
Hollydale Golf Course

Plymouth, Hennepin County, Minnesota

Wetland Delineation Report

Prepared for

Jake Walesch

by

Kjolhaug Environmental Services Company, Inc.

(KES Project No. 2019-113)

September 27, 2019

Hollydale Golf Course

Plymouth, Hennepin County, Minnesota

Wetland Delineation Report

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Hollydale Golf Course

Plymouth, Hennepin County, Minnesota

Wetland Delineation Report

1. WETLAND DELINEATION SUMMARY

- The 156.7-acre Hollydale Golf Course was inspected on August 14, 2019 for the presence and extent of wetland.
- The National Wetlands Inventory (NWI) map showed six wetlands on the site.
- The soil survey showed Muskego and Houghton (Hydric), Hamel (Partially Hydric), Klossner (Hydric), Cordova (Predominantly Hydric), Houghton (Hydric), Minnetonka (Hydric) and Glencoe (Hydric).
- The DNR Public Waters Inventory showed two DNR Public Wetlands (Unnamed 27-600 W and Unnamed 27-599 W) north of the site and one DNR Public Wetland (Unnamed 27-601 W) approximately 770 feet south of the site.
- The National Hydrography Dataset showed five Lake/Ponds within the site boundaries, as well as one Stream/River on the central and southeastern portion of the site.
- Nine wetlands were delineated within the site boundaries as summarized below in **Table 1**.

Table 1. Wetlands delineated on the Hollydale Golf Course

Wetland ID	Wetland Type			Dominant Vegetation	Size (Acres Onsite)
	Circular 39	Cowardin	Eggers and Reed		
1	Type 5	PUBGx	Excavated Open Water Wetland	Open water, narrow fringe of cattail, beggarticks, smartweed	0.48
2	Type 5	PUBGx	Excavated Open Water Wetland	Open water, narrow fringe of orange jewelweed, sandbar willow, redosier dogwood	0.09
3	Type 5	PUBGx	Excavated Open Water Wetland	Open water, duckweed	0.08
4	Type 3/2	PEM1C/PEM1A	Shallow Marsh, Wet Meadow	Cattail, reed canary grass and scattered green ash trees	0.04
5	Type 2	PEM1A	Wet Meadow	Fowl bluegrass, Kentucky bluegrass	0.08
6	Type 1/2/3/6	PFO1Ad/PEM1Bd/PEM1Cd/PS1Cd	Forested Seasonally Flooded Basin, Wet Meadow, Shallow Marsh, Shrub-Carr	Cattail and reed canary grass, orange jewelweed, arrowleaf tearthumb, redosier dogwood, black willow, stinging nettle, sedges	30.21
7	Type 5/2	PUBGx/PEM1A	Open Water, Wet Meadow	Open water with a narrow fringe of fowl bluegrass	0.18
8	Type 5	PUBGx	Open Water	Open water, duckweed	0.20
9	Type 5	PUBGx	Open Water	Open water with a narrow fringe of smartweed	0.21

2. OVERVIEW

The 156.7-acre Hollydale Golf Course was inspected on August 14, 2019 for the presence and extent of wetland. The property was located in Section 8, Township 118 North, Range 22 West, City of Plymouth, Hennepin County, Minnesota. The site was situated north of MN State Highway 55, west of Vicksburg Lane North (**Figure 1**). The property corresponded to the following Hennepin County PID's: 0811822340014 and 0811822310001.

The site consisted of a golf course with greens, fairways, cart paths, clubhouse, and maintenance buildings. Topography of the site was hilly, sloping from 1020 ft MSL on the northeast portion of the site to 964 ft MSL on the southeast portion. Surrounding land use consisted single-family housing developments, woodland, schools and commercial buildings south of the site.

Nine wetlands were delineated within the site boundaries. The delineated wetland boundaries and existing conditions are shown on **Figure 2**.

Appendix A of this report includes a Joint Application Form for Activities Affecting Water Resources in Minnesota, which is submitted in request for: (1) a wetland boundary, No-Loss and wetland type determination under the Minnesota Wetland Conservation Act (WCA), and (2) delineation concurrence under Section 404 of the Federal Clean Water Act.

3. METHODS

3.1 Wetland Delineation

Wetlands were identified using the Routine Determination method described in the [Corps of Engineers Wetlands Delineation Manual](#) (Waterways Experiment Station, 1987) and the [Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region](#) (Version 2.0) as required under Section 404 of the Clean Water Act and the Minnesota Wetland Conservation Act.

Wetland boundaries were identified as the upper-most extent of wetland that met criteria for hydric soils, hydrophytic vegetation, and wetland hydrology. Wetland-upland boundaries were marked with pin flags that were located using Trimble Juno T41 GPS Units.

Soils, vegetation, and hydrology were documented at a representative location along the wetland-upland boundary. Plant species dominance was estimated based on the percent aerial or basal coverage visually estimated within a 30-foot radius for trees and vines, a 15-foot radius for the shrub layer, and a 5-foot radius for the herbaceous layer within the community type sampled.

Soils were characterized to a minimum depth of 24 inches (unless otherwise noted) using a [Munsell Soil Color Book](#) and standard soil texturing methodology. Hydric soil indicators used are from [Field Indicators of Hydric Soils in the United States](#) (USDA Natural Resources Conservation Service (NRCS) in cooperation with the National Technical Committee for Hydric Soils, Version 7, 2010).

Plants were identified using standard regional plant keys. Taxonomy and indicator status of plant species was taken from the [2015 National Wetland Plant List](#) (U.S. Army Corps of Engineers 2014. National Wetland Plant List, version 3.2, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH).

4. RESULTS

4.1 Review of NWI, Soils, Public Waters, and NHD Information

The [National Wetlands Inventory \(NWI\)](#) (Minnesota Geospatial Commons 2009-2014 and [U.S. Fish and Wildlife Service](#)) showed six wetlands on the site (**Figure 3**).

The [Soil Survey](#) (USDA NRCS 2015) showed Muskego and Houghton (Hydric), Hamel (Partially Hydric), Klossner (Hydric), Cordova (Predominantly Hydric), Houghton (Hydric), Minnetonka (Hydric) and Glencoe (Hydric). Soil types are listed in **Table 2** on the following page and a map showing soil types is included as **Figure 4**.

Table 2. Soil types mapped on the Hollydale Golf Course

Symbol	Soil Name	Acres	% of Area	% Hydric	Hydric Category
L50A	Muskego and Houghton soils	37.88	24.13	100	Hydric
L44A	Nessel loam	22.33	14.22	10	Predominantly Non-Hydric
L22C2	Lester loam, 6 to 10 percent slopes, moderately eroded	21.62	13.77	2	Predominantly Non-Hydric
L37B	Angus loam	16.66	10.61	5	Predominantly Non-Hydric
L22D2	Lester loam, 10 to 16 percent slopes, moderately eroded	14.97	9.54	0	Non-Hydric
L36A	Hamel, overwash-Hamel complex, 0 to 3 percent slopes	11.22	7.15	45	Partially Hydric
L49A	Klossner soils	10.53	6.71	100	Hydric
L23A	Cordova loam, 0 to 2 percent slopes	9.29	5.92	95	Predominantly Hydric
L14A	Houghton muck	5.85	3.73	100	Hydric
L9A	Minnetonka silty clay loam	3.80	2.42	100	Hydric
L45A	Dundas-Cordova complex	2.14	1.36	30	Predominantly Non-Hydric
L40B	Angus-Kilkenny complex	0.68	0.44	5	Predominantly Non-Hydric
L24A	Glencoe clay loam	0.35	0.22	100	Hydric
L22F	Lester loam, morainic, 25 to 35 percent slopes	0.04	0.02	5	Predominantly Non-Hydric

The [Minnesota DNR Public Waters Inventory](#) (Minnesota Department of Natural Resources 2015) showed two DNR Public Wetlands (Unnamed 27-600 W and Unnamed 27-599 W) north of the site and one DNR Public Wetland (Unnamed 27-601 W) approximately 770 feet south of the site (**Figure 5**).

The [National Hydrography Dataset](#) (U.S. Geological Survey 2015) showed five Lake/Ponds within the site boundaries, as well as one Stream/River on the central and southeastern portion of the site (**Figure 6**).

4.2 Wetland Determinations and Delineations

Potential wetlands were evaluated during field observations on August 14, 2019. Nine wetlands were identified and delineated on the property (**Figure 2**). Corresponding data forms are included in **Appendix B**. The following descriptions of the wetlands and adjacent uplands reflects conditions observed at the time of the field visit. Herbaceous vegetation was actively growing. Precipitation conditions were within the normal range based on available 30-day rolling total precipitation and typical based on three-month antecedent precipitation data (**Appendix C**). A wetland boundary survey will be provided when it becomes available. Wetland descriptions are provided on the following page on **Table 3**.

