eral (F1)	(LRR K, L)		Coast Prairie I	Redox (A16) (LRK K, L, K)
_ _ Hydroge	n Sulfide (A4)		Loamy Gleye	d Ma	trix (F2)	. , ,		5 cm Mucky P	eat or Peat (S3) (LRK K, L, R)
_ Stratified	d Layers (A5)		_✓ Depleted Ma	ıtrix (F	-3)				J) (LKK N, L)
∠ Depleted	d Below Dark Surf	ace (A11)_✓ Redox Dark S	Surfac	ce (F6)			T biy value ber	face (S9) (LRR K L)
	rk Surfaco (A12)		Depleted Da	rk Sur	face (F7)			Iron-Mangane	ese Masses (F12) (I RR K. L. R)
_ Thick Da	IK Sullace (A12)				(50)				
_ Thick Da _ Sandy M	lucky Mineral (S1)		Redox Depre	ession	is (F8)			Piedmont Floo	odplain Soils (F19) (MLRA 149B)
_ Thick Da _ Sandy M _ Sandy G	lucky Mineral (S1) leyed Matrix (S4)		Redox Depre	ession	is (F8)			Piedmont Floo Mesic Spodic	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B)
Thick Da Sandy M Sandy G Sandy R	lucky Mineral (S1) leyed Matrix (S4) edox (S5)		Redox Depre	ession	IS (F8)			Piedmont Floo Mesic Spodic Red Parent M	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21)
Thick Da Sandy M Sandy G Sandy R Stripped	lucky Mineral (S1) leyed Matrix (S4) edox (S5) l Matrix (S6)		Redox Depre	ession	IS (F8)			Piedmont Floo Mesic Spodic Red Parent M. Very Shallow I	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12)
Thick Da Sandy M Sandy G Sandy R Stripped Dark Sur	lucky Mineral (S1) leyed Matrix (S4) edox (S5) l Matrix (S6) cface (S7) (LRR R, N	/LRA 14	Redox Depre	ession	IS (F8)			Piedmont Floo Mesic Spodic Red Parent M Very Shallow I Other (Explair	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks)
_ Thick Da _ Sandy W _ Sandy G _ Sandy R _ Stripped _ Dark Sun ndicators o	lucky Mineral (S1) leyed Matrix (S4) edox (S5) l Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg	ILRA 14	Redox Depre 9B) and wetland hydr	rology	y must be	e present,	unless disturbe	Piedmont Floo Mesic Spodic I Red Parent M. Very Shallow I Other (Explair d or problematic.	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) h in Remarks)
Thick Da Sandy W Sandy G Sandy R Stripped Dark Sun ndicators c estrictive L	lucky Mineral (S1) leyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed)	ILRA 14	Redox Depre 9B) and wetland hydr	rology	y must be	e present,	unless disturbe	Piedmont Floo Mesic Spodic (Red Parent M. Very Shallow I Other (Explair d or problematic.	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks)
Thick Da Sandy W Sandy G Sandy R Stripped Dark Sun ndicators o estrictive L	lucky Mineral (S1) leyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed) Type:	ILRA 14	Redox Depre 9B) and wetland hydr None	rology	is (F8) y must be	e present,	unless disturbe	Piedmont Floo Mesic Spodic (Red Parent M. Very Shallow I Other (Explair d or problematic.	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks)
_ Thick Da _ Sandy W _ Sandy G _ Sandy R _ Stripped _ Dark Sun ndicators c estrictive L	lucky Mineral (S1) leyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed) Type: Denth (inches):	ILRA 14	Redox Depre 9B) and wetland hydi None	rology	is (F8) y must be	e present, Hydric So	unless disturbe il Present?	Piedmont Floo Mesic Spodic (Red Parent M. Very Shallow I Other (Explair d or problematic.	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks)
_ Thick Da _ Sandy M _ Sandy G _ Sandy R _ Stripped _ Dark Sun ndicators o estrictive L	lucky Mineral (S1) leyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed) Type: Depth (inches):	/LRA 14 ! ;etation ; 	Redox Depre 9B) and wetland hydr None NA	rology	y must be	e present, Hydric So	unless disturbe bil Present?	Piedmont Floo Mesic Spodic (Red Parent M Very Shallow I Other (Explair d or problematic. Ye	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) a in Remarks)
_ Thick Da _ Sandy M _ Sandy G _ Sandy R _ Stripped _ Dark Sun hdicators o strictive L 	lucky Mineral (S1) leyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed) Type: Depth (inches):	ILRA 14	Redox Depre 9B) and wetland hydr 	rology	y must be	e present, Hydric So	unless disturbe ill Present?	Piedmont Floo Mesic Spodic (Red Parent M. Very Shallow I Other (Explair d or problematic. Ye	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks)
_ Thick Da _ Sandy W _ Sandy G _ Sandy R _ Stripped _ Dark Sun hdicators o strictive L strictive L :marks: ne criterion	lucky Mineral (S1) leyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed) Type: Depth (inches):	/LRA 14 <u>etation</u> : met.	Redox Depre 9B) and wetland hyd None NA	rology	y must be	e present, Hydric So	unless disturbe ill Present?	Piedmont Floo Mesic Spodic (Red Parent M Very Shallow I Other (Explair d or problematic. Ye	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks)
_ Thick Da _ Sandy M _ Sandy G _ Sandy R _ Stripped _ Dark Sun ndicators o estrictive L emarks: ne criterion	lucky Mineral (S1) leyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed) Type: Depth (inches):	/LRA 14 ! ;etation . : 	Redox Depre 9B) and wetland hyd None NA	rology	y must be	e present, Hydric So	unless disturbe bil Present?	Piedmont Floo Mesic Spodic (Red Parent M Very Shallow I Other (Explair d or problematic. Ye	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks)
_ Thick Da _ Sandy M _ Sandy G _ Sandy R _ Stripped _ Dark Sun dicators o strictive L strictive L emarks: ne criterion	lucky Mineral (S1) leyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed) Type: Depth (inches):	/LRA 14 ! ;etation . : met.	Redox Depre 9B) and wetland hydi <u>None</u> NA	rolog	y must be	e present, Hydric So	unless disturbe bil Present?	Piedmont Floo Mesic Spodic (Red Parent M Very Shallow I Other (Explair d or problematic. Ye	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks)
_ Thick Da _ Sandy M _ Sandy G _ Sandy R _ Stripped _ Dark Sun dicators d strictive L 	lucky Mineral (S1) leyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed) Type: Depth (inches):	/ILRA 14 ! <u>;etation .</u> : met.	Redox Depre 9B) and wetland hydr None NA	rolog	y must be	e present, Hydric So	unless disturbe bil Present?	Piedmont Floo Mesic Spodic (Red Parent M Very Shallow I Other (Explair d or problematic. Ye	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks)
_ Thick Da _ Sandy M _ Sandy G _ Sandy R _ Strippec _ Dark Sun ndicators of strictive L 	lucky Mineral (S1) leyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed) Type: Depth (inches):	/LRA 14	Redox Depre 9B) and wetland hydr None NA	rology	y must be	e present, Hydric So	unless disturbe bil Present?	Piedmont Floo Mesic Spodic (Red Parent M Very Shallow I Other (Explair d or problematic. Ye	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks)
_ Thick Da _ Sandy M _ Sandy G _ Sandy R _ Strippec _ Dark Sun dicators of strictive L marks: ne criterion	lucky Mineral (S1) leyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed) Type: Depth (inches):	/LRA 14	Redox Depre 9B) and wetland hydr None NA	rology	y must be	e present, Hydric So	unless disturbe bil Present?	Piedmont Floo Mesic Spodic (Red Parent M Very Shallow I Other (Explair d or problematic. Ye	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks) es _✓_ No
_ Thick Da _ Sandy M _ Sandy G _ Sandy R _ Strippec _ Dark Sun dicators of strictive L marks: he criterion	lucky Mineral (S1) leyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed) Type: Depth (inches):	<i>ILRA 14</i> <u>getation</u> : 	Redox Depre 9B) and wetland hydr <u>None</u> NA	rolog,	y must be	e present, Hydric So	unless disturbe bil Present?	Piedmont Floo Mesic Spodic (Red Parent M Very Shallow I Other (Explair d or problematic. Ye	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks) es _✓_ No
_ Thick Da _ Sandy M _ Sandy G _ Sandy R _ Strippec _ Dark Sun ndicators of estrictive L estrictive L emarks: ne criterion	lucky Mineral (S1) leyed Matrix (S4) edox (S5) l Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed) Type: Depth (inches):	<i>ILRA 14</i>	Redox Depre 9B) and wetland hydr <u>None</u> NA	rolog,	y must be	e present, Hydric So	unless disturbe bil Present?	Piedmont Floo Mesic Spodic (Red Parent M Very Shallow I Other (Explair d or problematic. Ye	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks) es _✓_ No
_ Thick Da _ Sandy M _ Sandy G _ Sandy R _ Strippec _ Dark Sum ndicators of estrictive L estrictive L marks: ne criterion	lucky Mineral (S1) leyed Matrix (S4) edox (S5) l Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg ayer (if observed) Type: Depth (inches):	<i>I</i> LRA 14 <u>getation</u> : met.	Redox Depre 9B) and wetland hydr <u>None</u> NA	rolog	y must ba	e present, Hydric So	unless disturbe bil Present?	Piedmont Floo Mesic Spodic (Red Parent M Very Shallow I Other (Explair d or problematic. 	odplain Soils (F19) (MLRA 149B) (TA6) (MLRA 144A, 145, 149B) aterial (F21) Dark Surface (TF12) n in Remarks) es _✓_ No
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Photo of Sample Plot



Northeast



North

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Yahara Hills Golf Course	e City/County: Madisor	, Dane	Sampling Date: 20	21-Nov-09
Applicant/Owner: Dane County W	aste & Renewables	State: Wisconsin	Sampling Point: SP-1	4
Investigator(s): Amanda Larsen		Section, Township, Range:	25-T7N-R10E	
Landform (hillslope, terrace, etc.):	Hillslope	Local relief (concave, convex, r	none): Flat	Slope (%): 2-5
Subregion (LRR or MLRA):	<	Lat: 43.03596 Long	g: -89.24868	Datum: WGS84
Soil Map Unit Name: Virgil silt loar	n, gravelly substratum, 0 to 3 percent	slopes	WWI classificatio	n: None
Are climatic/hydrologic conditions or	the site typical for this time of year?	Yes No 🟒 (If n	o, explain in Remarks.)	
Are Vegetation, Soil, Are Vegetation, Soil,	or Hydrology significantly disturk or Hydrology naturally problema	bed? Are "Normal Circum itic? (If needed, explain a	nstances" present? any answers in Remarks	Yes 🟒 No .)

