Appendices

Appendix A Otter Tail County Middle Segment Delineation Report



AQUATIC RESOURCE DELINEATION REPORT

Otter Tail Bike Trail, Otter Tail County, Perham, MN

Prepared for:

Otter Tail County Highway Department

I hereby certify that this report was prepared by me or under my direct supervision.

Hannah Erdmann

Houston Engineering Inc.

Date: March 2, 2020

HEI project no. 5197-0031



EXECUTIVE SUMMARY

Staff from Houston Engineering, Inc. completed the components of a field investigation of the subject area to identify and delineate aquatic resources for a project on behalf of the Otter Tail County Highway Department. The subject property is located in Lida, Dora, and Edna Townships, seven miles west of Perham, in Otter Tail County, Minnesota (Attachment A: Location Map). The delineation was conducted in accordance with the 1987 Corps of Engineers Wetland Delineation Manual (USACE 1987), and the Midwest Regional Supplement (2010), and guidelines for Ordinary High-Water Mark determinations (USACE 2005). Results of the field delineations indicate there are 34 wetland areas (total 20.02 acres) and no Other Waters located in the 253.898-acre survey area (Attachment B: Aquatic Resource Map). Most of these wetlands are either road ditch wetlands or natural depressions of the PEM1A or PEM1F type. There are two public water bodies listed by the Minnesota Public Water Inventory (MN DNR 2019a) in the assessment corridor (Attachment B).

1 INTRODUCTION

Staff from Houston Engineering, Inc. completed a field investigation in accordance with the 1987 Army Corps of Engineers Wetland Delineation Manual, and the Midwest Regional Supplement. The proposed construction includes acquisition of 25 foot of right-of-way along one side of the existing road and will connect with Pelican Rapids through future trail construction. The purpose of this report is to identify the wetlands and water resources within the project area to mitigate impacts during construction of the future bike trail.

2 LOCATION

The project is located in Lida Township (T136N, R42W, S26, S34), Dora Township (T 136N, R 41W, S13,14, 15, 18, 21, 28, 29), and Edna Township (T 136N, R 40W, S16, 17), near Perham, MN, in Otter Tail County, Minnesota; general latitude: 46.587570, longitude: -95.847987; **Attachment A: Location Map**). The project boundary begins at the intersection of CSAH 35 and CSAH 34 approximately 2.5 miles north of Dent, MN. The project extends west on CSAH 35, continues west along 440th Street, and then south on CSAH 41. The boundary extends west 415th Street, then south at 268th Avenue, and ends at MN HWY 108. (driving directions: from Dent, head northwest on N 1st Avenue toward Main St.; turn left onto W main St.; turn right at the first cross street to stay on W Main St.; merge onto US-10W; turn left onto 460th St.).

3 METHODS

For the delineation, we followed the methods described in the 1987 Army Corps of Engineers Manual for "routine" delineations (USACE 1987). Additionally, we followed methodology specific to the Midwest Regional Supplement (USACE 2010). Prior to the field delineation to identify potential wetland habitats and provide guidance for the investigation of wetlands at the project site, we reviewed the Minnesota Department of Natural Resources Wetland Inventory (MN DNR 2019b), the Public Waters Inventory (MN DNR 2019a), and the county digital soil surveys (USDA-NRCS 2019a), as well as current and historical aerial photography.

The following procedures were used to determine wetland habitats:

- We surveyed vegetation to determine the proportion of the dominant plant species classified as either obligate wetland, facultative wetland, or facultative plants; or if other indicators of wetland vegetation were present.
- We sampled the soil using a soil probe to identify soil morphology, redoximorphic features, and soil texture. We determined the hydric soil indicators according to Field Indicators of Hydric Soils in the United States; Guide for Identifying and Delineating Hydric Soils, Version 7.0 (USDA-NRCS, 2019b).
- We determined wetland hydrology on-site by observation of primary and secondary hydrologic indicators (USACE 2010). We also used aerial photography to assist hydrologic assessment. To describe the climactic conditions at the time of sampling, we accessed antecedent and recent rainfall data before going in the field (MN State Climatology Office 2019). To determine if the dry season water table hydrology indicator applies, we obtained the typical water balance for the site at the date of sampling (Matsuura et al. 2003).

Staff from Houston Engineering (Hannah Erdmann and Kaleb Haley) performed fieldwork on June 18th, 19th, and 20th 2019. We marked the wetland boundaries and sample locations using a handheld tablet and Trimble Geo 7x professional GPS unit. Sample points included observations of dominant vegetation, soil profiling including color, texture, and indications of hydrology. We used additional, undocumented sample points throughout the delineation to verify vegetation, hydric soils, and hydrology. We recorded our observations using data forms and geolocated photographs (**Attachment C: Site Photographs**). All areas within the project boundaries were surveyed. For some of the wetlands that appeared to extend into the adjacent properties, we estimated their extent by observing these at a distance during the field visit, and also through evidence of saturation or crop signatures from aerial photographs.

4 EXISTING CONDITIONS

Landscape Setting:

The project area is in the Eastern Broadleaf Forest Ecoregion, Hardwood Hills Subsection (MN DNR 1999). This region consists of glacial features including moraines, outwash plains, and kettle lakes, many of which are connected on the surface by natural streams, rivers, or artificial drainage. This area includes of a mix of vegetation types including forest, prairie, and wetland plant communities. Pre- settlement vegetation was primarily tallgrass prairies, maple-basswood forests, and oak savannas, but now much of the area has been converted to cultivated agriculture (MN DNR, 1999). The current local land use proximate to the project consists of rural and lakefront residential properties, grazing pastures, and cultivated agriculture, some with irrigation infrastructure.

The survey area was along one side of the existing road. The circumstances were not normal because of the soil disruption from the creation of the road. In some areas the ditches were mowed.

Climactic Conditions:

The weather conditions at the time of the delineation were good. Antecedent precipitation prior to delineation was normal (**Table 1 Antecedent Precipitation**, MN State Climatology Office 2019). The site received 0.32 inches of rain in the week before the delineation. The typical water balance for this site shows the dry season begins July 1 (Matsuura et al. 2003).

Table 1: Antecedent precipitation

Values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates	First prior month: May 2019	Second prior month: April 2019	First prior month: March 2019
Estimated precipitation total for this location	3.25R	1.49	2.08
There is a 30% change this location will have less than:	2.37	1.20	0.83
There is a 30% change this location will have more than:	3.55	2.31	1.34
Type of month: Dry Normal wet	Normal	Normal	Wet
Monthly score	3*2=6	2*2=4	1*3=3
Multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	13 (normal)		

Hydrology description:

The project area drains southeast towards Star Lake with a small section in the western portion of the project boundary that drains to the northwest towards Lake Lida. (Attachment D: LiDAR Maps). The closest Major River is the Buffalo River approximately 20 miles west of the corridor. The project area contains many lakes and depressions from glaciation.

Soil descriptions:

Dominant soils within the project site areas vary from well drained outwash sediment, to poorly drained glacial moraines and flood plains (USDA-NRCS, 2019c). The project area is composed of a variety of soil types with slopes ranging between zero and fifty percent (**Attachment E: Hydric Soil Maps**). The dominant soils include Lida (Hydric rating: 4 %) and Haslie complex (Hydric rating: 95 %).

Vegetation descriptions:

The plant communities in the survey area are wet prairie, shallow marsh, and deep marsh. Dominant species within the wetland areas represent all strata (Attachment F: Plant List and Attachment G: Data Forms). The tree and shrub species identified are *Acer negundo* (ashleaf maple), *Fraxinus nigra* (black ash), *Populus tremuloides* (quaking aspen), *Salix amygdaloides* (peachleaf willow), and *Salix interior* (sandbar willow). There are a variety of wetland herbs, the more frequent species include several species of Carex, *Phalaris arundinacea* (reed canary grass), *Typha sp.* (cattail), *Sanguinaria canadensis* (bloodroot), *Poa pratensis* (Kentucky blue grass), *Lysimachia thyrsiflora* (tufted yellow-loosestrife), *Equisetum arvense* and *E. hyemale* (field horsetail and scouring rush). The vine stratum included the species *Vitis riparia* (riverbank grape).

Commerce:

There are no evident commerce activities associated with these wetlands.

Aquatic Resources:

Results of the field wetland delineation indicate there are 34 wetland areas (total

20.02 acres) and no Other Waters located in the 253.898-acre survey area (Attachment B: Aquatic Resource Delineation and National Wetland Inventory Maps, Table 2). Some of the wetlands are listed in the NWI. Most of the wetlands are natural basin wetlands or formed with the construction of the road



ditches. These are mostly palustrine, emergent, frequently or seasonally flooded type (see **Attachment C Site Photographs**).

Wetland descriptions:

<u>Wetland 1</u>: is a natural wetland that was field determined as a PEM1A and extends beyond the project boundary to the east. This wetland was listed by the NWI as PEM1Cd.

<u>Wetland 2</u>: is a natural wetland that was field determined as a PEM1A which is connected to a larger natural wetland to the southeast and extends beyond the project boundary to the east. This wetland was listed by the NWI as PEM1Ad.

Wetland 3: is a natural wetland that was field determined as a PEM1A and extends beyond the project boundary to the northwest. This wetland was listed by the NWI as PEM1C.

Wetland 4: is a natural wetland that was determined as a PEM1A and extends beyond the project boundary to the north. This wetland was listed by the NWI as PEM1Ad.

<u>Wetland 5</u>: is a natural wetland that was field determined as a PEM1F and extends beyond the project boundary to the north. This wetland also extends beyond the project boundary to the north. This wetland was listed by the NWI as PEM1Cd.

<u>Wetland 6</u>: is a natural wetland that was field determined as a PEM1F and extends beyond the project boundary to the north. This wetland was listed by the NWI as PUBF.

Wetland 7: is a natural wetland that was field determined as a PEM1F.

Wetland 8: is road ditch wetland that is listed by the NWI as PEM1Ad.

Wetland 9: is a road ditch wetland that is listed by the NWI as PEM1Ad.

Wetland 10: is a road ditch wetland that is listed by the NWI as PEM1A.

Wetland 11: is a road ditch wetland that is listed by the NWI as PEM1A.

Wetland 12: is a road ditch wetland that was field determined as a PEM1A.

<u>Wetland 13</u>: is a natural wetland that was field determined as a PEM1F blended into a natural wooded wetland. This wetland extends past the project boundary to the south. This wetland was listed by the NWI as PEM1C and PUBF.

Wetland 14: is a natural wetland that was field determined as a PEM1A.

Wetland 15: is a road ditch wetland that was field determined as a PEM1F and extends beyond the project boundary to the southeast. This wetland was listed by the NWI as PUBF.



- Wetland 16: is a natural wetland that was field determined as a PEM1A.
- Wetland 17: is a road ditch wetland that was field determined as a PEM1A.
- Wetland 18: is a natural wetland that is listed by the NWI as PEM1A and extends beyond the project boundary to the south.
- Wetland 19: is a natural wetland that is listed by the NWI as a PEM1A.
- Wetland 20: is a natural wetland that was field determined as a PEM1A.
- Wetland 21: is a natural wetland that was field determined as a PEM1A. This wetland was listed by the NWI as PEM1C.
- Wetland 22: is a natural wetland that was field determined as a PEM1A.
- Wetland 23: is a natural wetland that was field determined as a PUBF.
- Wetland 24: is a natural wetland that is listed by the NWI PEM1F an extends beyond the project boundary to the south.
- Wetland 25: is a natural wetland that was field determined as a PEM1A and extends beyond the project boundary to the south. This wetland was listed by the NWI as PEM1F.
- Wetland 26: is a natural wetland that was field determined as a PEM1F and extends beyond the project boundary to the south. This wetland was listed by the NWI as PEM1Fd/PEM1Ad.
- <u>Wetland 27</u>: is a natural wetland that was field determined as a PEM1A and extends beyond the project boundary to the south. This wetland was listed by the NWI as PABF.
- Wetland 28: is a natural wetland that was field determined as a PEM1F and extends far beyond the project boundary to the south. This wetland was listed by the NWI as PEM1F/L2UBH.
- Wetland 29: is a natural wetland that is listed by the NWI as PEM1C and extends beyond the project boundary to the south.
- <u>Wetland 30</u>: is a natural wetland that was field determined as a PEM1A and extends beyond the project boundary to the south. This wetland was listed by the NWI as PEM1Cd.
- Wetland 31: is a natural wetland that was field determined as a PEM1A.



Wetland 32: is a natural wetland that was field determined as a PEM1F. This wetland was listed by the NWI as PUBF.

Wetland 33: is a natural wetland that is field determined as PEM1F and extends beyond the project boundary to the south. This wetland was listed by the NWI as PEM1F/PABF.

Wetland 34: is a natural wetland that was field determined as a PEM1A. This wetland was listed by the NWI as PEM1C.

Table 2: Delineated Wetlands and their characteristics; "-" Indicates not listed by the NWI

Wetland NWI Number Listing		Wetland type		Wetland			
	Cowardin et al. 1979	Circular 39 (Shaw and Fredine 1959)	Eggers and Reed (2015)	area (acres)	Latitude (center)	Longitude (center)	
1	PEM1Cd	PEM1A	Type 1	Wet prairie	0.17	46.550007	-95.949076
2	PEM1Ad	PEM1A	Type 1	Wet prairie	0.34	46.553278	-95.948852
3	PEM1C	PEM1A	Type 1	Wet prairie	0.16	46.556980	-95.948926
4	PEM1Ad	PEM1A	Type 1	Wet prairie	0.77	46.557558	-95.944912
5	PEM1Cd	PEM1F	Type 3	Deep Marsh	0.31	46.557517	-95.942201
6	PUBF	PEM1F	Type 3	Deep Marsh	1.00	46.557562	-95.937595
7	-	PEM1F	Type 3	Deep Marsh	0.24	46.559202	-95.935602
8	PEM1Ad	PEM1Ad	Type 1	Wet prairie	0.32	46.561809	-95.933997
9	PEM1Ad	PEM1Ad	Type 1	Wet prairie	0.08	46.562296	-95.932900
10	PEM1Ad	PEM1Ad	Type 1	Wet prairie	0.06	46.562629	-95.932801
11	PEM1A	PEM1A	Type 1	Wet prairie	0.44	46.564214	-95.931557
12	-	PEM1A	Type 1	Wet prairie	0.07	46.564195	-95.925489
13	PEM1c/ PUBF	PEM1F	Type 3	Deep Marsh	0.66	46.562980	-95.923643
14	-	PEM1A	Type 1	Wet prairie	0.04	46.562820	-95.921558
15	PUBF	PEM1F	Type 3	Deep Marsh	0.34	46.563276	-95.920326
16	-	PEM1A	Type 1	Wet prairie	0.12	46.564501	-95.906980

17	-	PEM1A	Type 1	Wet prairie	0.04	46.564197	-95.892892
18	PEM1Ad	PEM1Ad	Type 1	Wet Prairie	0.37	46.564407	-95.875299
19	PEM1A	PEM1A	Type 1	Wet prairie	0.37	46.571109	-95.857903
20	-	PEM1A	Type 1	Wet prairie	0.06	46.572921	-95.855643
21	PEM1C	PEM1A	Type 1	Wet prairie	0.47	46.583688	-95.854598
22	-	PEM1A	Type 1	Wet prairie	0.16	46.585957	-95.852547
23	PUBF	PEM1F	Type 3	Deep Marsh	0.46	46.585977	-95.851373
24	PUBF	PEM1F	Type 3	Deep Marsh	1.18	46.585764	-95.850727
25	PEM1F	PEM1A	Type 1	Wet prairie	0.76	46.585557	-95.847912
26	PUBFd/ PEM1Ad	PEM1F	Type 3	Deep Marsh	1.85	46.600084	-95.820525
27	PABF	PEM1A	Type 1	Wet prairie	0.20	46.599989	-95.808956
28	PEM1F/ L2UBH	PEM1F	Type 3	Deep Marsh	1.21	46.599752	-95.775067
29	PEM1C	PEM1C	Type 3	Shallow Marsh	4.32	46.599772	-95.763240
30	PEM1Cd	PEM1A	Type 1	Wet prairie	.56	46.599972	-95.749381
31	-	PEM1A	Type 1	Wet prairie	0.04	46.600016	-95.737131
32	PUBF	PEM1F	Type 3	Deep Marsh	0.39	46.599835	-95.733131
33	PEM1F/ PABF	PEM1F	Type 3	Deep Marsh	1.92	46.599926	-95.730425
34	PEM1C	PEM1A	Type 1	Wet prairie	0.52	46.598239	-95.726967
	Total Wetland Acres 20.02						

5 REFERENCES

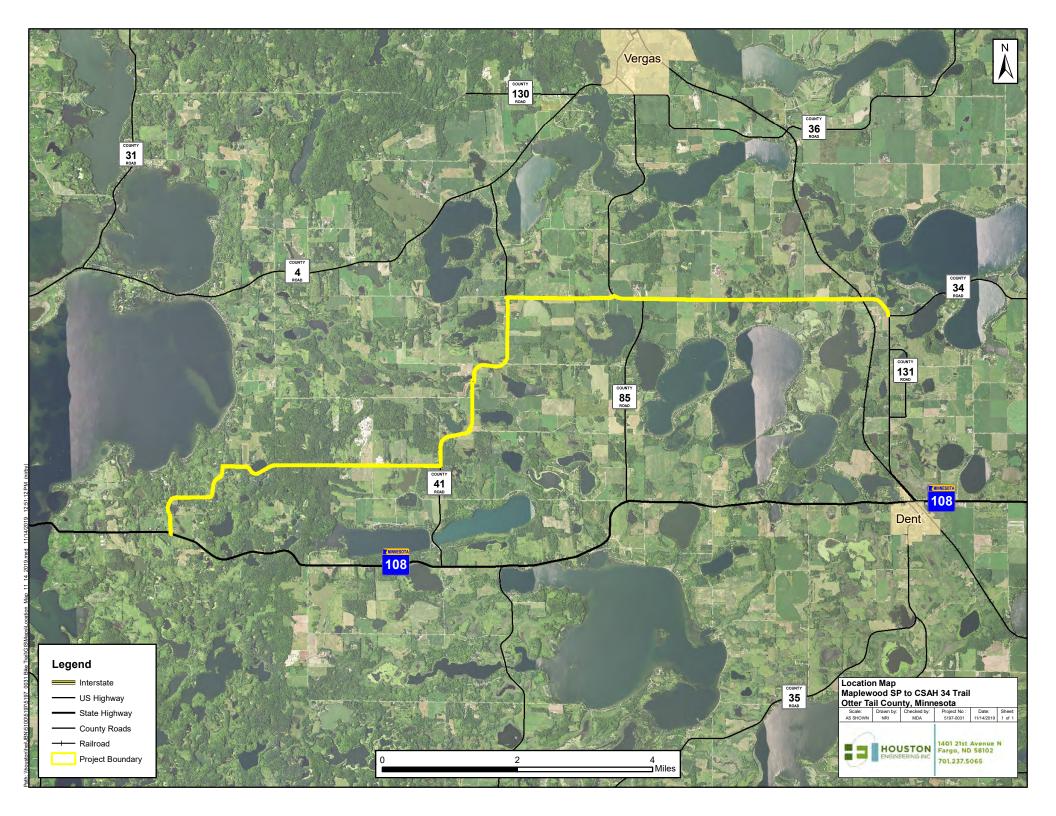
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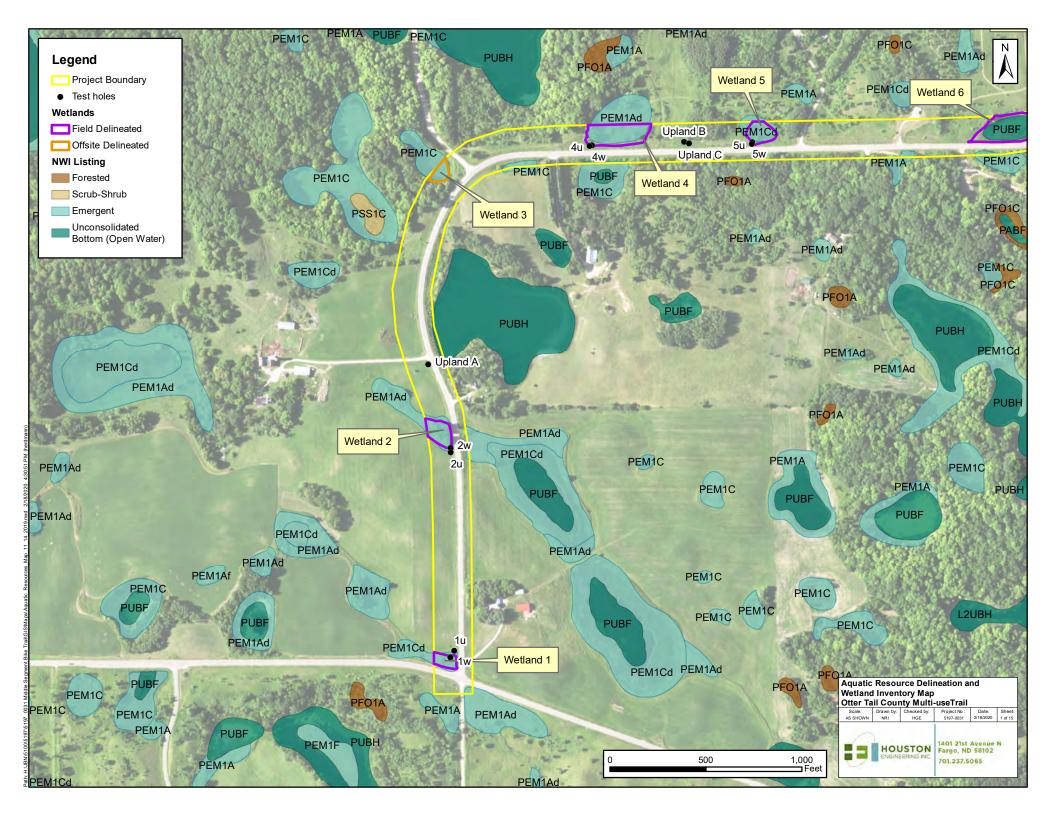
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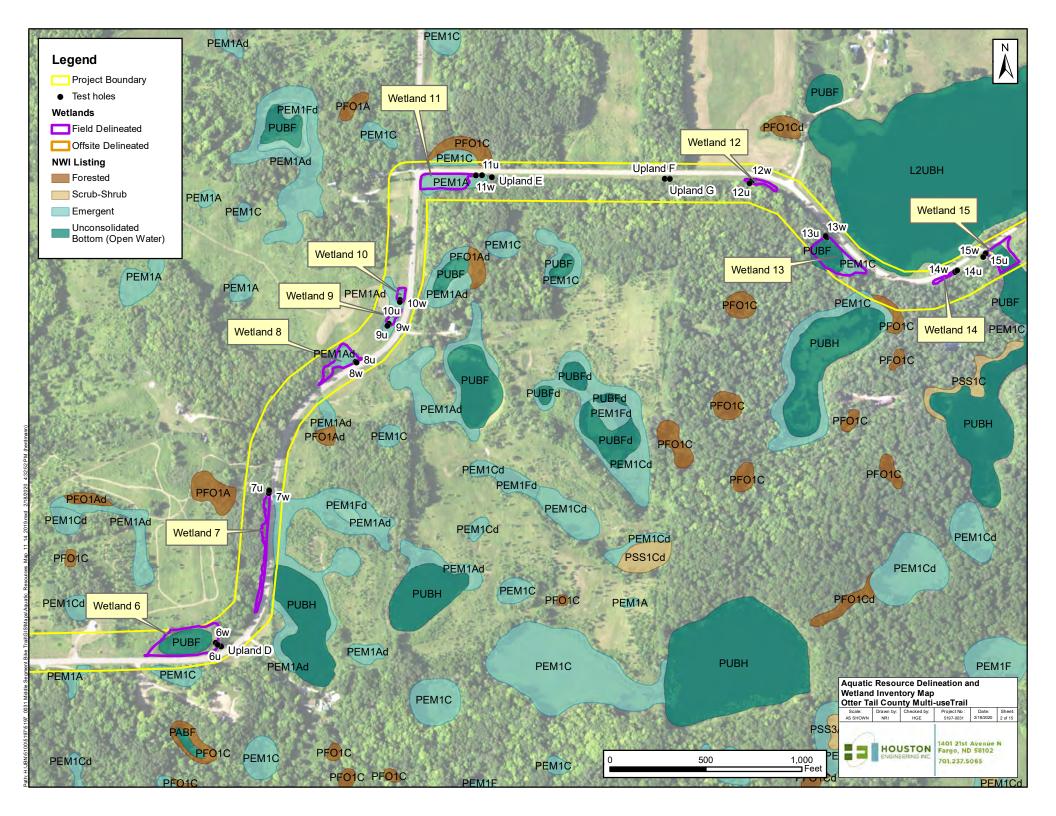
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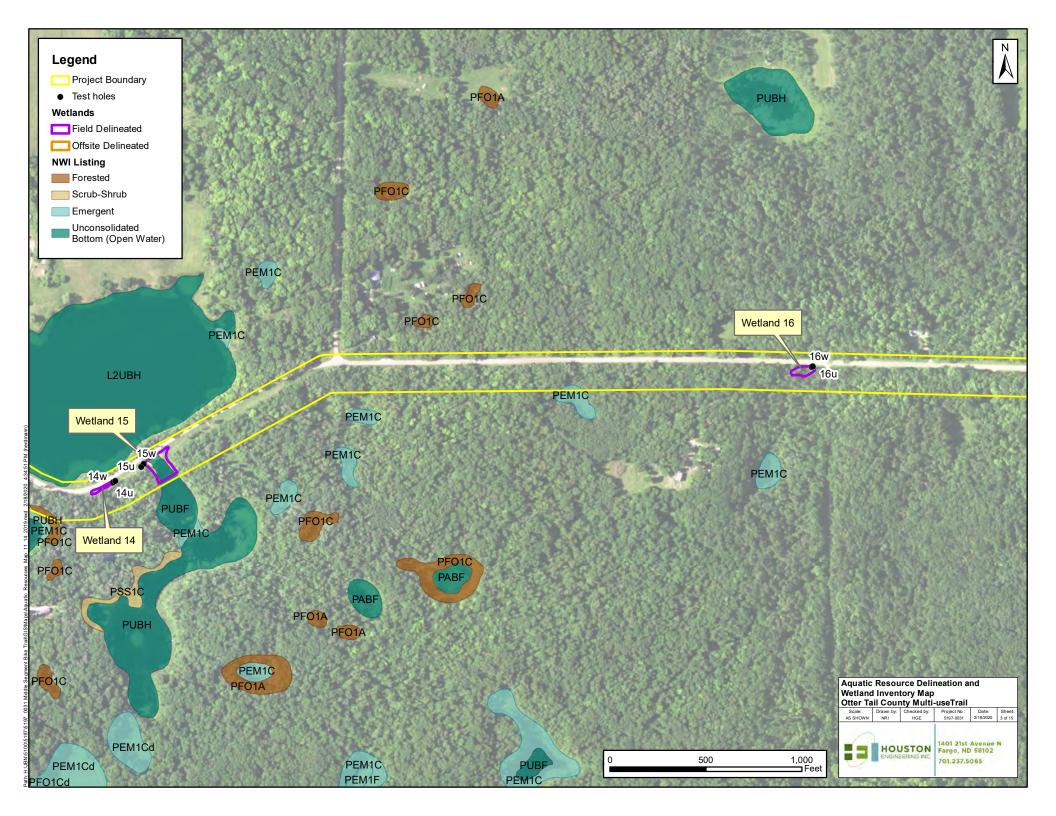


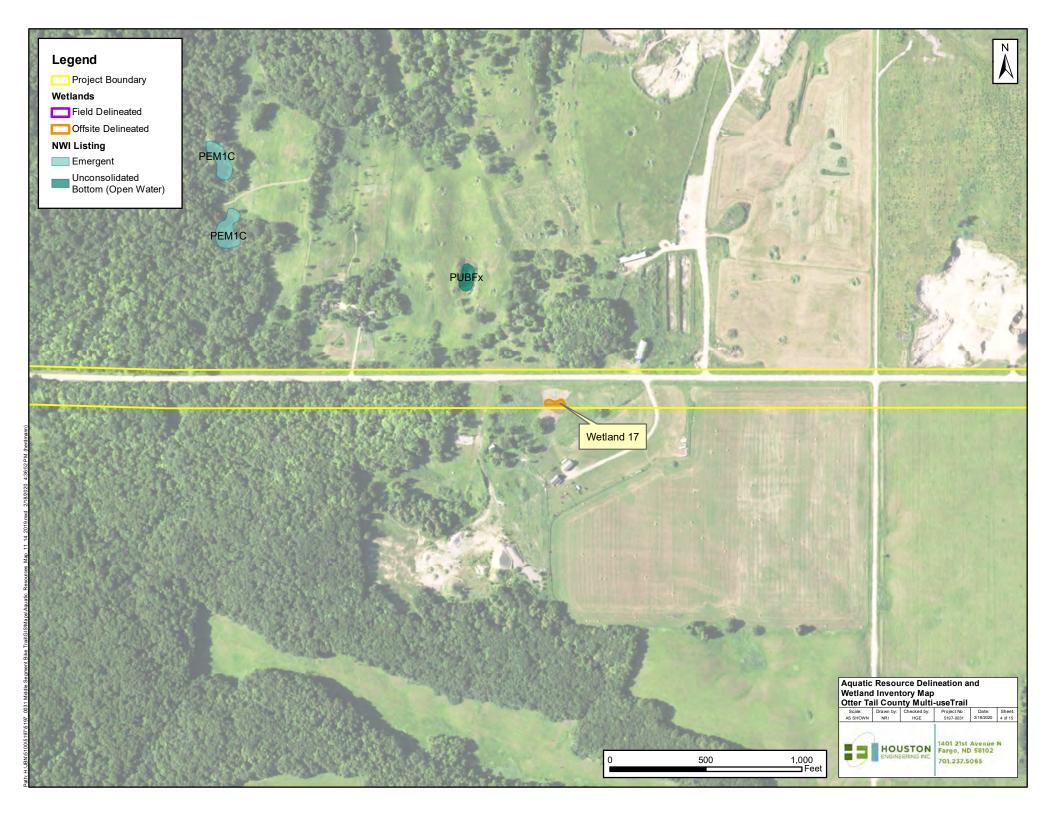
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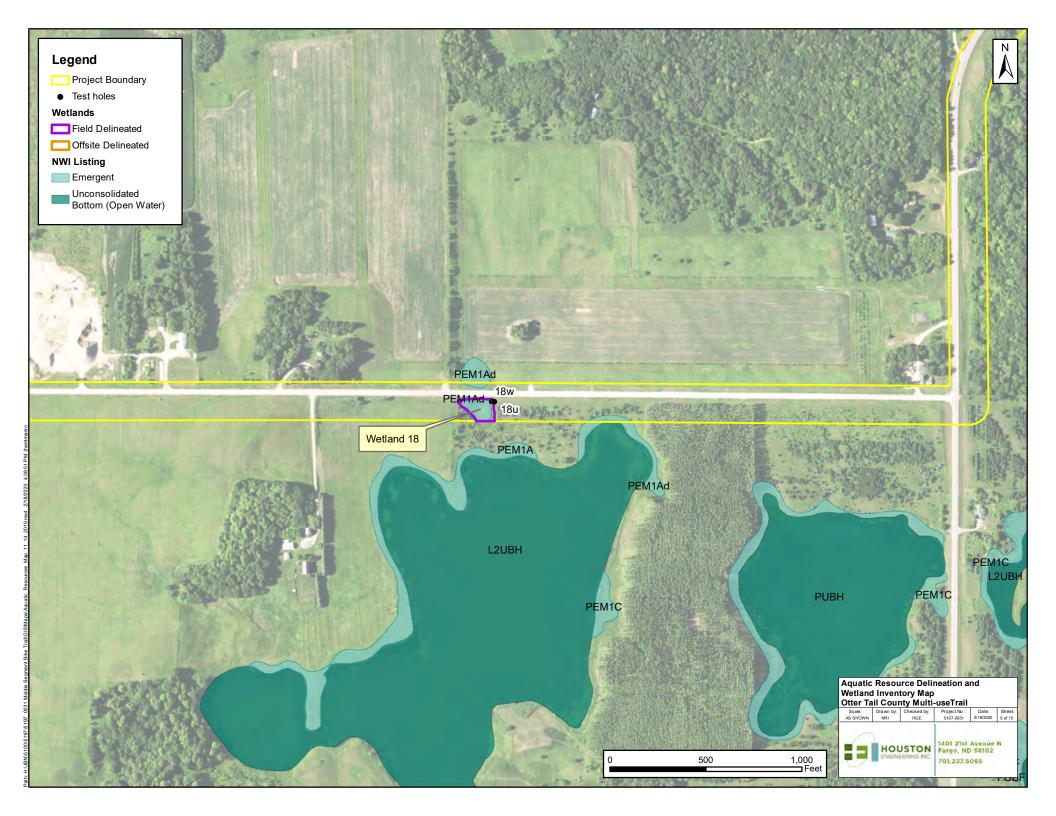
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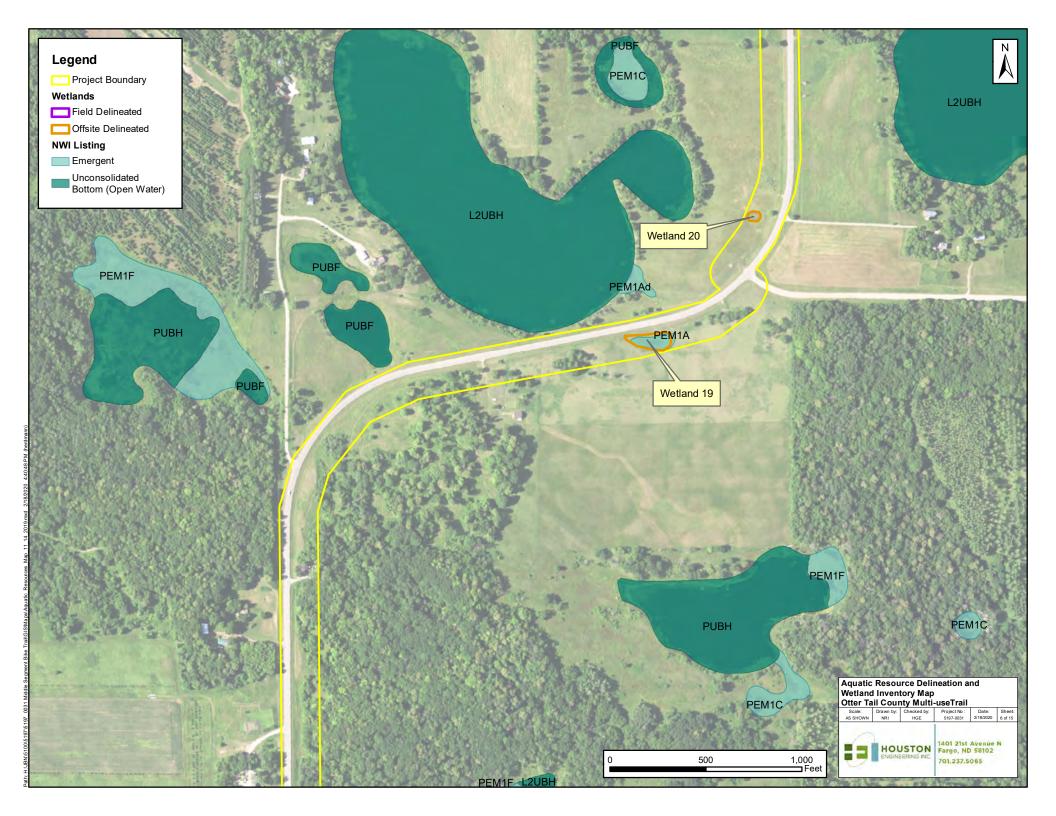


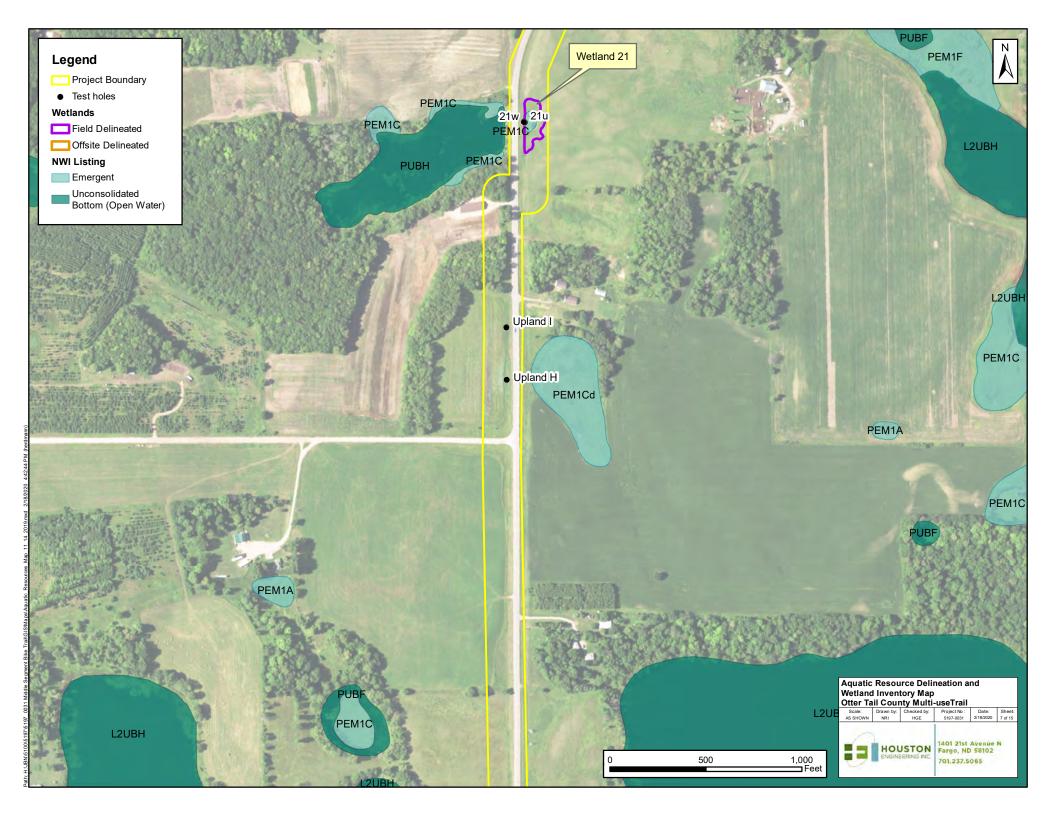


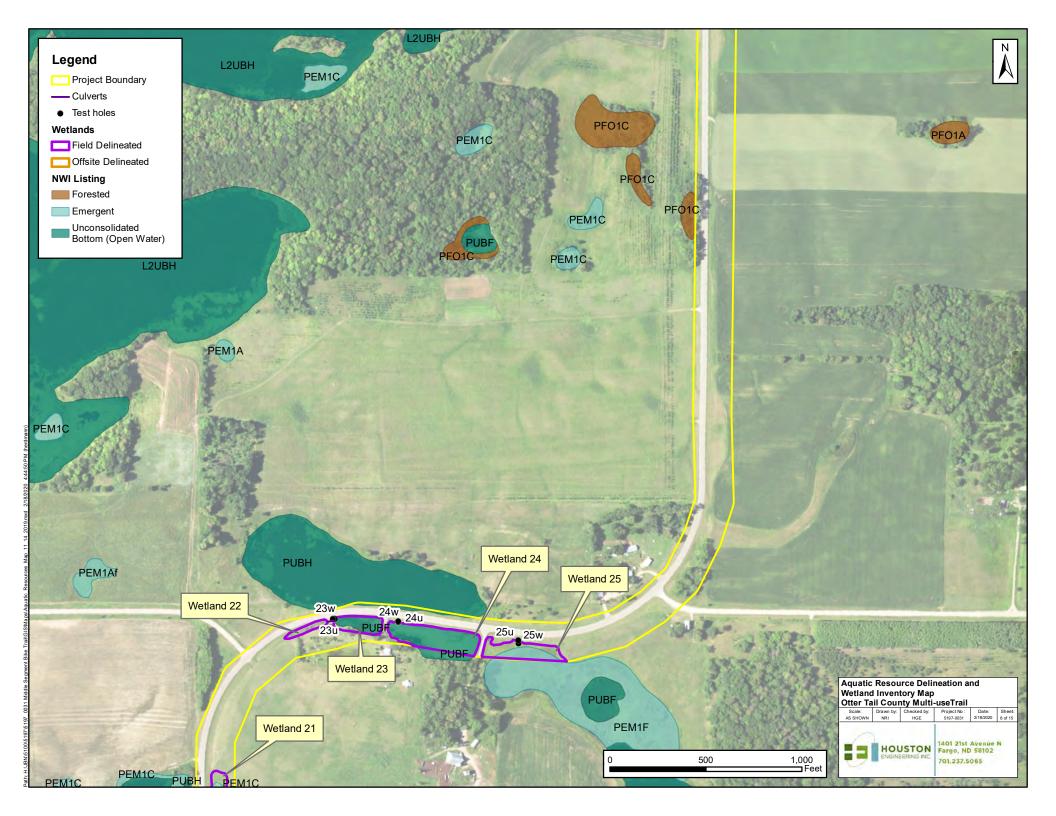


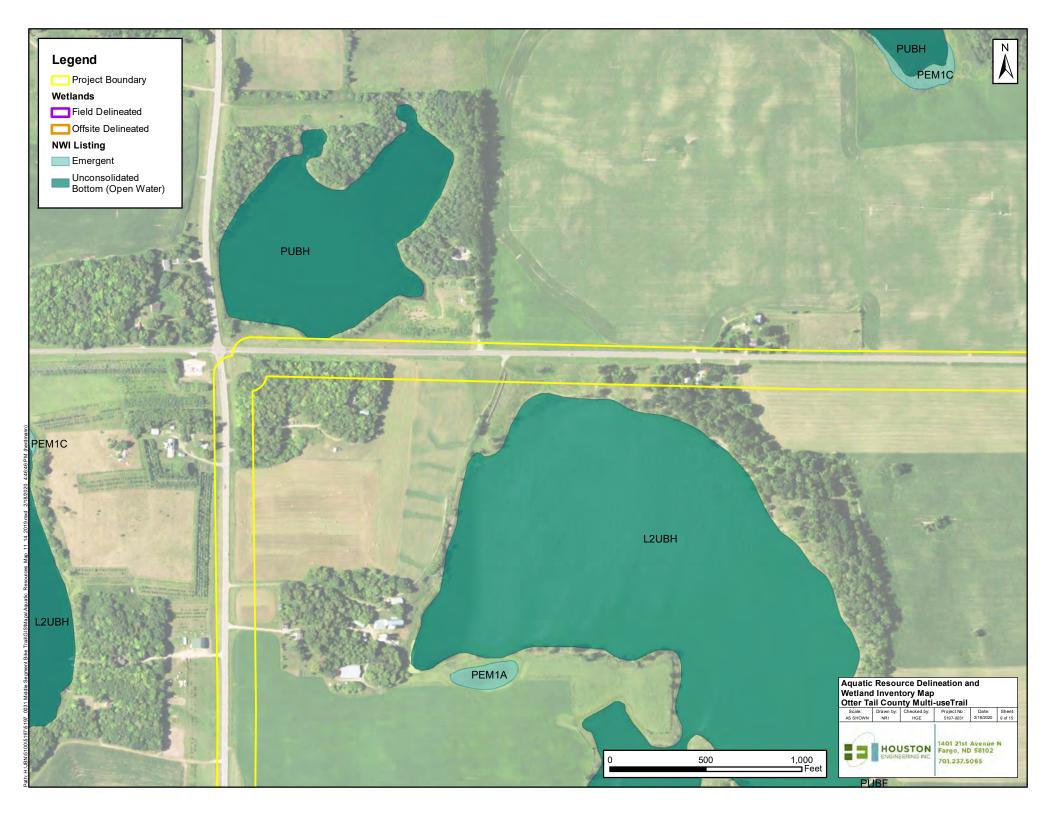


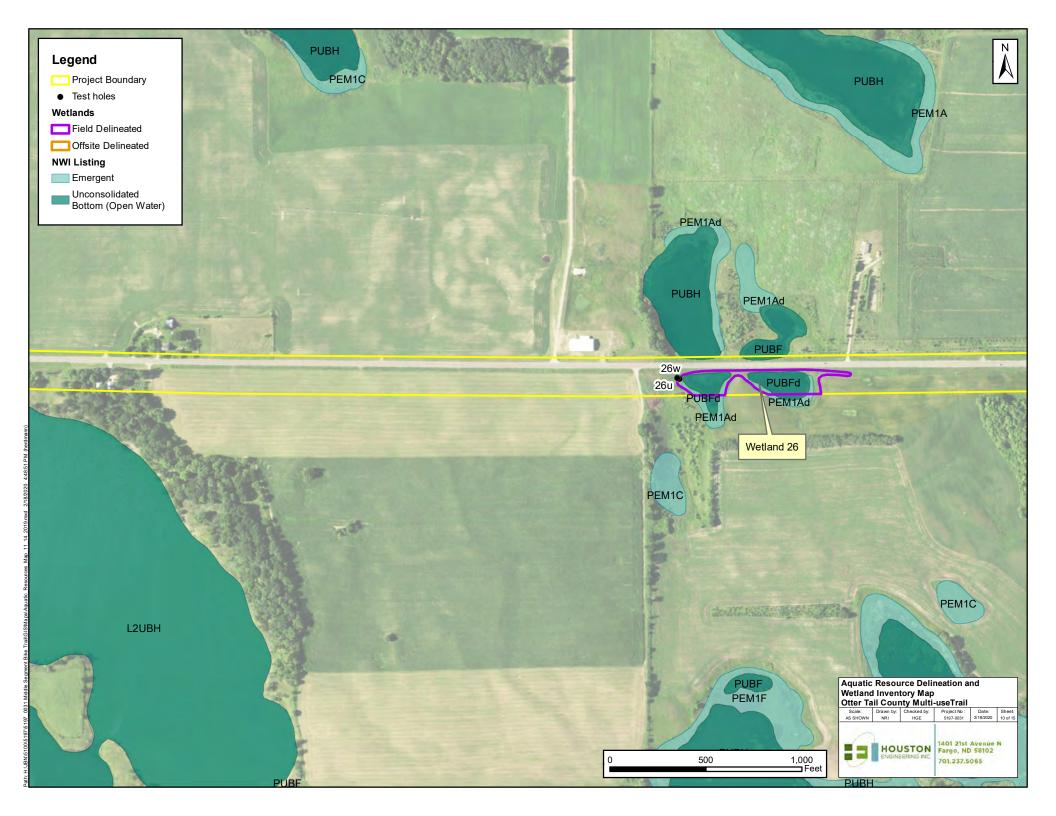


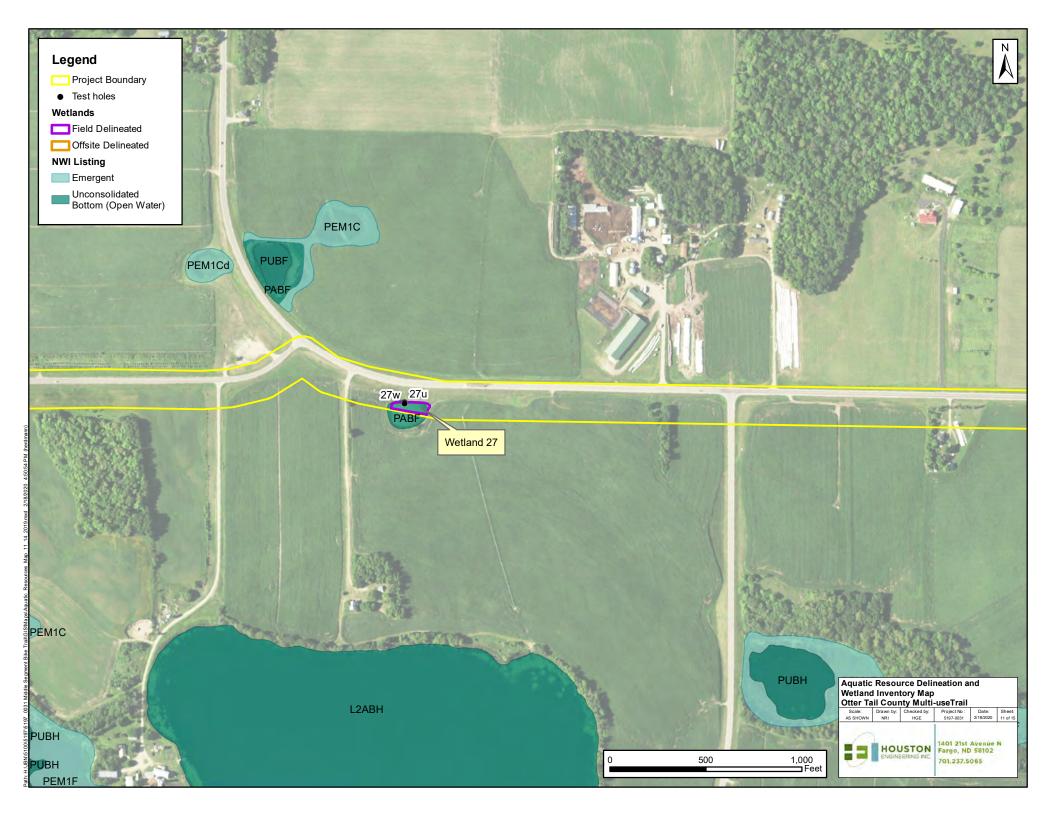


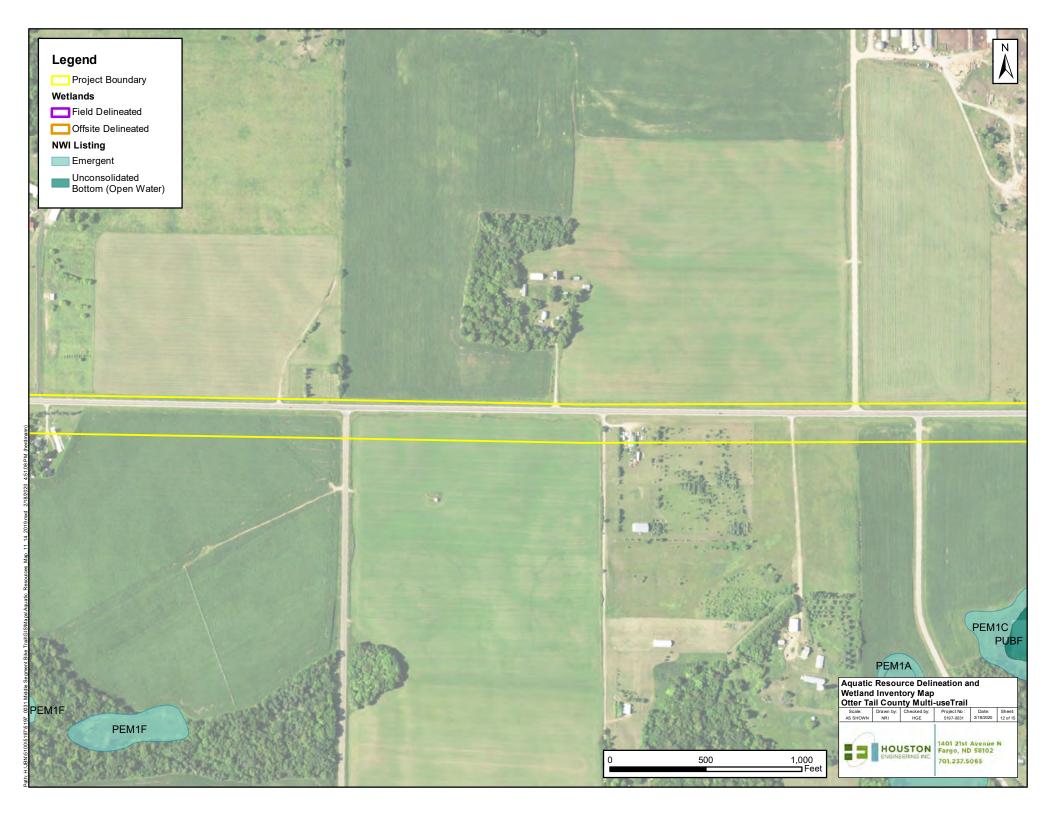


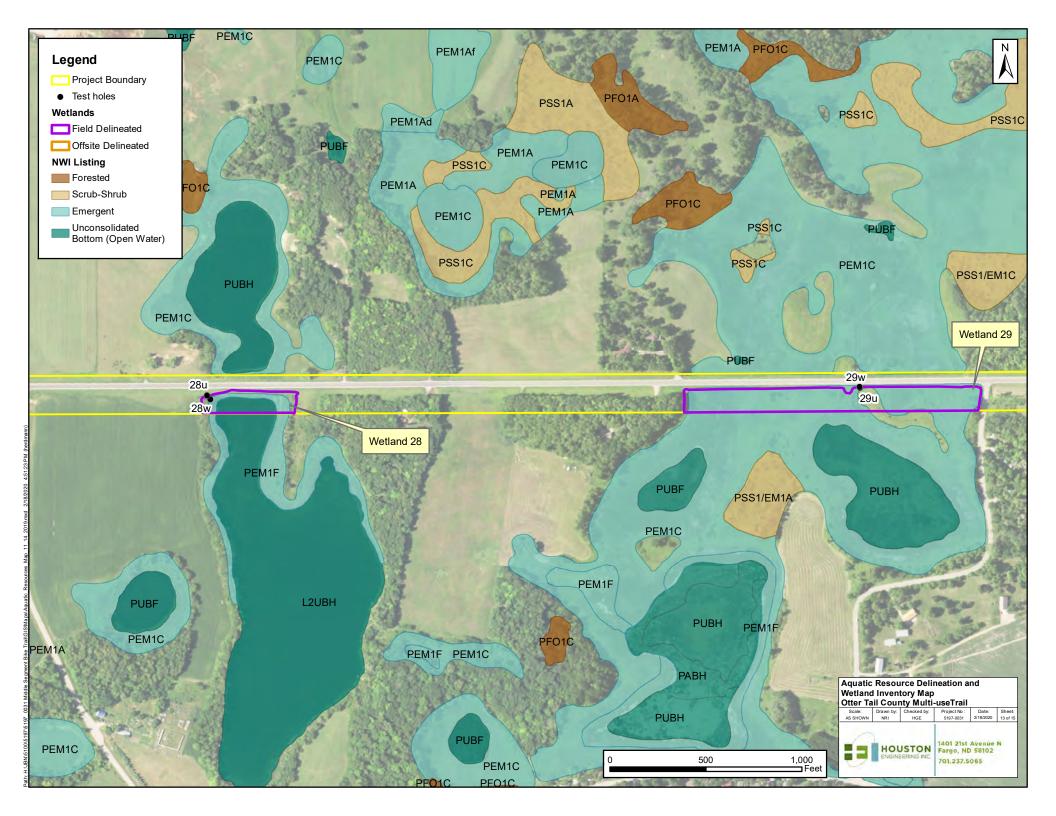


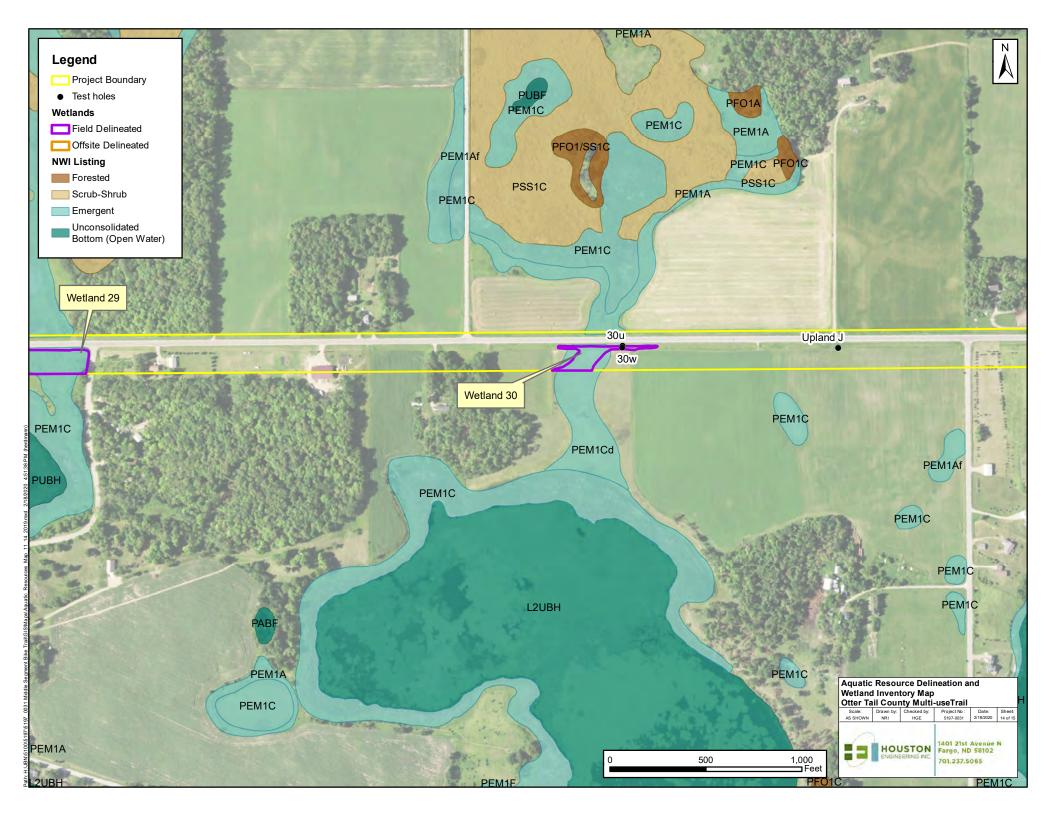


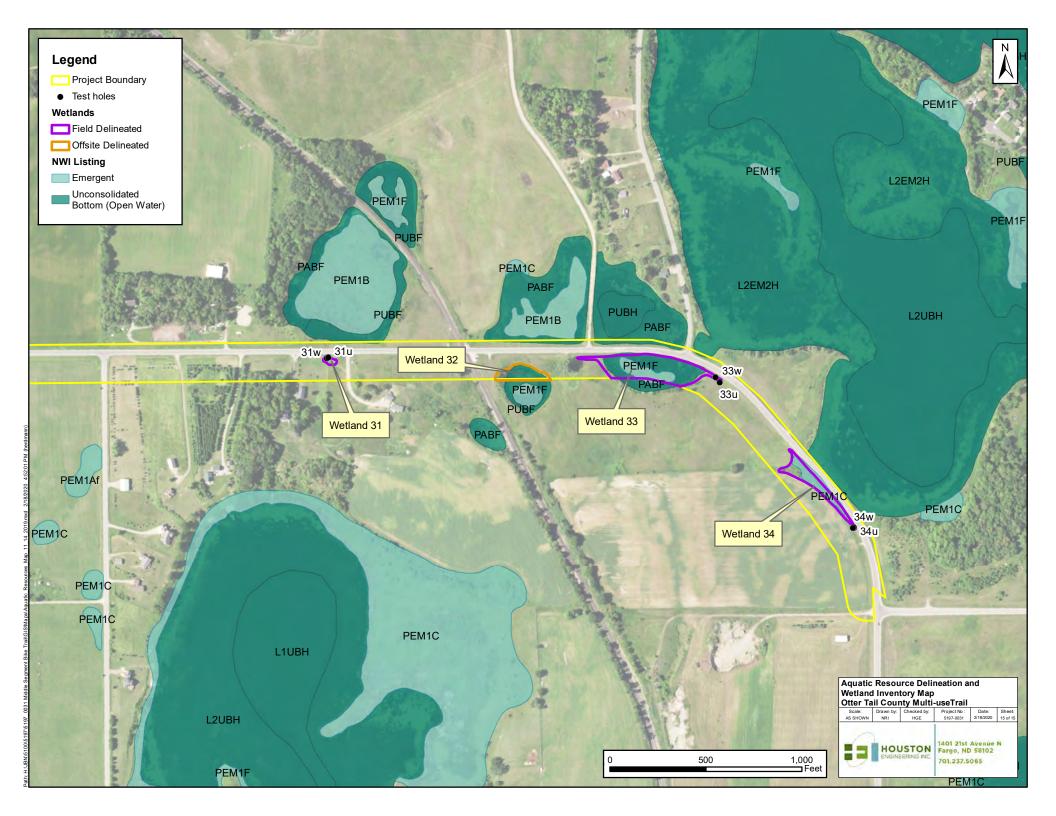












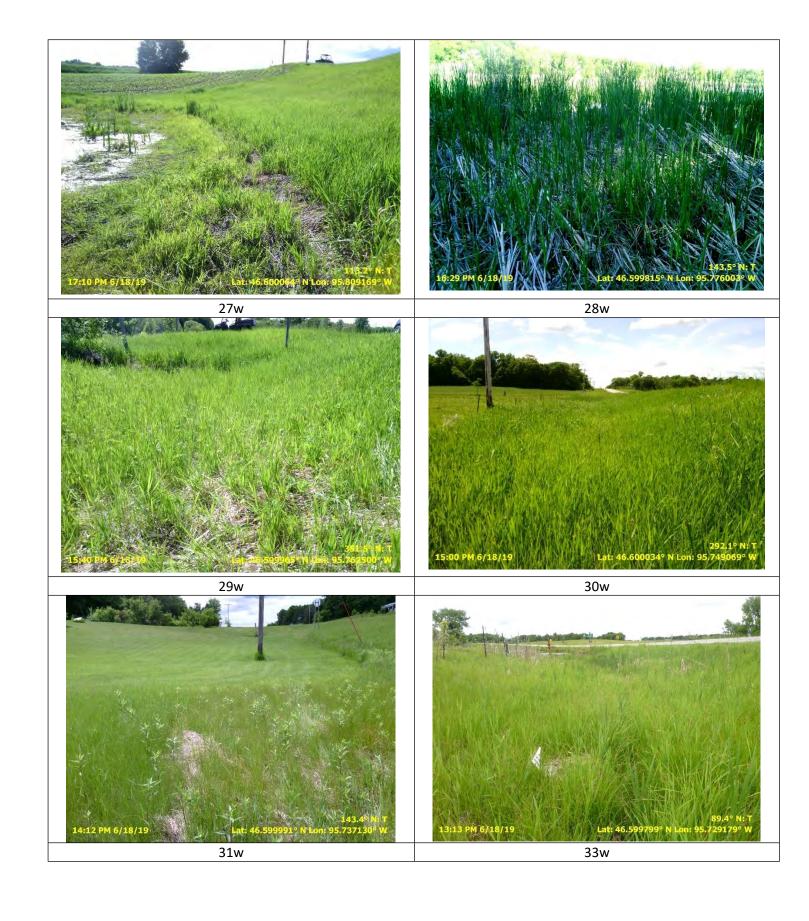
ATTACHMENT C

Wetland Site Photographs

Wetland Photographs



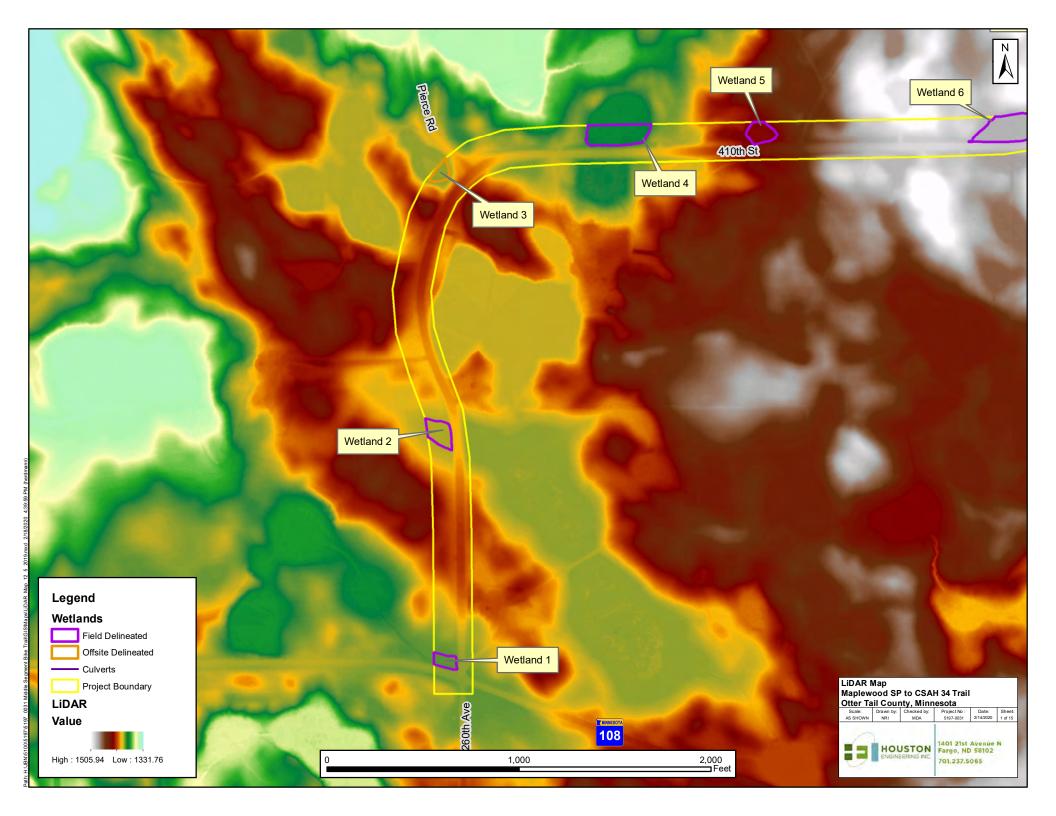


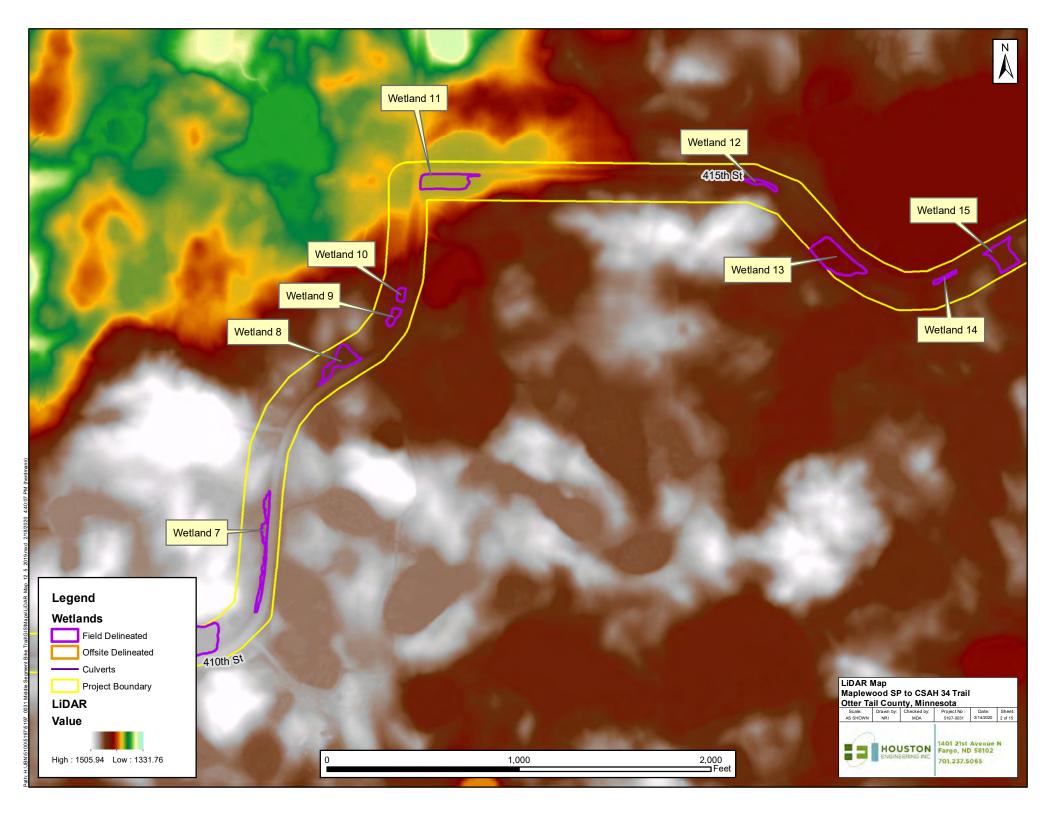


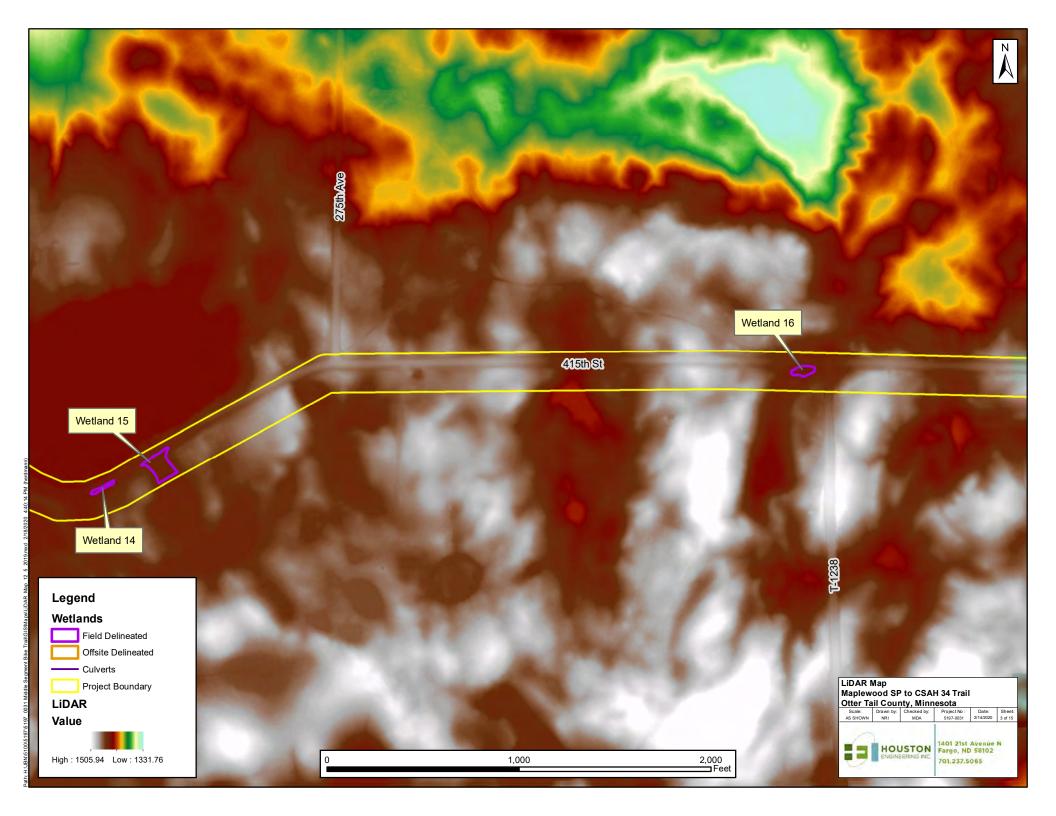


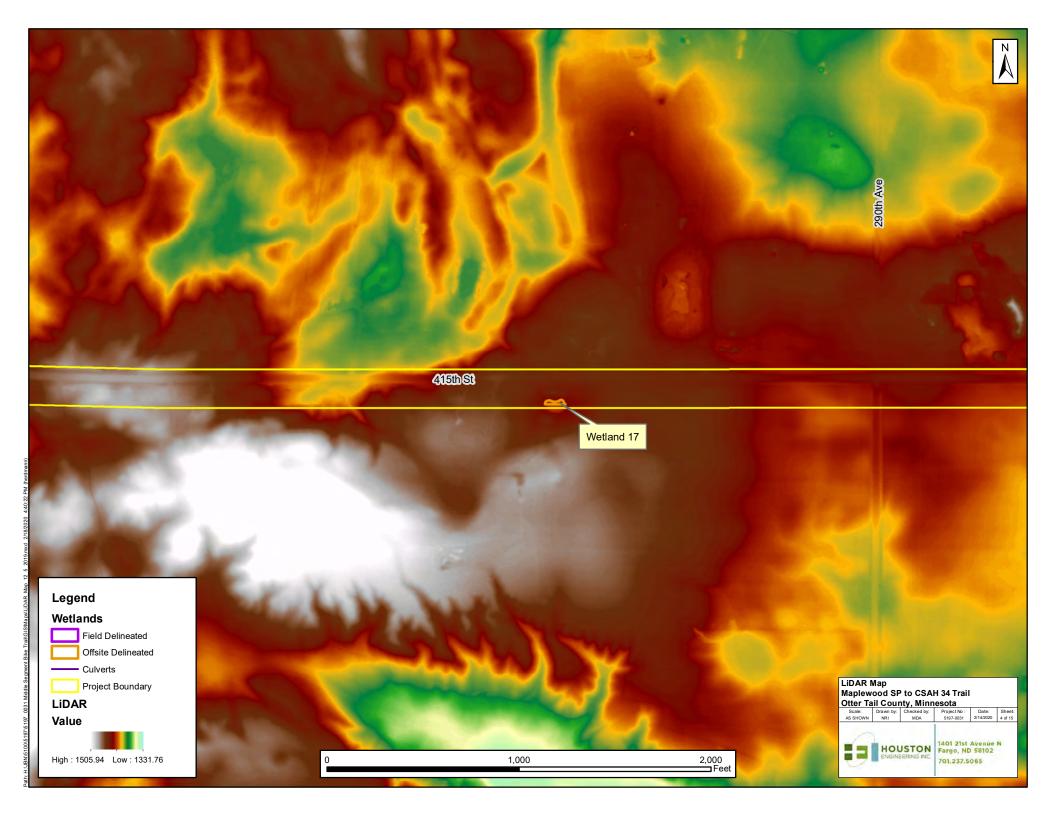
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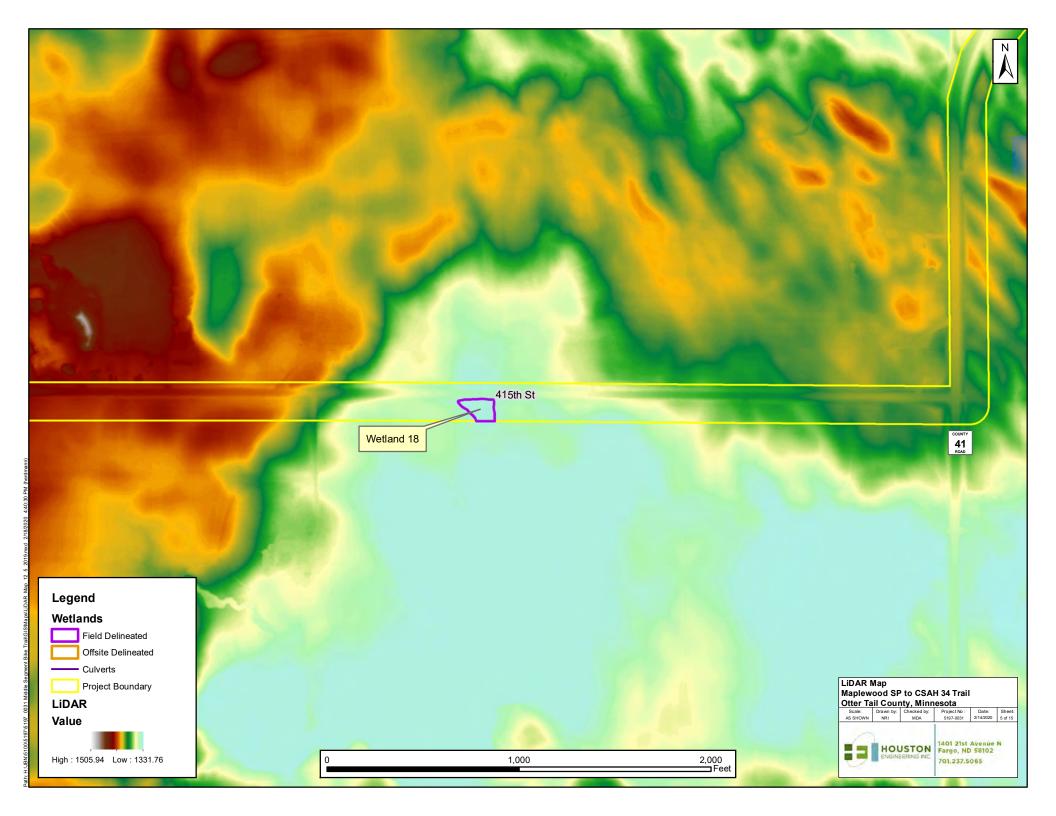
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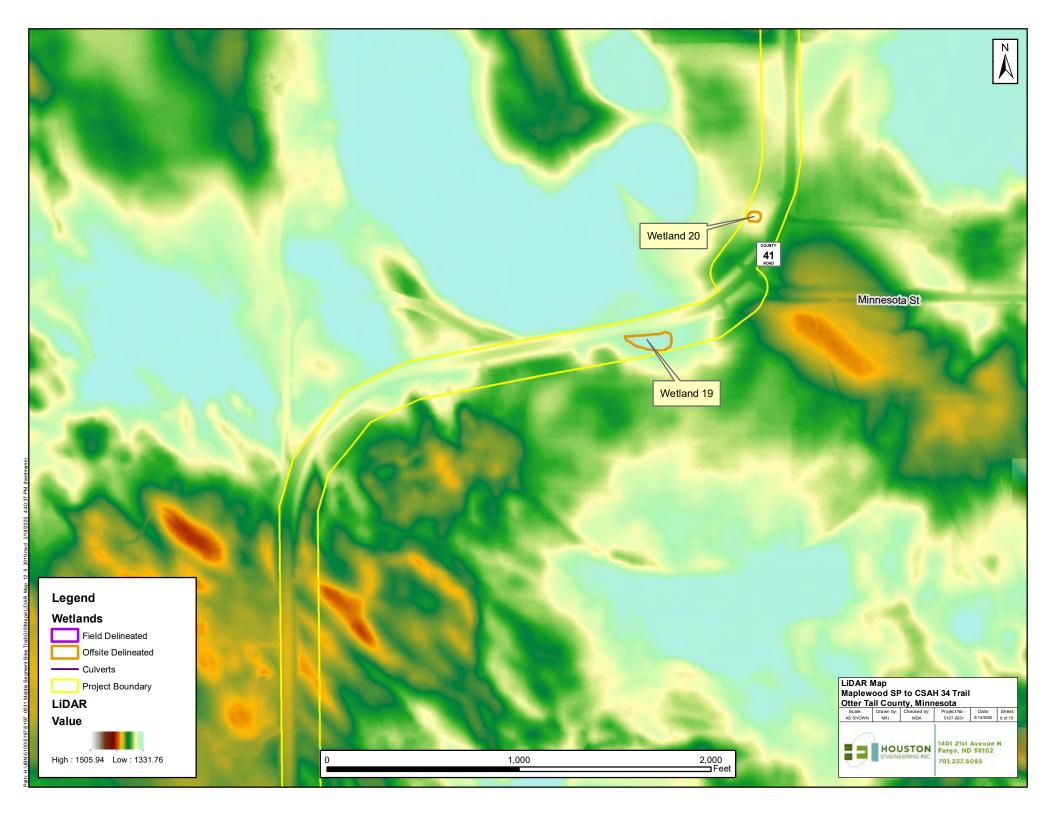