Table 3. Delineated Wetland Descriptions - Hollydale Golf Course

Wetland ID	Circular 39	Cowardin	Eggers and Reed	Dominant Vegetation	Adjacent Upland Vegetation	Observed Drainage Features	Observed Hydrology Indicat	Mapped NWI Wetland	Mapped Soil Series	Size (Acres Onsite)	Comments
1	Type 5	PUBGx	Excavated Open Water Wetland	Open water, narrow fringe of cattail, beggarticks, smartweed	Mowed golf course green dominated by Kentucky bluegrass with a lesser amount of white clover	Isolated basin; no inlets or outlets observed	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	PUBGx	Houghton, Hamel, Lester	0.48	Wetland 1 is an ornamental pond that was excavated in upland as described in Section 4.4 of the report.
2	Type 5	PUBGx	Excavated Open Water Wetland	Open water, narrow fringe of orange jewelweed, sandbar willow, redosier dogwood	Mowed golf course green dominated by Kentucky bluegrass	Isolated basin; no inlets or outlets observed	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	None	Hamel	0.09	Wetland 2 is an ornamental pond that was excavated in upland as described in Section 4.4 of the report.
3	Type 5	PUBGx	Excavated Open Water Wetland	Open water, duckweed	Mowed golf course green dominated by Kentucky bluegrass with a lesser amount of white clover	Isolated basin; no inlets or outlets observed	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	PUBGx	Lester	0.08	Wetland 3 is an ornamental pond that was excavated in upland as described in Section 4.4 of the report.
4	Type 3/2	PEM1C/PEM1A	Shallow Marsh, Wet Meadow	Cattail, reed canary grass and scattered green ash trees	Meadow dominated by creeping charlie, reed canary grass, smooth brome and common milkweed with scattered common buckthorn	Wetland 4 extends offsite to the east and west, connecting with wetlands adjacent to the railroad tracks	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	None	Cordova	0.04	Wetland 4 was part of a linear wetland adjacent to the railroad.
5	Type 2	PEM1A	Wet Meadow	Fowl bluegrass, Kentucky bluegrass	Mowed golf course green dominated by Kentucky bluegrass	Wetland 4 extends offsite to the north, connecting with wetlands adjacent to the railroad tracks	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	None	Minnetonka	0.08	None
6	Type 1/2/3/6	PFO1Ad/PEM1Bd/PEM1Cd/PSS1Cd	Forested Seasonally Flooded Basin, Wet Meadow, Shallow Marsh, Shrub-Carr	Cattail and reed canary grass, orange jewelweed, arrowleaf tearthumb, redosier dogwood, black willow, stinging nettle, sedges	Mowed golf course green dominated by Kentucky bluegrass with a lesser amount of common plantain, white clover and dandelion	Flows into a ditch network that drains into Bassett Creek approximately 2,000 feet south of the site	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	PABG/PSS1Ad/PEM1Ad/PFO1Ad/R2UBFx	Muskego and Houghton, Minnetonka	30.21	Wetland 6 contained an extensive ditch network and shows evidence of drainage.
7	Type 5/2	PUBGx/PEM1A	Open Water, Wet Meadow	Open water with a narrow fringe of fowl bluegrass	Mowed golf course green dominated by Kentucky bluegrass	Contains several inlets from the surrounding drain tile network; no outlets were observed	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test, Water-Stained Leaves	PUBGx	Klossner	0.18	None
8	Type 5	PUBGx	Open Water	Open water, duckweed	Mowed golf course green dominated by Kentucky bluegrass with a lesser amount of white clover and scattered white spruce and quaking aspen trees	Isolated basin; no inlets or outlets observed	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	PUBGx	Nessel, Angus	0.20	Wetland 8 is an ornamental pond that was excavated in upland as described in Section 4.4 of the report.
9	Type 5	PUBGx	Open Water	Open water with a narrow fringe of smartweed	Mowed golf course green dominated by Kentucky bluegrass	Drains though a tile into a ditch north of the site	Saturation, High Water Table, Geomorphic Position, FAC Neutral Test	PUBGx	Glencoe, Minnetonka	0.21	None

4.3 Other Areas

Other areas were investigated because they were: (1) observed to support a hydrophytic plant community, (2) had visible wetland hydrology indicators, (3) were shown as wetland on the NWI map, or (4) were depressional and mapped as hydric soil. Field investigation led to the conclusion that these areas were not wetland.

An area on the northern portion of the site was mapped as Cordova loam (Predominantly Hydric) on the soil survey (See **Figure 4**). This area was inspected in the field, and consisted of a hillslope golf course green dominated by Kentucky bluegrass, with a lesser amount of white clover, dandelion and white spruce trees.

An area on the central portion of the site was mapped with hydric soils including Houghton Muck (Hydric), Hamel (Partially Hydric) and Klossner (Hydric) on the soil survey (See **Figure 4**). This area was inspected in the field, and consisted of mowed golf course greens dominated by Kentucky bluegrass with a lesser amount of dandelion, common plantain, white clover and scattered white spruce trees. Although this area contained topographic depressions, it did not contain wetland plant communities, and was effectively drained by a network of drain tiles present onsite (See **Figure 2**). Because of the functional drainage system present within this area, Geomorphic Position does not apply. Although hydric soils were present, this area did not contain a wetland plant community, and did not meet one primary or two secondary indicators of wetland hydrology. Therefore, this area was determined to be upland.

4.4 Incidental Wetlands Discussion

The Hollydale Golf Course site contains numerous excavated ornamental ponds, and a separate memorandum will be prepared to establish the regulatory status of those ponds under the Minnesota Wetland Conservation Act and Section 404 of the Clean Water Act. Historic aerial photos and historic USGS Topography Maps will be provided at that time.

4.5 Request for Wetland Boundary and Jurisdictional Determination

Appendix A of this report includes a Joint Application Form for Activities Affecting Water Resources in Minnesota, which is submitted in request for: (1) a wetland boundary, No-Loss and wetland type determination under the Minnesota Wetland Conservation Act (WCA), and (2) delineation concurrence under Section 404 of the Federal Clean Water Act.

5. CERTIFICATION OF DELINEATION

The procedures utilized in the described delineation are based on the U.S. Army Corps of Engineers 1987 Wetlands Delineation Manual as required under Section 404 of the Clean Water Act and the Minnesota Wetland Conservation Act. This wetland delineation and report were prepared in compliance with the regulatory standards in place at the time the work was performed.

Site boundaries indicated on figures within this report are approximate and do not constitute an official survey product.

Delineation completed by: A Kyle Uhler, GIS & Remote Sensing Specialist
MN Certified Wetland Delineator

Will Effertz, Natural Resources Assistant

Report prepared by: Adam Cameron, Wetland Ecologist/GIS Specialist
MN Certified Wetland Delineator No. 1321

Report reviewed by:  _____ Date: September 27, 2019

Mark Kjolhaug, Professional Wetland Scientist No. 000845

Hollydale Golf Course

Wetland Delineation Report

FIGURES

1. Site Location
2. Existing Conditions
3. National Wetlands Inventory
4. Soil Survey
5. DNR Protected Waters Inventory
6. National Hydrography Dataset

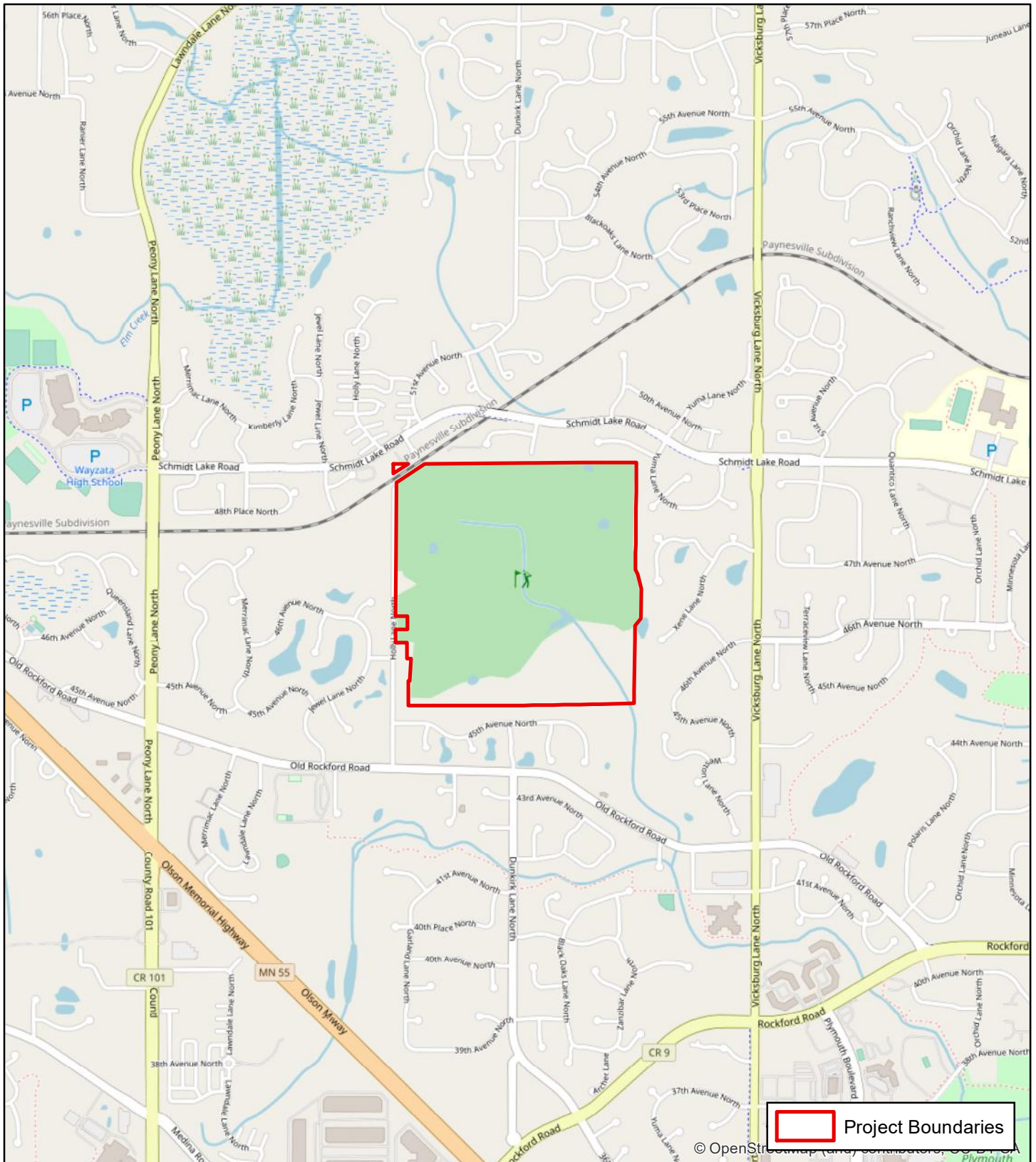


Figure 1 - Site Location Map



KJOLHAUG ENVIRONMENTAL SERVICES COMPANY
Source: ESRI Streets Basemap

N



0 1,500 Feet



Hollydale Golf Course (KES 2019-113)
Plymouth, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