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

Hydrophytic Vegetation Present?	Yes No 🟒		
Hydric Soil Present?	Yes No 🟒	Is the Sampled Area within a Wetland?	Yes No 🟒
Wetland Hydrology Present?	Yes No _	If yes, optional Wetland Site ID:	
Remarks: (Explain alternative procedure	s here or in a separate repo	ort)	
Based on the absence of all three paran	neters, this area is an upland	d.	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one	e is required; check all t	Secondary Indicators (minimum of two required)	
 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) 		Stained Leaves (B9) c Fauna (B13) eposits (B15) gen Sulfide Odor (C1) ed Rhizospheres on Living Roots (C3) ce of Reduced Iron (C4) Iron Reduction in Tilled Soils (C6) uck Surface (C7) Explain in Remarks)	 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 🟒	Depth (inches):	_
Water Table Present?	Yes No 🟒	Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present?	Yes No 🟒	Depth (inches):	_
(includes capillary fringe)			
Describe Recorded Data (stream ga Topo maps, soils map, WWI map, ae	uge, monitoring well, a erial imagery	erial photos, previous inspections), if	available:

Remarks:

The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

VEGETATION -- Use scientific names of plants.

Sampling Point: SP-14

Tree Stratum (Plot size:30' r)	Absolute	Dominant	Indicator	Dominance Test works	heet:		
	% Cover	Species?	Status	Are OBL_EACW_or_EAC	pecies That	2	(A)
1. Acer saccharinum	15	Yes	FACW	Total Number of Domin	nant Species		
2. Jugians nigra	10	Yes	FACU	Across All Strata:	iant species	6	(B)
3		<u> </u>		Percent of Dominant S	pecies That		(1 (2)
4				Are OBL, FACW, or FAC		33.3	(A/B)
з. с		<u> </u>		Prevalence Index works	sheet:		
7				Total % Cover	<u>of:</u>	<u>Multiply</u>	<u>By:</u>
/·	25	- Total Cov	or	OBL species	0	x 1 =	0
Sapling/Shrub Stratum (Plot size: 15' r)	25	- 10tai COV	ei	FACW species	35	x 2 =	70
1 Public idaaus	20	Voc	FACU	FAC species	0	x 3 =	0
2 Judans nigra	5	Voc	FACU	FACU species	120	x 4 =	480
		163	FACO	UPL species	15	x 5 =	75
з. л		<u> </u>		Column Totals	170	(A)	625 (B)
ч. 		<u> </u>		Prevalence In	ndex = B/A =	3.7	
з. с		<u> </u>		Hydrophytic Vegetation	Indicators:		
7				1- Rapid Test for H	Hydrophytic V	egetation/	
/·	25	- Total Cav	or	2 - Dominance Tes	st is > 50%		
Harb Stratum (Plat size) El r	25	- 10tal COV	ei	3 - Prevalence Ind	ex is $\leq 3.0^1$		
<u>Herb Stratum</u> (Plot Size. <u>5 1</u>)	60	Voc	EACU	4 - Morphological	Adaptations	(Provide	supporting
1. <u>Biechonia nederacea</u>	20	Vec		data in Remarks or on a	a separate sh	leet)	
	20		FACW	Problematic Hydr	ophytic Vege	tation ¹ (Ex	plain)
3. Arctium minus	15		FACU	¹ Indicators of hydric so	il and wetlan	d hydrolog	gy must be
4. Pasunaca sauva	10			present, unless disturb	ed or problei	matic	
5. Elymus repens	10	<u>No</u>	FACU	Definitions of Vegetation	on Strata:		
6. Cirsium discolor	5	NO	UPL	Tree – Woody plants 3 i	n. (7.6 cm) or	r more in o	diameter at
7		·		breast height (DBH), re	gardless of h	eight.	DU
8		·		sapling/snrub - woody	o 3 28 ft (1 m	nan 3 in. L Vtall	лын ала
9		·		Herb - All berbaceous ((non-woody)	nlants reg	ardless of
10		·		size, and woody plants	less than 3.2	8 ft tall.	
11		·		Woody vines – All wood	ly vines great	ter than 3.	28 ft in
12				height.			
	120	= lotal Cov	er	Hydronhytic Vegetatio	n Present?	/es N	
<u>Woody Vine Stratum</u> (Plot size: <u>30' r</u>)				Tydrophytic vegetatio	in resent.	ics iv	IU <u>v</u>
1		·					
2		<u> </u>					
3		<u> </u>					
4							
	0	_= Total Cov	er				
Remarks: (Include photo numbers here or on a separat	e sheet.)						
The criterion for hydrophytic vegetation is not met. Fall	ow field.						