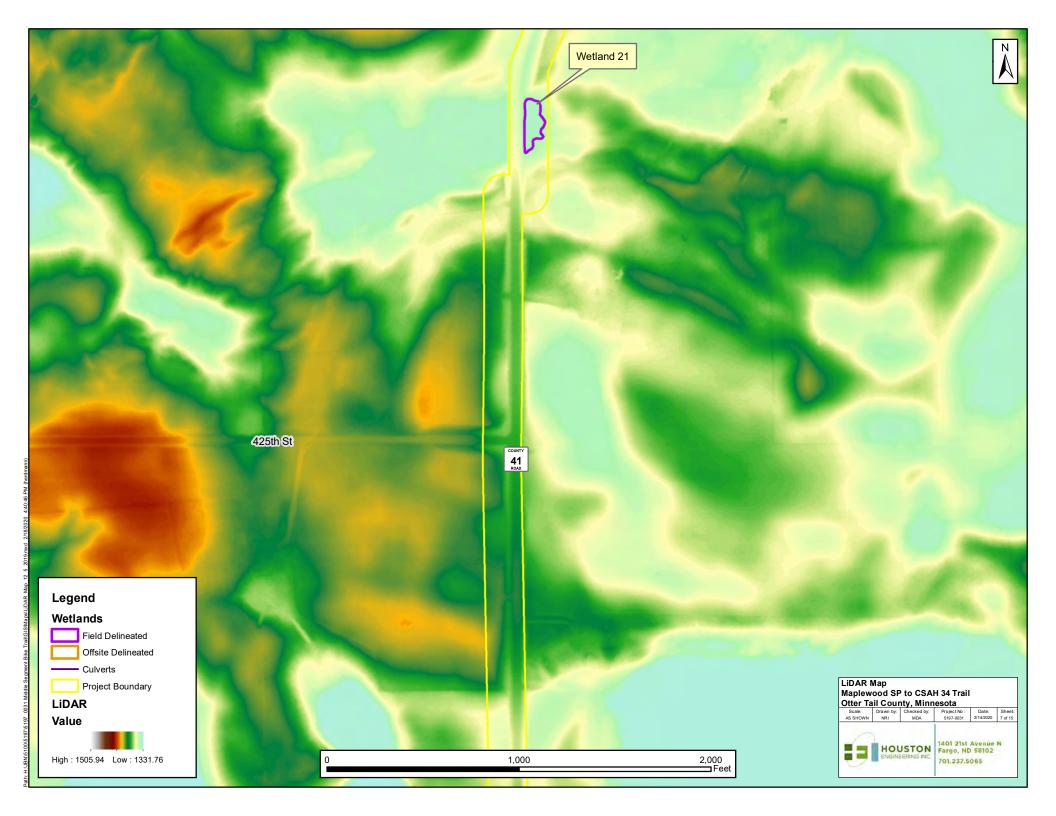


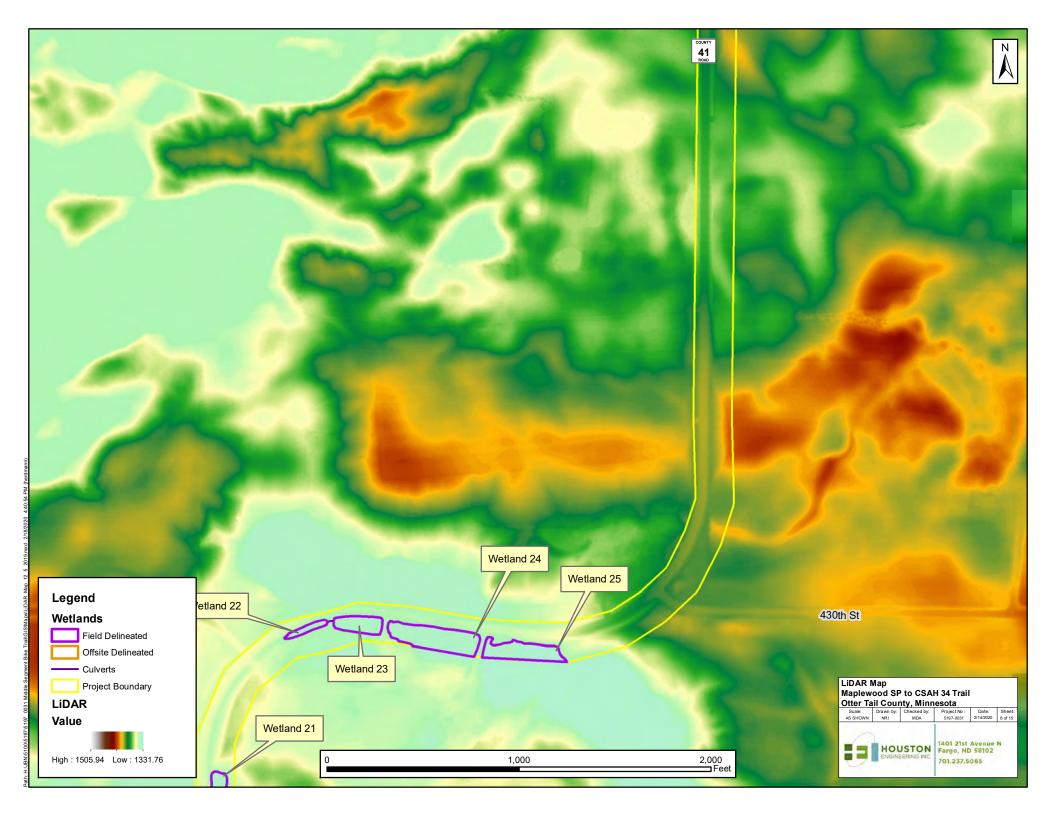


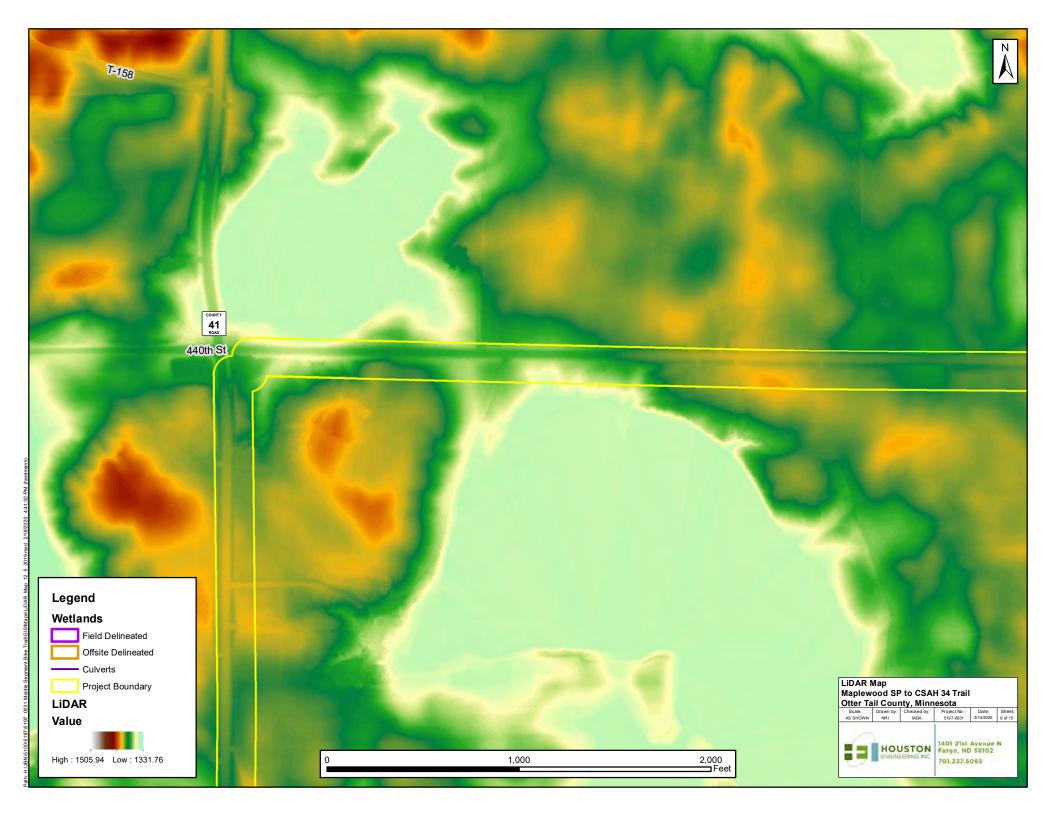


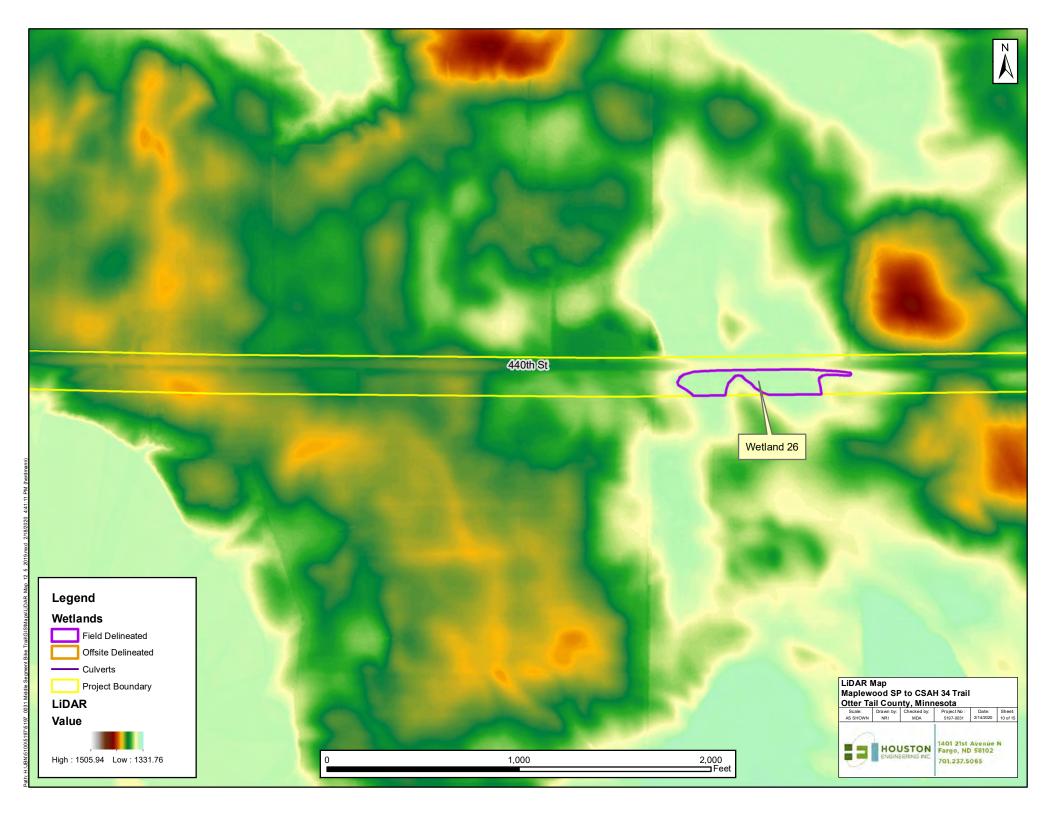


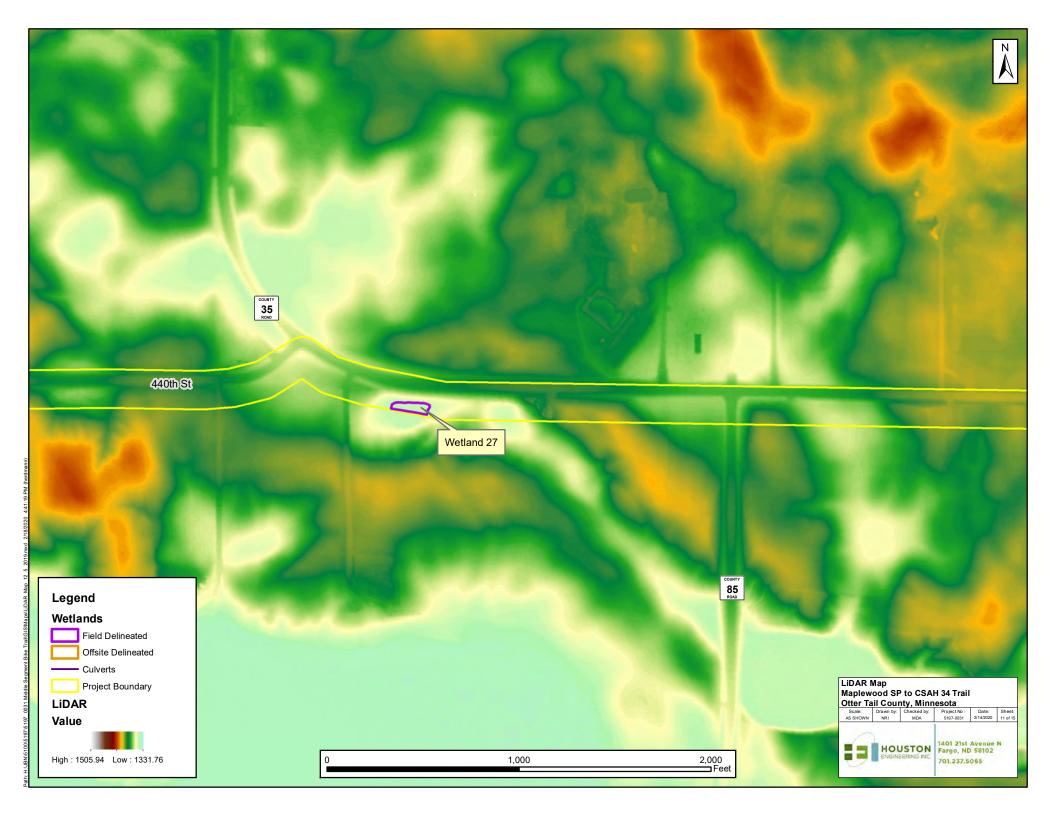


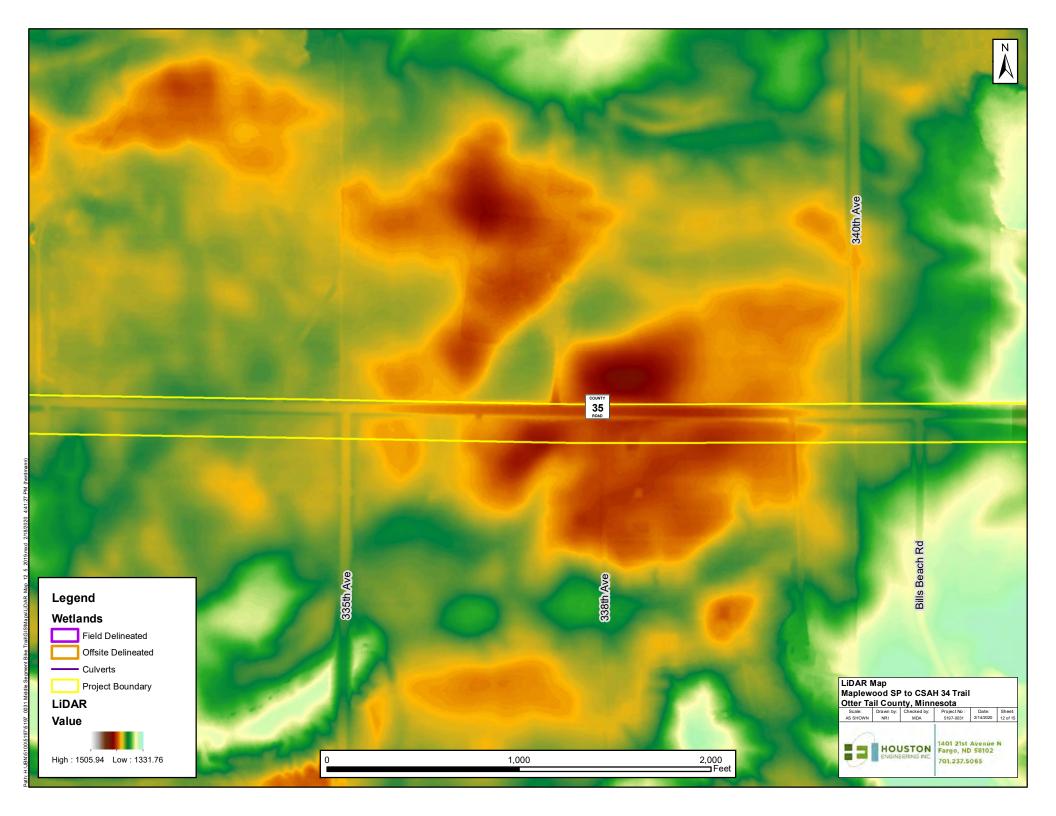


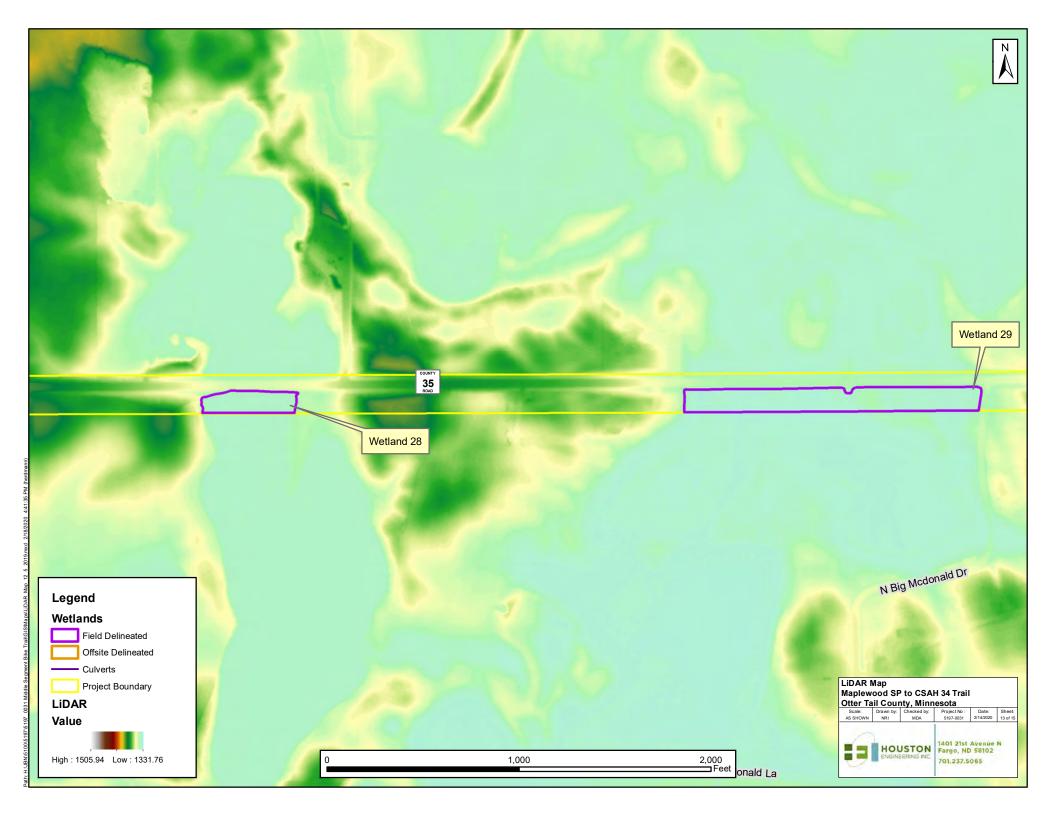


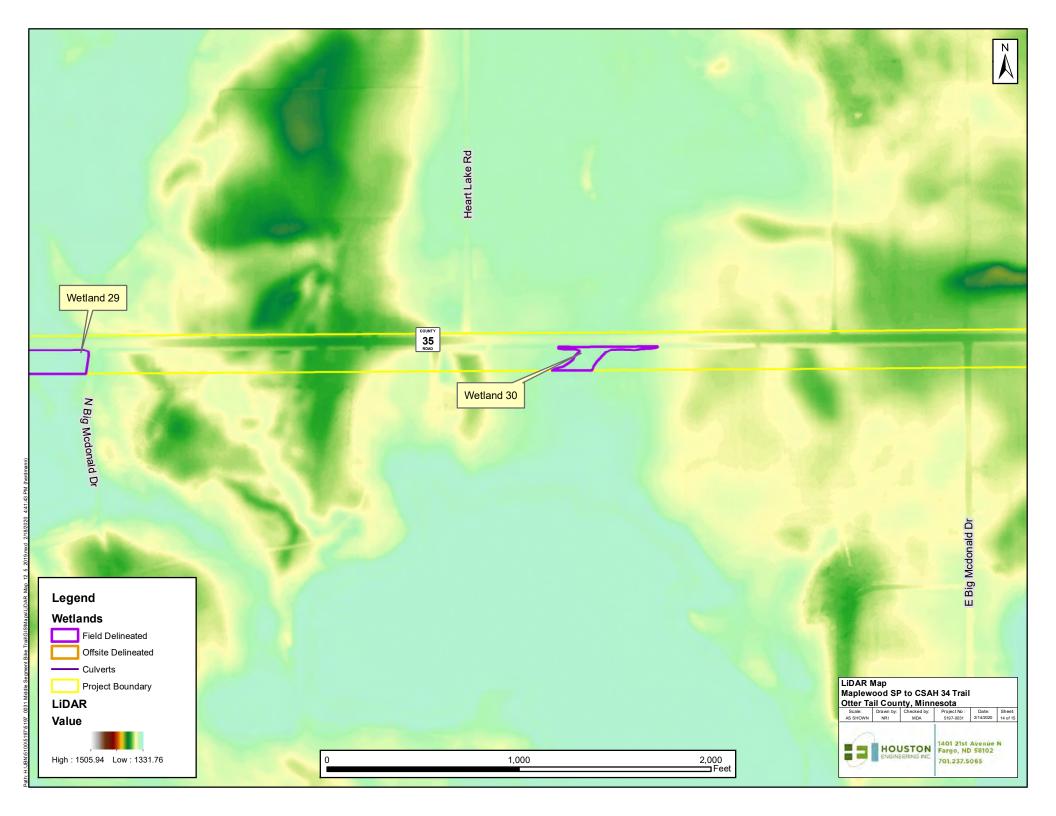


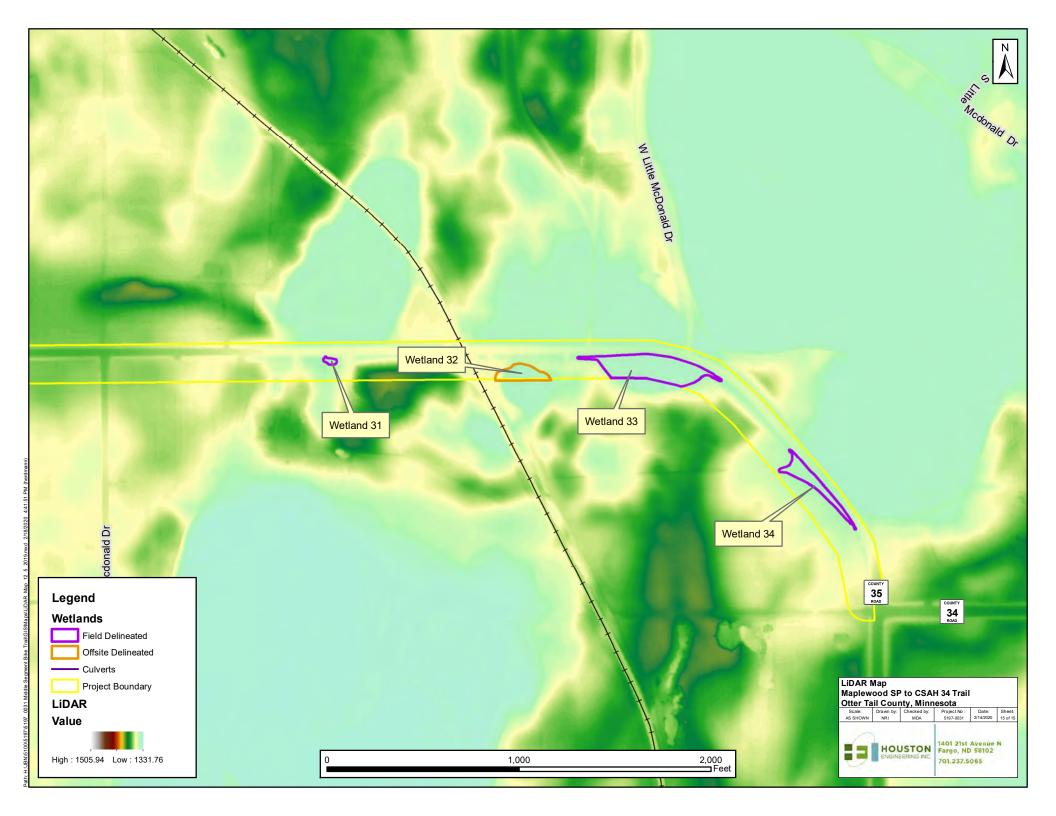






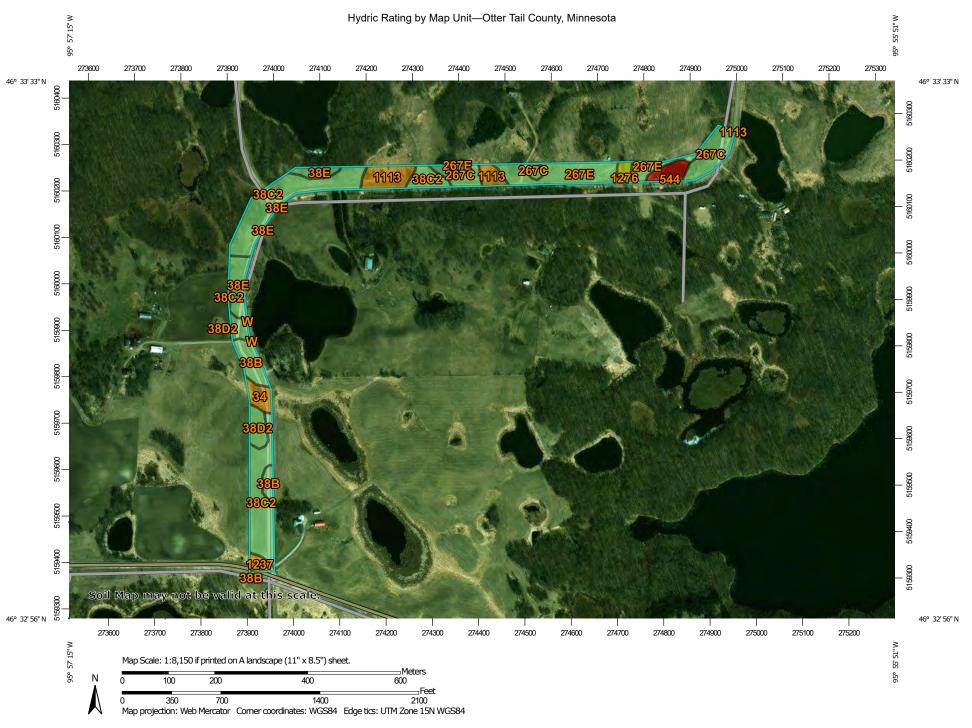


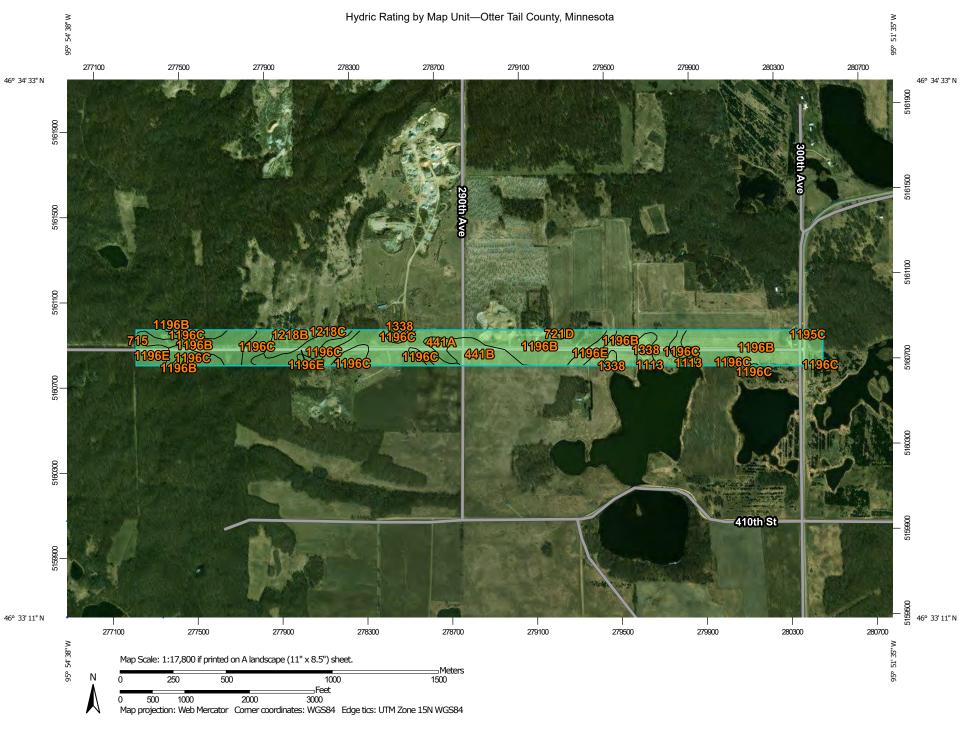


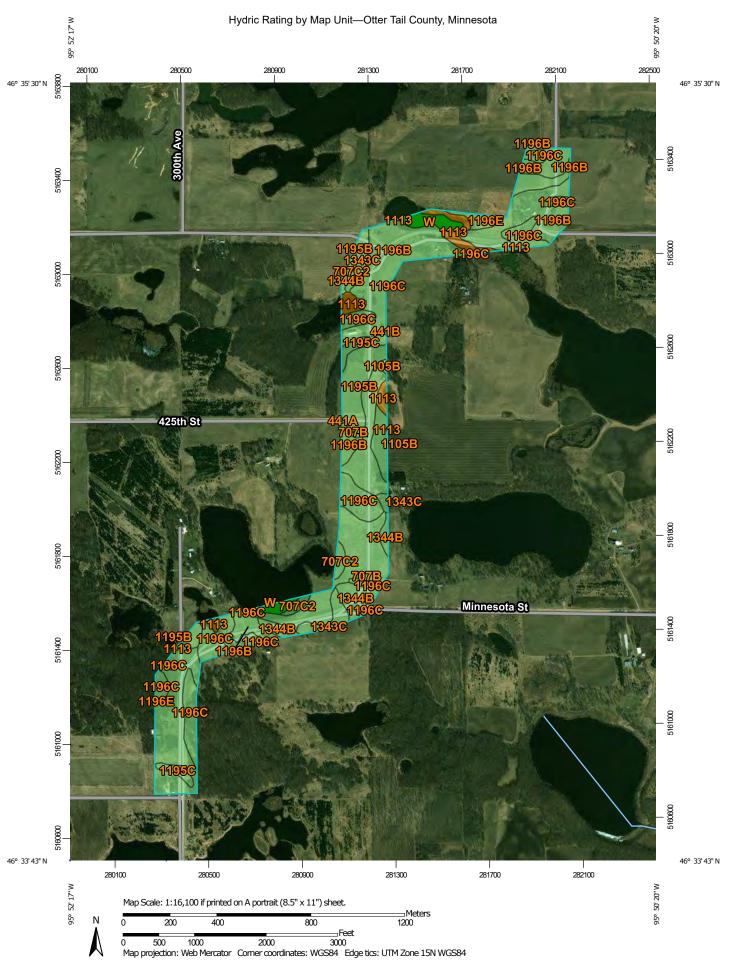


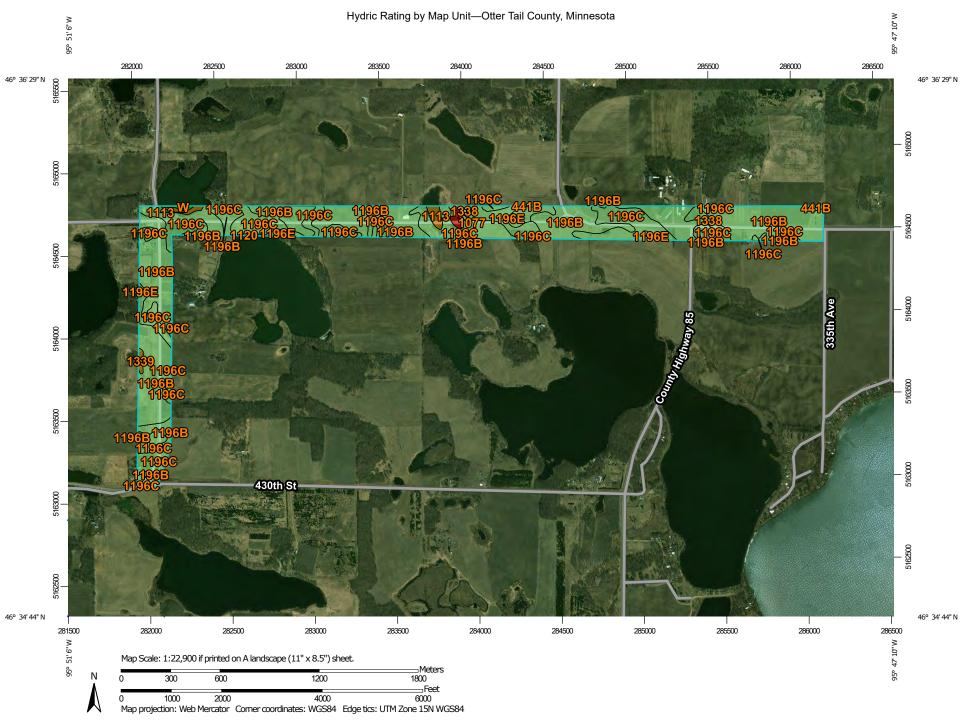
ATTACHMENT E

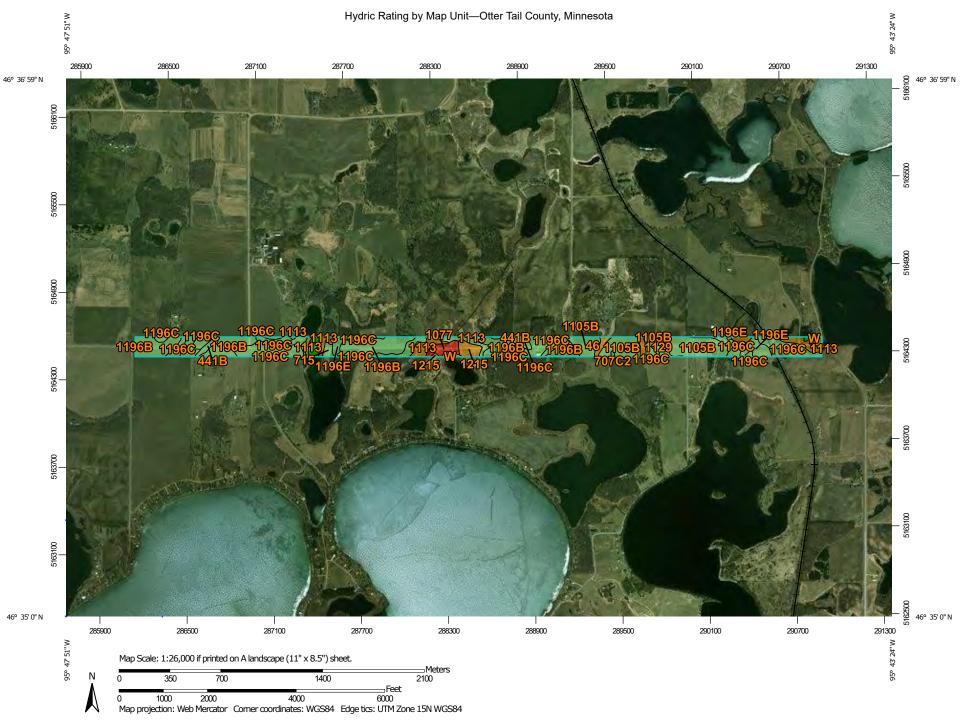
Hydric soil maps











MAP LEGEND

Area of Interest (AOI) Transportation Area of Interest (AOI) Rails Soils Interstate Highways **Soil Rating Polygons** US Routes Hydric (100%) Major Roads Hydric (66 to 99%) Local Roads \sim Hydric (33 to 65%) Background Hydric (1 to 32%) Aerial Photography Not Hydric (0%) Not rated or not available Soil Rating Lines Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Soil Rating Points** Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Water Features** Streams and Canals

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20.000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Otter Tail County, Minnesota Survey Area Data: Version 14, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 25, 2014—Mar 13, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
34	Parnell silty clay loam, occasionally ponded, 0 to 1 percent slopes	90	2.5	0.1%
38B	Waukon loam, 2 to 6 percent slopes	5	29.8	1.0%
38C2	Waukon, moderately eroded-Langhei complex, 6 to 12 percent slopes	7	95.6	3.1%
38D2	Waukon, moderately eroded-Langhei complex, 12 to 20 percent slopes	5	34.5	1.1%
38E	Waukon loam, 20 to 30 percent slopes	7	37.8	1.2%
46	Borup loam	97	13.9	0.5%
180	Gonvick loam, 1 to 4 percent slopes	7	2.3	0.1%
191	Epoufette sandy loam	96	5.6	0.2%
267B	Snellman sandy loam, 1 to 8 percent slopes	7	50.5	1.6%
267C	Snellman sandy loam, 8 to 15 percent slopes	5	92.4	3.0%
267E	Snellman sandy loam, 15 to 30 percent slopes	6	59.8	1.9%
267F	Snellman sandy loam, 30 to 45 percent slopes	8	2.3	0.1%
441A	Almora loam, 0 to 2 percent slopes	1	13.3	0.4%
441B	Almora loam, 2 to 6 percent slopes	2	62.6	2.0%
441C	Almora loam, 6 to 12 percent slopes	2	13.8	0.4%
540	Seelyeville-Seelyeville, ponded, complex, 0 to 1 percent slopes	100	13.0	0.4%
544	Cathro muck, occasionally ponded, 0 to 1 percent slopes	100	18.1	0.6%
707B	Lizzie silt loam, 2 to 6 percent slopes	3	46.6	1.5%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
707C2	Lizzie silt loam, 6 to 12 percent slopes, eroded	5	31.7	1.0%
715	Bluffcreek-Clearriver complex	7	18.3	0.6%
718E	Naytahwaush loam, 8 to 30 percent slopes	5	8.5	0.3%
721D	Corliss loamy sand, 12 to 20 percent slopes	4	4.9	0.2%
1030	Pits, gravel- Udipsamments complex	5	3.9	0.1%
1077	Forada and Leafriver soils, frequently ponded, 0 to 1 percent slopes	100	7.1	0.2%
1105B	Dent silt loam, 1 to 6 percent slopes	3	69.3	2.2%
1113	Haslie, Seelyeville, and Cathro soils, frequently ponded, 0 to 1 percent slopes	95	166.1	5.4%
1114	Hangaard loamy sand, lake beaches	91	0.0	0.0%
1120	Rushlake-Hangaard complex	41	2.4	0.1%
1129	Lindaas silty clay loam, morainic	95	1.5	0.0%
1195B	Sybil-Eagleview complex, 2 to 8 percent slopes	4	30.8	1.0%
1195C	Sybil-Eagleview complex, 8 to 15 percent slopes	5	24.8	0.8%
1195E	Sybil-Eagleview complex, 15 to 30 percent slopes	4	5.0	0.2%
1196B	Lida-Two Inlets complex, 1 to 8 percent slopes	4	1,022.1	33.0%
1196C	Lida-Two Inlets complex, 8 to 15 percent slopes	4	674.8	21.8%
1196E	Lida-Two Inlets complex, 15 to 30 percent slopes	5	117.2	3.8%
1196F	Lida-Two Inlets complex, 30 to 50 percent slopes	4	10.8	0.3%
1208B	Naytahwaush loam, 1 to 8 percent slopes	10	3.3	0.1%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1215	Pinelake sandy loam	94	7.1	0.2%
1218B	Snellman-Lida complex, 1 to 8 percent slopes	7	27.5	0.9%
1218C	Snellman-Lida complex, 8 to 15 percent slopes	7	24.9	0.8%
1218E	Snellman-Lida complex, 15 to 30 percent slopes	7	2.4	0.1%
1218F	Snellman-Lida complex, 30 to 45 percent slopes	6	6.4	0.2%
1237	Lakepark-Parnell, occasionally ponded, complex, 0 to 2 percent slopes	95	6.3	0.2%
1276	Knute-Brandsvold complex, thick solum	34	32.6	1.1%
1289	Knute fine sandy loam, thick solum	9	1.4	0.0%
1338	Oakcreek loam	8	35.1	1.1%
1339	Borup mucky silt loam, depressional	97	2.0	0.1%
1340	Bluffcreek-Epoufette complex	30	0.3	0.0%
1343C	Lida-Almora-Lizzie complex, 8 to 15 percent slopes	4	15.5	0.5%
1344B	Lida-Almora-Dent complex, 1 to 8 percent slopes	4	23.6	0.8%
W	Water	0	115.1	3.7%
Totals for Area of Inte	rest		3,097.0	100.0%

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

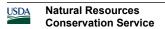
The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.



Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

ATTACHMENT F

Plant List

Table: Plant List

Genus/Species	Common Name	Indicator Status Midwest region*	Dominant Wetland plants	Dominant Upland Plants	Stratum
Acer negundo	boxelder	FAC	х		Tree/Shrub
Acer rubrum	red maple	FAC			Tree
Achillea millefolium	common yarrow	FACU			Herb
Anemone canadensis	round-leaf thimbleweed	FACW	х		Herb
Aruncus dioicus	goat's beard	FACU			Herb
Asclepias syriaca	common milkweed	FACU		Х	Herb
Betula papyrifera	paperberch	FACU			Tree
Bromus inermis	smooth brome	FACU		Х	Herb
Calamagrostis canadensis	bluejoint	OBL	Х	Х	Herb
Carex bicknellii	Bicknell's sedge	FACU	х		Herb
Carex hystericina	porcupine sedge	OBL	х		Herb
Carex lacustris	lakebank sedge	OBL	х		Herb
Carex pellita	woolly sedge	OBL	х		Herb
Cerastium arvense	chickweed	FACU			Herb
Cirsium arvense	Canadian thistle	FACU		Х	Herb
Daucus carota	queen Anne's lace	UPL		Х	Herb
Elymus canadensis	nodding wild rye	FACU			Herb
Elymus repens	creeping wild rye	FACU		Х	Herb
Equisetum arvense	field horsetail (fluffy)	FAC	х		Herb
Equisetum hyemale	tall scouring rush(stick)	FACW	х	Х	Herb
Fraxinus nigra	black ash	FACW	х	Х	Tree/Shrub
Glechoma hederacea	ground ivy	FACU			Herb
Juncus balticus	Baltic rush	OBL			Herb
Lysimachia thyrsiflora	tufted yellow loosestrife	OBL	х		Herb
Medicago lupulina	black medick	FACU		Х	Herb
Medicago sativa	alfalfa	FACU			Herb
Parthenocissus quinquefolia	Virginia creeper	FACU			Herb
Phalaris arundinacea	reed canary grass	FACW	х	Х	Herb
Plantago major	great plantain	FAC			Herb
Poa palustris	fowl blue grass	FACW			Herb
Poa pratensis	Kentucky blue grass	FAC	х	Х	Herb
Polygonatum biflorum	King Solomon's seal	FACU			Herb
Populus deltoides	eastern cottonwood	FAC			Herb
Populus tremuloides	quaking aspen	FAC	х	Х	Tree/Shrub
Prunus virginiana	chokecherry	FACU			Tree
Quercus bicolor	swamp oak	FACW			Tree/Shrub
Quercus macrocarpa	Burr oak	FAC			Tree
Quercus palustris	pin oak	FACW			Shrub
Rhus glabra	Smooth sumac	NONE			Tree

Otter Tail Aquatic Resource Delineation Report

				1	
Rubus idaeus	common raspberry	FACU			Shrub
Sagittaria cuneata	Arum leaf arrowhead	OBL			Herb
Salix amygdaloides	peachleaf willow	FACW	Х		Tree/Shrub
Salix interior	sandbar willow	FACW	Х		Shrub
Sanguinaria canadensis	blood root	FACU	Х		Herb
Shepherdia argentea	silver buffalo berry	FACU			Shrub
Solidago altissima	tall goldenrod	FACU			Herb
Solidago canadensis	Canadian goldenrod	FACU			Herb
Solidago gigantea	late goldenrod	FACW			Herb
Sonchus arvensis	field sow thistle	FACU			Herb
Taraxacum officinale	common dandelion	FACU			Herb
Thalictrum dioicum	early meadow rue	FACU		х	Herb
Toxicodendron radicans	eastern poison ivy	FAC			Herb
Typha sp.	cat tail	OBL	Х		Herb
Ulmus americana	American elm	FACW			Tree
Urtica dioica	stinging nettle	FACW			Herb
Verbena hastata	Simpler's joy	FACW			Herb
Vitis riparia	river bank grape	FACW	Х		Vine

^{*} Lichvar RW, Banks DL, Kirchner WN, Melvin NC (2016) The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. 28 April 2016. ISSN 2153 733X

ATTACHMENT G

Aquatic Resource Data Forms

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Otter Tail County Road Bike Trail	(City/Co	ounty: Otte	er Tail		Sampling	Date: 6-20-1	9
Applicant/Owner: Houston Engineering Inc.					State: MN	Sampling	Point: 1u	
Investigator(s): Hannah Erdmann		Section	n, Township	ip, Rang	ge: S34-T136-R42			
Landform (hillslope, terrace, etc.): sideslope to depressi	on		Local	relief (c	oncave, convex, none):	none		
Slope (%): 2 Lat: 46.550122								
Soil Map Unit Name: Parnell silt-loam					NWI classific			
Are climatic / hydrologic conditions on the site typical for this	time of you						notou	
							, y	
Are Vegetation, Soil, or Hydrology si					ormal Circumstances" p			٥
Are Vegetation, Soil, or Hydrology n	aturally prol	blemat	tic?	(If nee	ded, explain any answe	rs in Rema	ırks.)	
SUMMARY OF FINDINGS - Attach site map	showing	samı	pling po	int lo	cations, transects	, import	ant feature	s, etc.
Hydrophytic Vegetation Present? Yes No	o							
Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No	٥		Is the Sam	•			V	
Wetland Hydrology Present? Yes No	<u> </u>		within a W	Vetland	? Yes	No_	<u> </u>	
Remarks:								
$\label{eq:VEGETATION} \textbf{-} \ Use \ scientific \ names \ of \ plants.$								
T 01 1 (D) 1	Absolute		nant Indica		Dominance Test work	sheet:		
	% Cover				Number of Dominant S		1	/A)
1					That Are OBL, FACW,	or FAC: _	1	(A)
3					Total Number of Domin		1	(D)
4.					Species Across All Stra	ıa	<u>'</u>	(B)
5					Percent of Dominant Sp		100%	(A (D)
· ·			l Cover		That Are OBL, FACW,	JI FAC: _		(A/B)
Sapling/Shrub Stratum (Plot size:)					Prevalence Index wor	ksheet:		
1					Total % Cover of:		Multiply by:	_
2					OBL species			
3					FACW species			
4					FAC species			_
5					FACU species			
Herb Stratum (Plot size: 5' radius)		= Tota	l Cover		UPL species			
1. Phalaris arundinacea	60	Υ	FAC	cw	Column Totals:	(A)		_ (B)
2. Toxicodendron radicans	15	N	FAC		Prevalence Index	= B/A = _		_
3. Equisetum arvense	5	N	FAC	<u> </u>	Hydrophytic Vegetation	n Indicato	ors:	
4. Poa pratensis	5	<u>N</u>	FAC		1 - Rapid Test for I		c Vegetation	
5. Asclepias syriaca	5	_N	FAC		X 2 - Dominance Tes			
6. Solidago gigantea		<u>N</u>	<u>FAC</u>	— I	3 - Prevalence Inde			
7. Glechoma hederacea	. <u>5</u>	<u>N</u>	<u>FAC</u>	<u>U_</u>	4 - Morphological A data in Remarks	daptations	s¹ (Provide sup	porting
8					Problematic Hydro			
9					1 10516111411011194101	Jily tio Vogt	ctation (Expla	,
10	400				¹ Indicators of hydric soi	I and wetla	ınd hvdroloav r	nust
Woody Vine Stratum (Plot size:)	100	= Tota	l Cover		be present, unless distu			
1					Hydrophytic			
2.					Vegetation	\ <u>/</u>		
		= Tota	l Cover		Present? Yes	s_X_	No	
Remarks: (Include photo numbers here or on a separate s								

US Army Corps of Engineers Midwest Region – Version 2.0

Sampling Point _	1u
	Sampling Point _

Depth	Matrix	100		ox Featur				
(inches)	Color (moist)	%	Color (moist)	- %	Type	Loc ²	Texture	Remarks
0-5	2.5Y 3/1	100					SC	
5-14	2.5Y 4/2	94	10YR 4/4	6	С	М	SC	
14+	2.5Y 4/1	90	2.5YR 4/6	10	С	M	<u>C</u>	
Type: C=0	Concentration, D=D	epletion, RN	M=Reduced Matrix, M	IS=Maske	d Sand G	Grains.	² Location: 1	PL=Pore Lining, M=Matrix.
_ Histoso	il Indicators: ol (A1) Epipedon (A2)			Gleyed M		2	Coast Pr	r Problematic Hydric Soils ³ : airie Redox (A16) face (S7)
	Histic (A3)			ed Matrix (ganese Masses (F12)
	gen Sulfide (A4)		Loamy	Mucky M	ineral (F1	6.	745 m 75 m	illow Dark Surface (TF12)
2 cm N	ed Layers (A5) /luck (A10) ed Below Dark Surfa	(A11)		Gleyed Ned Matrix Dark Sur	(F3))	Other (E:	xplain in Remarks)
Thick E	Dark Surface (A12) Mucky Mineral (S1)		Deplet	ed Dark S Depressi	urface (F	7)		f hydrophytic vegetation and hydrology must be present,
	lucky Peat or Peat (unless di	sturbed or problematic
Restrictive	Layer (if observed	1):						
Type:							Hydric Soil P	resent? Yes X No
	17917							
100	nches): <u>14</u>							
Depth (i								
Depth (ii		s:						
Depth (ii Remarks: YDROLO Wetland H	OGY ydrology Indicator		uired; check all that a	(Ylqqı				
Depth (ii Remarks: YDROLO Vetland H Primary Ind	OGY ydrology Indicator			applγ) ained Lea	ves (B9)		Secondary	
Depth (ii Remarks: YDROLO Vetland Hi Primary Ind Surface	OGY ydrology Indicator dicators (minimum o		Water-St Aquatic F	ained Lea auna (B1	3)		Secondary Surface	Indicators (minimum of two required
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YDROLO Vetland H Surface High W Satura Water	OGY ydrology Indicator dicators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1)		Water-St Aquatic F True Aqu Hydroger	ained Lea auna (B1 atic Plant Sulfide C	3) s (B14) Odor (C1)		Secondary Surface Draina Dry-Se Crayfis	Indicators (minimum of two required te Soil Cracks (B6) tge Patterns (B10) teason Water Table (C2) th Burrows (C8)
Primary Ind Surface High W Saturat Water Sedime	OGY ydrology Indicator dicators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		Water-St Aquatic F True Aqu Hydroger Oxidized	ained Lea auna (B1 atic Plant Sulfide (Rhizosph	3) s (B14) Odor (C1) eres on L	iving Roots	Secondary Surface Draina Dry-Se Crayfis	Indicators (minimum of two required the Soil Cracks (B6) tige Patterns (B10) theason Water Table (C2) the Burrows (C8) tion Visible on Aerial Imagery (C9)
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Primary Ind Surface High W Saturar Water Sedime Drift De	OGY ydrology Indicator dicators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4)		Water-St Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir	ained Lea auna (B1 atic Plants Sulfide C Rhizosph of Reduction Reduction	3) s (B14) Odor (C1) eres on L red Iron (C)	iving Roots	Secondary Surface Draina Dry-Se Crayfis (C3) Satura Stunte	Indicators (minimum of two required be Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bit Burrows (C8) attion Visible on Aerial Imagery (C9) and or Stressed Plants (D1) corphic Position (D2)
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Primary Ind Surface High W Satural Water Sedime Drift De Algal M Iron De	ydrology Indicator dicators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5)	f one is requ	Water-St Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc	ained Lea auna (B1 atic Plants n Sulfide C Rhizosph of Reduc on Reduc	3) s (B14) Odor (C1) eres on L red Iron (C tion in Till (C7) a (D9)	iving Roots 34)	Secondary Surface Draina Dry-Se Crayfis (C3) Satura Stunte	Indicators (minimum of two required be Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bit Burrows (C8) tion Visible on Aerial Imagery (C9) and or Stressed Plants (D1) orphic Position (D2)
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Primary Ind Surface High W Saturar Water Sedime Drift De Algal M Iron De Inunda Sparse	ydrology Indicator dicators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) stion Visible on Aeria	f one is requ	Water-St Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc	ained Lea auna (B1, atic Plants Sulfide (Rhizosph of Reduction Reduction k Surface Well Date oplain in R	3) s (B14) Odor (C1) eres on L red Iron (C tion in Till (C7) a (D9)	iving Roots 34)	Secondary Surface Draina Dry-Se Crayfis (C3) Satura Stunte	Indicators (minimum of two required be Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) bit Burrows (C8) tion Visible on Aerial Imagery (C9) and or Stressed Plants (D1) orphic Position (D2)
YDROLO Vetland H Primary Ind Surface High W Saturar Water Sedime Drift De Algal M Iron De Inunda Sparse Field Obse	ydrology Indicator dicators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) tion Visible on Aeria	f one is requ Il Imagery (I	Water-St. Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc	ained Lea fauna (B1 atic Plants a Sulfide C Rhizosph of Reduct on Reduct k Surface Well Data cplain in R	3) s (B14) Odor (C1) eres on L red Iron (C tion in Till (C7) a (D9)	iving Roots 34)	Secondary Surface Draina Dry-Se Crayfis (C3) Satura Stunte	Indicators (minimum of two required the Soil Cracks (B6) age Patterns (B10) the Burrows (C8) thion Visible on Aerial Imagery (C9) and or Stressed Plants (D1) torphic Position (D2) deutral Test (D5)
Primary Ind Surface Water Sedime Drift De Algal M Iron De Inunda Sparse Field Obse Surface Water Table Saturation Includes ca	ydrology Indicator dicators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) tion Visible on Aeria ely Vegetated Conca ervations: ater Present? e Present? present?	I Imagery (Ive Surface Yes Yes	Water-St. Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc B7) Gauge or (B8) Other (Ex No X Depth (in No X Depth (in	ained Lea fauna (B1 atic Plants a Sulfide C Rhizosph of Reduct on Reduct on Reduct k Surface well Data (plain in R anches):	3) s (B14) Odor (C1) eres on L red Iron (C tion in Till (C7) a (D9) emarks)	iving Roots (24) led Solls (C	Secondary Surface Draina Dry-Se Crayfis (C3) Satura Stunte Geom X FAC-N	Indicators (minimum of two required be Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) and or Stressed Plants (D1) orphic Position (D2) leutral Test (D5)
Primary Ind Surface Water Sedime Drift De Algal M Iron De Inunda Sparse Field Obse Surface Water Table Saturation Includes ca	ydrology Indicator dicators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) tion Visible on Aeria ely Vegetated Conca ervations: ater Present? e Present? present?	I Imagery (Ive Surface Yes Yes	Water-St.	ained Lea fauna (B1 atic Plants a Sulfide C Rhizosph of Reduct on Reduct on Reduct k Surface well Data (plain in R anches):	3) s (B14) Odor (C1) eres on L red Iron (C tion in Till (C7) a (D9) emarks)	iving Roots (24) led Solls (C	Secondary Surface Draina Dry-Se Crayfis (C3) Satura Stunte Geom X FAC-N	Indicators (minimum of two required be Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) and or Stressed Plants (D1) orphic Position (D2) leutral Test (D5)
Primary Ind Surface High W Satural Water Sedime Drift De Inunda Sparse Field Obse Surface Water Table Saturation includes ca	ydrology Indicator dicators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) tion Visible on Aeria ely Vegetated Conca ervations: ater Present? e Present? present?	I Imagery (Ive Surface Yes Yes	Water-St. Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc B7) Gauge or (B8) Other (Ex No X Depth (in No X Depth (in	ained Lea fauna (B1 atic Plants a Sulfide C Rhizosph of Reduct on Reduct on Reduct k Surface well Data (plain in R anches):	3) s (B14) Odor (C1) eres on L red Iron (C tion in Till (C7) a (D9) emarks)	iving Roots (24) led Solls (C	Secondary Surface Draina Dry-Se Crayfis (C3) Satura Stunte Geom X FAC-N	Indicators (minimum of two required be Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) and or Stressed Plants (D1) orphic Position (D2) leutral Test (D5)
Primary Ind Surface Water Sedime Drift De Algal M Iron De Inunda Sparse Field Obse Surface Water Table Saturation Includes ca	ydrology Indicator dicators (minimum o e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) tion Visible on Aeria ely Vegetated Conca ervations: ater Present? e Present? present?	I Imagery (Ive Surface Yes Yes	Water-St. Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc B7) Gauge or (B8) Other (Ex No X Depth (in No X Depth (in	ained Lea fauna (B1 atic Plants a Sulfide C Rhizosph of Reduct on Reduct on Reduct k Surface well Data (plain in R anches):	3) s (B14) Odor (C1) eres on L red Iron (C tion in Till (C7) a (D9) emarks)	iving Roots (24) led Solls (C	Secondary Surface Draina Dry-Se Crayfis (C3) Satura Stunte Geom X FAC-N	Indicators (minimum of two required be Soil Cracks (B6) age Patterns (B10) beason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) and or Stressed Plants (D1) orphic Position (D2) leutral Test (D5)

WETLAND DETERMINATION DATA FORM - Midwest Region

2. Total Number of Dominant Species Across All Strata: 1 (B) 5. = Total Cover Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A) Sapling/Shrub Stratum (Plot size: 7 Total Sk Gover of: Multiply by: 0DBL species x 1 = Total Sk Gover of: Multiply by: 0DBL species x 2 = FACW species x 2 = FACW species x 3 = FACU species x 3 = FACU species x 4 = UPL species x 5 = Column Totals: (A) (B) (B) Prevalence Index worksheet: Total Sk Gover of: Multiply by: 0DBL species x 1 = Total Sk Gover of: Multiply by: 0DBL species x 2 = FACW species x 3 = <th>Project/Site: Otter Tail County Road Bike Trail</th> <th>City</th> <th>County: Otter Tail</th> <th></th> <th>Sampling Date: 6-20-19</th>	Project/Site: Otter Tail County Road Bike Trail	City	County: Otter Tail		Sampling Date: 6-20-19
Local relief (concave, convex, none) Concave	Applicant/Owner: Houston Engineering Inc.	- 18.1	10.00	State: MN 5	Sampling Point: 1w
Slope (%) 0-1 Lat 46.550025 Long95.948789 Nature NAD 1983 Soll Map Unit Name. Parmell stit-toam NWire classification. PEM1Cd Are climatic (hydrologic conditions on the site typical for this time of year? Yes	Investigator(s): Hannah Erdmann	Sec	ion, Township, Ran	ge: S34-T136-R42	
Soil Map Unit Name: Parnell silt-loam NWI classification: PEMICO	Landform (hillslope, terrace, etc.): depression		Local relief (concave, convex, none):	concave
Soil Map Unit Name. Parnell silt-loam NWI classification. PEMICO	Slope (%): 0-1 Lat: 46.550025	Long	-95.948789	1	Datum NAD 1983
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks) Are Vegetation Soil or Hydrology significantly disturbed? Are 'Normal Circumstances' present? Yes No Are Vegetation Soil or Hydrology naturally problemato? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, or Hydrophytic Vegetation Present? Yes No is the Sampled Area within a Wetland? Yes No within a Wetland? Yes No No Wetland Hydrology Present? Yes No Wetland Hydrology Present? Yes No No Within a Wetland? Yes No No No Within a Wetland? Yes No No No Within a Wetland? Yes No		3,27,			
Are Vegetation Soil or Hydrology naturally problematic? Are "Normal Circumstances" present? Yes No Normal Circumstances" present? Yes No Normal Circumstances of Plants. SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, ethydrophytic Vegetation Present? Yes No within a Wetland? Yes No within a Wetland? Yes No Normal Circumstances of Plants. Wetland Hydrology Present? Yes No within a Wetland? Yes No Normal Circumstances of Plants. VEGETATION — Use scientific names of plants. VEGETATION — Ves Samples and Plants of		this time of year?	Yes X No		
Are Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, et Hydrophytic Vegetation Present? Yes No Hydrology Present? Yes No Within a Wetland Hydrology Present? Yes No Within a Wetland? Yes No No Wetland Hydrology Present? Yes No					
SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features, ethydrophytic Vegetation Present? Yes		and the second second second			
Hydrophytic Vegetation Present? Yes					
Section Present Pres		And the second second second			215022102101200200000000000000000000000
Number of Dominant Species Status Percent of Dominant Species Across All Stratum Plot size Percent of Dominant Species Across All Stratum Plot size Percent of Dominant Species Across All Stratum Percent of Dominant Species That Are OBL, FACW, or FAC. 100% (Av. Av.	Hydric Soil Present? Yes X		Is the Sampled		
Absolute Dominant Indicator Species? Status St	Wetland Hydrology Present? Yes X	No	within a Wetland	1? Yes X	No
Absolute % Cover Species 7 Status	Remarks:				
Absolute % Cover Species 7 Status Status Status Species 7 Status Sta					
Absolute % Cover Species 7 Status Status Status Species 7 Status Status Status Status Species 7 Status Status Status Species 7 Status Status Status Status Species 7 Status Status Species 7 Status Sta					
Absolute % Cover Species 7 Status Status Status Species 7 Status Status Status Status Species 7 Status Status Status Species 7 Status Status Status Status Species 7 Status Status Species 7 Status Sta	VEGETATION – Use scientific names of plan	nts			
1.			minant Indicator	Dominance Test works	heet;
That Are OBL, FACW, or FAC: 1 (A) 7 total Number of Dominant Species Across All Strate: 1 (B) 8 sapling/Shrub Stratum (Plot size: 5 Tadius) 1. Phalaris arundinacea 100 Y FACW 2. Total Cover Herb Stratum (Plot size: 5 Tadius) 1. Phalaris arundinacea 100 Y FACW 2. Total Cover Herb Stratum (Plot size: 5 Tadius) 1. Phalaris arundinacea 100 Y FACW 2. Total Cover (Fac. 100% (A) Frevalence Index worksheet: Total % Cover of: Multiply by: OBL species x 1 = FACW species x 2 = FACW species x 3 = FACW species x 4 = UPL species x 4 = UPL species x 5 = Column Totals: (A) (B) Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Section Indicators: 1 - Rapid Test for Hydrophytic Vegetation Section Sec	The state of the s			Number of Dominant Spe	ecies
3.	16			That Are OBL, FACW, or	FAC: 1 (A)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (Accepted to the prevalence Index worksheet: Total % Cover of: Multiply by:	2			Total Number of Dominar	nt
Fercent of Dominant Species 100% (All Sapling/Shrub Stratum (Plot size 7 1 1 1 1 1 1 1 1 1	3		—	Species Across All Strata	1 (B)
That Are OBL, FACW, or FAC. 100% (Av.	4,			Percent of Dominant Spe	ecies
Prevalence Index worksheet: Total % Cover of:	5		A 96 A 3	That Are OBL, FACW, or	FAC: 100% (A/B)
Total % Cover of: Multiply by:	Saoling/Shrub Stratum (Plot size	=T0	otal Cover	Prevalence Index works	sheet:
2.	The state of the s				
3 FACW species x 2 = 4 FAC species x 3 = 5 FACU species x 4 = UPL species x 5 = Column Totals: (A) (B Prevalence Index = B/A = 3 Hydrophytic Vegetation Indicators: 4 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation ∑ 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide support data in Remarks or on a separate sheet) 9 Problematic Hydrophytic Vegetation¹ (Explain) 10 Foblematic Hydrophytic vegetation of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic vegetation vegetation vegetation vegetation vegetation. Prevent?				The second second second	
4.				FACW species	x 2 =
Herb Stratum (Plot size: 5' radius				FAC species	x 3 =
Herb Stratum (Plot size: 5 Tadius 100 Y FACW Prevalence Index = B/A =	5.			FACU species	x4=
1. Phalaris arundinacea 2. Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1. Rapid Test for Hydrophytic Vegetation 2. Dominance Test is >50% 3. Prevalence Index is ≤3.0¹ 4. Morphological Adaptations¹ (Provide support data in Remarks or on a separate sheet) 9. Problematic Hydrophytic Vegetation¹ (Explain) 10. Problematic Hydrophytic Vegetation¹ (Explain) 10. Hydrophytic Vegetation 10. Present? Yes X No	5' radius	= To	otal Cover	UPL species	x 5 =
Prevalence Index = B/A = Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation	Pholoria aryundinassa	100 V	EACW	Column Totals:	(A) (B)
Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide support data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) 10. Moody Vine Stratum (Plot size:) Problematic Hydrophytic soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes X No.	7		TACV	Prevalence Index	- R/Δ =
4	10.5		-	A CONTRACT OF THE PARTY OF THE	and the second second
X 2 - Dominance Test is >50%					
6					
7					
8					
9Problematic Hydrophytic Vegetation* (Explain) 10				data in Remarks	or on a separate sheet)
10			\$ 13	Problematic Hydroph	nytic Vegetation (Explain)
Woody Vine Stratum (Plot size:) 1				Remindered America TA	
Woody Vine Stratum (Plot size:) 1	Unit of the second	100 = To	otal Cover	Indicators of hydric soil a	and wetland hydrology must bed or problematic
2			-	process, alliand allatan	bi saismatus
Present? Yes X No					
	2		762-51	Present? Yes	X No
= Total Cover Remarks: (Include photo numbers here or on a separate sheet.)	B d Vi. ii d		otal Cover	712.6	

SOIL	Sampling Point 1W

Depth (inches)	Matrix Color (moist)	%	Color (moist)	dox Featur %	Type ¹	Loc ²	Texture	Remarks
0-18	2.5Y 2.5/1	70	Coloi (moist)		Type	LUC	LC	Remarks
		05	0. FVD 4/4			- 		
18-23	10YR 5/2	95	2.5YR 4/4	5	<u>C</u>	_ <u>M</u>	С	
23-36+	2.5Y 2.5/1	_						
				_	-			7
		_	-			-		
			-					
-1		pletion, RN	M=Reduced Matrix, I	MS=Mask	ed Sand G	irains.		: PL=Pore Lining, M=Matrix.
ydric Soil Ir			7					for Problematic Hydric Soils ³ :
_ Histosol (The second second			y Gleyed N				Prairie Redox (A16)
	ipedon (A2)			y Redox (S				urface (S7)
_ Black His	the second secon			ed Matrix		v.	146.00	anganese Masses (F12)
The Thirty	n Sulfide (A4) Layers (A5)			y Mucky M y Gleyed f				hallow Dark Surface (TF12) Explain in Remarks)
2 cm Mud				ted Matrix			_ Other (robiani in ricinalis)
	Below Dark Surfa	ce (A11)		x Dark Sur				
	rk Surface (A12)	55 W.31 IV		ted Dark S		7)	3Indicators	of hydrophytic vegetation and
	ucky Mineral (S1)			x Depressi				hydrology must be present,
	cky Peat or Peat (S	33)	-,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		- / /			disturbed or problematic
estrictive L	ayer (if observed):				-		
Type:							02:00%200	
							Hydric Soil	Present? Yes X No
Depth (inc	hes)::						Į.	
emarks:								
Remarks:	g y							
YDROLOG Vetland Hyd	GY Irology Indicators		uired check all that	annivi			Seconda	ny Indicators (minimum of two required
YDROLOG Vetland Hyd	GY Irology Indicators ators (minimum of		uired; check all that		was (POV			
YDROLOG Vetland Hyd Primary Indica Surface V	GY Irology Indicators ators (minimum of Water (A1)		Water-S	tained Lea			Surf	ace Soil Cracks (B6)
YDROLOG Vetland Hyd Vrimary Indica Surface V High Wat	GY Irology Indicators ators (minimum of Water (A1) ter Table (A2)		Water-S Aquatic	tained Lea Fauna (B1	3)		Surf Drai	ace Soil Cracks (B6) nage Patterns (B10)
YDROLOG Vetland Hyd Primary Indica Surface V High Wat Saturatio	GY Irology Indicators ators (minimum of Nater (A1) ter Table (A2) n (A3)		Water-S Aquatic True Aq	tained Lea Fauna (B1 uatic Plant	3) s (B14)		Surf Drai Dry-	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2)
YDROLOG Vetland Hyd Primary Indica Surface V High Wat Saturation Water Ma	GY Irology Indicators ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1)		Water-S Aquatic True Aq Hydroge	itained Lea Fauna (B1 uatic Plant en Sulfide (3) s (B14) Odor (C1)	ivina Roots	Surf Drai Dry- Cray	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8)
YDROLOG Vetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment	GY Irology Indicators ators (minimum of Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2)		Water-S Aquatic True Aq Hydroge Oxidized	itained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph	3) s (B14) Odor (C1) seres on Li	iving Roots	Surf Drai Cray (C3) Satu	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) tration Visible on Aerial Imagery (C9)
YDROLOG Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Depo	GY Irology Indicators ators (minimum of Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3)		Water-S Aquatic True Aq Hydroge Oxidized	tained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph e of Reduc	3) s (B14) Odor (C1) teres on Li ced Iron (C	(4)	Surf Drai Dry- Cray Satu Stur	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) tration Visible on Aerial Imagery (C9) tred or Stressed Plants (D1)
YDROLOG Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Mat Sediment Drift Depo	GY Irology Indicators ators (minimum of Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)		Water-S Aquatic True Aq Hydroge Oxidized Presenc	tained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph ee of Reduc Iron Reduc	3) s (B14) Odor (C1) neres on Li ced Iron (C		Surf Drai Cray Cray Stur Stur S) Seo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) tration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1) morphic Position (D2)
YDROLOG Vetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo	Irology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)	one is requ	Water-S Aquatic True Aq Hydroge Oxidized Presenc Recent I	tained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph ee of Reduc Iron Reduc ck Surface	3) s (B14) Odor (C1) heres on Li ced Iron (C tion in Till e (C7)	(4)	Surf Drai Cray Cray Stur Stur S) Seo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) tration Visible on Aerial Imagery (C9) tred or Stressed Plants (D1)
YDROLOG Vetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo	Irology Indicators ators (minimum of Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) I or Crust (B4) osits (B5) on Visible on Aerial	one is requ	Water-S Aquatic Arue Aq Hydroge Oxidized Presenc Recent I Thin Mu	tained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph ee of Reduc iron Reduc ck Surface or Well Dat	3) s (B14) Odor (C1) heres on Li ced Iron (C tion in Till c (C7) a (D9)	(4)	Surf Drai Cray Cray Stur Stur S) Seo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) tration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1) morphic Position (D2)
YDROLOC Vetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Depo Algal Mal Iron Depo Inundatio Sparsely	Irology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concav	one is requ	Water-S Aquatic Arue Aq Hydroge Oxidized Presenc Recent I Thin Mu	tained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph ee of Reduc Iron Reduc ck Surface	3) s (B14) Odor (C1) heres on Li ced Iron (C tion in Till c (C7) a (D9)	(4)	Surf Drai Cray Cray Stur Stur S) Seo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) tration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1) morphic Position (D2)
YDROLOG Vetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mal Iron Depo Inundation Sparsely ield Observ	Irology Indicators ators (minimum of Water (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concaviations:	one is requ Imagery (ve Surface	Water-S Aquatic True Aq Hydroge Oxidized Presenc Recent I Thin Mu B7) Gauge of (B8) Other (E	tained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph ee of Reduc fron Reduc ck Surface or Well Dat Explain in F	3) s (B14) Odor (C1) heres on Li ced Iron (C tion in Till c (C7) a (D9)	(4)	Surf Drai Cray Cray Stur Stur S) Seo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) tration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1) morphic Position (D2)
YDROLOG Vetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mal Iron Depo Inundatio Sparsely Surface Wate	Irology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concavations:	one is required in the second of the second	Water-S Aquatic True Aq Hydroge Oxidized Presenc Recent I Thin Mu B7) Gauge of (B8) Other (E	tained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosphe e of Reduc lron Reduc ck Surface or Well Dat explain in F	3) s (B14) Odor (C1) heres on Li ced Iron (C tion in Till c (C7) a (D9)	(4)	Surf Drai Cray Cray Stur Stur S) Seo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) tration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1) morphic Position (D2)
YDROLOG Vetland Hyd Primary Indica Surface V High Wate Saturation Water Ma Sediment Drift Depo Algal Mal Iron Depo Inundation Sparsely Field Observ Surface Water	Irology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concavations: er Present?	Imagery (ve Surface Yes	Water-S	tained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph ee of Reduc iron Reduc ck Surface or Well Dat explain in F	3) s (B14) Odor (C1) heres on Li ced Iron (C stion in Till c (C7) a (D9) Remarks)	C4) ed Solls (C6	Surfi Drai Dry Cray Satu Sturfi X Geo X FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) tration Visible on Aerial Imagery (C9) tited or Stressed Plants (D1) morphic Position (D2)Neutral Test (D5)
YDROLOG Vetland Hyd Primary Indica Surface V High Water Ma Sediment Drift Depo Algal Mal Iron Depo Inundatio Sparsely Surface Water Vater Table F Saturation Pre Includes capi	Irology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concavations: ar Present? Present? esent?	Imagery (ve Surface Yes Yes Yes	Water-S	tained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph ee of Reduc iron Reduc ck Surface or Well Dat explain in F (inches): (inches); (inches);	3) s (B14) Ddor (C1) heres on Li ced Iron (C stion in Till c (C7) a (D9) Remarks)	C4) ed Soils (C6) Weti	Surfi Drai Dry Cray Satu Sturfi Sturfi X Geo X FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) tration Visible on Aerial Imagery (C9) tted or Stressed Plants (D1) morphic Position (D2)
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YDROLOG Vetland Hyd Primary Indica Surface V High Wat Saturation Water Ma Sediment Drift Depo Algal Mal Iron Depo Inundatio Sparsely Field Observ Surface Water Vater Table Formulation Princludes Capital Control Princludes Capital Capital Capital Capital Capital Ca	Irology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concavations: ar Present? Present? esent?	Imagery (ve Surface Yes Yes Yes	Water-S	tained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph ee of Reduc iron Reduc ck Surface or Well Dat explain in F (inches): (inches); (inches);	3) s (B14) Ddor (C1) heres on Li ced Iron (C stion in Till c (C7) a (D9) Remarks)	C4) ed Soils (C6) Weti	Surfi Drai Dry Cray Satu Sturfi Sturfi X Geo X FAC	nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) tration Visible on Aerial Imagery (C9) tited or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
YDROLOG Vetland Hyd Primary Indica Surface V High Water Ma Sediment Drift Depo Algal Mal Iron Depo Inundatio Sparsely Surface Water Vater Table F Saturation Pre Includes capi	Irology Indicators ators (minimum of Nater (A1) ter Table (A2) in (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) on Visible on Aerial Vegetated Concavations: ar Present? Present? esent?	Imagery (ve Surface Yes Yes Yes	Water-S	tained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph ee of Reduc iron Reduc ck Surface or Well Dat explain in F (inches): (inches); (inches);	3) s (B14) Ddor (C1) heres on Li ced Iron (C stion in Till c (C7) a (D9) Remarks)	C4) ed Soils (C6) Weti	Surfi Drai Dry Cray Satu Sturfi Sturfi X Geo X FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) tration Visible on Aerial Imagery (C9) tited or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)

Project/Site: Otter Tail County Road Bike Trail	(City/County: Otter Tail Sampling Date: 6						
Applicant/Owner: Houston Engineering Inc.		State: MN Sampling Point: 2u						
Investigator(s): Hannah Erdmann	;	Section, Township, Range: S34-T136-R42						
Landform (hillslope, terrace, etc.): sideslope		Local relief (concave, convex, none): none						
					Datum: NAD 1983			
Soil Map Unit Name: Parnell stily-clay-loam, depress					NWI classification: not listed			
Are climatic / hydrologic conditions on the site typical for th								
					Normal Circumstances" present? Yes X No			
Are Vegetation, Soil, or Hydrology					,			
Are Vegetation, Soil, or Hydrology					eded, explain any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map		sam	pling	point lo	ocations, transects, important features, etc.			
Hydrophytic Vegetation Present? Yes 1	No X		lo the	Campled	Avec			
Hydric Soil Present? Yes !	No			: Sampled n a Wetlan				
Wetland Hydrology Present? Yes I Remarks:	NO		WILLIII	i a vvetian	id: 165 NO			
Remarks.								
VEGETATION – Use scientific names of plants								
Tree Stratum (Plot size:)	Absolute <u>% Cover</u>			Indicator Status	Dominance Test worksheet:			
1					Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)			
2.								
3					Total Number of Dominant Species Across All Strata: (B)			
4								
5					Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)			
Conline/Chaule Stratum (Diet sine)		= Tota	al Cove	er	Prevalence Index worksheet:			
Sapling/Shrub Stratum (Plot size:)					Total % Cover of: Multiply by:			
1					OBL species x 1 =			
2 3					FACW species x 2 =			
4					FAC species x 3 =			
5.					FACU species x 4 =			
El no dive					UPL species x 5 =			
Herb Stratum (Plot size: 5' radius)	50			E4011	Column Totals: (A) (B)			
1. Bromus inermis 2. Cirsium arvense	- 50				Dravelance Index - B/A -			
2. Cirsium arvense 3. Phalaris arundinacea	- <u>25</u> 15	$\frac{Y}{N}$		FACU_ FACW	Prevalence Index = B/A = Hydrophytic Vegetation Indicators:			
Poa pratensis	- 13	N		FAC	1 - Rapid Test for Hydrophytic Vegetation			
5. Aruncus dioicus	- 5	N		FACU	2 - Dominance Test is >50%			
6					3 - Prevalence Index is ≤3.0¹			
7					4 - Morphological Adaptations ¹ (Provide supporting			
8					data in Remarks or on a separate sheet)			
9					Problematic Hydrophytic Vegetation ¹ (Explain)			
10.					4			
	100	= Tota	al Cove	er er	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Woody Vine Stratum (Plot size:)					po process, amos anotarizad or problematio.			
1					Hydrophytic			
2					Vegetation Present? Yes No			
Remarks: (Include photo numbers here or on a separate		= Tota	al Cove	er				
Transition (include priore numbers field of oil a separate	J.1031.)							