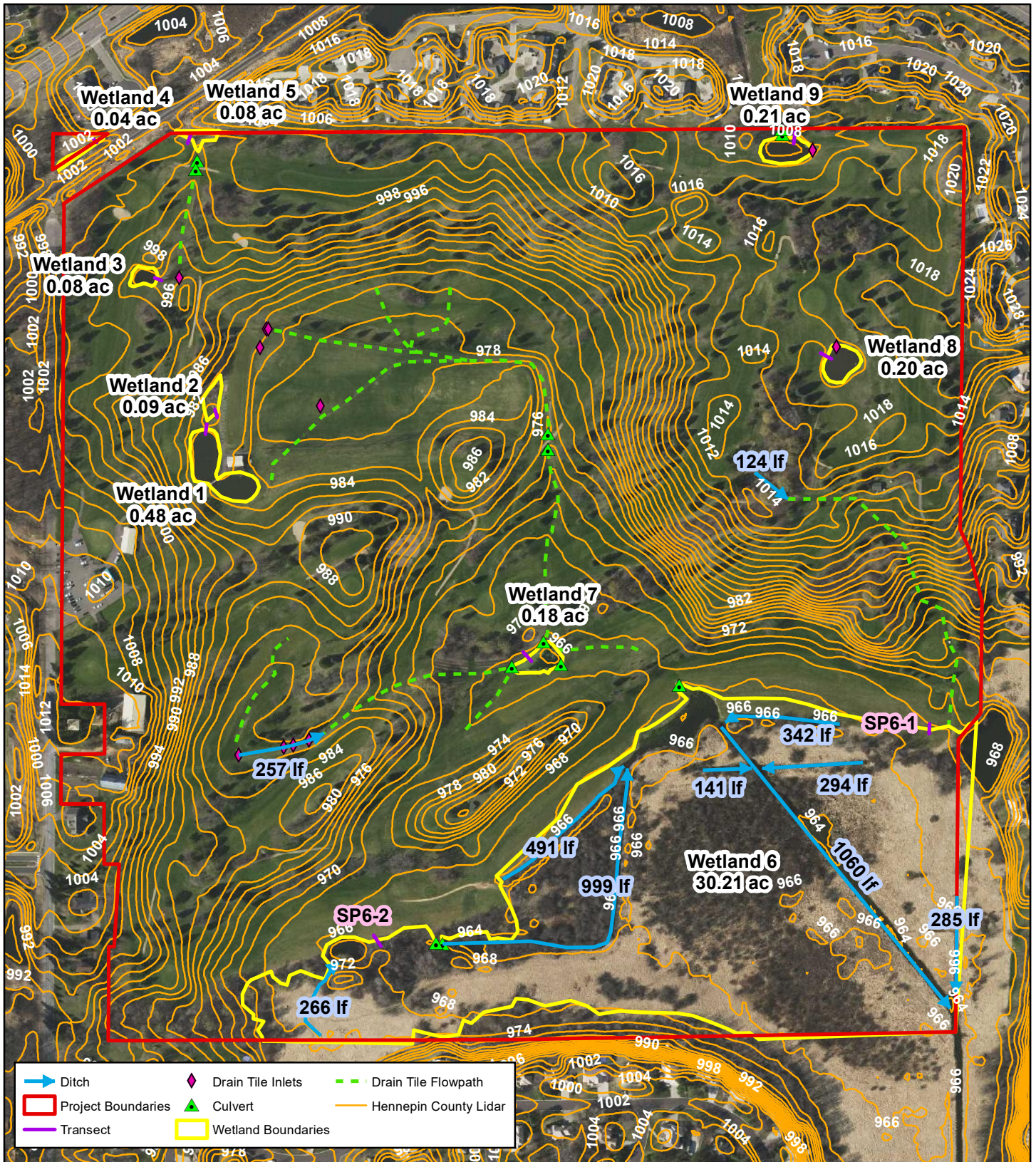


Figure 2 - Existing Conditions (2016 MNGEO Photo)



0 400
Feet

Hollydale Golf Course (KES 2019-113)
Plymouth, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MNGEO Spatial Commons

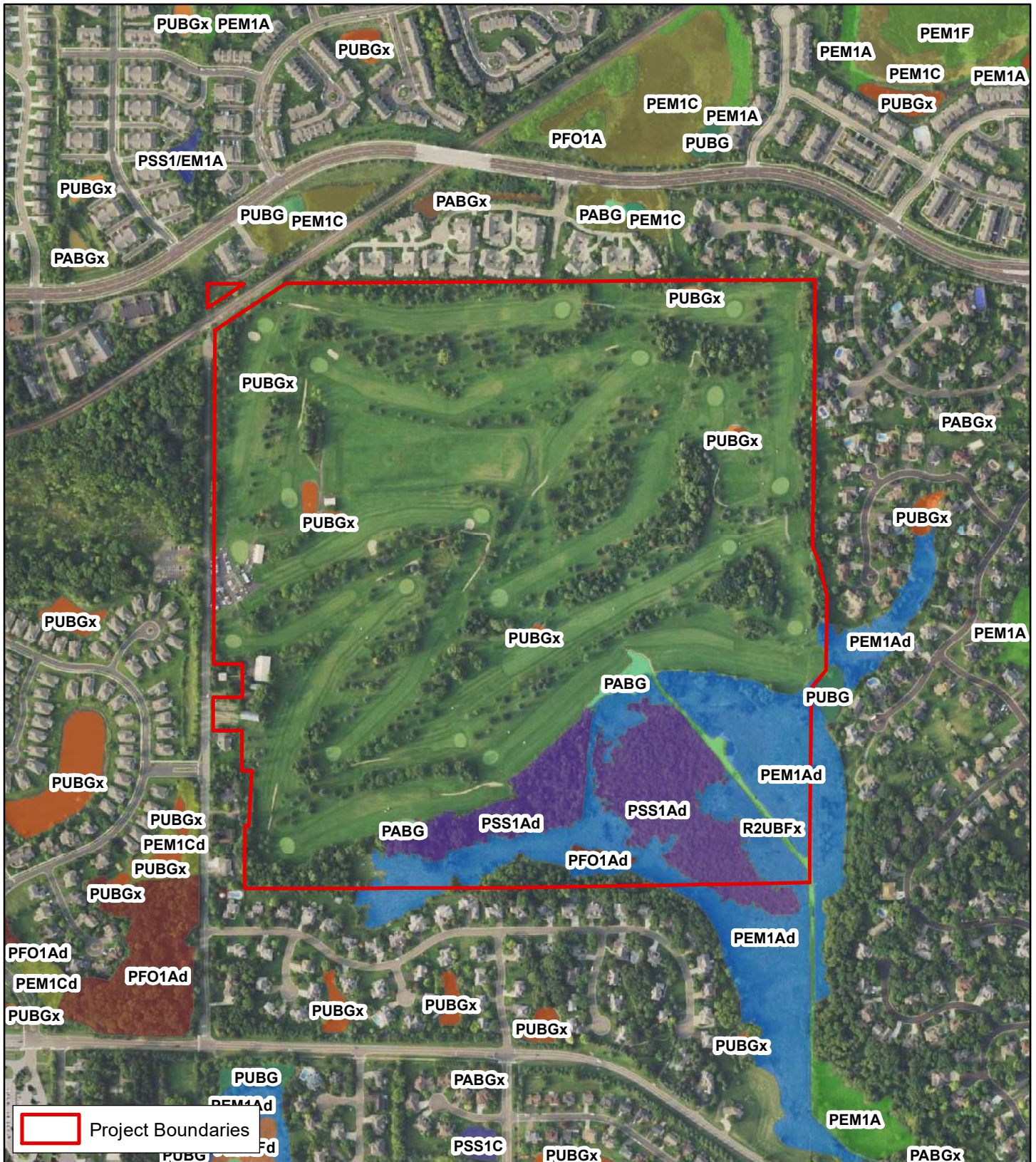


Figure 3 - National Wetlands Inventory



N

0 600



Feet

Hollydale Golf Course (KES 2019-113)
Plymouth, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.



KJOLHAUG ENVIRONMENTAL SERVICES COMPANY
 Source: MNGEO Spatial Commons, USFWS

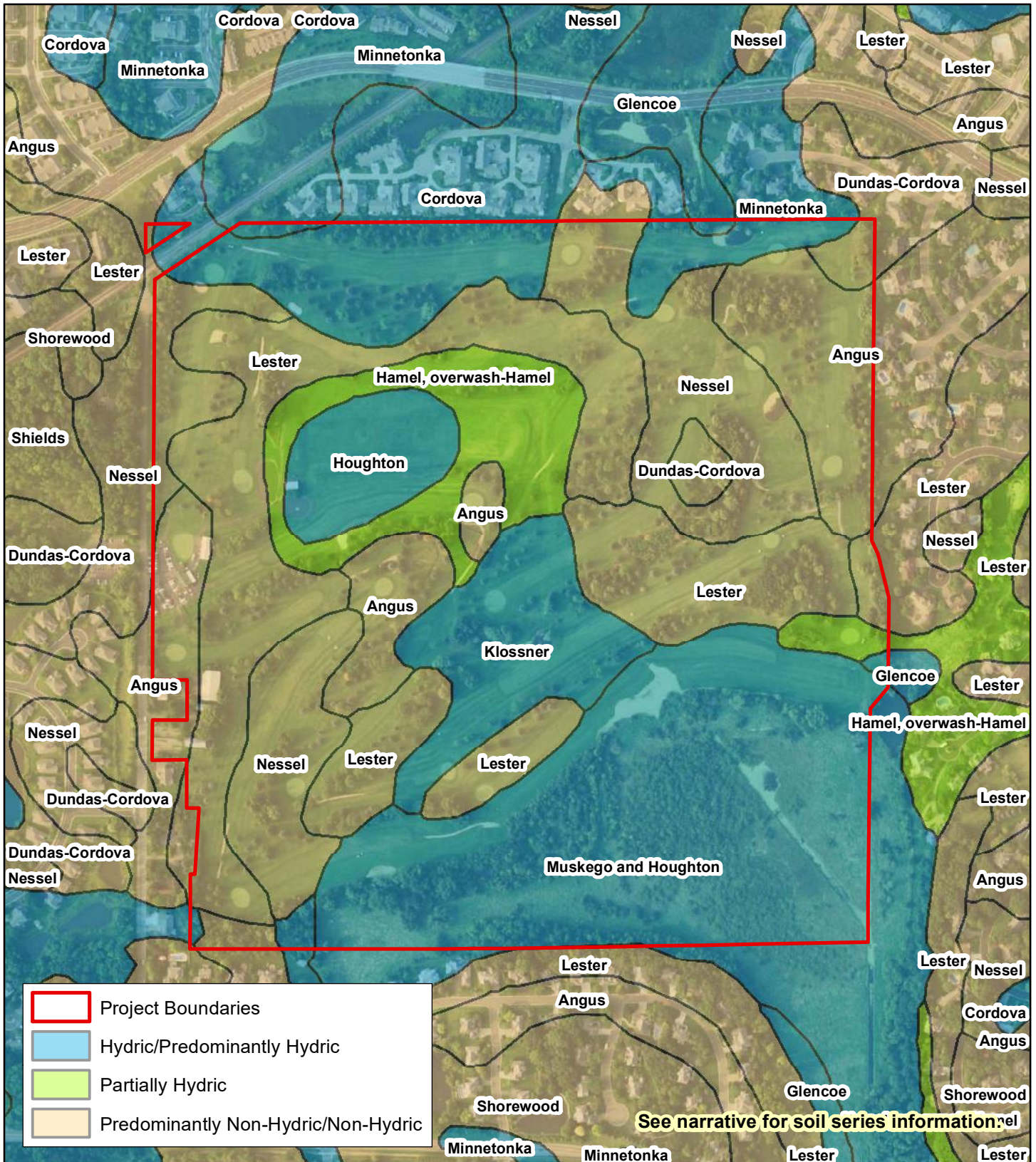


Figure 4 - Soil Survey



N



0 500
Feet



Hollydale Golf Course (KES 2019-113)
Plymouth, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY
 Source: MNGEO Spatial Commons, USDA, NRCS