SOIL

Depth	Matrix		Redox	Feat	ures				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks
0 - 11	10YR 3/3	100					Loam		
11 - 24	10YR 5/4	100					Clav		
							enay		
<u> </u>		· ·							
ype: C = C	oncentration, D =	Depletio	n, RM = Reduced	Mat	rix, MS =	Masked	Sand Grains. ² Lo	ocation: PL = I	Pore Lining, M = Matrix.
vdric Soil I	ndicators:		,					Indicators fo	or Problematic Hydric Soils ³ :
Histosol	(A1)		Polwalue Be	low S	urface (S	8) (I RR F	2. MI RA 149B)	2 14.	
Histic En	pipedon (A2)		Thin Dark Su	rface	(S9) (LRF	R. MLRA	() 149B)	2 cm Mu	ICK (ATU) (LRR K, L, MLRA 149B)
Black Hi	stic (A3)		Loamy Muck	v Mir	eral (F1)	(LRR K. L)	Coast Pr	airie Redox (A16) (LRR K, L, R)
 Hydroge	en Sulfide (A4)		Loamy Gleye	, d Ma	trix (F2)	. ,	,	5 cm Mu	ICKY Peat or Peat (S3) (LRR K, L, R)
Stratified	d Layers (A5)		Depleted Ma	trix (l	-3)			Dark Sur	Tace (S7) (LRR K, L)
_ Depleted	d Below Dark Surfa	ace (A11)	 Redox Dark S	Surfa	ce (F6)			Poiyvaiu	e Below Surface (S8) (LRR K, L)
	ark Surface (A12)		Depleted Dar	'k Su	face (F7))		Inin Dar	
			Rodov Dopro	ssior	ns (F8)			Iron-Mar	nganese Masses (F12) (LRR K, L, R)
Sandy M	lucky Mineral (S1)		Redux Depre					Pleamor	
Sandy M Sandy G	lucky Mineral (S1) ileyed Matrix (S4)								
Sandy M Sandy G Sandy R	lucky Mineral (S1) ileyed Matrix (S4) edox (S5)							Mesic Sp	oodic (TA6) (MLRA 144A, 145, 149B)
Sandy M Sandy G Sandy R Stripped	lucky Mineral (S1) ileyed Matrix (S4) edox (S5) l Matrix (S6)							Mesic Sp Red Pare	oodic (TA6) (MLRA 144A, 145, 149B) ent Material (F21)
Sandy M Sandy G Sandy R Strippec Dark Su	lucky Mineral (S1) ileyed Matrix (S4) edox (S5) l Matrix (S6) rface (S7) (LRR R. N	1LRA 149						Mesic Sp Red Pare Very Sha	oodic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) illow Dark Surface (TF12)
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Sandy M Sandy G Sandy R Strippec Dark Su ndicators o	lucky Mineral (S1) ileyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N of hydrophytic veg	ILRA 149	PB) and wetland hydr	rolog	y must b	e presen	t, unless disturber	Mesic Sp Red Pare Very Sha Other (E d or problem	podic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) Illow Dark Surface (TF12) xplain in Remarks) atic.
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_ Sandy M _ Sandy G _ Sandy R _ Stripped _ Dark Sun ndicators of estrictive L emarks: ne criterio	lucky Mineral (S1) ileyed Matrix (S4) edox (S5) il Matrix (S6) rface (S7) (LRR R, N <u>of hydrophytic veg</u> <u>ayer (if observed): Type: Depth (inches): n for hydric soil is i</u>	ILRA 149	PB) and wetland hydr None NA	rolog	y must b	e presen Hydric	t, unless disturber	Mesic Sp Red Pare Very Sha Other (E d or problem. Yes	oodic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) illow Dark Surface (TF12) xplain in Remarks) atic.
_ Sandy M _ Sandy G _ Sandy R _ Stripped _ Dark Sun ndicators of estrictive L emarks: ne criterio	lucky Mineral (S1) ileyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N <u>of hydrophytic veg</u> <u>ayer (if observed):</u> Type: <u>Depth (inches):</u> n for hydric soil is i	ILRA 149	PB) and wetland hydr None NA	rolog	y must b	e presen Hydric	t, unless disturber	Mesic Sp Red Pare Very Sha Other (E d or problem. Yes	oodic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) illow Dark Surface (TF12) xplain in Remarks) atic.
_ Sandy M _ Sandy G _ Sandy R _ Stripped _ Dark Sun hdicators of estrictive L emarks: he criterio	lucky Mineral (S1) ileyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N <u>of hydrophytic veg</u> .ayer (if observed): Type: Depth (inches): n for hydric soil is i	not met.	PB) and wetland hydr None NA	-	y must b	e presen Hydric	t, unless disturbe Soil Present?	Mesic Sp Red Pare Very Sha Other (E d or problem. Yes	nodic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) illow Dark Surface (TF12) xplain in Remarks) atic.
_ Sandy M _ Sandy G _ Sandy R _ Stripped _ Dark Sun hdicators of estrictive L emarks: he criterion	lucky Mineral (S1) ileyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N <u>of hydrophytic veg</u> .ayer (if observed): Type: Depth (inches): n for hydric soil is i	not met.	PB) and wetland hydr None NA	-	y must b	e presen Hydric	t, unless disturbe Soil Present?	Mesic Sp Red Pare Very Sha Other (E d or problem. Yes	No _∠
Sandy M Sandy G Sandy R Stripped Dark Sun ndicators of estrictive L emarks: he criterion	lucky Mineral (S1) ileyed Matrix (S4) edox (S5) il Matrix (S6) rface (S7) (LRR R, N <u>of hydrophytic veg</u> .ayer (if observed): Type: Depth (inches): n for hydric soil is i	not met.	PB) and wetland hydr None NA	-	y must b	e presen Hydric	t, unless disturbe Soil Present?	Mesic Sp Red Pare Very Sha Other (E d or problem. Yes	No _∠
Sandy M Sandy G Sandy R Stripped Dark Su ndicators of estrictive L emarks: he criterio	lucky Mineral (S1) ileyed Matrix (S4) edox (S5) I Matrix (S6) rface (S7) (LRR R, N <u>of hydrophytic veg</u> .ayer (if observed): Type: Depth (inches): n for hydric soil is i	not met.	PB) and wetland hydr None NA	-	y must b	e presen Hydric	t, unless disturbe Soil Present?	Mesic Sp Red Pare Very Sha Other (E d or problem. Yes	nodic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) illow Dark Surface (TF12) xplain in Remarks) atic.
Sandy M Sandy G Sandy R Stripped Dark Su ndicators of estrictive L emarks: he criterio	lucky Mineral (S1) ileyed Matrix (S4) edox (S5) il Matrix (S6) rface (S7) (LRR R, N <u>of hydrophytic veg</u> .ayer (if observed): Type: Depth (inches): n for hydric soil is i	not met.	PB) and wetland hydr None NA	-	y must b	e presen Hydric	t, unless disturbe Soil Present?	Mesic Sp Red Pare Very Sha Other (E d or problem. Yes	A Hoodplain Joins (FF9) (MERG (FF9)) podic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) illow Dark Surface (TF12) xplain in Remarks) atic.
Sandy M Sandy G Sandy R Stripped Dark Sun ndicators of estrictive L emarks: he criterion	lucky Mineral (S1) ileyed Matrix (S4) edox (S5) il Matrix (S6) rface (S7) (LRR R, N <u>of hydrophytic veg</u> .ayer (if observed): Type: Depth (inches): n for hydric soil is i	not met.	PB) and wetland hydr None NA	-	y must b	e presen Hydric	t, unless disturbe Soil Present?	Mesic Sp Red Pare Very Sha Other (E d or problem. Yes	A Hoodplain Sons (F15) (MERCT1452) podic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) illow Dark Surface (TF12) xplain in Remarks) atic.
_ Sandy M _ Sandy G _ Sandy R _ Stripped _ Dark Sun ndicators of estrictive L emarks: ne criterion	lucky Mineral (S1) ileyed Matrix (S4) edox (S5) il Matrix (S6) rface (S7) (LRR R, N <u>of hydrophytic veg</u> .ayer (if observed): Type: Depth (inches): n for hydric soil is i	not met.	PB) and wetland hydr None NA	-	y must b	e presen Hydric	t, unless disturbe Soil Present?	Mesic Sp Red Pare Very Sha Other (E d or problem. Yes	A Hoodplain Sons (FF) (MERCTFS) podic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) illow Dark Surface (TF12) xplain in Remarks) atic. No
_ Sandy M _ Sandy G _ Sandy R _ Stripped _ Dark Sun idicators of estrictive L emarks: ne criterion	lucky Mineral (S1) ileyed Matrix (S4) edox (S5) il Matrix (S6) rface (S7) (LRR R, N <u>of hydrophytic veg</u> .ayer (if observed): Type: Depth (inches): n for hydric soil is i	not met.	PB) and wetland hydr None NA	-	y must b	e presen Hydric	t, unless disturbe Soil Present?	Mesic Sp Red Pare Very Sha Other (E d or problem. Yes	A Hooppian Sons (13) (Mater 145) podic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) illow Dark Surface (TF12) xplain in Remarks) atic.

Photo of Sample Plot



North



Southeast

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Yahara Hills Go	olf Course City/C	County: Madison, Dane		Sampling Date: 202	21-Nov-09
Applicant/Owner: Dane C	County Waste & Renewables	State:	Wisconsin	Sampling Point: SP-1	5
Investigator(s): Amanda L	arsen	Section,	Township, Range: 25	5-T7N-R10E	
Landform (hillslope, terrace,	, etc.): Toe slope	Local relief	(concave, convex, no	ne): Concave	Slope (%): 1-3
Subregion (LRR or MLRA):	LRR K	Lat: 43.	03647 Long:	-89.25088	Datum: WGS84
Soil Map Unit Name: Virg	il silt loam, gravelly substratun	n, 0 to 3 percent slopes		WWI classificatio	n: W0Hx
Are climatic/hydrologic conc	litions on the site typical for th	his time of year? Ye	es No 🟒 (If no,	explain in Remarks.)	
Are Vegetation, Soil _ Are Vegetation, Soil _	, or Hydrology sig , or Hydrology na	gnificantly disturbed? aturally problematic?	Are "Normal Circums (If needed, explain an	tances" present? y answers in Remarks	Yes _ 🖌 No .)

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

Hydrophytic Vegetation Present?	Yes 🟒 No		
Hydric Soil Present?	Yes 🟒 No	Is the Sampled Area within a Wetland?	Yes 🯒 No
Wetland Hydrology Present?	Yes 🟒 No	If yes, optional Wetland Site ID:	W-5
Remarks: (Explain alternative procedures he	re or in a separate report)	
Based on the presence of all three paramete	ers, this area is a wetland.	Wetland fringe on pond edge. Wetland ID: W-5	

HYDROLOGY

Wetland Hydrology Indicators:						
Wetland Hydrology Indicators: Primary Indicators (minimum of 	one is required; check all t Water- Aquatio Marl D Hydrog Oxidize Presen Recent Thin M	hat apply) Stained Leaves (B9) c Fauna (B13) eposits (B15) gen Sulfide Odor (C1) ed Rhizospheres on Living Roo ce of Reduced Iron (C4) : Iron Reduction in Tilled Soils (uck Surface (C7)	ots (C3) (C6)	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)		
Inundation Visible on Aerial In Sparsely Vegetated Concave :	magery (B7) Other (Surface (B8)	Explain in Remarks)		Microtopographic Relief (D4) FAC-Neutral Test (D5)		
Field Observations:						
Surface Water Present?	Yes No 🟒	Depth (inches):				
Water Table Present?	Yes No	Depth (inches):		Wetland Hydrology Present? Yes No		
Saturation Present?	Yes 🟒 No	Depth (inches):	0			
(includes capillary fringe)						
Describe Recorded Data (stream	gauge monitoring well a	erial nhotos, previous inspecti	ions) if a	available		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo maps, soils map, WWI map, aerial imagery

Remarks:

The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal. Soil is episaturated.

VEGETATION -- Use scientific names of plants.