SOIL	Sampling Point 2u
Profile Description: (Describe to the depth needed to document th	e indicator or confirm the absence of indicators.)

Depth N	alrix		Redo	x Feature	s			
(inches) Color (mo			olor (moist)	%	Type ¹	Loc ²	Texture	Remarks
)-14+ 10YR 4/3	10	00					SC	
					100			-
				-				-
				-	-		_	
					القنقا			
								-
Type: C=Concentration,	O-Dopletie	- DM-Dad	unnd Matrix M	C=Manka	d Sand Crai	late.	2) continu	DI = Deco Lining M-Matrix
ydric Soil Indicators:	n-nehierro	I, NIVI-Reul	iceu mana, m	3-Wasket	a Sand Grai	1115.		PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :
Histosol (A1)			Sandy	Gleyed Ma	atriv (SA)			Prairie Redox (A16)
Histic Epipedon (A2)				Redox (St	and the second second			surface (S7)
Black Histic (A3)				d Matrix (8				anganese Masses (F12)
Hydrogen Sulfide (A4)				neral (F1)		760 - 760 -	hallow Dark Surface (TF12)
Stratified Layers (A5)				Gleyed M				(Explain in Remarks)
2 cm Muck (A10)			Deplete	d Matrix (F3)			
_ Depleted Below Dark		(1)		Dark Surfa			12000	
_ Thick Dark Surface (A					urface (F7)			of hydrophytic vegetation and
_ Sandy Mucky Mineral			Redox	Depressio	ns (F8)			d hydrology must be present,
_ 5 cm Mucky Peat or F							unless	disturbed or problematic
estrictive Layer (if obs	ervea):					-		
Type:		_					Hydric Soil	Present? Yes No _X
Depth (inches): 14						!	. 0	
emarks:								
remarks:								
emarks: /DROLOGY /etland Hydrology Indic				-14			0,000	
emarks: /DROLOGY /etland Hydrology Indic rimary Indicators (minim		required; c	all Probable	A 10 CO 10 CO	*****			ary Indicators (minimum of two required
emarks: /DROLOGY /etland Hydrology Indic rimary Indicators (minim Surface Water (A1)	um of one is	required; c	Water-Sta	ined Leav			Surf	ace Soil Cracks (B6)
emarks: 'DROLOGY /etland Hydrology Indic rimary Indicators (minim Surface Water (A1) High Water Table (A2	um of one is	required; c	Water-Sta Aquatic Fa	ined Leav auna (B13	3)		Surf Drai	ace Soil Cracks (B6) nage Patterns (B10)
PROLOGY Vetland Hydrology Indictionary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3)	um of one is	required; c	Water-Sta Aquatic Fa	ined Leav auna (B13 atic Plants	(B14)		Surf Drai Dry-	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2)
PROLOGY Vetland Hydrology Indictionary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	um of one is	required; c	Water-Sta Aquatic Fa True Aqua Hydrogen	ined Leav auna (B13 atic Plants Sulfide O	(B14) dor (C1)		Surf Drai Dry- Cray	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) yfish Burrows (C8)
PROLOGY Petland Hydrology Indications (minimally Indicators (Mini	um of one is	required; c	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I	ined Leav auna (B13 atic Plants Sulfide O Rhizosphe	i) (B14) dor (C1) eres on Livir	,	Surf Drai Dry- Cray 23) Satu	race Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9)
/DROLOGY /etland Hydrology Indic rimary Indicators (minimi Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1) Sediment Deposits (B3)	um of one is	s required; c	Water-Sta Aquatic Fi True Aqua Hydrogen Oxidized I Presence	ined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduce	i) (B14) dor (C1) eres on Livir ed Iron (C4))	Surf Drai Dry- Cray Satu Stur	race Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
PROLOGY Vetland Hydrology Indictionary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B6)	um of one is	s required; c	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro	ined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduct on Reduct	(B14) dor (C1) eres on Livir ed Iron (C4) ion in Tilled)	Surf Drai Cray Cray Stur Geo	race Soil Cracks (B6) rnage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) rited or Stressed Plants (D1) rmorphic Position (D2)
Portion Deposits (B5) Verland Hydrology Indicators (minimal Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	um of one is) 2)		Water-Sta Aquatic Fa Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck	ined Leavauna (B13 atic Plants Sulfide O Rhizosphe of Reduct on Reduct	(B14) (B14) (dor (C1) eres on Livir (C4) fron (C4) fron in Tilled (C7))	Surf Drai Cray Cray Stur Geo	race Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) uration Visible on Aerial Imagery (C9) nted or Stressed Plants (D1)
Property of the property of th	um of one is) 2) (i) Aerial Imag	ery (B7)	Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck Gauge or	ined Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reduct on Reduct Surface Well Data	(B14) dor (C1) eres on Livir ded Iron (C4) ion in Tilled (C7) (D9))	Surf Drai Cray Cray Stur Geo	race Soil Cracks (B6) rnage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) rited or Stressed Plants (D1) rmorphic Position (D2)
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PROLOGY Vetland Hydrology Indictionary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Sparsely Vegetated Collected Observations: urface Water Present?	um of one is 2) Aerial Imag	ery (B7) face (B8)	Water-Sta Aquatic Fa Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck Gauge or Other (Ex	ined Leav auna (B13 atic Plants Sulfide O Rhizosphe of Reduct on Reduct Surface Well Data plain in Re	(B14) dor (C1) eres on Livir ded Iron (C4) ion in Tilled (C7) (D9))	Surf Drai Cray Cray Stur Geo	race Soil Cracks (B6) rnage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) rited or Stressed Plants (D1) rmorphic Position (D2)
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YDROLOGY Vetland Hydrology Indicerimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mal or Crust (B4) Iron Deposits (B5) Inundation Visible on Sparsely Vegetated Collections: Surface Water Present?	um of one is) Aerial Imag oncave Sur Yes _ Yes _ Yes _ Yes _	ery (B7) face (B8) No No	Water-Sta Aquatic Fa Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Much Gauge or Other (Ex) X Depth (in X Depth (in	ined Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reduct Surface Well Data blain in Reduction Reduct	(B14) dor (C1) deres on Liver deres on Liver deres on Tilled (C7) (D9) emarks)) Solls (C6)	Surf Drai Dry- Cray Stur Geo FAC	race Soil Cracks (B6) rnage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) rited or Stressed Plants (D1) rmorphic Position (D2) S-Neutral Test (D5)
YDROLOGY Vetland Hydrology Indice Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Sparsely Vegetated Collected Observations: Surface Water Present? Vater Table Present? Staturation Present? Staturation Present?	um of one is) Aerial Imag oncave Sur Yes _ Yes _ Yes _ Yes _	ery (B7) face (B8) No No	Water-Sta Aquatic Fa Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck Gauge or Other (Ex) X Depth (in X Depth (in	ined Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reduct Surface Well Data blain in Reduction Reduct	(B14) dor (C1) deres on Liver deres on Liver deres on Tilled (C7) (D9) emarks)) Solls (C6)	Surf Drai Dry- Cray Stur Geo FAC	race Soil Cracks (B6) rnage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) rited or Stressed Plants (D1) rmorphic Position (D2) S-Neutral Test (D5)
YDROLOGY Vetland Hydrology Indice Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Sparsely Vegetated Collected Observations: Surface Water Present? Vater Table Present? Staturation Present? Staturation Present?	um of one is) Aerial Imag oncave Sur Yes _ Yes _ Yes _ Yes _	ery (B7) face (B8) No No	Water-Sta Aquatic Fa Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck Gauge or Other (Ex) X Depth (in X Depth (in	ined Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reduct Surface Well Data blain in Reduction Reduct	(B14) dor (C1) deres on Liver deres on Liver deres on Tilled (C7) (D9) emarks)) Solls (C6)	Surf Drai Dry- Cray Stur Geo FAC	race Soil Cracks (B6) rnage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) rited or Stressed Plants (D1) rmorphic Position (D2) S-Neutral Test (D5)
YDROLOGY Vetland Hydrology Indice Primary Indicators (minimal Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Sparsely Vegetated Collected Observations: Surface Water Present? Vater Table Present? Vater Table Present? Vater Table Recorded Data (Vegetated Data (Vegeta	um of one is) Aerial Imag oncave Sur Yes _ Yes _ Yes _ Yes _	ery (B7) face (B8) No No	Water-Sta Aquatic Fa Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Iro Thin Muck Gauge or Other (Ex) X Depth (in X Depth (in	ined Leave auna (B13 atic Plants Sulfide O Rhizosphe of Reduct Surface Well Data blain in Reduction Reduct	(B14) dor (C1) deres on Liver deres on Liver deres on Tilled (C7) (D9) emarks)) Solls (C6)	Surf Drai Dry- Cray Stur Geo FAC	race Soil Cracks (B6) rnage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) rited or Stressed Plants (D1) rmorphic Position (D2) S-Neutral Test (D5)

Project/Site: Otter Tail County Road Bike Trail	(City/County	: Otter Ta	<u>iil </u>	Sampling Date: 6-20-19)	
Applicant/Owner: Houston Engineering Inc.				State: MN Sampling Point: 2w			
Investigator(s): Hannah Erdmann		Section, To	wnship, Ra	ange: <u>S34-T136-R42</u>			
Landform (hillslope, terrace, etc.): depression			Local relief	lief (concave, convex, none): CONCAVE			
	948794		Datum: NAD 1983				
Soil Map Unit Name: Parnell stily-clay-loam, depression		NWI classific	ation: PEM1Ad				
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation, Soil, or Hydrology si	gnificantly	disturbed?	Are "	"Normal Circumstances" p	present? Yes X No		
Are Vegetation, Soil, or Hydrology na				eeded, explain any answe			
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important							
Hydrophytic Vegetation Present? Yes X	·						
Hydric Soil Present? Yes X			ne Sampled				
Wetland Hydrology Present? Yes X No	·	with	in a Wetlar	nd? Yes	No		
Remarks:							
VEGETATION – Use scientific names of plants.							
Tree Stratum (Plot size: 30' radius	Absolute % Cover	Dominant Species?	Indicator	Dominance Test work			
1 Populus deltoides	15	Y	FAC	Number of Dominant Sp That Are OBL, FACW, of		(A)	
2. Salix amygdaloides	10	Y	FACW			(,,)	
3				Total Number of Domini Species Across All Stra	4	(B)	
4						, ,	
5				Percent of Dominant Sp That Are OBL, FACW, of		(A/B)	
Sapling/Shrub Stratum (Plot size: 15' radius)	25	= Total Co	√er	Prevalence Index work	kehoot:		
1. Acer negundo	5	Υ	FAC		Multiply by:		
2					x 1 =	_	
3.				1	x 2 =		
4.				1	x 3 =		
5.				FACU species	x 4 =	_	
5' radius	5	= Total Co	ver	UPL species	x 5 =	-	
Herb Stratum (Plot size: 5' radius) 1. Phalaris arundinacea	90	Υ	FACW	Column Totals:	(A)	_ (B)	
Bromus inermis	5		FACU	Prevalence Index	= B/A =		
Cirsium arvense	5	N	FACU	Hydrophytic Vegetation			
4				' ' '	Hydrophytic Vegetation		
5.				X 2 - Dominance Tes	it is >50%		
6				3 - Prevalence Inde	ex is ≤3.0 ¹		
7					Adaptations ¹ (Provide supp	orting	
8					s or on a separate sheet) phytic Vegetation ¹ (Explain	• •	
9				Problematic Hydrop	Trylic vegetation (Explain	')	
10				Indicators of hydric soi	I and wetland hydrology m	ust	
Woody Vine Stratum (Plot size:)	100	= Total Co	ver	be present, unless distu			
1				Hydrophytic			
2.				Vegetation	V		
		= Total Co	ver	Present? Yes	s_X No		
Remarks: (Include photo numbers here or on a separate s	heet.)						

SOIL Sampling Point: 2W	
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Profile Desc	cription: (Describe	to the dep	oth needed to docu	ment the	indicator	or confirn	n the absence of indicators.)		
Depth	Matrix		Redo	x Feature	es				
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	Loc ²	Texture Remarks	_	
0-4	10YR 2/1	100					SC	_	
4-8	10YR 4/2	98	7.5YR 4/4	2	<u>C</u>	<u>M</u>	SC	_	
8-10	10YR 6/2	90	2.5Y 5/6	10	С	<u>M</u>	<u>s</u>	_	
10-16	10YR 4/2	95	7.5YR 4/4	5	<u>C</u>	<u>M</u>	<u>s</u>	_	
16-24	10YR 3/1	100					S		
								_	
								_	
¹ Type: C=C	oncentration D=Der	letion RM	=Reduced Matrix, M	- ——— S=Maske	d Sand Gr	ains	² Location: PL=Pore Lining, M=Matrix.	_	
Hydric Soil		DICTION, TAIVI	-reduced Waters, W	O-Waske	a Garia Gri	aii 13.	Indicators for Problematic Hydric Soils ³ :		
Histosol	(A1)		Sandy	Gleved M	atrix (S4)		Coast Prairie Redox (A16)		
1 —	oipedon (A2)			Redox (S			Dark Surface (S7)		
Black Hi	istic (A3)		Strippe	d Matrix (S6)		Iron-Manganese Masses (F12)		
Hydroge	en Sulfide (A4)		Loamy	Mucky Mi	neral (F1)		Very Shallow Dark Surface (TF12)		
Stratified	d Layers (A5)				latrix (F2)		Other (Explain in Remarks)		
	ıck (A10)		X Deplete		. ,				
1	d Below Dark Surfac	e (A11)	_	Dark Surf	. ,		3		
I —	ark Surface (A12)				urface (F7)	•	³ Indicators of hydrophytic vegetation and		
1 – ′	Mucky Mineral (S1)	2)	Redox	Depression	ons (F8)		wetland hydrology must be present, unless disturbed or problematic.		
	ucky Peat or Peat (S Layer (if observed)						unless disturbed of problematic.		
	Layer (ii observed)								
1	ches):						Hydric Soil Present? Yes X No	_	
Remarks:	<u> </u>								
HYDROLO	GY								
Wetland Hy	drology Indicators:	:							
Primary India	cators (minimum of o	one is requ	ired; check all that a	oply)			Secondary Indicators (minimum of two required	d)	
Surface	Water (A1)		Water-Sta	ined Leav	/es (B9)		Surface Soil Cracks (B6)		
	ater Table (A2)		Aquatic Fa		, ,		Drainage Patterns (B10)		
Saturation			True Aqua	,	,		Dry-Season Water Table (C2)		
Water M	, ,		Hydrogen		, ,		Crayfish Burrows (C8)		
1 —	nt Deposits (B2)		Oxidized I			ing Roots			
Drift De							Stunted or Stressed Plants (D1)		
1	Drift Deposits (B3)								
-									
I — ·	on Visible on Aerial	Imagery (B							
1 —	y Vegetated Concav				, ,				
Field Obser									
Surface Wat	er Present? Y	'es	No X Depth (in	ches):		_			
Water Table	Present?	'es	No X Depth (in	ches):		_			
Saturation P			No X Depth (in				land Hydrology Present? Yes 🔀 No	_	
	oillary fringe)						if a validable.		
Describe Re	corded Data (stream	i gauge, m	onitoring well, aerial	pnotos, p	revious ins	pections),	, if available:		
Remarks:									
INCINAINS.									

Project/Site: Otter Tail County Road Bike Trail		City/County: Otter Tail Sampling Date: 6-2					
Applicant/Owner: Houston Engineering Inc.		State: MN Sampling Point: 4u					
Investigator(s): Hannah Erdmann		Section, Township, Range: S26-T136-R42					
Landform (hillslope, terrace, etc.): sideslope		Local relief (concave, convex, none): none					
Slope (%): 5 Lat: 46.557335		Long: _	-95.945933	Datum: NAD 19	183		
Soil Map Unit Name: Haslie, Seelyeville, and Cathro,	ponded			NWI classification: not listed			
Are climatic / hydrologic conditions on the site typical for thi							
Are Vegetation, Soil, or Hydrology				Normal Circumstances" present? Yes	No		
Are Vegetation, Soil, or Hydrology ı				eeded, explain any answers in Remarks.)			
SUMMARY OF FINDINGS - Attach site map				ocations, transects, important fe	atures, etc.		
Hydrophytic Vegetation Present? Yes N	10 X						
Hydric Soil Present? Yes N	10 <u>X</u>		Is the Sampled				
Wetland Hydrology Present? Yes N	10 <u>X</u>		within a Wetla	nd? Yes No _X			
Remarks:							
VEGETATION – Use scientific names of plants							
VEGETATION – Ose scientific flames of plants		Domi	nant Indicator	Dominance Test worksheet:			
Tree Stratum (Plot size:)			ies? Status	Number of Dominant Species			
1				That Are OBL, FACW, or FAC: 1	(A)		
2				Total Number of Dominant			
3				Species Across All Strata: 2	(B)		
4				Percent of Dominant Species That Are OBL FACW or FAC: 50%			
5				That Are OBL, FACW, or FAC: 50%	(A/B)		
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet:			
1				Total % Cover of: Multiply			
2				OBL species x 1 =			
3				FACW species x 2 =			
4				FACULADOSION X 3 =			
5				FACU species x 4 = UPL species x 5 =			
Herb Stratum (Plot size: 5' radius)		- 10la	i Covei	Column Totals: (A)			
1. Phalaris arundinacea	60	<u>Y</u>			(5)		
2. Daucus carota	25		UPL	Prevalence Index = B/A =			
3. Poa pratensis	- 10	<u>N</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators:			
4. Cirsium arvense	_ 5	<u>N</u> _	FACU_	1 - Rapid Test for Hydrophytic Vegeta	ation		
5				2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹			
6				4 - Morphological Adaptations¹ (Provi	de sunnortina		
7				data in Remarks or on a separate			
8 9				Problematic Hydrophytic Vegetation ¹	(Explain)		
10							
		= Tota	l Cover	¹ Indicators of hydric soil and wetland hydr be present, unless disturbed or problemat			
Woody Vine Stratum (Plot size:)				be present, unless disturbed of problema	ic.		
1				Hydrophytic			
2				Vegetation	<u> </u>		
Remarks: (Include photo numbers here or on a separate		- 10ta	l Cover				
	,						
I .							

SOIL Sampling Point: 4u

Depth	ription: (Describ Matrix	e to the de	oth needed to docu Redo	ment the ox Featu		or comm		i muicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_Loc ²	Texture	Remarks
0-4	10YR 4/2	100					SC	
4-22	2.5Y 5/3	95	10YR 6/3	5	_ <u>C</u>	<u>M</u>	sc	
22-24+	2.5Y 5/3	95	7.5YR 2.5/2	5	C	М	С	
Type: C=Ce	oncentration D=De	epletion RM	=Reduced Matrix, M	S=Mask	ed Sand G	rains.	² Location	PL=Pore Lining, M=Matrix.
Hydric Soil		opiodori, rav	Troduced matrix, m	O MIGOR	ou ound o	anio.		or Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy	Gleyed N	Matrix (S4)		Coast Pr	rairie Redox (A16)
Histic Ep	oipedon (A2)		Sandy	Redox (S	S5)		Dark Su	rface (S7)
_	stic (A3)			d Matrix	. ,		_	nganese Masses (F12)
	en Sulfide (A4)				/lineral (F1)			allow Dark Surface (TF12)
	d Layers (A5)				Matrix (F2)		Other (E	xplain in Remarks)
_	ick (A10) d Below Dark Surfa	aco (A11)		ed Matrix	rface (F6)			
	ark Surface (A12)	ace (ATT)	_		Surface (F6)	7)	3Indicators o	of hydrophytic vegetation and
_	lucky Mineral (S1)				ions (F8)	,		hydrology must be present,
	icky Peat or Peat ((-,			isturbed or problematic.
Restrictive I	Layer (if observed	d):						
Туре:							Hudria Sail B	resent? Yes No X
Depth (in	ches):						nyaric Soil P	resentr resNo
HYDROLO	GY							
Wetland Hy	drology Indicator	s:						
Primary India	cators (minimum of	fone is requ	ired; check all that a	pply)			Secondary	/ Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ained Lea	aves (B9)		Surfac	ce Soil Cracks (B6)
High Wa	iter Table (A2)		Aquatic F	auna (B1	13)		Draina	age Patterns (B10)
Saturation	, ,		True Aqu		. ,			eason Water Table (C2)
Water M	larks (B1)		Hydrogen					sh Burrows (C8)
	nt Deposits (B2)		_			ving Roots	· · —	ation Visible on Aerial Imagery (C9)
	posits (B3)				ced Iron (C		_	ed or Stressed Plants (D1)
	at or Crust (B4)					ed Soils (C6	. —	norphic Position (D2)
	oosits (B5)		Thin Mucl				FAC-N	Neutral Test (D5)
_	on Visible on Aeria		<i>-</i>		. ,			
Field Obser	Vegetated Conca	ive Surface	(B8) Other (Ex	piain in r	temarks)			
Surface Wat		Vac	No X Depth (ir	ches).				
Water Table			No X Depth (ir					
Saturation P			No X Depth (ir				and Hydrology	Present? Yes No X
(includes car	oillary fringe)							105cm: 105 10
Describe Re	corded Data (strea	m gauge, m	onitoring well, aerial	photos,	previous in	spections),	if available:	
Remarks:								

Project/Site: Otter Tail County Road Bike Trail	(City/County	Sampling Date: 6-20-19			
Applicant/Owner: Houston Engineering Inc.		State: MN Sampling Point: 4w				
Investigator(s): Hannah Erdmann	;	Section, To	wnship, Ra	nge: <u>S26-T136-R42</u>		
Landform (hillslope, terrace, etc.): depression, toe of slop	ре	ı	Local relief	(concave, convex, none):	concave	
Slope (%): 3 Lat: 46.557347						
Soil Map Unit Name: Haslie, Seelyeville, and Cathro, p				NWI classific		
Are climatic / hydrologic conditions on the site typical for this			,			
Are Vegetation, Soil, or Hydrology signature.					oresent? Yes X No	
Are Vegetation, Soil, or Hydrology na				eded, explain any answe		
SUMMARY OF FINDINGS – Attach site map s		Samplin	g point i	cations, transects	, important leatures, etc.	
		lo th	e Sampled	Aron		
			e Sampled in a Wetlar		No	
Wetland Hydrology Present? Yes X No Remarks:	<u> </u>	With	iii a vvetiai	165_7		
Remarks.						
VEGETATION – Use scientific names of plants.						
Tree Stratum (Plot size: 30' radius)	Absolute	Dominant Species?		Dominance Test work		
1. Salix amygdaloides	15	Y	FACW	Number of Dominant Sp That Are OBL, FACW, of		
2 Acer negundo	10	<u>Y</u>	FAC	mat Are Obe, 1 ACW, t) (A)	
3				Total Number of Domini Species Across All Stra	•	
4				Opecies Across Air Otra	(b)	
5				Percent of Dominant Sp That Are OBL, FACW, of		
		= Total Cov	/er		(17.6)	
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worl		
1				Total % Cover of:		
2					x 1 =	
3					x 2 =	
4					x 3 =	
5					x 4 =	
Herb Stratum (Plot size: 5' radius)		= Total Cov	/er		x 5 =	
1. Phalaris arundinacea	85	Υ	FACW	Column Totals:	(A) (B)	
2. Equisetum arvense	5		FAC	Prevalence Index	= B/A =	
3. Acer negundo	5	N	FAC	Hydrophytic Vegetation	on Indicators:	
4. Vitis riparia	5	N	FACW		Hydrophytic Vegetation	
5				X 2 - Dominance Tes	t is >50%	
6				3 - Prevalence Inde	ex is ≤3.0 ¹	
7				4 - Morphological A	Adaptations ¹ (Provide supporting	
8				1	s or on a separate sheet)	
9				Problematic Hydrop	phytic Vegetation ¹ (Explain)	
10				1Indicators of hydric soil	l and wetland hydrology must	
W 1 1/2 0/1 (5/1)	100	= Total Cov	/er	be present, unless distu		
Woody Vine Stratum (Plot size:)						
1				Hydrophytic Vegetation		
2		= Total Car		Present? Yes	s_X No	
Remarks: (Include photo numbers here or on a separate si		= Total Cov	/el			
, and a superior of the superior of	,,,,					

SOIL Sampling Point: 4W

Profile Desc	ription: (Describe	to the dep	th needed to docu	ment the	indicator	or confirm	n the absence of indicators.)			
Depth	Matrix		Redo	ox Feature	es					
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	_Loc ²	Texture Remarks			
0-3	10YR 2/1	100					SC			
3-15	2.5Y 6/2	85	7.5YR 4/6	10	С	M	S			
	2.5Y 2.5/1	5					<u>s</u>			
15-23	2.5Y 7/1	60	10YR 5/4	40	C	M	S			
23+	Gley 1 7/N	70	10YR 6/4	30			SC SC			
1- 0.0							21			
Hydric Soil		pletion, RM	=Reduced Matrix, M	S=Maske	d Sand Gr	ains.	² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :			
*			Sandy	Clayed M	otriv (CA)		Coast Prairie Redox (A16)			
Histosol	oipedon (A2)			Gleyed M Redox (S			Coast Plaine Redox (A16) Dark Surface (S7)			
Black Hi				d Matrix (Iron-Manganese Masses (F12)			
1 —	n Sulfide (A4)				neral (F1)		Very Shallow Dark Surface (TF12)			
	Layers (A5)			Gleyed M			Other (Explain in Remarks)			
	ıck (A10)		X Deplete	ed Matrix	(F3)					
X Depleted	d Below Dark Surfac	e (A11)		Dark Surf	. ,					
I —	ark Surface (A12)				urface (F7))	³ Indicators of hydrophytic vegetation and			
1 —	lucky Mineral (S1)		Redox	Depression	ons (F8)		wetland hydrology must be present,			
	icky Peat or Peat (S						unless disturbed or problematic.			
_	Layer (if observed)									
1							Hydric Soil Present? Yes X No			
Depth (inc	ches):						1,, 11, 12, 12, 12, 12, 12, 12, 12, 12,			
HYDROLO	GY									
Wetland Hyd	drology Indicators	:								
Primary India	cators (minimum of	one is requi	red; check all that a	pply)			Secondary Indicators (minimum of two required)			
Surface	Water (A1)		Water-Sta	ained Leav	/es (B9)		Surface Soil Cracks (B6)			
I —	iter Table (A2)		Aquatic F		, ,		Orinage Patterns (B10)			
X Saturation			True Aqua	atic Plants	(B14)		Dry-Season Water Table (C2)			
Water M	arks (B1)		Hydrogen	Sulfide C	dor (C1)		Crayfish Burrows (C8)			
Sedimer	nt Deposits (B2)		Oxidized			ing Roots				
Drift Dep	oosits (B3)		Presence	of Reduc	ed Iron (C4	1)	Stunted or Stressed Plants (D1)			
Algal Ma	at or Crust (B4)		Recent Iro	on Reduct	ion in Tille	d Soils (C6	6) X Geomorphic Position (D2)			
Iron Deposits (B5) Thin Muck Surface (C7) X FAC-Neutral Test (D5)										
Inundation	on Visible on Aerial	Imagery (B	7) Gauge or	Well Data	a (D9)					
Sparsely	Vegetated Concav	e Surface (B8) Other (Ex	plain in R	emarks)					
Field Obser										
Surface Water	er Present?	/es	No X Depth (ir	nches):		_				
Water Table			No X Depth (ir			_				
Saturation P		/es_X_	No Depth (in	nches): <u>10</u>)"	_ Wetl	land Hydrology Present? Yes X No			
(includes cap Describe Re		n gauge, mo	onitoring well, aerial	photos, p	revious ins	pections),	if available:			
Remarks:										
1										

Project/Site: Otter Tail County Road Bike Trail	City/County: Otter Tail Sampling Date: 6-20-19						
Applicant/Owner: Houston Engineering Inc.				State: MN	Sampling Point: 5u		
Investigator(s): Hannah Erdmann and Kaleb Haley		Section, Township, Range: S26-T136-R42					
Landform (hillslope, terrace, etc.): sideslope			Local relief	(concave, convex, none):	none		
Slope (%): 4 Lat: 46.557369		Long: _	-95.942575		Datum: NAD 1983		
Soil Map Unit Name: Haslie, Seelyeville, and Cathro,	ponded			NWI classifica	ation: not listed		
Are climatic / hydrologic conditions on the site typical for thi	s time of ye	ar? Ye	s_X No_	(If no, explain in Re	emarks.)		
Are Vegetation, Soil, or Hydrology s	significantly	disturbe	ed? Are	'Normal Circumstances" pr	resent? Yes X No		
Are Vegetation, Soil, or Hydrology r				eded, explain any answer	s in Remarks.)		
SUMMARY OF FINDINGS - Attach site map	showing	samp	oling point l	ocations, transects,	important features, etc.		
Hydrophytic Vegetation Present? Yes N	lo X						
Hydric Soil Present? Yes N	10 X		ls the Sampled				
Wetland Hydrology Present? Yes N	10 <u>X</u>	,	within a Wetlar	nd? Yes	No <u>X</u>		
Remarks:							
VEGETATION – Use scientific names of plants							
Tree Stratum (Plot size:)			nant Indicator	Dominance Test works	heet:		
1			es? Status	Number of Dominant Sp That Are OBL, FACW, o			
2							
3				Total Number of Domina Species Across All Strat	•		
4				Percent of Dominant Sp			
5				That Are OBL, FACW, o			
Sapling/Shrub Stratum (Plot size:)		= Total	Cover	Prevalence Index work	sheet:		
1				Total % Cover of:	Multiply by:		
2.				OBL species	x 1 =		
3				FACW species	x 2 =		
4					x 3 =		
5					x 4 =		
Herb Stratum (Plot size: 5' radius)		= Total	Cover		x 5 =		
1. Phalaris arundinacea	60	Υ	FACW	Column Totals:	(A) (B)		
2. Daucus carota	25	Υ	UPL	Prevalence Index	= B/A =		
3. Poa pratensis	_ <u>10</u>	<u>N</u>	<u>FAC</u>	Hydrophytic Vegetatio			
4. Cirsium arvense	_ 5	<u>N</u>	FACU_	1 - Rapid Test for H			
5				2 - Dominance Test			
6				3 - Prevalence Inde	x is ≤3.0° daptations¹ (Provide supporting		
7					or on a separate sheet)		
8				Problematic Hydrop	hytic Vegetation¹ (Explain)		
9							
10.		= Total	Cover	¹ Indicators of hydric soil be present, unless distu	and wetland hydrology must		
Woody Vine Stratum (Plot size:)				be present, unless distu	bed or problematic.		
1				Hydrophytic			
2				Vegetation Present? Yes	s No_X_		
Remarks: (Include photo numbers here or on a separate		= Total	Cover				
Tremains. (include prioto numbers nere or on a separate	3.100t.)						

SOIL Sampling Point: 5u

Profile Desc	cription: (Describe	to the dep	oth needed to docu	ment the	indicator	or confirn	n the absence	of indicators.)	
Depth	Matrix			ox Feature					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_Loc ²	Texture	Remarks	
0-4	10YR 3/2	_ 100					SC	mucky	
4-13	2.5Y 5/4	80	5Y 3/2				FSC	fine sandy clay	
13-24+	2.5Y 6/3	80	2.5Y 5/6	10	С	М	С		
			7.5YR 3/3	_ <u></u> 10			C		
1							2		
	¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :								
'			Sandy	Clayed M	atrix (C1)			Prairie Redox (A16)	
Histosol	pipedon (A2)			Redox (S	atrix (S4)		_	Surface (S7)	
1 —	istic (A3)			d Matrix (_	Manganese Masses (F12)	
1 —	en Sulfide (A4)				ineral (F1)		_	Shallow Dark Surface (TF12)	
	d Layers (A5)			-	latrix (F2)			(Explain in Remarks)	
1	uck (A10)			ed Matrix				(2.plan m remaile)	
I —	d Below Dark Surfa	ce (A11)	Redox	Dark Surf	ace (F6)				
	ark Surface (A12)				urface (F7))	3Indicators	s of hydrophytic vegetation and	
Sandy N	Mucky Mineral (S1)		Redox	Depressi	ons (F8)		wetlan	d hydrology must be present,	
	ucky Peat or Peat (unless	s disturbed or problematic.	
Restrictive	Layer (if observed):							
Type:							Hydric Soi	Present? Yes No _X_	
Depth (in	ches):						Hyuric Soil	rresentr res No	
Remarks:							•		
HYDROLO	GY								
	drology Indicators								
1			ired; check all that a	nnly)			Sacand	ary Indicators (minimum of two required)	
	•	one is requ			(DO)				
1 —	Water (A1)		Water-Sta		, ,			face Soil Cracks (B6)	
	ater Table (A2)		Aquatic F					inage Patterns (B10)	
Saturati	, ,		True Aqua					-Season Water Table (C2)	
Water M	. ,		Hydrogen			_		yfish Burrows (C8)	
1—	nt Deposits (B2)		Oxidized					uration Visible on Aerial Imagery (C9)	
1 —	Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1)								
1 —	Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2)								
Iron Dep	, ,		Thin Mucl	k Surface	(C7)		FAG	C-Neutral Test (D5)	
Inundati	on Visible on Aerial	Imagery (B	B7) Gauge or	Well Data	a (D9)				
Sparsely	y Vegetated Conca	ve Surface	(B8) Other (Ex	plain in R	emarks)				
Field Obser									
Surface Wat			No X Depth (in						
Water Table			No X Depth (in						
Saturation P	resent?	Yes	No X Depth (in	nches):		Wetl	and Hydrolog	y Present? Yes No _X	
	pillary fringe)								
Describe Re	corded Data (strear	n gauge, m	onitoring well, aerial	pnotos, p	revious ins	spections),	ıt available:		
Remarks:									
I									

Project/Site: Otter Tail County Road Bike Trail	(City/County:	Otter Ta	il Sampling Date: 6-20-19			
Applicant/Owner: Houston Engineering Inc.				State: MN Sampling Point: 5w			
Investigator(s): Hannah Erdmann		Section, To	wnship, Rai	nge: S26-T136-R42			
Landform (hillslope, terrace, etc.): depression		ι	ocal relief	(concave, convex, none): Concave			
Slope (%): 2 Lat: 46.557394		Long:95.9	942575	Datum: NAD 1983			
Soil Map Unit Name: Haslie, Seelyeville, and Cathro, p							
Are climatic / hydrologic conditions on the site typical for this			,	· · · · · · · · · · · · · · · · · · ·			
Are Vegetation, Soil, or Hydrology signature and the state of the				Normal Circumstances" present? Yes X No			
Are Vegetation, Soil, or Hydrology na				eded, explain any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map s					, etc.		
Hydrophytic Vegetation Present? Yes X)						
			e Sampled				
Wetland Hydrology Present? Yes X No		withi	in a Wetlan	nd? Yes No			
Remarks:							
VEGETATION – Use scientific names of plants.							
	Absolute	Dominant		Dominance Test worksheet:			
	% Cover 5	Species?		Number of Dominant Species			
1. Salix amygdaloides	-	<u> </u>	FACW_	That Are OBL, FACW, or FAC: _4((A)		
2				Total Number of Dominant			
3				Species Across All Strata: 4 ((B)		
4				Percent of Dominant Species			
5		= Total Cov		That Are OBL, FACW, or FAC: 100%	(A/B)		
Sapling/Shrub Stratum (Plot size: 15')		- Total Cov	-CI	Prevalence Index worksheet:			
1. Salix interior	5	<u>Y</u>	FACW_	Total % Cover of: Multiply by:			
2. Fraxinus nigra	5	<u>Y</u>	FACW_	OBL species x 1 =	,		
3				FACW species x 2 =			
4				FAC species x 3 =			
5				FACU species x 4 =			
Herb Stratum (Plot size: 5' radius)	10	= Total Cov	er	UPL species x 5 =			
1. Phalaris arundinacea	80	Υ	FACW	Column Totals: (A)	(B)		
Daucus carota	10	\overline{N}	UPL	Prevalence Index = B/A =			
Typha sp.	5		OBL	Hydrophytic Vegetation Indicators:			
Cirsium arvense	5	N	FACU	1 - Rapid Test for Hydrophytic Vegetation			
5				2 - Dominance Test is >50%			
6				3 - Prevalence Index is ≤3.0 ¹			
7				4 - Morphological Adaptations¹ (Provide suppo	orting		
8				data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain)	,		
9				Problematic Hydrophytic Vegetation (Explain)	,		
10				¹ Indicators of hydric soil and wetland hydrology mu	ıet		
West Miss Chature (Blataine)	100	= Total Cov	er	be present, unless disturbed or problematic.	151		
Woody Vine Stratum (Plot size:)							
1				Hydrophytic Vegetation			
		= Total Cov	er	Present? Yes X No			
Remarks: (Include photo numbers here or on a separate si		i Star Cov					
, ,	ĺ						

SOIL Sampling Point: 5W

		e to the dep	orn needed to docu			or confirm	the absence	of indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Featur %	es Type ¹	Loc²	Texture	Remarks
0-3	10YR 3/2	100	Color (moist)				C	mucky
3-14	7.5YR 5/1	95	10YR 5/6	5	_ <u>C</u>		C	
14-24+	7.5YR 5/1	90	Gley 2 5/5	10			<u>C</u>	
	7.011071		<u> </u>					
		pletion, RM	=Reduced Matrix, M	S=Maske	ed Sand G	rains.		: PL=Pore Lining, M=Matrix.
Hydric Soil								for Problematic Hydric Soils ³ :
Histosol	. ,			-	latrix (S4)		_	Prairie Redox (A16)
. —	oipedon (A2) stic (A3)			Redox (S d Matrix (Surface (S7) anganese Masses (F12)
_	en Sulfide (A4)				(30) lineral (F1)		_	challow Dark Surface (TF12)
	d Layers (A5)				Matrix (F2)			(Explain in Remarks)
	ick (A10)		~ -	ed Matrix				(Explain in Normanio)
	d Below Dark Surfa	ce (A11)			face (F6)			
I	ark Surface (A12)		Deplete	ed Dark S	Surface (F7	')	³ Indicators	of hydrophytic vegetation and
ı —	lucky Mineral (S1)		Redox	Depressi	ons (F8)		wetlan	d hydrology must be present,
	icky Peat or Peat (-					unless	disturbed or problematic.
	Layer (if observed):						
Type:							Hydric Soil	Present? Yes X No
Depth (in Remarks:	ches):						,	
HYDROLO	GY							
Wetland Hy	drology Indicators	s:						
Primary India	cators (minimum of	one is requ	red; check all that a	oply)			Seconda	ary Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Lea	ves (B9)		Surf	face Soil Cracks (B6)
High Wa	ater Table (A2)		Aquatic F	auna (B1	3)		Drai	inage Patterns (B10)
Saturation	on (A3)		True Aqua	atic Plant	s (B14)		Dry-	-Season Water Table (C2)
Water M	larks (B1)		Hydrogen	Sulfide (Odor (C1)		Cra	yfish Burrows (C8)
Sedimer	nt Deposits (B2)		Oxidized	Rhizosph	eres on Li	ving Roots	(C3) Satu	uration Visible on Aerial Imagery (C9)
Drift De	oosits (B3)		Presence	of Reduc	ced Iron (C	4)		nted or Stressed Plants (D1)
Algal Ma	at or Crust (B4)		Recent Iro	n Reduc	tion in Tille	ed Soils (C6	_	emorphic Position (D2)
Iron Dep	oosits (B5)		Thin Mucl	s Surface	(C7)		\times FAC	C-Neutral Test (D5)
ı —	on Visible on Aeria		· — ·		. ,			
Sparsely	/ Vegetated Conca	ve Surface	B8) Other (Ex	plain in R	Remarks)			
Field Obser			~					
Surface Wat			No X Depth (ir					
Water Table			No X Depth (in					
Saturation P (includes car		Yes	No X Depth (ir	iches): _		Wetl	and Hydrolog	y Present? Yes X No
		m gauge, m	onitoring well, aerial	photos, p	revious in	spections),	if available:	
Remarks:								
. Komarko.								

Project/Site: Otter Tail County Road	l Bike Trail	(City/Co	ounty: _	Otter Tai	Otter Tail Sampling Date: 6-20-19			
Applicant/Owner: Houston Engineeri	ng Inc.					State: MN	Sampling P	oint: 6u	
Investigator(s): Hannah Erdmann			Sectio	n, Tow	nship, Ran	nge: S26-T136-R42			
Landform (hillslope, terrace, etc.): sides	slope			Lo	cal relief ((concave, convex, none)	none		
Slope (%): 2 Lat: 46.5575			Long:	-95.9	36574		Datum: NA	D 1983	
Soil Map Unit Name: Cathro muck			NWI classification: not listed						
Are climatic / hydrologic conditions on th	ne site typical for th	is time of ve	ar? Ye	es X					
Are Vegetation, Soil, or I					Normal Circumstances"		s X No	D	
Are Vegetation, Soil, or I					eded, explain any answe				
SUMMARY OF FINDINGS - A									s, etc.
Hydrophytic Vegetation Present?	Yes X 1				<u> </u>	· · · · · · · · · · · · · · · · · · ·	-		
Hydric Soil Present?	Yes N			Is the	Sampled			. ,	
Wetland Hydrology Present?	Yes N	No <u>X</u>		within	a Wetlan	d? Yes	No	<u>X</u>	
Remarks:									
VEGETATION – Use scientific r	names of plants	3.							
30'		Absolute			ndicator	Dominance Test wor	ksheet:		
Tree Stratum (Plot size: 30' 1. Populus tremuloides)	% Cover 50	Spec		Status AC	Number of Dominant S			
2. Quercus palustris		- 50	'n		ACW	That Are OBL, FACW,	or FAC: 3		(A)
- ·				— <u> </u>	// 	Total Number of Domi			
3						Species Across All Str	ata: <u>4</u>		(B)
4						Percent of Dominant S		50/	
5			- Tota	al Cove		That Are OBL, FACW,	or FAC: 1	5%	(A/B)
Sapling/Shrub Stratum (Plot size: 15)		- 1012	ai Cove	'	Prevalence Index wo	rksheet:		
1. Populus tremuloides		_ 40	<u>Y</u>	<u>F</u>	AC	Total % Cover of:	M	lultiply by:	_
2. Quercus palustris		_ <u>10</u>	<u>N</u>	<u>F</u>	ACW_	OBL species	x 1 =		_
3. Quercus bicolor		_ 5	<u>N</u>	<u>F</u>	ACW_	FACW species	x 2 =		_
4. Fraxinus nigra		_ <u>5</u>	<u>N</u>	<u>F</u>	ACW_	FAC species	x 3 =		_
5						FACU species			
Herb Stratum (Plot size: 5' radius	,	60	= Tota	al Cove	r	UPL species			
1. Poa pratensis)	40	Υ	F	FAC	Column Totals:	(A)		_ (B)
2. Bromus inermis		- 20	Y		FACU	Prevalence Index	x = B/A =		
3. Populus tremuloides		- 20	N		FAC	Hydrophytic Vegetati			
Phalaris arundinacea		10	N		FACW	1 - Rapid Test for			
5. Fraxinus nigra		- 5	N	F	FACW	2 - Dominance Te	st is >50%	•	
6. Equisetum arvense		_ 	N	F	FAC	3 - Prevalence Ind			
7. Solidago canadensis		_ 	N	F	FACU	4 - Morphological	Adaptations ¹	(Provide sup	porting
8. Rhus glabra		5	N	1	NL	data in Remark			
9.						Problematic Hydro	phytic Vegeta	ation' (Explai	n)
10						1			
		100	= Tota	al Cove	r	Indicators of hydric so be present, unless dist			nust
Woody Vine Stratum (Plot size:					-	,			
1						Hydrophytic			
2						Vegetation Present? Ye	es_X_ N	ło	
Remarks: (Include photo numbers her	e or on a senarate		- 1018	al Cove	·				
Tomana. (motada prioto numbera ner	o on a separate	5.1001.)							

SOIL Sampling Point: 6u

Profile Desc	cription: (Describe	to the dep	th needed to docu	nent the	indicator	or confire	n the absence	of indicators.)			
Depth	Matrix		Redo	x Feature	s						
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	Loc ²	Texture	Remarks			
0-2	2.5Y 3/3	95	10YR 5/6	5	С	<u>M</u>	SL				
2-16	2.5Y 4/4	80	10YR 5/8	10	С	М	SL				
			2.5Y 5/1	10	D	M	SL				
16-18	2.5Y 7/6	98	5Y 8/1	2	D		SC				
18-24+	5YR 4/6	90	2.5Y 6/4	_ 10		M	SC	2mm gravel			
	011111110		2.01 0/1		· —						
					- ——						
		pletion, RM	=Reduced Matrix, M	S=Maske	d Sand Gr	ains.		n: PL=Pore Lining, M=Matrix.			
Hydric Soil			0 1		(0.1)			for Problematic Hydric Soils ³ :			
Histosol (A1)							_	Prairie Redox (A16)			
1 —								Surface (S7)			
1 —	istic (A3) en Sulfide (A4)			d Matrix (S	,		_	langanese Masses (F12)			
1 — ' "	d Layers (A5)			-	neral (F1) atrix (F2)			Shallow Dark Surface (TF12) (Explain in Remarks)			
	uck (A10)			d Matrix (Other	(Explain in Remarks)			
I —	d Below Dark Surfa	ce (Δ11)		Dark Surfa	,						
		SC (A11)				١	3Indicators	s of hydrophytic vegetation and			
1 —	Thick Dark Surface (A12)							d hydrology must be present,			
1 '	ucky Peat or Peat (33)		- op. 000.0	(1 0)			s disturbed or problematic.			
	Layer (if observed										
Type:								~			
Depth (in	ches):						Hydric Soil	Present? Yes No _X			
Remarks:			<u> </u>								
HYDROLO	GY .										
	drology Indicators	:									
1			ired; check all that ag	(vlac			Seconda	ary Indicators (minimum of two required)			
	Water (A1)	0110 10 10 4	Water-Sta		res (B9)			face Soil Cracks (B6)			
_	ater Table (A2)		Aquatic Fa		, ,						
Saturation			True Aqua				Drainage Patterns (B10) Dry-Season Water Table (C2)				
1—	,										
Water M	. ,		Hydrogen			ina Dooto		yfish Burrows (C8)			
1 —	nt Deposits (B2)		Oxidized F					uration Visible on Aerial Imagery (C9)			
Drift Dep	. , ,		Presence		•	,		nted or Stressed Plants (D1)			
-	at or Crust (B4)		Recent Iro			a Solis (C		omorphic Position (D2)			
Iron Dep	, ,		Thin Muck				FAC	C-Neutral Test (D5)			
1 —	ion Visible on Aerial		<i>,</i> — <i>,</i>		` '						
		e Surface (B8) Other (Ex	plain in Re	emarks)						
Field Obser		_	🗸								
Surface Wat			No X Depth (in								
Water Table			No X Depth (in					~			
	pillary fringe)		No X Depth (in					y Present? Yes No _X			
Describe Re	corded Data (strear	n gauge, m	onitoring well, aerial	photos, p	revious ins	pections),	, if available:				
Remarks:											

Project/Site: Otter Tail County Road Bike Trail	(City/County	Otter Ta	Sampling Date: 6-20-19			
Applicant/Owner: Houston Engineering Inc.				State: MN	Sampling Point: 6w		
Investigator(s): Hannah Erdmann	:	Section, To	wnship, Rar	nge: <u>S26-T136-R42</u>			
Landform (hillslope, terrace, etc.): depression			Local relief ((concave, convex, none):	concave		
Slope (%): 0-1 Lat: 46.557591		Long: -95.	936617		Datum: NAD 1983		
Soil Map Unit Name: Cathro muck		NWI classification: PUBF					
Are climatic / hydrologic conditions on the site typical for this	time of vea						
Are Vegetation, Soil, or Hydrology si					present? Yes X No		
Are Vegetation, Soil, or Hydrology no				eded, explain any answer			
SUMMARY OF FINDINGS – Attach site map							
Hydrophytic Vegetation Present? Yes No	<u> </u>						
			e Sampled				
Wetland Hydrology Present? Yes X No	·	with	in a Wetlan	id? Yes	No		
Remarks:							
VECTATION Lies estantific normal of plants							
VEGETATION – Use scientific names of plants.	A b a alusta	Daminant	Indicator	Daminana Taat walk	-bt-		
Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?		Dominance Test works Number of Dominant Sp			
1. Populus tremuloides	50	Y	FAC	That Are OBL, FACW, of			
2. Fraxinus nigra	20	Υ	FACW	Total Number of Demin	ant .		
3. Salix amygdaloides	15	<u>N</u>	FACW	Total Number of Domina Species Across All Strat			
4. Quercus macrocarpa	10	<u>N</u>	FAC	Descent of Deminent Co	i		
5				Percent of Dominant Sp That Are OBL, FACW, of			
15'	95	= Total Cov	/er	Dunielana Indae	lank and		
Sapling/Shrub Stratum (Plot size: 15')	5	Υ	FAC	Prevalence Index work			
Populus tremuloides Salix amygdaloides			FACW	Total % Cover of:	Multiply by: x 1 =		
Salix amygdaloides Vitis riparia	5	<u>'</u>	FACW		x 1 =		
		<u> </u>			x 3 =		
4 5					x 4 =		
		= Total Cov			x 5 =		
Herb Stratum (Plot size: 5' radius)					(A)(B)		
1. Phalaris arundinacea	80	<u>Y</u>	FACW_		、 、		
2. Calamagrostis canadensis	15	<u>N</u>	OBL	Prevalence Index	= B/A =		
3. Bromus inermis	5	<u>N</u>	FACU_	Hydrophytic Vegetatio			
4					Hydrophytic Vegetation		
5				2 - Dominance Test			
6				3 - Prevalence Inde			
7				data in Remarks	Adaptations ¹ (Provide supporting s or on a separate sheet)		
8				1	phytic Vegetation ¹ (Explain)		
9							
10	400				I and wetland hydrology must		
Woody Vine Stratum (Plot size:)	100	= Total Cov	/er	be present, unless distu	irbed or problematic.		
1				Hydrophytic			
2				Vegetation	s_X No		
		= Total Cov	/er	Present? Yes	s_X No		
Remarks: (Include photo numbers here or on a separate s	heet.)						

SOIL Sampling Point: 6W

Profile Desc	cription: (Describe	to the dep	th needed to docu	ment the	indicator	or confirn	n the absence of indicators.)				
Depth	Matrix			ox Feature							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_Loc ²	Texture Remarks				
0-3	10YR 3/2						<u>SC</u>				
3-14	2.5Y 5/2	80	7.5Y 4/6	10	С	M	SC				
			5Y 5/1	_ <u></u> 10			SC SC				
14-24+	2.5Y 4/1	100					SC				
14-24+	2.51 4/1	_ 100					<u> </u>				
l ———											
¹Type: C=C	oncentration, D=Dep	letion RM:	=Reduced Matrix M	S=Maske	d Sand Gr	ains	² Location: PL=Pore Lining, M=Matrix.				
Hydric Soil		olotion, raivi	reduced matrix, m	O MIGORO	a cana ci	unio.	Indicators for Problematic Hydric Soils ³ :				
Histosol			Sandy	Gleved M	atrix (S4)		Coast Prairie Redox (A16)				
1 —	pipedon (A2)			Redox (S			Dark Surface (S7)				
1 —	istic (A3)			d Matrix (Iron-Manganese Masses (F12)				
Hydroge	en Sulfide (A4)		Loamy	Mucky M	ineral (F1)		Very Shallow Dark Surface (TF12)				
	d Layers (A5)		Loamy	Gleyed N	latrix (F2)		Other (Explain in Remarks)				
	uck (A10)			ed Matrix	. ,						
ı — ·	d Below Dark Surfac	e (A11)	_	Dark Surf			2				
	ark Surface (A12)				urface (F7)	³ Indicators of hydrophytic vegetation and				
1 '	Mucky Mineral (S1)	2)	Redox	Depression	ons (F8)		wetland hydrology must be present, unless disturbed or problematic.				
	ucky Peat or Peat (S Layer (if observed)						unless disturbed or problematic.				
I _											
Type:	-h \						Hydric Soil Present? Yes X No				
	ches):										
Remarks:											
HYDROLO	GY										
Wetland Hy	drology Indicators	:									
Primary India	cators (minimum of	one is requi	red; check all that a	pply)			Secondary Indicators (minimum of two required)				
Surface	Water (A1)		Water-Sta	ained Lea	ves (B9)		Surface Soil Cracks (B6)				
1 5	ater Table (A2)		Aguatic F		, ,		Drainage Patterns (B10)				
X Saturation	, ,		True Aqua	,	,		Dry-Season Water Table (C2)				
Water M	. ,		Hydrogen				Crayfish Burrows (C8)				
I —	nt Deposits (B2)					ing Roots					
Drift De	,		Presence				Stunted or Stressed Plants (D1)				
1 —	at or Crust (B4)		Recent Ire				• •				
Iron Dep			Thin Mucl				X FAC-Neutral Test (D5)				
I — ·	on Visible on Aerial	Imagery (B					<u></u>				
1 —	y Vegetated Concav	• • •	, <u> </u>		, ,						
Field Obser		,			,						
Surface Wat	er Present?	'es	No X Depth (ir	nches):							
Water Table			No Depth (ir		2	_					
Saturation P			No Depth (ir			— Wot	land Hydrology Present? Yes X No				
	pillary fringe)	62	No Deptil (ii	icries)	<u> </u>	_ well	land Hydrology Fresent? Tes No				
	corded Data (stream	n gauge, mo	onitoring well, aerial	photos, p	revious ins	spections),	if available:				
Remarks:											

pplicant/Owner: Houston Engineering Inc. Investigator(s): Hannah Erdmann andform (hillslope, terrace, etc.): up-slope from depression of the service of th	ion botto				Sampling Point: 7u				
andform (hillslope, terrace, etc.): up-slope from depression (%): 2 Lat. 46.559764 cil Map Unit Name: Haslie, Seelyeville, and Cathro, po	ion botto			nge: <u>S26-T136-R42</u>					
cil Map Unit Name: Haslie, Seelyeville, and Cathro, po		m ı		Section, Township, Range: S26-T136-R42					
oil Map Unit Name: Haslie, Seelyeville, and Cathro, po		- h.	ocal relief	(concave, convex, none):	concave				
		ong: -95.	935513		Datum NAD 1983				
					cation: not listed				
		r? Yes _	No						
re Vegetation, Soil, or Hydrology sig	nificantly o	listurbed?	Are "	Normal Circumstances"	present? Yes X No				
re Vegetation, Soil, or Hydrology nat	turally prob	olematic?	(If ne	eded, explain any answe	ers in Remarks.)				
SUMMARY OF FINDINGS - Attach site map si	howing	samplin	g point le	ocations, transects	, important features, etc				
Hydrophytic Vegetation Present? Yes X No.		11	75. C - 25. v	ows. z					
Hydric Soil Present? Yes X No.		111111111111111111111111111111111111111	e Sampled	The state of the s	~				
Wetland Hydrology Present? Yes No	<u> </u>	with	in a Wetlar	nd? Yes	No_X				
Remarks									
EGETATION – Use scientific names of plants.									
	Absolute	Dominant		Dominance Test work	sheet:				
	% Cover	Species?	Status	Number of Dominant S					
10	_	_	_	That Are OBL, FACW,	or FAC: 1 (A)				
2	_			Total Number of Domin	97.57%				
3			$\overline{}$	Species Across All Stra	ita: (B)				
4	_			Percent of Dominant S					
5	_	7.10		That Are OBL, FACW,	or FAC: 100% (A/B)				
Sapling/Shrub Stratum (Plot size:		= Total Cov	er	Prevalence Index wor	ksheet;				
1.				Total % Cover of:	Multiply by:				
2				OBL species	x1=				
3.				FACW species	x 2 =				
4				FAC species	x 3 =				
5.				FACU species	x 4 =				
El radius		= Total Cov	er	UPL species	x 5 =				
Herb Stratum (Plot size: 5' radius)	00		E 4 0 1 4 /	Column Totals:	(A)(B)				
In	90	Y	FACW	83.7	50				
Poa pratensis	10	N	FAC	Prevalence Index	- N - N - N - N - N - N - N - N - N - N				
3	-			Hydrophytic Vegetation					
4		$\overline{}$		2 - Dominance Tes	Hydrophytic Vegetation				
5			_	3 - Prevalence Inde					
6					ex is ≤3.0 Adaptations¹ (Provide supporting				
T ₁		_			s or on a separate sheet)				
8					phytic Vegetation¹ (Explain)				
9	_		-	7					
10	100		i i		il and wetland hydrology must				
Woody Vine Stratum (Plot size:)	100	= Total Cov	er	be present, unless dist	urbed or problematic.				
1				Hydrophytic					
2.				Vegetation	V				
		= Total Cov	er	Present? Ye	s_X_ No				
Remarks: (Include photo numbers here or on a separate sh				L					

SOIL	Sampling Point /U

Depth	cription: (Describe Matrix		Red	ox Feature	es						
(inches)	Color (moist)	%	Color (moist)	%	Type	Loc2	Texture	Remarks			
0-5	5Y 3/2	100					SC				
5-24	5Y 5/2	98	10YR 8/2	2	С	M	siC				
		_						-			
	-		>				-				
							وتسست				
						-					
1		v ar true		2 77	20072	_	2,				
Hydric Soil		pletion, RN	M=Reduced Matrix, M	IS=Maske	d Sand G	rains.		PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :			
a seattly market			Cond	Clause M	atria (CA)						
Histosol	pipedon (A2)			Redox (S	atrix (S4)			Prairie Redox (A16) urface (S7)			
	istic (A3)			ed Matrix (anganese Masses (F12)			
	en Sulfide (A4)				ineral (F1)		- MAC - No. 1	hallow Dark Surface (TF12)			
	d Layers (A5)		4. 4. 4		latrix (F2)			Explain in Remarks)			
2 cm Mu	uck (A10)		X Deplet	A 100 A			-				
Depleted	d Below Dark Surfa	ce (A11)	Redox	Dark Surf	ace (F6)						
	ark Surface (A12)		Deplet	ed Dark S	urface (F7)		of hydrophytic vegetation and			
	Mucky Mineral (S1)	100	Redox	Depression	ons (F8)		wetland hydrology must be present,				
	icky Peat or Peat (unless	disturbed or problematic			
	Layer (if observed):									
Type:							Hydric Soil	Present? Yes X No			
The second second							riyane com	Tresent. Tes			
Depth (inc	ches):										
Depth (inc Remarks:											
Depth (inc Remarks:	GY										
Depth (inc Remarks: IYDROLO Wetland Hyd	GY drology Indicators		already chank all that a	nonly)			Seconda	ny Indicatore (minimum of huo required			
Depth (inc Remarks: IYDROLO Wetland Hyd Primary India	GY drology Indicators cators (minimum of		uired; check all that a		VICE (FDV)			ry Indicators (minimum of two required			
Depth (inc Remarks: IYDROLO Wetland Hyd Primary Indic Surface	GY drology Indicators cators (minimum of Water (A1)		Water-Sta	ained Lea			Surfa	ace Soil Cracks (B6)			
Depth (inc Remarks: IYDROLO Wetland Hyd Primary Indic Surface High Wa	GY drology Indicators cators (minimum of Water (A1) ater Table (A2)		Water-Str	ained Lea auna (B1:	3)		Surfa	ace Soil Cracks (B6) nage Patterns (B10)			
Depth (inc Remarks: IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturatio	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3)		Water-Sta Aquatic F True Aqu	ained Lea auna (B1) atic Plants	3) s (B14)		Surfa Drain Dry-	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2)			
Depth (inc Remarks: IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturatio Water M	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1)		Water-Standard Water-	ained Lea auna (B1) atic Plants Sulfide C	3) s (B14) Odor (C1)	una Poote	Surfa Drain Dry- Cray	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8)			
Depth (inc Remarks: IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturation Water M	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2)		Water-Str Aquatic F True Aqu Hydroger Oxidized	ained Lea auna (B1) atic Plants Sulfide C Rhizosphi	3) s (B14) Odor (C1) eres on Liv	ving Roots	Surfa Drain Cray Cray	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9)			
Depth (inc Remarks: IYDROLO Wetland Hyd Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3)		Water-Str Aquatic F True Aqu Hydroger Oxidized Presence	ained Lea auna (B1; atic Plants Sulfide C Rhizosphi of Reduc	3) s (B14) odor (C1) eres on Liv ed Iron (C	4)	Surfa Drain Cray Cray Satu Stun	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) rration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1)			
Depth (inc Remarks: IYDROLO Wetland Hyd Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In	ained Lea fauna (B1; atic Plants a Sulfide C Rhizosph of Reduction Reduction	3) s (B14) Odor (C1) eres on Lived Iron (C		Surfa Drain Cray Cray Stun Stun Geo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rish Burrows (C8) ration Visible on Aerial Imagery (C9) rted or Stressed Plants (D1) morphic Position (D2)			
Depth (inc Remarks: IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	one is requ	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In	ained Lea fauna (B1) atic Plants n Sulfide C Rhizospho of Reduct on Reduct k Surface	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille	4)	Surfa Drain Cray Cray Stun Stun Geo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) rration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1)			
Depth (inc Remarks: IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria	one is requ	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc	ained Leat auna (B1) atic Plants Sulfide C Rhizospho of Reduct on Reduct k Surface	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4)	Surfa Drain Cray Cray Stun Stun Geo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rish Burrows (C8) ration Visible on Aerial Imagery (C9) rted or Stressed Plants (D1) morphic Position (D2)			
Depth (inc Remarks: IYDROLO Wetland Hyde Primary Indic Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca	one is requ	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc	ained Lea fauna (B1) atic Plants n Sulfide C Rhizospho of Reduct on Reduct k Surface	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4)	Surfa Drain Cray Cray Stun Stun Geo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rish Burrows (C8) rration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)			
Depth (inc Remarks: IYDROLO Wetland Hyd Surface High Wa Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Inundation Sparsely	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca	one is requ Imagery (I	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc B7) Gauge of (B8) Other (Ex	ained Leat auna (B1) autic Plants Sulfide C Rhizosphe of Reduct on Reduct k Surface Well Data splain in R	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4)	Surfa Drain Cray Cray Stun Stun Geo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rish Burrows (C8) rration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)			
Depth (inc Remarks: IYDROLO Wetland Hyd Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatic Sparsely Field Observator	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present?	one is required in the second of the second	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc B7) Gauge or (B8) Other (Ex	ained Lear auna (B1) atic Plants a Sulfide C Rhizosphe of Reduct on Reduct k Surface well Data cplain in R	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4)	Surfa Drain Cray Cray Stun Stun Geo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rish Burrows (C8) rration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)			
Depth (inc Remarks: IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Field Obser Surface Water	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present?	Imagery (Ive Surface Yes	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc B7) Gauge or (B8) Other (Ex No X Depth (in	ained Lear auna (B1; atic Plants a Sulfide C Rhizosphe of Reduct on Reduct k Surface Well Data (plain in R	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4) ed Solls (C	Surfa Drain Cray Cray Satun Stun Geo. X FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)			
Depth (inc Remarks: IYDROLO Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Obser Surface Water Water Table Saturation Per Saturation Per Surface Water	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present?	one is required in the second of the second	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc B7) Gauge or (B8) Other (Ex	ained Lear auna (B1; atic Plants a Sulfide C Rhizosphe of Reduct on Reduct k Surface Well Data (plain in R	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4) ed Solls (C	Surfa Drain Cray Cray Satun Stun Geo. X FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rish Burrows (C8) rration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)			
Depth (includes cape)	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	Imagery (Ive Surface Yes Yes	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc B7) Gauge or (B8) Other (Ex No X Depth (in	ained Lear fauna (B1) atic Plants n Sulfide C Rhizosphe of Reduct on Reduct k Surface r Well Data (plain in R nches); nches); nches); nches); nches);	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Surfa Drain Dry Cray Satura Sturn Geo X FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)			
Depth (inc. Remarks: IYDROLO Wetland Hyde Primary Indic Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Obser Surface Water Water Table Saturation Pe (includes cap Describe Rec	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	Imagery (Ive Surface Yes Yes	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc B7) Gauge or (B8) Other (Ex No X Depth (in No X Depth (in	ained Lear fauna (B1) atic Plants n Sulfide C Rhizosphe of Reduct on Reduct k Surface r Well Data (plain in R nches); nches); nches); nches); nches);	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Surfa Drain Dry Cray Satura Sturn Geo X FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)			
Depth (includes cape)	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	Imagery (Ive Surface Yes Yes	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc B7) Gauge or (B8) Other (Ex No X Depth (in No X Depth (in	ained Lear fauna (B1) atic Plants n Sulfide C Rhizosphe of Reduct on Reduct k Surface r Well Data (plain in R nches); nches); nches); nches); nches);	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Surfa Drain Dry Cray Satura Sturn Geo X FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)			
Depth (inc. Remarks: IYDROLO Wetland Hyde Primary Indic Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Obser Surface Water Water Table Saturation Pe (includes cap Describe Rec	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) flarks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	Imagery (Ive Surface Yes Yes	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc B7) Gauge or (B8) Other (Ex No X Depth (in No X Depth (in	ained Lear fauna (B1) atic Plants n Sulfide C Rhizosphe of Reduct on Reduct k Surface r Well Data (plain in R nches); nches); nches); nches); nches);	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Surfa Drain Dry Cray Satura Sturn Geo X FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) rfish Burrows (C8) rration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)			

Project/Site: Otter Tail County Road Bike Trail	(City/County: Otter Tail Sampling Date: 6-19-					
Applicant/Owner: Houston Engineering Inc.				State: MN	Sampling Point: 7w		
Investigator(s): Hannah Erdmann	(Section,	, Township, Ra	nge: <u>S26-T136-R42</u>			
Landform (hillslope, terrace, etc.): depression			Local relief	(concave, convex, none):	concave		
Slope (%): 0-1 Lat: 46.559727		Long:	95.935519		Datum: NAD 1983		
Soil Map Unit Name: Haslie, Seelyeville, and Cathro, p	onded	NWI classification: not listed					
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Yes	X_ No_	(If no, explain in R	temarks.)		
Are Vegetation, Soil, or Hydrology si	gnificantly	disturbe	d? Are	'Normal Circumstances" p	oresent? Yes X No _		
Are Vegetation, Soil, or Hydrology na	aturally pro	blematio	c? (If ne	eeded, explain any answe	rs in Remarks.)		
SUMMARY OF FINDINGS - Attach site map s	showing	samp	ling point l	ocations, transects	, important features,	etc.	
Hydrophytic Vegetation Present? Yes X							
Hydric Soil Present? Yes X			s the Sampled				
Wetland Hydrology Present? Yes X No	·	v	vithin a Wetlar	1d? Yes <u>X</u>	No		
Remarks:							
VEGETATION – Use scientific names of plants.							
Tree Stratum (Plot size:)			ant Indicator	Dominance Test work			
1				Number of Dominant Sp That Are OBL, FACW, of		A)	
2				Total Number of Domin	nant		
3				Species Across All Stra	4	B)	
4				Percent of Dominant Sp			
5				That Are OBL, FACW, o	or FAC: 100% (A	A/B)	
Sapling/Shrub Stratum (Plot size:)		- Total	Cover	Prevalence Index wor	ksheet:		
1				Total % Cover of:			
2				1	x 1 =		
3					x 2 =		
4					x 3 = x 4 =		
5					x 5 =		
Herb Stratum (Plot size: 5' radius)					(A)	(B)	
1. Phalaris arundinacea Poa pratensis	<u>95</u> 5	<u>Y</u>		Prevalence Index	- D/A -		
		<u>IN</u>	FAC	Hydrophytic Vegetation			
3 4				' ' '	Hydrophytic Vegetation		
5				2 - Dominance Tes			
6.				3 - Prevalence Inde	ex is ≤3.0 ¹		
7				4 - Morphological A	Adaptations ¹ (Provide suppor	rting	
8				1	s or on a separate sheet) phytic Vegetation¹ (Explain)		
9				Troblematic Tryare,	priyac vegetation (Explain)		
10	100				il and wetland hydrology mus	st	
Woody Vine Stratum (Plot size:)	100	= Total	Cover	be present, unless distu	urbed or problematic.		
1				Hydrophytic			
2				Vegetation Present? Yes	s_X No		
Domonico (Inglisdo mesto asserbase have a		= Total	Cover	165			
Remarks: (Include photo numbers here or on a separate s	neet.)						