Figure 5 - DNR Public Waters Inventory

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY
 Source: MNGEO Spatial Commons, MN DNR

**Hollydale Golf Course (KES 2019-113)
 Plymouth, Minnesota**

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

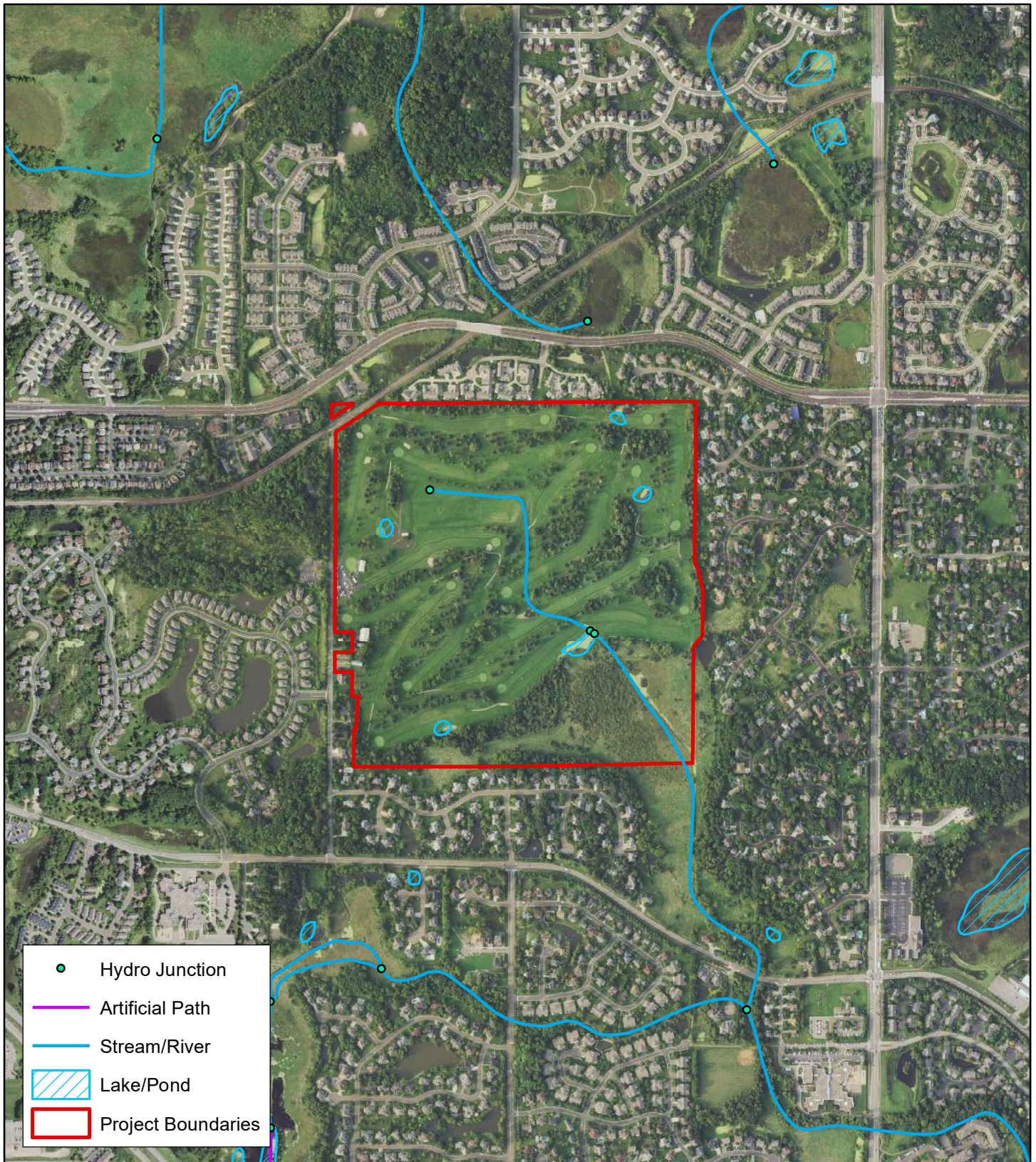


Figure 6 - National Hydrography Dataset



N



0 1,000
Feet



Hollydale Golf Course (KES 2019-113)
Plymouth, Minnesota

Note: Boundaries indicated on this figure are approximate and do not constitute an official survey product.

KJOLHAUG ENVIRONMENTAL SERVICES COMPANY

Source: MNGEO Spatial Commons, USGS

Hollydale Golf Course

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APPENDIX A

Joint Application Form for Activities Affecting Water Resources in Minnesota

PART ONE: Applicant Information

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: ~~Jake Walesch~~ *Hollydale GG Development, Inc.*
Mailing Address: 10850 Old County Road 15, Suite 200, Plymouth MN 55441
Phone: 612-749-1360
E-mail Address: Jake@Jakewalesch.com

Authorized Contact (do not complete if same as above):

Mailing Address:

Phone:

E-mail Address:

Agent Name: Adam Cameron

Mailing Address: 2500 Shadywood Road #130, Orono MN 55331

Phone: 952-401-8757 Ext. #106

E-mail Address: Adam@kjolhaugenv.com

PART TWO: Site Location Information

County: Hennepin

City/Township: Plymouth

Parcel ID and/or Address: 0811822340014, 0811822310001

Legal Description (Section, Township, Range): S:8 T:118N R:22W

Lat/Long (decimal degrees): -

Attach a map showing the location of the site in relation to local streets, roads, highways.

Approximate size of site (acres) or if a linear project, length (feet): 156.7

If you know that your proposal will require an individual Permit from the U.S. Army Corps of Engineers, you must provide the names and addresses of all property owners adjacent to the project site. This information may be provided by attaching a list to your application or by using block 25 of the Application for Department of the Army permit which can be obtained at:

http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform_4345_2012oct.pdf

PART THREE: General Project/Site Information

If this application is related to a delineation approval, exemption determination, jurisdictional determination, or other correspondence submitted *prior to* this application then describe that here and provide the Corps of Engineers project number.

Describe the project that is being proposed, the project purpose and need, and schedule for implementation and completion. The project description must fully describe the nature and scope of the proposed activity including a description of all project elements that effect aquatic resources (wetland, lake, tributary, etc.) and must also include plans and cross section or profile drawings showing the location, character, and dimensions of all proposed activities and aquatic resource impacts.

PART FOUR: Aquatic Resource Impact¹ Summary

If your proposed project involves a direct or indirect impact to an aquatic resource (wetland, lake, tributary, etc.) identify each impact in the table below. Include all anticipated impacts, including those expected to be temporary. Attach an overhead view map, aerial photo, and/or drawing showing all of the aquatic resources in the project area and the location(s) of the proposed impacts. Label each aquatic resource on the map with a reference number or letter and identify the impacts in the following table.

Aquatic Resource ID (as noted on overhead view)	Aquatic Resource Type (wetland, lake, tributary etc.)	Type of Impact (fill, excavate, drain, or remove vegetation)	Duration of Impact Permanent (P) or Temporary (T) ¹	Size of Impact ²	Overall Size of Aquatic Resource ³	Existing Plant Community Type(s) in Impact Area ⁴	County, Major Watershed #, and Bank Service Area # of Impact Area ⁵

¹If impacts are temporary; enter the duration of the impacts in days next to the "T". For example, a project with a temporary access fill that would be removed after 220 days would be entered "T (220)".

²Impacts less than 0.01 acre should be reported in square feet. Impacts 0.01 acre or greater should be reported as acres and rounded to the nearest 0.01 acre. Tributary impacts must be reported in linear feet of impact and an area of impact by indicating first the linear feet of impact along the flowline of the stream followed by the area impact in parentheses). For example, a project that impacts 50 feet of a stream that is 6 feet wide would be reported as 50 ft (300 square feet).

³This is generally only applicable if you are applying for a de minimis exemption under MN Rules 8420.0420 Subp. 8, otherwise enter "N/A".

⁴Use *Wetland Plants and Plant Community Types of Minnesota and Wisconsin* 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.

⁵Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

If any of the above identified impacts have already occurred, identify which impacts they are and the circumstances associated with each:

PART FIVE: Applicant Signature

Check here if you are requesting a pre-application consultation with the Corps and LGU based on the information you have provided. Regulatory entities will not initiate a formal application review if this box is checked.

By signature below, I attest that the information in this application is complete and accurate. I further attest that I possess the authority to undertake the work described herein.

Hollydale GC Development, Inc.
 Signature: *[Signature]* Date: *9/27/19*
Its: President

I hereby authorize Kjolhaug Environmental to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this application.

¹ The term "impact" as used in this joint application form is a generic term used for disclosure purposes to identify activities that may require approval from one or more regulatory agencies. For purposes of this form it is not meant to indicate whether or not those activities may require mitigation/replacement.

Attachment A

Request for Delineation Review, Wetland Type Determination, or Jurisdictional Determination

By submission of the enclosed wetland delineation report, I am requesting that the U.S. Army Corps of Engineers, St. Paul District (Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):

Wetland Type Confirmation

Delineation Concurrence. Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).

Preliminary Jurisdictional Determination. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.

Approved Jurisdictional Determination. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.

In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the *Guidelines for Submitting Wetland Delineations in Minnesota* (2013).