Sampling Point: SP-15

Tree Stratum (Plot size: 5' x 40')	Absolute	Dominant	Indicator	Dominance Test workshi	eet:		
1	% Cover	Species?	Status	Are OBL, FACW, or FAC:	ecies That	3	(A)
2.	·			Total Number of Domina	ant Species	3	(B)
3.				Across All Strata:			
4.				Are OBL FACW or FAC:	ecies That	100	(A/B)
5				Prevalence Index works	neet:		
6				Total % Cover o	of:	Multiply	By:
7				OBL species	0	x 1 =	0
	0	= Total Cov	er	FACW species	105	x 2 =	210
Sapling/Shrub Stratum (Plot size: <u>5' x 40'</u>)				FAC species	0	x 3 =	0
1. <i>Salix interior</i>	15	Yes	FACW	FACU species	0	x 4 =	0
2				UPL species	0	x 5 =	0
3				Column Totals	105	(A)	210 (B)
4		. <u> </u>		Prevalence Inc	dex = B/A =	2	
5				Hydrophytic Vegetation	Indicators:		
6				. 1- Rapid Test for Hy	vdrophytic V	/egetation	ı
7				2 - Dominance Test	is >50%	egetation	•
	15	= Total Cov	er	✓ 3 - Prevalence Inde	$x is < 3.0^{1}$		
Herb Stratum (Plot size: <u>5'x 40</u>)				4 - Morphological A	daptations	¹ (Provide	supporting
1. <i>Phalaris arundinacea</i>	60	Yes	FACW	data in Remarks or on a	separate sh	neet)	sabber m.8
2. Agrostis stolonifera	30	Yes	FACW	Problematic Hydro	phytic Vege	tation ¹ (Ex	(plain)
3				¹ Indicators of hydric soil	and wetlan	d hydrolo	gy must be
4				present, unless disturbe	d or problei	matic	
5				Definitions of Vegetation	n Strata:		
6				Tree – Woody plants 3 in	ı. (7.6 cm) oı	r more in	diameter at
7				breast height (DBH), reg	ardless of h	eight.	
8.				Sapling/shrub - Woody	olants less t	han 3 in. I	DBH and
9.				greater than or equal to	3.28 ft (1 m) tall.	
10.				Herb – All herbaceous (r	ion-woody)	plants, re	gardless of
11.				size, and woody plants le	ess than 3.2	8 ft tall.	
12.				Woody vines – All woody	/ vines great	ter than 3	.28 ft in
	90	= Total Cov	er	height.			
Woody Vine Stratum (Plot size: <u>5' x 40'</u>)		-		Hydrophytic Vegetation	Present?	res 🟒 🛚	lo
1.							
2.	·						
3.	·						
4.	·						
	0	= Total Cov	er				
Demarker (Include photo numbers here or on a consta	to choot)	-					
The criterion for hydrophytic vegetation is met.	wot) Magad	ow plant c-	mmunity				
The chileholi for hydrophydic vegetation is met. Fresh (wet) wedu	ow plant co	minuriity.				

SOIL

Profile Desc	cription: (Describe t	o the c	lepth needed to d	locun	nent the	indicato	r or confirm th	e absence of indicators.)
Depth	Matrix		Redox	Feat	ures			
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	lexture	e Remarks
0-6	10YR 3/2	95	10YR 5/8	5	<u> </u>	M	Loam	
				·				
				·				
				· —				
ype: C = C	Concentration, D = [Depleti	on, RM = Reduced	d Mat	rix, MS =	Masked	l Sand Grains.	² Location: PL = Pore Lining, M = Matrix.
/dric Soil	ndicators:							Indicators for Problematic Hydric Soils ³ :
_ Histosol	(A1)		Polyvalue Be	low S	Surface (S	58) (LRR	R, MLRA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 149B)
_ Histic Ep	oipedon (A2)		Thin Dark Su	rface	(S9) (LRI	r R, MLR	A 149B)	Coast Prairie Redox (A16) (LRR K, L, R)
_ Black Hi	stic (A3)		Loamy Muck	y Mir	neral (F1)	(LRR K,	L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
_ Hydroge	en Sulfide (A4)		Loamy Gleye	d Ma	trix (F2)			Dark Surface (S7) (LRR K, L)
Deplete	d Layers (A5) d Below Dark Surfa	دم (۵۱٬	Depieted Ma	urix (Surfa	F3) CA (E6)			Polyvalue Below Surface (S8) (LRR K, L)
Thick Da	ark Surface (A12)		Depleted Dark	rk Su	rface (F7)		Thin Dark Surface (S9) (LRR K, L)
Sandy N	lucky Mineral (S1)		Redox Depre	ession	nace (F8)	,		Iron-Manganese Masses (F12) (LRR K, L, R)
Sandy G	ileved Matrix (S4)				- (-)			Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy R	edox (S5)							Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Stripped	d Matrix (S6)							Red Parent Material (F21)
Dark Su	rface (S7) (LRR R, M	LRA 14	I9B)					Very Shallow Dark Surface (TFT2)
ndicators	of hydrophytic vege	etation	and wetland hyd	rolog	y must b	e presei	nt, unless distu	irbed or problematic.
estrictive l	_ayer (if observed):							
	Туре:		None			Hydric	Soil Present?	Yes 🟒 No
	Depth (inches):		NA					
emarks: he criterio	n for hydric soil is r	net. Re	fusal on rocks at	6 incl	nes.			

Photo of Sample Plot



East

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Yahara Hills Golf Course	City/County: Madison, Dane		Sampling Date: 202	1-Nov-09
Applicant/Owner: Dane County Waste & Renewa	bles State: V	Visconsin Sa	ampling Point: SP-16	5
Investigator(s): Amanda Larsen	Section, To	ownship, Range: 25-7	7N-R10E	
Landform (hillslope, terrace, etc.): Shoulder slope	Local relief (c	concave, convex, non	e): Convex	Slope (%): 3-6
Subregion (LRR or MLRA): LRR K	Lat: 43.03	657 Long: -8	89.25099	Datum: WGS84
Soil Map Unit Name: Virgil silt loam, gravelly subs	stratum, 0 to 3 percent slopes		WWI classification	n: W0Hx
Are climatic/hydrologic conditions on the site typica	I for this time of year? Yes	No 🟒 (If no, e	xplain in Remarks.)	
Are Vegetation Soil or Hydrology Are Vegetation Soil or Hydrology	significantly disturbed? Ar naturally problematic? (If	e "Normal Circumsta needed, explain any	nces" present? answers in Remarks.	Yes No 🟒)

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

Hydrophytic Vegetation Present?	Yes No 🟒		
Hydric Soil Present?	Yes No 🟒	Is the Sampled Area within a Wetland?	Yes No 🟒
Wetland Hydrology Present?	Yes No 🟒	If yes, optional Wetland Site ID:	
Remarks: (Explain alternative procedures her	e or in a separate report)	
Based on the absence of all three parameters	s, this area is an upland.	Circumstances are not normal due to mowing of vegeta	ation.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum o	<u>f one is required; check all t</u>	Secondary Indicators (minimum of two required)	
 Surface Water (A1) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) Marl Deposits (B15) Water Marks (B1) Hydrogen Sulfide Odor (C1) 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) 		Stained Leaves (B9) c Fauna (B13) eposits (B15) gen Sulfide Odor (C1) ed Rhizospheres on Living Roots (C3) ice of Reduced Iron (C4) Iron Reduction in Tilled Soils (C6) uck Surface (C7) (Explain in Remarks)	 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 🟒	Depth (inches):	
Water Table Present?	Yes No 🟒	Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present?	Yes No 🟒	Depth (inches):	
(includes capillary fringe)			
Describe Recorded Data (stream	m gauge, monitoring well, a	erial photos, previous inspections), if a	available:
Topo maps, soils map, WWI ma	p, aerial imagery		

Remarks:

The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal.

VEGETATION -- Use scientific names of plants.

Sampling Point: SP-16

<u>Tree Stratum</u> (Plot size: <u>30' r</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test workshee Number of Dominant Spe	et: cies That	0	
1. Pinus strobus	30	Yes	FACU	Are OBL, FACW, or FAC:		0	(A)
2.				Total Number of Dominar	nt Species	3	(B)
3.				Across All Strata:			
4.				Percent of Dominant Spec	cies That	0	(A/B)
5.				Are OBL, FACW, or FAC:			
6.				Prevalence Index workshe	eet:		
7.				Total % Cover of:	<u>_</u>	<u>Multiply</u>	<u>By:</u>
···	30	= Total Cov	er	OBL species	0	x 1 =	0
Sanling/Shrub Stratum (Plot size: 15' r)				FACW species	0	x 2 =	0
1				FAC species	0	x 3 =	0
·				FACU species	155	x 4 =	620
2.				UPL species	0	x 5 =	0
3				Column Totals	155	(A)	620 (B)
4.				Prevalence Inde	ex = B/A =	4	
5.				Hydrophytic Vegetation In	dicators:		
6				1- Rapid Test for Hvd	drophytic V	egetation	ı
7				2 - Dominance Test i	s > 50%	-8	-
	0	= Total Cov	er	3 - Prevalence Index	$15 < 3.0^{1}$		
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)				4 - Morphological Ad	lantations ¹	(Provide	supporting
1. <i>Poa compressa</i>	80	Yes	FACU	data in Remarks or on a s	eparate sh	eet)	supporting
2. <i>Poa pratensis</i>	30	Yes	FACU	Problematic Hydrop	hvtic Vege	tation ¹ (E:	xplain)
3. <i>Taraxacum officinale</i>	15	No	FACU	¹ Indicators of hydric soil a	nd wetlan	d hvdrolo	ev must be
4				present, unless disturbed	or probler	natic	8,
5.				Definitions of Vegetation	Strata:		
6.				Tree – Woody plants 3 in.	(7.6 cm) or	more in	diameter at
7.				breast height (DBH), regar	rdless of h	eight.	
8.				Sapling/shrub - Woody pl	ants less tl	han 3 in. I	DBH and
9.				greater than or equal to 3	.28 ft (1 m) tall.	
10				Herb – All herbaceous (no	n-woody)	plants, re	gardless of
11				size, and woody plants les	s than 3.2	8 ft tall.	-
12				Woody vines – All woody v	vines great	er than 3	.28 ft in
12	125	- Total Cav	<u></u>	height.			
Manaka Mina Churchana (Diatainan 2014)	125		er	Hydrophytic Vegetation P	Present?	/es l	No 🖌
<u>woody vine Stratum</u> (Plot size: <u>30' r</u>)							
1							
2							
3							
4							
	0	= Total Cov	er				
Remarks: (Include photo numbers here or on a separa	te sheet.)			_			
The criterion for hydrophytic vegetation is not met. Ve	getation sig	nificantly di	sturbed as a	a result of mowing. Planted	turf grass	area	
					0.000		