SOIL
Sampling Point: 7W
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix			x Feature							
(inches)	Color (moist)	%	Color (moist)	%_	Type ¹ _	_Loc²	Texture	Remarks			
0-12	2.5Y 2.5/1	_ 98	7.5YR 4/6	- 2	_ <u>C</u>		LC				
12-24+	2.5Y 5/2	95	2.5Y 6/8	5	_ <u>C</u>		<u>C</u>				
				- ——							
		epletion, RM	I=Reduced Matrix, M	S=Maske	ed Sand G	ains.		PL=Pore Lining, M=Matrix.			
Hydric Soil								for Problematic Hydric Soils ³ :			
Histosol	. ,				latrix (S4)		_	Prairie Redox (A16)			
	oipedon (A2)			Redox (S				urface (S7)			
Black Hi	n Sulfide (A4)			d Matrix (Mucky M	ວຣ) ineral (F1)		_	anganese Masses (F12) hallow Dark Surface (TF12)			
	d Layers (A5)				nierai (F1) Natrix (F2)			Explain in Remarks)			
	ick (A10)			d Matrix				Explain in Remaile)			
_	d Below Dark Surfa	ace (A11)		Dark Surf	. ,						
_	ark Surface (A12)				urface (F7)	³ Indicators	of hydrophytic vegetation and			
	lucky Mineral (S1)		Redox I	Depressi	ons (F8)			I hydrology must be present,			
	icky Peat or Peat (unless	disturbed or problematic.			
	Layer (if observed	1):									
Type:	- h N						Hydric Soil	Present? Yes X No			
Depth (inc	cnes):										
Remarks:											
HYDROLO	GY										
Wetland Hyd	drology Indicators	s:									
Primary India	cators (minimum of	one is requ	ired; check all that ap	oply)			<u>Seconda</u>	ry Indicators (minimum of two required)			
Surface	Water (A1)		Water-Sta	ined Lea	ves (B9)		Surface Soil Cracks (B6)				
High Wa	iter Table (A2)		Aquatic Fa	auna (B1	3)		Drainage Patterns (B10)				
Saturatio	on (A3)		True Aqua	tic Plants	s (B14)		Dry-Season Water Table (C2)				
Water M	arks (B1)		Hydrogen	Sulfide C	Odor (C1)			fish Burrows (C8)			
	nt Deposits (B2)		Oxidized F			-		ration Visible on Aerial Imagery (C9)			
	posits (B3)		Presence		,	,		ted or Stressed Plants (D1)			
-	at or Crust (B4)		Recent Iro			ed Soils (C		morphic Position (D2)			
l —	oosits (B5)		Thin Muck				X FAC	-Neutral Test (D5)			
—	on Visible on Aeria / Vegetated Conca		<i>,</i> — <i>,</i>		, ,						
Field Obser		ve Suriace	(B8) Other (Exp	olain in K	emarks)						
Surface Water		Voc	No X Depth (in	choe):							
			No X Depth (in								
Water Table Saturation P			No X Depth (in				land Hudralam	Present? Yes X No			
(includes car		res	No _/ Depth (in	cries)		_ wet	iand nydrology	Present? Tes No			
		m gauge, m	onitoring well, aerial	photos, p	revious in	spections),	if available:				
Remarks:											

Project/Site: Otter Tail County Road Bike Trail	(City/County: Otter Tail Sampling Date: 6-19				
Applicant/Owner: Houston Engineering Inc.				State: MN	Sampling Point: 8u	
Investigator(s): Hannah Erdmann	;	Section	, Township, Ra	nge: <u>S26-T136-R42</u>		
Landform (hillslope, terrace, etc.): sideslope to depression	on		Local relief	(concave, convex, none):	none	
Slope (%): 3 Lat: 46.561597		Long: _	-95.933711		Datum: NAD 1983	
Soil Map Unit Name: Snellman sandy loam, 2 to 8 per	cent slope	es		NWI classific	cation: not listed	
Are climatic / hydrologic conditions on the site typical for this	time of yea					
Are Vegetation, Soil, or Hydrology si	ignificantly	disturbe	ed? Are	"Normal Circumstances" p	oresent? Yes X No	
Are Vegetation, Soil, or Hydrology na	aturally pro	blemati	c? (If ne	eeded, explain any answe	ers in Remarks.)	
SUMMARY OF FINDINGS - Attach site map	showing	samp	oling point l	ocations, transects	, important features, etc.	
Hydrophytic Vegetation Present? Yes X No.		<u>.</u>		· · ·	· ·	
Hydric Soil Present? Yes No	\sim		ls the Sampled	l Area		
Wetland Hydrology Present? Yes No	5 <u>X</u>	، ا	within a Wetlar	nd? Yes	No <u>X</u>	
Remarks:		•				
VEGETATION – Use scientific names of plants.						
Tree Stratum (Plot size:)			nant Indicator es? Status	Dominance Test work		
1				Number of Dominant S That Are OBL, FACW,		
2.				Total Number of Domin		
3				Species Across All Stra	4	
4				Percent of Dominant Sp	pecies	
5				That Are OBL, FACW,		
Sapling/Shrub Stratum (Plot size:)		= Total	Cover	Prevalence Index wor	ksheet:	
1				Total % Cover of:	Multiply by:	
2				1	x 1 =	
3				1	x 2 =	
4					x 3 = x 4 =	
5					x 5 =	
Herb Stratum (Plot size: 5' radius)					(A) (B)	
1. Calamagrostis canadensis	90	<u>Y</u>	OBL			
2. Cirsium arvense Taraxacum officinale	5	N	FACU FACU	Prevalence Index Hydrophytic Vegetation		
3	- -			' ' '	Hydrophytic Vegetation	
4. 5.				2 - Dominance Tes		
6				3 - Prevalence Inde		
7.					Adaptations ¹ (Provide supporting	
8					s or on a separate sheet) phytic Vegetation¹ (Explain)	
9				i robiematic riyaro	priytic vegetation (Explain)	
10					il and wetland hydrology must	
Woody Vine Stratum (Plot size:)	100	= Total	Cover	be present, unless distu	urbed or problematic.	
1				Hydrophytic		
2				Vegetation Present? Ye	s_X No	
Demonstra (Include abote purchase bases and		= Total	Cover			
Remarks: (Include photo numbers here or on a separate s	neet.)					

SOIL Sampling Point: 8u

Depth	Matrix	to the de	pth needed to docu Redo	ox Featur		or commi	ii tile abselice t	of materials.)			
(inches)	Color (moist)	%	Color (moist)	%_	Type ¹ _	_Loc ²	Texture	Remarks			
0-3	2,5Y 3/3						LC .				
3-9	2.5Y 5/3	98	10YR 5/6	2	_ <u>C</u>	<u>M</u>	LC .				
9-36+	2.5Y 6/4	45	5Y 5/2	40	_ D	<u>M</u>	SC				
			7.5YR 4/6	5	С	М					
1Type: C=C	ncontration D=Da	nlotion PM	I=Reduced Matrix, M	S-Macke	od Sand Gr		2l coation:	PL=Pore Lining, M=Matrix.			
Hydric Soil I		pietion, Niv	i-Reduced Matrix, M	3-Maske	eu Sanu Gi	airis.		for Problematic Hydric Soils ³ :			
Histosol			Sandy	Gleved M	Matrix (S4)			Prairie Redox (A16)			
_	pipedon (A2)			Redox (S			_	urface (S7)			
Black Hi	stic (A3)		Strippe	d Matrix	(S6)		Iron-Ma	nganese Masses (F12)			
Hydroge	n Sulfide (A4)		Loamy	Mucky M	lineral (F1)		Very Sh	nallow Dark Surface (TF12)			
	Layers (A5)			-	Matrix (F2)		Other (E	Explain in Remarks)			
2 cm Mu	, ,			ed Matrix	. ,						
	Below Dark Surfa	ce (A11)	_		face (F6)		31	of budges budges as a sector and			
_	ark Surface (A12)				Surface (F7)		of hydrophytic vegetation and			
	lucky Mineral (S1) cky Peat or Peat (S	:3)	Redox	Depressi	ons (Fo)			hydrology must be present, disturbed or problematic.			
	_ayer (if observed)						unless (disturbed of problematic.			
Type:	, (,-						.,			
	ches):						Hydric Soil F	Present? Yes No _X_			
Remarks:											
HYDROLO	GY										
Wetland Hyd	drology Indicators	:									
Primary Indic	ators (minimum of	one is requ	ired; check all that a	pply)			Secondar	y Indicators (minimum of two required)			
Surface	Water (A1)		Water-Sta	ained Lea	ives (B9)		Surfa	ace Soil Cracks (B6)			
High Wa	ter Table (A2)		Aquatic F	•	,		Drainage Patterns (B10)				
Saturatio	, ,		True Aqu					Season Water Table (C2)			
Water M	arks (B1)		Hydrogen					fish Burrows (C8)			
Sedimer	nt Deposits (B2)				eres on Liv		(C3) Satur	ration Visible on Aerial Imagery (C9)			
Drift Dep	oosits (B3)				ced Iron (C		_	ted or Stressed Plants (D1)			
Algal Ma	t or Crust (B4)				tion in Tille	d Soils (C6		morphic Position (D2)			
	osits (B5)		Thin Muc		` '		X FAC-	Neutral Test (D5)			
_	on Visible on Aerial		, <u> </u>		, ,						
	Vegetated Concav	e Surface	(B8) Other (Ex	plain in R	Remarks)						
Field Observ		_	🗸								
Surface Wate			No X Depth (ir								
Water Table			No X Depth (ir					~			
Saturation Pr (includes cap		Yes	No X Depth (ir	nches): _		Wetl	and Hydrology	Present? Yes No _X			
_		n gauge, m	onitoring well, aerial	photos, p	orevious ins	spections),	if available:				
Remarks:											
itematks.											

Project/Site: Otter Tail County Road Bike Tr	ail	_ City/County: Otter Tail Sampling Date: 6-19-1							
Applicant/Owner: Houston Engineering Inc.					State: MN Sampling Point: 8w				
Investigator(s): Hannah Erdmann		Section, Township, Range: S26-T136-R42							
Landform (hillslope, terrace, etc.): depression		Local relief (concave, convex, none): CONCAVE							
Slope (%): 0-1 Lat: 46.561607		Long:	-95.9	33729	Datum: NAD 1983				
Soil Map Unit Name: Snellman sandy loam, 2					NWI classification: PEM1Ad				
Are climatic / hydrologic conditions on the site typi									
Are Vegetation, Soil, or Hydrology					"Normal Circumstances" present? Yes X No				
Are Vegetation, Soil, or Hydrology					peded, explain any answers in Remarks.)				
					ocations, transects, important features, etc.				
Hydrophytic Vegetation Present? Yes	X No								
Hydric Soil Present? Yes _			Is the	Sampled					
Wetland Hydrology Present? Yes _	X No		withi	n a Wetlan	nd? Yes <u>X</u> No				
Remarks:									
VEGETATION - Use scientific names of	f plants.								
	Absolute			Indicator	Dominance Test worksheet:				
<u>Tree Stratum</u> (Plot size:) 1					Number of Dominant Species That Are OBL, FACW, or FAC:1(A)				
2					Total Number of Dominant				
3					Species Across All Strata: 1 (B)				
4					Percent of Dominant Species				
5					That Are OBL, FACW, or FAC: 100% (A/B)				
Sapling/Shrub Stratum (Plot size:)	= Tota	al Cove	er	Prevalence Index worksheet:				
1					Total % Cover of: Multiply by:				
2					OBL species x 1 =				
3					FACW species x 2 =				
4					FAC species x 3 =				
5					FACU species x 4 =				
Herb Stratum (Plot size: 5' radius		= Tota	al Cove	er	UPL species x 5 =				
1. Phalaris arundinacea	95	Υ		FACW	Column Totals: (A) (B)				
2. Poa pratensis	5	N		FAC	Prevalence Index = B/A =				
3					Hydrophytic Vegetation Indicators:				
4.					1 - Rapid Test for Hydrophytic Vegetation				
5.					× 2 - Dominance Test is >50%				
6					3 - Prevalence Index is ≤3.0 ¹				
7					4 - Morphological Adaptations ¹ (Provide supporting				
8					data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain)				
9					Problematic Hydrophytic Vegetation (Explain)				
10					¹ Indicators of hydric soil and wetland hydrology must				
Woody Vine Stratum (Plot size:		= Tota	al Cove	er	be present, unless disturbed or problematic.				
1					Hydrophytic				
2					Vegetation Present? Yes X No				
Demontos (Includo pheto pumbaro hara ana		= Tota	al Cove	er	110				
Remarks: (Include photo numbers here or on a	separate sneet.)								

SOIL Sampling Point: 8W

Profile Desc	cription: (Describe	to the dep	th needed to docu	ment the	indicator	or confirn	n the absence	of indicators	5.)			
Depth	Matrix		Redo	x Feature	es							
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_Loc ²	Texture		Remarks			
0-2	10YR 3/2	_ 100					SC	mucky				
2-10	2.5Y 6/2	98	7.5YR 6/8	2	С	M	LC					
10-24+	2.5Y 2.5/1	98	10YR 3/4	2		PL	LC					
					- —	·-						
l ———												
l												
1Type: C=C	oncontration D=Da	nlotion PM:	=Reduced Matrix, M	S-Macko	d Sand Gr	rains	² l acation	n: DI =Boro I i	ning, M=Matri			
Hydric Soil		pielion, Kivi-	-Reduced Matrix, M	3-Maske	u Sanu Gi	allis.			atic Hydric S			
Histosol			Sandy	Gleved M	atrix (S4)			Prairie Redox	-			
1 —	pipedon (A2)			Redox (S			_	Surface (S7)	(110)			
I —	istic (A3)			d Matrix (_	langanese Ma	sses (F12)			
1 —	en Sulfide (A4)				ineral (F1)		_	•	Surface (TF12))		
Stratifie	d Layers (A5)				latrix (F2)			(Explain in Re				
2 cm Mu	uck (A10)		X Deplete	ed Matrix	(F3)							
	d Below Dark Surfa	ce (A11)		Dark Surf								
1 —	ark Surface (A12)				urface (F7)			ic vegetation a			
ı — ·	Mucky Mineral (S1)	201	Redox	Depression	ons (F8)				ust be presen	t,		
	ucky Peat or Peat (unless	s disturbed or	problematic.			
	Layer (if observed											
Type:							Hydric Soi	Present?	Yes_X_	No		
Depth (in	ches):						,					
Remarks:												
HYDROLO	GY											
Wetland Hv	drology Indicators	:										
1			red; check all that a	only)			Second	ary Indicators	(minimum of t	wo required)		
	Water (A1)	One io requi	Water-Sta		(BQ)					vvo required)		
_	ater Table (A2)		Aquatic Fa		, ,		Surface Soil Cracks (B6)					
Saturati			True Aqua				Drainage Patterns (B10)					
Water M	, ,		Hydrogen				Dry-Season Water Table (C2) Crayfish Burrows (C8)					
1 —	nt Deposits (B2)		Oxidized			ina Poots			on Aerial Ima	gery (CQ)		
1—	posits (B3)		Presence			-			ed Plants (D1)			
I —	at or Crust (B4)		Recent Iro					omorphic Posi		,		
Iron Dep			Thin Muck			.u 00113 (00		C-Neutral Test				
1 —	ion Visible on Aeria	Imagery (B					<u>Z</u> 1740	5-Noutian 105	(00)			
1 —			B8) Other (Ex		` '							
Field Obser		re canace (piani iii i	omanio,							
Surface Wat		Vac	No X Depth (in	chee).								
Water Table			No X Depth (in									
								D	v X	Na		
Saturation Present? Yes No _X Depth (inches): Wetland Hydrold (includes capillary fringe)									res	No		
		n gauge, mo	onitoring well, aerial	photos, p	revious in	spections),	if available:					
	•			•		,,						
Remarks:												

Project/Site: Otter Tail County Road Bike Trail	(City/County: Otter Tail Sampling Date: 6-18							
Applicant/Owner: Houston Engineering Inc.					State: MN	Sampling	Point: 9u		
Investigator(s): Hannah Erdmann	:	Section, Township, Range: S26-T136-R42							
Landform (hillslope, terrace, etc.): sideslope			L	ocal relief (concave, convex, none):	none			
							NAD 1983		
Soil Map Unit Name:									
Are climatic / hydrologic conditions on the site typical for this									
					(ii fio, explain iii K Normal Circumstances" p		v X N	_	
Are Vegetation, Soil, or Hydrology s								o	
Are Vegetation, Soil, or Hydrology n SUMMARY OF FINDINGS - Attach site map					eded, explain any answe			o oto	
		Saiii	hiiií	j politi ic	cations, transects	, illipor	tani ieature	5, 610.	
Hydrophytic Vegetation Present? Yes X	°		Is the	Sampled	Area				
Hydric Soil Present? Yes New Yes	×			n a Wetlan		No	X		
Remarks:									
\									
VEGETATION – Use scientific names of plants.									
Tree Stratum (Plot size:)	Absolute <u>% Cover</u>			Indicator Status	Dominance Test work				
1					Number of Dominant Sport That Are OBL, FACW, or		2	(A)	
2				- 1				(* 1)	
3					Total Number of Domin Species Across All Stra		2	(B)	
4.				- 1	•			(=)	
5					Percent of Dominant Sp That Are OBL, FACW, of		100%	(A/B)	
		= Tota	al Cov	er				()	
Sapling/Shrub Stratum (Plot size:)					Prevalence Index wor				
1				- 1	Total % Cover of:			_	
2					OBL species				
3					FACW species FAC species				
4				- 1	FACU species			_	
5					UPL species				
Herb Stratum (Plot size: 5' radius)		- 1018	ai COV		Column Totals:				
1. Phalaris arundinacea	40	<u>Y</u>		FACW_		(, ,		_ (-,	
2. Poa pratensis	40	<u>Y</u>		FAC	Prevalence Index	= B/A =		_	
3. Asclepias syriaca	10	<u>N</u>		FACU	Hydrophytic Vegetation				
4. Cirsium arvense	5	N		FACU	1 - Rapid Test for H		•		
5. Achillea millefolium	5	<u>N</u>		FACU	× 2 - Dominance Tes				
6					3 - Prevalence Inde				
7					4 - Morphological A data in Remarks	daptation s or on a s	s (Provide sup separate sheet)	porting	
8					Problematic Hydro				
9									
10	400		10-		¹ Indicators of hydric soi			must	
Woody Vine Stratum (Plot size:)	100	= Tota	al Cov	er	be present, unless distu	ırbed or pı	roblematic.		
1					Hydrophytic				
2					Vegetation	~			
		= Tota	al Cov	er	Present? Yes	s_X_	No		
Remarks: (Include photo numbers here or on a separate s	sheet.)								

SOIL Sampling Point: 9u

Depth	Matrix	. to the de	p th needed to doc u Red	lox Featur				i maioators.j
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	10 YR 3/2	100					LC	
6-24+	2.5Y 5/3	85	2.5Y 2.5/1	5	С	M	sc	
			10YR 5/6	10	_ <u>C</u>	M		
		pletion, RM	I=Reduced Matrix, N	/IS=Mask	ed Sand G	rains.		PL=Pore Lining, M=Matrix.
Hydric Soil								or Problematic Hydric Soils ³ :
Histosol	. ,			-	Matrix (S4)		_	rairie Redox (A16)
	pipedon (A2) istic (A3)			Redox (Sed Matrix				face (S7) ganese Masses (F12)
_	en Sulfide (A4)				lineral (F1))	_	allow Dark Surface (TF12)
_ , ,	d Layers (A5)				Matrix (F2)			xplain in Remarks)
2 cm Mu	uck (A10)			ed Matrix				
	d Below Dark Surfac	ce (A11)	_	Dark Sur	, ,		2	
_	ark Surface (A12)				Surface (F7	7)		f hydrophytic vegetation and
	Mucky Mineral (S1) ucky Peat or Peat (S	:3)	Redox	Depressi	ons (F8)			nydrology must be present, isturbed or problematic.
	Layer (if observed)						unless di	sturbed of problematic.
Type:		, -						
	ches):						Hydric Soil P	resent? Yes No _X_
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicators	:						
Primary Indi	cators (minimum of	one is requ	ired; check all that a	apply)			Secondary	Indicators (minimum of two required)
	Water (A1)			ained Lea	, ,			ce Soil Cracks (B6)
_ •	ater Table (A2)			auna (B1	,			age Patterns (B10)
Saturati	` '		True Aqu		, ,			eason Water Table (C2)
	Marks (B1)		Hydroger			dan Danta		sh Burrows (C8)
	nt Deposits (B2) posits (B3)				eres on Li ced Iron (C	ving Roots		ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1)
	at or Crust (B4)		_		•	ed Soils (C6		orphic Position (D2)
	posits (B5)		Thin Muc			50 00113 (00		Neutral Test (D5)
	ion Visible on Aerial	Imagery (E			, ,		<u> </u>	
_	y Vegetated Concav	• • • • • • • • • • • • • • • • • • • •	, <u> </u>	xplain in F	, ,			
Field Obser	vations:		<u> </u>					
Surface Wat	ter Present?	Yes	No X Depth (i	nches): _				
Water Table	Present?	Yes	No X Depth (i	nches): _				
Saturation P	resent?	Yes	No X Depth (i	nches): _		Wetl	and Hydrology I	Present? Yes No _X_
	pillary fringe)	n dalide m	onitoring well, aeria	l photos i	revious in	enections)	if available:	
Describe Ne	corded Data (Stream	ii gauge, ii	ormorning well, aeria	i priotos, į	nevious iii	spections),	ii avallable.	
Remarks:								

Project/Site: Otter Tail County Road Bike Trail	(_ City/County: Otter Tail Sampling Date: 6-18							
Applicant/Owner: Houston Engineering Inc.					State: MN Sampling Point: 9w				
Investigator(s): Hannah Erdmann	;	Section, Township, Range: S16-T136-R40							
Landform (hillslope, terrace, etc.): depression			L	ocal relief (concave, convex, none): CONCAVE				
					Datum: NAD 1983				
Soil Map Unit Name:									
Are climatic / hydrologic conditions on the site typical for th									
					Normal Circumstances" present? Yes X No				
Are Vegetation, Soil, or Hydrology					· —				
Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS - Attach site map					eded, explain any answers in Remarks.)				
		Jain	hiiii	, point ic	cations, transects, important reatures, etc.				
	No		Is the	Sampled	Area				
Hydric Soil Present? Yes Net				n a Wetlan	\				
Remarks:									
VECETATION Lies exicutific names of plants									
VEGETATION – Use scientific names of plants		D	·	Indicator	Daminana Tastanakahast				
Tree Stratum (Plot size:)	Absolute <u>% Cover</u>			Indicator Status	Dominance Test worksheet:				
1					Number of Dominant Species That Are OBL, FACW, or FAC: (A)				
2					Total Number of Dominant				
3					Species Across All Strata: (B)				
4					Percent of Dominant Species				
5					That Are OBL, FACW, or FAC: (A/B)				
Senling/Shrub Stratum (Diet eine)		= Tota	al Cov	er	Prevalence Index worksheet:				
Sapling/Shrub Stratum (Plot size:)					Total % Cover of: Multiply by:				
1 2					OBL species x 1 =				
3					FACW species x 2 =				
4					FAC species x 3 =				
5					FACU species x 4 =				
					UPL species x 5 =				
Herb Stratum (Plot size: 5' radius	00	V		ODI	Column Totals: (A) (B)				
1. Phalaris arundinacea 2. Solidago gigantea	<u> 90</u>	$\frac{1}{N}$		OBL FACU	Prevalence Index = B/A =				
2. Cirsium arvense	- 5	N		FAC	Hydrophytic Vegetation Indicators:				
					1 - Rapid Test for Hydrophytic Vegetation				
4					2 - Dominance Test is >50%				
5 6					3 - Prevalence Index is ≤3.0 ¹				
7					4 - Morphological Adaptations ¹ (Provide supporting				
8					data in Remarks or on a separate sheet)				
9					Problematic Hydrophytic Vegetation ¹ (Explain)				
10					4				
Woody Vine Stratum (Plot size:)	400	= Tota	al Cov	er	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
1					Hydrophytic				
2					Vegetation				
		= Tota	al Cov	er	Present? Yes X No				
Remarks: (Include photo numbers here or on a separate									

SOIL Sampling Point: 9W

		e to the dep	otn needed to docu			or commi	i tile absence	of indicators.)			
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Featu	Type ¹	Loc ²	Texture	Remarks			
0-6	2.5Y 2.5/1	100					SC				
6-20	2.5Y 6/2	95	10YR 5/6	5	_ <u>C</u>	M	SC				
20-24+	2.55Y 4/1	 95	10YR 5/6	- -	_ <u>_</u>		SC				
1							2				
'Type: C=C Hydric Soil		epletion, RM	=Reduced Matrix, M	S=Mask	ed Sand G	rains.		PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :			
,			Sandy	Clayed N	Matrix (SA)			Prairie Redox (A16)			
Histosol	oipedon (A2)			Redox (S	Matrix (S4)		_	urface (S7)			
	stic (A3)			d Matrix	•			anganese Masses (F12)			
_	en Sulfide (A4)				/lineral (F1))	_	hallow Dark Surface (TF12)			
	d Layers (A5)		Loamy	Gleyed I	Matrix (F2)			Explain in Remarks)			
	ıck (A10)		X Deplete	ed Matrix	(F3)						
I	d Below Dark Surfa	ce (A11)	_		rface (F6)						
_	ark Surface (A12)				Surface (F7	')		of hydrophytic vegetation and			
ı —	Mucky Mineral (S1)	00)	Redox	Depress	ions (F8)			hydrology must be present,			
	icky Peat or Peat (unless	disturbed or problematic.			
	Layer (if observed	1):									
Type:	ahaa):						Hydric Soil	Present? Yes X No			
Depth (in Remarks:											
HYDROLO	GY										
Wetland Hy	drology Indicators	s:									
Primary India	cators (minimum of	one is requ	ired; check all that a	pply)			<u>Seconda</u>	ry Indicators (minimum of two required)			
Surface	Water (A1)		Water-Sta	ined Lea	aves (B9)		Surfa	ace Soil Cracks (B6)			
High Wa	iter Table (A2)		Aquatic F	auna (B1	13)		Drainage Patterns (B10)				
Saturation	on (A3)		True Aqua	atic Plan	ts (B14)		Dry-Season Water Table (C2)				
Water M	larks (B1)		Hydrogen	Sulfide	Odor (C1)		Crayfish Burrows (C8)				
Sedimer	nt Deposits (B2)		Oxidized					ration Visible on Aerial Imagery (C9)			
	oosits (B3)				ced Iron (C			ted or Stressed Plants (D1)			
	at or Crust (B4)					ed Soils (C6		morphic Position (D2)			
	posits (B5)		Thin Mucl		` '		X FAC	-Neutral Test (D5)			
_	on Visible on Aeria	0 , (, <u> </u>								
-	/ Vegetated Conca	ve Surface (B8) Other (Ex	plain in F	Remarks)						
Field Obser			🗸								
Surface Wat			No X Depth (ir								
Water Table			No X Depth (ir					\checkmark			
Saturation P (includes car		Yes	No X Depth (in	iches): _		Wetla	and Hydrology	Present? Yes X No			
		m gauge, m	onitoring well, aerial	photos,	previous in	spections),	if available:				
Remarks:											

Project/Site: Otter Tail County Road Bike Trail	(City/County: <u>Otter Tail</u> Sampling Date: <u>6-1</u>							
Applicant/Owner: Houston Engineering Inc.					State: MN Sampling Point: 10u				
Investigator(s): Hannah Erdmann	:	Section, Township, Range: S16-T136-R40							
Landform (hillslope, terrace, etc.):			L	ocal relief ((concave, convex, none):				
Slope (%): 4% Lat: 46.562457		Long:	-95.9	32836	Datum: NAD 1983				
Soil Map Unit Name:									
Are climatic / hydrologic conditions on the site typical for this									
Are Vegetation, Soil, or Hydrologys					Normal Circumstances" present? Yes X No				
Are Vegetation, Soil, or Hydrology r					eded, explain any answers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map				•					
Hydrophytic Vegetation Present? Yes X N	0								
Hydric Soil Present? Yes N	o_X		ls the	Sampled					
Wetland Hydrology Present? Yes N	。_X		withi	n a Wetlan	nd? Yes NoX				
Remarks:									
VEGETATION - Use scientific names of plants.									
	Absolute			Indicator	Dominance Test worksheet:				
Tree Stratum (Plot size:)	% Cover				Number of Dominant Species				
1					That Are OBL, FACW, or FAC: 1 (A)				
2					Total Number of Dominant Species Across All Strata: 3 (B)				
3 4					Species Across All Strata: 3 (B)				
5					Percent of Dominant Species That Are OBL FACW or FAC: 33% (A/R)				
·			I Cove	er	That Are OBL, FACW, or FAC: 33% (A/B)				
Sapling/Shrub Stratum (Plot size:)				-	Prevalence Index worksheet:				
1					Total % Cover of: Multiply by:				
2					OBL species x 1 =				
3					FACW species x 2 =				
4					FAC species x 3 =				
5					FACU species x 4 =				
Herb Stratum (Plot size: 5' radius		= Tota	I Cove	er	UPL species x 5 = Column Totals: (A) (B)				
1. Asclepia syriaca	40	Υ		FACU_	Column Totals (A) (B)				
2. Solidago gigantea	25	Υ		FACW	Prevalence Index = B/A =				
3. Cirsium arvense	20	<u>Y</u>		FACU_	Hydrophytic Vegetation Indicators:				
4. Phalaris arundinacea	15	<u>N</u>		FACW_	1 - Rapid Test for Hydrophytic Vegetation				
5					2 - Dominance Test is >50%				
6					3 - Prevalence Index is ≤3.0¹				
7					4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)				
8					Problematic Hydrophytic Vegetation¹ (Explain)				
9			_						
10	400				¹ Indicators of hydric soil and wetland hydrology must				
Woody Vine Stratum (Plot size:)	100	= Tota	I Cove	er	be present, unless disturbed or problematic.				
1					Hydrophytic				
2					Vegetation				
		= Tota	l Cove	er	Present? Yes No _X				
Remarks: (Include photo numbers here or on a separate	sheet.)								

SOIL	Sampling Point:	10u	
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Profile Desc	cription: (Describe	e to the dep	oth needed to docu	ment the	indicator	or confirm	m the absence of indicators.)					
Depth	Matrix			x Feature								
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_Loc ²						
0-14	10YR 5/3	_ 95	2.5Y 2.5/1	_ <u>5</u>	_ <u>C</u>		SC					
14-18	2.5Y 5/4	96	10YR 6/8	2	С	M	SC					
			7.5YR 4/4	2	С	M						
18-32+	2.5Y 2.5/1	100					SC SC					
10 021	2.01 2.0/1	_ 100										
							· —— ———					
							- <u> </u>					
¹ Type: C=C	oncentration, D=De	pletion, RM	=Reduced Matrix, M	S=Maske	d Sand G	rains.	² Location: PL=Pore Lining, M=Matrix.					
Hydric Soil	Indicators:						Indicators for Problematic Hydric Soils ³ :					
Histosol	. ,				atrix (S4)		Coast Prairie Redox (A16)					
ı —	pipedon (A2)			Redox (S			Dark Surface (S7)					
ı —	istic (A3)			d Matrix (Iron-Manganese Masses (F12)					
	en Sulfide (A4) d Layers (A5)				ineral (F1)		Very Shallow Dark Surface (TF12) Other (Explain in Remarks)					
ı —	uck (A10)			ed Matrix	latrix (F2) (F3)		Other (Explain in Remarks)					
_	d Below Dark Surfa	ce (A11)		Dark Surl	. ,							
	ark Surface (A12)	00 (/ 11 1)			urface (F7)	³ Indicators of hydrophytic vegetation and					
	Mucky Mineral (S1)			Depressi		,	wetland hydrology must be present,					
ı —	ucky Peat or Peat (S3)	_	·	, ,		unless disturbed or problematic.					
Restrictive	Layer (if observed):										
Type:												
Depth (in	ches):						Hydric Soil Present? Yes NoX					
Remarks:												
HYDROLO	GY											
	drology Indicators											
1	0,		ired; check all that a	only)			Secondary Indicators (minimum of two required)					
		one is requ			(DO)							
_	Water (A1)		Water-Sta				Surface Soil Cracks (B6)					
	ater Table (A2)		Aquatic Fa	,	,		Drainage Patterns (B10)					
Saturati	, ,		True Aqua				Dry-Season Water Table (C2)					
ı	larks (B1)		Hydrogen				Crayfish Burrows (C8)					
ı —	nt Deposits (B2)		Oxidized I									
I —	posits (B3)		Presence				Stunted or Stressed Plants (D1)					
ı —	at or Crust (B4)		Recent Iro			ed Soils (C						
ı —	posits (B5)		Thin Muck				FAC-Neutral Test (D5)					
ı —	on Visible on Aeria		<i>-</i>		, ,							
		ve Surface (B8) Other (Ex	plain in R	emarks)							
Field Obser			N X 5									
Surface Wat			No X Depth (in									
Water Table			No X Depth (in				~					
Saturation P	resent? pillary fringe)	Yes	No X Depth (in	iches):		Wet	tland Hydrology Present? Yes No _X					
		m gauge, m	onitoring well, aerial	photos, p	revious in	spections),	, if available:					
	,											
Remarks:												
I												

Project/Site: Otter Tail County Road Bike Trail	(_ City/County: Otter Tail Sampling Date: 6-						
Applicant/Owner: Houston Engineering Inc.				State: MN S	Sampling Point: 10w			
Investigator(s): Hannah Erdmann	;	Section, Township, Range: S26-T136-R42						
Landform (hillslope, terrace, etc.): depression		Local relief (concave, convex, none): Concave						
Slope (%): 0-1 Lat: 46.562500	ו	Long: -95.932815 Datum: NAD 1983						
Soil Map Unit Name:		-						
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology sig					esent? Yes X No			
Are Vegetation, Soil, or Hydrology na				eded, explain any answers				
SUMMARY OF FINDINGS – Attach site map s								
Hydrophytic Vegetation Present? Yes No								
			he Sampled					
Wetland Hydrology Present? Yes X No		with	hin a Wetlar	nd? Yes	No			
Remarks:								
VEGETATION – Use scientific names of plants.								
Tree Stratum (Plot size: 30' radius	Absolute % Cover		t Indicator Status	Dominance Test worksh				
1. Fraxinus nigra	10	Y	FACW	Number of Dominant Spe That Are OBL, FACW, or				
2. Salix amygdaloides	10	Υ	FACW	Total Number of Deminer				
3				Total Number of Dominar Species Across All Strata				
4				Percent of Dominant Spe	ries			
5				That Are OBL, FACW, or				
Sapling/Shrub Stratum (Plot size:)	20	= Total Co	over	Prevalence Index works	sheet:			
1				Total % Cover of:				
2.				OBL species				
3				FACW species				
4				FAC species	x 3 =			
5				FACU species	x 4 =			
5' radius		= Total Co	over	UPL species x 5 =				
Herb Stratum (Plot size: 5' radius) 1. Phalaris arundinacea	85	Υ	FACW	Column Totals:	(A) (B)			
2. Solidago gigantea	10	N	FACU	Prevalence Index =	= B/A =			
3. Cirsium arvense	5	N	FAC	Hydrophytic Vegetation				
4.				X 1 - Rapid Test for Hy	drophytic Vegetation			
5				2 - Dominance Test i				
6				3 - Prevalence Index				
7				4 - Morphological Ad	aptations ¹ (Provide supporting or on a separate sheet)			
8				1	nytic Vegetation ¹ (Explain)			
9					ytic vegetation (Explain)			
10	400			Indicators of hydric soil a	and wetland hydrology must			
Woody Vine Stratum (Plot size:)	100	= Total Co	over	be present, unless disturb				
1				Hydrophytic				
2.				Vegetation	V			
		= Total Co	over	Present? Yes	X No			
Remarks: (Include photo numbers here or on a separate sl	neet.)							

SOIL Sampling Point: 10w

Profile Desc Depth	ription: (Describe Matrix	to the dep	oth needed to docur Redo	nent the x Featur		or confirm	the absence of	or indicators.)
(inches)	Color (moist)	%	Color (moist)	<u> %</u>	Type ¹	_Loc ²	Texture	Remarks
0-24	2.5Y 2.5/1	100					SC	
24-36+	2.5Y 5/2	90	10YR 6/8	5	_ C	M	sc	
			10YR 4/6	5	_ <u>C</u>	M		
				- —				
		pletion, RM	=Reduced Matrix, MS	S=Mask	ed Sand G	ains.		PL=Pore Lining, M=Matrix.
Hydric Soil I			0	31 d A	1-1-i (O.1)			for Problematic Hydric Soils ³ :
Histosol	(A1) pipedon (A2)			sieyea N Redox (S	Matrix (S4)		_	Prairie Redox (A16) urface (S7)
Black Hi				d Matrix				inganese Masses (F12)
_	n Sulfide (A4)				lineral (F1)		_	nallow Dark Surface (TF12)
	Layers (A5)		Loamy	Gleyed I	Matrix (F2)			Explain in Remarks)
_	ıck (A10)			d Matrix				
·	d Below Dark Surfac	ce (A11)	_		face (F6)		3	
_	ark Surface (A12)				Surface (F7)		of hydrophytic vegetation and
	lucky Mineral (S1) icky Peat or Peat (S	33)	Redox i	Depress	ions (F8)			hydrology must be present, disturbed or problematic.
	Layer (if observed)							distarbed of problematio.
Type:	, (,-						~
	ches):						Hydric Soil F	Present? Yes X No
Remarks:								
HYDROLO	GY							
Wetland Hyd	drology Indicators	:						
Primary Indic	cators (minimum of	one is requ	ired; check all that ap	ply)			Secondar	y Indicators (minimum of two required)
	Water (A1)		Water-Sta		, ,			ace Soil Cracks (B6)
_ •	iter Table (A2)		Aquatic Fa	,	,			nage Patterns (B10)
Saturation	, ,		True Aqua				_ ′	Season Water Table (C2)
	arks (B1)		Hydrogen			D t .		fish Burrows (C8)
	nt Deposits (B2)		_			ing Roots		ration Visible on Aerial Imagery (C9)
	oosits (B3) at or Crust (B4)				ced Iron (C	4) d Soils (C6		ted or Stressed Plants (D1) norphic Position (D2)
	oosits (B5)		Thin Muck			d Solis (CC	_	Neutral Test (D5)
	on Visible on Aerial	Imagery (B			, ,		<u>X</u> 170-	redual rest (DO)
_	Vegetated Concav		, <u> </u>		. ,			
Field Observ					,			
Surface Wate	er Present?	Yes	No X Depth (in	ches): _		_		
Water Table			No X Depth (in					
Saturation Pr			No X Depth (in			_	and Hydrology	Present? Yes X No
(includes cap	oillary fringe)							
Describe Red	corded Data (stream	n gauge, m	onitoring well, aerial	photos,	previous in	spections),	if available:	
Remarks:								

Project/Site: Otter Tail County Road Bike Trail	(City/Co	ounty:	Otter Tai	il Sampling Date: 6-19-19			
Applicant/Owner: Houston Engineering Inc.					State: MN Sampling Point: 11u			
Investigator(s): Hannah Erdmann	(Section, Township, Range: S26-T136-R42						
Landform (hillslope, terrace, etc.): sideslope		Local relief (concave, convex, none): none						
					Datum: NAD 1983			
Soil Map Unit Name: Haslie, Seelyeville, and Cathro,					NWI classification: not listed			
Are climatic / hydrologic conditions on the site typical for this								
					Normal Circumstances" present? Yes X No			
Are Vegetation, Soil, or Hydrology s					,			
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.								
		Sam	biini	g point ic	ocations, transects, important leatures, etc.			
Hydrophytic Vegetation Present? Yes X N	0		le the	e Sampled	Area			
Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N	° X	_ ' '						
Remarks:	<u> </u>							
Tremains.								
\								
VEGETATION – Use scientific names of plants.								
Tree Stratum (Plot size:)	Absolute % Cover			Indicator Status	Dominance Test worksheet:			
1					Number of Dominant Species That Are OBL, FACW, or FAC: _1(A)			
2.					,,,			
3					Total Number of Dominant Species Across All Strata: (B)			
4								
5					Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)			
		= Tota	al Cov	er	Prevalence Index worksheet:			
Sapling/Shrub Stratum (Plot size:)					Total % Cover of: Multiply by:			
1					OBL species x 1 =			
2 3					FACW species x 2 =			
4					FAC species x 3 =			
5.					FACU species x 4 =			
					UPL species x 5 =			
Herb Stratum (Plot size: 5' radius)					Column Totals: (A) (B)			
1. Calamagrostis canadensis	90			OBL	Dravelance Index - B/A -			
2. Cirsium arvense 3. Taraxacum officinale	- 5	$\frac{N}{N}$		FACU FACU	Prevalence Index = B/A = Hydrophytic Vegetation Indicators:			
	- —				1 - Rapid Test for Hydrophytic Vegetation			
4					2 - Dominance Test is >50%			
5 6					3 - Prevalence Index is ≤3.0¹			
7					4 - Morphological Adaptations ¹ (Provide supporting			
8					data in Remarks or on a separate sheet)			
9					Problematic Hydrophytic Vegetation ¹ (Explain)			
10					4			
	400	= Tota	al Cov	er	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Woody Vine Stratum (Plot size:)					po process, amos anotarizad or problematio.			
1					Hydrophytic			
2					Vegetation			
Remarks: (Include photo numbers here or on a separate s		= Tota	II COV	er				
Total Andreas prioro numbers here of on a separate s								

SOIL Sampling Point: 11u

Profile Descri	iption: (Describe	to the depth	needed to docum	nent the indicator or	confirm the	absence	of indicators.)				
Depth	Matrix			x Features	 .		_				
(inches)	Color (moist) 10YR 3/2		Color (moist)	%Type ¹	Loc ² S	Texture	Re	emarks	_		
									_		
3-12	10YR 6/3				<u>s</u>				_		
12-36+	2.5Y 7/1				S				_		
									_		
									_		
									_		
						_			_		
		letion, RM=F	Reduced Matrix, MS	S=Masked Sand Grain			PL=Pore Lining				
Hydric Soil In					'		for Problematic	•			
Histosol (/	•			Gleyed Matrix (S4)	-		Prairie Redox (A1	6)			
	pedon (A2)			Redox (S5)	-	Dark Surface (S7) Iron-Manganese Masses (F12)					
Black Hist	, ,			Matrix (S6)	-		-	, ,			
	Sulfide (A4)			Mucky Mineral (F1)	-	Very Shallow Dark Surface (TF12)					
Stratified	Layers (A5)			Gleyed Matrix (F2) d Matrix (F3)	-	Other (Explain in Remarks)					
_	Below Dark Surfac	- (Δ11)		Dark Surface (F6)							
	k Surface (A12)	e (A11)	_	d Dark Surface (F7)		3Indicators	of hydrophytic ve	egetation and			
_	icky Mineral (S1)			Depressions (F8)				-			
_ ′	ky Peat or Peat (S	3)		, op. 000.0 (1 0)		wetland hydrology must be present, unless disturbed or problematic.					
	ayer (if observed):	-									
Туре:			_					~			
Depth (inch	nes):		<u> </u>		Н	ydric Soil	Present? Yes	No_X	-		
Remarks:									_		
HYDROLOG	SY										
Wetland Hydr	rology Indicators:										
Primary Indica	tors (minimum of c	one is require	ed; check all that app	ply)		Seconda	ry Indicators (min	nimum of two required	<u>(t</u>		
Surface W	Vater (A1)		Water-Stair	ned Leaves (B9)		Surfa	ace Soil Cracks (I	B6)			
High Wate	High Water Table (A2) Aquatic Fauna (B13)					Drainage Patterns (B10)					
Saturation				tic Plants (B14)		Dry-	Season Water Ta	ıble (C2)			
	Water Marks (B1) Hydrogen Sulfide Odor (C1)						Crayfish Burrows (C8)				
Sediment	Deposits (B2)			Rhizospheres on Living	Roots (C3)			Aerial Imagery (C9)			
Drift Depo				of Reduced Iron (C4)	, ,		ted or Stressed F	Plants (D1)			
	or Crust (B4)			n Reduction in Tilled S	Soils (C6)	_	morphic Position				
Iron Depo	. ,			Surface (C7)	` '		-Neutral Test (D5				
	n Visible on Aerial	lmagery (B7)		Well Data (D9)		_	,				
_	Vegetated Concav			olain in Remarks)							
Field Observa	ations:										
Surface Water	Present? Y	'es N	o X Depth (inc	ches):							
Water Table P				ches):							
						Hydrology	Present? Yes	No_X			
(includes capil	lary fringe)										
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:											
Remarks:											

Project/Site: Otter Tail County Road Bike Trail	(City/County	: Otter Tai	<u>il</u>	Sampling Date: 6-19-19				
Applicant/Owner: Houston Engineering Inc.				Sampling Point: 11w					
Investigator(s): Hannah Erdmann	Section, Township, Range: S26-T136-R42								
Landform (hillslope, terrace, etc.): depression		Local relief (concave, convex, none): Concave							
Slope (%): 2 Lat: 46.564273	ι	_ong:95.	931413		Datum: NAD 1983				
Soil Map Unit Name: Haslie, Seelyeville, and Cathro, p				NWI classific					
Are climatic / hydrologic conditions on the site typical for this									
Are Vegetation, Soil, or Hydrology sig					oresent? Yes X No				
Are Vegetation, Soil, or Hydrology na				eded, explain any answei					
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.									
Hydrophytic Vegetation Present? Yes No									
			e Sampled						
Wetland Hydrology Present? Yes X No		within a Wetland? Yes No							
Remarks:									
VEGETATION – Use scientific names of plants.									
Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?		Dominance Test works					
1. Salix amygdaloides	40	Y	FACW	Number of Dominant Sp That Are OBL, FACW, o					
2. Fraxinus nigra	30	Y	FACW	, ,	, ,				
3. Prunus virginiana	5	N	FACU	Total Number of Domina Species Across All Strate	^				
4				Percent of Dominant Sp	paging				
5				That Are OBL, FACW, of					
Sapling/Shrub Stratum (Plot size:)	75	= Total Cov	er er	Prevalence Index work	ksheet:				
1				Total % Cover of:					
2.					x 1 =				
3					x 2 =				
4.				FAC species	x 3 =				
5				FACU species	x 4 =				
5' radius		= Total Cov	rer er	UPL species	x 5 =				
Herb Stratum (Plot size: 5' radius) 1. Phalaris arundinacea	90	Υ	FACW	Column Totals:	(A) (B)				
2. Calamagrostis canadensis	5	<u>N</u>	OBL	Prevalence Index	= B/A =				
Rubus idaeus	5	N	FACU	Hydrophytic Vegetation					
4.					Hydrophytic Vegetation				
5				X 2 - Dominance Tes					
6				3 - Prevalence Inde					
7				4 - Morphological A	Adaptations ¹ (Provide supporting s or on a separate sheet)				
8				1	phytic Vegetation ¹ (Explain)				
9					my to vogetation (Explain)				
10	400				I and wetland hydrology must				
Woody Vine Stratum (Plot size:)	100	= Total Cov	er	be present, unless distu	urbed or problematic.				
1				Hydrophytic					
2									
	= Total Cover								
Remarks: (Include photo numbers here or on a separate sl	neet.)								

SOIL Sampling Point: 11w

		e to the dep	tn needed to docur			or confirm	the absence	of indicators.)			
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Feature %	es Type ¹	_Loc²	Texture	Remarks			
0-2	10YR 3/1	100	Color (moist)		<u></u>		MC	mucky			
2-12	2.5Y 5/2	90	10YR 5/6	10			C				
12-20	2.5Y 2.5/1	100					MC				
20-36+	2.5Y 2.5/1	100					<u>C</u>				
20 001	2.01 2.0/1										
		pletion, RM	=Reduced Matrix, M	S=Maske	d Sand Gr	ains.		: PL=Pore Lining, M=Matrix.			
Hydric Soil I								for Problematic Hydric Soils ³ :			
Histosol	. ,			-	atrix (S4)		_	Prairie Redox (A16)			
HISTIC ED	oipedon (A2)			Redox (S d Matrix (Dark Surface (S7) Iron-Manganese Masses (F12)				
_	n Sulfide (A4)				ineral (F1)		Iron-Manganese Masses (F12) Very Shallow Dark Surface (TF12)				
	Layers (A5)				latrix (F2)			(Explain in Remarks)			
_	ick (A10)		• •	d Matrix			_	,,			
Depleted	d Below Dark Surfa	ce (A11)	Redox I	Dark Surf	ace (F6)						
Thick Da	ark Surface (A12)				urface (F7)	³ Indicators of hydrophytic vegetation and				
ı —	lucky Mineral (S1)		Redox I	Depressi	ons (F8)			d hydrology must be present,			
	cky Peat or Peat (unless	disturbed or problematic.			
	_ayer (if observed):									
Type:	- L N						Hydric Soil Present? Yes X No				
Depth (inc	ches):		_								
Remarks:											
HYDROLO											
Wetland Hyd	drology Indicators	: :									
Primary Indic	cators (minimum of	one is requi	red; check all that ap	ply)			<u>Seconda</u>	ary Indicators (minimum of two required)			
Surface	Water (A1)		Water-Sta	ined Lea	ves (B9)		Surface Soil Cracks (B6)				
High Wa	ter Table (A2)		Aquatic Fa				Drainage Patterns (B10)				
Saturatio	_ Saturation (A3) True Aquatic Plants (B14)						Dry-Season Water Table (C2)				
Water M	_ Water Marks (B1) Hydrogen Sulfide Odor (C1)						Crayfish Burrows (C8)				
Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aeria							• • • •				
	Drift Deposits (B3) Presence of Reduced Iron (C4)						Stunted or Stressed Plants (D1)				
-	Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C										
Iron Deposits (B5) Thin Muck Surface (C7)							X FAC	C-Neutral Test (D5)			
Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9)											
	Vegetated Conca	ve Surface (B8) Other (Exp	plain in R	emarks)						
Field Obser			🗸 –								
Surface Wate			No X Depth (in			— ı					
Water Table			No X Depth (in					~			
Saturation Present? Yes No _X Depth (inches): Wetland Hydrology Present? Yes _X No											
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:											
Remarks:											

Project/Site: Otter Tail County Road Bike Trail	(City/Co	il Sampling Date: 6-19-19					
Applicant/Owner: Houston Engineering Inc.					State: MN Sampling Point: 12u			
Investigator(s): Hannah Erdmann	;	_ Section, Township, Range: S25-T136-R42						
Landform (hillslope, terrace, etc.): sideslope			L	ocal relief ((concave, convex, none): Concave			
Slope (%): 8 Lat: 46.564162		Long:	-95.9	925585	Datum: NAD 1983			
Soil Map Unit Name: Snellman sandy loam, 2 to 8 pe					NWI classification: not listed			
Are climatic / hydrologic conditions on the site typical for thi								
Are Vegetation, Soil, or Hydrology :					Normal Circumstances" present? Yes X No			
Are Vegetation, Soil, or Hydrology i					eded, explain any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map								
Hydrophytic Vegetation Present? Yes N	10 X							
Hydric Soil Present? Yes N	10 <u>X</u>		ls the	e Sampled				
Wetland Hydrology Present? Yes N	√ X_		withi	in a Wetlan	d? Yes No _X			
Remarks:								
VEGETATION – Use scientific names of plants	·.							
	Absolute			Indicator	Dominance Test worksheet:			
Tree Stratum (Plot size:)	% Cover				Number of Dominant Species			
1 2					That Are OBL, FACW, or FAC: 1 (A)			
3					Total Number of Dominant Species Across All Strata: 2 (B)			
4					Species Across Ail Strata (B)			
5					Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)			
			al Cov	er	That Ale OBE, I AGW, OF I AG.			
Sapling/Shrub Stratum (Plot size:)					Prevalence Index worksheet:			
1					Total % Cover of: Multiply by:			
2					OBL species x 1 =			
3					FACW species x 2 =			
4					FAC species x 3 = FACU species x 4 =			
5					UPL species x 5 =			
Herb Stratum (Plot size: 5' radius)		= 1018	al Cov	er	Column Totals: (A) (B)			
1. Phalaris arundinacea	_ 50	<u>Y</u>		FACW_	Column Totals (7)			
2. Thalictrum dioicum	_ 25	<u>Y</u>		FACU_	Prevalence Index = B/A =			
3. Sanguinaria canadensis	_ <u>10</u>	<u>N</u>		FACU_	Hydrophytic Vegetation Indicators:			
4. Equisetum arvense	_ 10	N		FAC	1 - Rapid Test for Hydrophytic Vegetation			
5. Anemone canadensis	_ 5	_N_		FACW	2 - Dominance Test is >50%			
6					3 - Prevalence Index is ≤3.0¹			
7					 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) 			
8					Problematic Hydrophytic Vegetation ¹ (Explain)			
9								
10					¹ Indicators of hydric soil and wetland hydrology must			
Woody Vine Stratum (Plot size:)	100	= Tota	al Cov	er	be present, unless disturbed or problematic.			
1					Hydrophytic			
2					Vegetation			
		= Tota	al Cov	er	Present? Yes No _X_			
Remarks: (Include photo numbers here or on a separate	sheet.)							

SOIL Sampling Point: 12u

Profile Description: (Describe to the dept	h needed to document the indicator or o	confirm the absence of indicators.)
Depth <u>Matrix</u>	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹ L	_oc² Texture Remarks
0-6 2.5Y 2.5/1		L
6-24 2.5Y 4/3		S
1Type: C=Consentration D=Depletion BM=	Padusad Matrix MS-Maskad Sand Crains	s. ² Location: PL=Pore Lining, M=Matrix.
¹ Type: C=Concentration, D=Depletion, RM= Hydric Soil Indicators:	Reduced Matrix, MS-Masked Sand Grains	Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Gleyed Matrix (34) Sandy Redox (S5)	Coast Platfie Redox (A16)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	wetland hydrology must be present,
5 cm Mucky Peat or Peat (S3)		unless disturbed or problematic.
Restrictive Layer (if observed):		
Туре:	<u> </u>	Hydric Soil Present? Yes No X
Depth (inches):	<u> </u>	Tryunc son Present: Tes No
Remarks:		·
HYDROLOGY		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is require	ed: check all that apply)	Secondary Indicators (minimum of two required)
	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Surface Water (A1) High Water Table (A2)		Drainage Patterns (B10)
Saturation (A3)	Aquatic Fauna (B13)	Drainage Fatterns (B10) Dry-Season Water Table (C2)
l 	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1)	
Water Marks (B1)	Oxidized Rhizospheres on Living	Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Sediment Deposits (B2)		Stunted or Stressed Plants (D1)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	
Algal Mat or Crust (B4) Iron Deposits (B5)	Recent Iron Reduction in Tilled SThin Muck Surface (C7)	oils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Inundation Visible on Aerial Imagery (B7		FAC-Neutral Test (D5)
Sparsely Vegetated Concave Surface (E	, <u> </u>	
Field Observations:	Other (Explain in Remarks)	I
	No X Depth (inches):	
	No X Depth (inches):	
Saturation Present? Yes N (includes capillary fringe)	No X Depth (inches):	Wetland Hydrology Present? Yes No _X
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previous inspec	Itions), if available:
Damada		
Remarks:		

Project/Site: Otter Tail County Road Bike Trail	(City/County: Otter Tail Sampling Date: 6-1					
Applicant/Owner: Houston Engineering Inc.				State: MN	Sampling Point: 12w		
Investigator(s): Hannah Erdmann	;	Section, T	ownship, Ra	nge: <u>S25-T136-R42</u>			
Landform (hillslope, terrace, etc.): bottom of depression			Local relief	(concave, convex, none):	concave		
Slope (%): <u>2-3</u> Lat: <u>46.564213</u>		Long: <u>-95</u>	.925541		Datum: NAD 1983		
Soil Map Unit Name: Snellman sandy loam, 2 to 8 per	cent slope	es		NWI classifica	ation: not listed		
Are climatic / hydrologic conditions on the site typical for this	time of yea						
Are Vegetation, Soil, or Hydrology signature.	gnificantly	disturbed?	Are °	'Normal Circumstances" pr	resent? Yes X No		
Are Vegetation, Soil, or Hydrology na	aturally pro	blematic?	(If ne	eded, explain any answers	s in Remarks.)		
SUMMARY OF FINDINGS - Attach site map s	howing	sampliı	ng point l	ocations, transects,	important features, etc		
Hydrophytic Vegetation Present? Yes No							
Hydric Soil Present? Yes X			he Sampled				
Wetland Hydrology Present? Yes X No	·	wit	hin a Wetlar	ıd? Yes _ ^_	No		
Remarks:							
VEGETATION – Use scientific names of plants.							
Tree Stratum (Plot size:)	Absolute % Cover		t Indicator Status	Dominance Test works			
1				Number of Dominant Sp That Are OBL, FACW, o			
2				Total Number of Domina	ant		
3				Species Across All Strate	•		
4				Percent of Dominant Spe			
5				That Are OBL, FACW, o	or FAC: 66% (A/B)		
Sapling/Shrub Stratum (Plot size:)		- Total Co	ovei	Prevalence Index work	sheet:		
1				Total % Cover of:			
2					x 1 =		
3					x 2 =		
4					x 3 = x 4 =		
5					x 5 =		
Herb Stratum (Plot size: 5' radius)			ovei .		(A) (B)		
1. Phalaris arundinacea	35	<u>Y</u>	<u>FACW</u>				
	35	Y		Prevalence Index			
3. Equisetum arvense	30	<u>Y</u>	FAC	Hydrophytic Vegetation			
4				× 2 - Dominance Test	ydrophytic Vegetation		
5				3 - Prevalence Index			
6					daptations ¹ (Provide supporting		
7 8				data in Remarks	or on a separate sheet)		
9				Problematic Hydrop	hytic Vegetation ¹ (Explain)		
10				Northwest and a few date and the	and wattend builded and accept		
W 1 15 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	100	= Total Co	over	be present, unless distur	and wetland hydrology must rbed or problematic.		
Woody Vine Stratum (Plot size:) 1				H. decorbed o			
2				Hydrophytic Vegetation	V		
		= Total Co	over	Present? Yes	. <u> </u>		
Remarks: (Include photo numbers here or on a separate si	heet.)						

SOIL Sampling Point: 12w

Profile Desc	cription: (Describe	to the dep	th needed to docu	ment the	indicator	or confir	m the absence of indicators.)
Depth	Matrix		Redo	x Feature	es		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_Loc ²	
0-3	10YR 4/2	98	10YR 5/6	2	С	М	SC
3-12	2.5Y 5/4	98	7.5YR 5/8	2	С	М	S
12-18	2.5Y 2.5/1	95	7.5YR 3/4	- 5	_ _		SC
		pletion, RM	Reduced Matrix, M	S=Maske	d Sand G	rains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil							Indicators for Problematic Hydric Soils ³ :
Histosol	. ,				atrix (S4)		Coast Prairie Redox (A16)
1 —	pipedon (A2)			Redox (S			Dark Surface (S7)
1 —	istic (A3)			d Matrix (,		Iron-Manganese Masses (F12)
	en Sulfide (A4)				ineral (F1)		Very Shallow Dark Surface (TF12)
1	d Layers (A5)				latrix (F2)		Other (Explain in Remarks)
1 —	uck (A10) d Below Dark Surfa	ce (Δ11)	X Redox	ed Matrix	. ,		
I — ·	ark Surface (A12)	ce (ATT)			urface (F6)	``	³ Indicators of hydrophytic vegetation and
I —	Mucky Mineral (S1)			Depressi		,	wetland hydrology must be present,
ı — ·	ucky Peat or Peat (S3)		Боргосол	3110 (1 0)		unless disturbed or problematic.
	Layer (if observed						
Type:							
Depth (in	ches):						Hydric Soil Present? Yes X No
Remarks:							
HYDROLO	GY						
Wetland Hy	drology Indicators	:					
Primary Indi	cators (minimum of	one is requi	red; check all that ap	oply)			Secondary Indicators (minimum of two required)
Surface	Water (A1)		X Water-Sta	ined Lea	ves (B9)		Surface Soil Cracks (B6)
High Wa	ater Table (A2)		Aquatic Fa	auna (B1	3)		Drainage Patterns (B10)
Saturati	on (A3)		True Aqua	atic Plants	s (B14)		Dry-Season Water Table (C2)
Water M	larks (B1)		Hydrogen	Sulfide C	Odor (C1)		Crayfish Burrows (C8)
Sedime	nt Deposits (B2)		Oxidized I	Rhizosph	eres on Li	ving Roots	s (C3) Saturation Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Presence	of Reduc	ed Iron (C	4)	Stunted or Stressed Plants (D1)
Algal Ma	at or Crust (B4)		Recent Iro	n Reduc	tion in Tille	ed Soils (C	C6) X Geomorphic Position (D2)
Iron Dep	oosits (B5)		Thin Mucl	Surface	(C7)		FAC-Neutral Test (D5)
Inundati	on Visible on Aerial	Imagery (B	7) Gauge or	Well Data	a (D9)		
Sparsely	y Vegetated Conca	ve Surface (l	B8) Other (Ex	plain in R	emarks)		
Field Obser	vations:						
Surface Wat	er Present?	Yes	No 🔀 Depth (in	ches):			
Water Table	Present?	Yes	No X Depth (in	ches):		_	
Saturation P			No X Depth (in				tland Hydrology Present? Yes X No
	pillary fringe)						
Describe Re	corded Data (strear	n gauge, mo	onitoring well, aerial	pnotos, p	revious in	spections)), ii avaliable:
Remarks:							
ixemaiks.							

Project/Site: Otter Tail County Road Bike Trail	(City/Co	ounty:	Otter Tai	Sampling Date:	Sampling Date: <u>6-19-19</u>		
Applicant/Owner: Houston Engineering Inc.					State: MN Sampling Point:	_13u		
Investigator(s): Hannah Erdmann	;	Section, Township, Range: <u>S25-T136-R42</u>						
Landform (hillslope, terrace, etc.): sideslope			L	ocal relief (concave, convex, none): none			
					Datum: NAD 1	983		
Soil Map Unit Name: Snellman sandy loam, 8 to 15 pe					NWI classification: not listed			
Are climatic / hydrologic conditions on the site typical for this								
					Iormal Circumstances" present? Yes	X N-		
Are Vegetation, Soil, or Hydrology s						NO		
Are Vegetation, Soil, or Hydrology n					eded, explain any answers in Remarks.)			
SUMMARY OF FINDINGS – Attach site map		Sam	biini) point ic	cations, transects, important is	eatures, etc.		
Hydrophytic Vegetation Present? Yes X	°		le tha	e Sampled	Δrea			
Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N	$\frac{\circ}{\times}$			n a Wetlan	\/			
Remarks:								
Tremains.								
VEGETATION – Use scientific names of plants.								
Tree Stratum (Plot size:)	Absolute % Cover			Indicator	Dominance Test worksheet:			
1					Number of Dominant Species That Are OBL, FACW, or FAC: 2	(A)		
2						(/,/		
3					Total Number of Dominant Species Across All Strata: 3	(B)		
4.				- 1		(2)		
5					Percent of Dominant Species That Are OBL, FACW, or FAC: 66%	(A/B)		
			al Cov	er				
Sapling/Shrub Stratum (Plot size:)					Prevalence Index worksheet:			
1						oly by:		
2				- 1	OBL species x 1 =			
3				- 1	FACW species x 2 = FAC species x 3 =			
4				- 1	FACU species x 4 =			
5					UPL species x 5 =			
Herb Stratum (Plot size: 5' radius)		- 1018	ai COV	-	Column Totals: (A)			
1. Bromus inermis	35	<u>Y</u>		FACU_		(-,		
2. Poa pratensis	35	<u>Y</u>		FAC	Prevalence Index = B/A =			
3. Phalaris arundinacea	30	<u>Y</u>		FACW	Hydrophytic Vegetation Indicators:			
4					1 - Rapid Test for Hydrophytic Vege	tation		
5					× 2 - Dominance Test is >50%			
6					3 - Prevalence Index is ≤3.0¹			
7					4 - Morphological Adaptations ¹ (Prodata in Remarks or on a separate	vide supporting e sheet)		
8					Problematic Hydrophytic Vegetation	·		
9								
10	400				¹ Indicators of hydric soil and wetland hydric			
Woody Vine Stratum (Plot size:)	100	= Tota	II Cov	er	be present, unless disturbed or problems	atic.		
1					Hydrophytic			
2					Vegetation			
		= Tota	al Cov	er	Present? Yes X No _			
Remarks: (Include photo numbers here or on a separate s	sheet.)							

SOIL Sampling Point: 13u

Profile Desc	ription: (Describe	to the depth	needed to docum	ent the in	dicator or	confirm	the absence	of indicato	ors.)	
Depth	Matrix		Redox	Features						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹ l	Loc ²	Texture		Remarks	
0-8	2.5Y 3/3	100					SC	Fine		
8-24+	10YR 4/4	100					S			
	oncentration, D=De	pletion, RM=F	Reduced Matrix, MS	=Masked	Sand Grains	S.			Lining, M=Matrix	
Hydric Soil	Indicators:						Indicators	for Proble	matic Hydric So	oils³:
Histosol	(A1)			leyed Mat			Coast	Prairie Red	ox (A16)	
. —	oipedon (A2)			edox (S5)			_	Surface (S7)		
_	stic (A3)			Matrix (S6	,		_	-	lasses (F12)	
	en Sulfide (A4)			lucky Mine	, ,				Surface (TF12)	
I	d Layers (A5)			Sleyed Mat			Other	(Explain in F	Remarks)	
ı —	ick (A10)	(8.4.4)		Matrix (F						
	d Below Dark Surfac ark Surface (A12)	ce (A11)		ark Surfac I Dark Surf			3Indicators	of budrook	utio voqetation o	nd
_	Mucky Mineral (S1)			epression:	, ,				ytic vegetation a must be present	
ı —	icky Peat or Peat (S	(3)	Nedox B	epression	5 (1-0)				r problematic.	.,
	Layer (if observed)	-						distance o	problematic.	
Type:	,									
	ahaa):		_				Hydric Soil	Present?	Yes	$_{No}$ $\!$
Depth (in	cnes):									
Remarks:										
HYDROLO	GY									
	drology Indicators									
			d. ab a de all 4b at and	-1-3			0			
	cators (minimum of	one is require							s (minimum of tw	vo requirea)
_	Water (A1)		Water-Stair		s (B9)			face Soil Cra	, ,	
- "	iter Table (A2)		Aquatic Fa					inage Patter		
Saturation	, ,		True Aquat						iter Table (C2)	
l	larks (B1)		Hydrogen S					yfish Burrow		
Sedimer	nt Deposits (B2)		Oxidized R	hizosphere	es on Living	Roots (· · —		le on Aerial Imag	
Drift Dep	oosits (B3)		Presence of	f Reduced	I Iron (C4)		Stur	nted or Stres	ssed Plants (D1)	
Algal Ma	at or Crust (B4)		Recent Iron	n Reduction	n in Tilled S	oils (C6)		morphic Po		
Iron Dep	oosits (B5)		Thin Muck	Surface (C	(7)		FAC	C-Neutral Te	est (D5)	
Inundati	on Visible on Aerial	Imagery (B7)	Gauge or V	Vell Data (D9)					
Sparsely	/ Vegetated Concav	e Surface (B	B) Other (Exp	lain in Ren	narks)					
Field Obser	vations:									
Surface Wat	er Present?	/es No	\sim $ extstyle extstyle$	hes):						
Water Table	Present?	/es N	o X Depth (inc	hes):						
Saturation P			Depth (inc			Wetla	and Hydrolog	v Present?	Yes	$_{No}$ \times
(includes car	oillary fringe)									
Describe Re	corded Data (stream	n gauge, mon	itoring well, aerial p	hotos, pre	vious inspec	ctions), i	if available:			
Remarks:										

Project/Site: Otter Tail County Road E	3ike Trail		City/C	6-19-19				
Applicant/Owner: Houston Engineering	g Inc.				State: MN	State: MN Sampling Point: 13w		
Investigator(s): Hannah Erdmann			Section, Township, Range: S25-T136-R42					
Landform (hillslope, terrace, etc.): depres	ssion							
Slope (%): 3 Lat: _46.56339							983	
Soil Map Unit Name: Snellman sandy I					NWI classific			
Are climatic / hydrologic conditions on the								
Are Vegetation, Soil, or Hy					Normal Circumstances" p		X No	
Are Vegetation, Soil, or Hy					eded, explain any answe			
SUMMARY OF FINDINGS - Atta							eatures, etc.	
Hydrophytic Vegetation Present?	Yes X				· · · · · · · · · · · · · · · · · · ·	•	,	
Hydric Soil Present?	Yes			Is the Sampled				
Wetland Hydrology Present?	$_{Yes}$	No		within a Wetlar	nd? Yes_X	No	_	
Remarks:								
VEGETATION – Use scientific na	mes of pla	ants.						
- 30' radius		Absolute		inant Indicator	Dominance Test work	sheet:		
Tree Stratum (Plot size: 30' radius 1. Acer rubrum)	<u>% Cover</u> 40	Spec Y	cies? Status FAC	Number of Dominant S		(4)	
2 Fraxinus nigra		$\frac{10}{25}$	Ÿ	FACW	That Are OBL, FACW,	or FAC: 7	(A)	
Betula papyrifera		$\frac{25}{10}$	'n	FACU	Total Number of Domin		(5)	
					Species Across All Stra	ita: 0	(B)	
4			_		Percent of Dominant Sp		(4.45)	
5			= Tot	al Cover	That Are OBL, FACW,	or FAC: 07 70	(A/B)	
Sapling/Shrub Stratum (Plot size: 15' i	adius		- 100	ai Covei	Prevalence Index wor	ksheet:		
1. Betula papyrifera		10	<u>Y</u>	FACU_	Total % Cover of:	Multip	oly by:	
2. Fraxinus nigra		10	<u>Y</u>	<u>FACW</u>	OBL species	x 1 =		
3. Acer rubrum		5	<u>Y</u>	FAC	FACW species	x 2 =		
4					FAC species	x 3 =		
5					FACU species			
5' radius	,	<u>25</u>	= Tota	al Cover	UPL species			
Herb Stratum (Plot size: 5' radius 1. Calamagrostis canadensis)	45	Υ	OBL	Column Totals:	(A)	(B)	
Faurica turas a musica a		${20}$	Y	FAC	Prevalence Index	= B/A =		
2. Equisetum arvense 3. Equisetum hyemale		$\frac{20}{20}$	Ÿ		Hydrophytic Vegetation			
Solidago altissima		$\frac{10}{10}$	Ň	FACU	1 - Rapid Test for H		etation	
5 Polygonatum biflorum		 5	N	FACU	2 - Dominance Tes	st is >50%		
6.					3 - Prevalence Inde			
7					4 - Morphological A	Adaptations ¹ (Pro	vide supporting	
8.					data in Remarks	s or on a separate	e sheet)	
9.					Problematic Hydro	phytic Vegetation	¹ (Explain)	
10								
			= Tota	al Cover	¹ Indicators of hydric soi be present, unless distu			
Woody Vine Stratum (Plot size:)				be present, unless dist	Tibed of problems	alic.	
1					Hydrophytic			
2					Vegetation Present? Yes	s_X No_		
Demontos (Includo abeta asserbas de			= Tota	al Cover				
Remarks: (Include photo numbers here	or on a sepa	irate sneet.)						