<http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx>

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APPENDIX B

Wetland Delineation Data Forms

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP1-1U
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 1 to 4 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Hamel Consociation NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil X, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point is located within a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4 _____	_____	_____	_____	FAC species <u>55</u> x 3 = <u>165</u>
5 _____	_____	_____	_____	FACU species <u>35</u> x 4 = <u>140</u>
<u>0</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>
				Column totals <u>90</u> (A) <u>305</u> (B)
				Prevalence Index = B/A = <u>3.39</u>
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:
1 <u>Poa Pratensis</u>	<u>55</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Trifolium repens</u>	<u>35</u>	<u>Y</u>	<u>FACU</u>	____ Dominance test is >50%
3 _____	_____	_____	_____	____ Prevalence index is ≤3.0*
4 _____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____	_____	_____	_____	____ Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>90</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>N</u>
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP1-1U

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 4	10YR 2/2	100					Mucky Loam	
4 to 12	10YR 2/2	55					Clay Loam	Disturbed
	10YR 3/1	45					Clay Loam	Disturbed
12 to 24	10YR 2/1	100					Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed): Type: _____ Depth (inches): _____ Remarks: _____	Hydric soil present? <u>Y</u>
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HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: _____

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP1-1W
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Hamel Consociation NWI Classification: PUBGx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
If yes, optional wetland site ID: <u>Wetland 1</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point was on the edge of a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 _____	_____	_____	_____		Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4 _____	_____	_____	_____		
5 _____	_____	_____	_____		
<u>0</u> = Total Cover					
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet	
1 _____	_____	_____	_____		Total % Cover of:
2 _____	_____	_____	_____	OBL species <u>3</u> x 1 = <u>3</u>	
3 _____	_____	_____	_____	FACW species <u>2</u> x 2 = <u>4</u>	
4 _____	_____	_____	_____	FAC species <u>80</u> x 3 = <u>240</u>	
5 _____	_____	_____	_____	FACU species <u>15</u> x 4 = <u>60</u>	
<u>0</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>	
				Column totals <u>100</u> (A) <u>307</u> (B)	
				Prevalence Index = B/A = <u>3.07</u>	
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Poa Pratensis</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>		<input type="checkbox"/> Rapid test for hydrophytic vegetation
2 <u>Digitaria ischaemum</u>	<u>15</u>	<u>N</u>	<u>FACU</u>		<input checked="" type="checkbox"/> Dominance test is >50%
3 <u>typha x glauca</u>	<u>3</u>	<u>N</u>	<u>OBL</u>		<input type="checkbox"/> Prevalence index is ≤3.0*
4 <u>Bidens frondosa</u>	<u>2</u>	<u>N</u>	<u>FACW</u>		Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____	_____	_____	_____		<input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____		
7 _____	_____	_____	_____		
8 _____	_____	_____	_____		
9 _____	_____	_____	_____		
10 _____	_____	_____	_____		
<u>100</u> = Total Cover					
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status		
1 _____	_____	_____	_____		
2 _____	_____	_____	_____		
<u>0</u> = Total Cover					

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

SOIL

Sampling Point: SP1-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 4	10YR 2/1	100					Mucky Loam	
4 to 10	10YR 2/1	80	5G 5/1	15	D	M	Clay Loam	
			10YR 4/6	5	C	M	Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

Likely Depleted below dark surface

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)

- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): 5
 Saturation present? Yes No Depth (inches): 0
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP2-1U
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 1 to 4 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Hamel Consociation NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil X, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point is located within a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4 _____	_____	_____	_____	FAC species <u>80</u> x 3 = <u>240</u>
5 _____	_____	_____	_____	FACU species <u>20</u> x 4 = <u>80</u>
	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>
	_____	_____	_____	Column totals <u>100</u> (A) <u>320</u> (B)
	_____	_____	_____	Prevalence Index = B/A = <u>3.20</u>
	<u>0</u> = Total Cover			
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1 <u>Poa Pratensis</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Trifolium repens</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
	<u>100</u> = Total Cover			
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
	<u>0</u> = Total Cover			

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

SOIL

Sampling Point: SP2-1U

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 12	10YR 2/2	100					Loam	
12 to 18	10YR 2/1	100					Clay Loam	
18 to 27	10YR 3/1	100					Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)		Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)	
*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic					

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u> N </u>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (minimum of two required)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Gauge or Well Data (D9)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)				
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)					
<input type="checkbox"/> Water-Stained Leaves (B9)					

Field Observations: Surface water present? Yes _____ No <u> X </u> Depth (inches): _____ Water table present? Yes _____ No <u> X </u> Depth (inches): _____ Saturation present? Yes _____ No <u> X </u> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u> N </u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP2-1W
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Hamel Consociation NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
If yes, optional wetland site ID: <u>Wetland 2</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point was on the edge of a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across all Strata: <u>3</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <input checked="" type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0* _____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)				
1 <u>Salix interior</u>	10	Y	FACW	
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>10</u> = Total Cover				
<u>Herb stratum</u> (Plot size: <u>5</u>)				
1 <u>Typha x glauca</u>	35	Y	OBL	
2 <u>Impatiens capensis</u>	25	Y	FACW	
3 <u>Salix interior</u>	10	N	FACW	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>70</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>15</u>)				
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP2-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 2	10YR 2/1	100					Mucky Loam	
2 to 10	10YR 2/1	100					Loam	
10 to 24	N 2.5/	100					Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)

- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

Likely Depleted below dark surface

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)

- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes _____ No X Depth (inches): _____
 Water table present? Yes X No _____ Depth (inches): 15
 Saturation present? Yes X No _____ Depth (inches): 0
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP3-1U
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 1 to 4 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Hamel Consociation NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil X, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point is located within a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4 _____	_____	_____	_____	FAC species <u>80</u> x 3 = <u>240</u>
5 _____	_____	_____	_____	FACU species <u>20</u> x 4 = <u>80</u>
<u>0</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>
				Column totals <u>100</u> (A) <u>320</u> (B)
				Prevalence Index = B/A = <u>3.20</u>
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:
1 <u>Poa Pratensis</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Trifolium repens</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	<input type="checkbox"/> Dominance test is >50%
3 _____	_____	_____	_____	<input type="checkbox"/> Prevalence index is ≤3.0*
4 _____	_____	_____	_____	<input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____	_____	_____	_____	<input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>100</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>N</u>
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP3-1U

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 5	10YR 2/2	100					Loam	
5 to 18	10YR 5/2	95	10YR 4/6	5	C	M	Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)		Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)	
*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic					

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes <u>X</u> No _____ Depth (inches): <u>18</u> Saturation present? Yes <u>X</u> No _____ Depth (inches): <u>18</u> (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP3-1W
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Hamel Consociation NWI Classification: PUBGx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 3</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point was on the edge of a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>70</u> x 1 = <u>70</u>
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4 _____	_____	_____	_____	FAC species <u>10</u> x 3 = <u>30</u>
5 _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>
	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>
	_____	_____	_____	Column totals <u>80</u> (A) <u>100</u> (B)
	_____	_____	_____	Prevalence Index = B/A = <u>1.25</u>
	<u>0</u> = Total Cover			
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:
1 <u>Lemna minor</u>	<u>40</u>	<u>Y</u>	<u>OBL</u>	
2 <u>Persicaria amphibia</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	<input checked="" type="checkbox"/> Dominance test is >50%
3 <u>Poa pratensis</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	<input checked="" type="checkbox"/> Prevalence index is ≤3.0*
4 _____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____	_____	_____	_____	Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
	<u>80</u> = Total Cover			*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>Y</u>
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
	<u>0</u> = Total Cover			

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

SOIL

Sampling Point: SP3-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 12	10YR 2/1	94	10YR 4/6	3	C	M	Loam	Mucky Surface
			10YR 4/1	3	D	M	Loam	
12 to 24	10YR 2/1	100					Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

Likely Depleted below dark surface

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): 5
 Saturation present? Yes No Depth (inches): 0
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP4-1U
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 1 to 4 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Cordova Consociation NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	
If yes, optional wetland site ID: _____	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>3</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>33.33%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 <u>Rhamnus cathartica</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4 _____	_____	_____	_____	FAC species <u>50</u> x 3 = <u>150</u>
5 _____	_____	_____	_____	FACU species <u>55</u> x 4 = <u>220</u>
<u>50</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>
<u>50</u> = Total Cover				Column totals <u>105</u> (A) <u>370</u> (B)
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index = B/A = <u>3.52</u>
1 <u>Solidago canadensis</u>	<u>35</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation _____ Dominance test is >50% _____ Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
2 <u>Parthenocissus quinquefolia</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>55</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>N</u>
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP4-1U

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 8	10YR 2/2	100					Loam	
8 to 16	10YR 3/2	100					Clay Loam	
16 to 24	10YR 4/1	95	10YR 4/6	5	C	M	Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)		Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)	
*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic					

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u> N </u>
Remarks: _____	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (minimum of two required)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Gauge or Well Data (D9)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)				
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)					
<input type="checkbox"/> Water-Stained Leaves (B9)					

Field Observations: Surface water present? Yes _____ No <u> X </u> Depth (inches): _____ Water table present? Yes _____ No <u> X </u> Depth (inches): _____ Saturation present? Yes _____ No <u> X </u> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u> N </u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: _____

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP4-1W
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Minnetonka Consociation NWI Classification: PUBGx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? Yes

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 4</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point was on the edge of a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet
1 <u>Acer negundo</u>	50	Y	FAC	
2 _____				Total Number of Dominant Species Across all Strata: <u>3</u> (B)
3 _____				Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4 _____				
5 _____				
	50 = Total Cover			
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Prevalence Index Worksheet
1 _____				
2 _____				OBL species <u>40</u> x 1 = <u>40</u>
3 _____				FACW species <u>30</u> x 2 = <u>60</u>
4 _____				FAC species <u>50</u> x 3 = <u>150</u>
5 _____				FACU species <u>0</u> x 4 = <u>0</u>
	0 = Total Cover			UPL species <u>0</u> x 5 = <u>0</u>
				Column totals <u>120</u> (A) <u>250</u> (B)
				Prevalence Index = B/A = <u>2.08</u>
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Hydrophytic Vegetation Indicators:
1 <u>Typha x glauca</u>	40	Y	OBL	
2 <u>Phalaris arundinacea</u>	30	Y	FACW	<input checked="" type="checkbox"/> Dominance test is >50%
3 _____				<input checked="" type="checkbox"/> Prevalence index is ≤3.0*
4 _____				Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____				Problematic hydrophytic vegetation* (explain)
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
	70 = Total Cover			
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Hydrophytic vegetation present? <u>Y</u>
1 _____				
2 _____				
	0 = Total Cover			

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

SOIL

Sampling Point: SP4-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 4	10YR 2/1						Loam	Mucky Surface
4 to 8	10YR 3/1	95	10YR 4/6	5	C	M	Loam	
8 to 16	10YR 7/1	80	10YR 6/6	20	C	M	Clay Loam	
16 to 24	N 7/	80	10YR 6/6	20	C	M	Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)

Secondary Indicators (minimum of two required)

- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)
- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): 8
 Saturation present? Yes No Depth (inches): 0
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP5-1U
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 1 to 4 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Minnetonka Consociation NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil X, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point is located within a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4 _____	_____	_____	_____	FAC species <u>75</u> x 3 = <u>225</u>
5 _____	_____	_____	_____	FACU species <u>20</u> x 4 = <u>80</u>
	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>
<u>0</u> = Total Cover				Column totals <u>95</u> (A) <u>305</u> (B)
				Prevalence Index = B/A = <u>3.21</u>
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:
1 <u>Poa Pratensis</u>	<u>75</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Trifolium repens</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	<input type="checkbox"/> Dominance test is >50%
3 _____	_____	_____	_____	<input type="checkbox"/> Prevalence index is ≤3.0*
4 _____	_____	_____	_____	<input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____	_____	_____	_____	<input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>95</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>N</u>
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP5-1U

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 14	10YR 2/1	100					Loam	
14 to 20	10YR 3/1	95	10YR 4/6	5	C	M	Clay Loam	
20 to 26	10YR 4/1	90	10YR 4/6	10	C	M	Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input checked="" type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)		Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)	
*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic					

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
Remarks: _____	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (minimum of two required)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)			
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Drainage Patterns (B10)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)			
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Gauge or Well Data (D9)	<input type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)				
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)					
<input type="checkbox"/> Water-Stained Leaves (B9)					

Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: _____

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP5-1W
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Minnetonka Consociation NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 5</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point was within a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>0</u> x 1 = <u>0</u>
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4 _____	_____	_____	_____	FAC species <u>100</u> x 3 = <u>300</u>
5 _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>
_____	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>
<u>0</u> = Total Cover				Column totals <u>100</u> (A) <u>300</u> (B)
<u>0</u> = Total Cover				Prevalence Index = B/A = <u>3.00</u>
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:
1 <u>Poa pratensis</u>	<u>100</u>	<u>Y</u>	<u>FAC</u>	
2 _____	_____	_____	_____	<input checked="" type="checkbox"/> Dominance test is >50%
3 _____	_____	_____	_____	<input checked="" type="checkbox"/> Prevalence index is ≤3.0*
4 _____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____	_____	_____	_____	Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>100</u> = Total Cover				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
<u>0</u> = Total Cover				Hydrophytic vegetation present? <u>Y</u>
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP5-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 4	10YR 2/1	95	10YR 6/2	5	D	M	Loam	
4 to 18	10YR 2/1	95	10YR 6/2	5	D	M	Clay Loam	
18 to 24	10YR 6/1	85	10YR 6/6	15	C	M	Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)

- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes _____ No X Depth (inches): _____
 Water table present? Yes X No _____ Depth (inches): 0
 Saturation present? Yes X No _____ Depth (inches): 0
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP6-1U
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 1 to 2 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Glencoe Consociation NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil X, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>N</u>	
If yes, optional wetland site ID: _____	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point is located within a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>75</u> x 3 = <u>225</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>95</u> (A) <u>305</u> (B) Prevalence Index = B/A = <u>3.21</u>
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
3 _____	_____	_____	_____	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <u>X</u> Dominance test is >50% _____ Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1 <u>Poa Pratensis</u>	<u>75</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Trifolium repens</u>	<u>15</u>	<u>N</u>	<u>FACU</u>	
3 <u>Taraxacum officinale</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>95</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP6-1U

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 14	10YR 3/1	97	10YR 4/6	3	C	M	Loam	
14 to 20	N 2.5/	100					Loam	
20 to 26	N 2.5/	100					Sapric Organic	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)
*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic			

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
Remarks: _____	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes <u>X</u> No _____ Depth (inches): <u>13</u> Saturation present? Yes <u>X</u> No _____ Depth (inches): <u>13</u> (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
--	--

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: _____

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP6-1W
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Minnetonka Consociation NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil _____, or hydrology X significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
If yes, optional wetland site ID: <u>Wetland 6</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point was within a manicured lawn within golf course. Hydrology disturbed due to historic ditch.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	50	Y		
2 _____				Total Number of Dominant Species Across all Strata: <u>2</u> (B)
3 _____				Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)
4 _____				
5 _____				
	50 = Total Cover			
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____				
2 _____				OBL species <u>0</u> x 1 = <u>0</u>
3 _____				FACW species <u>0</u> x 2 = <u>0</u>
4 _____				FAC species <u>90</u> x 3 = <u>270</u>
5 _____				FACU species <u>10</u> x 4 = <u>40</u>
	0 = Total Cover			UPL species <u>0</u> x 5 = <u>0</u>
				Column totals <u>100</u> (A) <u>310</u> (B)
				Prevalence Index = B/A = <u>3.10</u>
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:
1 <u>Poa pratensis</u>	90	Y	FAC	
2 <u>Trifolium repens</u>	10	N	FACU	<input type="checkbox"/> Dominance test is >50%
3 _____				<input type="checkbox"/> Prevalence index is ≤3.0*
4 _____				Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____				<input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
6 _____				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
7 _____				
8 _____				
9 _____				
10 _____				
	100 = Total Cover			
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present? <u>N</u>
1 _____				
2 _____				
	0 = Total Cover			

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

SOIL

Sampling Point: SP6-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 4	10YR 3/1	95	10YR 4/6	5	D	M	Loam	
4 to 11	10YR 4/1	95	10YR 4/6	5	D	M	Clay Loam	
11 to 26	10YR 3/2	100					Fibric Peat	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes _____ No X Depth (inches): _____
 Water table present? Yes X No _____ Depth (inches): 18
 Saturation present? Yes X No _____ Depth (inches): 11
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP6-2U
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 1 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Muskego Consociation NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil X, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>N</u>	
If yes, optional wetland site ID: _____	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point is located within a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
1	_____	_____	_____	_____	
2	_____	_____	_____	_____	
3	_____	_____	_____	_____	
4	_____	_____	_____	_____	
5	_____	_____	_____	_____	
		<u>0</u>	= Total Cover		Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>80</u> x 3 = <u>240</u> FACU species <u>15</u> x 4 = <u>60</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>95</u> (A) <u>300</u> (B) Prevalence Index = B/A = <u>3.16</u>
Sapling/Shrub stratum	(Plot size: <u>15</u>)				
1	_____	_____	_____	_____	
2	_____	_____	_____	_____	
3	_____	_____	_____	_____	
4	_____	_____	_____	_____	
5	_____	_____	_____	_____	
		<u>0</u>	= Total Cover		
Herb stratum	(Plot size: <u>5</u>)				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <u>X</u> Dominance test is >50% _____ Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1	<u>Poa Pratensis</u>	80	Y	FAC	
2	<u>Trifolium repens</u>	10	N	FACU	
3	<u>Taraxacum officinale</u>	5	N	FACU	
4	_____	_____	_____	_____	
5	_____	_____	_____	_____	
6	_____	_____	_____	_____	
7	_____	_____	_____	_____	
8	_____	_____	_____	_____	
9	_____	_____	_____	_____	
10	_____	_____	_____	_____	
		<u>95</u>	= Total Cover		
Woody vine stratum	(Plot size: <u>15</u>)				
1	_____	_____	_____	_____	
2	_____	_____	_____	_____	
		<u>0</u>	= Total Cover		

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

SOIL

Sampling Point: SP6-2U

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 12	10YR 2/1	100					Loam	
12 to 16	N 2.5/	100					Loam	
16 to 28	N 2.5/	100					Sapric Organic	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

Likely Depleted Below Dark Surface.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes _____ No X Depth (inches): _____
 Water table present? Yes X No _____ Depth (inches): 16
 Saturation present? Yes X No _____ Depth (inches): 16
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP6-2W
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Minnetonka Consociation NWI Classification: PSS1Ad

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology X significantly disturbed? Are "normal circumstances" present? Yes
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? Yes

SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 6</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Hydrology disturbed due to historic ditch, however normal circumstances were present.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet
1 <u>Salix nigra</u>	30	Y	OBL	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>4</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>30</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Prevalence Index Worksheet
1 <u>Frangula alnus</u>	20	Y	FACW	
2 _____	_____	_____	_____	OBL species <u>45</u> x 1 = <u>45</u>
3 _____	_____	_____	_____	FACW species <u>45</u> x 2 = <u>90</u>
4 _____	_____	_____	_____	FAC species <u>0</u> x 3 = <u>0</u>
5 _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>
6 _____	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>
7 _____	_____	_____	_____	Column totals <u>90</u> (A) <u>135</u> (B)
8 _____	_____	_____	_____	Prevalence Index = B/A = <u>1.50</u>
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>20</u> = Total Cover				
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Hydrophytic Vegetation Indicators:
1 <u>Impatiens capensis</u>	25	Y	FACW	
2 <u>Persicaria sagittata</u>	15	Y	OBL	<u>X</u> Dominance test is >50%
3 _____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*
4 _____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____	_____	_____	_____	Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>40</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Hydrophytic vegetation present? <u>Y</u>
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP6-2W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 18	10YR 2/1						Loam	
18 to 23	10YR 3/1	97	10YR 4/6	3	C	M	Loam	
11 to 26	10YR 4/1	95	10YR 4/6	5	C	M	Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input checked="" type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p>
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p> <p>Remarks:</p>	<p>Hydric soil present? <u>Y</u></p>
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HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (minimum of one is required; check all that apply)</p> <p><input type="checkbox"/> Surface Water (A1)</p> <p><input type="checkbox"/> High Water Table (A2)</p> <p><input checked="" type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1)</p> <p><input type="checkbox"/> Sediment Deposits (B2)</p> <p><input type="checkbox"/> Drift Deposits (B3)</p> <p><input type="checkbox"/> Algal Mat or Crust (B4)</p> <p><input type="checkbox"/> Iron Deposits (B5)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>	<p>Secondary Indicators (minimum of two required)</p> <p><input type="checkbox"/> Aquatic Fauna (B13)</p> <p><input type="checkbox"/> True Aquatic Plants (B14)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Gauge or Well Data (D9)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Stunted or Stressed Plants (D1)</p> <p><input checked="" type="checkbox"/> Geomorphic Position (D2)</p> <p><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</p>
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<p>Field Observations:</p> <p>Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____</p> <p>Water table present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>20</u></p> <p>Saturation present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>11</u></p>	<p>Indicators of wetland hydrology present? <u>Y</u></p>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP7-1U
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 1 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Klossner Consociation NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil X, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point is located within a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>1</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
1 <u>Picea pungens</u>			NI	
2 _____				
3 _____				
4 _____				
5 _____				
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratur</u> (Plot size: <u>15</u>)				Hydrophytic Vegetation Indicators: _____ Rapid test for hydrophytic vegetation <u>X</u> Dominance test is >50% _____ Prevalence index is ≤3.0* Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet) _____ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1 _____				
2 _____				
3 _____				
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
<u>0</u> = Total Cover				
<u>Herb stratum</u> (Plot size: <u>5</u>)				Hydrophytic vegetation present? <u>Y</u>
1 <u>Poa Pratensis</u>	80	Y	FAC	
2 <u>Trifolium repens</u>	20	N	FACU	
3 <u>Plantago major</u>	20	N	FAC	
4 _____				
5 _____				
6 _____				
7 _____				
8 _____				
9 _____				
10 _____				
<u>120</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>15</u>)				
1 _____				
2 _____				
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP7-1U