SOIL

Colo 0 - 5 10			Redox	Feat	ures	indicator	or committee a	,
0 - 5 10'	r (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
	YR 3/1	100		_			Loam	
				_				
				_				
				_				
				_				
				_				
				_				
pe: C = Concenti	ation, D = De	epletio	n, RM = Reduced	Mati	ix, MS =	Masked S	Sand Grains. ² L	ocation: PL = Pore Lining, M = Matrix.
dric Soil Indicato	rs:							Indicators for Problematic Hydric Soils ³ :
Histosol (A1)			Polyvalue Bel	ow S	urface (S	58) (LRR R	, MLRA 149B)	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Epipedon	(A2)		Thin Dark Su	face	(S9) (LRF	R R, MLRA	149B)	Coast Prairie Redox (A16) (LRR K, L, R)
Black Histic (A3)			Loamy Mucky	/ Min	eral (F1)	(LRR K, L)		5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
Hydrogen Sulfic	le (A4)		Loamy Gleye	d Ma	trix (F2)			Dark Surface (S7) (LRR K, L)
Stratified Layers	(A5) Dark Surfac	0 (A11)	Depleted Mai	TIX (F	·3) ·o (E6)			Polyvalue Below Surface (S8) (LRR K, L)
Thick Dark Surfa	ace (A12)	e (ATT)	Depleted Dark	k Sur	face (F7))		Thin Dark Surface (S9) (LRR K, L)
Sandy Mucky M	ineral (S1)	-	Redox Depre	ssion	s (F8)	, ,		Iron-Manganese Masses (F12) (LRR K, L, R)
Sandy Gleved N	latrix (S4)							Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy Redox (S	5)							Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Stripped Matrix	(S6)							Red Parent Material (F21)
Dark Surface (S	7) (LRR R, ML	RA 149	В)					Other (Explain in Remarks)
dicators of bydro	phytic voget	ation a	nd wotland bydr	olom	/ must b	o procont	uplass disturbe	d or problematic
strictive Laver (if	observed).	ationa		ulog	mustb		., uniess distuibe	
Type	observeu).		None			Hydric	Soil Present?	Yes No. /
Denth (inches).		NA					
narke:	incrico).		1.07.1					
		Jumet.	Kelusal on nin at		nes.			



West

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Yahara Hills Golf Course	n, Dane Sampling Date: 2021-Nov-09					
Applicant/Owner: Dane County Waste 8	& Renewables	State: Wisconsin	Sampling Point: SP-1	7		
Investigator(s): Amanda Larsen	Section, Township, Range: 25-T7N-R10E					
Landform (hillslope, terrace, etc.): Toe sl	ope	Local relief (concave, convex,	none): Concave	Slope (%): 1-3		
Subregion (LRR or MLRA): LRR K		Lat: 43.03652 Long	g: -89.25112	Datum: WGS84		
Soil Map Unit Name: Virgil silt loam, gra	avelly substratum, 0 to 3 percent s	slopes	WWI classificatio	n: W0Hx		
Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)						
Are Vegetation, Soil, or Hy Are Vegetation, Soil, or Hy	drology significantly disturb drology naturally problema	ed? Are "Normal Circun tic? (If needed, explain a	istances" present? any answers in Remarks	Yes 🟒 No .)		

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

Hydrophytic Vegetation Present?	Yes 🟒 No								
Hydric Soil Present?	Yes 🟒 No	Is the Sampled Area within a Wetland?	Yes 🯒 No						
Wetland Hydrology Present?	Yes 🟒 No	If yes, optional Wetland Site ID:	W-5						
Remarks: (Explain alternative procedures here or in a separate report)									
Based on the presence of all three parameters, this area is a wetland. Wetland ID: W-5									

HYDROLOGY

Wetland Hydrology Indicators:					
Primary Indicators (minimum of one	Secondary Indicators (minimum of two required)				
 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 Imag Sparsely Vegetated Concave Surf 	Water-5 Aquatic Marl De Hydrog Oxidize Presend Recent Thin Mu gery (B7) Other (1 Face (B8)	Stained Leaves (B9) : Fauna (B13) eposits (B15) en Sulfide Odor (C1) ed Rhizospheres on Living R ce of Reduced Iron (C4) Iron Reduction in Tilled Soi uck Surface (C7) Explain in Remarks)	oots (C3) ls (C6)	 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 _🖌	Depth (inches):			
Water Table Present?	Yes No _🖌	Depth (inches):		Wetland Hydrology Present? Yes No	
Saturation Present?	Yes No	Depth (inches):	0		
(includes capillary fringe)					

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Topo maps, soils map, WWI map, aerial imagery

Remarks:

The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are wetter than normal. Soil is episaturated. 0-6 inches saturated.

VEGETATION -- Use scientific names of plants.

Sampling Point: SP-17

Tree Stratum (Distring) - El y 401 -)	Absolute	Dominant	Indicator	Dominance Test workshe	et:		
<u>11ee Stratum</u> (Plot Size. <u>5 x 40)</u>	% Cover	Species?	Status	Number of Dominant Sp	ecies That	2	(A)
1				Are OBL, FACW, or FAC:			
2.				Total Number of Domina	nt Species	2	(B)
3.				Across All Strata:			
4.				Percent of Dominant Spe	cies That	100	(A/B)
5.				Are OBL, FACW, or FAC:			
6.				Prevalence Index worksh	eet:	N 4 41	D
7.				Iotal % Cover of	<u>:</u>		<u>ву:</u>
	0	= Total Cov	er		0	x I = -	0
Sapling/Shrub Stratum (Plot size: <u>5' x 40'</u>)		-			55	x Z = -	170
1. Salix interior	40	Yes	FACW	FAC species	5	× 3 = -	15
2. Rhamnus cathartica	5	No	FAC		8	× 4 = _	32
3.		······································			0	x 5 = _	0
4.					98	(A) _	217 (B)
5.		· ·		Prevalence Ind	ex = B/A =	2.2	
6.		· ·		Hydrophytic Vegetation I	ndicators:		
7.				1- Rapid Test for Hy	drophytic V	egetation/	ı
	45	= Total Cov	er	2 - Dominance Test	is >50%		
Herb Stratum (Plot size: 5' x 40')		-		3 - Prevalence Index	$is \leq 3.0^1$		
1. Phalaris arundinacea	45	Yes	FACW	4 - Morphological A	daptations	(Provide	supporting
2. Arctium minus	5	No	FACU	data in Remarks or on a s	separate sh	ieet)	
3. Dipsacus fullonum	3	No	FACU	Problematic Hydrop	onytic Vege	tation' (E>	(plain)
4.				present, unless disturbed or problematic			gy must be
5		<u> </u>		Definitions of Vegetation		Halic	
6		<u> </u>		Trop Woody plants 2 in	$\sqrt{7} 6 \text{ cm}$	moro in	diameter at
7		<u> </u>		hreast height (DBH) rega	rdless of h	eight	ulameter at
8				Sapling/shrub – Woody p	lants less t	han 3 in. [OBH and
o				greater than or equal to 3	3.28 ft (1 m) tall.	2211 4114
10				Herb – All herbaceous (n	on-woody)	plants, re	gardless of
11				size, and woody plants le	ss than 3.2	8 ft tall.	
12		·		Woody vines – All woody	vines great	ter than 3	.28 ft in
12	53	- Total Cov	or	height.			
Woody Vino Stratum (Plot size: E' x 40')	- 33	- 10101 COV	CI	Hydrophytic Vegetation	Present?	∕es 🖌 N	lo
1							
·		<u> </u>					
2.							
5							
4		- Tatal Car					
	0	= lotal Cov	er				
Remarks: (Include photo numbers here or on a separate	e sheet.)						
The criterion for hydrophytic vegetation is met. Shrub-C	arr plant o	community.					

SOIL

Induxty Induxty Induxty Induxty Induxty Remark (inches) Color (moist) % Color (moist) % Type' Loc² Texture Remark 0 - 6 10YR 3/2 95 10YR 5/8 5 C M Loam	is
Indresy Color (most) vi rype Loc Texture Nethank 0 - 6 10YR 3/2 95 10YR 5/8 5 C M Loam	
OF-0 IOTK 3/2 93 IOTK 3/8 3 C M Loann Image: Construction of the structure	
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	ia, 145, 1496)
Ked Parent Material (P21)	-12)
Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks)	(2)
raicators of hydrophytic vegetation and wetland hydrology must be present, dniess disturbed of problematic.	
zstrictive Layer (II observed).	
Type:No	
Depth (inches): NA	

Photo of Sample Plot



Northeast

Appendix E: Site Photographs











Photo No. Date 4 11/9/2021 Description Proof of growing season, Arctium minus (lesser burdock) and Phalaris arundinacea (reed canary grass)











Appendix F: Professional Opinion on Wetland Susceptibility

Table 5: Opinion of Susceptibility for NR 151 Setback Purposes

Note: Final authority on NR 151 protective areas rests with WDNR, but the following is TRC's opinion of each wetland's NR 151 protective area category.

Watland #	<u>Least</u>	Moderately	<u>Highly</u>
<u>wettand #</u>	<u>Susceptible</u>	<u>Susceptible</u>	<u>Susceptible</u>
W-1 (FWM)	x		
W-1 (SC/FF)		Х	
W-2	Х		
W-3	Х		
W-4	х		
W-5	Х		

Definitions of Susceptibility Per WDNR Administrative Code:

<u>Least Susceptible</u>: Degraded wetlands dominated by invasive species (\geq 90%) such as reed canary grass. Protective area = 10% of avg wetland width, but no less than 10' or more than 30'.