SOIL Sampling Point: 13w

		e to the dep	in needed to docur			or commi	i tile absence t	of mulcators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Featur	Type ¹	_Loc ²	Texture	Remarks
0-6	2.5Y 2.5/1	100					SC	· · · · · · · · · · · · · · · · · · ·
6-14	10YR 5/2	95	7.5YR 5/6	- 	_ _		SC	
0-14	1011 3/2	_ =====================================	7.511 5/0			IVI		
l								
l ———								
¹ Type: C=Ce	oncentration, D=De	pletion, RM=	Reduced Matrix, M	S=Maske	ed Sand Gr	ains.		PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators f	for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy 0	Gleyed M	latrix (S4)		Coast P	Prairie Redox (A16)
. —	oipedon (A2)			Redox (S			_	urface (S7)
ı —	stic (A3)			d Matrix (. ,		_	inganese Masses (F12)
	en Sulfide (A4)				ineral (F1)			nallow Dark Surface (TF12)
_	Layers (A5)		Loamy	Gleyed N	Matrix (F2)		Other (B	Explain in Remarks)
ı —	ick (A10)	00 (411)	X Deplete					
	d Below Dark Surfa ark Surface (A12)	ce (ATT)	_		face (F6) Jurface (F7	`	3Indicators	of hydrophytic vegetation and
_	flucky Mineral (S1)			Depressi	,	,		hydrology must be present,
ı —	icky Peat or Peat (S3)		DOP! COO!	0110 (1 0)			disturbed or problematic.
	Layer (if observed							
Type:	,	,						
	ches):						Hydric Soil F	Present? Yes X No
Remarks:	ones)							
HYDROLO	GY							
Wetland Hy	drology Indicators	:						
Primary India	cators (minimum of	one is requi	red; check all that ap	ply)			<u>Secondar</u>	ry Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Lea	ves (B9)		Surfa	ace Soil Cracks (B6)
High Wa	iter Table (A2)		Aquatic Fa	auna (B1	3)		Drain	nage Patterns (B10)
Saturation	on (A3)		True Aqua	tic Plant	s (B14)		Dry-S	Season Water Table (C2)
Water M	larks (B1)		Hydrogen	Sulfide C	Odor (C1)		Cray	fish Burrows (C8)
Sedimer	nt Deposits (B2)		Oxidized F	Rhizosph	eres on Liv	ing Roots ((C3) Satur	ration Visible on Aerial Imagery (C9)
Drift Dep	posits (B3)		Presence	of Reduc	ed Iron (C	4)	_	ted or Stressed Plants (D1)
Algal Ma	at or Crust (B4)		Recent Iro	n Reduc	tion in Tille	d Soils (C6	_	morphic Position (D2)
Iron Dep	oosits (B5)		Thin Muck	Surface	(C7)		\times FAC-	Neutral Test (D5)
Inundati	on Visible on Aerial	Imagery (B	7) Gauge or	Well Data	a (D9)			
Sparsely	Vegetated Conca	/e Surface (l	38) Other (Exp	olain in R	emarks)			
Field Obser	vations:							
Surface Wat	er Present?	Yes	No <u>X</u> Depth (in	ches):		_		
Water Table	Present?	Yes	No X Depth (in	ches):		_		
Saturation P	resent?	Yes	No X Depth (in	ches):		Wetla	and Hydrology	Present? Yes X No
(includes car	oillary fringe)							
Describe Re	corded Data (strear	n gauge, mo	onitoring well, aerial	photos, p	revious in	spections),	if available:	
Remarks:								

Project/Site: Otter Tail County Road	Bike Trail	(City/Co	unty: Otte	er Tail		Sampli	ng Date: <u>6-19</u>	<u>}-19</u>
Applicant/Owner: Houston Engineer	ing Inc.					State: MN	Sampli	ng Point: <u>15u</u>	i
Investigator(s): Hannah Erdmann		:	Section	n, Township	p, Range:	S25-T136-R42	<u>-</u>		
Landform (hillslope, terrace, etc.): side	slope			Local r	relief (cond	ave, convex, non	e): <u>none</u>		
Slope (%): 5 Lat: 46.5631	19		Long: _	-95.9207	50		Datum:	NAD 1983	
Soil Map Unit Name: Snellman sand	y loam, 8 to 15 p	ercent slop	pes			NWI class	ification: <u>n</u>	ot listed	
Are climatic / hydrologic conditions on the	ne site typical for thi	is time of yea	ar? Ye	s_X_	No	(If no, explain ir	n Remarks.)	
Are Vegetation, Soil, or	Hydrology	significantly	disturb	ed?	Are "Norm	nal Circumstances	s" present?	Yes X	No
Are Vegetation, Soil, or	Hydrology	naturally pro	blemat	ic?	(If needed	, explain any ans	wers in Rei	marks.)	
SUMMARY OF FINDINGS - A	ttach site map	showing	samp	pling poi	int locat	ions, transec	ts, impo	rtant featu	res, etc.
Hydrophytic Vegetation Present?	Yes X		<u>.</u>			·			-
Hydric Soil Present?	Yes N	1 0 _X		ls the Sam	npled Area				
Wetland Hydrology Present?	Yes N	10 <u>X</u>		within a W	Vetland?	Yes	No	• <u>X</u>	
Remarks:									
VEGETATION – Use scientific r	names of plants								
Tree Stratum (Plot size:)	Absolute % Cover		nant Indica ies? Stat	tue	minance Test wo			
1					INU	mber of Dominan at Are OBL, FACV		2	(A)
2						al Number of Dor	minant		
3					1	ecies Across All S		2	(B)
4						cent of Dominant		4000/	
5					The	at Are OBL, FACV	V, or FAC:	100%	(A/B)
Sapling/Shrub Stratum (Plot size:)		- 10ta	Cover	Pre	valence Index w	orksheet:		
1					_	Total % Cover o			
2						L species			
3						CW species			
4						C species CU species			
5						L species			
_ ,)				Col	umn Totals:			
1. Phalaris arundinacea 2. Poa pratensis		- 50 50	Y	$\frac{FAC}{FAC}$		Prevalence Ind	Jan - D/A -	_	
-·			<u> </u>	FAC		drophytic Vegeta			
3 4					— '' '	1 - Rapid Test fo			1
5					$ \overline{\times}$	2 - Dominance			
6						3 - Prevalence I			
7					_	4 - Morphologica	al Adaptatio	ons ¹ (Provide s separate she	supporting
8						Problematic Hyd			
9					-	r resiemano rije	op.iiy.iio v	ogotation (Exp	piani,
10				Cover		dicators of hydric			gy must
Woody Vine Stratum (Plot size:)	100	- Tota	Cover	be	present, unless d	isturbed or	problematic.	
1					Ну	drophytic			
2						getation esent?	Yes X	_ No	
Remarks: (Include photo numbers her	o or on a nemerate		= Total	l Cover					-
Remarks: (include photo numbers her	e or on a separate	sileet.)							

SOIL Sampling Point: 15u

Depth	matrix	; to the de	p th needed to doc u Red	ox Featu		or confirm	ii tile absence of	mulcators.)
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_Loc ²	Texture	Remarks
0-5	7.5YR 4/2	100					sc	
5-13	2.5Y 6/3	100					S	
13-24+	2.5Y 8/2	 85	10YR 7/8	5	_ <u>C</u>	M	sc	
					_			
1Type: C=C	oncentration D=De	nletion RM	=Reduced Matrix, N	– – IS=Maski	ed Sand Gr	ains	² Location: F	PL=Pore Lining, M=Matrix.
Hydric Soil		piction, rav	i-reduced waths, is	IO-WIGSK	ca cana ci	airis.		r Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy	Gleyed N	//atrix (S4)		Coast Pra	airie Redox (A16)
Histic Ep	oipedon (A2)		Sandy	Redox (S	S5)		Dark Surf	face (S7)
_	stic (A3)			ed Matrix	. ,			ganese Masses (F12)
	en Sulfide (A4)			-	fineral (F1)			llow Dark Surface (TF12)
	d Layers (A5)				Matrix (F2)		Other (Ex	plain in Remarks)
_	ıck (A10) d Below Dark Surfa	ce (A11)		ed Matrix	rface (F6)			
	ark Surface (A12)	CC (A11)	_		Surface (F7)	3Indicators of	hydrophytic vegetation and
_	flucky Mineral (S1)			Depress	,	,		ydrology must be present,
5 cm Mu	icky Peat or Peat (S3)		·				sturbed or problematic.
Restrictive I	Layer (if observed):						
Туре:							Hydric Soil Pr	resent? Yes No _X_
Depth (in	ches):						11,411.0 0011	
HYDROLO	GY							
Wetland Hy	drology Indicators	:						
	•	one is requ	ired; check all that a	ipply)				Indicators (minimum of two required)
	Water (A1)		Water-St		, ,			e Soil Cracks (B6)
_ •	ater Table (A2)		Aquatic F	,	,			ge Patterns (B10)
Saturation	, ,		True Aqu				_ ′	eason Water Table (C2)
	larks (B1)		Hydroger					sh Burrows (C8)
	nt Deposits (B2)				neres on Liv	-		tion Visible on Aerial Imagery (C9)
	posits (B3)		_		ced Iron (C	,		d or Stressed Plants (D1)
	at or Crust (B4) posits (B5)		Thin Muc		ction in Tille	d Solls (Co		orphic Position (D2) leutral Test (D5)
	on Visible on Aerial	Imagery (E					<u>X</u> 1/A0-14	iodital rest (50)
_	y Vegetated Concav	• • • •	, <u> </u>		, ,			
Field Obser	vations:		,					
Surface Wat	er Present?	Yes	No X Depth (i	nches): _		_		
Water Table	Present?	Yes	No X Depth (i	nches): _		_		
Saturation P		Yes	No X Depth (i	nches): _		Wetl	and Hydrology P	Present? Yes No
	oillary fringe) corded Data (strear	n gauge, m	onitoring well, aeria	photos.	previous in	spections).	if available:	
	(234)	J	J ,	, /		, ,		
Remarks:								

Project/Site: Otter Tail County Road Bike Trail	(City/County: Otter Tail Samp					Date: <u>6-18-1</u>	9
Applicant/Owner: Houston Engineering Inc.		State: MN Sampling Po						
Investigator(s): Hannah Erdmann	;	Section, Township, Range: S25-T136-R42						
Landform (hillslope, terrace, etc.):			L	ocal relief (concave, convex, none):			
Slope (%): Lat: 46.564569		Long:	-95.9	06830		Datum: N	NAD 1983	
Soil Map Unit Name:								
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology si					Normal Circumstances" p		vas X N	
								, ——
Are Vegetation, Soil, or Hydrology no SUMMARY OF FINDINGS - Attach site map s				•	eded, explain any answer		,	s. etc.
Hydrophytic Vegetation Present? Yes X No				, ,	,			,
Hydric Soil Present? Yes No	, X		ls the	Sampled	Area			
Wetland Hydrology Present? Yes No	5 X		withi	n a Wetlan	d? Yes	No_	_X_	
Remarks:								
VEGETATION – Use scientific names of plants.								
	Absolute	Domi	inant	Indicator	Dominance Test works	sheet:		
Tree Stratum (Plot size:)	% Cover				Number of Dominant Sp			
1					That Are OBL, FACW, o	or FAC:	2	(A)
2					Total Number of Domina	ant		
3				- 1	Species Across All Strat	la:	3	(B)
4					Percent of Dominant Sp	ecies		
5					That Are OBL, FACW, o	or FAC:	66%	(A/B)
Sapling/Shrub Stratum (Plot size:)		= Tota	al Cove	er	Prevalence Index work	sheet:		
1					Total % Cover of:		Multiply by:	
2.					OBL species		=	_
3.					FACW species			
4.					FAC species	x 3	=	_
5				- 1	FACU species	x 4	· =	_
					UPL species	x 5	=	_
Herb Stratum (Plot size: 5' radius)	40	V		FACU	Column Totals:	(A)		_ (B)
1. Cirsium arvense 2 Phalaris arundinacea	15	<u>'</u>		FACW	Prevalence Index	- B/A -		
2. Prialaris arundinacea Poa pratensis	15	<u>'</u>	_	FAC	Hydrophytic Vegetatio			
Solidago gigantea	10	N		FACW	1 - Rapid Test for H			
5. Setaria pumila	10	N		FAC	2 - Dominance Test			
6. Asclepias syriaca	10	N		FACU	3 - Prevalence Inde			
7	,				4 - Morphological A	daptations	s¹ (Provide sup	porting
8.					data in Remarks			
9.					Problematic Hydrop	hytic Vege	etation¹ (Explai	n)
10.					1			
Monday Vina Stratum (Diet size	100	= Tota	al Cove	er	¹ Indicators of hydric soil be present, unless distu			nust
Woody Vine Stratum (Plot size:)								
1 2					Hydrophytic Vegetation			
		= Tota	al Cov		Present? Yes	,_X_	No	
Remarks: (Include photo numbers here or on a separate s		1018	., 550					
	•							
I .								

SOIL Sampling Point: 16u

	cription: (Describe	to the de	pth needed to docu			or confirm	n the absence of i	ndicators.)	
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Feature %	Type ¹	_Loc²	Texture	Remarks	
0-24	10YR 4/3		Color (moist)		_ rype_		SC	Remarks	
24-36+	10YR 4/3	90	10YR 5/8	10			SC -		
24-30+	101K 4/3		10113/6	- 10			<u>sc</u>		
						- —			
1							2		
Hydric Soil		pletion, RN	1=Reduced Matrix, M	S=Maske	d Sand G	rains.		_=Pore Lining, M=Matrix. Problematic Hydric Soils ³	
			Sandy	Clayed M	atriv (CA)			rie Redox (A16)	i
Histosol	oipedon (A2)			Sieyed M Redox (S	atrix (S4)		Coast Prai	. ,	
							_	anese Masses (F12)	
Black Histic (A3) Stripped Matrix (S6) Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1)								ow Dark Surface (TF12)	
Stratified	d Layers (A5)		Loamy	Gleyed N	latrix (F2)		Other (Exp	lain in Remarks)	
ı —	ıck (A10)			d Matrix	. ,				
	d Below Dark Surfa	ce (A11)	_	Dark Surf	. ,		31		
_	ark Surface (A12)				urface (F7)		hydrophytic vegetation and drology must be present,	
_ ′	Sandy Mucky Mineral (S1) Redox Depressions (F8) 5 cm Mucky Peat or Peat (S3)							urbed or problematic.	
	m Mucky Peat or Peat (S3) ctive Layer (if observed):								
Type:									\ <u></u>
Depth (inc	ches):						Hydric Soil Pre	sent? Yes No	<u>×</u>
Remarks:									
HYDROLO	GY								
Wetland Hyd	drology Indicators	:							
	0,		ired; check all that a	(ylac			Secondary In	ndicators (minimum of two re	equired)
	Water (A1)		Water-Sta	. , ,	ves (B9)			Soil Cracks (B6)	
	ater Table (A2)		Aquatic Fa	auna (B1	3)			e Patterns (B10)	
Saturation	on (A3)		True Aqua				Dry-Sea	son Water Table (C2)	
Water M	larks (B1)		Hydrogen	Sulfide C	dor (C1)		Crayfish	Burrows (C8)	
Sedimer	nt Deposits (B2)		Oxidized I	Rhizosph	eres on Li	ving Roots	(C3) Saturation	on Visible on Aerial Imagery	(C9)
Drift Dep	oosits (B3)		Presence	of Reduc	ed Iron (C	4)	Stunted	or Stressed Plants (D1)	
ı —	at or Crust (B4)		Recent Iro	n Reduc	tion in Tille	ed Soils (Ce	· —	phic Position (D2)	
l —	posits (B5)		Thin Muck				FAC-Ne	utral Test (D5)	
_	on Visible on Aerial	• • • •	, <u> </u>						
	y Vegetated Concav	e Surface	(B8) Other (Ex	plain in R	emarks)				
Field Obser		/ 00	No X Depth (in	ahaa):					
Surface Water			No X Depth (in						
Water Table			No X Depth (in			_	land Hudralagu Dr	acant? Vac Na	_X_
Saturation Pi (includes cap		res	No Depth (in	cries)		_ well	and Hydrology Pr	esent? Yes No	
		n gauge, m	nonitoring well, aerial	photos, p	revious in	spections),	if available:		
Remarks:									

Project/Site: Otter Tail County Road E	(City/County: Otter Tail Sampling Date: 6-18-19						
Applicant/Owner: Houston Engineering	g Inc.			State: MN Sampling Point: 16w				
Investigator(s): Hannah Erdmann			Section, Township, Range: S25-T136-R42					
Landform (hillslope, terrace, etc.): depres	ssion			Local relief	(concave, convex, none):	concave		
Slope (%): 2 Lat: 46.56456	9		Long: <u>-95.906830</u> Datum: NAD 1983				1983	
Soil Map Unit Name: Bluffcreak-Clearri					NWI classific			
Are climatic / hydrologic conditions on the site typical for this time of								
Are Vegetation, Soil, or Hydrology significan					Normal Circumstances" p		X No	
Are Vegetation, Soil, or Hydrology naturally p					eded, explain any answe			
SUMMARY OF FINDINGS - Atta			ocations, transects	, important	features, etc.			
Hydrophytic Vegetation Present?	Yes X	No				-	-	
Hydric Soil Present?	Yes X	No		Is the Sampled				
Wetland Hydrology Present?	Yes X	No		within a Wetlar	nd? Yes <u>X</u>	No	_	
Remarks:								
VEGETATION – Use scientific na	mes of plan	nts.						
20' radius		Absolute		inant Indicator	Dominance Test work	sheet:		
Tree Stratum (Plot size: 30' radius)	<u>% Cover</u> 15	Spec Y	<u>Status</u> FACW	Number of Dominant S			
1. Ulmus americana		$-\frac{15}{15}$	<u>'</u>	FAC	That Are OBL, FACW,	or FAC: 7	(A)	
2. Populus tremuloides		$-\frac{15}{10}$	Y	FAC FAC	Total Number of Domin			
3. Quercus macrocarpa		$-\frac{10}{10}$	Ϋ́	FACW	Species Across All Stra	ata: 8	(B)	
4. Fraxinus pennsylvanica			<u>'</u>	FACVV	Percent of Dominant Sp	pecies		
5			_		That Are OBL, FACW,	or FAC: 87.5	(A/B)	
Sapling/Shrub Stratum (Plot size: 15' I	radius ,	50	= Tota	al Cover	Prevalence Index wor	ksheet:		
1. Rosa arkansana		60	Υ	FACU	Total % Cover of:		ply by:	
2. Fraxinus pennsylvanica			N	FACW	OBL species			
3. Ulmus americanum		10	N	FACW	FACW species			
4. Cornus alba			N	FACW	FAC species			
5.					FACU species			
		90	= Tota	al Cover	UPL species			
Herb Stratum (Plot size: 5' radius)				Column Totals:			
1. Toxicodendron radicans		40	<u>Y</u>	<u>FAC</u>				
2. Anemone canadensis		<u>15</u>	<u>Y</u>	FACW	Prevalence Index			
Phalaris arundinacea		15	<u>Y</u>	FACW	Hydrophytic Vegetation			
4. Equisetum hyemale		$-\frac{10}{12}$	N	— FACW	1 - Rapid Test for I	Hydrophytic Veg	etation	
5. Cirsium arvense		10	_N_	FACU_	× 2 - Dominance Tes			
6					3 - Prevalence Inde			
7					4 - Morphological A	Adaptations' (Pro s or on a separa	ovide supporting te sheet)	
8					Problematic Hydro		·	
9			_			priyac vegetalie	(Explain)	
10			_		¹ Indicators of hydric soi	l and wetland hy	drology must	
Woody Vine Stratum (Plot size: 15' ra	dius ,	100	= Tota	al Cover	be present, unless distu			
1. Vitis riparia		20	Υ	FACW				
2.			<u> </u>		Hydrophytic Vegetation			
		20	= Tota	al Cover	Present? Ye	s_X No_		
Remarks: (Include photo numbers here	or on a separa			3010.	I			
	•							

SOIL Sampling Point: 16w

Depth	ription: (Descrii Matrix		oth needed to docu Red	ment the ox Featur		or confirm	the absence of	of indicators.)
(inches)	Color (moist)	%	Color (moist)	<u> </u>	Type ¹	Loc ²	Texture	Remarks
0-3	2.5Y 4/2	20	2.5Y 6/6	20	С	M	SC	
3-12	2.5Y 5/2	95	2.5Y 6/6	5	_ <u>C</u>		SC	
12-20	2.5Y 5/3		2.5Y 6/6	2	_ C		SC	
1							2,	
Hydric Soil I		epietion, Riv	=Reduced Matrix, M	S=Maske	ed Sand G	rains.		PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :
Histosol			Sandy	Gleved M	Matrix (S4)			Prairie Redox (A16)
_	pipedon (A2)			Redox (S			_	urface (S7)
Black His				d Matrix				inganese Masses (F12)
Hydroge	n Sulfide (A4)		Loamy	Mucky N	lineral (F1))	Very Sh	nallow Dark Surface (TF12)
Stratified	Layers (A5)		Loamy	Gleyed N	Matrix (F2)		Other (E	Explain in Remarks)
2 cm Mu	, ,		X Deplete					
	Below Dark Surf	face (A11)	_		face (F6)		3	
_	irk Surface (A12)				Surface (F7	')		of hydrophytic vegetation and
	lucky Mineral (S1	•	Redox	Depressi	ions (F8)			hydrology must be present,
	cky Peat or Peat ayer (if observe						uniess	disturbed or problematic.
Type:	ayer (ii observe	u).						
	ches):						Hydric Soil F	Present? Yes X No
Remarks:	es)							
HYDROLO	GY							
Wetland Hyd	drology Indicator	rs:						
Primary Indic	ators (minimum o	of one is requ	ired; check all that a	pply)			<u>Secondar</u>	y Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ained Lea	ives (B9)		Surfa	ace Soil Cracks (B6)
High Wa	ter Table (A2)		Aquatic F	auna (B1	3)		_	nage Patterns (B10)
Saturatio	, ,		True Aqu					Season Water Table (C2)
	arks (B1)		Hydrogen					fish Burrows (C8)
	t Deposits (B2)					ving Roots		ration Visible on Aerial Imagery (C9)
	osits (B3)				ced Iron (C			ted or Stressed Plants (D1)
	t or Crust (B4)					ed Soils (C6		morphic Position (D2)
	osits (B5)		Thin Mucl		` '		X FAC-	Neutral Test (D5)
_	on Visible on Aeri	0 , (, <u> </u>		, ,			
-	Vegetated Conc	ave Surface	(B8) Other (Ex	plain in F	Remarks)			
Field Observ			🗸					
Surface Water			No X Depth (ir					
Water Table	Present?		No X Depth (ir					~
Saturation Pr (includes cap		Yes	No X Depth (ir	nches): _		Wetl	and Hydrology	Present? Yes NoX
		am gauge, m	onitoring well, aerial	photos, p	orevious in	spections),	if available:	
Remarks:								

Project/Site: Otter Tail County Road Bike Trail	(City/County: Otter Tail Sampling Date: 6-19-19					
Applicant/Owner: Houston Engineering Inc.		State: MN Sampling Point: 18u					
Investigator(s): Hannah Erdmann	:	Sectio	n, Tov	vnship, Rar	nge: S29-T136-R41		
Landform (hillslope, terrace, etc.): sideslope			L	ocal relief ((concave, convex, none): none		
Slope (%): 2 Lat: 46.564410							
Soil Map Unit Name: Oakcreek loam					NWI classification: not listed		
Are climatic / hydrologic conditions on the site typical for thi	is time of you	ar2 V					
					Normal Circumstances" present? Yes X No		
Are Vegetation, Soil, or Hydrology :					· — —		
Are Vegetation, Soil, or Hydrology					eded, explain any answers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map		Sam	biini	g point ic	ocations, transects, important leatures, etc.		
Hydrophytic Vegetation Present? Yes X	10 <u> </u>		le the	e Sampled	Area		
Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N	10 X			n a Wetlan			
Remarks:	<u> </u>				····		
Tremains.							
VECETATION Lies esigntific names of plants							
VEGETATION – Use scientific names of plants				In direction	I Boundaries Total constant		
Tree Stratum (Plot size:)	Absolute % Cover			Indicator Status	Dominance Test worksheet:		
1					Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)		
2.					Total Number of Dominant		
3					Species Across All Strata: 2 (B)		
4					Percent of Dominant Species		
5					That Are OBL, FACW, or FAC: 100% (A/B)		
Santing/Charle Stratum (Diet sing)		= Tota	al Cov	er	Prevalence Index worksheet:		
Sapling/Shrub Stratum (Plot size:)					Total % Cover of: Multiply by:		
1					OBL species x 1 =		
3					FACW species x 2 =		
4					FAC species x 3 =		
5					FACU species x 4 =		
					UPL species x 5 =		
Herb Stratum (Plot size: 5' radius	5 0	V		EA C\\\	Column Totals: (A) (B)		
1. Phalaris arundinacea Poa pratensis	- 50	<u>'</u>		FACW_	Prevalence Index = B/A =		
	_ <u>50</u>			FAC_	Hydrophytic Vegetation Indicators:		
3					1 - Rapid Test for Hydrophytic Vegetation		
4. 5.					2 - Dominance Test is >50%		
6.					3 - Prevalence Index is ≤3.0 ¹		
7					4 - Morphological Adaptations ¹ (Provide supporting		
8					data in Remarks or on a separate sheet)		
9.					Problematic Hydrophytic Vegetation ¹ (Explain)		
10					1		
W 1 15 20 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	100	= Tota	al Cov	er	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
Woody Vine Stratum (Plot size:)							
1					Hydrophytic Vegetation		
2			al Cov	 er	Present? Yes X No		
Remarks: (Include photo numbers here or on a separate		- 1018	000				
	•						
I .							

SOIL Sampling Point: 18u

Depth	Matrix	e to the dep	th needed to document the indicator or Redox Features	Committee	ne absence	of indicators.)
(inches)	Color (moist)	%		Loc ²	Texture	Remarks
0-12	2.5Y 2.5/1	100		;	SC	
12-24	2.5Y 3/2	100			S	
1					2	
		pletion, RM=	Reduced Matrix, MS=Masked Sand Grain	ıs.		: PL=Pore Lining, M=Matrix.
Hydric Soil			0			for Problematic Hydric Soils ³ :
Histosol	. ,		Sandy Gleyed Matrix (S4)		_	Prairie Redox (A16)
Histic Ep	oipedon (A2)		Sandy Redox (S5) Stripped Matrix (S6)		_	urface (S7) anganese Masses (F12)
_	en Sulfide (A4)		Loamy Mucky Mineral (F1)			hallow Dark Surface (TF12)
	d Layers (A5)		Loamy Gleyed Matrix (F2)			Explain in Remarks)
	ıck (A10)		Depleted Matrix (F3)			,,
Depleted	d Below Dark Surfa	ce (A11)	Redox Dark Surface (F6)			
Thick Da	ark Surface (A12)		Depleted Dark Surface (F7)		3Indicators	of hydrophytic vegetation and
	lucky Mineral (S1)		Redox Depressions (F8)			d hydrology must be present,
	icky Peat or Peat (unless	disturbed or problematic.
	Layer (if observed):				
Type:					Hydric Soil	Present? Yes No X
Depth (in	ches):		<u> </u>		riyanic con	1105cm: 105 110
Remarks:						
HYDROLO	GY					
Wetland Hy	drology Indicators	s:				
Primary India	cators (minimum of	one is requir	ed; check all that apply)		Seconda	ry Indicators (minimum of two required)
Surface	Water (A1)		Water-Stained Leaves (B9)		Surf	ace Soil Cracks (B6)
	ater Table (A2)		Aquatic Fauna (B13)			nage Patterns (B10)
Saturation	, ,		True Aquatic Plants (B14)		_	Season Water Table (C2)
Water M	larks (B1)		Hydrogen Sulfide Odor (C1)			rfish Burrows (C8)
	nt Deposits (B2)		Oxidized Rhizospheres on Living	g Roots (C		ration Visible on Aerial Imagery (C9)
Drift Dep	posits (B3)		Presence of Reduced Iron (C4)		Stur	ited or Stressed Plants (D1)
Algal Ma	at or Crust (B4)		Recent Iron Reduction in Tilled S	Soils (C6)	Geo	morphic Position (D2)
Iron Dep	oosits (B5)		Thin Muck Surface (C7)		X FAC	-Neutral Test (D5)
Inundati	on Visible on Aeria	I Imagery (B7	') Gauge or Well Data (D9)			
Sparsely	Vegetated Conca	ve Surface (E	38) Other (Explain in Remarks)			
Field Obser	vations:					
Surface Wat	er Present?	Yes 1	No X Depth (inches):	.		
Water Table	Present?	Yes 1	No _X Depth (inches):			
Saturation P			No X Depth (inches):		d Hydrology	Present? Yes No X
(includes car	oillary fringe)					
Describe Re	corded Data (strea	m gauge, mo	nitoring well, aerial photos, previous inspe	ections), if	available:	
Remarks:						
iveillative.						
Í						

Project/Site: Otter Tail County Road Bike Trail		City/County: Otter Tail Sampling Date: 6-19-19					
Applicant/Owner: Houston Engineering Inc.		State: MN Sampling Point: 18w					
Investigator(s): Hannah Erdmann	;	Section,	Township, Ra	nge: S29-T136-R41			
Landform (hillslope, terrace, etc.): depression			Local relief	(concave, convex, none): Concave			
Slope (%): 0-1 Lat: 46.564420		Long:	95.874933	Datum: NAD 1983			
Soil Map Unit Name: Oakcreek loam		NWI classification: PEM1Ad					
Are climatic / hydrologic conditions on the site typical for this	time of year	ar? Yes	X_ No_	(If no, explain in Remarks.)			
Are Vegetation, Soil, or Hydrology signature.	gnificantly	disturbe	d? Are	'Normal Circumstances" present? Yes X No			
Are Vegetation, Soil, or Hydrology na	aturally prol	blematio	c? (If ne	eeded, explain any answers in Remarks.)			
SUMMARY OF FINDINGS - Attach site map s	howing	samp	ling point l	ocations, transects, important features, etc.			
Hydrophytic Vegetation Present? Yes X No)						
Hydric Soil Present? Yes X No			s the Sampled				
Wetland Hydrology Present? Yes X No		v	vithin a Wetlar	nd? Yes No			
Remarks:							
VEGETATION – Use scientific names of plants.							
VEGETATION – Ose scientific flames of plants.	Absolute	Domin	ant Indicator	Dominance Test worksheet:			
Tree Stratum (Plot size:)			es? Status	Number of Dominant Species			
1				That Are OBL, FACW, or FAC: 1 (A)			
2				Total Number of Dominant Species Across All Strata: 2 (B)			
3. 4.				Species Across All Strata: 2 (B)			
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)			
			Cover	(VB)			
Sapling/Shrub Stratum (Plot size:)				Prevalence Index worksheet:			
1							
2 3				FACW species 50 $\times 2 = 100$			
4				FAC species x 3 =			
5				FACU species _50			
		= Total	Cover	UPL species x 5 =			
Herb Stratum (Plot size: 5' radius) 1. Phalaris arundinacea	50	Υ	FACW	Column Totals: 100 (A) 300 (B)			
2 Carex bicknellii	50	Y		Prevalence Index = B/A = 3			
3				Hydrophytic Vegetation Indicators:			
4				1 - Rapid Test for Hydrophytic Vegetation			
5				2 - Dominance Test is >50%			
6				X 3 - Prevalence Index is ≤3.0¹			
7				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)			
8				Problematic Hydrophytic Vegetation¹ (Explain)			
9							
	100	= Total	Cover	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Woody Vine Stratum (Plot size:)				be present, unless distarged of presidentation			
1				Hydrophytic Vegetation			
2		= Total	Cover	Present? Yes X No			
Remarks: (Include photo numbers here or on a separate sl		, otal		1			

SOIL Sampling Point: 18w

Profile Desc	cription: (Describe	to the dep	th needed to docu	ment the	indicator	or confin	m the absence of indicators.)			
Depth	Matrix		Redo	x Feature	es		_			
(inches)	Color (moist)	%	Color (moist)	%_	_Type ¹	_Loc ²				
0-8	2.5YR 2.5/1	95	7.5YR 5/8	5	<u>C</u>	M	SL			
8-12	10YR 4/2	90	5YR 5/8	10	С	M	S			
12-20	2.5Y 2.5/1	95	7.5YR 5/8	- 5						
				- —						
				- ——						
¹ Type: C=C	oncentration, D=De	pletion, RM	=Reduced Matrix, M	S=Maske	d Sand Gr	ains.	² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil	Indicators:						Indicators for Problematic Hydric Soils ³ :			
Histosol	l (A1)		Sandy	Gleyed M	atrix (S4)		Coast Prairie Redox (A16)			
I —	pipedon (A2)			Redox (S			Dark Surface (S7)			
ı —	istic (A3)			d Matrix (,		Iron-Manganese Masses (F12)			
1	en Sulfide (A4)				ineral (F1)		Very Shallow Dark Surface (TF12)			
	d Layers (A5)			-	latrix (F2)		Other (Explain in Remarks)			
I —	uck (A10) d Bolow Dork Surfo	oo (A11)		ed Matrix	` '					
ı — ·	d Below Dark Surfa ark Surface (A12)	æ (A11)	X Redox		. ,	`	³ Indicators of hydrophytic vegetation and			
I —	Mucky Mineral (S1)			Depression	urface (F7)	wetland hydrology must be present,			
1 —	ucky Peat or Peat (S	:3)	Kedox	Depressi) IIS (FO)		unless disturbed or problematic.			
	Layer (if observed)	-					unless distarbed of problematic.			
Type:										
1	ches):						Hydric Soil Present? Yes X No			
Remarks:										
HYDROLO	GY									
Wetland Hy	drology Indicators	:								
Primary Indi	cators (minimum of	one is requi	red; check all that a	oply)			Secondary Indicators (minimum of two required			
Surface	Water (A1)		Water-Sta	ined Lea	ves (B9)		Surface Soil Cracks (B6)			
High Wa	ater Table (A2)		Aquatic Fa	auna (B1	3)		Drainage Patterns (B10)			
Saturati	on (A3)		True Aqua				Dry-Season Water Table (C2)			
Water M	, ,		Hydrogen				Crayfish Burrows (C8)			
Sedime	nt Deposits (B2)		Oxidized			ing Roots				
Drift De	posits (B3)		Presence	of Reduc	ed Iron (C	4)	Stunted or Stressed Plants (D1)			
I —	at or Crust (B4)		Recent Iro							
Iron Dep			Thin Muck				X FAC-Neutral Test (D5)			
	ion Visible on Aerial	Imagery (B					_			
Sparsel	y Vegetated Concav	e Surface (B8) Other (Ex							
Field Obser	vations:									
Surface Wat	ter Present?	res	No X Depth (in	ches):		_				
Water Table	Present?	res	No X Depth (in	iches):		_				
Saturation P		res	No X Depth (in	iches):		Wet	tland Hydrology Present? Yes 🔀 No			
	pillary fringe) corded Data (strear	n gauge, mo	onitoring well, aerial	photos, p	revious in	spections)), if available:			
	,		-							
Remarks:										

Project/Site: Otter Tail County Road Bike Trail	(City/County: Otter Tail Sampling Date: 6-19-19					
Applicant/Owner: Houston Engineering Inc.		State: MN Sampling Point: 21u					
Investigator(s): Hannah Erdmann	:	Sectio	n, Tov	vnship, Rar	nge: <u>S21-T136-R41</u>		
Landform (hillslope, terrace, etc.): sideslope			L	ocal relief ((concave, convex, none): none		
Slope (%): 8 Lat: 46.583507		Long:	-95.8	354811	Datum: NAD 1983		
Soil Map Unit Name: Lide-Two Inlets complex, 1 to 8							
Are climatic / hydrologic conditions on the site typical for th				,			
Are Vegetation, Soil, or Hydrology					Normal Circumstances" present? Yes X No		
Are Vegetation, Soil, or Hydrology					eded, explain any answers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map							
Hydrophytic Vegetation Present? Yes 1	No_X						
Hydric Soil Present? Yes 1	No X			e Sampled			
Wetland Hydrology Present? Yes !	No <u>X</u>		withi	n a Wetlan	d? Yes No _X		
Remarks:							
VEGETATION – Use scientific names of plants	S.						
Trac Stratum (Diet size)	Absolute			Indicator	Dominance Test worksheet:		
Tree Stratum (Plot size:) 1					Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)		
2					Total Number of Dominant		
3					Species Across All Strata: 2 (B)		
4					Percent of Dominant Species That Are ORL FACW or FAC: 50% (A/B)		
5			al Cov		That Are OBL, FACW, or FAC: 50% (A/B)		
Sapling/Shrub Stratum (Plot size:)		- 1018	ai COV	CI	Prevalence Index worksheet:		
1					Total % Cover of: Multiply by:		
2					OBL species x 1 =		
3					FACW species x 2 =		
4					FAC species x 3 =		
5					FACU species x 4 =		
Herb Stratum (Plot size: 5' radius)		= Tota	al Cov	er	UPL species x 5 =		
1. Bromus inermis	70	Υ		FACU	Column Totals: (A) (B)		
2. Poa pratensis	20	Υ		FAC	Prevalence Index = B/A =		
3. Carex bicknellii	_ 10	<u>N</u>		FACU_	Hydrophytic Vegetation Indicators:		
4					1 - Rapid Test for Hydrophytic Vegetation		
5					2 - Dominance Test is >50%		
6					3 - Prevalence Index is ≤3.0¹		
7					 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) 		
8					Problematic Hydrophytic Vegetation ¹ (Explain)		
9							
10			ol Cov		¹ Indicators of hydric soil and wetland hydrology must		
Woody Vine Stratum (Plot size:)		- 1018	11 000	CI	be present, unless disturbed or problematic.		
1					Hydrophytic		
2					Vegetation		
		= Tota	al Cov	er	165 NO / N		
Remarks: (Include photo numbers here or on a separate	sheet.)						

SOIL	Sampling Point: 21u

Depth	Matrix			dox Featur		1 2	T	D
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-3	10YR 4/2	_ 100					<u>s</u>	
3-18	10YR 4/3	_ 98	2.5Y 5/6	_ 2	_ <u>c</u>		<u>s</u>	
¹ Type: C=Ce	oncentration, D=De	pletion. RM	M=Reduced Matrix.	— ——— MS=Maske	d Sand G	ains.	² Location:	PL=Pore Lining, M=Matrix.
Hydric Soil								or Problematic Hydric Soils³:
Histosol	(A1)		Sand	y Gleyed M	atrix (S4)		Coast Pr	rairie Redox (A16)
_	oipedon (A2)			y Redox (S			_	rface (S7)
Black Hi	stic (A3)		Stripp	oed Matrix (S6)		Iron-Mar	nganese Masses (F12)
Hydroge	en Sulfide (A4)		Loam	ny Mucky M	ineral (F1)		Very Sha	allow Dark Surface (TF12)
Stratified	d Layers (A5)		Loam	ny Gleyed N	1atrix (F2)		Other (E	xplain in Remarks)
_	ıck (A10)			eted Matrix	. ,			
	d Below Dark Surfa	ce (A11)	_	x Dark Sur	. ,		2	
_	ark Surface (A12)			eted Dark S	•)		f hydrophytic vegetation and
_ ′	Mucky Mineral (S1)	22)	Redo	x Depressi	ons (F8)			hydrology must be present, isturbed or problematic.
	icky Peat or Peat (S Layer (if observed						unless d	isturbed or problematic.
_	Layer (II Observed	,.						
Type:	ahaa):						Hydric Soil P	resent? Yes No _X_
	ches):							
Remarks:								
Remarks:	GY							
Remarks:	GY drology Indicators	::	iradi abaak all that	onely)			Secondary	Undicators (minimum of two requires
Remarks: IYDROLO Wetland Hyderimary India	GY drology Indicators cators (minimum of	::						/ Indicators (minimum of two required
Remarks: HYDROLO Wetland Hydelight Primary Indice Surface	GY drology Indicators cators (minimum of Water (A1)	::	Water-S	Stained Lea	, ,		Surfac	ce Soil Cracks (B6)
Remarks: HYDROLO Wetland Hyder Primary Indice Surface High Wa	GY drology Indicators cators (minimum of Water (A1) ater Table (A2)	::	Water-S Aquatic	Stained Lea Fauna (B1	3)		Surfac	ce Soil Cracks (B6) age Patterns (B10)
Remarks: HYDROLO Wetland Hyder Primary Indice Surface High Watter Saturation	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3)	::	Water-S Aquatic True Ad	Stained Lea Fauna (B1 juatic Plant	3) s (B14)		Surface Draina Dry-S	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2)
HYDROLO Wetland Hyde Primary India Surface High Wa Saturatia Water M	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1)	::	Water-8 Aquatic True Ad Hydrogo	Stained Lea Fauna (B1 Juatic Plant en Sulfide (3) s (B14) Odor (C1)		Surface Draina Dry-S Crayfi	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8)
HYDROLO Wetland Hydeliand Hydeliand Surface High Water Mater	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2)	::	Water-8 Aquatic True Ac Hydrogo Oxidize	Stained Lea Fauna (B1 Juatic Plant en Sulfide (d Rhizosph	3) s (B14) Odor (C1) eres on Liv	•	Surface Draina Dry-S Crayfi (C3) Satura	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9)
HYDROLO Wetland Hyd Primary India Surface High Wa Saturatia Water Mater	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3)	::	Water-S Aquatic True Ac Hydrogo Oxidize Presence	Stained Lea Fauna (B1 juatic Plant en Sulfide (d Rhizosph ce of Reduc	3) s (B14) Odor (C1) eres on Lived Iron (C	4)	Surface Drains Dry-S Crayfi (C3) Satura Stunte	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1)
HYDROLO Wetland Hydeligh Water M Saturation Water M Sedimer Drift Dep Algal Ma	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4)	::	Water-S Aquatic True Ac Hydroge Oxidize Presence Recent	Stained Lea Fauna (B1 Juatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc	3) s (B14) Odor (C1) eres on Lived Iron (C	4)	Surface Draina Dry-S Crayfi (C3) Satura Stunte 6) Geom	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) torphic Position (D2)
HYDROLO Wetland Hyde Primary India Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	s: one is requ	Water-S Aquatic True Ac Hydrogo Oxidize Presence Recent Thin Mo	Stained Lea Fauna (B1 juatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7)	4)	Surface Draina Dry-S Crayfi (C3) Satura Stunte 6) Geom	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1)
AYDROLO Wetland Hyde Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial	:: one is requ	Water-S Aquatic True Ac Hydrogo Oxidize Presenc Recent Thin Mu	Stained Lea Fauna (B1 juatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface or Well Dat	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4)	Surface Draina Dry-S Crayfi (C3) Satura Stunte 6) Geom	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) torphic Position (D2)
HYDROLO Wetland Hyde Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatia Sparsely	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aerial of Vegetated Concar	:: one is requ	Water-S Aquatic True Ac Hydrogo Oxidize Presenc Recent Thin Mu	Stained Lea Fauna (B1 juatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4)	Surface Draina Dry-S Crayfi (C3) Satura Stunte 6) Geom	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) torphic Position (D2)
HYDROLO Wetland Hyde Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatia Sparsely	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aerial of Vegetated Concar vations:	one is requ one is requ Imagery (I	Water-S Aquatic True Ac Hydrogo Oxidize Presenc Recent Thin Mc Gauge (B8) Other (B	Stained Lea Fauna (B1 juatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface or Well Dat Explain in R	3) s (B14) odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (Ce	Surface Draina Dry-S Crayfi (C3) Satura Stunte 6) Geom	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) torphic Position (D2)
HYDROLO Wetland Hyde Primary Indice Surface High Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati Sparsely Field Obser Surface Water	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aerial v Vegetated Concar vations: er Present?	one is required in the second	Water-S Aquatic True Ac Hydroge Oxidize Presence Recent Thin Mc 37) Gauge ((B8) Other (B	Stained Lea Fauna (B1 juatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface or Well Dat Explain in R	3) s (B14) odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) od Soils (Co	Surface Draina Dry-S Crayfi (C3) Satura Stunte 6) Geom	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) torphic Position (D2)
Nemarks: HYDROLO Wetland Hyder Primary India Surface High Water Management Sedimer Drift Dep Algal Management Iron Dep Inundati Sparsely Field Obser Surface Water Water Table	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aerial of Vegetated Concar vations: er Present? Present?	one is required in the second	Water-S Aquatic True Ad Hydrogo Oxidize Presend Recent Thin Mu 37) Gauge (B8) Other (B	Stained Lea Fauna (B1 juatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface or Well Dat Explain in R (inches): (inches):	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (Ce	Surface Surface Draina Dry-S Crayfi (C3) Satura Stunte FAC-1	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) elorphic Position (D2) Neutral Test (D5)
Nemarks: HYDROLO Wetland Hyder Primary India Surface High Water Manager Sedimer Drift Dep Algal Manager Iron Dep Inundati Sparsely Field Obser Surface Water Water Table Saturation P	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial v Vegetated Concavations: er Present? Present?	one is required in the second	Water-S Aquatic True Ac Hydroge Oxidize Presence Recent Thin Mc 37) Gauge ((B8) Other (B	Stained Lea Fauna (B1 juatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface or Well Dat Explain in R (inches): (inches):	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (Ce	Surface Surface Draina Dry-S Crayfi (C3) Satura Stunte FAC-1	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) torphic Position (D2)
HYDROLO Wetland Hydeligh Water Manager Sedimer Drift Deplement Inundation Sparsely Field Obsert Surface Water Table Saturation Person (includes capetal)	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial of Vegetated Concar vations: er Present? Present? resent?	one is required in the second	Water-S	Stained Lea Fauna (B1 juatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface or Well Dat Explain in R (inches): (inches): (inches): (inches):	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (Ce	Surface Surface Draina Dry-S Crayfi (C3) Satura Stunte FAC-N	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) elorphic Position (D2) Neutral Test (D5)
HYDROLO Wetland Hydeligh Water Manager Sedimer Drift Deplement Inundation Sparsely Field Obsert Surface Water Table Saturation Person (includes capetal)	drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aerial v Vegetated Concavations: er Present? Present?	one is required in the second	Water-S	Stained Lea Fauna (B1 juatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface or Well Dat Explain in R (inches): (inches): (inches): (inches):	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (Ce	Surface Surface Draina Dry-S Crayfi (C3) Satura Stunte FAC-N	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) elorphic Position (D2) Neutral Test (D5)
HYDROLO Wetland Hydeligh Water Manager Sedimer Drift Deplement Inundation Sparsely Field Obsert Surface Water Table Saturation Person (includes capetal)	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial of Vegetated Concar vations: er Present? Present? resent?	one is required in the second	Water-S	Stained Lea Fauna (B1 juatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface or Well Dat Explain in R (inches): (inches): (inches): (inches):	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (Ce	Surface Surface Draina Dry-S Crayfi (C3) Satura Stunte FAC-N	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) elorphic Position (D2) Neutral Test (D5)
HYDROLO Wetland Hyder Primary India Surface High Water Mand Mandali Sedimer Algal Mandali Iron Deputer Mandali Sparsely Field Obser Surface Water Table Saturation P (includes cap Describe Reservation P	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial of Vegetated Concar vations: er Present? Present? resent?	one is required in the second	Water-S	Stained Lea Fauna (B1 juatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface or Well Dat Explain in R (inches): (inches): (inches): (inches):	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (Ce	Surface Surface Draina Dry-S Crayfi (C3) Satura Stunte FAC-N	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) elorphic Position (D2) Neutral Test (D5)
HYDROLO Wetland Hyder Primary India Surface High Water Mand Mandali Sedimer Algal Mandali Iron Dep Inundati Sparsely Field Obser Surface Water Table Saturation Pe (includes cap Describe Reserved.)	GY drology Indicators cators (minimum of Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) on Visible on Aerial of Vegetated Concar vations: er Present? Present? resent?	one is required in the second	Water-S	Stained Lea Fauna (B1 juatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface or Well Dat Explain in R (inches): (inches): (inches): (inches):	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (Ce	Surface Surface Draina Dry-S Crayfi (C3) Satura Stunte FAC-N	ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) elorphic Position (D2) Neutral Test (D5)

Project/Site: Otter Tail County Road Bike Trail	(City/County: Otter Tail Sampling Date: 6-19-19				
Applicant/Owner: Houston Engineering Inc.				State: MN	Sampling Point: 21w	
Investigator(s): Hannah Erdmann	;	Section, T	ownship, Ra	nge: <u>S21-T136-R41</u>		
Landform (hillslope, terrace, etc.): depression			Local relief	(concave, convex, none):	concave	
Slope (%): 2 Lat: 46.583499		Long: <u>-95</u>	5.854783		Datum: NAD 1983	
Soil Map Unit Name: Lida-Two Inlets complex, 1 to 8 p	ercent slo	slopes NWI classification: PEM1C				
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation, Soil, or Hydrology si	gnificantly	disturbed?	Are °	'Normal Circumstances" p	resent? Yes X No	
Are Vegetation, Soil, or Hydrology na	aturally pro	blematic?	(If ne	eeded, explain any answer	s in Remarks.)	
SUMMARY OF FINDINGS - Attach site map s	showing	samplii	ng point l	ocations, transects,	, important features, etc.	
Hydrophytic Vegetation Present? Yes No						
Hydric Soil Present? Yes X			he Sampled			
Wetland Hydrology Present? Yes X No	·	wit	hin a Wetlar	nd? Yes^_	No	
Remarks:						
VECTATION III significance of plants						
VEGETATION – Use scientific names of plants.	Absolute	Dominar	nt Indicator	Dominance Test works	shoot:	
Tree Stratum (Plot size:)			Status	Number of Dominant Sp		
1				That Are OBL, FACW, o		
2				Total Number of Domina	ant _	
3				Species Across All Strat	ta: <u>2</u> (B)	
4. 5.				Percent of Dominant Sp		
0			over	That Are OBL, FACW, o	or FAC: 100% (A/B)	
Sapling/Shrub Stratum (Plot size:)				Prevalence Index work		
1				Total % Cover of:		
2					x 1 = x 2 =	
3 4					x 3 =	
5					x 4 =	
					x 5 =	
Herb Stratum (Plot size: 5' radius)				Column Totals:	(A) (B)	
1. Phalaris arundinacea Poa pratensis	50 45	<u>Y</u>	- FACW FAC	Prevalence Index	- D/A -	
2. Toa praterisis Carex bicknellii	5	$\frac{1}{N}$	FACU	Hydrophytic Vegetatio		
	-			' ' '	lydrophytic Vegetation	
4. 5.				2 - Dominance Test		
6				3 - Prevalence Inde		
7.					daptations ¹ (Provide supporting	
8				1	or on a separate sheet)	
9				Problematic Hydrop	ohytic Vegetation ¹ (Explain)	
10				¹ Indicators of hydric soil	and wetland hydrology must	
Woody Vine Stratum (Plot size:)	100	= Total Co	over	be present, unless distu		
1				Hydrophytic		
2				Vegetation	Y	
		= Total Co	over	Present? Yes	s_X No	
Remarks: (Include photo numbers here or on a separate s	heet.)					

SOIL Sampling Point: 21w

Depth	ription: (Describe Matrix	e to the dep	th needed to docui	ment the ox Feature		or confirm	n the absence of	of indicators.)
(inches)	Color (moist)	%	Color (moist)	<u> %</u>	Type ¹	Loc ²	Texture	Remarks
0-4	2.5Y 2.5/1	100					SLC	
4-12	2.5Y 5/2	90	10YR 5/8	10			S	
¹ Type: C=Co	oncentration, D=De	pletion, RM:	=Reduced Matrix, M	S=Maske	d Sand G	ains.	² Location:	PL=Pore Lining, M=Matrix.
Hydric Soil I			·				Indicators f	for Problematic Hydric Soils³:
Histosol	(A1)		Sandy	Gleyed M	atrix (S4)		Coast F	Prairie Redox (A16)
	pipedon (A2)			Redox (S			_	urface (S7)
Black His	, ,			d Matrix (,			anganese Masses (F12)
	n Sulfide (A4)				ineral (F1)			nallow Dark Surface (TF12)
_	l Layers (A5) ick (A10)		X Deplete		latrix (F2) (F3)		Other (i	Explain in Remarks)
	d Below Dark Surfa	ce (A11)		Dark Surf				
	ark Surface (A12)	,	_		urface (F7)	³ Indicators	of hydrophytic vegetation and
Sandy M	lucky Mineral (S1)		Redox	Depression	ons (F8)		wetland	hydrology must be present,
	cky Peat or Peat (unless	disturbed or problematic.
Restrictive L	_ayer (if observed):						
Туре:							Hydric Soil I	Present? Yes <u>×</u> No
Depth (inc	ches):						1.,, 4	
Remarks:								
HYDROLO								
_	drology Indicators							
		one is requi	red; check all that a					ry Indicators (minimum of two required)
	Water (A1)		Water-Sta		, ,			ace Soil Cracks (B6)
_ •	ter Table (A2)		Aquatic Fa	,	,		_	nage Patterns (B10)
Saturatio	, ,		True Aqua					Season Water Table (C2)
	arks (B1)					ina Poote		fish Burrows (C8) ration Visible on Aerial Imagery (C9)
	nt Deposits (B2) posits (B3)		Oxidized i			ing Roots	· · —	ted or Stressed Plants (D1)
	it or Crust (B4)					ed Soils (C6		morphic Position (D2)
	osits (B5)		Thin Muck			, a 00,10 (00		-Neutral Test (D5)
	on Visible on Aerial	Imagery (B	_		` '			
_	Vegetated Concav	• • • •	, <u> </u>		, ,			
Field Observ	vations:							
Surface Wate	er Present?	Yes	No X Depth (in	ches):		_		
Water Table			No X Depth (in					
Saturation Pr			No X Depth (in				and Hydrology	Present? Yes X No
(includes cap	oillary fringe)							
Describe Red	corded Data (strear	n gauge, m	onitoring well, aerial	photos, p	revious in	spections),	if available:	
Remarks:								
Tromaino.								

Project/Site: Otter Tail County Road Bike Trail	(City/County: Otter Tail Sampling Date: 6-19-19				
Applicant/Owner: Houston Engineering Inc.				State: MN	Sampling Point: 23u	
Investigator(s): Hannah Erdmann	;	Section	, Township, Ra	ange: S21-T136-R41		
Landform (hillslope, terrace, etc.): sideslope			Local relief	(concave, convex, none):	none	
Soil Map Unit Name: Lida-Two Inlets complex, 1 to 8						
Are climatic / hydrologic conditions on the site typical for thi						
Are Vegetation, Soil, or Hydrology:					present? Yes X No	
Are Vegetation, Soil, or Hydrology				eeded, explain any answe		
SUMMARY OF FINDINGS – Attach site map	showing	samp	oling point	ocations, transects	, important features, etc.	
Hydrophytic Vegetation Present? Yes N	40 X					
Hydric Soil Present? Yes N	40 X		Is the Sample		🗸	
Wetland Hydrology Present? Yes N	<u> </u>		within a Wetla	nd? Yes	No <u>X</u>	
Remarks:						
VEGETATION – Use scientific names of plants	;.					
Tana Chantura (Diet siese	Absolute		nant Indicator	Dominance Test work	sheet:	
Tree Stratum (Plot size:)			es? Status	Number of Dominant S That Are OBL, FACW,		
1				That Ale Obl., PACW,	01 FAC. <u>2</u> (A)	
3				Total Number of Domin Species Across All Stra	•	
4				Species Across Air Stra	па (В)	
5				Percent of Dominant Sp That Are OBL, FACW,		
	- <u> </u>		Cover		(775)	
Sapling/Shrub Stratum (Plot size:)				Prevalence Index wor		
1				Total % Cover of:		
2					x 1 =	
3					x 2 =	
4					x 3 =	
5				1	x 4 =	
Herb Stratum (Plot size: 5' radius)		= Total	Cover		x 5 =	
1. Poa pratensis	50	Υ	FAC	Column Totals.	(A) (B)	
2. Phalaris arundinacea	10	Υ	FACW	Prevalence Index	= B/A =	
3. Taraxacum officinale	_ 10	<u>Y</u>	FACU_	Hydrophytic Vegetation	on Indicators:	
4. Cerastium arvense	_ 10	<u>Y</u>	FACU_	ı — ·	Hydrophytic Vegetation	
5. Medicago lupulina	_ 10	Y	FACU	2 - Dominance Tes		
6. Elymus repens	_ 10	<u>Y</u>	FACU_	3 - Prevalence Inde		
7				4 - Morphological A	Adaptations ¹ (Provide supporting s or on a separate sheet)	
8				1	phytic Vegetation ¹ (Explain)	
9					priyate vegetation (Explain)	
10				¹ Indicators of hydric soi	il and wetland hydrology must	
Woody Vine Stratum (Plot size:)	100	= Total	Cover	be present, unless distr		
1				Hydrophytic		
2				Vegetation	~	
		= Total	Cover	Present? Ye	s No_X_	
Remarks: (Include photo numbers here or on a separate				1		

SOIL Sampling Point: 23u

Profile Desc	cription: (Describe	to the dept	h needed to docu	ment the	indicator	or confirm	n the absence of indicators.)				
Depth	Matrix										
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_Loc ²	Texture Remarks				
0-8	10YR 3/2	_ 98	10YR 6/6	_ 2	_ <u>C</u>	<u>M</u>	<u>s</u>				
8-18	10YR 4/4	100					S				
l											
l											
¹Type: C=C	oncentration, D=De	nletion PM=	Peduced Matrix M	- ———— IS-Masker	d Sand G	raine	² Location: PL=Pore Lining, M=Matrix.				
Hydric Soil		pielion, Nivi-	Reduced Matrix, IV	IO-IVIASKE	J Sand Gi	ali is.	Indicators for Problematic Hydric Soils ³ :				
Histosol			Sandy	Gleyed Ma	atrix (S4)		Coast Prairie Redox (A16)				
ı —	pipedon (A2)			Redox (St			Dark Surface (S7)				
ı —	istic (A3)			d Matrix (Iron-Manganese Masses (F12)				
ı —	en Sulfide (A4)			Mucky Mi	,		Very Shallow Dark Surface (TF12)				
	d Layers (A5)			Gleyed M			Other (Explain in Remarks)				
2 cm Mu	uck (A10)		Deplete	ed Matrix (F3)						
Deplete	d Below Dark Surfa	ce (A11)	Redox	Dark Surfa	ace (F6)						
ı —	ark Surface (A12)			ed Dark Su	,)	³ Indicators of hydrophytic vegetation and				
ı —	Mucky Mineral (S1)	201	Redox	Depressio	ns (F8)		wetland hydrology must be present,				
	ucky Peat or Peat (-					unless disturbed or problematic.				
l _	Layer (if observed										
" —			_				Hydric Soil Present? Yes No _X				
Depth (in	ches): <u>6</u>		<u> </u>				13,4115-25111-125111-12511-12				
Remarks:											
HYDROLO	GY										
Wetland Hy	drology Indicators	:									
	cators (minimum of		ed: check all that a	nnly)			Secondary Indicators (minimum of two required)				
	Water (A1)	one io require		ained Leav	ee (BQ)						
I —	ater Table (A2)		Aquatic F		, ,		Surface Soil Cracks (B6)				
Saturati	, ,		True Aqu				Drainage Patterns (B10)				
	larks (B1)		Hydrogen				Dry-Season Water Table (C2)				
I —	nt Deposits (B2)		Oxidized		, ,	ina Poete	Crayfish Burrows (C8) (C3) Saturation Visible on Aerial Imagery (C9)				
	posits (B3)		Presence			•	Stunted or Stressed Plants (D1)				
ı —	at or Crust (B4)		Recent Ir			,					
-	posits (B5)		Thin Muc			d colls (cc	FAC-Neutral Test (D5)				
ı —	on Visible on Aerial	Imagery (B7					1 Ao-Nedital 1631 (Bb)				
I —	y Vegetated Conca	0 , 1			, ,						
Field Obser	, ,	re ouridee (D		panin	Jiliaiko)						
Surface Wat		Voc N	lo X Depth (ir	ochee).							
			lo X Depth (ir								
Water Table											
Saturation P (includes car		Yes N	lo X Depth (ir	nches):		_ Weti	and Hydrology Present? Yes No X				
	corded Data (strear	n gauge, mor	nitoring well, aerial	photos, pr	revious in:	spections),	if available:				
	,										
Remarks:											

Project/Site: Otter Tail County Road Bike Trail	(City/Count	Sampling Date: 6-19-19				
Applicant/Owner: Houston Engineering Inc.		State: MN Sampling Point: 23w					
Investigator(s): Hannah Erdmann		Section, Township, Range: S21-T136-R41					
Landform (hillslope, terrace, etc.): depression		Local relief (concave, convex, none): concave					
Slope (%): 2 Lat: 46.586010		Long: -95.852238 Datum: NAD 1983					
Soil Map Unit Name: Lida-Two Inlets complex, 1 to 8 p	percent sle	opes		NWI classifica	ition: PUBF		
Are climatic / hydrologic conditions on the site typical for this			<u>X_</u> No_	(If no, explain in Re	emarks.)		
Are Vegetation, Soil, or Hydrology si	ignificantly o	disturbed?	Are "	'Normal Circumstances" pr	resent? Yes X No		
Are Vegetation, Soil, or Hydrology na	(If ne	eded, explain any answers	s in Remarks.)				
SUMMARY OF FINDINGS – Attach site map s	showing	samplii	ng point le	ocations, transects,	important features, etc.		
Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No		ls t	he Sampled	Area			
Wetland Hydrology Present?		wit	hin a Wetlar	nd? Yes_X	No		
Remarks: VEGETATION – Use scientific names of plants.							
VEGETATION – Use scientific names of plants.		Daminan	t Indicator	Dominance Test works	book		
<u>Tree Stratum</u> (Plot size:) 1		Species?	nt Indicator Status	Number of Dominant Sp That Are OBL, FACW, o	ecies		
2 3				Total Number of Domina Species Across All Strata	0		
4. 5.				Percent of Dominant Spo That Are OBL, FACW, o	ecies		
Sapling/Shrub Stratum (Plot size:)	40 30 15 15	= Total Co	FACW OBL OBL OBL	FACW species FAC species FACU species UPL species Column Totals: Prevalence Index Hydrophytic Vegetation 1 - Rapid Test for Hy 2 - Dominance Test 3 - Prevalence Index 4 - Morphological Addata in Remarks Problematic Hydropical	Multiply by: x 1 = x 2 = x 3 = x 4 = x 5 = (A)(B) = B/A = n Indicators: ydrophytic Vegetation is >50% x is ≤3.0¹ daptations¹ (Provide supporting or on a separate sheet) hytic Vegetation¹ (Explain) and wetland hydrology must		
Woody Vine Stratum (Plot size:) 1 2				Hydrophytic Vegetation			
		= Total Co	over	Present? Yes	No		
Remarks: (Include photo numbers here or on a separate s	sheet.)						

SOIL Sampling Point: 23w

		to the de	oth needed to docu			or confirm	n the absence of	indicators.)			
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Feature %	s Type ¹	Loc ²	Texture	Remarks			
0-14	2.5Y 2.5/1	95	5YR 4/6	5	C	M	SC	Remains			
	2.01 2.0/1		3111 1/3	- —	<u> </u>	· ····					
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.								PL=Pore Lining, M=Matrix.			
Hydric Soil								r Problematic Hydric Soils ³ :			
Histosol	. ,			Gleyed Ma			_	airie Redox (A16)			
. —	oipedon (A2)			Redox (S5			Dark Surf				
ı —	stic (A3) en Sulfide (A4)			d Matrix (S Mucky Mir	,			ganese Masses (F12) llow Dark Surface (TF12)			
	d Layers (A5)			Gleyed Ma				plain in Remarks)			
	ick (A10)			ed Matrix (01161 (EX	cpain in Nemarks)			
ı —	d Below Dark Surfa	ce (A11)	X Redox	,	,						
	ark Surface (A12)	, ,		d Dark Su		")	3Indicators of	hydrophytic vegetation and			
Sandy M	lucky Mineral (S1)		Redox	Depressio	ns (F8)		wetland h	ydrology must be present,			
	icky Peat or Peat (S						unless dis	sturbed or problematic.			
Restrictive I	Layer (if observed)):									
Type:							Hydric Soil Pr	resent? Yes X No			
Depth (inches): No								esent: res NO			
Remarks:											
HYDROLO	GY										
Wetland Hy	drology Indicators	:									
Primary India	cators (minimum of	one is requ	ired; check all that a	oply)			Secondary	Indicators (minimum of two required)			
Surface	Water (A1)		Water-Sta	ined Leav	es (B9)		Surface Soil Cracks (B6)				
High Wa	iter Table (A2)		Aquatic Fa	auna (B13)		Drainage Patterns (B10)				
Saturation	on (A3)		True Aqua	atic Plants	(B14)		Dry-Season Water Table (C2)				
Water M	larks (B1)		Hydrogen	Sulfide O	dor (C1)		Crayfis	sh Burrows (C8)			
Sedimer	nt Deposits (B2)		Oxidized I	Rhizosphe	res on Li	ving Roots	(C3) Satura	tion Visible on Aerial Imagery (C9)			
Drift Dep	posits (B3)		Presence	of Reduce	ed Iron (C	4)	Stunte	d or Stressed Plants (D1)			
Algal Ma	at or Crust (B4)		Recent Iro	n Reducti	on in Tille	ed Soils (C6	6) X Geomo	orphic Position (D2)			
Iron Dep	oosits (B5)		Thin Muck	Surface ((C7)		X FAC-N	eutral Test (D5)			
Inundati	on Visible on Aerial	Imagery (E	7) Gauge or	Well Data	(D9)						
Sparsely	Vegetated Concav	e Surface	B8) Other (Ex	plain in Re	emarks)						
Field Obser	vations:										
Surface Wat	er Present?	Yes	No X Depth (in	ches):		_					
Water Table	Present?	Yes	No X Depth (in	ches):		_					
Saturation P							and Hydrology P	Present? Yes X No			
(includes car											
Describe Re	corded Data (stream	n gauge, m	onitoring well, aerial	pnotos, pr	evious in	spections),	ıı avallable:				
Remarks:											

Project/Site: Otter Tail County Road Bike Trail	(_ City/County: Otter Tail Sampling Date: 6-19-					
Applicant/Owner: Houston Engineering Inc.		State: MN Sampling Point: 24u					
Investigator(s): Hannah Erdmann	:	Section, Township, Range: S21-T136-R41					
Landform (hillslope, terrace, etc.): sideslope		Local relief (concave, convex, none): none					
					Datum: NAD 1983		
Soil Map Unit Name: Lida-Two Inlets complex, 1 to 8							
Are climatic / hydrologic conditions on the site typical for th							
Are Vegetation, Soil, or Hydrology					Normal Circumstances" present? Yes X No No		
Are Vegetation, Soil, or Hydrology	naturally pro	blema	itic?	(If ne	eded, explain any answers in Remarks.)		
SUMMARY OF FINDINGS - Attach site map	showing	sam	pling	point lo	ocations, transects, important features, etc.		
Hydrophytic Vegetation Present? Yes N	No _X						
Hydric Soil Present? Yes X	No			Sampled			
Wetland Hydrology Present? YesN	No _X		within	a Wetlan	nd? Yes NoX		
Remarks:							
VEGETATION – Use scientific names of plants	S.						
	Absolute			ndicator	Dominance Test worksheet:		
Tree Stratum (Plot size:)					Number of Dominant Species		
1					That Are OBL, FACW, or FAC: 2 (A)		
2					Total Number of Dominant Species Across All Strata: 6 (B)		
3 4					Species Across All Strata: 6 (B)		
5					Percent of Dominant Species That Are ORL FACW or FAC: 33% (A/B)		
· .			al Cove		That Are OBL, FACW, or FAC: 33% (A/B)		
Sapling/Shrub Stratum (Plot size:)				.	Prevalence Index worksheet:		
1					Total % Cover of: Multiply by:		
2					OBL species x 1 =		
3					FACW species x 2 =		
4					FAC species x 3 =		
5					FACU species x 4 =		
Herb Stratum (Plot size: 5' radius)		= Tota	al Cove	r	UPL species x 5 =		
1. Poa pratensis	50	Υ	F	FAC	Column Totals: (A) (B)		
2. Phalaris arundinacea	10	Y		ACW	Prevalence Index = B/A =		
Taraxacum officinale	10	Υ	F	FACU	Hydrophytic Vegetation Indicators:		
4. Cerastium arvense	10	Υ	F	FACU	1 - Rapid Test for Hydrophytic Vegetation		
5. Medicago lupulina	10	Υ	F	FACU	2 - Dominance Test is >50%		
6. Elymus repens	_ 10	<u>Y</u>	<u>F</u>	FACU_	3 - Prevalence Index is ≤3.0 ¹		
7					4 - Morphological Adaptations¹ (Provide supporting		
8					data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain)		
9					Problematic Hydrophytic Vegetation (Explain)		
10					¹ Indicators of hydric soil and wetland hydrology must		
Manda Vine Stratum (Blat sine)	100	= Tota	al Cove	r	be present, unless disturbed or problematic.		
Woody Vine Stratum (Plot size:)							
1 2					Hydrophytic Vegetation		
		= Tota	al Cove		Present? Yes No		
Remarks: (Include photo numbers here or on a separate			5546				
I .							