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 20	10YR 2/1	100					Loam	
12 to 16	10YR 3/1	97	10YR 4/6	5	C	M	Clay Loam	
16 to 28	10YR 4/1	97	10YR 4/6	5	C	M	Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- 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): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP7-1W
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Klossner Consoiation NWI Classification: PUBGx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
If yes, optional wetland site ID: <u>Wetland 7</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point was on the edge of a mancured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>1</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>5</u> x 1 = <u>5</u>
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4 _____	_____	_____	_____	FAC species <u>80</u> x 3 = <u>240</u>
5 _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>
<u>0</u> = Total Cover				UPL species <u>0</u> x 5 = <u>0</u>
<u>0</u> = Total Cover				Column totals <u>85</u> (A) <u>245</u> (B)
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Prevalence Index = B/A = <u>2.88</u>
1 <u>Poa pratensis</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:
2 <u>Persicaria amphibia</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
3 _____	_____	_____	_____	<u>X</u> Dominance test is >50%
4 _____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*
5 _____	_____	_____	_____	Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
6 _____	_____	_____	_____	Problematic hydrophytic vegetation* (explain)
7 _____	_____	_____	_____	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
8 _____	_____	_____	_____	Hydrophytic vegetation present? <u>Y</u>
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>85</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Staus	
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP7-1W

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 10	10YR 2/1	100					Loam	Mucky Surface
10 to 24	10YR 2/1	100					Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

Likely Depleted below dark surface

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)

- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes _____ No X Depth (inches): _____
 Water table present? Yes X No _____ Depth (inches): 8
 Saturation present? Yes X No _____ Depth (inches): 1
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP8-1U
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 1 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Nessel Consociation NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil X, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point is located within a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet
1 <u>Picea pungens</u>			<u>NI</u>	
2 _____				Total Number of Dominant Species Across all Strata: <u>2</u> (B)
3 _____				Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)
4 _____				
5 _____				
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratur</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Prevalence Index Worksheet
1 _____				
2 _____				OBL species <u>0</u> x 1 = <u>0</u>
3 _____				FACW species <u>0</u> x 2 = <u>0</u>
4 _____				FAC species <u>80</u> x 3 = <u>240</u>
5 _____				FACU species <u>20</u> x 4 = <u>80</u>
				UPL species <u>0</u> x 5 = <u>0</u>
<u>0</u> = Total Cover				Column totals <u>100</u> (A) <u>320</u> (B)
				Prevalence Index = B/A = <u>3.20</u>
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Hydrophytic Vegetation Indicators:
1 <u>Poa Pratensis</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>	
2 <u>Trifolium repens</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	<input type="checkbox"/> Dominance test is >50%
3 _____				<input type="checkbox"/> Prevalence index is ≤3.0*
4 _____				<input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____				<input type="checkbox"/> Problematic hydrophytic vegetation* (explain)
6 _____				<small>*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic</small>
7 _____				
8 _____				
9 _____				
10 _____				
<u>100</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Hydrophytic vegetation present? <u>N</u>
1 _____				
2 _____				
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP8-1U

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 14	10YR 2/1	100					Loam	
14 to 22	10YR 3/1	97	10YR 4/6	5	C	M	Clay Loam	
22 to 28	10YR 4/1	97	10YR 4/6	5	C	M	Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input checked="" type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)		Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)	
*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic					

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
Remarks: _____	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Indicators of wetland hydrology present? <u>N</u>
--	--

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: _____

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP8-1W
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Nessel Consociation NWI Classification: PUBGx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
If yes, optional wetland site ID: <u>Wetland 8</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point was on the edge of a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>25</u> x 1 = <u>25</u>
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4 _____	_____	_____	_____	FAC species <u>80</u> x 3 = <u>240</u>
5 _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>
_____	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>
<u>0</u> = Total Cover				Column totals <u>105</u> (A) <u>265</u> (B)
<u>0</u> = Total Cover				Prevalence Index = B/A = <u>2.52</u>
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:
1 <u>Poa pratensis</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>	
2 <u>lemna minor</u>	<u>25</u>	<u>Y</u>	<u>OBL</u>	<input checked="" type="checkbox"/> Dominance test is >50%
3 _____	_____	_____	_____	<input checked="" type="checkbox"/> Prevalence index is ≤3.0*
4 _____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____	_____	_____	_____	Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>105</u> = Total Cover				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
<u>0</u> = Total Cover				Hydrophytic vegetation present? <u>Y</u>
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 4	10YR 2/1	100					Mucky Loam	
4 to 10	10YR 4/1	55	5GY 5/1	30	D	M	Clay Loam	
			10YR 4/6	15	C	M	Clay Loam	
10 to 16	10YR 5/1	70	5GY 5/1	15	D	M	Clay Loam	
			10YR 4/6	15	C	M	Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input checked="" type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input checked="" type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)		Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)	
*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic					

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
Remarks: _____	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (minimum of two required)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Gauge or Well Data (D9)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		
<input type="checkbox"/> Water-Stained Leaves (B9)					

Field Observations: Surface water present? Yes _____ No <u>X</u> Depth (inches): _____ Water table present? Yes <u>X</u> No _____ Depth (inches): <u>4</u> Saturation present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Indicators of wetland hydrology present? <u>Y</u>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: _____

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP9-1U
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear
 Slope (%): 1 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Minnetonka Consociation NWI Classification: None

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil X, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	
If yes, optional wetland site ID: _____	

Remarks: (Explain alternative procedures here or in a separate report.)
30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical. Sample point is located within a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet
1 <u><i>Picea pungens</i></u>			NI	Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across all Strata: <u>2</u> (B) Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)
2				
3				
4				
5				
<u>0</u> = Total Cover				Prevalence Index Worksheet Total % Cover of: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>60</u> x 3 = <u>180</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species <u>0</u> x 5 = <u>0</u> Column totals <u>100</u> (A) <u>340</u> (B) Prevalence Index = B/A = <u>3.40</u>
Sapling/Shrub stratum (Plot size: <u>15</u>)				
1				
2				
3				
<u>0</u> = Total Cover				
Herb stratum (Plot size: <u>5</u>)				
1 <u><i>Poa Pratensis</i></u>	60	Y	FAC	Hydrophytic Vegetation Indicators: ___ Rapid test for hydrophytic vegetation ___ Dominance test is >50% ___ Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) ___ Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
2 <u><i>Trifolium repens</i></u>	40	Y	FACU	
3				
4				
5				
6				
7				
8				
9				
10				
<u>100</u> = Total Cover				
Woody vine stratum (Plot size: <u>15</u>)				
1				
2				
<u>0</u> = Total Cover				

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

SOIL

Sampling Point: SP9-1U

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 12	10YR 2/2	100					Loam	
12 to 19	10YR 2/1	100					Clay Loam	
19 to 26	10YR 3/1	95	10YR 4/6	5	C	M	Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)

- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)

Secondary Indicators (minimum of two required)

- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- 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): _____
 (includes capillary fringe)

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Hollydale Golf Course City/County: Plymouth/Hennepin Sampling Date: 08/14/2019
 Applicant/Owner: See Joint Application Form State: MN Sampling Point: SP9-1W
 Investigator(s): Kyle Uhler & Will Effertz Section, Township, Range: S8 T118N R22W
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0 to 3 Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name Minnetonka Consociation NWI Classification: PUBGx

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation X, soil _____, or hydrology _____ significantly disturbed? Are "normal circumstances" present? No
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? present? No

SUMMARY OF FINDINGS

(If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
If yes, optional wetland site ID: <u>Wetland 9</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
 30-day precipitation rolling total is within normal range. Precipitation from gridded database method is typical.
 Sample point was on the edge of a manicured lawn within golf course.

VEGETATION -- Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Dominance Test Worksheet
1 <u>Salix nigra</u>	50	Y	OBL	
2 _____	_____	_____	_____	Total Number of Dominant Species Across all Strata: <u>2</u> (B)
3 _____	_____	_____	_____	Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)
4 _____	_____	_____	_____	
5 _____	_____	_____	_____	
<u>50</u> = Total Cover				
<u>Sapling/Shrub stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Prevalence Index Worksheet
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	OBL species <u>65</u> x 1 = <u>65</u>
3 _____	_____	_____	_____	FACW species <u>0</u> x 2 = <u>0</u>
4 _____	_____	_____	_____	FAC species <u>80</u> x 3 = <u>240</u>
5 _____	_____	_____	_____	FACU species <u>0</u> x 4 = <u>0</u>
6 _____	_____	_____	_____	UPL species <u>0</u> x 5 = <u>0</u>
7 _____	_____	_____	_____	Column totals <u>145</u> (A) <u>305</u> (B)
8 _____	_____	_____	_____	Prevalence Index = B/A = <u>2.10</u>
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>0</u> = Total Cover				
<u>Herb stratum</u> (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Hydrophytic Vegetation Indicators:
1 <u>Poa pratensis</u>	80	Y	FAC	
2 <u>Persicaria amphibia</u>	15	N	OBL	<u>X</u> Dominance test is >50%
3 _____	_____	_____	_____	<u>X</u> Prevalence index is ≤3.0*
4 _____	_____	_____	_____	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
5 _____	_____	_____	_____	Problematic hydrophytic vegetation* (explain)
6 _____	_____	_____	_____	
7 _____	_____	_____	_____	
8 _____	_____	_____	_____	
9 _____	_____	_____	_____	
10 _____	_____	_____	_____	
<u>95</u> = Total Cover				
<u>Woody vine stratum</u> (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Staus	Hydrophytic vegetation present? <u>Y</u>
1 _____	_____	_____	_____	
2 _____	_____	_____	_____	
<u>0</u> = Total Cover				