<u>Moderately Susceptible</u>: Fens, sedge meadows, bogs, low prairies, conifer swamps, shrub swamps, other forested wetlands, fresh wet meadows, shallow marshes, deep marshes and seasonally flooded basins. Protective area = 50'.

<u>Highly Susceptible:</u> Outstanding/exceptional resource waters, wetlands in areas of special natural resource interest as specificed in s. NR 103.04. Protective area = 75'.

M2 Wetland Determination Summary Report by Heartland Ecological Group Inc. (5/23/22)



506 Springdale Street, Mount Horeb, WI 53572

May 23, 2022

Ms. Teri Daigle Tetra Tech 8413 Excelsior Drive, Suite 160 Madison, WI 53717

RE: Wetland Determination Summary – Dane County Landfill Site No. 3 at Yahara Golf Course, City of Madison, Dane County, Wisconsin

Dear Ms. Daigle:

Heartland Ecological Group, Inc. ("Heartland") completed an assured wetland determination within a portion of the proposed Dane County Landfill Site No. 3 at the Yahara Hills Golf Course on April 25, 2022 at the request of Tetra Tech. Fieldwork was completed by Jeff Kraemer, an assured delineator qualified via the Wisconsin Department of Natural Resources (WDNR) Wetland Delineation Assurance Program (Attachment 5, Delineator Qualifications). The 72.70-**acre site (the "Study Area")** lies southeast of the intersection of 139/190 and US 12/18 in the southeast portion of the Yahara Hills Golf Course. The Study Area is in Sections 25 and 36, Township 7N, Range 10E, City of Madison, Dane County, Wisconsin (Attachment 1, Figure 1). The purpose of the wetland delineation was to determine the location and extent of wetlands within the Study Area. There were no wetlands identified within the Study Area (Attachment 1, Figure 6).

Methods

Wetland determinations were based upon 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* (Attachment 1, Figure 2), the Natural Resource Conservation Service's (NRCS) Soil Survey Geographic Database (SSURGO), U.S. Department of Agriculture's (USDA) *Web Soil Survey* (Attachment 1, Figure 3), the Wisconsin Department of Natural Resources' *Surface Water Data Viewer's* wetland indicator data layer (Attachment 1, Figure 4), the WDNR's *Wisconsin Wetland Inventory* data layer (Attachment 1, Figure 5), and aerial imagery available through the USDA Farm Service Agency's (FSA) National Agriculture Imagery Program (NAIP), Google Earth™, and Dane County's interactive mapping. The USGS *National Hydrography Dataset* is included on Attachment 1, Figures 2 and 5.

Wetland determinations were completed on-site at sample points, often along transects if wetlands were determined to be present, 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



Tetra Tech Dane County Landfill Site No. 3 Project #:20220702 May 23, 2022

were present or not present based on a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology.

The growing season was determined to be underway due to the presence of emerging reed canary grass (*Phalaris arundinacea*), brome grass (*Bromus inermis*), and burdock (*Arctium minus*). Leaves were present on honey suckle shrubs (*Lonicera x bella*). Sample point placement(s) for the wetland determination(s) were based on topography and the presence of potentially hydric soils as indicated by NRCS-mapped soil units and the **WDNR's SWDV**.

Recent weather conditions influence the visibility or presence of certain wetland hydrology indicators and an assessment of recent precipitation patterns can assist in determining if climatic/hydrologic conditions were typical when the field investigation was completed. Therefore, a review of the antecedent precipitation in the 90 days leading up to the field investigation was completed. Using an Antecedent Precipitation Tool (APT) analysis developed by the USACE, the amount of precipitation over the preceding 90 days was 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 days prior to the investigation were also considered while interpreting wetland hydrology indicators. In addition, the Palmer Drought Severity Index was checked for long-term drought or moist conditions (NOAA, 2018).

The sample point locations were recorded with a Global Positioning System (GPS) capable of sub-meter accuracy. Flagging was not used. The GPS data was used to map the sample points using ESRI ArcGIS Pro[™] 2.9.2 Geographical Information System (GIS) software.

Results

According to the APT analysis using the previous 90 days of precipitation data, conditions encountered at the time of the fieldwork were expected to be wetter than normal for the time of year (Attachment 2, APT Analysis). Site conditions observed during the field investigation were confirmed to be normal to wetter than normal given the time of year.

The topography within the Study Area was rolling, with various hills, depressions, and slopes and a topographic high of approximately 935 feet mean sea level (msl) in the east-central portion of the site, and a topographic low of approximately 901 feet msl near the northcentral portion of the site (Attachment 1, Figures 2 and 6). Land uses within the Study Area consist of active golf course and surrounding areas are primarily agricultural row cropping with residential, pasture, and woodland areas also present.

Soils mapped by the NRCS Soil Survey within the Study Area and their hydric status are summarized in Table 1 and illustrated on Figure 3. Those areas of the Study Area with hydric or potentially hydric soils mapped by the NRCS were the primary focus of the field wetland determination. The Wisconsin Wetland Inventory (WWI) mapping (Attachment 1, Figure 5) or the WDNR Wetland Indicator mapping does not identify wetlands or potential within the Study Area.


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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
DnC2: Dodge silt loam, 6 to 12 percent slopes, eroded	Dodge-Eroded	80-90	Drumlins	No
	St. Charles- Eroded	7-13	Till plains	No
	McHenry- Eroded	3-7	Moraines	No
KdD2: Kidder loam, 12 to 20 percent slopes, eroded	Kidder-Eroded	90-100	Moraines	No
	Casco-Eroded	0-5	Moraines	No
	McHenry	0-5	Moraines	No
MdC2: McHenry silt loam, 6 to 12 percent slopes, eroded	McHenry- Eroded	85-95 Moraines		No
	Kendall	2-7	Drainageways	No
	Kidder-Eroded	3-8	Moraines	No
Os: Orion silt loam, wet	Orion variant- Wet	85-95	Flood plains	Yes
	Otter	2-6	Flood plains	Yes
	Wacousta	2-5	Flood plains	Yes
	Sable	1-4	Flood plains	Yes
ScB: St. Charles silt loam, 2 to 6 percent slopes	St. Charles	80-90	Till plains	No
	St. Charles- Moderately well drained	5-10	Till plains	No
	Virgil	3-5	Till plains	No
	Pella	2-5	Drainageways	Yes
VwA: Virgil silt loam, gravelly substratum, 0 to 3 percent slopes	Virgil-Gravelly substratum	85-95	Drainageways on outwash plains	No
	Drummer- Drained	2-6	Depressions on outwash plains	Yes
	Sebewa	2-5	Depressions on outwash plains	Yes



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Soil symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
	Sable	1-4	Depressions on outwash plains	Yes
WxB: Whalan silt loam, 2 to 6 percent slopes	Whalan	100	Hills	No

Wetland determination data sheets (Attachment 3) were completed at one (1) sample where potential wetlands may be present based on the desktop review and field reconnaissance. Attachment 4 provides photographs, typically at the sample point locations and other representative locations of the Study Area. The sample point locations are shown on Figure 6.

Vegetation at the sample point location was comprised of shrub-scrub community at the edge of maintained fairway turf. Dominate species included smooth brome grass Kentucky blue grass (*Poa pratensis*, FACU), honey locust (*Gleditsia triacanthos*, FAC) and red pine (*Pinus resinosa*, FACU). Therefore, the hydrophytic vegetation criteria was not satisfied. No field indicators of hydric soils or indicators of wetland hydrology were observed.

Based on the results of the wetland determination, no wetlands are present within the limits of the Study Area.

Heartland recommends that all applicable regulatory agency reviews and permits are obtained prior to beginning work within the Study Area. 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 determination.

Experienced and qualified professionals completed the wetland determination using standard practices and professional judgment. Wetland determinations may be affected by conditions present within the Study Area at the time of the fieldwork. All final decisions on wetlands are made by the USACE, the WDNR, and/or sometimes a local unit of government. Wetland determination 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 determination 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.

Please feel free to contact me if you have any questions regarding this wetland determination.

Regards,

Jeff Kraemer, Principal Heartland Ecological Group, Inc. jeff@heartlandecological.com 608.490.2450 Ext. 2



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Attachments:

- 1 Figures 1-6
- 2 APT Analysis
- 3 Wetland Determination Data Sheets
- 4 Site Photographs
- 5 Delineator Qualifications



Attachment 1 | Figures















Attachment 2 | APT Analysis



Result

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WebWIMP H₂O Balance

igure and tables made by the intecedent Precipitation Tool Version 1.0

Wet Season

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

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
MADISON DANE RGNL AP	43.1406, -89.3453	866.142	8.077	9.778	3.714	11353	90

---- Daily Total

- 30-Day Rolling Total
 - 30-Year Normal Range

Jul 202	2 2	Aug Sep 2022 2022
ondition Value	Month Weight	Product
3	3	9
3	2	6
1	1	1
		Wetter than Normal - 16



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Attachment 3 | Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Dane County Landfill S	Jite No. 3	City/C	ounty: Madison, Dane	Sampl	ling Date: 4/25	5/22
Applicant/Owner: Dane County			State:	WI Sam	pling Point:	P1
Investigator(s): Jeff Kraemer, Heartla	and		Section, Township, Range: S	325/36, T7N, R	₹10E	
Landform (hillside, terrace, etc.): for	oothill	Local relief (c	oncave, convex, none): <u>concav</u>	е	Slope %:	3
Subregion (LRR or MLRA): LRR K	Lat:		Long:		Datum:	
Soil Map Unit Name: Orion Silt Loar	n (Os)		NWI classif	ication: none		
Are climatic / hydrologic conditions or	n the site typical for this	s time of year?	Yes No X	(If no, explain	in Remarks.)	
Are Vegetation, Soil,	or Hydrologysiç	gnificantly disturbed?	Are "Normal Circumstance	s" present?	Yes X No	
Are Vegetation, Soil,	or Hydrologyna	aturally problematic?	(If needed, explain any ans	swers in Rema	ırks.)	
SUMMARY OF FINDINGS –	Attach site map sl	howing sampling	point locations, transec	ts, importa:	ant features	, etc.
Hydrophytic Vegetation Present?	Yes	No X Ist!	ie Sampled Area			

riyurophytic vegetation riesent:	163		is the Sampled Alea
Hydric Soil Present?	Yes	No X	within a Wetland? Yes <u>No X</u>
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedur	es here or in a	separate report.)	