SOIL Sampling Point: 24u

Depth	ription: (Describe Matrix	to the dep	th needed to docu Redd	ment the		or confirm	n the absence o	of indicators.)		
(inches)	Color (moist)	%	Color (moist)	<u> %</u>	Type ¹	_Loc ²	Texture	Remarks		
0-8	2.5Y 2.5/1	100					SCL			
8-14	2.5Y 6/1	95	10YR 5/8	5 5	_ <u>C</u>		S			
¹ Type: C=Co	oncentration, D=De	pletion, RM:	=Reduced Matrix, M	- ——— S=Maske	d Sand G	rains.	² Location:	PL=Pore Lining, M=Matrix.		
Hydric Soil I			·					or Problematic Hydric Soils ³ :		
Histosol	(A1)		Sandy	Gleyed M	atrix (S4)		Coast P	rairie Redox (A16)		
Histic Ep	pipedon (A2)		Sandy	Redox (S	5)		Dark Su	ırface (S7)		
Black His	, ,			d Matrix (,		_	nganese Masses (F12)		
	n Sulfide (A4)				ineral (F1)			allow Dark Surface (TF12)		
	Layers (A5)				latrix (F2)		Other (E	Explain in Remarks)		
$\overline{}$	ick (A10)	(Δ44)	X Deplete							
	d Below Dark Surfac ark Surface (A12)	ce (ATT)	_	Dark Surl	ace (F6) urface (F7	``	3Indicators	of hydrophytic vegetation and		
_	lucky Mineral (S1)			Depressi	•	,		hydrology must be present,		
	icky Peat or Peat (S	33)		Бергеззи	3113 (1 0)			disturbed or problematic.		
	ayer (if observed)									
Type:								~		
Depth (inc							Hydric Soil F	Present? Yes X No		
Remarks:	,									
HYDROLO	GY									
Wetland Hyd	drology Indicators	:								
Primary Indic	cators (minimum of	one is requi	red; check all that a	oply)			Secondar	y Indicators (minimum of two required)		
	Water (A1)		Water-Sta		ves (B9)		Surface Soil Cracks (B6)			
	iter Table (A2)		Aquatic F		, ,		Drainage Patterns (B10)			
Saturation	, ,		True Aqua	•	,		Dry-Season Water Table (C2)			
Water M	arks (B1)		Hydrogen					ish Burrows (C8)		
	nt Deposits (B2)					ving Roots		ration Visible on Aerial Imagery (C9)		
Drift Dep	posits (B3)		Presence					ed or Stressed Plants (D1)		
Algal Ma	at or Crust (B4)		Recent Iro	n Reduc	tion in Tille	ed Soils (C6	_	norphic Position (D2)		
	osits (B5)		Thin Muck			•	-	Neutral Test (D5)		
Inundation	on Visible on Aerial	Imagery (B	7) Gauge or	Well Data	a (D9)		_			
Sparsely	Vegetated Concav	e Surface (B8) Other (Ex	plain in R	emarks)					
Field Observ	vations:									
Surface Water	er Present?	Yes	No X Depth (in	ches):		_				
Water Table	Present?	Yes	No X Depth (in	ches):		_				
Saturation Present? Yes No X Depth (inches): Wetland Hydrology Present? Yes No X (includes capillary fringe)							Present? Yes No _X			
		n gauge, m	onitoring well, aerial	photos, p	revious in:	spections),	if available:			
Damada										
Remarks:										

Project/Site: Otter Tail County Road Bike Trail	(City/County: Otter Tail Sampling Date: 6-19-					
Applicant/Owner: Houston Engineering Inc.		State: MN Sampling Point: 24w					
Investigator(s): Hannah Erdmann		_ Section, Township, Range: S21-T136-R41					
Landform (hillslope, terrace, etc.): depression		Local relief (concave, convex, none): <u>concave</u>					
Slope (%): 2 Lat: 46.585968		Long: -95.850929 Datum: NAD 1983					
Soil Map Unit Name: Lida-Two Inlets complex, 1 to 8 p	percent sl	opes		NWI classifica	ation:		
Are climatic / hydrologic conditions on the site typical for this	ar? Yes _	X No_	(If no, explain in Re	emarks.)			
Are Vegetation, Soil, or Hydrology si			Are "	'Normal Circumstances" p	resent? Yes X No		
Are Vegetation, Soil, or Hydrology na				eeded, explain any answer			
SUMMARY OF FINDINGS – Attach site map s		samplir	ig point l	ocations, transects,	important features, etc.		
Hydrophytic Vegetation Present? Hydric Soil Present? Yes X No Yes X No			he Sampled				
Wetland Hydrology Present? Yes X No	°	with	hin a Wetlar	nd? Yes_/_	No		
Remarks: VEGETATION – Use scientific names of plants.							
	Absolute	Dominan	t Indicator	Dominance Test works	sheet:		
<u>Tree Stratum</u> (Plot size:) 1	% Cover			Number of Dominant Sp That Are OBL, FACW, o			
2 3				Total Number of Domina Species Across All Strat	^		
4.				Percent of Dominant Sp			
5			- ——	That Are OBL, FACW, o			
3. Medicago sativa 4	70 25 5	= Total Co	FACU	FACW species FAC species FACU species UPL species Column Totals: Prevalence Index Hydrophytic Vegetatio 1 - Rapid Test for H 2 - Dominance Test 3 - Prevalence Inde 4 - Morphological A data in Remarks Problematic Hydrop	Multiply by: x 1 = x 2 = x 3 = x 4 = x 5 = (A) (B) = B/A = In Indicators: lydrophytic Vegetation t is >50% ix is ≤3.0¹ daptations¹ (Provide supporting or on a separate sheet) bytic Vegetation¹ (Explain) and wetland hydrology must		
Woody Vine Stratum (Plot size:) 1				Hydrophytic	issa of problematic.		
2			. ——	Vegetation Present? Yes	s_X No		
Remarks: (Include photo numbers here or on a separate s		= Total Co	ver	1000			
Tremains. (include prioto numbers nere or on a separate s	eet. <i>)</i>						

SOIL Sampling Point: 24W

Depth	cription: (Describ Matrix	e to the depth		nent the indicator or o	confirm ti	ne absence	of indicators.)
(inches)	Color (moist)	%	Color (moist)	%Type ¹ I	Loc ²	Texture	Remarks
0-1	2.5Y 2.5/1	100					3/4" muck
1-8	2.5Y 4/1	100					
¹ Type: C=C	oncentration, D=De	pletion, RM=R	Reduced Matrix, MS	======================================	 IS.	² Location	: PL=Pore Lining, M=Matrix.
Hydric Soil			,				for Problematic Hydric Soils ³ :
Histosol	I (A1)		Sandy G	Gleyed Matrix (S4)		Coast	Prairie Redox (A16)
	pipedon (A2)		Sandy R	Redox (S5)		Dark S	Surface (S7)
	istic (A3)		Stripped	Matrix (S6)		Iron-M	anganese Masses (F12)
	en Sulfide (A4)			Mucky Mineral (F1)			hallow Dark Surface (TF12)
	d Layers (A5)			Gleyed Matrix (F2)		Other	(Explain in Remarks)
2 cm Mi	, ,	(8.4.4)		d Matrix (F3)			
. —	d Below Dark Surfa	ice (A11)	_	ark Surface (F6)		31	of levels a level and a second of a second
I —	ark Surface (A12) Mucky Mineral (S1)			d Dark Surface (F7) Depressions (F8)			of hydrophytic vegetation and dhydrology must be present,
	ucky Peat or Peat (S3)	Redux D	epressions (Fo)			disturbed or problematic.
	Layer (if observed					aniooo	alistance of problematic.
		•					.,
	ches):		_			Hydric Soil	Present? Yes X No
Remarks:							
HYDROLO	GY						
Wetland Hy	drology Indicator	s:					
Primary Indi	cators (minimum of	one is require	d; check all that app	ply)		Seconda	ary Indicators (minimum of two required)
Surface	Water (A1)		Water-Stair	ned Leaves (B9)		Surf	face Soil Cracks (B6)
High Wa	ater Table (A2)		Aquatic Fat	una (B13)		Drai	inage Patterns (B10)
Saturati	on (A3)		True Aquati	tic Plants (B14)		Dry-	-Season Water Table (C2)
Water N	/larks (B1)		Hydrogen S	Sulfide Odor (C1)		Cray	yfish Burrows (C8)
Sedime	nt Deposits (B2)		Oxidized RI	hizospheres on Living	Roots (C	3) Satu	uration Visible on Aerial Imagery (C9)
Drift De	posits (B3)		Presence o	of Reduced Iron (C4)		Stur	nted or Stressed Plants (D1)
Algal Ma	at or Crust (B4)		Recent Iron	n Reduction in Tilled S	Soils (C6)		emorphic Position (D2)
Iron De	posits (B5)		Thin Muck	Surface (C7)		\times FAC	C-Neutral Test (D5)
ı —	ion Visible on Aeria	,	_ ·	Well Data (D9)			
	y Vegetated Conca	ve Surface (B8	B) Other (Expl	lain in Remarks)			
Field Obser			~				
Surface Wat				ches):			
Water Table	Present?		o_X_ Depth (incl				~
Saturation P		Yes X No	Depth (inc	:hes): <u>30</u>	Wetlan	d Hydrolog	y Present? Yes X No
	pillary fringe) corded Data (strea	m gauge, mon	itoring well, aerial p	photos, previous inspec	ections), if a	available:	
Remarks:							

Project/Site: Otter Tail County Road Bike Trail		City/County: Otter Tail Sampling Date: 6-1					
Applicant/Owner: Houston Engineering Inc.		State: MN Sampling Point: 25u					
Investigator(s): Hannah Erdmann	;	Section, Township, Range: S21-T136-R41					
Landform (hillslope, terrace, etc.): sideslope		Local relief (concave, convex, none): none					
Slope (%): 3 Lat: 46.585716	ו	Long: -95.848438 Datum: NAD 1983					
Soil Map Unit Name: Lida-Two Inlets complex, 1 to 8 p	ercent slo	opes		NWI classifica	tion: not listed		
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation, Soil, or Hydrology signature.					esent? Yes X No		
Are Vegetation, Soil, or Hydrology na				eded, explain any answers			
SUMMARY OF FINDINGS - Attach site map s				ocations, transects,	important features, etc.		
Hydrophytic Vegetation Present? Yes No	, X						
Hydric Soil Present? Yes No	, <u>X</u>		the Sampled		V		
Wetland Hydrology Present? Yes No	, <u>X</u>	wi	thin a Wetlar	nd? Yes	No <u>X</u>		
Remarks:							
VECETATION Lies escentific names of plants							
VEGETATION – Use scientific names of plants.	Absolute	Domina	nt Indicator	Dominance Test works	hoot:		
Tree Stratum (Plot size:)			? Status	Number of Dominant Spe			
1				That Are OBL, FACW, or			
2				Total Number of Domina	nt		
3				Species Across All Strata	a: <u>2</u> (B)		
4				Percent of Dominant Spe			
5			over	That Are OBL, FACW, or	FAC: 50% (A/B)		
Sapling/Shrub Stratum (Plot size:)		701010	0101	Prevalence Index works	sheet:		
1					Multiply by:		
2				1	x 1 =		
3				1	x 2 =		
4					x 3 = x 4 =		
5					x 5 =		
Herb Stratum (Plot size: 5' radius)					(A) (B)		
1. Poa pratensis	70	<u>Y</u>	FAC				
			FACU	Prevalence Index			
3. Equisetum arvense Asclepias syriaca	5 5	N	- FAC	Hydrophytic Vegetation			
"		<u>N</u>	_ FACU_	1 - Rapid Test for Hy			
5				3 - Prevalence Index			
6				I —	daptations ¹ (Provide supporting		
7 8				data in Remarks	or on a separate sheet)		
9				Problematic Hydropl	hytic Vegetation ¹ (Explain)		
10				1			
	100	= Total C	over	Indicators of hydric soil a be present, unless distur	and wetland hydrology must bed or problematic.		
Woody Vine Stratum (Plot size:)							
1				Hydrophytic Vegetation			
2		= Total C	over	Present? Yes	No X		
Remarks: (Include photo numbers here or on a separate s		. o.a. o		I			

SOIL Sampling Point: 25u

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth <u>Matrix</u>	Redox Features							
(inches) Color (moist) %	Color (moist) % Type ¹ I	_oc² Texture Remarks						
0-6 10YR 3/2 100		SL						
l								
¹ Type: C=Concentration, D=Depletion, RM	I=Reduced Matrix, MS=Masked Sand Grains	s. ² Location: PL=Pore Lining, M=Matrix.						
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :						
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)						
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)						
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)						
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)						
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)						
2 cm Muck (A10)	Depleted Matrix (F3)							
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)							
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and						
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	wetland hydrology must be present,						
5 cm Mucky Peat or Peat (S3)		unless disturbed or problematic.						
Restrictive Layer (if observed):								
Type: Gravel/rocks		Hydric Soil Present? Yes No _X_						
Depth (inches): 6		nyunc son Fresent: Tes No						
Remarks:								
HYDROLOGY								
Wetland Hydrology Indicators:								
Primary Indicators (minimum of one is requ	ired; check all that apply)	Secondary Indicators (minimum of two required)						
Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)						
High Water Table (A2)	Aquatic Fauna (B13)	Drainage Patterns (B10)						
Saturation (A3)	True Aquatic Plants (B14)	Dry-Season Water Table (C2)						
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)						
Sediment Deposits (B2)	Oxidized Rhizospheres on Living							
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)						
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled S							
Iron Deposits (B5)	Thin Muck Surface (C7)	FAC-Neutral Test (D5)						
Inundation Visible on Aerial Imagery (E		TAC-Neutral Test (D3)						
Sparsely Vegetated Concave Surface	, _ ,							
_ , , ,	(B8) Other (Explain in Remarks)							
Field Observations:	. Y							
	No X Depth (inches):							
	No X Depth (inches):							
	No X Depth (inches):	Wetland Hydrology Present? Yes No _X						
(includes capillary fringe)	onitoring well, aerial photos, previous inspec	tions) if available:						
Describe Necorded Data (Stream gauge, III	officing well, aerial priotos, previous inspec	olions), ii avaliable.						
Remarks:								

Project/Site: Otter Tail County Road Bike Trail	(_ City/County: Otter Tail Sampling Date: 6-1					
Applicant/Owner: Houston Engineering Inc.		State: MN Sampling Point: 25w					
Investigator(s): Hannah Erdmann	:	Section, Township, Range: S21-T136-R41					
Landform (hillslope, terrace, etc.): depression		Local relief (concave, convex, none): CONCAVE					
Slope (%): 0-1 Lat: 46.585664		Long:95.848434 Datum: NAD 1983					
Soil Map Unit Name: Lida-Two Inlets complex, 1 to 8 p	ercent sl	opes		NWI classific	ation: PEM1F		
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation, Soil, or Hydrology si	gnificantly	disturbed?	? Are	Normal Circumstances" p	present? Yes X No		
Are Vegetation, Soil, or Hydrology na	(If ne	eded, explain any answe	rs in Remarks.)				
SUMMARY OF FINDINGS - Attach site map s	showing	sampli	ng point l	ocations, transects	, important features, etc.		
Hydrophytic Vegetation Present? Yes No)						
Hydric Soil Present? Yes X			the Sampled				
Wetland Hydrology Present? Yes X No		wit	hin a Wetlar	nd? Yes _X	No		
Remarks:							
$\label{eq:VEGETATION-Use} \textbf{VEGETATION}-\textbf{Use scientific names of plants}.$							
Tree Stratum (Blat size:	Absolute		nt Indicator	Dominance Test work	sheet:		
<u>Tree Stratum</u> (Plot size:) 1			? Status	Number of Dominant Sp That Are OBL, FACW, of			
2				Total Number of Domin	ant		
3				Species Across All Stra	4		
4				Percent of Dominant Sp	pecies		
5				That Are OBL, FACW, o	or FAC: 100% (A/B)		
Sapling/Shrub Stratum (Plot size:)		= Total Co	over	Prevalence Index work	ksheet:		
1				Total % Cover of:	Multiply by:		
2				OBL species	x 1 =		
3				FACW species	x 2 =		
4				FAC species	x 3 =		
5				FACU species	x 4 =		
Herb Stratum (Plot size: 5' radius)		= Total Co	over		x 5 =		
Herb Stratum (Plot size: 5 Tadius) 1. Equisetum arvense	65	Υ	FAC	Column Totals:	(A) (B)		
Carex hystericina	5	N		Prevalence Index	= B/A =		
Carex bicknellii	5	N	FACU	Hydrophytic Vegetation			
Verbena hastata	5	N	FACW	1 - Rapid Test for H	Hydrophytic Vegetation		
5. Juncus balticus	5	N	OBL	2 - Dominance Tes			
6. Phalaris arundinacea	5	N	FACW	3 - Prevalence Inde	ex is ≤3.0 ¹		
7. Plantago major	5	N	FAC		Adaptations ¹ (Provide supporting		
8. Lysimachia thyrsiflora	5	N	OBL		s or on a separate sheet)		
9				Problematic Hydrop	phytic Vegetation ¹ (Explain)		
10				¹ Indicators of hydric soil	l and wetland hydrology must		
Woody Vine Stratum (Plot size:)	100	= Total Co	over	be present, unless distu			
1				Hydrophytic			
2.				Vegetation	~		
		= Total Co	over	Present? Yes	s_X No		
Remarks: (Include photo numbers here or on a separate s	heet.)						

SOIL Sampling Point: 25w

Depth	ription: (Describ Matrix	e to the de	pth needed to docu	ment the ox Featur		or confirm	n the absence	of indicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_Loc²	Texture	Remarks		
0-4	2.5Y 2.5/1	100					SC			
4-8	2.5Y 2.5/1	95	5YR 4/6	5	С	М	SC			
8-15	Gley 1 5/N	90	10YR 5/8	10	С	М	S			
15-24	Gley 1 5/N	90	10YR 5/8	10	С	<u>M</u>	SC			
¹ Type: C=Co	oncentration, D=De	epletion, RM	l=Reduced Matrix, M	S=Maske	ed Sand Gr	ains.	² Location:	PL=Pore Lining, M=Matrix.		
Hydric Soil I	ndicators:						Indicators	for Problematic Hydric Soils ³ :		
Histosol	(A1)		X Sandy	Gleyed M	latrix (S4)		Coast F	Prairie Redox (A16)		
	pipedon (A2)			Redox (S				urface (S7)		
Black His	, ,			d Matrix (anganese Masses (F12)		
	n Sulfide (A4)				ineral (F1)			nallow Dark Surface (TF12)		
	Layers (A5)				Matrix (F2)		Other (Explain in Remarks)		
2 cm Mu	ick (A10) d Below Dark Surfa	oo (A11)		ed Matrix Dark Sur	. ,					
	ark Surface (A12)	ice (ATT)	_		ace (F6) Surface (F7)	3Indicators	of hydrophytic vegetation and		
_	lucky Mineral (S1)			Depressi	,	,		hydrology must be present,		
_ ′	icky Peat or Peat (S3)			()			disturbed or problematic.		
	ayer (if observed							·		
Type:								~		
Depth (inc	ches):						Hydric Soil	Present? Yes X No		
Remarks:										
HYDROLO	GY									
Wetland Hyd	drology Indicators	s:								
Primary India	ators (minimum of	one is requ	ired; check all that a	oply)			Seconda	ry Indicators (minimum of two required)		
Surface	Water (A1)		Water-Sta	ined Lea	ves (B9)		Surface Soil Cracks (B6)			
High Wa	iter Table (A2)		Aquatic F	auna (B1	3)		Drainage Patterns (B10)			
Saturatio	on (A3)		True Aqua	atic Plant	s (B14)		Dry-9	Season Water Table (C2)		
Water M	arks (B1)		Hydrogen	Sulfide (Odor (C1)		Cray	fish Burrows (C8)		
Sedimen	nt Deposits (B2)		Oxidized	Rhizosph	eres on Liv	ing Roots	(C3) Satu	ration Visible on Aerial Imagery (C9)		
Drift Dep	oosits (B3)		Presence	of Reduc	ed Iron (C	4)	Stun	ted or Stressed Plants (D1)		
Algal Ma	t or Crust (B4)		Recent Iro	n Reduc	tion in Tille	d Soils (C6		morphic Position (D2)		
Iron Dep	osits (B5)		Thin Mucl	Surface	(C7)		X FAC	-Neutral Test (D5)		
Inundation	on Visible on Aeria	l Imagery (E	37) Gauge or	Well Dat	a (D9)					
Sparsely	Vegetated Conca	ve Surface	(B8) Other (Ex	plain in R	(emarks					
Field Observ										
Surface Water	er Present?		No X Depth (in							
Water Table	Present?	Yes	No X Depth (in	ches): _		_				
Saturation Pr		Yes	No X Depth (in	ches): _		Wetl	and Hydrology	Present? Yes X No		
(includes cap Describe Red		m gauge, m	onitoring well, aerial	photos, p	revious in	spections),	if available:			
Remarks:										

Project/Site: Otter Tail County Road Bike Trail	(_ City/County: Otter Tail Sampling Date: 6-19-1					
Applicant/Owner: Houston Engineering Inc.		State: MN Sampling Point: 26u					
Investigator(s): Hannah Erdmann	;	Section, Township, Range: S14-T136-R41					
Landform (hillslope, terrace, etc.): sideslope		Local relief (concave, convex, none): none					
					Datum: NAD 1983		
Soil Map Unit Name: Lida-Two Inlets complex, 8 to 1							
Are climatic / hydrologic conditions on the site typical for th							
					Normal Circumstances" present? Yes X No		
Are Vegetation, Soil, or Hydrology					· — —		
Are Vegetation, Soil, or Hydrology					eded, explain any answers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map		sam	pling	point ic	ocations, transects, important features, etc.		
	No <u>X</u>		lo the	Campled	Avec		
Hydric Soil Present? Yes X	No			Sampled ı a Wetlan			
Wetland Hydrology Present? Yes N	NO		witiiii	i a vvetian	id: 165 NO		
Remarks.							
VEGETATION – Use scientific names of plants							
Tree Stratum (Plot size:)	Absolute <u>% Cover</u>			ndicator	Dominance Test worksheet:		
1					Number of Dominant Species That Are OBL, FACW, or FAC: _1(A)		
2					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
3					Total Number of Dominant Species Across All Strata: (B)		
4.							
5					Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)		
			al Cove	r			
Sapling/Shrub Stratum (Plot size: 15ft.)					Prevalence Index worksheet:		
1					Total % Cover of: Multiply by:		
2					OBL species x 1 =		
3					FAC species x 2 =		
4					FAC species x 3 = FACU species x 4 =		
5					UPL species x 5 =		
Herb Stratum (Plot size: 5' radius)		= 1018	ai Cove	'	Column Totals: (A) (B)		
1. Bromus inermis	30	<u>Y</u>	<u>F</u>	FACU_	Column Totals (7)		
2. Poa pratensis	25	<u>Y</u>	<u>F</u>	FAC	Prevalence Index = B/A =		
3. Phalaris arundinacea	_ <u>15</u>	<u>N</u>		FACW_	Hydrophytic Vegetation Indicators:		
4. Medicago sativa	_ 10	N		FACU_	1 - Rapid Test for Hydrophytic Vegetation		
5. Equisetum hyemale	_ 10	N		FACW_	2 - Dominance Test is >50%		
6. Equisetum arvense	_ 10	<u>N</u>	<u> </u>	FAC	3 - Prevalence Index is ≤3.0 ¹		
7					 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) 		
8					Problematic Hydrophytic Vegetation¹ (Explain)		
9							
10					¹ Indicators of hydric soil and wetland hydrology must		
Woody Vine Stratum (Plot size:)	100	= Tota	al Cove	r	be present, unless disturbed or problematic.		
1					Hydrophytic		
2.					Vegetation		
		= Tota	al Cove	r	Present? Yes No _X		
Remarks: (Include photo numbers here or on a separate	sheet.)						

SOIL Sampling Point: 26u

Depth (inches)			Redox Features					
(Matrix Color (moist)	%	Redox Features Color (moist) % Type ¹ Lo	oc² Texture	Remarks			
0-6	10YR 3/2	100		SL SL				
6-7	2.5Y 6/2	100						
•								
1Type: C=Co	ncentration D=De	nletion PM=P	educed Matrix, MS=Masked Sand Grains.	² l ocation: F	PL=Pore Lining, M=Matrix.			
Hydric Soil I		spielion, Nivi-N	educed Matrix, MIS-Masked Sand Grains.		r Problematic Hydric Soils ³ :			
Histosol			Sandy Gleyed Matrix (S4)		airie Redox (A16)			
_	pipedon (A2)		Sandy Redox (S5)	Dark Surf				
Black Histic (A3)			Stripped Matrix (S6)	Iron-Man	Iron-Manganese Masses (F12)			
Hydroge	n Sulfide (A4)		Loamy Mucky Mineral (F1)	Very Sha	llow Dark Surface (TF12)			
_	d Layers (A5)		Loamy Gleyed Matrix (F2)	Other (Ex	plain in Remarks)			
_	ick (A10)		X Depleted Matrix (F3)					
	d Below Dark Surfa	ice (A11)	Redox Dark Surface (F6)	31	budaala da aa aa badaa aa aa			
Thick Dark Surface (A12) Sandy Mucky Mineral (S1)			Depleted Dark Surface (F7)Redox Depressions (F8)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present,			
	icky Peat or Peat (S3)	Redox Depressions (Fo)		sturbed or problematic.			
	Layer (if observed			unicss di	starbed of problematic.			
	gravel/rocks	.,-						
Depth (inches): 7				Hydric Soil Pr	esent? Yes X No No			
Remarks:			<u>–</u>					
r comanto.								
HYDROLO	GY							
	drology Indicators							
			d. ab a ab a 11 4b at a a a b A					
		one is required	Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of two required)					
	Water (A1)		11.77					
High Water Table (A2)			Water-Stained Leaves (B9)	Surfac	e Soil Cracks (B6)			
_ •	, ,		Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Draina	e Soil Cracks (B6) ge Patterns (B10)			
Saturatio	on (A3)		Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surfac Draina Dry-Se	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2)			
Saturatio	on (A3) larks (B1)		 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) 	Surface Draina Dry-Se Crayfis	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8)			
Saturation Water M	on (A3) larks (B1) nt Deposits (B2)		Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R	Surface Draina Dry-Se Crayfis Coots (C3) Surface	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9)			
Saturation Water M Sediment Drift Dep	on (A3) larks (B1) nt Deposits (B2) posits (B3)		Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4)	Surface Draina Dry-Se Crayfis Roots (C3) Satura Stunte	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)			
Saturation Saturation Water M Sedimen Drift Dep Algal Ma	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)		Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil	Surface Draina Dry-Se Crayfis Roots (C3) Satura Stuntee Stuntee Is (C6) Geome	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)			
Saturation Water M Sedimen Drift Dep Algal Ma	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	I Imagery (B7)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil	Surface Draina Dry-Se Crayfis Roots (C3) Satura Stuntee Stuntee Is (C6) Geome	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)			
Saturation Water M Sedimen Drift Dep Algal Ma Iron Dep	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria		Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Draina Dry-Se Crayfis Roots (C3) Satura Stuntee Stuntee Is (C6) Geome	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)			
Saturation Water M Sedimen Drift Dep Algal Ma Iron Dep Inundation Sparsely	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca		Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Draina Dry-Se Crayfis Roots (C3) Satura Stuntee Stuntee Is (C6) Geome	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)			
Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Inundation Sparsely	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca vations:	ve Surface (B8	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks)	Surface Draina Dry-Se Crayfis Roots (C3) Satura Stuntee Stuntee Is (C6) Geome	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)			
Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Observ Surface Water	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca vations: er Present?	ve Surface (B8	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) Depth (inches):	Surface Draina Dry-Se Crayfis Roots (C3) Satura Stuntee Stuntee Is (C6) Geome	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)			
Saturation Water M Sediment Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Observ Surface Water	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present?	ve Surface (B8 Yes No	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) X Depth (inches): Depth (inches):	Surface Draina Dry-Se Crayfis Soots (C3) Satura Stunte Geomo FAC-N	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)			
Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Field Observ Surface Water Water Table Saturation Pr	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria v Vegetated Conca vations: er Present? Present?	ve Surface (B8 Yes No	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) Depth (inches): Depth (inches):	Surface Draina Dry-Se Crayfis Soots (C3) Satura Stunte Geomo FAC-N	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)			
Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Observ Surface Water Water Table Saturation Pr (includes cap	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	Yes No Yes No Yes No	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) X Depth (inches): Depth (inches):	Surface Draina Dry-Se Crayfis Soots (C3) Satura Stunte Stunte FAC-N Wetland Hydrology F	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)			
Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Observ Surface Water Water Table Saturation Pr (includes cap	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	Yes No Yes No Yes No	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) X Depth (inches): Depth (inches): Depth (inches):	Surface Draina Dry-Se Crayfis Soots (C3) Satura Stunte Stunte FAC-N Wetland Hydrology F	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)			
Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Observ Surface Water Water Table Saturation Pr (includes cap	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	Yes No Yes No Yes No	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) X Depth (inches): Depth (inches): Depth (inches):	Surface Draina Dry-Se Crayfis Soots (C3) Satura Stunte Stunte FAC-N Wetland Hydrology F	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)			
Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Sparsely Field Obser Surface Water Water Table Saturation Pr (includes cap Describe Rec	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	Yes No Yes No Yes No	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) X Depth (inches): Depth (inches): Depth (inches):	Surface Draina Dry-Se Crayfis Soots (C3) Satura Stunte Stunte FAC-N Wetland Hydrology F	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)			
Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Observ Surface Water Water Table Saturation Pro (includes cap Describe Recommendation	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	Yes No Yes No Yes No	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) X Depth (inches): Depth (inches): Depth (inches):	Surface Draina Dry-Se Crayfis Soots (C3) Satura Stunte Stunte FAC-N Wetland Hydrology F	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)			
Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Inundation Sparsely Field Observ Surface Water Water Table Saturation Profincludes cap Describe Recommendation	on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	Yes No Yes No Yes No	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soil Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) X Depth (inches): Depth (inches): Depth (inches):	Surface Draina Dry-Se Crayfis Soots (C3) Satura Stunte Geome FAC-N Wetland Hydrology F	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)			

Project/Site: Otter Tail County Road E	3ike Trail		(City/Co	ounty:	Otter Tai	il	Samplin	ıg Date: <u>6-19</u> -	-19
Applicant/Owner: Houston Engineering	g Inc.						State: MN	Samplin	g Point: 26w	
Investigator(s): Hannah Erdmann			;	Section, Township, Range: S14-T136-R41						
Landform (hillslope, terrace, etc.): depre	ssion				L	ocal relief ((concave, convex, none):	concav	/e	
Slope (%): 2 Lat: 46.60016	0									
Soil Map Unit Name: Lida-Two Inlets c							NWI classific			
Are climatic / hydrologic conditions on the										
Are Vegetation, Soil, or Hy							Normal Circumstances" p			No
Are Vegetation, Soil, or Hy			-				eded, explain any answe			
SUMMARY OF FINDINGS - Atta										res, etc.
Hydrophytic Vegetation Present?	Yes	< No)							
Hydric Soil Present?	Yes	_)		Is the	e Sampled				
Wetland Hydrology Present?	Yes	<u> </u>			withi	n a Wetlan	ıd? Yes X	No		
Remarks:										
VEGETATION – Use scientific na	mes of p	olants.								
			Absolute			Indicator	Dominance Test work	sheet:		
Tree Stratum (Plot size:			% Cover				Number of Dominant Sport That Are OBL, FACW, or		2	(A)
2.							Total Number of Domin	ant		_ , ,
3							Species Across All Stra		2	_ (B)
4							Percent of Dominant Sp	necies		
5							That Are OBL, FACW,		100%	_ (A/B)
Sapling/Shrub Stratum (Plot size:)		= Tota	al Cov	er	Prevalence Index wor	ksheet:		
1							Total % Cover of:		Multiply by:	
2.							OBL species			
3.							FACW species	x	2 =	_
4.							FAC species	x	3 =	
5							FACU species	x	4 =	
5' radius				= Tota	al Cov	er	UPL species	x	5 =	_
Herb Stratum (Plot size: 5' radius 1. Carex lacustris)		40	Υ		OBL	Column Totals:	(A	.)	(B)
Phalaris arundinacea			30	Y		FACW	Prevalence Index	= B/A =		
3. Equisetum arvense			15	'n		FAC	Hydrophytic Vegetation			
Poa palustris			15	\overline{N}		FACW	1 - Rapid Test for H			
5. Salix interior			10	N		FACW	2 - Dominance Tes	t is >50%	0	
6							3 - Prevalence Inde			
7.							4 - Morphological A	daptation	ns¹ (Provide sı	upporting
8							data in Remarks			
9							Problematic Hydro	onytic ve	getation (Exp	iain)
10							¹ Indicators of hydric soi	l and wet	land hydrolog	v must
Woody Vine Stratum (Plot size:		_)	100	= Tota	al Cove	er	be present, unless distu			/ must
1							Hydrophytic			
2							Vegetation	- ×	Na	
				= Tota	al Cov	er	Present? Yes	<u> </u>	No	
Remarks: (Include photo numbers here	or on a se	parate s	heet.)							

SOIL	Sampling Point
SOIL	Sampling Pol

Depth	Matrix		Red	ox Featur	es			
(inches)	Color (moist)	%	Color (moist)	%	Type	Loc ²	Texture	Remarks
0-2	10YR 2/1	100					S	
2-12	2.5Y 6/2	95	10YR 5/8	5	С	М	<u>s</u> _	
	-	_	>			_	-	
		-				_		
_			-	-		-		
		-	-		_	-		
Type, C=C	oncentration, D=De	epletion, RN	M=Reduced Matrix, N	IS=Maske	ed Sand G	rains.	² Location: F	L=Pore Lining, M=Matrix.
	Indicators:							Problematic Hydric Soils ³ :
Histoso	I (A1)		Sandy	Gleyed M	atrix (S4)		Coast Pra	irie Redox (A16)
Histic E	pipedon (A2)		Sandy	Redox (S	5)		Dark Surf	ace (S7)
Black H	istic (A3)		Strippe	ed Matrix (S6)		Iron-Mang	ganese Masses (F12)
Hydroge	en Sulfide (A4)		Loamy	Mucky M	ineral (F1))	Very Shall	low Dark Surface (TF12)
	d Layers (A5)		Loamy	Gleyed N	fatrix (F2)		Other (Ex	plain in Remarks)
	uck (A10)			ed Matrix				
	d Below Dark Surfa	ice (A11)		Dark Sur			120000000	
	ark Surface (A12)				urface (F7	7)		hydrophytic vegetation and
	Mucky Mineral (S1)		Redox	Depressi	ons (F8)			ydrology must be present,
	ucky Peat or Peat (unless dis	turbed or problematic.
Restrictive	Layer (if observed	1):						
Type:	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1						11.12.0.10	esent? Yes X No
1,1,00							Hydric Soil Pr	esent? Yes X No
Depth (in	iches):		_					
Depth (in Remarks:								
Depth (in Remarks:		s:						
Depth (in Remarks: IYDROLO Wetland Hy	OGY odrology Indicator		uired: check all that a	apply)			Secondary	Indicators (minimum of two required
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi	OGY drology Indicator cators (minimum ol		uired; check all that a	C	ves (B9)			Indicators (minimum of two required
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface	OGY odrology Indicators cators (minimum of Water (A1)		Water-Sta	ained Lea			Surface	e Soil Cracks (B6)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Wa	OGY rdrology Indicators cators (minimum of Water (A1) ater Table (A2)		Water-Sta Aquatic F	ained Lea auna (B1	3)		Surface Draina	e Soil Cracks (B6) ge Patterns (B10)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Wa Saturati	OGY rdrology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3)		Water-Sta Aquatic F True Aqu	ained Lea auna (B1 atic Plant	3) s (B14)		Surface Draina Dry-Se	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Water Mater Ma	OGY rdrology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1)		Water-Sta Aquatic F True Aqu Hydroger	ained Lea auna (B1 atic Plant Sulfide (3) s (B14) Odor (C1)	wing Poots	Surface Drainag Dry-Se Crayfis	a Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High W: Saturati Water M Sedime	ody rdrology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2)		Water-Sta Aquatic F True Aqu Hydroger Oxidized	ained Lea auna (B1 atic Plant Sulfide (Rhizosph	3) s (B14) Odor (C1) eres on Li	ving Roots	Surface Drainag Dry-Se Crayfis (C3) Satural	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High W: Saturati Water M Sedime Drift De	ody drology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3)		Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence	ained Lea auna (B1 atic Plants Sulfide C Rhizosph of Reduc	3) s (B14) Odor (C1) eres on Li ced Iron (C	(4)	Surface Drainag Dry-Se Crayfis s (C3) Satural Stunted	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Water M Sedime Drift De Algal M	ody ordrology Indicators cators (minimum of water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4)		Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In	ained Lea auna (B1 atic Plants Sulfide C Rhizosph of Reduction Reduction	3) s (B14) Odor (C1) eres on Li ed Iron (C		Surface Drainag Dry-Se Crayfis s (C3) Satural Stunted	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Water It Sedime Drift De Algal M Iron De	ordrology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	one is req	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In	ained Lea fauna (B1 atic Plants n Sulfide C Rhizosph of Reduc on Reduc k Surface	3) s (B14) Odor (C1) eres on Li ced Iron (C tion in Tille (C7)	(4)	Surface Drainag Dry-Se Crayfis s (C3) Satural Stunted	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Water M Sedime Drift De Algal M Iron De	order of the control	one is req	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc	ained Lea auna (B1 atic Plants Sulfide C Rhizosph of Reduct on Reduct k Surface	3) s (B14) Odor (C1) eres on Li red Iron (C tion in Tille (C7) a (D9)	(4)	Surface Drainag Dry-Se Crayfis s (C3) Satural Stunted	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High W. Saturati Water M. Sedime Drift De Algal M. Iron De Inundat Sparsel	ordrology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca	one is req	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc	ained Lea fauna (B1 atic Plants n Sulfide C Rhizosph of Reduc on Reduc k Surface	3) s (B14) Odor (C1) eres on Li red Iron (C tion in Tille (C7) a (D9)	(4)	Surface Drainag Dry-Se Crayfis s (C3) Satural Stunted	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High W: Saturati Water M Sedime Drift De Algal M Iron De Inundat Sparsel	ody cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Concar	I Imagery (Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc B7) Gauge or (B8) Other (Ex	ained Lea auna (B1) atic Plants Sulfide (Rhizosph of Reduc on Reduc k Surface Well Data oplain in R	3) s (B14) Odor (C1) eres on Li red Iron (C tion in Tille (C7) a (D9)	(4)	Surface Drainag Dry-Se Crayfis s (C3) Satural Stunted	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Water M Sedime Drift De Algal M Iron De Inundat Sparsel Field Obser	orderology Indicators cators (minimum of Water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Concar reations: ter Present?	I Imagery (ve Surface	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc B7) Gauge or (B8) Other (Ex	ained Lea fauna (B1, atic Plants a Sulfide C Rhizosph of Reduct on Reduct k Surface Well Data (plain in R	3) s (B14) Odor (C1) eres on Li red Iron (C tion in Tille (C7) a (D9)	(4)	Surface Drainag Dry-Se Crayfis s (C3) Satural Stunted	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Water M Sedime Drift De Algal M Iron De Inundat Sparsel Field Obser Surface Water Table	order of the control	I Imagery (ve Surface Yes	Water-State	ained Lea fauna (B1 atic Plants n Sulfide C Rhizosph of Reduct on Reduct on Reduct k Surface well Data (plain in R nches):	3) s (B14) Odor (C1) eres on Li red Iron (C tion in Tille (C7) a (D9)	(4) ed Solls (C	Surface Drainag Dry-Se Crayfis Satural Stunted S6)	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) rephic Position (D2) eutral Test (D5)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Water M Sedime Drift De Algal M Iron De Inundat Sparsel Field Obser Surface Water Table Saturation F (includes ca	ordrology Indicators cators (minimum of water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca rvations: ter Present? Present? Present?	I Imagery (ve Surface Yes Yes	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc B7) Gauge or (B8) Other (Ex No X Depth (in No X Depth (in	ained Lea fauna (B1 atic Plants n Sulfide C Rhizosph of Reduct on Reduct on Reduct k Surface r Well Data (plain in R nches): nches): nches): nches): nches):	3) s (B14) Odor (C1) eres on Li zed Iron (C tion in Tille (C7) a (D9) emarks)	(4) ed Soils (C	Surface Drainag Dry-Se Crayfis Satural Stunted S6) X Geomo X FAC-N	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Water M Sedime Drift De Algal M Iron De Inundat Sparsel Field Obser Surface Water Table Saturation F (includes ca	ordrology Indicators cators (minimum of water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca rvations: ter Present? Present? Present?	I Imagery (ve Surface Yes Yes	Water-State	ained Lea fauna (B1 atic Plants a Sulfide C Rhizosph of Reduct on Reduct on Reduct k Surface well Data (plain in R anches): nches): nches): nches): nches):	3) s (B14) Odor (C1) eres on Li zed Iron (C tion in Tille (C7) a (D9) emarks)	(4) ed Soils (C	Surface Drainag Dry-Se Crayfis Satural Stunted S6) X Geomo X FAC-N	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) rephic Position (D2) eutral Test (D5)
Depth (in Remarks: IYDROLO Wetland Hy Primary Indi Surface High Water M Sedime Drift De Algal M Iron De Inundat Sparsel Field Obser Surface Water Table Saturation F (includes ca	ordrology Indicators cators (minimum of water (A1) ater Table (A2) ion (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) ion Visible on Aeria y Vegetated Conca rvations: ter Present? Present? Present?	I Imagery (ve Surface Yes Yes	Water-Sta Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc B7) Gauge or (B8) Other (Ex No X Depth (in No X Depth (in	ained Lea fauna (B1 atic Plants a Sulfide C Rhizosph of Reduct on Reduct on Reduct k Surface well Data (plain in R anches): nches): nches): nches): nches):	3) s (B14) Odor (C1) eres on Li zed Iron (C tion in Tille (C7) a (D9) emarks)	(4) ed Soils (C	Surface Drainag Dry-Se Crayfis Satural Stunted S6) X Geomo X FAC-N	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) rephic Position (D2) eutral Test (D5)

Project/Site: Otter Tail County Roa	ad Bike Trail	(City/Cou	_{nty:} Otter Ta	<u>iil </u>	Sampling Date: 6-18-	-19
Applicant/Owner: Houston Enginee	ring Inc.				State: MN	Sampling Point: 27u	
Investigator(s): Hannah Erdmann		;	Section,	Township, Ra	nge: <u>S14-T136-R41</u>		
Landform (hillslope, terrace, etc.): sid	eslope			_ Local relief	(concave, convex, none)	none	
Slope (%): 5 Lat: 46.600)070		Long:	5.809145		Datum: NAD 1983	
Soil Map Unit Name: Lida-Two Inlet	s complex, 1 to 8	percent slo	opes		NWI classific	cation: not listed	
Are climatic / hydrologic conditions on	the site typical for thi	is time of yea	ar? Yes	X_ No_	(If no, explain in F	Remarks.)	
Are Vegetation, Soil, o	r Hydrology:	significantly of	disturbed	d? Are	'Normal Circumstances"	present? Yes X	No
Are Vegetation, Soil, o	r Hydrology	naturally pro	blematic	? (If ne	eeded, explain any answe	ers in Remarks.)	
SUMMARY OF FINDINGS - A	Attach site map	showing	sampl	ing point l	ocations, transects	s, important featur	es, etc.
Hydrophytic Vegetation Present?	Yes X					-	
Hydric Soil Present?	Yes N	10 X	Is	the Sampled			
Wetland Hydrology Present?	Yes N	10 <u>X</u>	w	rithin a Wetlar	nd? Yes	No <u>X</u>	
Remarks:							
VEGETATION – Use scientific	names of plants	·.					
Tree Stratum (Plot size:)	Absolute % Cover		ant Indicator s? Status	Dominance Test work		
1					Number of Dominant S That Are OBL, FACW,		(A)
2					Total Number of Domir		_ ` ,
3					Species Across All Stra	4	_ (B)
4					Percent of Dominant S	pecies	
5					That Are OBL, FACW,		_ (A/B)
Sapling/Shrub Stratum (Plot size: _)		= Total (Cover	Prevalence Index wor	rksheet:	
1					Total % Cover of:	Multiply by:	
2						x 1 =	
3						x 2 =	
4						x 3 =	
5						x 4 = x 5 =	
Herb Stratum (Plot size: 5' radius)		- Total C	Jover		(A)	
1. Phalaris arundinacea		100	<u>Y</u>	_ FACW_			(-/
2					Prevalence Index		
3					Hydrophytic Vegetati	on indicators: Hydrophytic Vegetation	
4					2 - Dominance Te		
5 6					3 - Prevalence Ind		
7					4 - Morphological	Adaptations¹ (Provide su	upporting
8.						s or on a separate shee	,
9					Problematic Hydro	phytic Vegetation ¹ (Exp	lain)
10					¹ Indicators of hydric so	il and wetland hydrology	v must
Woody Vine Stratum (Plot size:	,	100	= Total (Cover	be present, unless dist		rinast
1					Hydrophytic		
2.					Vegetation	V	
			= Total (Cover	Present? Ye	es_X No	
Remarks: (Include photo numbers h	ere or on a separate	sheet.)					_

SOIL Sampling Point: 27u

Profile Description: (Describe to	the depth needed to	document the indicator	or confirm	n the absence of indicators.)	
DepthMatrix		Redox Features			
(inches) Color (moist)	% Color (mois	st) % Type ¹	Loc ²		_
0-36 2.5Y 2.5/1	100			SC	
					_
					_
					_
					_
					_
					_
¹ Type: C=Concentration, D=Deple	etion, RM=Reduced Mati	ix, MS=Masked Sand G	rains.	² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil Indicators:				Indicators for Problematic Hydric Soils ³ :	
Histosol (A1)		andy Gleyed Matrix (S4)		Coast Prairie Redox (A16)	
Histic Epipedon (A2)		andy Redox (S5)		Dark Surface (S7)	
Black Histic (A3)		ripped Matrix (S6)		Iron-Manganese Masses (F12)	
Hydrogen Sulfide (A4)		amy Mucky Mineral (F1)		Very Shallow Dark Surface (TF12)	
Stratified Layers (A5)		amy Gleyed Matrix (F2)		Other (Explain in Remarks)	
2 cm Muck (A10)		epleted Matrix (F3)			
Depleted Below Dark Surface		edox Dark Surface (F6)		31 milionators of building building constation and	
Thick Dark Surface (A12) Sandy Mucky Mineral (S1)		epleted Dark Surface (F7 edox Depressions (F8))	³ Indicators of hydrophytic vegetation and wetland hydrology must be present,	
5 cm Mucky Peat or Peat (S3)		edox Depressions (Fo)		unless disturbed or problematic.	
Restrictive Layer (if observed):				unless disturbed of problematic.	
_ , , , ,					
Type:				Hydric Soil Present? Yes NoX	_
Depth (inches):					
Remarks:					
HYDROLOGY					
Wetland Hydrology Indicators:					
Primary Indicators (minimum of on	a ia manuimado abaale all fi	and analys		Secondary Indicators (minimum of two required	۱۱.
	•	,			7)
Surface Water (A1)		er-Stained Leaves (B9)		Surface Soil Cracks (B6)	
High Water Table (A2)		itic Fauna (B13)		Drainage Patterns (B10)	
Saturation (A3)		Aquatic Plants (B14)		Dry-Season Water Table (C2)	
Water Marks (B1)		ogen Sulfide Odor (C1)		Crayfish Burrows (C8)	
Sediment Deposits (B2)	_	ized Rhizospheres on Li	•	—	
Drift Deposits (B3)	_	ence of Reduced Iron (C	-	Stunted or Stressed Plants (D1)	
Algal Mat or Crust (B4)	_	ent Iron Reduction in Tille	ed Soils (C6		
Iron Deposits (B5)		Muck Surface (C7)		X FAC-Neutral Test (D5)	
Inundation Visible on Aerial Im	nagery (B7) Gau	ge or Well Data (D9)			
Sparsely Vegetated Concave	Surface (B8) Othe	r (Explain in Remarks)			
Field Observations:					
Surface Water Present? Ye	s No _X_ Dep	th (inches):	_		
Water Table Present? Ye	s No X Dep	th (inches):	_		
Saturation Present? Ye	s No X Dep	th (inches):	Wetla	and Hydrology Present? Yes No _X	_
(includes capillary fringe)					_
Describe Recorded Data (stream of	gauge, monitoring well, a	erial photos, previous in	spections),	if available:	
Remarks:					

Project/Site: Otter Tail County Road	Bike Tra	uil		City/Co	ounty: Otter Ta	il	Sampling Date: 6-18-19		
Applicant/Owner: Houston Engineering	ng Inc.			10.00		State: MN	Sampling Point: 27w		
Investigator(s): Hannah Erdmann				Section, Township, Range: S14-T136-R41					
Landform (hillslope, terrace, etc.): depre	ession				Local relief	(concave, convex, none):	concave		
Slope (%): 0-1 Lat: 46.60005					-95.809145		Datum NAD 1983		
Soil Map Unit Name: Lida-Two Inlets	complex,	, 1 to 8	percent sl	opes		NVVI classific	cation: PABF		
Are climatic / hydrologic conditions on the Are Vegetation, Soil, or H Are Vegetation, Soil, or H SUMMARY OF FINDINGS Att	lydrology lydrology tach site	e map	significantly naturally pro	disturb blemat	ed? Are "	Normal Circumstances" peded, explain any answe	oresent? Yes X No		
Hydrophytic Vegetation Present?		\	No		Is the Sampled	Area			
Hydric Soil Present? Wetland Hydrology Present?	Yes		No		within a Wetlan		No		
Remarks:	res		NO		Transit Transit		- **		
VEGETATION – Use scientific na Tree Stratum (Plot size:)		Absolute		nant Indicator ies? Status	Dominance Test work Number of Dominant S That Are OBL, FACW,	pecies		
2						Total Number of Domin	pant		
3				-	\rightarrow	Species Across All Stra	ta: <u>Z</u> (B)		
5						Percent of Dominant Sp That Are OBL, FACW,			
Sapling/Shrub Stratum (Plot size:				= Tota	I Cover	FACW species			
5' radius	- 0			= Tota	Cover	UPL species	x 5 =		
Herb Stratum (Plot size: 5' radius 1. Polygonum aviculare			50	Υ	FAC	Column Totals:	(A) (B)		
2. Phalaris arundinacea			40	Y	FACW	Prevalence Index	= R/A =		
3 Carex hystericina			10	N	OBL	Hydrophytic Vegetatio			
4						1 - Rapid Test for F 2 - Dominance Tes 3 - Prevalence Inde 4 - Morphological A data in Remarks Problematic Hydro	Hydrophytic Vegetation st is >50% ex is ≤3.0¹ Adaptations¹ (Provide supporting so on a separate sheet) phytic Vegetation¹ (Explain)		
Woody Vine Stratum (Plot size:1		_)		≈ Tota	l Cover	be present, unless distu			
				= Tota	l Cover	Present? Ye	s_X No		
Remarks: (Include photo numbers here	or on a s	eparate	sheet.)						

SOIL	Sampling Point 27

	Matrix			ox Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type	Loc2	Texture	Remarks
	Y 2.5/1	95	10YR 3/6	5	С	М	<u>s</u>	
12-24+ 2	2.5Y 2.5/1	100					SC	
			-					
		-	-	-	-	_		
		_	-		_			
			-					
		pletion, RN	M=Reduced Matrix, M	MS=Maske	d Sand G	ains.		PL=Pore Lining, M=Matrix.
ydric Soil Indi			5	لادرع				or Problematic Hydric Soils ³ :
_ Histosol (A1	V			Gleyed M				rairie Redox (A16)
Histic EpipeBlack Histic				Redox (S ed Matrix (face (S7) nganese Masses (F12)
_ Hydrogen S	Andrew Co. Land			y Mucky M				allow Dark Surface (TF12)
Stratified La				y Gleyed N				xplain in Remarks)
2 cm Muck	(A10)			ted Matrix				
	elow Dark Surfa	ce (A11)		Dark Surf			12.00	
	Surface (A12)			ted Dark S) .		f hydrophytic vegetation and
	ky Mineral (S1) y Peat or Peat (S	22)	Redox	Depression	ons (F8)			nydrology must be present, isturbed or problematic.
	er (if observed	3.7					unless of	isturbed of problematic
Confession Cay	er (ii observed	,.					100	and the same of the same
Type:							Hydric Soil P	resent? Yes X No
Type:	e).						The second contract of the con	
Type: Depth (inche Remarks:	es):						100000000	
Depth (inche								
Depth (inche temarks:	,							
Depth (inche Remarks: YDROLOGY Wetland Hydro	γ ology Indicators		stonel alterate all these					
Depth (inche lemarks: YDROLOGY Vetland Hydro	Y ology Indicators ors (minimum of		uired; check all that a		/00 /PDV		Secondary	Indicators (minimum of two require
Depth (inche lemarks: YDROLOGY Vetland Hydro rimary Indicato Surface Wa	ology Indicators ors (minimum of ater (A1)		Water-St	tained Lea			SecondarySurface	Indicators (minimum of two require se Soil Cracks (B6)
Depth (inche lemarks: /DROLOGY /etland Hydro rimary Indicato Surface Wa High Water	ology Indicators ors (minimum of ater (A1) Table (A2)		Water-St	tained Lea Fauna (B1:	3)		Secondary Surfac	r Indicators (minimum of two require be Soil Cracks (B6) age Patterns (B10)
Depth (inche lemarks: YDROLOGY Wetland Hydro Irimary Indicato Surface Wa High Water Saturation (Vology Indicators ors (minimum of ater (A1) Table (A2) (A3)		Water-St Aquatic I True Aqu	tained Lea Fauna (B1: uatic Plants	3) s (B14)		Secondary Surface Draina Dry-Se	r Indicators (minimum of two require be Soil Cracks (B6) age Patterns (B10) eason Water Table (C2)
Depth (inche iemarks: DROLOGY Vetland Hydro rimary Indicato Surface Wa High Water Saturation (Water Mark	y ology Indicators ors (minimum of ater (A1) Table (A2) (A3) (S (B1)		Water-Si Aquatic I True Aqu Hydroge	tained Lea Fauna (B1: uatic Plants n Sulfide C	3) s (B14) odor (C1)	ving Roots	Secondary Surface Draina Dry-Se Crayfic	r Indicators (minimum of two require ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8)
Pepth (inche Remarks: YDROLOGY Vetland Hydro Primary Indicate Surface Wa High Water Saturation (Water Mark Sediment D	Vology Indicators ors (minimum of ater (A1) Table (A2) (A3) (A3) Opposits (B2)		Water-Si Aquatic I True Aqu Hydroge Oxidized	tained Lea Fauna (B1: uatic Plants	3) s (B14) odor (C1) eres on Li		Secondary Surface Draina Dry-Se Crayfice (C3) Sature	r Indicators (minimum of two require ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9)
Pepth (inche lemarks: YDROLOGY Vetland Hydro Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi	Vology Indicators ors (minimum of ater (A1) Table (A2) (A3) (A3) Opposits (B2)		Water-Si Aquatic I True Aqu Hydroge Oxidized Presence	tained Lea Fauna (B1; uatic Plants n Sulfide C I Rhizosph	3) s (B14) odor (C1) eres on Li ed Iron (C	4)	Secondary Surfac Draina Dry-Sc Crayfic (C3) Satura	r Indicators (minimum of two require ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8)
Pepth (inche lemarks: YDROLOGY Vetland Hydro Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi	ology Indicators ors (minimum of ater (A1) Table (A2) (A3) (A3) (A5 (B1) Deposits (B2) its (B3) or Crust (B4)		Water-Si Aquatic I True Aqu Hydroge Oxidized Presence Recent I	tained Lea Fauna (B1: uatic Plants n Sulfide C I Rhizosph e of Reduc	3) s (B14) odor (C1) eres on Li ed Iron (C tion in Tille	4)	Secondary Surfac Draina Dry-Se Crayfie (C3) Satura Stunte M Geom	r Indicators (minimum of two require the Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) and or Stressed Plants (D1)
Pepth (inche Remarks: YDROLOGY Vetland Hydro Primary Indicator Surface Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi	ology Indicators ors (minimum of ater (A1) Table (A2) (A3) (A3) (A5 (B1) Deposits (B2) its (B3) or Crust (B4)	one is requ	Water-St Aquatic I True Aqu Hydroge Oxidized Presence Recent II	tained Lea Fauna (B1; uatic Plants n Sulfide C I Rhizosphi e of Reduction Reduction	3) s (B14) odor (C1) eres on Li ed Iron (C tion in Tille (C7)	4)	Secondary Surfac Draina Dry-Se Crayfie (C3) Satura Stunte M Geom	r Indicators (minimum of two require ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2)
Pepth (inche lemarks: YDROLOGY Vetland Hydro rimary Indicate Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation (ology Indicators ors (minimum of ater (A1) Table (A2) (A3) (xs (B1) Deposits (B2) its (B3) r Crust (B4) its (B5)	one is requ	Water-St Aquatic I True Aqu Hydroge Oxidized Presence Recent I Thin Muc	tained Lear Fauna (B1: uatic Plants n Sulfide C I Rhizosphi e of Reduction Reduction ck Surface	B) B (B14) D dor (C1) Beres on Li Bed Iron (C Bition in Tille B (C7) B (D9)	4)	Secondary Surfac Draina Dry-Se Crayfie (C3) Satura Stunte M Geom	r Indicators (minimum of two require ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2)
Pepth (inche Remarks: YDROLOGY Vetland Hydro Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi	Plogy Indicators ors (minimum of ater (A1) Table (A2) (A3) (S (B1) Deposits (B2) its (B3) or Crust (B4) its (B5) Visible on Aerial egetated Concar	one is requ	Water-St Aquatic I True Aqu Hydroge Oxidized Presence Recent I Thin Muc B7) Gauge o (B8) Other (E	tained Lear Fauna (B1: uatic Plants n Sulfide C I Rhizosphr e of Reduct ron Reduct ck Surface or Well Data	B) B (B14) D dor (C1) Beres on Li Bed Iron (C Bition in Tille B (C7) B (D9)	4)	Secondary Surfac Draina Dry-Se Crayfie (C3) Satura Stunte M Geom	r Indicators (minimum of two require ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2)
Pepth (inche Remarks: YDROLOGY Vetland Hydro Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation V Sparsely Ve	y logy Indicators ors (minimum of ater (A1) Table (A2) (A3) (S (B1) Deposits (B2) its (B3) or Crust (B4) its (B5) Visible on Aerial egetated Concar ions:	one is requ	Water-St Aquatic I True Aqu Hydroge Oxidized Presence Recent I Thin Muc	tained Leav Fauna (B1: uatic Plants n Sulfide C I Rhizosphi e of Reduct ron Reduct ck Surface or Well Data xplain in R	B) B (B14) D dor (C1) Beres on Li Bed Iron (C Bition in Tille B (C7) B (D9)	4)	Secondary Surfac Draina Dry-Se Crayfie (C3) Satura Stunte M Geom	r Indicators (minimum of two require ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2)
Pepth (inche Remarks: YDROLOGY Vetland Hydro Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation V Sparsely Ve	ology Indicators ors (minimum of ater (A1) Table (A2) (A3) (A3) (A5) (A5) (A5) (A5) (A5) (A5) (A5) (A5	one is requ Imagery (I	Water-St	tained Leav Fauna (B1: uatic Plants n Sulfide C I Rhizosphi e of Reduct ron Reduct ck Surface or Well Data xplain in R	B) B (B14) D dor (C1) Beres on Li Bed Iron (C Bition in Tille B (C7) B (D9)	4) ed Soils (C	Secondary Surface Draina Dry-Se Crayfice (C3) Satura Stunte 6) X Geom X FAC-N	r Indicators (minimum of two require the Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) and or Stressed Plants (D1) orphic Position (D2) Neutral Test (D5)
Pepth (inche Remarks: YDROLOGY Vetland Hydro Primary Indicator Surface Water Saturation (Water Mark Sediment D Drift Deposit Algal Mat or Iron Deposit Inundation (Sparsely Vetled Observatif Surface Water Fetle Present Contract of P	ology Indicators ors (minimum of ater (A1) Table (A2) (A3) (A3) (A5) (A5) (A5) (A5) (A5) (A5) (A5) (A5	one is required in the second of the second	Water-St Aquatic I Aquatic I True Aqu Hydroge Oxidized Presence Recent II Thin Muc 37) Gauge o (B8) Other (E	tained Lear Fauna (B1: uatic Plants n Sulfide C I Rhizosphr e of Reduct ron Reduct ck Surface or Well Data xplain in R inches):	B) B (B14) D dor (C1) Beres on Li Bed Iron (C Bition in Tille B (C7) B (D9)	4) ed Soils (C	Secondary Surface Draina Dry-Se Crayfice (C3) Satura Stunte 6) X Geom X FAC-N	r Indicators (minimum of two require ce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1) orphic Position (D2)
Pepth (inche Remarks: YDROLOGY Vetland Hydro Primary Indicato Surface Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation V Sparsely Veticated Observati Surface Water Fetigaturation Presencludes capilla	ology Indicators ors (minimum of ater (A1) Table (A2) (A3) (A3) (A5) (A5) (A5) (A5) (A5) (A5) (A5) (A5	Imagery (I ve Surface Yes Yes Yes	Water-St	tained Lear Fauna (B1: uatic Plants n Sulfide C I Rhizosphre e of Reduct ron Reduct ck Surface or Well Data xplain in R inches): inches): inches): inches); inches);	3) s (B14) odor (C1) eres on Li ed Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Secondary Surface Draina Dry-Se Crayfice (C3) Satura Stunte 6) X Geom X FAC-N	r Indicators (minimum of two requiresce Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) ad or Stressed Plants (D1) orphic Position (D2) Neutral Test (D5)
Pepth (inche Remarks: YDROLOGY Vetland Hydro Surface Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation V Sparsely Vetical Observati Surface Water Fable Presence Water Table Presence Includes capilla	ology Indicators ors (minimum of ater (A1) Table (A2) (A3) (A3) (A5) (A5) (A5) (A5) (A5) (A5) (A5) (A5	Imagery (I ve Surface Yes Yes Yes	Water-St Aquatic I True Aqu Hydroge Oxidized Presence Recent II Thin Muc 37) Gauge o (B8) Other (E No X Depth (ii No X Depth (ii	tained Lear Fauna (B1: uatic Plants n Sulfide C I Rhizosphre e of Reduct ron Reduct ck Surface or Well Data xplain in R inches): inches): inches): inches); inches);	3) s (B14) odor (C1) eres on Li ed Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Secondary Surface Draina Dry-Se Crayfice (C3) Satura Stunte 6) X Geom X FAC-N	r Indicators (minimum of two require the Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) and or Stressed Plants (D1) orphic Position (D2) Neutral Test (D5)
Pepth (inche Remarks: YDROLOGY Vetland Hydro Surface Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Inundation V Sparsely Vetical Observati Surface Water Fable Presence Water Table Presence Includes capilla	ology Indicators ors (minimum of ater (A1) Table (A2) (A3) (A3) (A5) (A5) (A5) (A5) (A5) (A5) (A5) (A5	Imagery (I ve Surface Yes Yes Yes	Water-St Aquatic I True Aqu Hydroge Oxidized Presence Recent II Thin Muc 37) Gauge o (B8) Other (E No X Depth (ii No X Depth (ii	tained Lear Fauna (B1: uatic Plants n Sulfide C I Rhizosphre e of Reduct ron Reduct ck Surface or Well Data xplain in R inches): inches): inches): inches); inches);	3) s (B14) odor (C1) eres on Li ed Iron (C tion in Tille (C7) a (D9) emarks)	4) ed Soils (C	Secondary Surface Draina Dry-Se Crayfice (C3) Satura Stunte 6) X Geom X FAC-N	r Indicators (minimum of two require the Soil Cracks (B6) age Patterns (B10) eason Water Table (C2) sh Burrows (C8) ation Visible on Aerial Imagery (C9) and or Stressed Plants (D1) orphic Position (D2) Neutral Test (D5)

Project/Site: Otter Tail County Road Bike Trail	(City/Cou	unty: <u>C</u>	Otter Ta	il Sampling Date: 6-18-19
Applicant/Owner: Houston Engineering Inc.					State: MN Sampling Point: 28u
Investigator(s): Hannah Erdmann		Section	, Town	iship, Rai	nge: <u>S18-T136-R40</u>
Landform (hillslope, terrace, etc.): sideslope			Loc	cal relief	(concave, convex, none): none
					Datum: NAD 1983
Soil Map Unit Name: Haslie and Nidaros soils, ponded					NWI classification: not listed
Are climatic / hydrologic conditions on the site typical for this					
					Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrology si					· — —
Are Vegetation, Soil, or Hydrology n SUMMARY OF FINDINGS - Attach site map s					eded, explain any answers in Remarks.)
			J9	point it	
Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes No	X	1	ls the S	Sampled	Area
Wetland Hydrology Present? Yes No	$\frac{1}{X}$	١,	within	a Wetlan	nd? Yes NoX
Remarks:					
VECETATION Line exicutific names of plants					
VEGETATION – Use scientific names of plants.					I Boundaries Took word about
Tree Stratum (Plot size: 30' radius)	Absolute % Cover			idicator Status	Dominance Test worksheet:
1. Ulmus americana	10	Υ		ACW	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
2. Fraxinus nigra	10	Υ	F.	ACW	
3					Total Number of Dominant Species Across All Strata: 6 (B)
4					
5					Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)
15' radius	_20	= Total	Cover		
Sapling/Shrub Stratum (Plot size: 15'. radius)	15	V	_	۸ <i>C</i> \	Prevalence Index worksheet:
1. Vitis riparia				ACW_	
2					FACW species x 2 =
3					FAC species x 3 =
4. 5.					FACU species x 4 =
	15				UPL species x 5 =
Herb Stratum (Plot size: 5' radius)					Column Totals: (A) (B)
1. Bromus inermis	40	<u>Y</u>		ACU	
2. Phalaris arundinacea	30	<u>Y</u>		ACW	Prevalence Index = B/A =
3. Asclepias syriaca	20	<u>Y</u>		ACU	Hydrophytic Vegetation Indicators:
4. Poa pratensis	10	<u>N</u>		AC	1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%
5					l .
6			— –		3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting
7					data in Remarks or on a separate sheet)
8			— –		Problematic Hydrophytic Vegetation ¹ (Explain)
9					
10	400	= Total			¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)		- Total	Cover		be present, unless disturbed or problematic.
1					Hydrophytic
2					Vegetation
		= Total	Cover	·	Present? Yes No
Remarks: (Include photo numbers here or on a separate s	heet.)				

SOIL Sampling Point: 28u

	epth needed to document the indicator or cor	min the about or maioatoroly
DepthMatrix	Redox Features	_
(inches) Color (moist) %	Color (moist) % Type ¹ Loc	
0-3 10YR 3/1		SCL
3-6 2.5Y 5/6		SCL
	M=Reduced Matrix, MS=Masked Sand Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	3 Indicators of hydrophytic variation and
Thick Dark Surface (A12) Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)Redox Depressions (F8)	Indicators of hydrophytic vegetation and wetland hydrology must be present,
5 cm Mucky Peat or Peat (S3)	Redox Depressions (Fo)	unless disturbed or problematic.
Restrictive Layer (if observed):		unless distarbed of problematic.
Type: gravel/rocks		
,,		Hydric Soil Present? Yes No _X_
Depth (inches): 6		
Remarks:		
Restrictive layer near the road		
HYDROLOGY		
Madand Undual and Indiantary		
Wetland Hydrology Indicators:		
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required)	11.77	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is reg Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Primary Indicators (minimum of one is reg Surface Water (A1) High Water Table (A2)	11.77	Surface Soil Cracks (B6) Drainage Patterns (B10)
Primary Indicators (minimum of one is reg Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Primary Indicators (minimum of one is reg Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6) Drainage Patterns (B10)
Primary Indicators (minimum of one is reg Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Primary Indicators (minimum of one is reg Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Primary Indicators (minimum of one is req Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) oots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Primary Indicators (minimum of one is reg Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Roman Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) oots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Primary Indicators (minimum of one is reg Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) oots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) s (C6) Geomorphic Position (D2)
Primary Indicators (minimum of one is reg 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)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) oots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) s (C6) Geomorphic Position (D2)
Primary Indicators (minimum of one is reg 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 (Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) oots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) s (C6) Geomorphic Position (D2)
Primary Indicators (minimum of one is reg 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 (Sparsely Vegetated Concave Surface) Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) oots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) s (C6) Geomorphic Position (D2)
Primary Indicators (minimum of one is reg 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 (Sparsely Vegetated Concave Surface) Field Observations: Surface Water Present? Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) oots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) s (C6) Geomorphic Position (D2)
Primary Indicators (minimum of one is reg 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 (Sparsely Vegetated Concave Surface) Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present? Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No X Depth (inches): No X Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) sots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) X FAC-Neutral Test (D5)
Primary Indicators (minimum of one is requested and services are services and servi	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No X Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) oots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) s (C6) Geomorphic Position (D2)
Primary Indicators (minimum of one is reg 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 (Sparsely Vegetated Concave Surface) Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No X Depth (inches): No X Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) pots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) X FAC-Neutral Test (D5)
Primary Indicators (minimum of one is reg 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 (Sparsely Vegetated Concave Surface) Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No X Depth (inches): No X Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) pots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) X FAC-Neutral Test (D5)
Primary Indicators (minimum of one is reg 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 (Sparsely Vegetated Concave Surface) Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, 1)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No X Depth (inches): No X Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) pots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) X FAC-Neutral Test (D5)
Primary Indicators (minimum of one is reg 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 (Sparsely Vegetated Concave Surface) Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No X Depth (inches): No X Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) pots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) X FAC-Neutral Test (D5)
Primary Indicators (minimum of one is reg 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 (Sparsely Vegetated Concave Surface) Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, 1)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No X Depth (inches): No X Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) pots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) X FAC-Neutral Test (D5)
Primary Indicators (minimum of one is reg 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 (Sparsely Vegetated Concave Surface) Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, 1)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Thin Muck Surface (C7) B7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No X Depth (inches): No X Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) pots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) X FAC-Neutral Test (D5)

Project/Site: Otter Tail County Road Bike Trail	(City/County	_{/:} Otter Ta	<u>iil </u>	Sampling Date: 6-18-19
Applicant/Owner: Houston Engineering Inc.				State: MN	Sampling Point: 28w
Investigator(s): Hannah Erdmann	;	Section, To	wnship, Ra	nge: <u>S18-T136-R40</u>	
Landform (hillslope, terrace, etc.): depression			Local relief	(concave, convex, none):	concave
		Long: <u>-95</u>	.775980		Datum: NAD 1983
Soil Map Unit Name: Haslie and Nidaros soils, ponded	<u> </u>			NWI classifica	ation: PEM1F
Are climatic / hydrologic conditions on the site typical for this			<u> </u>	(If no, explain in Re	emarks.)
Are Vegetation, Soil, or Hydrology signature.	gnificantly	disturbed?	Are °	'Normal Circumstances" pr	resent? Yes X No
Are Vegetation, Soil, or Hydrology na	aturally pro	blematic?	(If ne	eeded, explain any answer	s in Remarks.)
SUMMARY OF FINDINGS - Attach site map s	howing	samplin	ig point l	ocations, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes No	·				
Hydric Soil Present? Yes X No			ne Sampled		No
Wetland Hydrology Present? Yes No	<u>, </u>	with	nin a Wetlar	nd? Yes _/\	No
Remarks:					
VEGETATION – Use scientific names of plants.					
	Absolute	Dominant	Indicator	Dominance Test works	sheet:
<u>Tree Stratum</u> (Plot size:) 1	% Cover			Number of Dominant Sp That Are OBL, FACW, o	
2				Total Number of Domina	0
3 4				Species Across All Strat	a: <u>3</u> (B)
5.				Percent of Dominant Sp. That Are OBL, FACW, o	
Sapling/Shrub Stratum (Plot size:)		= Total Co	ver	Prevalence Index work	sheet:
1				Total % Cover of:	
2.					x 1 =
3				FACW species	x 2 =
4				FAC species	x 3 =
5				FACU species	x 4 =
Herb Stratum (Plot size: 5' radius		= Total Co	ver		x 5 =
1. Typha sp.	40	Υ	OBL	Column Totals:	(A) (B)
2 Carex lacustris	30	Y	OBL	Prevalence Index	= B/A =
Phalaris arundinacea	25	Υ	FACW	Hydrophytic Vegetatio	n Indicators:
4. Urtica dioica	5	N	FACW		ydrophytic Vegetation
5				2 - Dominance Test	
6				3 - Prevalence Inde	
7					daptations ¹ (Provide supporting or on a separate sheet)
8					hytic Vegetation ¹ (Explain)
9					Tytio Vogotation (Explain)
10					and wetland hydrology must
Woody Vine Stratum (Plot size:)	100	= Total Co	ver	be present, unless distu	rbed or problematic.
1				Hydrophytic	
2				Vegetation Present? Yes	No
Remarks: (Include photo numbers here or on a separate si		= Total Co	ver		
, , , , , , , , , , , , , , , , , , , ,					

SOIL Sampling Point: 28w

		to the deptr	needed to document the indicator or	confirm th	e absence	of indicators.)
Depth (inches)	Matrix Color (moist)	——————————————————————————————————————	Redox Features Color (moist) % Type ¹	Loc ²	Texture	Remarks
0-12	10YR 2/1	100	70 1 ypc	<u> </u>		1/2" of muck
12-13	2.5Y 2.5/1	100				
13-24	2.5Y 7/1	100			<u> </u>	
				<u> </u>		
¹ Type: C=Co	oncentration, D=De	pletion, RM=F	Reduced Matrix, MS=Masked Sand Grains	S.	² Location	: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:				Indicators	for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy Gleyed Matrix (S4)		Coast	Prairie Redox (A16)
	pipedon (A2)		Sandy Redox (S5)		_	Surface (S7)
Black Hi	, ,		Stripped Matrix (S6)		_	anganese Masses (F12)
	n Sulfide (A4) d Layers (A5)		Loamy Mucky Mineral (F1)Loamy Gleyed Matrix (F2)			Shallow Dark Surface (TF12) (Explain in Remarks)
_	ick (A10)		Depleted Matrix (F3)		Other	(Explain in Remarks)
_	d Below Dark Surfa	ce (A11)	Redox Dark Surface (F6)			
	ark Surface (A12)	` '	Depleted Dark Surface (F7)		³ Indicators	of hydrophytic vegetation and
Sandy M	lucky Mineral (S1)		Redox Depressions (F8)		wetland	d hydrology must be present,
	icky Peat or Peat (S				unless	disturbed or problematic.
Restrictive I	_ayer (if observed):				
Туре:			_	١,	Hydric Soil	Present? Yes X No
Depth (inc	ches):				.,	
Remarks:						
HYDROLO						
	drology Indicators					
		one is require	d; check all that apply)			ary Indicators (minimum of two required)
	Water (A1)		Water-Stained Leaves (B9)			face Soil Cracks (B6)
	iter Table (A2)		Aquatic Fauna (B13)			inage Patterns (B10)
Saturatio	,		True Aquatic Plants (B14)			-Season Water Table (C2)
	arks (B1)		Hydrogen Sulfide Odor (C1)	. Doots (C2		yfish Burrows (C8)
	nt Deposits (B2)			Roots (Ca	-	uration Visible on Aerial Imagery (C9)
	oosits (B3) at or Crust (B4)		Presence of Reduced Iron (C4)Recent Iron Reduction in Tilled S	Coile (C6)		nted or Stressed Plants (D1) omorphic Position (D2)
-	oosits (B5)		Thin Muck Surface (C7)	olis (CO)		C-Neutral Test (D5)
	on Visible on Aerial	Imagery (B7)			<u> </u>	Artoural rest (Bo)
_	Vegetated Concav					
Field Observ		,		Τ		
Surface Wate	er Present?	Yes N	o X Depth (inches):			
Water Table			o X Depth (inches):			
Saturation Pr	resent?	Yes X N	o Depth (inches): 0"	Wetland	d Hydrolog	y Present? Yes X No
(includes cap	oillary fringe)					,
Describe Red	corded Data (stream	n gauge, mon	itoring well, aerial photos, previous inspe	ctions), if a	vailable:	
Remarks:						

Project/Site: Otter Tail County Road Bike Trail	(City/Co	ounty:	il Sampling Date: 6-18-19	
Applicant/Owner: Houston Engineering Inc.					State: MN Sampling Point: 29u
Investigator(s): Hannah Erdmann	:	Sectio	n, Tov	vnship, Ran	nge: <u>S18-T136-R40</u>
Landform (hillslope, terrace, etc.): sideslope			L	ocal relief ((concave, convex, none): NONe
Slope (%): 4 Lat: _46.599954					
Soil Map Unit Name: Forada and Leafriver soils, depre					NWI classification: not listed
Are climatic / hydrologic conditions on the site typical for this					
					Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrology s					,
Are Vegetation, Soil, or Hydrology n					eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map		Sam	biini) point ic	ocations, transects, important leatures, etc.
Hydrophytic Vegetation Present? Yes X N	~~		le tha	Sampled	Area
Hydric Soil Present? Yes New Yes	$\sim \frac{1}{2}$			n a Wetlan	
Remarks:			*******		135 <u></u>
Tremains.					
VEGETATION – Use scientific names of plants.					
Tree Stratum (Plot size:)	Absolute % Cover			Indicator	Dominance Test worksheet:
1					Number of Dominant Species That Are OBL, FACW, or FAC: _1(A)
2					
3					Total Number of Dominant Species Across All Strata: 1 (B)
4.					
5					Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)
		= Tota	al Cov	er	
Sapling/Shrub Stratum (Plot size:)					Prevalence Index worksheet:
1					Total % Cover of: Multiply by:
2					OBL species x 1 =
3					FACW species x 2 = FAC species x 3 =
4					FACU species x 4 =
5					UPL species x 5 =
Herb Stratum (Plot size: 5' radius)					Column Totals: (A) (B)
1. Phalaris arundinacea	80	<u>Y</u>		FACW_	()
2. Poa pratensis	10	N		FAC	Prevalence Index = B/A =
3. Bromus inermis	5	N		FACU	Hydrophytic Vegetation Indicators:
4. Equisetum arvense	5	<u>N</u>		FAC	1 - Rapid Test for Hydrophytic Vegetation
5					× 2 - Dominance Test is >50%
6					3 - Prevalence Index is ≤3.0¹
7				——	 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
8				——	Problematic Hydrophytic Vegetation ¹ (Explain)
9					
10	400				¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)	100	= Tota	ii Cov	er	be present, unless disturbed or problematic.
1					Hydrophytic
2					Vegetation
		= Tota	al Cov	er	Present? Yes X No
Remarks: (Include photo numbers here or on a separate s	sheet.)				