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

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0 to 10	10YR 2/1	100					Mucky Loam	
10 to 18	10YR 2/1	100					Clay Loam	
18 to 24	10 YR 3/1	90	10YR 4/6	10	C	M	Clay Loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)

- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Y

Remarks:

Likely Depleted below dark surface

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)

- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface water present? Yes _____ No X Depth (inches): _____
 Water table present? Yes X No _____ Depth (inches): 4
 Saturation present? Yes X No _____ Depth (inches): 0
 (includes capillary fringe)

Indicators of wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

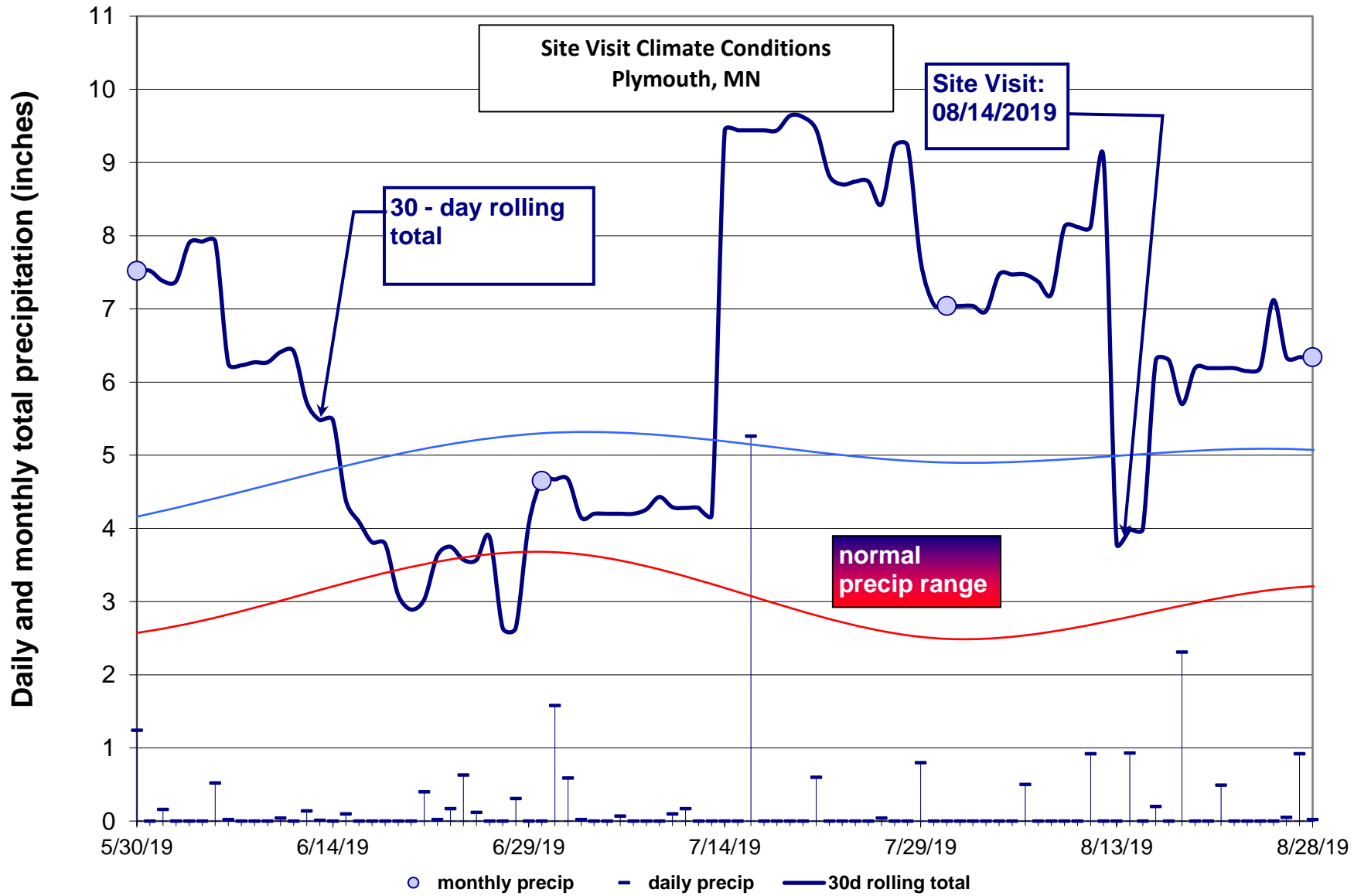
Remarks:

Hollydale Golf Course

Wetland Delineation Report

APPENDIX C

Precipitation Data



Plymouth, MN: Precipitation Summary
Source: Minnesota Climatology Working Group

Monthly Totals: 2019

Target: 118N 22W S8 (latitude: 45.04362 longitude: 93.49205)
mon year cc tttN rrw ss nnnn oooooo pre (inches)

May/June/July/August Daily Records

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Jan 2019 27 118N 21W 20 NWS NEW HOPE .46
Feb 2019 27 118N 21W 20 NWS NEW HOPE 2.39
Mar 2019 27 118N 21W 20 NWS NEW HOPE 2.42
Apr 2019 27 119N 22W 31 BYRG 3.16
May 2019 27 119N 22W 31 BYRG 7.83
Jun 2019 27 119N 22W 31 BYRG 2.64
Jul 2019 27 119N 22W 31 BYRG 9.23
Aug 2019 27 119N 21W 31 BYRG 6.34
  
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May 1, 2019	.43	Jun 1, 2019	.16	Jul 1, 2019	1.58	Aug 1, 2019	0
May 2, 2019	.04	Jun 2, 2019	0	Jul 2, 2019	.59	Aug 2, 2019	0
May 3, 2019	0	Jun 3, 2019	0	Jul 3, 2019	.02	Aug 3, 2019	0
May 4, 2019	.14	Jun 4, 2019	0	Jul 4, 2019	0	Aug 4, 2019	0
May 5, 2019	T	Jun 5, 2019	.52	Jul 5, 2019	-	Aug 5, 2019	0
May 6, 2019	0	Jun 6, 2019	.02	Jul 6, 2019	.07	Aug 6, 2019	.50
May 7, 2019	0	Jun 7, 2019	0	Jul 7, 2019	T	Aug 7, 2019	0
May 8, 2019	0	Jun 8, 2019	0	Jul 8, 2019	0	Aug 8, 2019	0
May 9, 2019	1.67	Jun 9, 2019	0	Jul 9, 2019	0	Aug 9, 2019	0
May 10, 2019	.02	Jun 10, 2019	.04	Jul 10, 2019	.10	Aug 10, 2019	0
May 11, 2019	0	Jun 11, 2019	0	Jul 11, 2019	.17	Aug 11, 2019	.92
May 12, 2019	T	Jun 12, 2019	.14	Jul 12, 2019	0	Aug 12, 2019	0
May 13, 2019	0	Jun 13, 2019	.01	Jul 13, 2019	0	Aug 13, 2019	0
May 14, 2019	0	Jun 14, 2019	0	Jul 14, 2019	0	Aug 14, 2019	.93
May 15, 2019	.70	Jun 15, 2019	.10	Jul 15, 2019	0	Aug 15, 2019	0
May 16, 2019	.34	Jun 16, 2019	T	Jul 16, 2019	5.26	Aug 16, 2019	.20
May 17, 2019	0	Jun 17, 2019	T	Jul 17, 2019	0	Aug 17, 2019	0
May 18, 2019	1.10	Jun 18, 2019	0	Jul 18, 2019	0	Aug 18, 2019	2.31
May 19, 2019	.29	Jun 19, 2019	0	Jul 19, 2019	0	Aug 19, 2019	0
May 20, 2019	.28	Jun 20, 2019	0	Jul 20, 2019	0	Aug 20, 2019	0
May 21, 2019	.02	Jun 21, 2019	.40	Jul 21, 2019	.60	Aug 21, 2019	.49
May 22, 2019	1.10	Jun 22, 2019	.02	Jul 22, 2019	0	Aug 22, 2019	0
May 23, 2019	.22	Jun 23, 2019	.17	Jul 23, 2019	0	Aug 23, 2019	0
May 24, 2019	.03	Jun 24, 2019	.63	Jul 24, 2019	0	Aug 24, 2019	0
May 25, 2019	.03	Jun 25, 2019	.12	Jul 25, 2019	0	Aug 25, 2019	0
May 26, 2019	0	Jun 26, 2019	0	Jul 26, 2019	.04	Aug 26, 2019	.05
May 27, 2019	.18	Jun 27, 2019	0	Jul 27, 2019	0	Aug 27, 2019	.92
May 28, 2019	-	Jun 28, 2019	.31	Jul 28, 2019	0	Aug 28, 2019	.02
May 29, 2019	-	Jun 29, 2019	-	Jul 29, 2019	.80	Aug 29, 2019	0
May 30, 2019	1.24	Jun 30, 2019	-	Jul 30, 2019	0	Aug 30, 2019	0
May 31, 2019	0			Jul 31, 2019	0		

1981-2010 Summary Statistics

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	WARM	ANN	WAT
30%	0.47	0.41	1.24	1.94	2.60	3.68	2.49	3.21	1.99	1.29	1.06	0.64	16.25	26.93	27.02
70%	0.92	0.89	1.91	2.89	4.20	5.30	4.90	5.03	3.70	3.23	2.00	1.44	21.22	33.19	33.74
mean	0.78	0.75	1.73	2.66	3.51	4.42	4.08	4.12	3.34	2.44	1.65	1.12	19.47	30.60	30.41

Minnesota State Climatology Office

State Climatology Office - DNR Division of Ecological and Water Resources University of Minnesota

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Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

county: **Hennepin** township number: **118N**

township name: **Plymouth** range number: **22W**

nearest community: **Hamel** section number: **8**

Aerial photograph or site visit date:

Wednesday, August 14, 2019

Score using 1981-2010 normal period

values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates .	first prior month: July 2019	second prior month: June 2019	third prior month: May 2019
estimated precipitation total for this location:	8.57R	2.59R	7.74R
there is a 30% chance this location will have less than:	2.49	3.68	2.60
there is a 30% chance this location will have more than:	4.90	5.30	4.20
type of month: dry normal wet	wet	dry	wet
monthly score	3 * 3 = 9	2 * 1 = 2	1 * 3 = 3
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	14 (Normal)		

Other Resources:

- [retrieve daily precipitation data](#)
- [view radar-based precipitation estimates](#)
- [view weekly precipitation maps](#)
- [Evaluating Antecedent Precipitation Conditions](#) (BWSR)