Based on WETS analysis conditions at the time of the investigation were wetter than normal. Observed conditions were confirmed wet to normal fo the time of year. Sample point located on low portion of project area, within relatively unmanaged vegetation. No wetalnd indicators or mapped wetlands are present in the project area. No observed portions of the Study Area supported wetland indicators based on the field assessment.

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)			
Primary Indicators (minimum of one is require	ed; check all that apply)	Surface Soil Cracks (B6)			
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns (B10)			
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)			
Saturation (A3)	Marl Deposits (B15)	Dry-Season Water Table (C2)			
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)			
Sediment Deposits (B2)	Saturation Visible on Aerial Imagery (C9)				
Drift Deposits (B3)	Stunted or Stressed Plants (D1)				
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Geomorphic Position (D2)			
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)			
Sparsely Vegetated Concave Surface (B	8)	FAC-Neutral Test (D5)			
Field Observations:		—			
Surface Water Present? Yes	No X Depth (inches):				
Water Table Present? Yes	No X Depth (inches):				
Saturation Present? Yes	No X Depth (inches): Wetlar	nd Hydrology Present? Yes No X			
(includes capillary fringe)	· · · /				
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previous inspections), if	available:			
Remarks:					
No hydrology indicators observed.					

VEGETATION – Use scientific names of plants.

Sampling Point:

P1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Pinus resinosa	30	Yes	FACU	Number of Dominant Species
2.				That Are OBL, FACW, or FAC: 1 (A)
3.				Total Number of Dominant
4.				Species Across All Strata: 3 (B)
5.		·		Barcont of Dominant Spacios
6.				That Are OBL, FACW, or FAC: 33.3% (A/B)
7.				Prevalence Index worksheet:
	30	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:))			OBL species 0 x 1 = 0
1				FACW species 0 x 2 = 0
2.				FAC species 20 x 3 = 60
3. Gleditsia triacanthos	20	Yes	FAC	FACU species 106 x 4 = 424
4. Prunus serotina	5	No	FACU	UPL species 15 x 5 = 75
5. Lonicera X bella	5	No	FACU	Column Totals: 141 (A) 559 (B)
6.				Prevalence Index = B/A = 3.96
7.				Hydrophytic Vegetation Indicators:
	30	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:)				2 - Dominance Test is >50%
1. Poa pratensis	60	Yes	FACU	3 - Prevalence Index is ≤3.0 ¹
2. Pastinaca sativa	15	No	UPL	4 - Morphological Adaptations ¹ (Provide supporting
3. Cirsium arvense	3	No	FACU	data in Remarks or on a separate sheet)
4. Taraxacum officinale	3	No	FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
5.				¹ Indicators of hydric soil and wetland hydrology must
6.				be present, unless disturbed or problematic.
7.				Definitions of Vegetation Strata:
8				Tree – Woody plants 3 in (7.6 cm) or more in
9				diameter at breast height (DBH), regardless of height.
10				Sanling/shrub – Woody plants less than 3 in DBH
11				and greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All berbaceous (non-woody) plants, regardless
	81	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:))			Woody vines – All woody vines greater than 3 28 ft in
1				height.
2				
3				Hydrophytic Vegetation
4				Present? Yes No X
		=Total Cover		
Remarks: (Include photo numbers here or on a sep	arate sheet.)			
Shrub-scrub, unmanaged rough				