SOIL Sampling Point: 29u

Profile Description	n: (Describe to the	depth needed to document the indicator of	or confirm the absence of indicators.)	
Depth	Matrix	Redox Features		
	olor (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks	
0-5 2.5Y	3/1 100			
l — — —				
l				
l — — —				
¹ Type: C=Concent	ration, D=Depletion,	RM=Reduced Matrix, MS=Masked Sand Gra	ains. ² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil Indicat	tors:		Indicators for Problematic Hydric Soils ³ :	
Histosol (A1)		Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)	
Histic Epipedor	n (A2)	Sandy Redox (S5)	Dark Surface (S7)	
Black Histic (A	3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)	
Hydrogen Sulfi		Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)	
Stratified Layer	s (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)	
2 cm Muck (A1	,	Depleted Matrix (F3)		
ı —	v Dark Surface (A11)			
Thick Dark Sur	` '	Depleted Dark Surface (F7)		
Sandy Mucky N	, ,	Redox Depressions (F8)	wetland hydrology must be present,	
	eat or Peat (S3)		unless disturbed or problematic.	
Restrictive Layer	if observed):			
Туре:			Hydric Soil Present? Yes No	X
Depth (inches):	5		nyuric Son Fresent? Tes No	<u> </u>
Remarks:				
Restrictive layer i	near the road			
HYDROLOGY				
Wetland Hydrolog	y Indicators:			
Primary Indicators	minimum of one is re	equired; check all that apply)	Secondary Indicators (minimum of two requ	ired)
Surface Water	(A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)	
High Water Tal	, ,	Aquatic Fauna (B13)	Drainage Patterns (B10)	
Saturation (A3)	, ,	True Aquatic Plants (B14)	Dry-Season Water Table (C2)	
Water Marks (E		Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)	
Sediment Depo		Oxidized Rhizospheres on Livi		۵)
Drift Deposits (Presence of Reduced Iron (C4		3)
I — .	•			
Algal Mat or Cr		Recent Iron Reduction in Tilled		
Iron Deposits (Thin Muck Surface (C7)	X FAC-Neutral Test (D5)	
I —	ble on Aerial Imagery	—		
Consume to Manager		ce (B8) Other (Explain in Remarks)		
sparsely vege	tated Concave Surfa	Ce (Bb) Other (Explain in Remarks)		
Field Observation	s:	· · ·		
	s:	NoX Depth (inches):		
Field Observation	s: sent? Yes	· · ·	I	
Field Observation: Surface Water Preservater Table Preservater	s: sent? Yes nt? Yes		_	×
Field Observation: Surface Water Pres	s: eent? Yes nt? Yes	No X Depth (inches):	_	<u>×_</u>
Field Observation: Surface Water Pres Water Table Present Saturation Present (includes capillary f	s: sent? Yes nt? Yes Yes ringe)		Wetland Hydrology Present? Yes No	<u>×_</u> _
Field Observation: Surface Water Pres Water Table Present Saturation Present (includes capillary f	s: sent? Yes nt? Yes Yes ringe)	No X Depth (inches): No X Depth (inches): No X Depth (inches):	Wetland Hydrology Present? Yes No	<u>×_</u>
Field Observation: Surface Water Pres Water Table Present Saturation Present (includes capillary f	s: sent? Yes nt? Yes Yes ringe)	No X Depth (inches): No X Depth (inches): No X Depth (inches):	Wetland Hydrology Present? Yes No	×
Field Observation: Surface Water Pres Water Table Preser Saturation Present' (includes capillary f Describe Recorded	s: sent? Yes nt? Yes Yes ringe)	No X Depth (inches): No X Depth (inches): No X Depth (inches):	Wetland Hydrology Present? Yes No	<u>×_</u>
Field Observation: Surface Water Pres Water Table Preser Saturation Present' (includes capillary f Describe Recorded	s: sent? Yes nt? Yes Yes ringe)	No X Depth (inches): No X Depth (inches): No X Depth (inches):	Wetland Hydrology Present? Yes No	×
Field Observation: Surface Water Pres Water Table Preser Saturation Present' (includes capillary f Describe Recorded	s: sent? Yes nt? Yes Yes ringe)	No X Depth (inches): No X Depth (inches): No X Depth (inches):	Wetland Hydrology Present? Yes No	×

Project/Site: Otter Tail County Road Bike Trail	(_ City/County: Otter Tail Sampling Date: 6-18					
Applicant/Owner: Houston Engineering Inc.				State: MN	Sampling Point: 29w		
Investigator(s): Hannah Erdmann	;	Section, To	wnship, Ra	nge: <u>S18-T136-R40</u>			
Landform (hillslope, terrace, etc.): depression			Local relief	(concave, convex, none):	concave		
Slope (%): 0-1 Lat: 46.599922		Long: -95.762461 Datum: NAD1983					
Soil Map Unit Name: Forada and Leafriver soils, depre	ssional	NWI classification: PEM1C					
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation, Soil, or Hydrology signature.	gnificantly	disturbed?	Are "	'Normal Circumstances" pr	resent? Yes X No		
Are Vegetation, Soil, or Hydrology na	aturally pro	blematic?	(If ne	eeded, explain any answers	s in Remarks.)		
SUMMARY OF FINDINGS - Attach site map s	howing	samplin	ıg point l	ocations, transects,	important features, etc.		
Hydrophytic Vegetation Present? Yes No							
Hydric Soil Present? Yes X			ne Sampled				
Wetland Hydrology Present? Yes X No	·	with	nin a Wetlar	nd? Yes _ <u> </u>	No		
Remarks:							
VECTATION III significance of plants							
VEGETATION – Use scientific names of plants.	Absolute	Dominant	t Indicator	Dominance Test works	hoot		
Tree Stratum (Plot size:)	% Cover			Number of Dominant Sp			
1				That Are OBL, FACW, o			
2				Total Number of Domina	unt o		
3				Species Across All Strate	a: <u>2</u> (B)		
4. 5.			. ——	Percent of Dominant Spe			
0		= Total Co	ver	That Are OBL, FACW, o	r FAC: 100% (A/B)		
Sapling/Shrub Stratum (Plot size:)				Prevalence Index work			
1				Total % Cover of:			
2					x 1 =		
3					x 2 = x 3 =		
4 5					x 4 =		
		= Total Co			x 5 =		
Herb Stratum (Plot size: 5' radius)					(A) (B)		
1. Phalaris arundinacea	40	<u>Y</u>	FACW		D/A		
2. Anemone canadensis Carex bicknellii	40 10	Y	FACU FACU	Prevalence Index			
Equisetum hyemale	10	N	FACW	Hydrophytic Vegetation	ydrophytic Vegetation		
"				2 - Dominance Test			
5 6				3 - Prevalence Index			
7			. ——		daptations ¹ (Provide supporting		
8.					or on a separate sheet)		
9.				Problematic Hydrop	hytic Vegetation ¹ (Explain)		
10				¹ Indicators of hydric soil	and wetland hydrology must		
Woody Vine Stratum (Plot size:)	100	= Total Co	ver	be present, unless distur			
1				Hydrophytic			
2.				Vegetation	V		
		= Total Co	otal Cover Present? Yes X No				
Remarks: (Include photo numbers here or on a separate si	heet.)						

SOIL Sampling Point: 29w

l		to the dep	th needed to docur			or confirm	n the absence of	indicators.)
Depth	Matrix Color (moist)	%	Color (moist)	x Feature %	Type ¹	Loc ²	Texture	Remarks
(inches) 0-4	5YR 2.5/1	100	Color (moist)		туре		SC	Remarks
			40VD 4/0					
4-12	Gley 2 6/10G	95	10YR 4/6	<u> 5</u>	_ <u>D</u>		<u>s</u>	
		- —						
		letion, RM:	=Reduced Matrix, M	S=Maske	d Sand Gi	ains.		PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:		\					r Problematic Hydric Soils ³ :
Histosol			X Sandy	-			_	airie Redox (A16)
	oipedon (A2)			Redox (S			Dark Surfa	• •
Black Hi	, ,			d Matrix (,		_	ganese Masses (F12)
	n Sulfide (A4) I Layers (A5)				ineral (F1) latrix (F2)			low Dark Surface (TF12) plain in Remarks)
	ick (A10)			d Matrix (Office (EX	plant in Nemarks)
ı —	d Below Dark Surfac	e (A11)		Dark Surf	. ,			
	ark Surface (A12)	,	_		urface (F7)	3Indicators of	hydrophytic vegetation and
Sandy M	lucky Mineral (S1)		Redox I	Depression	ons (F8)			ydrology must be present,
	icky Peat or Peat (S	-					unless dis	sturbed or problematic.
Restrictive I	_ayer (if observed)	:						
Туре:							Hydric Soil Pro	esent? Yes X No
Depth (inc	ches):						Hydric 30ii Fit	esent: TesNo
Remarks:								
HYDROLO	GY							
Wetland Hyd	drology Indicators:							
Primary Indic	cators (minimum of c	ne is requi	red; check all that ap	oply)			Secondary	Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Leav	ves (B9)		Surface	e Soil Cracks (B6)
— High Wa	iter Table (A2)		Aquatic Fa		, ,		Drainag	ge Patterns (B10)
Saturation	on (A3)		True Aqua				Dry-Se	ason Water Table (C2)
	arks (B1)		Hydrogen					h Burrows (C8)
Sedimer	nt Deposits (B2)					ing Roots		tion Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)		Presence	of Reduc	ed Iron (C	4)	Stunted	d or Stressed Plants (D1)
Algal Ma	t or Crust (B4)					ed Soils (C6	6) X Geomo	orphic Position (D2)
Iron Dep	osits (B5)		Thin Muck	Surface	(C7)		X FAC-N	eutral Test (D5)
Inundation	on Visible on Aerial	magery (B	7) Gauge or	Well Data	a (D9)			
Sparsely	Vegetated Concav	e Surface (B8) Other (Exp	olain in R	emarks)			
Field Obser	vations:							
Surface Wate	er Present? Y	es	No X Depth (in	ches):		_		
Water Table	Present? Y	es	No X Depth (in	ches):		_		
Saturation Pr			No Depth (in				and Hydrology P	resent? Yes X No
(includes car	oillary fringe)							
Describe Red	corded Data (stream	gauge, mo	onitoring well, aerial	pnotos, p	revious in	spections),	if available:	
Remarks:								

Project/Site: Otter Tail County Road Bike Trail	(City/Co	il Sampling Date: 6-18-19				
Applicant/Owner: Houston Engineering Inc.					State: MN Sampling Point: 30u		
Investigator(s): Hannah Erdmann	:	Sectio	n, Tov	vnship, Rar	nge: S17-T136-R40		
Landform (hillslope, terrace, etc.): ditch sideslope			L	ocal relief ((concave, convex, none): NONE		
Slope (%): 5 Lat: 46.600035							
Soil Map Unit Name: Dent silt loam, 1 to 6 percent slo		NWI classification: not listed					
Are climatic / hydrologic conditions on the site typical for thi							
					Normal Circumstances" present? Yes X No		
Are Vegetation, Soil, or Hydrology					,		
Are Vegetation, Soil, or Hydrology					eded, explain any answers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map		Sam	biini	g point it	ocations, transects, important leatures, etc.		
Hydrophytic Vegetation Present? Yes X	No		le tha	e Sampled	Area		
Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N	No X			n a Wetlan			
Remarks:	NO		********		165 <u></u> 116 <u></u>		
Tremains.							
VEGETATION – Use scientific names of plants	3.						
Tree Stratum (Plot size:)	Absolute % Cover			Indicator	Dominance Test worksheet:		
1				<u> </u>	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)		
2							
3					Total Number of Dominant Species Across All Strata: 1 (B)		
4							
5					Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)		
			al Cov	er			
Sapling/Shrub Stratum (Plot size:)					Prevalence Index worksheet:		
1					Total % Cover of: Multiply by:		
2					OBL species x 1 =		
3					FACW species x 2 =		
4					FAC species x 3 = FACU species x 4 =		
5					UPL species x 5 =		
Herb Stratum (Plot size: 5' radius)		- 1018	ai COV	eı	Column Totals: (A) (B)		
1. Phalaris arundinacea	080	<u>Y</u>		FACW_	Column rotals.		
Poa pratensis	_ 10	_N_		FAC	Prevalence Index = B/A =		
3. Bromus inermis	_ 5	N		FACU_	Hydrophytic Vegetation Indicators:		
4. Equisetum arvense	_ 5	<u>N</u>		FAC	1 - Rapid Test for Hydrophytic Vegetation		
5					2 - Dominance Test is >50%		
6					3 - Prevalence Index is ≤3.0¹		
7					 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) 		
8					Problematic Hydrophytic Vegetation ¹ (Explain)		
9							
10					¹ Indicators of hydric soil and wetland hydrology must		
Woody Vine Stratum (Plot size:)	100	= Tota	al Cov	er	be present, unless disturbed or problematic.		
1					Hydrophytic		
2					Vegetation		
		= Tota	al Cov	er	Present? Yes X No		
Remarks: (Include photo numbers here or on a separate	sheet.)						

SOIL Sampling Point: 30u

Profile Desc Depth	ription: (Describe Matrix	to the dep		ument the lox Feature		or confirm	n the absence of	indicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-12	10YR 3/2	100					CL	
12-24	2.5Y 3/3	90	2.5Y 6/1	10	D	M	CL	
								-
17							21	N - D Linin - M-M-M-M-
Hydric Soil	oncentration, D=Dep Indicators:	pletion, Rivi	=Reduced Matrix, N	/IS=Maske	a Sana G	rains.		PL=Pore Lining, M=Matrix. r Problematic Hydric Soils ³ :
Histosol			Sandy	Gleyed M	atrix (S4)			airie Redox (A16)
_	pipedon (A2)			Redox (S			Dark Surf	
Black Hi	stic (A3)		Strippe	ed Matrix (S6)		Iron-Man	ganese Masses (F12)
Hydroge	n Sulfide (A4)			Mucky M			Very Sha	llow Dark Surface (TF12)
	Layers (A5)			Gleyed N			Other (Ex	rplain in Remarks)
_	ick (A10)	- (8.4.4)		ted Matrix	. ,			
	d Below Dark Surfac ark Surface (A12)	ce (A11)	_	Dark Surf ted Dark S		'	3Indicators of	hydrophytic vegetation and
_	lucky Mineral (S1)			Depression	•	,		ydrology must be present,
	icky Peat or Peat (S	3)		СБОРГОООК	3113 (1 3)			sturbed or problematic.
	Layer (if observed)							•
Туре:								
Depth (inc	ches):						Hydric Soil Pr	esent? Yes No _X
Remarks:								
HYDROLO	GY							
Wetland Hyd	drology Indicators:	:						
Primary India	cators (minimum of	one is requ	ired; check all that a	apply)			Secondary	Indicators (minimum of two required)
Surface	Water (A1)		Water-St	ained Lea	ves (B9)		Surface	e Soil Cracks (B6)
High Wa	iter Table (A2)		Aquatic F	auna (B1	3)		Draina	ge Patterns (B10)
Saturation	,			atic Plants	. ,		_ ′	eason Water Table (C2)
	arks (B1)		Hydroge					h Burrows (C8)
	nt Deposits (B2)			-		ving Roots	—	tion Visible on Aerial Imagery (C9)
	posits (B3)		_	e of Reduc	`	,	_	d or Stressed Plants (D1)
	at or Crust (B4)					ed Soils (C6		orphic Position (D2) eutral Test (D5)
	oosits (B5) on Visible on Aerial	Imageny (B		ck Surface r Well Data			A FAC-N	edital Test (D5)
_	Vegetated Concav	• • • •	, <u> </u>	xplain in R	. ,			
Field Obser		- Curidoc (xpiaii ii i	- Thanks,			
Surface Water		es/es	No X Depth (i	nches):				
Water Table			No X Depth (i					
Saturation P			No X Depth (i				and Hydrology P	Present? Yes No _X_
(includes car	oillary fringe)							
Describe Re	corded Data (strean	n gauge, m	onitoring well, aeria	l photos, p	revious in	spections),	if available:	
Remarks:								

Project/Site: Otter Tail County Road Bike Trail	(City/Count	_{y:} Otter Ta	<u>iil </u>	Sampling Date: 6-18-19		
Applicant/Owner: Houston Engineering Inc.				State: MN	Sampling Point: 30w		
Investigator(s): Hannah Erdmann	:	Section, To	ownship, Ra	nge: <u>S17-T136-R40</u>			
Landform (hillslope, terrace, etc.): depression			Local relief	(concave, convex, none):	concave		
		Long:95.748968 Datum: NAD 1983					
Soil Map Unit Name: Dent silt loam, 1 to 6 percent slop	pes	NWI classification: not listed (PEM1Cd)					
Are climatic / hydrologic conditions on the site typical for this							
Are Vegetation, Soil, or Hydrology si	gnificantly	disturbed?	Are "	'Normal Circumstances" p	resent? Yes X No		
Are Vegetation, Soil, or Hydrology na	aturally pro	blematic?	(If ne	eeded, explain any answer	s in Remarks.)		
SUMMARY OF FINDINGS - Attach site map s	showing	samplir	ng point l	ocations, transects,	, important features, etc.		
Hydrophytic Vegetation Present? Yes X							
Hydric Soil Present? Yes X		ls t	he Sampled				
Wetland Hydrology Present? Yes X No	·	with	hin a Wetlar	nd? Yes X	No		
Remarks:							
VEGETATION – Use scientific names of plants.							
Tree Stratum (Plot size:)	Absolute % Cover		t Indicator	Dominance Test works			
1				Number of Dominant Sp That Are OBL, FACW, or			
2				Total Number of Domina	ent		
3				Species Across All Strat	4		
4			- ——	Percent of Dominant Sp	pecies 4000		
5				That Are OBL, FACW, o	or FAC: 100% (A/B)		
Sapling/Shrub Stratum (Plot size:)		= Total Co	ver	Prevalence Index work	sheet:		
1				Total % Cover of:	Multiply by:		
2			- ——	1	x 1 =		
3					x 2 =		
4					x 3 = x 4 =		
5		= Total Co			x 5 =		
Herb Stratum (Plot size: 5' radius)					(A) (B)		
1. Phalaris arundinacea	90 5	<u>Y</u>	FACW				
2. Equisetum arvense 3. Solidago altissima	5	N N	FACU FACU	Prevalence Index Hydrophytic Vegetatio			
				' ' '	lydrophytic Vegetation		
4. 5.			- —	2 - Dominance Test			
6				3 - Prevalence Inde			
7.					daptations ¹ (Provide supporting		
8				1	or on a separate sheet) Shytic Vegetation¹ (Explain)		
9			- ——	Problematic Hydrop	Trytic vegetation (Explain)		
10			- —	¹ Indicators of hydric soil	and wetland hydrology must		
Woody Vine Stratum (Plot size:)	100	= Total Co	ver	be present, unless distu	rbed or problematic.		
1				Hydrophytic			
2			- ——	Vegetation Present? Yes	s_X No		
Develop (lasted askets as a last askets)		= Total Co	ver	Tresent: Tes	, NO		
Remarks: (Include photo numbers here or on a separate s	neet.)						

SOIL Sampling Point: 30w

Depth (inches) 0-8 8-23 23-36	Matrix Color (moist)		Red	lox Featui	ree					
0-8 8-23		%	Color (moist)	%	Type ¹	Loc²	Texture	Remarks		
	2.5Y 2.5/1	98	7.5YR 3/4	2	C	M	C			
23-36	2.5Y 2.5/1	100					<u>C</u>			
	5Y 6/1	95	10YR 4/4	 5	_ _		<u> </u>			
				_ —						
l										
		epletion, RN	1=Reduced Matrix, N	/IS=Mask	ed Sand G	rains.		re Lining, M=Matrix.		
Hydric Soil	Indicators:							lematic Hydric Soils³:		
Histosol	, ,			-	Matrix (S4)		Coast Prairie R	, ,		
. —	pipedon (A2)			Redox (S			Dark Surface (S	,		
ı —	istic (A3)			ed Matrix	. ,		Iron-Manganes	, ,		
	en Sulfide (A4)				Mineral (F1)			ark Surface (TF12)		
_	d Layers (A5) uck (A10)			ed Matrix	Matrix (F2)		Other (Explain i	n Remarks)		
ı —	d Below Dark Surf	ace (Δ11)			rface (F6)					
	ark Surface (A12)	ace (ATT)	_		. ,	7)	3Indicators of hydro	phytic vegetation and		
Thick Dark Surface (A12) — Sandy Mucky Mineral (S1) — Depleted Dark Surface (F7) — Redox Depressions (F8)						,		gy must be present,		
ı —	5 cm Mucky Peat or Peat (S3)							d or problematic.		
	Layer (if observed									
Туре:								Y		
Depth (in	ches):						Hydric Soil Present	? Yes <u>X</u> No		
Remarks:										
HADBOLOGA										
HYDROLO	HYDROLOGY									
	drology Indicator	s:								
Wetland Hy			uired; check all that a	apply)			Secondary Indica	tors (minimum of two required)		
Wetland Hyd				apply) ained Lea	aves (B9)		Secondary Indica			
Wetland Hyder Primary Indice	cators (minimum o			ained Lea	, ,			Cracks (B6)		
Wetland Hyder Primary Indice	cators (minimum o Water (A1) ater Table (A2)		Water-St	ained Lea auna (B1	(3)		Surface Soil Drainage Pat	Cracks (B6)		
Wetland Hyden Primary India Surface High Wa	cators (minimum o Water (A1) ater Table (A2)		Water-St Aquatic F True Aqu	ained Lea auna (B1 atic Plan	(3)		Surface Soil Drainage Pat	Cracks (B6) terns (B10) Water Table (C2)		
Wetland Hyd Primary India Surface High Wa Saturatia Water M	cators (minimum o Water (A1) ater Table (A2) on (A3)		Water-St Aquatic F True Aqu Hydroge	ained Lea Fauna (B1 Jatic Plant In Sulfide	13) ts (B14) Odor (C1)	ving Roots	Surface Soil Drainage Pat Dry-Season \ Crayfish Burn	Cracks (B6) terns (B10) Water Table (C2)		
Wetland Hydeling Primary India Surface High Wa Saturation Water M Sedimen	cators (minimum o Water (A1) ater Table (A2) on (A3) darks (B1)		Water-St Aquatic F True Aqu Hydrogel Oxidized	ained Lea Fauna (B1 natic Plant n Sulfide (Rhizosph	13) ts (B14) Odor (C1)	-	Surface Soil Drainage Pat Dry-Season V Crayfish Burn (C3) Saturation Vi	Cracks (B6) tterns (B10) Water Table (C2) rows (C8)		
Wetland Hyd Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep	cators (minimum o Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2)		<pre>Water-St Aquatic F True Aqu Hydroger Oxidized Presence</pre>	ained Lea Fauna (B1 latic Plant n Sulfide (Rhizosph e of Redu	l3) ts (B14) Odor (C1) neres on Li ced Iron (C	-	Surface Soil Drainage Pat Dry-Season Crayfish Burn (C3) Saturation Vi	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1)		
Wetland Hydeling Primary India Surface High Water Mater Mate	cators (minimum o Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3)		<pre>Water-St Aquatic F True Aqu Hydroger Oxidized Presence</pre>	ained Lea Fauna (B1 Jatic Plant In Sulfide (Rhizospher of Reductor Fon Reductor	ts (B14) Odor (C1) neres on Li ced Iron (C	4)	Surface Soil Drainage Pat Dry-Season Crayfish Burn (C3) Saturation Vi	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1) Position (D2)		
Wetland Hydeling Primary India Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep	cators (minimum o Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4)	f one is requ	Water-St Aquatic F True Aqu Hydroger Oxidized Presencer Recent In	ained Lea Fauna (B1 latic Plant In Sulfide (Rhizosphe of Reductor Fon Reductor Redu	ts (B14) Odor (C1) neres on Li ced Iron (C ction in Tille	4)	Surface Soil Drainage Pat Dry-Season V Crayfish Burn (C3) Saturation Vi Stunted or St X Geomorphic	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1) Position (D2)		
Wetland Hydelicon Primary India Surface High Water Management Sedimer Drift Dep Algal Management Iron Dep Inundation	cators (minimum o Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	f one is requ al Imagery (I	Water-St Aquatic F Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc	ained Lea Fauna (B1 latic Plant n Sulfide Rhizosph e of Redu ron Reduc ck Surface r Well Dat	ts (B14) Odor (C1) neres on Li ced Iron (C ction in Tille e (C7) ta (D9)	4)	Surface Soil Drainage Pat Dry-Season V Crayfish Burn (C3) Saturation Vi Stunted or St X Geomorphic	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1) Position (D2)		
Wetland Hydelicon Primary India Surface High Water Management Sedimer Drift Dep Algal Management Iron Dep Inundation	cators (minimum o Water (A1) ater Table (A2) on (A3) Marks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria	f one is requ al Imagery (I	Water-St Aquatic F Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc	ained Lea Fauna (B1 latic Plant n Sulfide Rhizosph e of Redu ron Reduc ck Surface r Well Dat	ts (B14) Odor (C1) neres on Li ced Iron (C ction in Tille e (C7) ta (D9)	4)	Surface Soil Drainage Pat Dry-Season V Crayfish Burn (C3) Saturation Vi Stunted or St X Geomorphic	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1) Position (D2)		
Wetland Hydelicon Primary India Surface High Water Management Sedimer Drift Dep Algal Management Iron Dep Inundati	cators (minimum o Water (A1) ater Table (A2) on (A3) flarks (B1) int Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca	f one is requ al Imagery (I ave Surface	Water-St Aquatic F Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc	ained Lea Fauna (B1 Iatic Plant In Sulfide (I Rhizospher For Reduction Reduction Ick Surface Ir Well Date Explain in F	ts (B14) Odor (C1) neres on Li ced Iron (C ction in Tille e (C7) ta (D9) Remarks)	ed Soils (Ce	Surface Soil Drainage Pat Dry-Season V Crayfish Burn (C3) Saturation Vi Stunted or St X Geomorphic	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1) Position (D2)		
Wetland Hydelian Primary India Surface High Water Mater Mate	cators (minimum o Water (A1) ater Table (A2) on (A3) darks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations:	al Imagery (I ave Surface	Water-St Aquatic F True Aqu Hydrogel Oxidized Presence Recent Ir Thin Muc Thin Muc Gary Gauge or (B8) Other (Es	ained Lea Fauna (B1 Iatic Plant In Sulfide (Rhizospher of Reduction Reduction Ick Surface Ir Well Data Explain in Fanches):	ts (B14) Odor (C1) heres on Li ced Iron (C ction in Tille e (C7) ta (D9) Remarks)	4) ed Soils (Ce	Surface Soil Drainage Pat Dry-Season V Crayfish Burn (C3) Saturation Vi Stunted or St X Geomorphic	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1) Position (D2)		
Wetland Hydelian Primary India Surface High Water Management Sedimer Drift Dep Algal Management Inundation Sparsely Field Obsert	cators (minimum of Water (A1) after Table (A2) on (A3) flarks (B1) after Deposits (B2) posits (B3) after Crust (B4) posits (B5) on Visible on Aeric y Vegetated Concavations: er Present?	al Imagery (I ave Surface Yes Yes	Water-St Aquatic F Aquatic F True Aqu Hydroger Oxidized Presence Recent Ir Thin Muc Thin Muc Gar) Gauge or (B8) Other (Ex	ained Lea Fauna (B1 natic Plant n Sulfide (Rhizosph e of Reduc on Reduc k Surface r Well Dat xplain in F nches): _ nches): _	ts (B14) Odor (C1) heres on Li ced Iron (C ction in Tille e (C7) ta (D9) Remarks)	4) ed Soils (Ce	Surface Soil Drainage Pat Dry-Season V Crayfish Burn (C3) Saturation Vi Stunted or St X Geomorphic	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1) Position (D2) Test (D5)		
Wetland Hyderimary India Surface High Water Management Sedimen Drift Dep Algal Management Iron Dep Inundati Sparsely Field Obser Surface Water Table Saturation P (includes cap	cators (minimum o Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	al Imagery (I ave Surface Yes Yes	Water-St	ained Lea Fauna (B1 vatic Plant n Sulfide of Rhizosph e of Reduc on Reduc ck Surface r Well Dat xplain in F nches): _ nches): _ nches): _	ts (B14) Odor (C1) heres on Li ced Iron (C ction in Tille e (C7) ta (D9) Remarks)		Surface Soil Drainage Pat Dry-Season V Crayfish Burn (C3) Saturation Vi Stunted or St X Geomorphic X FAC-Neutral	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1) Position (D2) Test (D5)		
Wetland Hyderimary India Surface High Water Management Sedimen Drift Dep Algal Management Iron Dep Inundati Sparsely Field Obser Surface Water Table Saturation P (includes cap	cators (minimum o Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	al Imagery (I ave Surface Yes Yes	Water-St Aquatic F True Aqu Hydroger Oxidized Presencer Recent Ir Thin Muc 37) Gauge or (B8) Other (Exiter) No X Depth (ir No X Depth (ir No X	ained Lea Fauna (B1 vatic Plant n Sulfide of Rhizosph e of Reduc on Reduc ck Surface r Well Dat xplain in F nches): _ nches): _ nches): _	ts (B14) Odor (C1) heres on Li ced Iron (C ction in Tille e (C7) ta (D9) Remarks)		Surface Soil Drainage Pat Dry-Season V Crayfish Burn (C3) Saturation Vi Stunted or St X Geomorphic X FAC-Neutral	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1) Position (D2) Test (D5)		
Wetland Hyderimary India Surface High Water Management Sedimen Drift Dep Algal Management Iron Dep Inundati Sparsely Field Obser Surface Water Table Saturation P (includes cap	cators (minimum o Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	al Imagery (I ave Surface Yes Yes	Water-St	ained Lea Fauna (B1 vatic Plant n Sulfide of Rhizosph e of Reduc on Reduc ck Surface r Well Dat xplain in F nches): _ nches): _ nches): _	ts (B14) Odor (C1) heres on Li ced Iron (C ction in Tille e (C7) ta (D9) Remarks)		Surface Soil Drainage Pat Dry-Season V Crayfish Burn (C3) Saturation Vi Stunted or St X Geomorphic X FAC-Neutral	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1) Position (D2) Test (D5)		
Wetland Hyderimary India Surface High Water Mager Mage	cators (minimum o Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	al Imagery (I ave Surface Yes Yes	Water-St	ained Lea Fauna (B1 vatic Plant n Sulfide of Rhizosph e of Reduc on Reduc ck Surface r Well Dat xplain in F nches): _ nches): _ nches): _	ts (B14) Odor (C1) heres on Li ced Iron (C ction in Tille e (C7) ta (D9) Remarks)		Surface Soil Drainage Pat Dry-Season V Crayfish Burn (C3) Saturation Vi Stunted or St X Geomorphic X FAC-Neutral	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1) Position (D2) Test (D5)		
Wetland Hyderimary India Surface High Water Mager Mater Table Saturation Per (includes cape Describe Reservante)	cators (minimum o Water (A1) ater Table (A2) on (A3) farks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) on Visible on Aeria y Vegetated Conca vations: er Present? Present? resent?	al Imagery (I ave Surface Yes Yes	Water-St	ained Lea Fauna (B1 vatic Plant n Sulfide of Rhizosph e of Reduc on Reduc ck Surface r Well Dat xplain in F nches): _ nches): _ nches): _	ts (B14) Odor (C1) heres on Li ced Iron (C ction in Tille e (C7) ta (D9) Remarks)		Surface Soil Drainage Pat Dry-Season V Crayfish Burn (C3) Saturation Vi Stunted or St X Geomorphic X FAC-Neutral	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1) Position (D2) Test (D5)		
Wetland Hydelian Primary India Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati Sparsely Field Obser Surface Water Table	cators (minimum of Water (A1) after Table (A2) on (A3) flarks (B1) after Deposits (B2) posits (B3) after Crust (B4) posits (B5) on Visible on Aeric y Vegetated Concavations: er Present?	al Imagery (I ave Surface Yes Yes	Water-St Aquatic F True Aqu Hydroger Oxidized Presencer Recent Ir Thin Muc 37) Gauge or (B8) Other (Exiter) No X Depth (ir No X Depth (ir No X	ained Lea Fauna (B1 natic Plant n Sulfide (Rhizosph e of Reduc on Reduc k Surface r Well Dat xplain in F nches): _ nches): _	ts (B14) Odor (C1) heres on Li ced Iron (C ction in Tille e (C7) ta (D9) Remarks)	4) ed Soils (Ce	Surface Soil Drainage Pat Dry-Season Crayfish Burn (C3) Saturation Vi Stunted or St Geomorphic X FAC-Neutral	Cracks (B6) tterns (B10) Water Table (C2) rows (C8) sible on Aerial Imagery (C9) tressed Plants (D1) Position (D2) Test (D5)		

Project/Site: Otter Tail County Road Bike Trail	(City/Co	_{unty:} Otter Ta	<u>il</u>	Sampling Date: 6-18-19			
Applicant/Owner: Houston Engineering Inc.				State: MN	Sampling Point: 31u			
Investigator(s): Hannah Erdman	:	Section	, Township, Ra	nge: S16-T136-R40				
Landform (hillslope, terrace, etc.): sideslope			Local relief	(concave, convex, none):	none			
Slope (%): 4 Lat: _46.599966		Long: _	ong: -95.737099 Datum: NAD 1983					
Soil Map Unit Name: Lida-Two Inlets complex, 8 to 15								
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology si					present? Yes X No			
Are Vegetation, Soil, or Hydrology na				eded, explain any answe				
SUMMARY OF FINDINGS – Attach site map s								
Hydrophytic Vegetation Present? Yes No	, X							
Hydric Soil Present? Yes X No)		s the Sampled					
Wetland Hydrology Present? Yes No	<u> </u>	١ ا	within a Wetlar	nd? Yes	No <u>X</u> _			
Remarks:								
VEGETATION – Use scientific names of plants.								
Trac Stratum (Diet size:			nant Indicator	Dominance Test work	sheet:			
Tree Stratum (Plot size:)			es? Status	Number of Dominant S That Are OBL, FACW,				
2				Total Number of Domin	•			
3				Species Across All Stra	ata: <u>6</u> (B)			
4				Percent of Dominant S				
5				That Are OBL, FACW,	or FAC: 16% (A/B)			
Sapling/Shrub Stratum (Plot size:)		- Total	00701	Prevalence Index wor	ksheet:			
1				Total % Cover of:				
2				1	x 1 =			
3				1	x 2 =			
4					x 3 =			
5					x 4 =			
Herb Stratum (Plot size: 5' radius)		= Total	Cover		x 5 = (A) (B)			
1. Poa pratensis	30	Υ		Column Totals.	(A) (B)			
	20		FACU	Prevalence Index	= B/A =			
3. Bromus inermis	10	<u>Y</u>	FACU_	Hydrophytic Vegetation				
4. Taraxacum officinale	10	<u>Y</u>	FACU_	1 - Rapid Test for I	Hydrophytic Vegetation			
5. Cirsium arvense	10	<u>Y</u>	FACU	2 - Dominance Tes				
6. Achillea millefolium	10	<u>Y</u>	FACU	3 - Prevalence Inde				
7. Cerastium arvense	<u>5</u>	N	FACU	4 - Morphological A	Adaptations ¹ (Provide supporting s or on a separate sheet)			
8. Asclepias syriaca		<u>N</u>	FACU_	1	phytic Vegetation ¹ (Explain)			
9								
10	100	= Total	0		il and wetland hydrology must			
Woody Vine Stratum (Plot size:)	100	- Totai	Cover	be present, unless distr	urbed or problematic.			
1				Hydrophytic				
2				Vegetation				
		= Total	Cover	Present? Ye	s No_X_			
Remarks: (Include photo numbers here or on a separate s	heet.)							

SOIL Sampling Point: 31u

Profile Desc Depth	ription: (Descrit) Matrix		oth needed to doc Red	ument the dox Featur		or confirm	n the absence	of indicators.)		
(inches)	Color (moist)	%	Color (moist)	<u> %</u>	Type ¹	Loc ²	Texture	Remarks		
0-6	2.5Y 3/1	100					L			
6-24	5Y 5/2	95	10YR 5/6		_ <u>C</u>	M	S			
24+	5Y 5/2	 95	10YR 5/6		_ C		SC			
1							2			
'Type: C=Ce Hydric Soil		epletion, RM	=Reduced Matrix, I	MS=Mask	ed Sand G	rains.		PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :		
Histosol			Sand	, Gleved N	//atrix (S4)			Prairie Redox (A16)		
_	oipedon (A2)			, Gleyed I , Redox (S			_	urface (S7)		
	stic (A3)			ed Matrix				anganese Masses (F12)		
_	en Sulfide (A4)				lineral (F1))	_	nallow Dark Surface (TF12)		
Stratified	d Layers (A5)				Matrix (F2)		Other (Explain in Remarks)		
_	ıck (A10)			ted Matrix						
	d Below Dark Surf	ace (A11)	_	x Dark Sur	. ,		2			
_	ark Surface (A12)				Surface (F7	')		of hydrophytic vegetation and		
	Mucky Mineral (S1)		Redo	x Depress	ions (F8)			hydrology must be present, disturbed or problematic.		
	icky Peat or Peat Layer (if observe						uniess	disturbed or problematic.		
Type:	Layer (ii obeerve	۵,۰								
	ches):						Hydric Soil	Present? Yes X No No		
Remarks:										
HYDROLO	GY									
Wetland Hy	drology Indicator	s:								
Primary India	cators (minimum o	f one is requ	ired; check all that	apply)			Seconda	ry Indicators (minimum of two required)		
Surface	Water (A1)		Water-S	tained Lea	aves (B9)		Surface Soil Cracks (B6)			
High Wa	iter Table (A2)			Fauna (B1	,			nage Patterns (B10)		
Saturation	, ,			uatic Plant				Season Water Table (C2)		
	larks (B1)		Hydroge					fish Burrows (C8)		
	nt Deposits (B2)			-		ving Roots	· / —	ration Visible on Aerial Imagery (C9)		
	posits (B3)		_		ced Iron (C	,	_	ted or Stressed Plants (D1)		
	at or Crust (B4)					ed Soils (C6	· —	morphic Position (D2)		
	oosits (B5)			ck Surface			FAC-	-Neutral Test (D5)		
_	on Visible on Aeria / Vegetated Conca	• • • • • • • • • • • • • • • • • • • •	, <u> </u>	or Well Dat Explain in F	, ,					
Field Obser		ave Suriace	(B6) Other (E	.хріаш ш г	(Ciliaiks)					
Surface Wat		Yes	No X Depth (inches).						
Water Table			No X Depth (
Saturation P			No X Depth (and Hydrology	Present? Yes No X		
(includes car	oillary fringe)									
Describe Re	corded Data (strea	am gauge, m	onitoring well, aeria	ai pnotos, į	previous in	spections),	ıт available:			
Remarks:										

Project/Site: Otter Tail County Road Bike Trail	(City/Coun	_{ity:} Otter Ta	<u>ıİl</u>	Sampling Date: 6-18-19		
Applicant/Owner: Houston Engineering Inc.				State: MN Sampling Point: 31w			
Investigator(s): Hannah Erdmann	;	Section, 7	Γownship, Ra	nge: <u>S16-T136-R40</u>			
Landform (hillslope, terrace, etc.): depression			Local relief	(concave, convex, none):	concave		
Slope (%): 1-2 Lat: 46.599976		Long: <u>-9</u> :	g: -95.737103 Datum: AND 1983				
Soil Map Unit Name: Lida-Two Inlets complex, 8 to 15	percent s	slopes		NWI classifica	ation: not listed		
Are climatic / hydrologic conditions on the site typical for this	time of year	ar? Yes_	<u> </u>	(If no, explain in Re	emarks.)		
Are Vegetation, Soil, or Hydrology signature.	gnificantly	disturbed	? Are "	'Normal Circumstances" pr	resent? Yes X No		
Are Vegetation, Soil, or Hydrology na	aturally pro	blematic?	(If ne	eeded, explain any answer	s in Remarks.)		
SUMMARY OF FINDINGS - Attach site map s	howing	sampli	ing point l	ocations, transects,	important features, etc.		
Hydrophytic Vegetation Present? Yes No							
Hydric Soil Present? Yes X			the Sampled				
Wetland Hydrology Present? Yes X No	·	wi	thin a Wetlar	1d? Yes	No		
Remarks:							
VECETATION Line exicutific memory of plants							
VEGETATION – Use scientific names of plants.		Damina	mt Indicator	Dominance Test works			
Tree Stratum (Plot size:)	Absolute % Cover		nt Indicator Status	Number of Dominant Sp			
1				That Are OBL, FACW, o			
2				Total Number of Domina	ant		
3				Species Across All Strat	ta: <u>3</u> (B)		
4. 5.				Percent of Dominant Sp			
			over	That Are OBL, FACW, o	or FAC: 00% (A/B)		
Sapling/Shrub Stratum (Plot size:)				Prevalence Index work			
1				Total % Cover of:			
2				1	x 1 = x 2 =		
3 4					x 3 =		
5					x 4 =		
				UPL species	x 5 =		
Herb Stratum (Plot size: 5' radius) 1. Carex pellita	50	Υ	OBL	Column Totals:	(A) (B)		
Solidago canadensis	25		FACU	Prevalence Index	= B/A =		
3. Poa pratensis	25	Y	FAC	Hydrophytic Vegetatio			
4.					lydrophytic Vegetation		
5				2 - Dominance Test			
6				3 - Prevalence Inde			
7					daptations ¹ (Provide supporting or on a separate sheet)		
8				1	ohytic Vegetation¹ (Explain)		
9							
		= Total C	over	¹ Indicators of hydric soil be present, unless distu	and wetland hydrology must		
Woody Vine Stratum (Plot size:)				be present, unless dista	Thed of problematic.		
1				Hydrophytic Vegetation			
2		= Total C	over	Present? Yes	s_X No		
Remarks: (Include photo numbers here or on a separate si		- Total C	-0461				
	-						

SOIL Sampling Point: 31w

Depth	ription: (Describe Matrix	to the de	pth needed to docu Redd	ment the ox Featur		or confirm	the absence of	of indicators.)
(inches)	Color (moist)	%	Color (moist)	<u> %</u>	Type ¹	_Loc ²	Texture	Remarks
0-4	2.5Y 2.5/1						SLC	
4-30	5Y 5/1	90	5YR 4/6	10	С	М	SC	
30+	White 8N	75	2.5Y 7/1	20	D	М	SCL	
			7.5YR 3/4	5	С	M	SCL	
¹ Type: C=Co	oncentration. D=Der	letion. RM	I=Reduced Matrix, M	 S=Maske	ed Sand Gr	ains.	² Location:	PL=Pore Lining, M=Matrix.
Hydric Soil I								for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy	Gleyed M	latrix (S4)		Coast F	Prairie Redox (A16)
Histic Epipedon (A2) Sandy Redox (S5)						urface (S7)		
Black His	, ,			d Matrix				inganese Masses (F12)
	n Sulfide (A4)				lineral (F1)			nallow Dark Surface (TF12)
	Layers (A5)		X Deplete		Matrix (F2)		Other (I	Explain in Remarks)
2 cm Mu	ick (A10) I Below Dark Surfac	ο (Δ11)			(F3) face (F6)			
	ark Surface (A12)	æ (A11)	_		Surface (F7)	3Indicators	of hydrophytic vegetation and
_	lucky Mineral (S1)			Depressi	,	,		hydrology must be present,
5 cm Mu	cky Peat or Peat (S	3)	_	·	, ,			disturbed or problematic.
Restrictive L	ayer (if observed)	:						
Туре:							Hydric Soil I	Present? Yes X No
Depth (inc	ches):						Hydric Soil i	Fresentr Tes NO
Remarks:							•	
HYDROLO	GY							
Wetland Hyd	drology Indicators:	:						
Primary Indic	ators (minimum of o	one is requ	ired; check all that a	oply)			Secondar	ry Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Lea	ves (B9)		Surfa	ace Soil Cracks (B6)
High Wa	ter Table (A2)		Aquatic Fa	auna (B1	3)		Drair	nage Patterns (B10)
Saturatio	on (A3)		True Aqua	atic Plant	s (B14)		Dry-9	Season Water Table (C2)
Water M	arks (B1)		Hydrogen	Sulfide (Odor (C1)		Cray	fish Burrows (C8)
Sedimer	nt Deposits (B2)			-		ing Roots	(C3) Satu	ration Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)		Presence	of Reduc	ced Iron (C	4)		ted or Stressed Plants (D1)
_ •	t or Crust (B4)		Recent Iro	n Reduc	tion in Tille	d Soils (C6		morphic Position (D2)
	osits (B5)		Thin Muck				FAC-	-Neutral Test (D5)
_	on Visible on Aerial	• • •	· — ·		` '			
	Vegetated Concav	e Surface	(B8) Other (Ex	plain in R	Remarks)			
Field Observ			🗸 5					
Surface Wate			No X Depth (in			-		
Water Table			No X Depth (in			— I		- · · · · ·
Saturation Pr (includes cap		es	No Depth (in	iches): <u>3</u>	0	Wetl	and Hydrology	Present? Yes X No
		n gauge, m	onitoring well, aerial	photos, p	revious in	spections),	if available:	
Remarks:								

Project/Site: Otter Tail County Road Bike Trail	(_ City/County: Otter Tail Sampling Date: 6					Date: <u>6-18-1</u>	9
Applicant/Owner: Houston Engineering Inc.					State: MN	Sampling	Point: 33u	
Investigator(s): Hannah Erdman	;	Section	n, Town	ship, Ran	ge: S16-T136-R40			
Landform (hillslope, terrace, etc.): sideslope			Loc	cal relief (d	concave, convex, none):	concave)	
Soil Map Unit Name: Lida-Two Inlets complex, 8 to 15								
Are climatic / hydrologic conditions on the site typical for this								
					Iormal Circumstances" p		X N	
Are Vegetation, Soil, or Hydrology si								,
Are Vegetation, Soil, or Hydrology no					eded, explain any answe			
SUMMARY OF FINDINGS – Attach site map s		samı	pling	point io	cations, transects	, import	ant features	s, etc.
Hydrophytic Vegetation Present? Yes X No	· —		la tha (Samulad (A			
Hydric Soil Present? Yes No	· 			Sampled / a Wetland		No_	X	
Wetland Hydrology Present? Yes No Remarks:			WILIIII	a welland	111 165			
Remarks:								
VEGETATION – Use scientific names of plants.								
Tree Stratum (Plot size:)	Absolute % Cover		inant In		Dominance Test work			
1	% Cover			<u>Status</u>	Number of Dominant S That Are OBL, FACW,	pecies	2	(A)
2					mat Ale OBL, FACW,	DI FAC.		(^)
3					Total Number of Domin Species Across All Stra	ant	2	(B)
4.					•			(0)
5					Percent of Dominant Sp That Are OBL, FACW,		100	(A/B)
			l Cover					(700)
Sapling/Shrub Stratum (Plot size:)					Prevalence Index wor			
1					Total % Cover of:		Multiply by:	_
2					OBL species			
3					FACW species			
4					FAC species			_
5					UPL species			
Herb Stratum (Plot size: 5' radius)		= rota	ii Cover		Column Totals:			
1. Poa pratensis	40	<u>Y</u>	F	AC	Column Totalo.	(//		_ (5)
2. Phalaris arundinacea	20	<u>Y</u>	<u>F</u>	ACW_	Prevalence Index	= B/A = _		_
3. Cirsium arvense	10	<u>N</u>		ACU_	Hydrophytic Vegetation	on Indicate	ors:	
4. Solidago canadensis	10	N		ACU_	1 - Rapid Test for I		c Vegetation	
5. Equisetum arvense	10	N		AC	× 2 - Dominance Tes			
6. Taraxacum officinale	5	<u>N</u>		ACU	3 - Prevalence Inde		1	
7. Medicago sativa	5	<u>N</u>	<u>F</u>	ACU_	4 - Morphological A data in Remarks	Adaptations s or on a se	s' (Provide sup eparate sheet)	porting
8					Problematic Hydro			
9			— –			, ,	,—,	,
10					¹ Indicators of hydric soi	l and wetla	and hydrology r	nust
Woody Vine Stratum (Plot size:)	100	= Tota	l Cover		be present, unless distu	urbed or pr	oblematic.	
1					Hydrophytic			
2.					Vegetation	~		
		= Tota	l Cover		Present? Ye	s_X_	No	
Remarks: (Include photo numbers here or on a separate s	heet.)							

SOIL Sampling Point: 33u

Profile Description: (Describe to the dept	h needed to document the indicator or o	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹ L	_oc ² Texture Remarks
0-8 10YR 3/2 100		S
·		
		
		
¹ Type: C=Concentration, D=Depletion, RM=	Reduced Matrix, MS=Masked Sand Grains	Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	3to discount of the second of
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Redox Depressions (F8)	wetland hydrology must be present,
5 cm Mucky Peat or Peat (S3)		unless disturbed or problematic.
Restrictive Layer (if observed): Type: gravel/rocks		
		Hydric Soil Present? Yes NoX_
Depth (inches): 8		1194110 CONT 10001111 100 110
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is require	ed; check all that apply)	Secondary Indicators (minimum of two required)
Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Drainage Patterns (B10)
Saturation (A3)	True Aquatic Plants (B14)	Dry-Season Water Table (C2)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Se	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5)	Thin Muck Surface (C7)	X FAC-Neutral Test (D5)
Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9)	
Sparsely Vegetated Concave Surface (E	88) Other (Explain in Remarks)	
Field Observations:		
Surface Water Present? Yes N	No X Depth (inches):	
	No X Depth (inches):	
	No X Depth (inches):	Wetland Hydrology Present? Yes No _X
(includes capillary fringe)	VO	Wettalid Hydrology Present: Tes No
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previous inspec	tions), if available:
- Domontos		
Remarks:		

Project/Site: Otter Tail County Road Bike Trail	(City/Coun	_{ity:} Otter Ta	Sampling Date: 6-18-19	
Applicant/Owner: Houston Engineering Inc.				State: MN 5	Sampling Point: 33w
Investigator(s): 1annah Erdmann	;	Section, 1	Γownship, Rai	nge: S16-T136-R40	
Landform (hillslope, terrace, etc.): depression			Local relief	(concave, convex, none):	concave
Soil Map Unit Name: Lida-Two Inlets complex, 8 to 15				NWI classifica	
Are climatic / hydrologic conditions on the site typical for this					
					esent? Yes X No
Are Vegetation, Soil, or Hydrology signs and the state of the sta					
Are Vegetation, Soil, or Hydrology na SUMMARY OF FINDINGS – Attach site map s				eded, explain any answers	
		Jampii	ing point is	ocations, transcots,	important leatures, etc.
		ls	the Sampled	Area	
Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No			thin a Wetlar		No
Remarks:	<u> </u>				
VEGETATION . He a significant and a factority					
VEGETATION – Use scientific names of plants.					
Tree Stratum (Plot size:)	Absolute % Cover		nt Indicator Status	Dominance Test works	
1			<u>otatao</u>	Number of Dominant Spe That Are OBL, FACW, or	
2					(1)
3				Total Number of Domina Species Across All Strata	•
4.					
5				Percent of Dominant Spe That Are OBL, FACW, or	
		= Total C	over		
Sapling/Shrub Stratum (Plot size:)				Prevalence Index works	
1				Total % Cover of:	Multiply by: x 1 = _20
2				OBL species	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
3				FACW species	x 2 = 45
4				FAC species 15 FACU species 45	x 3 = x 4 =180
5				TAGG species	x 5 =
Herb Stratum (Plot size: 5' radius)		- Total C	over	Column Totals: 100	(A) 285 (B)
1. Carex bicknellii	30	Υ	_ FACU_		
2. Phalaris arundinacea	20	_Y	FACW_	Prevalence Index :	= B/A =
3. Equisetum arvense	<u>15</u>	<u>Y</u>	_ FAC	Hydrophytic Vegetation	n Indicators:
4. Carex pellita	10	<u>N</u>	OBL_		ydrophytic Vegetation
5. Solidago canadensis	10	N	FACU	2 - Dominance Test	
6. Typha sp.	10	<u>N</u>	OBL	3 - Prevalence Index	
7. Carex bicknellii	5	<u>N</u>	_ <u>FACU</u>	4 - Morphological Ad	daptations ¹ (Provide supporting or on a separate sheet)
8				l	hytic Vegetation ¹ (Explain)
9					Tytio Vogotation (Explain)
10	400			Indicators of hydric soil	and wetland hydrology must
Woody Vine Stratum (Plot size:)	100	= Total C	over	be present, unless distur	
1				Undranbutia	
2.				Hydrophytic Vegetation	
		= Total C	over	Present? Yes	_X No
Remarks: (Include photo numbers here or on a separate s				I	

US Army Corps of Engineers

SOIL Sampling Point: 33w

Depth	Matrix		Red	ox Feature			. the aboutor	or maioatorol,
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
0-6	2.5Y 2.5/1	98	7.5YR 4/6	2	С	PL	LC	
¹ Type: C=Co	oncentration, D=De	epletion, RM=	Reduced Matrix, M	IS=Maske	d Sand Gr	ains.	² Location:	PL=Pore Lining, M=Matrix.
Hydric Soil		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandv	Gleyed Ma	atrix (S4)		Coast F	Prairie Redox (A16)
_	pipedon (A2)			Redox (St			_	urface (S7)
Black Hi				d Matrix (_	anganese Masses (F12)
_	n Sulfide (A4)			Mucky Mi	,		_	nallow Dark Surface (TF12)
	Layers (A5)			Gleyed M				Explain in Remarks)
2 cm Mu	ick (A10)			ed Matrix (•
Depleted	d Below Dark Surfa	ice (A11)	Redox	Dark Surfa	ace (F6)			
Thick Da	ark Surface (A12)		Deplet	ed Dark Si	urface (F7)	3Indicators	of hydrophytic vegetation and
Sandy M	lucky Mineral (S1)		X Redox	Depressio	ns (F8)		wetland	hydrology must be present,
5 cm Mu	icky Peat or Peat (S3)					unless	disturbed or problematic.
Restrictive I	ayer (if observed	I):						
Type: 9	ravel/rocks							×
Depth (inc	ches): 6						Hydric Soil	Present? Yes X No
Remarks:								
HYDROLO	GY							
Wetland Hyd	drology Indicators	s:						
Primary India	cators (minimum of	one is require	ed; check all that a	pply)			Seconda	ry Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ained Leav	res (B9)		Surfa	ace Soil Cracks (B6)
High Wa	iter Table (A2)			auna (B13	, ,			nage Patterns (B10)
Saturatio	, ,			atic Plants				Season Water Table (C2)
	arks (B1)			Sulfide O				fish Burrows (C8)
	nt Deposits (B2)					ing Roots		ration Visible on Aerial Imagery (C9)
	posits (B3)			of Reduce		-		ted or Stressed Plants (D1)
	it or Crust (B4)				•	., d Soils (C6		morphic Position (D2)
	osits (B5)			k Surface		u 00110 (00		-Neutral Test (D5)
	on Visible on Aeria	I Imagery (B7	_	Well Data	` '		<u></u> 1710	riodiai root (50)
_	Vegetated Conca							
Field Obser		ve Surface (B	Other (LX	pair iii ix	ziliai ks)			
			. 🗸					
Surface Water			lo X Depth (ir					
Water Table			lo X Depth (ir					×
Saturation P		Yes N	lo 🔀 Depth (ir	nches):		Wetl	and Hydrology	Present? Yes X No
(includes cap	oillary fringe) corded Data (strea	m dalide moi	nitoring well periol	nhotos n	revious in	nections)	if available:	
Describe Re	corded Data (Strea	m gauge, moi	illoring well, aerial	priotos, pi	revious iris	spections),	ii avaliable.	
Remarks:								

pplicant/Owner: Houston Engineering Inc. vestigator(s): Hannah Erdmann			State: MN Sampling Point 34u
vestigator(s): Hannah Erdmann			State. WITY Sampling Fullit 5-tu
7		Section, Township, Ra	nge: S16-T136-R40
andform (hillslope, terrace, etc.): depression		Local relief	(concave, convex, none): Concave
lope (%): 2 Lat. 46.597646		Long: -95.726304	Datum NAD 1983
oil Map Unit Name: Almora loam, 2 to 6 percent slo		772	NWI classification: not listed
re climatic / hydrologic conditions on the site typical for th		ar? Yes X No	
re Vegetation, Soil, or Hydrology			"Normal Circumstances" present? Yes No X
re Vegetation, Soil, or Hydrology			eeded, explain any answers in Remarks.)
			ocations, transects, important features, etc
the state of the first of the control of the first of the first of the first of the first of the state of the first of the		sampling point is	ocations, transects, important leatures, etc
Hydrophytic Vegetation Present? Yes 1 Hydric Soil Present? Yes 1		Is the Sampled	Area
Wetland Hydrology Present? Yes N		within a Wetlan	
Remarks	300	300000000	
	_		
EGETATION – Use scientific names of plants			
Tree Stratum (Plot size:)	% Cover	Dominant Indicator Species? Status	Dominance Test worksheet:
1	70 00101	Openico. Otatos	Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
2.			
3.			Total Number of Dominant Species Across All Strata: 1 (B)
4			
5,			Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)
		= Total Cover	macAre OBE, FACV, of FAC (AB)
Sapling/Shrub Stratum (Plot size)		Maria III	Prevalence Index worksheet:
1			Total % Cover of: Multiply by:
2	-		OBL species x 1 =
3	-		FACW species x 2 =
4		-	FAC species x 3 =
i		2.00	FACU species x 4 =
Herb Stratum (Plot size: 5' radius)	-	= Total Cover	UPL species x 5 =
1. Elymus candensis	60	Y FACU	Column Totals: (A) (B)
2 Medicago sativa	5	Y FACU	Prevalence Index = B/A =
3. Cirsium arvense	5	Y FACU	Hydrophytic Vegetation Indicators:
4.			1 - Rapid Test for Hydrophytic Vegetation
5.			2 - Dominance Test is >50%
B:			3 - Prevalence Index is ≤3.0 ¹
7,			4 - Morphological Adaptations¹ (Provide supporting
8			data in Remarks or on a separate sheet)
9		1	Problematic Hydrophytic Vegetation¹ (Explain)
10			Andientoir of hydric poll and westerd budgeters are
drawa da a	70	= Total Cover	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)			
1			Hydrophytic Vegetation
			Present? Yes No X
2		= Total Cover	rieselit? lesNo/

SOIL Sampling Point: 34u

			pth needed to docum			r or confirm	n the absence	of indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Featur %	res Type ¹	Loc²	Texture	Remarks
0-7	2.5Y 3/2	80	10YR 3/6	20	_ <u>- ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	_ <u></u> M	SC	Tomano
7-9	5Y 6/1	95	10YR 4/6	5	_ <u>C</u>		SC	
9-14	2.5Y 2.5/1	100					C	
14-20	2.5Y 2.5/1	 85	Gley 1 6/10GY	15	_ <u></u>		SC	
20-26	2.5Y 6/2	 80	2.5Y 8/1	5	_ <u>D</u>	_ <u></u>	SC	
			10YR 3/6	5	_ <u>C</u>		SC	
Type: C=Co	oncentration D=D	epletion RM	I=Reduced Matrix, MS	S=Maske	ed Sand 0		2Location:	PL=Pore Lining, M=Matrix.
Hydric Soil I		opionom, r m	. Houses many, m	- maon	ou ourra c	7 (411)		for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy C	Gleyed N	/latrix (S4))	Coast F	Prairie Redox (A16)
Histic Ep	pipedon (A2)		Sandy F	Redox (S	65)		Dark Si	urface (S7)
Black His	stic (A3)		Stripped	d Matrix	(S6)		Iron-Ma	anganese Masses (F12)
	n Sulfide (A4)				1ineral (F1	,		nallow Dark Surface (TF12)
	Layers (A5)				Matrix (F2)	Other (Explain in Remarks)
2 cm Mu	, ,		Deplete		` '			
	Below Dark Surf	ace (A11)	_		face (F6)	7)	31	of levels and state of the stat
_	rk Surface (A12)				Surface (F	1)		of hydrophytic vegetation and
	lucky Mineral (S1) cky Peat or Peat		Redox I	Depressi	ions (F8)			hydrology must be present, disturbed or problematic.
	ayer (if observe						dilless	disturbed of problematic.
Type:	, (0.200.10	,-						
	ches):						Hydric Soil	Present? Yes No _X_
Remarks:								
HYDROLO	GY							
Wetland Hyd	drology Indicator	s:						
Primary Indic	ators (minimum o	f one is requ	ired; check all that ap	ply)			<u>Seconda</u>	ry Indicators (minimum of two required)
Surface	Water (A1)		Water-Stai	ined Lea	aves (B9)		Surfa	ace Soil Cracks (B6)
High Wa	ter Table (A2)		Aquatic Fa	una (B1	3)		Drair	nage Patterns (B10)
Saturatio	on (A3)		True Aqua	tic Plant	ts (B14)		Dry-9	Season Water Table (C2)
Water M	arks (B1)		Hydrogen	Sulfide (Odor (C1)		Cray	fish Burrows (C8)
Sedimen	t Deposits (B2)		Oxidized F	Rhizosph	neres on L	iving Roots	(C3) Satu	ration Visible on Aerial Imagery (C9)
Drift Dep	osits (B3)		Presence	of Redu	ced Iron (C4)	Stun	ted or Stressed Plants (D1)
Algal Ma	t or Crust (B4)		Recent Iro	n Reduc	ction in Til	led Soils (C	6) Geor	morphic Position (D2)
Iron Dep	osits (B5)		Thin Muck	Surface	(C7)		FAC-	-Neutral Test (D5)
Inundatio	on Visible on Aeria	al Imagery (E	37) Gauge or \	Well Dat	ta (D9)			
Sparsely	Vegetated Conca	ave Surface	(B8) Other (Exp	olain in F	Remarks)			
Field Observ	/ations:		.,					
Surface Water	er Present?		No X Depth (inc					
Water Table	Present?		No X Depth (inc					
Saturation Pr		Yes	No X Depth (in	ches): _		Wetl	land Hydrology	Present? Yes No _X
		am gauge, m	onitoring well, aerial p	photos, į	previous i	nspections),	if available:	
Remarks:								

Project/Site: Otter Tail County Road Bike Trail	(City/County: Otter Tail Sampling Date: 6-18						
Applicant/Owner: Houston Engineering Inc.				State: MN	Sampling Point: 34w			
Investigator(s): Hannah Erdmann	:	Section,	Township, Ra	nge: S16-T136-R40				
Landform (hillslope, terrace, etc.): depression			Local relief	(concave, convex, none):	concave			
Slope (%): 2 Lat: 46.597646		Long: <u>-9</u>	5.726304		Datum: NAD 1983			
Soil Map Unit Name: Almora loam, 2 to 6 percent slope	es	NWI classification: not listed						
Are climatic / hydrologic conditions on the site typical for this								
Are Vegetation, Soil, or Hydrology si	gnificantly	disturbed	? Are "	'Normal Circumstances" p	resent? Yes X No			
Are Vegetation, Soil, or Hydrology na	aturally pro	blematic?	(If ne	eeded, explain any answer	rs in Remarks.)			
SUMMARY OF FINDINGS - Attach site map s	showing	sampli	ing point l	ocations, transects,	, important features, etc.			
Hydrophytic Vegetation Present? Yes X								
Hydric Soil Present? Yes X			the Sampled					
Wetland Hydrology Present? Yes X No	·	wi	thin a Wetlar	1d? Yes	No			
Remarks:								
VEGETATION – Use scientific names of plants.								
Tree Stratum (Plot size:)	Absolute % Cover		nt Indicator Status	Dominance Test works				
1				Number of Dominant Sp That Are OBL, FACW, or				
2				Total Number of Domina	ant			
3				Species Across All Strat	•			
4				Percent of Dominant Sp	pecies			
5				That Are OBL, FACW, o	or FAC: 100 (A/B)			
Sapling/Shrub Stratum (Plot size:)		= Total C	over	Prevalence Index work	sheet:			
1				Total % Cover of:	Multiply by:			
2				1	x 1 =			
3					x 2 =			
4					x 3 = x 4 =			
5					x 4 x 5 =			
Herb Stratum (Plot size: 5' radius)			00001		(A) (B)			
1. Carex pellita	35	<u>Y</u>	OBL					
2. Phalaris arundinacea Poa pratensis	35 30	Y	$-\frac{FACW}{FAC}$	Prevalence Index				
				Hydrophytic Vegetatio	lydrophytic Vegetation			
4. 5.				2 - Dominance Test				
6				3 - Prevalence Inde				
7					daptations ¹ (Provide supporting			
8				1	s or on a separate sheet) Ohytic Vegetation¹ (Explain)			
9				Problematic Hydrop	mytic vegetation (Explain)			
10				¹ Indicators of hydric soil	and wetland hydrology must			
Woody Vine Stratum (Plot size:)	100	= Total C	Cover	be present, unless distu				
1				Hydrophytic				
2				Vegetation	s X No			
		= Total C	over	Present? Yes	s_X No			
Remarks: (Include photo numbers here or on a separate s	heet.)							