(inches) Color (moist) % Color (moist) % Type Loc ² Texture Remarks 0-12 10YR 3/3 100	Depth	Matrix		Redo	x Featu	res				-	
0-12 10YR 3/3 100	(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remark	S
12-16 10YR 3/1 85	0-12	10YR 3/3	100					Loamy/Clayey		SiCL	
10YR 3/3 15 16-24 10YR 3/1 85 10YR 4/2 10 10YR 2/1 5 11 10 11 10 11 10 11 10	12-16	10YR 3/1	85					Loamy/Clayey		SiCL	
16:24 10YR 3/1 85		10YR 3/3	15								
10YR 4/2 10 10YR 2/1 5 10YR 2/1 10 10YR 2/1	16-24	10YR 3/1	85			<u> </u>		Loamy/Clayey		SiCL	
10YR 2/1 5		10YR 4/2	10								
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Indicators for Problematic Hydric Soils ³ : Histosol (A1) Polyvalue Below Surface (S8) (LRR R, MLRA 149B) 2 cm Muck (A10) (LRR K, L, MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, R) Hydrigen Sulfide (A4) High Chroma Sands (S11) (LRR K, L) Polyvalue Below Surface (S9) (LRR K, L) Depleted Below Dark Surface (A1) Loamy Gleyed Matrix (F2) Inon-Manganese Masses (F12) (LRR K, L, R) Sandy Mucky Mineral (S1) Redox Depressions (F8) Very Shallow Dark Surface (F22) Sandy Mucky Mineral (S1) Redox Depressions (F8) Very Shallow Dark Surface (F22) Sandy Mucky Mineral (S1) Redox Depressions (F8) Very Shallow Dark Surface (F22) Stratified Layer (K5) Redox Depressions (F8) Very Shallow Dark Surface (F22) Stratified Solit (G6) Mari (F10) (LRR K, L) Other (Explain in Remarks) Sandy Mucky Mineral (G1) Redox Depressions (F8) Very Shallow Dark Surface (F22) Stratified Layer (If observed): Trape: Depleted Matrix (S6) Mari (F10) (LRR K, L) Dark Surface (S7) ** Hydric Soil		10YR 2/1	5								
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Indicators for Problematic Hydric Soils ² : Histic Explexion MLRA 149B) Histic Explexion Coast Prairie Redox (A16) (LRR K, L, R) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Hydrogen Sulfide (A4) High Chroma Sands (S11) (LRR K, L) Polyvalue Below Surface (S9) (LRR K, L) Polyvalue Below Surface (S8) (LRR K, L) Depleted Below Dark Surface (A11) Loamy Mucky Mineral (F1) (LRR K, L) Depleted Below Dark Surface (A12) Depleted Matrix (F2) Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Sandy Redox (S5) Redox Depressions (F8) Sandy Redox (S5) Matri (F10) (LRR K, L) Dark Surface (S7) Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (If observed): Type:											
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Indicators for Problematic Hydric Soils ³ : Histic Epipedon (A2) MLRA 149B) Black Histic (A3) Thin Dark Surface (S9) (LRR R, L, R) Coast Praine Redox (A16) (LRR K, L, R) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) 5 cm Muck (A10) (LRR K, L, R) Black Histic (A3) Thin Dark Surface (S9) (LRR K, L) Polyvalue Below Surface (S9) (LRR K, L) Stratified Layers (A5) Loamy Mucky Mineral (F1) (LRR K, L) Depleted Below Dark Surface (A11) Loamy Gleyed Matrix (F2) Thick Dark Surface (A12) Depleted Matrix (F3) Sandy Gleyed Matrix (S4) Depleted Dark Surface (F6) Sandy Gleyed Matrix (S4) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S6) Marl (F10) (LRR K, L) Dark Surface (S7) Red Parent Material (F21) Sandy Redox (S5) Redox Depressions (F8) Very Shallow Dark Surface (F22) Stripped Matrix (S6) Marl (F10) (LRR K, L) Other (Explain in Remarks) Dark Surface (S7) Predemot Floodplain in Remarks) Depleted Dark Surface (F7) *Indicator						·					
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¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Indicators for Problematic Hydric Soils ³ : Histosol (A1) Polyvalue Below Surface (S8) (LRR R, L) Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Stratified Layers (A5) Loamy Mucky Mineral (F1) (LRR K, L) Polyvalue Below Dark Surface (A11) Loamy Gleyed Matrix (F2) Thick Dark Surface (A12) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Redox Cark Surface (F7) Sandy Redox (S5) Redox Derk Surface (F7) Sandy Redox (S5) Redox Deressions (F8) Uark Surface (S7) Marl (F10) (LRR K, L) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Remarks: Hydric Soil Present?						·					
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¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: Indicators for Problematic Hydric Soils ³ : Histosol (A1) Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2) Indicators for Problematic Hydric Soils ³ : Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, R) Hydrogen Sulfide (A4) High Chroma Sands (S11) (LRR K, L) Polyvalue Below Surface (S8) (LRR K, L, R) Depleted Below Dark Surface (A11) Loamy Gleyed Matrix (F2) Thin Dark Surface (F6) Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Mesic Spodic (TA6) (MLRA 1445, 1445, 149B) Sandy Redox (S5) Redox Depressions (F8) Very Shallow Dark Surface (F22) Stripped Matrix (S6) Matri (F10) (LRR K, L) Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Yes											
Hydric Soil Indicators: Polyvalue Below Surface (S8) (LRR R,2 cm Muck (A10) (LRR K, L, MLRA 149B)	¹ Type: C=C	oncentration, D=Dep	letion, RM	=Reduced Matrix, N	/IS=Mas	ked San	d Grains.	² Location:	PL=Pore Li	ning, M=Mat	rix.
Industry (rth) Industry (rth) (Litter, j., indict resp) Histic Epipedon (A2) MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, R) Black Histic (A3) Thin Dark Surface (S9) (LRR K, L) S cm Mucky Peat or Peat (S3) (LRR K, L, R) Hydrogen Sulfide (A4) High Chroma Sands (S11) (LRR K, L) Polyvalue Below Surface (S8) (LRR K, L) Stratified Layers (A5) Loamy Mucky Mineral (F1) (LRR K, L) Thin Dark Surface (S9) (LRR K, L) Depleted Below Dark Surface (A11) Loamy Gleyed Matrix (F2) Iron-Manganese Masses (F12) (LRR K, L, R) Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Sandy Gleyed Matrix (S4) Depleted Dark Surface (F7) Red Parent Material (F21) Sandy Redox (S5) Redox Depressions (F8) Very Shallow Dark Surface (F22) Stripped Matrix (S6) Marl (F10) (LRR K, L) Other (Explain in Remarks) Dark Surface (S7) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Remarks:	Hydric Soil Histosol	Indicators:		Polyvalue Belo	w Surfa	ace (S8) (Indicators	for Probler	matic Hydric	SOIIS":
Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) Hydrogen Sulfide (A4) High Chroma Sands (S11) (LRR K, L) Polyvalue Below Surface (S8) (LRR K, L, R) Stratified Layers (A5) Loamy Mucky Mineral (F1) (LRR K, L) Thin Dark Surface (S9) (LRR K, L, R) Depleted Below Dark Surface (A12) Depleted Matrix (F2) Iron-Manganese Masses (F12) (LRR K, L, R) Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Mesic Spodic (TA6) (MLRA 144A, 145, 149B Sandy Redox (S5) Redox Depressions (F8) Very Shallow Dark Surface (F22) Stripped Matrix (S6) Marl (F10) (LRR K, L) Other (Explain in Remarks) Back Surface (S7) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type:	Histic E	pipedon (A2)		MLRA 149B		(00) (Coast I	Prairie Redo	ox (A16) (LR	R K, L, R)
Hydrogen Sulfide (A4) High Chroma Sands (S11) (LRR K, L) Polyvalue Below Surface (S8) (LRR K, L) Stratified Layers (A5) Loamy Mucky Mineral (F1) (LRR K, L) Thin Dark Surface (S9) (LRR K, L) Depleted Below Dark Surface (A11) Loamy Gleyed Matrix (F2) Iron-Manganese Masses (F12) (LRR K, L, R) Thick Dark Surface (A12) Depleted Matrix (F3) Piedmont Floodplain Soils (F19) (MLRA 1449) Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Sandy Redox (S5) Redox Depressions (F8) Very Shallow Dark Surface (F22) Stripped Matrix (S6) Marl (F10) (LRR K, L) Other (Explain in Remarks) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type:	Black Hi	istic (A3)		Thin Dark Surf	, ace (S9) (LRR R	, MLRA [·]	149B) 5 cm N	lucky Peat of	or Peat (S3)	(LRR K, L, R)
Stratified Layers (A5) Loamy Mucky Mineral (F1) (LRR K, L) Thin Dark Surface (S9) (LRR K, L) Depleted Below Dark Surface (A11) Loamy Gleyed Matrix (F2) Iron-Manganese Masses (F12) (LRR K, L, R Thick Dark Surface (A12) Depleted Matrix (F3) Piedmont Floodplain Soils (F19) (MLRA 1491 Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Mesic Spodic (TA6) (MLRA 144A, 145, 149B Sandy Gleyed Matrix (S4) Depleted Dark Surface (F7) Red Parent Material (F21) Sandy Redox (S5) Redox Depressions (F8) Very Shallow Dark Surface (F22) Stripped Matrix (S6) Marl (F10) (LRR K, L) Other (Explain in Remarks) Dark Surface (S7) Restrictive Layer (if observed): Type: Type:	Hydroge	en Sulfide (A4)		High Chroma	Sands (S	S11) (LR	R K, L)	Polyval	ue Below S	Surface (S8) (LRR K, L)
Depleted Below Dark Surface (A11) Loamy Gleyed Matrix (F2) Iron-Manganese Masses (F12) (LRR K, L, R Thick Dark Surface (A12) Depleted Matrix (F3) Piedmont Floodplain Soils (F19) (MLRA 1491 Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Mesic Spodic (TA6) (MLRA 144A, 145, 149B Sandy Redox (S5) Redox Depressions (F8) Very Shallow Dark Surface (F22) Stripped Matrix (S6) Marl (F10) (LRR K, L) Other (Explain in Remarks) Jandicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type:	Stratifie	d Layers (A5)		Loamy Mucky	Mineral	(F1) (LR	R K, L)	Thin Da	ark Surface	(S9) (LRR K	Χ, L)
Thick Dark Surface (A12) Depleted Matrix (F3) Piedmont Floodplain Soils (F19) (MLRA 1491 Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Mesic Spodic (TA6) (MLRA 144A, 145, 149E Sandy Gleyed Matrix (S4) Depleted Dark Surface (F7) Red Parent Material (F21) Sandy Redox (S5) Redox Depressions (F8) Very Shallow Dark Surface (F22) Stripped Matrix (S6) Marl (F10) (LRR K, L) Other (Explain in Remarks) Dark Surface (S7) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type:	Deplete	d Below Dark Surface	e (A11)	Loamy Gleyed	Matrix	(F2)		Iron-Ma	anganese M	lasses (F12)	(LRR K, L, R)
Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Mesic Spodic (TA6) (MLRA 144A, 145, 149B Sandy Gleyed Matrix (S4) Depleted Dark Surface (F7) Red Parent Material (F21) Sandy Redox (S5) Redox Depressions (F8) Very Shallow Dark Surface (F22) Stripped Matrix (S6) Marl (F10) (LRR K, L) Other (Explain in Remarks) Dark Surface (S7) Marl (F10) (LRR K, L) Other (Explain in Remarks) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type:	Thick Da	ark Surface (A12)		Depleted Matri	x (F3)			Piedmo	ont Floodpla	ain Soils (F19	9) (MLRA 149B
Sandy Gleyed Matrix (S4) Depleted Dark Surface (F7) Red Parent Material (F21) Sandy Redox (S5) Redox Depressions (F8) Very Shallow Dark Surface (F22) Stripped Matrix (S6) Marl (F10) (LRR K, L) Other (Explain in Remarks) Dark Surface (S7) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Yes No X Remarks: Yes	Sandy M	/lucky Mineral (S1)		Redox Dark Su	urface (I	=6)		Mesic \$	Spodic (TA6	6) (MLRA 14	4 A , 145, 149B)
Sandy Redox (S5)	Sandy G	Gleyed Matrix (S4)		Depleted Dark	Surface	e (F7)		Red Pa	arent Materi	al (F21)	
Stripped Matrix (S6)Mari (F10) (LRR K, L)Other (Explain in Remarks) Dark Surface (S7)	Sandy F	Redox (S5)		Redox Depres	sions (F	8)		Very S	hallow Dark	Surface (F2	2)
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Remarks:	Stripped	Matrix (S6)		Marl (F10) (LR	(R K , L)			Other (Explain in F	Remarks)	
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed):											
Restrictive Layer (if observed): Type: Hydric Soil Present? Yes No X Depth (inches):	³ Indicators o	f hydrophytic vegetat	tion and w	etland hydrology mi	ust be p	resent, u	nless dist	urbed or problematic			
Type:	Restrictive	Layer (if observed):									
Depth (inches): Hydric Soil Present? Yes No X Remarks:	Type:								_		
Remarks:	Depth (i	nches):						Hydric Soil Prese	ent?	Yes	No X
	Remarks:										



Attachment 4 | Site Photographs



Assured Wetland Delineation Dane County, Wisconsin Heartland Project #: 20220702



Photo #1 RCG Emergence in off-site wetland



Photo #3 Woodland opening in SE part of site



Photo #5 Woodland opening in SE part of site



Photo #2 Honey suckle leaf out



Photo #4 Woodland opening in SE part of site



Photo #6 Old field in SE part of site





Photo #7 Typical pine/spruce area between fairways (east-central)



Photo #9 Service road on SE-S part of site



Photo #11 Typical fairway (southcentral)



Photo #8 Typical pine/spruce area between fairways (east-central)



Photo #10 Typical pine/spruce planting b/n fairways (south-southeast)



Photo #12 Typical fairway (southcentral)





Photo #13 Typical fairway (southcentral)



Photo #15 Pine/spruce/locust planting b/n fairways (central)



Photo #17 Pine/spruce planting b/n fairways (central)



Photo #14 Pine/spruce/locust planting b/n fairways (central)



Photo #16 Fairway at edge of pine/spruce planting (central)



Photo #18 Pine/spruce planting b/n fairways (northcentral)





Photo #19 Typical fairway (northcentral)



Photo #21 Honey locust thicket (northwest)



Photo #23 Honey locust thicket (northwest)



Photo #20 Honey locust thicket (northwest)



Photo #22 Honey locust thicket (northwest)



Photo #24 P1





Photo #25 P1



Photo #27 P1



Photo #29 Pine woodland (northcentral)



Photo #26 P1



Photo #28 P1



Photo #30 Pine woodland (northcentral)





Photo #31 Pine woodland (northcentral)



Photo #32 Pine woodland (northcentral)



Tetra Tech Dane County Landfill Site No. 3 Project #:20220702 May 23, 2022

Attachment 5 | 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 18 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