SOIL Sampling Point: 34w

Profile Desc	cription: (Describe	to the dep	th needed to docui	ment the	indicator	or confirm	the absence of indi	cators.)
Depth	Matrix		Redo	x Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
0-1	2.5Y 2.5/1	90	10YR 3/6	10	С	M	SC	
1-5	2.5Y 5/2	95	10YR 3/6	5	C	M	SC	
5-24	5Y 7/1	60	2.5Y 6/1	40			SC	
	<u> </u>							
l ——								
¹ Type: C=C	oncentration, D=De	pletion, RM=	Reduced Matrix, M	S=Maske	d Sand Gr	ains.	² Location: PL=P	ore Lining, M=Matrix.
Hydric Soil							Indicators for Pro	blematic Hydric Soils³:
Histosol	(A1)		Sandy	Gleyed M	atrix (S4)		Coast Prairie	Redox (A16)
Histic E	pipedon (A2)		Sandy I	Redox (S	5)		Dark Surface	(S7)
Black H	istic (A3)		Strippe	d Matrix (S6)		Iron-Mangane	se Masses (F12)
Hydroge	en Sulfide (A4)		Loamy	Mucky M	neral (F1)		Very Shallow	Dark Surface (TF12)
Stratifie	d Layers (A5)		~ /		latrix (F2)		Other (Explain	n in Remarks)
1 —	uck (A10)		X Deplete		. ,			
I — ·	d Below Dark Surfa	ce (A11)	_	Dark Surf	٠,			
I —	ark Surface (A12)				urface (F7)		rophytic vegetation and
1 – ′	Mucky Mineral (S1)		Redox	Depression	ons (F8)		•	logy must be present,
	ucky Peat or Peat (-					unless disturb	ed or problematic.
	Layer (if observed							
1	-1>						Hydric Soil Preser	nt? Yes_X_ No
Depth (in Remarks:	ches):						<u> </u>	
HYDROLO	GY							
Wetland Hy	drology Indicators	:						
Primary Indi	cators (minimum of	one is requir	ed; check all that ap	oply)			Secondary Indic	cators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Leav	/es (B9)		Surface So	il Cracks (B6)
High Wa	ater Table (A2)		Aquatic Fa	auna (B13	3)		Drainage P	atterns (B10)
Saturati	on (A3)		True Aqua	atic Plants	(B14)		Dry-Seasor	n Water Table (C2)
Water M	farks (B1)		Hydrogen	Sulfide C	dor (C1)		Crayfish Bu	rrows (C8)
Sedime	nt Deposits (B2)		Oxidized F			ing Roots		Visible on Aerial Imagery (C9)
1	posits (B3)		Presence	of Reduc	ed Iron (C	4)	Stunted or	Stressed Plants (D1)
1	at or Crust (B4)		Recent Iro	n Reduct	ion in Tille	d Soils (C6		
Iron De	posits (B5)		Thin Muck				X FAC-Neutra	
1 —	ion Visible on Aerial	Imagery (B7					_	, ,
Sparsel	y Vegetated Concav	e Surface (l	38) Other (Ex	plain in R	emarks)			
Field Obser								
Surface Wat	ter Present?	YesI	No X Depth (in	ches):				
Water Table	Present?	Yes	No X Depth (in	ches):				
Saturation P			No Depth (in			— Wetl	and Hydrology Prese	ent? Yes X No
(includes ca	pillary fringe)							
Describe Re	corded Data (strear	n gauge, mo	nitoring well, aerial	photos, p	revious ins	spections),	if available:	
Dam article								
Remarks:								

Project/Site: Otter Tail County Road Bike Trail		City/Count	y: Otter Ta	Sampling Date: 6-20-19
Applicant/Owner: Houston Engineering Inc.		11 11 1		State: MN Sampling Point: Upland A
nvestigator(s): Hannah Erdmann		Section, T	ownship, Ra	inge: S34-T136-R42
andform (hillslope, terrace, etc.): sloping ditch depres				(concave, convex, none): none
		Long -95		Datum NAD 1983
Soil Map Unit Name: Waukon loam, 2 to 6 percent sl				NWI classification: not listed
Are climatic / hydrologic conditions on the site typical for the			X No	
Are Vegetation, Soil, or Hydrology	ALC: THE RESERVE OF			"Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology	naturally pro	blematic?	(If ne	eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing	sampli	ng point l	ocations, transects, important features, etc
Hydrophytic Vegetation Present? Yes1	No X	-		
Hydric Soil Present? Yes I		ls t	the Sampled	
Wetland Hydrology Present? Yes I	No _X_	wit	hin a Wetlar	nd? Yes No X
Remarks:				
VEGETATION - Use scientific names of plants				
	Absolute	Dominar	nt Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)			? Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3			-	Species Across All Strata: 4 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 50 (A/B)
Sapling/Shrub Stratum (Plot size 15')	_	= Total Co	over	Prevalence Index worksheet:
1 Salix interior	25	Υ	FACW	Total % Cover of: Multiply by:
2.	- ,20	-	171011	OBL species 0 x1 = 0
				FACW species 55 x 2 = 110
4				FAC species 0 x 3 = 0
5				FACU species 70 x 4 = 280
	25	= Total Co	over	UPL species 0 x 5 = 0
Herb Stratum (Plot size: 5' radius)				Column Totals: 125 (A) 390 (B)
1, Phalaris arundinacea	30	Y	FACW	
2. Bromus inermis	20	Y	FACU	Prevalence Index = B/A = 3.12
3. Phleum pratense	_ 20	Y	FACU	Hydrophytic Vegetation Indicators:
4 Melilotus officinalis	15	N	FACU	1 - Rapid Test for Hydrophytic Vegetation
5. Sonchus arvensis	15	N	FACU	2 - Dominance Test is >50%
6				3 - Prevalence Index is ≤3.01
7,				4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
8				Problematic Hydrophytic Vegetation (Explain)
9		-	-	
10	400	2000		Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)	100	= Total Co	over	be present, unless disturbed or problematic.
1				Hydrophytic
2				Hydrophytic Vegetation
		= Total Co	over	Present? Yes No X

Sampling Point Upland A

Depth	Matrix			Featur				E4. Z.
(inches)	Color (moist)	%	Color (moist)	%	Type	Loc ²	Texture	Remarks
0-7	2.5Y 3/2	78	10YR 5/2	20	D	M	SC	
			5YR 5/6	2	С	M		
'-9	5Y 6/1	90	10YR 4/6	10	С	М	SC	
-14	2.5Y 2.5/1	100					С	
4-20	2.5Y 2.5/1	85	Gley 1 10GY 6/1	15	D	М	SC	
20-26	2.5Y 6/2	90	2.5Y 8/1	5	D	М	SC	-
0 20	2.01 0/2		10YR 3/6	5	C			
		1.0 - 10		_			21	Dispession Later
ydric Soil I		pletion, Ri	M=Reduced Matrix, MS	-Waske	d Sand Gr	ains.		PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :
outer market o			04-0		-1-0 (04)			
_ Histosol					latrix (S4)			Prairie Redox (A16)
	oipedon (A2)		Sandy R					urface (S7)
_ Black His	n Sulfide (A4)		Stripped		ineral (F1)		- March 1965 - 1	anganese Masses (F12) hallow Dark Surface (TF12)
	Layers (A5)				Matrix (F2)			Explain in Remarks)
2 cm Mu			Loamy C				Other (Explain in Nerhalks)
	d Below Dark Surfa	ce (A11)		and the second second	face (F6)			
	ark Surface (A12)	00 (/11/)			urface (F7	Ý	3Indicators	of hydrophytic vegetation and
	lucky Mineral (S1)		Redox D			, .		hydrology must be present,
	cky Peat or Peat (S3)		-10	- v - v			disturbed or problematic
	ayer (if observed							
Туре:							0.000	
							Hydric Soil	Present? Yes No _X
Depth (inc	ches):							
emarks:								
emarks:		3:						
emarks: /DROLO	GY drology Indicators		uired; check all that ap	ply)			Seconda	ry Indicators (minimum of two required
POROLOGICATION OF THE PROPERTY	GY drology Indicators		uired: check all that ap		ves (B9)			ry Indicators (minimum of two required
/DROLOGIVetland Hydrimary Indice	GY drology Indicators ators (minimum of		and the same of th	ned Lea			Surfa	
/DROLOGIVetland Hydrimary Indice	GY drology Indicators ators (minimum of Water (A1) iter Table (A2)		Water-Stair	ned Lea una (B1	3)		Surfa Drain	ace Soil Cracks (B6)
PROLOGICATION OF THE PROPERTY	GY drology Indicators ators (minimum of Water (A1) iter Table (A2)		Water-Stair Aquatic Fa	ned Lea una (B1 tic Plant	3) s (B14)		Surfa Drain Dry-	ace Soil Cracks (B6) nage Patterns (B10)
POROLOGI Vetland Hydrimary Indice Surface V High Wa Saturatic Water Mi	GY drology Indicators ators (minimum of Water (A1) on (A3)		Water-Stair Aquatic Fa True Aquat	ned Lea una (B1 tic Plant Sulfide (3) s (B14) Odor (C1)	ving Roots	Surfa Drain Dry-	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2)
POROLOGICATION OF THE PROPERTY	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1)		Water-Stain Aquatic Fa True Aquat Hydrogen S	ned Lea una (B1 tic Plant Sulfide (hizosph	3) s (B14) Odor (C1) eres on Liv		Surfa Drain Cray s (C3) Satu	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8)
/DROLOG /etland Hydrimary Indic Surface \(\) High Wa Saturatic Water M. Sedimen	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) at Deposits (B2)		Water-Stain Aquatic Fa True Aquat Hydrogen S Oxidized R	ned Lea una (B1 tic Plant Sulfide (hizosph of Reduc	3) s (B14) Odor (C1) eres on Liv ced Iron (C	4)	Surfa Drain Cray s (C3) Satu Stun	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9)
YDROLOG Vetland Hydrimary Indice Surface High Wa Saturatice Water Manager Mana	GY drology Indicators cators (minimum of Water (A1) hter Table (A2) on (A3) arks (B1) arks (B2) posits (B3)		Water-Stair Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of	ned Lea una (B1 tic Plant Sulfide (hizosph of Reduc n Reduc	3) s (B14) Odor (C1) eres on Liv ed Iron (C	4)	Surfa Drain Cray s (C3) Satu Stun C6) Geo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1)
YDROLOG Vetland Hyd Surface V High Wa Saturatic Water M Sedimen Drift Dep Algal Ma Iron Dep	GY drology Indicators cators (minimum of Water (A1) hter Table (A2) on (A3) harks (B1) ht Deposits (B2) hosits (B3) ht or Crust (B4)	one is req	Water-Stair Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck	ned Lea una (B1 tic Plant Sulfide (hizosph of Reduc n Reduc Surface	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7)	4)	Surfa Drain Cray s (C3) Satu Stun C6) Geo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
POROLOGICATION OF THE PROPERTY	GY drology Indicators cators (minimum of Water (A1) Iter Table (A2) on (A3) Iarks (B1) Int Deposits (B2) Ioosits (B3) It or Crust (B4) Ioosits (B5)	one is req	Water-Stair Aquatic Fa Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck B7) Gauge or V	ned Lea una (B1 tic Plant Sulfide C hizosph of Reduc Reduc Surface Vell Dat	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4)	Surfa Drain Cray s (C3) Satu Stun C6) Geo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
/DROLOG /etland Hydrimary Indice Surface V High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely	GY drology Indicators cators (minimum of Water (A1) ther Table (A2) on (A3) arks (B1) at Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) on Visible on Aeria	one is req	Water-Stain Aquatic Fa Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck B7) Gauge or V (B8) Other (Exp	ned Lea una (B1 tic Plant Sulfide C hizosph of Reduc Reduc Surface Vell Dat	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4)	Surfa Drain Cray s (C3) Satu Stun C6) Geo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
POROLOGICAL SURFACE NATION OF THE PROPERTY OF	GY drology Indicators cators (minimum of Water (A1) ter Table (A2) on (A3) carks (B1) ot Deposits (B2) cosits (B3) cit or Crust (B4) cosits (B5) on Visible on Aeria vectors:	one is req	Water-Stair Aquatic Fa Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck B7) Gauge or V	ned Lea una (B1 tic Plant Sulfide C hizosph of Reduc Reduc Surface Vell Dat lain in R	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4)	Surfa Drain Cray s (C3) Satu Stun C6) Geo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2)
YDROLOG Vetland Hyd Primary Indic Surface Water M. Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely ield Observi	GY drology Indicators sators (minimum of Water (A1) hter Table (A2) on (A3) harks (B1) ht Deposits (B2) hosits (B3) hal or Crust (B4) hosits (B5) hon Visible on Aeria have Vegetated Conca- vations: her Present?	one is req	Water-Stain Aquatic Fa Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck B7) Gauge or V (B8) Other (Exp	ned Lea una (B1 tic Plant Sulfide (hizosph of Reduc Reduc Surface Well Dat lain in R	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4)	Surfa Drain Cray s (C3) Satu Stun C6) Geo	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
YDROLOG Vetland Hyd Surface Valent Ma Saturation Water Ma Sediment Drift Dep Algal Ma Iron Dep Inundation Sparsely ield Observal	drology Indicators cators (minimum of Water (A1) Iter Table (A2) In (A3) In (A3) In (B4) In (B4) In (B5) In (Crust (B4) In (Crust (B5) In (Visible on Aeria Iter Present? Iter Present? Iter Present? Iter Present?	I Imagery (ve Surface	Water-Stair Aquatic Fa Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck B7) Gauge or V (B8) Other (Exp	ned Lea una (B1 tic Plant Sulfide (hizosph of Reduc n Reduc Surface (Vell Dat lain in R	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	4) d Soils (C	Surfa Drain Cray Satu Stun Geon FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
YDROLOG Vetland Hydrimary Indice Surface Water Manager	drology Indicators cators (minimum of Water (A1) Inter Table (A2) Inter Table (A2) Inter Deposits (B2) Inter Deposits (B3) Inter Crust (B4) Inter Crust (B4) Inter Crust (B5) Inter Crust (B5) Inter Crust (B4) In	I Imagery (ve Surface Yes Yes	Water-Stair Aquatic Fa Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck B7) Gauge or V (B8) Other (Exp	ned Lea una (B1 tic Plant Sulfide (hizosph of Reduc n Reduc Surface (Vell Dat lain in R ches): ches): ches);	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) d Solls (C	Surfa Drain Dry-1 Cray Satun Stun Geon FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
YDROLOG Vetland Hyd Primary Indic Surface High Wa Saturatic Water M. Sedimen Drift Dep Algal Ma Iron Dep Inundatic Sparsely Field Observice Water Table Saturation Princludes cap	drology Indicators cators (minimum of Water (A1) Inter Table (A2) Inter Table (A2) Inter Deposits (B2) Inter Deposits (B3) Inter Crust (B4) Inter Crust (B4) Inter Crust (B5) Inter Crust (B5) Inter Crust (B4) In	I Imagery (ve Surface Yes Yes	Water-Stair Aquatic Fa Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck B7) Gauge or V (B8) Other (Exp	ned Lea una (B1 tic Plant Sulfide (hizosph of Reduc n Reduc Surface (Vell Dat lain in R ches): ches): ches);	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) d Solls (C	Surfa Drain Dry-1 Cray Satun Stun Geon FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
YDROLOG Vetland Hydrimary Indice Surface Water M. Sediment Drift Dep Algal Ma Iron Dep Inundation Sparsely ield Observious Surface Water Vater Table	drology Indicators cators (minimum of Water (A1) Inter Table (A2) Inter Table (A2) Inter Deposits (B2) Inter Deposits (B3) Inter Crust (B4) Inter Crust (B4) Inter Crust (B5) Inter Crust (B5) Inter Crust (B4) In	I Imagery (ve Surface Yes Yes	Water-Stair Aquatic Fa Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck B7) Gauge or V (B8) Other (Exp	ned Lea una (B1 tic Plant Sulfide (hizosph of Reduc n Reduc Surface (Vell Dat lain in R ches): ches): ches);	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) d Solls (C	Surfa Drain Dry-1 Cray Satun Stun Geon FAC	nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)
YDROLOG Vetland Hyd Vetland Hyd Surface V High Wa Saturatio Water M Sedimen Drift Dep Algal Ma Iron Dep Inundatio Sparsely ield Observation Princludes cap vescribe Rec	drology Indicators cators (minimum of Water (A1) Inter Table (A2) Inter Table (A2) Inter Deposits (B2) Inter Deposits (B3) Inter Crust (B4) Inter Crust (B4) Inter Crust (B5) Inter Crust (B5) Inter Crust (B4) In	I Imagery (ve Surface Yes Yes	Water-Stair Aquatic Fa Aquatic Fa True Aquat Hydrogen S Oxidized R Presence of Recent Iron Thin Muck B7) Gauge or V (B8) Other (Exp	ned Lea una (B1 tic Plant Sulfide (hizosph of Reduc n Reduc Surface (Vell Dat lain in R ches): ches): ches);	3) s (B14) Odor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9) emarks)	4) d Solls (C	Surfa Drain Dry-1 Cray Satun Stun Geon FAC	ace Soil Cracks (B6) nage Patterns (B10) Season Water Table (C2) fish Burrows (C8) ration Visible on Aerial Imagery (C9) ted or Stressed Plants (D1) morphic Position (D2) -Neutral Test (D5)

Project/Site: Otter Tail County Road Bike Trail	(_ City/County: Otter Tail Sampling Date:						19
Applicant/Owner: Houston Engineering Inc.					State: MN Sampling Point: Upland			
Investigator(s): Hannah Erdmann		Section	n, Towns	ship, Ran	ge: <u>S26-T136-R42</u>			
Landform (hillslope, terrace, etc.): slight depression			Loca	al relief (d	concave, convex, none):	concave		
		Long: -95.943974 Datum: _						
Soil Map Unit Name: Waukon loam, 6 to 12 percent s		-			NWI classifica			
Are climatic / hydrologic conditions on the site typical for thi								
Are Vegetation, Soil, or Hydrology					Iormal Circumstances" pi		. X	do
Are Vegetation, Soil, or Hydrology i					eded, explain any answer			
SUMMARY OF FINDINGS – Attach site map								es, etc.
Hydrophytic Vegetation Present? Yes X	No	Т						
Hydric Soil Present? Yes N	10 <u>X</u>		Is the Sa	ampled A			. ,	
Wetland Hydrology Present? Yes N	10 <u>X</u>		within a	Wetland	i? Yes	No_	<u>X</u>	
Remarks:								
VEGETATION – Use scientific names of plants	·.							
30'	Absolute		inant Ind		Dominance Test works	heet:		
Tree Stratum (Plot size: 30' 1. Fraxinus nigra	% Cover 30	Spec Y		ACW	Number of Dominant Sp		4	
2. Populus tremuloides	- 30 —	Y	— <u> </u>		That Are OBL, FACW, o	r FAC: _	4	_ (A)
					Total Number of Domina		4	(D)
3					Species Across All Strat	a: _	1	_ (B)
5					Percent of Dominant Sp		100%	(A (D)
		= Tota	al Cover		That Are OBL, FACW, o	r FAC: _	10070	_ (A/B)
Sapling/Shrub Stratum (Plot size: 15')					Prevalence Index work	sheet:		
1. Populus tremuloides	_ <u>30</u>	<u>Y</u>	<u>FA</u>	(C	Total % Cover of:		Multiply by:	_
2					OBL species			
3					FACW species			
4			— —		FAC species			_
5					FACU species			
Herb Stratum (Plot size: 5' radius)	30	= Tota	al Cover		UPL species			
1. Phalaris arundinacea	60	Υ	FA	ACW	Column Totals:	(A)		(B)
Poa pratensis	10	N	FA	4C	Prevalence Index	= B/A = _		_
3. Parthenocissus quinquefolia	5	N	FA	CU	Hydrophytic Vegetatio	n Indicato	rs:	
4. Solidago gigantea	5	N	FA	4CW	1 - Rapid Test for H		Vegetation	
5. Populus tremuloides	_ 5	N	FA		× 2 - Dominance Test			
6. Asclepias syriaca	_ 5	<u>N</u>	FA	CU	3 - Prevalence Inde			
7. Fraxinus nigra	_ 5	N		ACW_	4 - Morphological Adda in Remarks	daptations	1 (Provide su	pporting
8. Equisetum arvense	_ 5	<u>N</u>	FA	/C	Problematic Hydrop			
9					i robiematic riyarop	nytic vege	tation (Expir	,
10					¹ Indicators of hydric soil	and wetlar	nd hydrology	must
Woody Vine Stratum (Plot size:)	100	= Tota	al Cover		be present, unless distu			
1					Hydrophytic			
2					Hydrophytic Vegetation	\ <u>/</u>		
		= Tota	al Cover		Present? Yes	<u>X</u>	No	
Remarks: (Include photo numbers here or on a separate	sheet.)							

SOIL Sampling Point: Upland B

			ptn needed to docu			or commi	i tile absence	of indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Featur %	Type ¹	_Loc²	Texture	Remarks
0-2	2.5Y 4/2	100					C	
2-4	5Y 6/1	95	5YR 4/6	5	_ <u>C</u>	M	C	
4-16	10YR 3/1	95	10YR 3/3	5	C	M	С	
16-24+	2.5Y 5/2	88	10YR 5/6	10		M	С	
			2.5Y 3/1	2	_ <u></u>	M	C	
¹ Type: C=Co	oncentration. D=D	epletion. RM	I=Reduced Matrix, N	– ——— IS=Maske	– ——— ed Sand Gr	ains.	2Location	: PL=Pore Lining, M=Matrix.
Hydric Soil			· · · · · · · · · · · · · · · · · · ·					for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy	Gleyed M	Matrix (S4)		Coast I	Prairie Redox (A16)
Histic Ep	pipedon (A2)		Sandy	Redox (S	S5)		Dark S	urface (S7)
Black Hi	, ,		Stripped Matrix (S6)			Iron-Manganese Masses (F12)		
	n Sulfide (A4)		Loamy Mucky Mineral (F1)				Very Shallow Dark Surface (TF12)	
_	Layers (A5)			-	Matrix (F2)		Other (Explain in Remarks)
_	ick (A10)	Face (A44)		ed Matrix	. ,			
	d Below Dark Surf ark Surface (A12)	lace (ATT)	_	Dark Sur	Surface (F6)	`	3Indicators	of hydrophytic vegetation and
_	lucky Mineral (S1)		Depressi	,	,		d hydrology must be present,
_ ·	icky Peat or Peat	,		Боргосол	0110 (1 0)			disturbed or problematic.
	ayer (if observe							
Туре:								
Depth (inc	ches):						Hydric Soil	Present? Yes No _X
Remarks:							1	
HYDROLO	GY							
Wetland Hyd	drology Indicato	rs:						
Primary Indic	cators (minimum c	of one is requ	ired; check all that a	pply)			<u>Seconda</u>	ry Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ained Lea	ives (B9)		Surf	ace Soil Cracks (B6)
High Wa	ter Table (A2)		Aquatic F	auna (B1	3)		Drai	nage Patterns (B10)
Saturatio	on (A3)		True Aqu	atic Plant	s (B14)		Dry-	Season Water Table (C2)
Water M	arks (B1)		Hydroger	Sulfide (Odor (C1)		Cray	fish Burrows (C8)
Sedimer	nt Deposits (B2)		Oxidized	Rhizosph	eres on Liv	ing Roots	(C3) Satu	ration Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)		_		ced Iron (C	,	_	ited or Stressed Plants (D1)
Algal Ma	t or Crust (B4)		Recent Ir	on Reduc	tion in Tille	d Soils (C6		morphic Position (D2)
	osits (B5)		Thin Muc				X FAC	-Neutral Test (D5)
_	on Visible on Aeri		· — ·		, ,			
	Vegetated Conc	ave Surface	(B8) Other (Ex	plain in R	Remarks)			
Field Observ			~					
Surface Wate	er Present?		No X Depth (in					
Water Table	Present?		No X Depth (in					~
Saturation Projection (includes cap	oillary fringe)		No X Depth (in					Present? Yes No X
200011001100	oorada Dala (oli 6	a gaage, II	ormorning went, aeriai	priotos, p	o. o vious il k	, pootions),	available.	
Remarks:								

Project/Site: Otter Tail County Road Bike Trail		City/Cour	_{ity:} Otter Ta	il Sampling Date: <u>6-20-19</u>	Sampling Date: 6-20-19				
Applicant/Owner: Houston Engineering Inc.				State: MN Sampling Point: Upland	Sampling Point: Upland C				
Investigator(s): Hannah Erdmann		Section, Township, Range: S26-T136-R42							
Landform (hillslope, terrace, etc.): slight depression		Local relief (concave, convex, none): CONCAVE							
Slope (%): 0-1 Lat: 46.557371									
Soil Map Unit Name: Waukon loam, 6 to 12 percent s									
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _X No (If no, explain in Remarks.) Are Vegetation, Soil, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes _X No									
				•					
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.									
			ng ponit i		, στο.				
Hydrophytic Vegetation Present? Yes X N Hydric Soil Present? Yes N	$^{\circ}$	ls	the Sampled	Area					
Wetland Hydrology Present? Yes N	°X	wi	thin a Wetlar	nd? Yes NoX					
Remarks:	<u> </u>								
VECETATION Line exignific names of plants									
VEGETATION – Use scientific names of plants.									
Tree Stratum (Plot size: 30')	Absolute % Cover		nt Indicator Status	Dominance Test worksheet:					
1. Populus tremuloides	15	Y	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: 4	(A)				
2. Fraxinus nigra	15	Υ	FACW		. ,				
3.				Total Number of Dominant Species Across All Strata: 4	(B)				
4					,				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100%	(A/B)				
15'	_30	= Total C	cover						
Sapling/Shrub Stratum (Plot size: 15')	10	V	ГЛС	Prevalence Index worksheet:					
1. Populus tremuloides				Total % Cover of: Multiply by:	-				
2				OBL species x 1 =					
3				FACW species x 2 = FAC species x 3 =					
4				FACU species x 4 =					
5	4.0	= Total C		UPL species x 5 =					
Herb Stratum (Plot size: 5' radius)		- Total C	ovei	Column Totals: (A)					
1. Phalaris arundinacea	80	_Y	_ FACW_	Coldina Fotolo: (F)	(5)				
2. Equisetum arvense	5	_N	_ FAC	Prevalence Index = B/A =	-				
3. Parthenocissus quinquefolia	_ <u>5</u>	<u>N</u>	_ FACU_	Hydrophytic Vegetation Indicators:					
4. Solidago gigantea	_ 5	N	_ FACW	1 - Rapid Test for Hydrophytic Vegetation					
5. Populus tremuloides	5	<u>N</u>	_ FAC	× 2 - Dominance Test is >50%					
6				3 - Prevalence Index is ≤3.0¹					
7				 4 - Morphological Adaptations¹ (Provide supp data in Remarks or on a separate sheet) 	orting				
8				Problematic Hydrophytic Vegetation¹ (Explain)				
9					<i>'</i>				
10	400			¹ Indicators of hydric soil and wetland hydrology ma	ust				
Woody Vine Stratum (Plot size:)	100	= Total C	cover	be present, unless disturbed or problematic.					
1				Hydrophytic					
2				Hydrophytic Vegetation					
		= Total C	over	Present? Yes X No					
Remarks: (Include photo numbers here or on a separate s				1					
1									

SOIL Sampling Point: Upland C

Depth (inches) Matrix Redox Features Cinches) Color (moist) % Type¹ Loc² Texture Remarks 0-6 2.5Y 5/3 SC	
0-6 2.5Y 5/3 SC	
	
6-10 2.5Y 5/3 S	
10-21 10YR 7/1 96 7.5YR 4/6 2 C M SC	
7.5YR 2.5/1 2 C M SC	
21-24+ 2.5Y 3/1 83 7.5YR 4/1 15 D M S	
10YR 3/4 2 C M	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix	ix.
Hydric Soil Indicators: Indicators for Problematic Hydric S	
Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16)	
Histic Epipedon (A2) Sandy Redox (S5) Dark Surface (S7)	
Black Histic (A3) Stripped Matrix (S6) Iron-Manganese Masses (F12)	
Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (TF1:	2)
Stratified Layers (A5) Loamy Gleyed Matrix (F2) Other (Explain in Remarks)	,
2 cm Muck (A10) Depleted Matrix (F3)	
Depleted Below Dark Surface (A11) Redox Dark Surface (F6)	
Thick Dark Surface (A12) Depleted Dark Surface (F7) 3Indicators of hydrophytic vegetation	and
Sandy Mucky Mineral (S1) Redox Depressions (F8) wetland hydrology must be prese	
5 cm Mucky Peat or Peat (S3) unless disturbed or problematic.	
Restrictive Layer (if observed):	
Type:	No_X_
Depth (inches): Hydric Soil Present? Yes	NO
Remarks:	
HYDROLOGY	
Wetland Hydrology Indicators:	two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of	two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of one is required) Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6)	two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of one is required) Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10)	two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of one is required) Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2)	two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of minimum of minimu	
Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Im	agery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Important Presence of Reduced Iron (C4) Stunted or Stressed Plants (D	agery (C9)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of one of primary Indicators (Minimum of one o	agery (C9) 1)

Project/Site: Otter Tail County Roa	d Bike Trail	(City/Co	ounty: Otter	r Tail		Sampling [Date: <u>6-20-</u> 1	19
Applicant/Owner: Houston Enginee	ring Inc.					State: MN	Sampling F	oint: Uplar	nd D
Investigator(s): Hannah Erdmann			Sectio	n, Township,	, Range:	S26-T136-R42			
Landform (hillslope, terrace, etc.): side	slope			Local re	elief (cor	ncave, convex, none)	none		
Slope (%): 2 Lat: _46.557			Long:	-95.93650)5		Datum: NA	AD 1983	
Soil Map Unit Name: Cathro muck						NWI classifi	cation: not I	isted	
Are climatic / hydrologic conditions on	the site typical for	this time of yea	ar? Ye	es_X_ N					
Are Vegetation, Soil, or						mal Circumstances"		es X N	lo
Are Vegetation, Soil, or						ed, explain any answe			
SUMMARY OF FINDINGS – A									es, etc.
Hydrophytic Vegetation Present?	Yes X					-			
Hydric Soil Present?	Yes			Is the Samp	pled Are				
Wetland Hydrology Present?	Yes	No <u>X</u>		within a We	etland?	Yes	No	<u>X</u>	
Remarks:									
VEGETATION – Use scientific	names of plan	ts.							
T 0' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '		Absolute		inant Indicat		ominance Test worl	ksheet:		
Tree Stratum (Plot size: 30' 1. Populus tremuloides)	<u>% Cover</u> 50	Spec Y	<u>sies?</u> <u>Statu</u> FAC	— N	umber of Dominant S		5	(4)
2. Fraxinus nigra		$-\frac{30}{20}$	Ÿ			hat Are OBL, FACW,	or FAC:	,	(A)
3. Salix amygdaloides		$-\frac{20}{15}$	·N		<u>√</u> To	otal Number of Domin		5	(5)
4. Quercus macrocarpa			N	FAC	— SI	pecies Across All Stra	ata:		(B)
5.						ercent of Dominant S		00%	(4.45)
3		95	= Tota	al Cover	— ''	hat Are OBL, FACW,	or FAC:	0070	(A/B)
Sapling/Shrub Stratum (Plot size: 1	5')		- 1018	ai Covei	Pi	revalence Index wo	rksheet:		
			<u>Y</u>	<u>FAC</u>	_ _	Total % Cover of:		Multiply by:	_
2. <u>Salix amydgaloides</u>		5	Υ	FACV	<u>N</u> 0	BL species	x 1 =	=	_
3					F/	ACW species	x 2 =	<u> </u>	_
4					F/	AC species	x 3 =	=	_
5					ı	ACU species			
Herb Stratum (Plot size: 5' radius	`	10	= Tota	al Cover		PL species			
Phalaris arundinacea		75	Υ	FACV	W C	olumn Totals:	(A)		(B)
2 Calamagrostis canadensis			N	OBL	-	Prevalence Index	κ = B/A =		
3. Bromus inermis		$-\frac{10}{10}$	N		J H	ydrophytic Vegetati			
4					_ _	_ 1 - Rapid Test for	Hydrophytic	Vegetation	
5.					$- \bar{z} $	 ✓ 2 - Dominance Te	st is >50%	•	
6.						_ 3 - Prevalence Ind			
7					_ _	_ 4 - Morphological	Adaptations ¹	(Provide sup	porting
8						data in Remark			
9.					_ -	_ Problematic Hydro	phytic Veget	tation' (Expla	iin)
10					_ _				
		100	= Tota	al Cover		ndicators of hydric so e present, unless dist			must
Woody Vine Stratum (Plot size:)					,			
						ydrophytic			
2						egetation resent? Ye	es_X_ i	No	
Remarks: (Include photo numbers he	ere or on a cenara		= Tota	al Cover					
Tremains. (include prioto numbers ne	ne or on a separa	ie sileet.)							

US Army Corps of Engineers Midwest Region – Version 2.0

SOIL Sampling Point: Upland E

Depth	ription: (Descri Matri		pth needed to docu	ment the ox Featur		r or confirm	n the absence	of indicators.)
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-2	2.5Y 3/3	95	10YR 5/6	5	С		SL	
2-16	2.5Y 4/4	80	10YR 5/8	10	_ <u>C</u>	_ <u>M</u>	SL	
			2.5Y 5/1	10	_ _	_ <u></u>	SL	
16-18	2.5Y 7/6		5Y 8/1	2			SC	
18-24+	5YR 4/6		2.5Y 6/4	- 2 10	– C	– M	SC	2mm gravel
	011111110		2.01 0/1					
1Type: C=C	ncontration D=0	Oppletion PM	=Reduced Matrix, M	S-Mack			² I coation	: PL=Pore Lining, M=Matrix.
Hydric Soil		pepielion, Niv	i-Reduced Matrix, M	O-Mask	eu Sanu C	oranis.		for Problematic Hydric Soils ³ :
Histosol			Sandy	Gleved M	/latrix (S4))		Prairie Redox (A16)
_	pipedon (A2)			Redox (S		,	_	urface (S7)
Black Hi				d Matrix	,			anganese Masses (F12)
Hydroge	n Sulfide (A4)		Loamy	Mucky M	lineral (F1	1)	Very S	hallow Dark Surface (TF12)
Stratified	Layers (A5)		Loamy	Gleyed N	Matrix (F2)	Other (Explain in Remarks)
_	ck (A10)			ed Matrix	` '			
	l Below Dark Sur	. ,	_		face (F6)		2	
_	ark Surface (A12)				Surface (F	7)		of hydrophytic vegetation and
_ ′	lucky Mineral (S1	,	Redox	Depressi	ions (F8)			d hydrology must be present,
	cky Peat or Peat ayer (if observe						uniess	disturbed or problematic.
	ayer (II observe	au).						
Type:							Hydric Soil	Present? Yes NoX
Remarks:	ches):							
HYDROLO	GY							
Wetland Hyd	drology Indicato	rs:						
Primary Indic	ators (minimum	of one is requ	ired; check all that a	pply)			<u>Seconda</u>	ry Indicators (minimum of two required)
Surface	Water (A1)		Water-Sta	ined Lea	aves (B9)		Surf	ace Soil Cracks (B6)
High Wa	ter Table (A2)		Aquatic F	auna (B1	3)		Drai	nage Patterns (B10)
Saturatio	on (A3)		True Aqu	atic Plant	ts (B14)		Dry-	Season Water Table (C2)
Water M	arks (B1)		Hydrogen					fish Burrows (C8)
Sedimer	nt Deposits (B2)		Oxidized	Rhizosph	neres on L	iving Roots	(C3) Satu	ration Visible on Aerial Imagery (C9)
Drift Dep	oosits (B3)		Presence	of Reduc	ced Iron (C4)	Stur	ited or Stressed Plants (D1)
Algal Ma	t or Crust (B4)		Recent Ire	on Reduc	ction in Til	led Soils (Ce		morphic Position (D2)
	osits (B5)		Thin Muc				X FAC	-Neutral Test (D5)
_	on Visible on Aer	0,1	, <u> </u>		, ,			
Sparsely	Vegetated Cond	ave Surface	(B8) Other (Ex	plain in F	Remarks)			
Field Obser	vations:		V					
Surface Wate	er Present?		No X Depth (ir					
Water Table	Present?		No X Depth (ir					
Saturation Pro		Yes	No X Depth (ir	iches): _		Wetl	and Hydrology	y Present? Yes No _X
		am gauge, m	onitoring well, aerial	photos, p	previous i	nspections),	if available:	
Remarks:								
. tomanto.								

Project/Site: Otter Tail County Road Bike Trail	(City/Co	ounty: .	Otter Ta	<u> </u>	Sampling	g Date: <u>6-19-1</u>	9
Applicant/Owner: Houston Engineering Inc.					State: MN	Sampling	Point: Uplan	d E
Investigator(s): Hannah Erdmann	;	Section	n, Tow	nship, Raı	nge: <u>S26-T136-R42</u>			
Landform (hillslope, terrace, etc.): sideslope			Lo	ocal relief	(concave, convex, none):	concave	e	
Slope (%): 2 Lat: 46.564246		Long: _	-95.9	30914		Datum: _	NAD 1983	
Soil Map Unit Name: Haslie, Seelyeville, and Cathro, p	onded				NWI classific	ation: <u>no</u>	t listed	
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Ye	s_X	No _	(If no, explain in R	emarks.)		
Are Vegetation, Soil, or Hydrology si	gnificantly	disturb	ed?	Are "	Normal Circumstances" p	resent?	Yes X N	o
Are Vegetation, Soil, or Hydrology na	aturally pro	blemat	tic?	(If ne	eded, explain any answe	rs in Rema	arks.)	
SUMMARY OF FINDINGS - Attach site map s	showing	samı	pling	point k	ocations, transects	, impor	tant feature	s, etc.
Hydrophytic Vegetation Present? Yes X No		<u>.</u>		•	•	•		
Hydric Soil Present? Yes No	\propto		ls the	Sampled	Area			
Wetland Hydrology Present? Yes No	, <u>X</u>		withir	n a Wetlan	nd? Yes	No.	_X_	
Remarks:		•						
$\label{eq:VEGETATION-Use} \textbf{VEGETATION}-\textbf{Use scientific names of plants}.$								
Tree Stratum (Plot size:)	Absolute % Cover				Dominance Test work			
1					Number of Dominant Sport That Are OBL, FACW, or		1	(A)
2.								(
3					Total Number of Domin Species Across All Stra		1	(B)
4					Percent of Dominant Sp	necies		
5					That Are OBL, FACW,		100%	(A/B)
Sapling/Shrub Stratum (Plot size:)		= Total	l Cove	ŧr	Prevalence Index wor	ksheet:		
1					Total % Cover of:		Multiply by:	_
2					OBL species	x 1	1 =	_
3					FACW species	x 2	2 =	_
4					FAC species			
5					FACU species			
Herb Stratum (Plot size: 5' radius)				r	UPL species Column Totals:			
1. Calamagrostis canadensis	90	<u>Y</u>		OBL				_ (5)
	5			FACU	Prevalence Index			
3. Taraxacum officinale	5	<u>N</u>	!	FACU_	Hydrophytic Vegetation			
4			— -		1 - Rapid Test for F			
5					3 - Prevalence Inde			
6 7					4 - Morphological A			porting
8.					data in Remarks	s or on a s	separate sheet)	
9.					Problematic Hydrop	phytic Veg	getation¹ (Expla	in)
10					¹ Indicators of hydric soi	l and wath	and hudralagu	munt
Woody Vine Stratum (Plot size:)	100	= Total	l Cove	er	be present, unless distu			nust
1					I leaders as beading			
2					Hydrophytic Vegetation	~		
		= Total	l Cove	er	Present? Yes	s_X_	No	
Remarks: (Include photo numbers here or on a separate s	heet.)				•			

SOIL Sampling Point: Upland E

Profile Des	cription: (Describe	e to the depth	needed to docur	nent the	indicator	or confirm	n the absence of indicators.)	
Depth	Matrix			x Feature				
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	_Loc ² _	Texture Remarks	_
0-3	10YR 3/2						SC	_
3-12	10YR 6/3						S	
12-36+	2.5Y 7/1						S	_
								_
								_
l ———								_
								_
¹ Type: C=C	oncentration, D=De	nletion RM=R	Reduced Matrix MS	S=Maske	d Sand Gra	ains	² Location: PL=Pore Lining, M=Matrix.	_
Hydric Soil		piction, raw	toddood Matrix, Mi	o maono	a oana on	an 10.	Indicators for Problematic Hydric Soils ³ :	
Histosol			Sandy (Sleved Ma	atrix (S4)		Coast Prairie Redox (A16)	
ı —	pipedon (A2)			Redox (S			Dark Surface (S7)	
Black H	istic (A3)		Stripped	Matrix (S6)		Iron-Manganese Masses (F12)	
Hydroge	en Sulfide (A4)		Loamy	Mucky Mi	neral (F1)		Very Shallow Dark Surface (TF12)	
	d Layers (A5)				atrix (F2)		Other (Explain in Remarks)	
ı —	uck (A10)			d Matrix (. ,			
ı —	d Below Dark Surfa	ce (A11)	_	Dark Surf	٠,		31-diseases of budges budges and	
ı —	ark Surface (A12)				urface (F7)		³ Indicators of hydrophytic vegetation and	
. —	Mucky Mineral (S1) ucky Peat or Peat (53)	Redox i	Depressio	ons (Fo)		wetland hydrology must be present, unless disturbed or problematic.	
	Layer (if observed	-					diffess distarbed of problematic.	
		•						
" —	ches):		_				Hydric Soil Present? Yes NoX	_
Remarks:	C11C5).		_					
Remarks.								
HYDROLO								
Wetland Hy	drology Indicators	: :						
Primary Indi	cators (minimum of	one is require	d; check all that ap	ply)			Secondary Indicators (minimum of two required	<u>d)</u>
Surface	Water (A1)		Water-Sta	ined Leav	res (B9)		Surface Soil Cracks (B6)	
High Wa	ater Table (A2)		Aquatic Fa	una (B13	3)		Drainage Patterns (B10)	
Saturati	on (A3)		True Aqua	tic Plants	(B14)		Dry-Season Water Table (C2)	
Water M	farks (B1)		Hydrogen	Sulfide O	dor (C1)		Crayfish Burrows (C8)	
Sedime	nt Deposits (B2)		Oxidized F	Rhizosphe	eres on Liv	ing Roots	(C3) Saturation Visible on Aerial Imagery (C9)	
Drift De	posits (B3)		Presence	of Reduc	ed Iron (C4	·)	Stunted or Stressed Plants (D1)	
Algal Ma	at or Crust (B4)		Recent Iro	n Reduct	ion in Tille	d Soils (C6		
Iron De	posits (B5)		Thin Muck	Surface	(C7)		X FAC-Neutral Test (D5)	
ı —	ion Visible on Aeria			Well Data	(D9)			
	y Vegetated Conca	ve Surface (B8	B) Other (Exp	olain in Re	emarks)			
Field Obser								
Surface Wat	ter Present?	Yes No	o X Depth (in	ches):		_		
Water Table	Present?	Yes No	o X Depth (in	ches):		_		
Saturation P	resent?	Yes No	Depth (in	ches):		_ Wetl	and Hydrology Present? Yes No 🔀	_
	pillary fringe)							
Describe Re	corded Data (stream	m gauge, mon	itoring well, aerial	photos, p	revious ins	pections),	if available:	
Remarks:								
1								

Project/Site: Otter Tail County Road	Bike Trail	(City/Co	unty: Otter Ta	ail	_ Sampling Date: <u>6-19</u>	-19
Applicant/Owner: Houston Engineerii	ng Inc.				State: MN	Sampling Point: Upla	ınd F
Investigator(s): Hannah Erdmann		:	Section	, Township, Ra	nge: <u>S26-T136-R42</u>		
Landform (hillslope, terrace, etc.): slopii	ng terrace			Local relief	(concave, convex, none)	: concave	
Slope (%): 1 Lat: 46.5642				95.927341		_ Datum: NAD 1983	
Soil Map Unit Name: Snellman sandy	loam, 2 to 8 pe	ercent slope	es		NWI classifi	cation: not listed	
Are climatic / hydrologic conditions on the	e site typical for th	is time of yea					
Are Vegetation, Soil, or H	lydrology	significantly	disturbe	ed? Are	"Normal Circumstances"	present? Yes X	No
Are Vegetation, Soil, or H	lydrology	naturally pro	blemati	c? (If ne	eeded, explain any answ	ers in Remarks.)	
SUMMARY OF FINDINGS - At	tach site map	showing	samp	ling point l	ocations, transects	s, important featur	res, etc.
Hydrophytic Vegetation Present?	Yes X		<u>.</u>		·	•	-
Hydric Soil Present?	Yes N	No X	_ ı	s the Sampled	l Area		
Wetland Hydrology Present?	Yes N	No <u>X</u>	١ ا	within a Wetla	nd? Yes	No <u>X</u> _	
Remarks:							
VEGETATION – Use scientific n	ames of plants	3.					
Tree Stratum (Plot size:	```			nant Indicator	Dominance Test wor		
1					Number of Dominant S That Are OBL, FACW,		(A)
2.							_ ()
3					Total Number of Domi Species Across All Str	^	_ (B)
4					Percent of Dominant S	Species	
5					That Are OBL, FACW,		_ (A/B)
Sapling/Shrub Stratum (Plot size:)		= Iotal	Cover	Prevalence Index wo	rksheet:	
1					Total % Cover of:	Multiply by:	
2					1	x 1 =	
3					1	x 2 =	
4						x 3 =	
5					1	x 4 = x 5 =	
Herb Stratum (Plot size: 5' radius)					(A)	
1. Poa pratensis		_ 50	<u>Y</u>				
2. Phalaris arundinacea				FACW			
3					Hydrophytic Vegetat	Hydrophytic Vegetation	
4. 5.					2 - Dominance Te		
6					3 - Prevalence Inc		
7						Adaptations ¹ (Provide s	
8					1	ks or on a separate shee ophytic Vegetation ¹ (Exp	,
9					Problematic Hydro	pnytic vegetation (Exp	iain)
10					Indicators of hydric so	oil and wetland hydrology	v must
Woody Vine Stratum (Plot size:)	100	= Total	Cover	be present, unless dis		,
1					Hydrophytic		
2					Vegetation	es X No	
			= Total	Cover	Present? Yo	es_X No	
Remarks: (Include photo numbers here	or on a separate	sheet.)					

SOIL Sampling Point: Upland F

Profile Des	cription: (Describ	e to the depth	needed to docur	nent the	indicator	or confirm	the absence of in	dicators.)	
Depth	Matrix			x Feature					
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	_Loc ² _	Texture	Remarks	
0-24	2.5Y 2.5/1						<u> </u>		
24+	10YR 4/2						<u>C</u>		
l ———									
¹ Type: C=C	concentration, D=De	enletion RM=R	Reduced Matrix Ma	S=Maske	d Sand Gra	ains	² Location: PL:	=Pore Lining, M=Matr	ix
Hydric Soil		prodort, raw r	toddood matrix, in	o maono	a ouna on	an 10.		Problematic Hydric S	
Histoso	I (A1)		Sandy (Gleved Ma	atrix (S4)			ie Redox (A16)	
ı —	pipedon (A2)			Redox (S			Dark Surfac	, ,	
Black H	listic (A3)		Stripped	d Matrix (S6)		Iron-Manga	nese Masses (F12)	
Hydroge	en Sulfide (A4)		Loamy	Mucky Mi	neral (F1)		Very Shallo	w Dark Surface (TF12	2)
	d Layers (A5)				atrix (F2)		Other (Expl	ain in Remarks)	
ı —	uck (A10)			d Matrix (. ,				
ı —	ed Below Dark Surfa	ace (A11)	_	Dark Surf	. ,		31		and
ı —	ark Surface (A12)				urface (F7)			ydrophytic vegetation	
	Mucky Mineral (S1) ucky Peat or Peat (Redox i	Depression	nis (Fo)		•	Irology must be presei irbed or problematic.	π,
	Layer (if observed						diffess diste	arbed of problematic.	
		•							
'' -	nches):		_				Hydric Soil Pres	sent? Yes	No <u>×</u>
Remarks:			_						
Remarks.									
HYDROLO									
1	drology Indicator								
Primary Indi	cators (minimum of	one is require	d; check all that ar	oply)			Secondary In	dicators (minimum of	two required)
Surface	Water (A1)		Water-Sta	ined Leav	/es (B9)		Surface S	Soil Cracks (B6)	
High Wa	ater Table (A2)		Aquatic Fa	,	,		Drainage	Patterns (B10)	
Saturati	ion (A3)		True Aqua	tic Plants	(B14)		Dry-Seas	son Water Table (C2)	
_	Лarks (В1)		Hydrogen					Burrows (C8)	
Sedime	nt Deposits (B2)		Oxidized F	Rhizosphe	eres on Liv	ing Roots	(C3) Saturatio	n Visible on Aerial Ima	agery (C9)
Drift De	posits (B3)		Presence	of Reduc	ed Iron (C4	ł)	Stunted of	or Stressed Plants (D1)
Algal M	at or Crust (B4)		Recent Iro	n Reduct	ion in Tille	d Soils (C6		phic Position (D2)	
I —	posits (B5)		Thin Muck				X FAC-Neu	ıtral Test (D5)	
ı —	ion Visible on Aeria				` '				
	y Vegetated Conca	ve Surface (B8	3) Other (Exp	olain in Re	emarks)				
Field Obser	rvations:								
Surface Wat	ter Present?		o X Depth (in						
Water Table	Present?		o <u>X</u> Depth (in						
Saturation F	Present?	Yes No	o <u>X</u> Depth (in	ches):		_ Wetla	and Hydrology Pre	esent? Yes	No <u>X</u>
	pillary fringe)	m gauga man	itoring well periol	nhotoo n	rovious ins	nootions)	if available:		
Describe Re	ecorded Data (strea	m gauge, mon	itoring well, aerial	pnotos, p	revious ins	pections),	if available:		
Remarks:									
1									

Project/Site: Otter Tail County Road Bike Trail	(City/Co	ounty:	Otter Tai	il Sampling Date: 6-19-19
Applicant/Owner: Houston Engineering Inc.					State: MN Sampling Point: Upland G
Investigator(s): Hannah Erdmann	;	Sectio	n, Tov	vnship, Rar	nge: <u>S26-T136-R42</u>
Landform (hillslope, terrace, etc.): sideslope			L	ocal relief ((concave, convex, none): CONCAVE
					Datum: NAD 1983
Soil Map Unit Name: Snellman sandy loam, 2 to 8 per					NWI classification: not listed
Are climatic / hydrologic conditions on the site typical for this					
					Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrology s					,
Are Vegetation, Soil, or Hydrology n					eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map		Sam	biiiié) point it	ocations, transects, important leatures, etc.
Hydrophytic Vegetation Present? Yes X N	0		le tha	Sampled	Area
Hydric Soil Present? Yes N Wetland Hydrology Present? Yes N	°X			n a Wetlan	
Remarks:	0_/_		********		155 <u></u> 115 <u></u>
Tremains.					
VEGETATION – Use scientific names of plants.					
Tree Stratum (Plot size:)	Absolute % Cover			Indicator	Dominance Test worksheet:
1					Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
2					
3					Total Number of Dominant Species Across All Strata: 2 (B)
4.					
5					Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)
		= Tota	al Cov	er	
Sapling/Shrub Stratum (Plot size:)					Prevalence Index worksheet:
1					Total % Cover of: Multiply by:
2					OBL species x 1 =
3					FACW species x 2 = FAC species x 3 =
4					FACU species x 4 =
5					UPL species x 5 =
Herb Stratum (Plot size: 5' radius)		- 1016			Column Totals: (A) (B)
1. Poa pratensis	50	<u>Y</u>		FAC	()
Phalaris arundinacea	50	<u>Y</u>		FACW_	Prevalence Index = B/A =
3					Hydrophytic Vegetation Indicators:
4					1 - Rapid Test for Hydrophytic Vegetation
5					2 - Dominance Test is >50%
6					3 - Prevalence Index is ≤3.0¹
7					 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
8					Problematic Hydrophytic Vegetation ¹ (Explain)
9					
10	400				¹ Indicators of hydric soil and wetland hydrology must
Woody Vine Stratum (Plot size:)	100	= Tota	al Cov	er	be present, unless disturbed or problematic.
1					Hydrophytic
2					Vegetation
		= Tota	al Cov	er	Present? Yes No
Remarks: (Include photo numbers here or on a separate s	sheet.)				

US Army Corps of Engineers Midwest Region – Version 2.0

SOIL Sampling Point: Upland C

Profile Des	cription: (Describe	to the depth	needed to docu	ment the	indicator	or confirm	n the absence of in	dicators.)
Depth	Matrix			ox Feature				
(inches)	Color (moist)		Color (moist)	%	Type ¹	_Loc ² _	Texture	Remarks
0-12	10YR 3/3	_ 100					siC	
12-36	2.5Y 2.5/1	100					LC	
¹Type: C=C	concentration, D=Dep	oletion RM=R	Reduced Matrix M	S=Masked	d Sand Gra	ains	2l ocation: Pl	=Pore Lining, M=Matrix.
	Indicators:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	iouuoou mann, m	- maone	a ouna on			Problematic Hydric Soils ³ :
Histoso	I (A1)		Sandy	Gleyed Ma	atrix (S4)			ie Redox (A16)
ı —	pipedon (A2)			Redox (S5			Dark Surfac	
Black H	listic (A3)		Strippe	d Matrix (S	36)		Iron-Manga	nese Masses (F12)
	en Sulfide (A4)			Mucky Mir	, ,			w Dark Surface (TF12)
ı —	d Layers (A5)			Gleyed Ma			Other (Expl	ain in Remarks)
ı —	uck (A10)			ed Matrix (
	ed Below Dark Surface	ce (A11)	_	Dark Surfa	. ,		31	udaaahadiaaadatiaa aad
_	ark Surface (A12) Mucky Mineral (S1)			ed Dark St Depressio	urface (F7)	1		ydrophytic vegetation and drology must be present,
	ucky Peat or Peat (S	(3)		Depressio	113 (1-0)		-	urbed or problematic.
	Layer (if observed)							arbed of problematic.
Type:								
	nches):		_				Hydric Soil Pres	sent? Yes No _X_
Remarks:								
Remarks.								
HYDROLO)GV							
	drology Indicators							
1			d: abaak all that a	nnlu)			Cocondon In	dicators (minimum of two required)
	cators (minimum of	one is required			(DO)			
_	Water (A1)			ined Leav	, ,			Soil Cracks (B6)
1 —	ater Table (A2)		— .	auna (B13	,		_ ,	Patterns (B10)
ı —	ion (A3)			atic Plants	` '		,	son Water Table (C2)
I —	Marks (B1)		Hydrogen			: D4-		Burrows (C8)
ı —	ent Deposits (B2)		Oxidized Presence		eres on Liv	•		on Visible on Aerial Imagery (C9)
I —	posits (B3)		_		•	,		or Stressed Plants (D1)
	at or Crust (B4) posits (B5)		Recent Ire			u Solis (Co	. —	ohic Position (D2) utral Test (D5)
ı —	ion Visible on Aerial	Imagen/(P7)	Thin Mucl Gauge or				X PAC-Net	diai resi (D3)
ı —	y Vegetated Concav	. , ,	_ •		, ,			
Field Obse		e ourrace (bo	Other (Ex	plain in ixe	iliaiks)			
l		/oo No	Depth (ir	schoo):				
			Depth (ir					
Water Table								
Saturation F	resent? pillary fringe)	res No	Depth (ir	icnes):		_ weti	and Hydrology Pre	esent? Yes No _X
	ecorded Data (strean	n gauge, moni	itoring well, aerial	photos, pr	evious ins	pections),	if available:	
Remarks:								
I								

Applicant/Owner: Houston Engineering Inc. nvestigator(s): Hannah Erdmann				State: MN	Sampling Point: Upland H
		Smill of the			
eloning ditch donroes		Section, To	wnship, Ra	nge: S34-T136-R42	
andform (hillslope, terrace, etc.): sloping ditch depress	sion		ocal relief	(concave, convex, none):	none
Slope (%): 1-2 Lat: 46.579828		Long: -95.	855165	W 10 1 1 1 1	Datum NAD 1983
Soil Map Unit Name: Lizzie silt loam, 2 to 6 percent sl				700	cation: not listed
Are climatic / hydrologic conditions on the site typical for the		ar? Yes	< No		
Are Vegetation, Soil, or Hydrologys					present? Yes X No
Are Vegetation, Soil, or Hydrology r	at the second second second			eded, explain any answe	Confirmation of the Confir
SUMMARY OF FINDINGS - Attach site map					
Hydrophytic Vegetation Present? YesN	×				
Hydric Soil Present? Yes N		Is th	e Sampled	The state of the s	
Wetland Hydrology Present? Yes N		with	in a Wetlar	nd? Yes	No X
Remarks:					
/EGETATION - Use scientific names of plants		-			
	Absolute	Dominant	1 NO. 10 P. C. C. C. C. C.	Dominance Test work	sheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant S	
1		-	_	That Are OBL, FACW,	or FAC: 1 (A)
2	_			Total Number of Domin	0
3	_	-	$\overline{}$	Species Across All Stra	ta: <u>2</u> (B)
4	_	_	_	Percent of Dominant S	
5		- Total Co		That Are OBL, FACW,	or FAC: 50 (A/B)
Sapling/Shrub Stratum (Plot size:)	_	= Total Cov	ei	Prevalence Index wor	ksheet:
1				Total % Cover of:	Multiply by:
2				OBL species	x1=
3				FACW species	x 2 =
4,				FAC species	x 3 =
5		_			x 4 =
Herb Stratum (Plot size: 5' radius	_	= Total Cov	er	And the state of t	x 5 =
1. Bromus inermis	75	Υ	FACU	Column Totals:	(A) (B)
2 Phalaris arundinacea	20	Y	FACW	Prevalence Index	= B/A =
2 Cirsium arvense	5	N	FACU	Hydrophytic Vegetati	1-17 V 1-10-1
4				1 - Rapid Test for	Hydrophytic Vegetation
5				2 - Dominance Tes	A TOTAL STREET
6				3 - Prevalence Ind	ex is ≤3.0 ¹
7,					Adaptations ¹ (Provide supporting
Ř				data in Remark	s or on a separate sheet)
9.				Problematic Hydro	phytic Vegetation¹ (Explain)
10.				8	
Woody Vine Stratum (Plot size:)	100	= Total Cov	er	Indicators of hydric so be present, unless dist	il and wetland hydrology must urbed or problematic.
1				Hydrophytic	
2.				Hydrophytic Vegetation	
		= Total Cov	er		sNo_X
Remarks: (Include photo numbers here or on a separate		1-100		1	

SOIL Sampling Point Upland H

Profile Des Depth	Matrix		Red	ox Feature	es			
(inches) 0-13	Color (moist) 2.5Y 3/2	%	Color (moist)	%	Type	Loc²	Texture SC	Remarks
	2.5Y 3/2		10YR 6/8	10	C	N/	SC -	
13-15+	2.51 3/2	90	10 f R 6/8	10		<u>M</u>	50	
Hydric Soil Histoso Histic E	Concentration, D=De Indicators: of (A1) epipedon (A2) distic (A3)	pletion, RM	Sandy Sandy	IS=Maske Gleyed M Redox (Sed Matrix (atrix (S4) 5)		Indicators for Coast Pra Dark Surf	PL=Pore Lining, M=Matrix. r Problematic Hydric Soils ³ : airie Redox (A16) ace (S7) ganese Masses (F12)
Hydrog Stratifie 2 cm M	en Sulfide (A4) ed Layers (A5) luck (A10) ed Below Dark Surfac	ce (A11)	Loamy Loamy Deplet	Mucky Mi Gleyed M ed Matrix Dark Surf	ineral (F1) latrix (F2) (F3)		Very Sha	llow Dark Surface (TF12) plain in Remarks)
Thick D Sandy I 5 cm M	oark Surface (A12) Mucky Mineral (S1) lucky Peat or Peat (S	(3)		ed Dark S Depressio).	wetland h	hydrophytic vegetation and ydrology must be present, sturbed or problematic.
	Layer (if observed)	¢.						
Type:							4010 4010 400	
	4773.7		-				Hydric Soil Pr	esent? Yes No X
Depth (ir Remarks:	nches):	to lack of	hydrophytic vege	etation an	d hydrol	ogy indic	Hydric Soil Prater ators.	esent? Yes No _X
Depth (in Remarks: soils were	not sampled due	to lack of	hydrophytic vege	etation an	d hydrol	ogy indic	100000000000000000000000000000000000000	esent? Yes No _X
Depth (in Remarks: soils were	not sampled due		hydrophytic vege	etation an	d hydrol	ogy indic	100000000000000000000000000000000000000	esent? Yes No _X
Depth (in Remarks: soils were	not sampled due				d hydrol	ogy indic	ators.	
Depth (ir Remarks: soils were YDROLO Wetland Hy Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat	not sampled due OGY rdrology Indicators	: one is requ	ired; check all that a Water-St Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc	apply) ained Leav fauna (B1) aitic Plants a Sulfide C Rhizosphe of Reduct on Reduct k Surface r Well Data	ves (B9) 3) 5 (B14) 0dor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	ving Roots 4)	Secondary Surface Draina Dry-Se Crayfis (C3) Satural Stunted	
Depth (ir Remarks: soils were YDROLO Wetland Hy Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat	not sampled due OGY /drology Indicators icators (minimum of a Water (A1) /dret Table (A2) /fon (A3) /darks (B1) /ent Deposits (B2) /eposits (B3) //lat or Crust (B4) //posits (B5) //fon Visible on Aerial //ly Vegetated Concav	: one is requ	ired; check all that a Water-St Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc	apply) ained Leav fauna (B1; atic Plants n Sulfide C Rhizospho of Reduct on Reduct	ves (B9) 3) 5 (B14) 0dor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	ving Roots 4)	Secondary Surface Draina Dry-Se Crayfis (C3) Satural Stunted	Indicators (minimum of two required e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) th Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
Depth (in Remarks: soils were Soils water Table Saturation Features	pogy verology Indicators icators (minimum of water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) ition Visible on Aerial ly Vegetated Concavery vertions: leter Present?	: one is requ	ired; check all that a Water-St Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc	apply) ained Leav fauna (B1; latic Plants in Sulfide C Rhizosphie of Reduct on Reduct on Reduct k Surface if Well Data xplain in Ri inches);	ves (B9) 3) 5 (B14) 0dor (C1) eres on Lived Iron (C tion in Tille (C7) a (D9)	ving Roots 4) ed Soils (C	Secondary Surface Draina Dry-Se Crayfis (C3) Satural Stunted	Indicators (minimum of two required a Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
Depth (in Remarks: soils were Soi	pogy rdrology Indicators icators (minimum of water (A1) fater Table (A2) fon (A3) Marks (B1) fat Deposits (B2) fat or Crust (B4) frosts (B5) fin Visible on Aerial ly Vegetated Concaveryations: fater Present?	: one is requ Imagery (E e Surface /es /es /es	ired: check all that a Water-St: Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc 37) Gauge or (B8) Other (Ex No X Depth (in No X Depth (in	apply) ained Leav fauna (B1; latic Plants in Sulfide C Rhizosphie of Reduct on Reduct on Reduct k Surface r Well Date xplain in R inches); inches);	ves (B9) 3) 5 (B14) 0dor (C1) eres on Liv ed Iron (C tion in Tille (C7) a (D9) emarks)	ving Roots 4) ed Soils (C	Secondary Surface Drainag Dry-Se Crayfis (C3) Satural Stunted FAC-N	Indicators (minimum of two required a Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
Depth (in Remarks: soils were Soi	not sampled due OGY vorology Indicators icators (minimum of water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) ition Visible on Aerial ly Vegetated Concavervations: ter Present? Present? epillary fringe)	: one is requ Imagery (E e Surface /es /es /es	ired: check all that a Water-St: Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc 37) Gauge or (B8) Other (Ex No X Depth (in No X Depth (in	apply) ained Leav fauna (B1; latic Plants in Sulfide C Rhizosphie of Reduct on Reduct on Reduct k Surface r Well Date xplain in R inches); inches);	ves (B9) 3) 5 (B14) 0dor (C1) eres on Liv ed Iron (C tion in Tille (C7) a (D9) emarks)	ving Roots 4) ed Soils (C	Secondary Surface Drainag Dry-Se Crayfis (C3) Satural Stunted FAC-N	Indicators (minimum of two required a Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
Depth (in Remarks: soils were Soi	not sampled due OGY vorology Indicators icators (minimum of water (A1) later Table (A2) ion (A3) Marks (B1) ent Deposits (B2) eposits (B3) lat or Crust (B4) eposits (B5) ition Visible on Aerial ly Vegetated Concavervations: ter Present? Present? epillary fringe)	: one is requ Imagery (E e Surface /es /es /es	ired: check all that a Water-St: Aquatic F True Aqu Hydroger Oxidized Presence Recent In Thin Muc 37) Gauge or (B8) Other (Ex No X Depth (in No X Depth (in	apply) ained Leav fauna (B1; latic Plants in Sulfide C Rhizosphie of Reduct on Reduct on Reduct k Surface r Well Date xplain in R inches); inches);	ves (B9) 3) 5 (B14) 0dor (C1) eres on Liv ed Iron (C tion in Tille (C7) a (D9) emarks)	ving Roots 4) ed Soils (C	Secondary Surface Drainag Dry-Se Crayfis (C3) Satural Stunted FAC-N	Indicators (minimum of two required a Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) tion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)

pplicant/Owner: Houston Engineering Inc. vestigator(s): Hannah Erdmann andform (hillslope, terrace, etc.): up-slope from depre		Section Tow	- C - D		Sampling Point: Upland I
		Section Tow	C B	004 T400 D44	
andform (hillslope, terrace, etc.): up-slope from depre		Decilon, Tow	nsnip, Kai	nge: S21-T136-R41	
	ession	Lo	cal relief	(concave, convex, none):	concave
lope (%): 3 Lat. 46.580580		Long: -95.8	55159		Datum NAD 1983
oil Map Unit Name: Sybil-Eagleview complex, 2 to 8	8 percent s	lopes		NWI classific	ation: not listed
re climatic / hydrologic conditions on the site typical for th	is time of ye	ar? Yes X	No_		
re Vegetation, Soil, or Hydrology					present? Yes X No
re Vegetation, Soil, or Hydrology	ALL A CONTRACTOR			eded, explain any answe	
UMMARY OF FINDINGS - Attach site map			e . C. S		
	No_X	mel			
Hydric Soil Present? Yes X 1	No	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Sampled		\ <u>/</u>
Wetland Hydrology Present? Yes I	No X	withir	a Wetlan	nd? Yes	No_X
Remarks:					
EGETATION - Use scientific names of plants	3.				
	Absolute			Dominance Test work	sheet:
Tree Stratum (Plot size:) 1)	% Cover	Species?	Status	Number of Dominant S That Are OBL, FACW,	
2.					1 9
3.				Total Number of Domin Species Across All Stra	2
4.					
5				Percent of Dominant S That Are OBL, FACW,	
		= Total Cove	r	Landon Audio Cox	
Sapling/Shrub Stratum (Plot size)				Prevalence Index wor	
1/	->	-	_	Total % Cover of:	Multiply by: x 1 =
2			_	The State of the S	x2=
3 4		-	-		x 3 =
5					x 4 =
		= Total Cove			x 5 =
Herb Stratum (Plot size: 5' radius)				The state of the s	(A) (B)
1, Bromus inermis	70		ACU	A STATE OF THE STA	
2. Equisetum hyemale	20		ACW	Prevalence Index	
3. Asclepias syriaca	10	N I	ACU	Hydrophytic Vegetation	
4		_	_		Hydrophytic Vegetation
5				2 - Dominance Tes	
6:				3 - Prevalence Ind	ex is ≤3.0° Adaptations¹ (Provide supporting
7,		_			s or on a separate sheet)
8					phytic Vegetation¹ (Explain)
9		-	-		A CONTRACTOR OF THE PARTY OF TH
10	100	= Total Cove	_	Indicators of hydric so	and wetland hydrology must
Woody Vine Stratum (Plot size:)	00	- Tutal Cove	-	be present, unless dist	urbed or problematic.
1				Hydrophytic	
2.				Vegetation	Y
		= Total Cove	r	Present? Ye	s No_X
Remarks: (Include photo numbers here or on a separate	sheet.)				

Sampling Point Upland I

Depth	Matrix		Re	dox Featur	96			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-10 2	2.5Y 6/2	100					S	
10-12	10YR 3/2	100					S	
12-16	10YR 6/6	90	7.5YR 4/6	10	С	М	S	
16-19	10YR 7/3		*					
	10YR 7/3	95	10YR 5/8	5	C	M	<u>s</u> –	
19-22	10110 1/3	95	10110 3/0			IVI		
				22 17 .0	30.72	_		Z.C
Type: C=Con-		epletion, RN	M=Reduced Matrix,	MS=Maske	ed Sand G	rains.		PL=Pore Lining, M=Matrix. Problematic Hydric Soils ³ :
Histosol (A	A1)			y Gleyed M			Coast Pra	irie Redox (A16)
Histic Epip				y Redox (S			Dark Surf	
Black Histi	Sulfide (A4)			ed Matrix y Mucky IV			760 - 760 - 760 - 760	ganese Masses (F12) llow Dark Surface (TF12)
	Layers (A5)			y Gleyed N				plain in Remarks)
2 cm Muck				eted Matrix				pion in territory
	Below Dark Surfa	ice (A11)	Redo	x Dark Sur	face (F6)			
	Surface (A12)			eted Dark S		7)		hydrophytic vegetation and
	cky Mineral (S1)		Redo	x Depressi	ons (F8)			ydrology must be present,
	ky Peat or Peat (yer (if observed						uniess dis	sturbed or problematic
Type:	iyer (ii observed	.,.						
Depth (inch	Zata.		_				Hydric Soil Pr	esent? Yes_X_ No
Depth (IIICh	es):						the second secon	
	es):							
Remarks:								
Remarks:	Y	5.						
Remarks: YDROLOG Wetland Hydro	Y ology Indicators		wired check all that	anniv)			Secondary	Indicators (minimum of two requires
Remarks: YDROLOG Wetland Hydro	Y ology Indicators tors (minimum of		uired; check all that	1 1 1 0 1	was /BOV			
YDROLOG Wetland Hydro Primary Indicat Surface W	Y ology Indicators tors (minimum of /ater (A1)		Water-S	tained Lea			Surface	e Soil Cracks (B6)
YDROLOG Vetland Hydro Primary Indicat Surface W High Wate	ology Indicators tors (minimum of later (A1) er Table (A2)		Water-S Aquatic	tained Lea Fauna (B1	3)		Surface Draina	e Soil Cracks (B6) ge Patterns (B10)
YDROLOG Vetland Hydro Primary Indicat Surface W High Wate Saturation	ology Indicators tors (minimum of later (A1) er Table (A2) (A3)		Water-S Aquatic True Aq	tained Lea Fauna (B1 uatic Plant	3) s (B14)		Surface Draina	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2)
YDROLOG Vetland Hydro Surface W High Wate Saturation Water Mar	ology Indicators tors (minimum of later (A1) er Table (A2) (A3)		Water-S Aquatic True Aq Hydroge	tained Lea Fauna (B1 uatic Plant en Sulfide (3) s (B14) Odor (C1)	ving Roots	Surface Drainag Dry-Se Crayfis	e Soil Cracks (B6) ge Patterns (B10)
YDROLOG Wetland Hydro Primary Indicat Surface W High Wate Saturation Water Mar	ology Indicators tors (minimum of /ater (A1) er Table (A2) i (A3) rks (B1) Deposits (B2)		Water-S Aquatic True Aq Hydroge Oxidized	tained Lea Fauna (B1 uatic Plant	3) s (B14) Odor (C1) seres on Li		Surface Draina Dry-Se Crayfis (C3) Satural	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8)
YDROLOG Netland Hydro Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos	ology Indicators tors (minimum of /ater (A1) er Table (A2) i (A3) rks (B1) Deposits (B2)		Water-S Aquatic True Aq Hydroge Oxidized	itained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph	3) s (B14) Odor (C1) teres on Li ced Iron (C	(4)	Surface Draina Dry-Se Crayfis (C3) Satural Stunted	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9)
YDROLOG Netland Hydro Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos	ology Indicators tors (minimum of /ater (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4)		Water-S Aquatic True Aq Hydroge Oxidized Presenc	itained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph ce of Reduc	3) s (B14) Odor (C1) teres on Li ced Iron (C	(4)	Surface Drainag Dry-Se Crayfis (C3) Satural Stuntee Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1)
YDROLOG Netland Hydro Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos	ology Indicators tors (minimum of later (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5)	one is required in the second	Water-S Aquatic True Aq Hydroge Oxidizer Presenc Recent Thin Mu	stained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface or Well Dat	3) s (B14) Odor (C1) peres on Li ced Iron (C stion in Tille (C7) a (D9)	(4)	Surface Drainag Dry-Se Crayfis (C3) Satural Stuntee Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLOG Vetland Hydro Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Inundation Sparsely V	ology Indicators tors (minimum of /ater (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) of Visible on Aeria //egetated Conca	one is required in the second	Water-S Aquatic True Aq Hydroge Oxidizer Presenc Recent Thin Mu	stained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph de of Reduc Iron Reduc ck Surface	3) s (B14) Odor (C1) peres on Li ced Iron (C stion in Tille (C7) a (D9)	(4)	Surface Drainag Dry-Se Crayfis (C3) Satural Stuntee Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLOG Netland Hydro Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Inundation Sparsely W	ology Indicators tors (minimum of /ater (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) of Visible on Aeria /egetated Conca	one is required in the second	Water-S Aquatic True Aq Hydroge Oxidized Presend Recent Thin Mu B7) Gauge 6 (B8) Other (E	stained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph ee of Reduc Iron Reduc ick Surface or Well Dat Explain in F	3) s (B14) Odor (C1) peres on Li ced Iron (C stion in Tille (C7) a (D9)	(4)	Surface Drainag Dry-Se Crayfis (C3) Satural Stuntee Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLOG Vetland Hydro Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Inundation Sparsely W	ology Indicators tors (minimum of /ater (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) of Visible on Aeria /egetated Conca	one is required in the second	Water-S Aquatic True Aq Hydroge Oxidized Presenc Recent Thin Mu B7) Gauge co (B8) Other (E	tained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph de of Reduc Iron Reduc ick Surface or Well Dat Explain in F	3) s (B14) Odor (C1) peres on Li ced Iron (C stion in Tille (C7) a (D9)	(4)	Surface Drainag Dry-Se Crayfis (C3) Satural Stuntee Geomo	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2)
YDROLOG Netland Hydro Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Inundation Sparsely W Field Observa	ology Indicators tors (minimum of /ater (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) n Visible on Aeria /egetated Conca	I Imagery (Water-S	stained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph ce of Reduc Iron Reduc ick Surface or Well Dat Explain in F (inches): (inches):	3) s (B14) Odor (C1) peres on Li ced Iron (C stion in Tille (C7) a (D9)	(4) ed Soils (C	Surface Draina; Dry-Se Crayfis . (C3) Saturat Stuntec . Geomo FAC-N	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
YDROLOG Netland Hydro Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat of Iron Depos Inundation Sparsely W Field Observa Surface Water Nater Table Presincludes capill	ology Indicators tors (minimum of later (A1) er Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) or Visible on Aeria legetated Conca attons: Present? resent? sent?	I Imagery (ve Surface Yes Yes	Water-S	stained Lea Fauna (B1 uatic Plant en Sulfide (d Rhizosph de of Reduc Iron Reduc ick Surface or Well Dat Explain in F (inches): (inches); (inches);	3) s (B14) Odor (C1) heres on Li ced Iron (C tion in Tille (C7) a (D9) Remarks)	(4) ed Solls (C	Surface Draina; Dry-Se Crayfis Satura; Stuntee Geomo FAC-N	e Soil Cracks (B6) ge Patterns (B10) ason Water Table (C2) h Burrows (C8) ion Visible on Aerial Imagery (C9) d or Stressed Plants (D1) orphic Position (D2) eutral Test (D5)
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Project/Site: Otter Tail County Road Bike Trai		City/County: Otter T	ail	Sampling Date: 6-20-19	
Applicant/Owner: Houston Engineering Inc.			State: MN	Sampling Point: Upland J	
nvestigator(s): Hannah Erdmann		Section, Township, Range: S34-T136-R42			
andform (hillslope, terrace, etc.): sloping ditch d				none	
			45,000		
Soil Map Unit Name: Waukon loam, 2 to 6 perc				cation: not listed	
Are climatic / hydrologic conditions on the site typics		\ /			
				present? Yes X No	
Are Vegetation, Soil, or Hydrology _	and the second s	durant and a second		Contract to the second	
Are Vegetation, Soil, or Hydrology _			needed, explain any answe		
SUMMARY OF FINDINGS - Attach site	the same of the sa	sampling point	locations, transects	s, important features, etc.	
	No X	In the Comple	1400		
	No X	Is the Sample within a Wetla			
Wetland Hydrology Present? Yes Remarks:	No_X	within a vveda	and: res		
Remarks.					
and the state of t					
VEGETATION – Use scientific names of p	olants.				
Tree Stratum (Plot size:)	Absolute % Cover	Dominant Indicator Species? Status		77.577.6	
1	76 COVE	Species: Status	Number of Dominant S That Are OBL, FACW,		
2			THAT ARE OBE, I AGW,	01170. <u>-</u> (A)	
3.			Total Number of Domin Species Across All Stra	97.37	
4			opedies Across Air Str	1(d)(D)	
5.			Percent of Dominant S		
Ā		= Total Cover	That Are OBL, FACW,	or FAC: 50 (A/B)	
Sapling/Shrub Stratum (Plot size 15'	_7	The state of the s	Prevalence Index wor	ksheet:	
1 Salix interior	25	Y FACW	Total % Cover of:		
2			OBL species 0	x = 0	
3			FACW species 55	x = 110	
4,		-	FAC species 0	x 3	
5			FACU species 70	x 4 = 280	
Herb Stratum (Plot size: 5' radius	25	= Total Cover	UPL species 0	$\times 5 = \frac{0}{390}$	
1. Phalaris arundinacea	30	Y FACW	Column Totals: 125	(A) 390 (B)	
2 Bromus inermis	20	Y FACU	Prevalence Index	a = B/A = 3.12	
3 Phleum pratense	20	Y FACU	Hydrophytic Vegetati	3-8 7 V 38-7	
Melilotus officinalis	15	N FACU	1 - Rapid Test for	Hydrophytic Vegetation	
5 Sonchus arvensis	15	N FACU	2 - Dominance Te	st is >50%	
6			3 - Prevalence Ind	ex is ≤3.0 ¹	
7.			4 - Morphological	Adaptations ¹ (Provide supporting	
8.				s or on a separate sheet)	
9			Problematic Hydro	phytic Vegetation¹ (Explain)	
10.					
District on Edward	100	= Total Cover	Indicators of hydric so be present, unless dist	il and wetland hydrology must urbed or problematic	
Woody Vine Stratum (Plot size:			- Processor annous and	Control Control Control	
1			Hydrophytic		
			Vegetation		
2		= Total Cover	Present? Ye	sNo_X_	

Soil Sampling Point Upland J

Color (moist) % Color (moist) % Type Lec* Texture Remarks Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. The state of the sta	Profile Description: (Description: Matr. Depth Matr.	1 1 1 1 1 1 1 1 1 1 1 1		x Features			27.24.46.724
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Remarks: soils were not sampled due to lack of hydrophytic vegetation and hydrology indicators. Variable						Hydric Soil Pres	sent? Yes No^_
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US Army Corps of Engineers Midwest Region - Version 2.0

Appendix B Otter Tail County West Segment Delineation Report



AQUATIC RESOURCE DELINEATION REPORT

Otter Tail Bike Trail West Segment, Otter Tail County,

Prepared for:

Otter Tail County Highway Department

I hereby certify that this report was prepared by me or under my direct supervision.

Hannah G. Erdmann Houston Engineering Inc. CWDT #5254

Date: March 2, 2020 HEI project no. 5197-0033



EXECUTIVE SUMMARY

Staff from Houston Engineering, Inc. completed the components of a field investigation of the subject area to identify and delineate aquatic resources for a project on behalf of the Otter Tail County Highway Department. The subject property is located in Maplewood Township (T135N, R42W, S6, 7, 8, 9,), Erhards Grove Township (T135N, R43W, S1, 2, 3), and Pelican Township (T136N, R43W, S34), near Pelican Rapids in Otter Tail County, Minnesota. The delineation was conducted in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, and the Midwest Regional Supplement (2010), and the Minnesota Department of Natural Resources Public Waters Inventory (2019a). Results of the field delineations indicate there are 23 wetland areas (total 13.54 acres) and no Other Waters located in the 96.11-acre survey area. Most of the delineated wetlands are natural depressions of the PEM1A or PEM1C type. There is one public water body (Lake Lida) listed by the Minnesota Public Water Inventory (PWI) that is located adjacent to the project boundary (MN DNR 2019a). The project corridor appears to be outside of the OHW listed for Lake Lida. In addition, a few public waters wetlands are located on the opposite side of the road from the project corridor.

1 INTRODUCTION

Staff from Houston Engineering, Inc. completed a field investigation in accordance with the 1987 Army Corps of Engineers Wetland Delineation Manual, and the Midwest Regional Supplement. The proposed construction includes acquisition of 25 feet of right-of-way along one side of the existing road. The trail extends from the town of Pelican Rapids to Maplewood State Park, and through future trail construction will extend from Maplewood State Park to near the town of Perham, Minnesota. The purpose of this report is to identify the wetlands and water resources within the project area to mitigate impacts during construction of the future bike trail.

2 LOCATION

The project is located in Maplewood Township (T135N, R42W, S6, 7, 8, 9,), Erhards Grove Township (T135N, R43W, S1, 2, 3), and Pelican Township (T136N, R43W, S34), near Pelican Rapids in Otter Tail County, Minnesota; general latitude: 46.535515, longitude: -96.031937; **Attachment A: Location Map**). The project boundary extends for approximately 6.8 miles and begins less than a mile south of Pelican Rapids, MN (driving directions: from Pelican Rapids, head south on HWY 59 for 0.2 miles and the project begins on the east side of the highway). The project boundary consists of a length generally along HWY 59 until County HWY 3; it continues on the north/east side of this highway until 300th St.

3 METHODS

For the delineation, we followed the methods described in the 1987 Army Corps of Engineers Manual for "routine" delineations (USACE 1987). Additionally, we followed methodology specific to the Midwest Regional Supplement (USACE 2010). Prior to the field delineation to identify potential wetland habitats and provide guidance for the investigation of wetlands at the project site, we reviewed the Minnesota Department of Natural Resources Wetland Inventory (MN DNR 2019b), the Public Waters Inventory (MN DNR 2019a), and the county digital soil surveys (USDA-NRCS 2019a), as well as current and historical aerial photography.

The following procedures were used to determine wetland habitats:

- We surveyed vegetation to determine the proportion of the dominant plant species classified as
 either obligate wetland, facultative wetland, or facultative plants; or if other indicators of wetland
 vegetation were present.
- We sampled the soil using a soil probe to identify soil morphology, redoximorphic features, and soil texture. We determined the hydric soil indicators according to Field Indicators of Hydric Soils in the United States; Guide for Identifying and Delineating Hydric Soils, Version 7.0 (USDA-NRCS 2019b).
- We determined wetland hydrology on-site by observation of primary and secondary hydrologic indicators (USACE 2010). We also used aerial photography to assist hydrologic assessment. To describe the climactic conditions at the time of sampling, we accessed antecedent and recent rainfall data before going in the field (MN State Climatology Office 2019). To determine if the dry season water table hydrology indicator applies, we obtained the typical water balance for the site at the date of sampling (Matsuura et al. 2003).
- We reviewed aerial and historic photography to assess wetland signatures in cropped fields for which we had limited access to during the field visit.

Staff from Houston Engineering (Mark D. Aanenson and Donna Jacob) performed fieldwork on October 9th and 10th, 2019. We marked the wetland boundaries and sample locations using a Trimble 7x professional GPS. Sample points included observations of dominant vegetation, soil profiling including color and texture, and indications of hydrology. We used additional, undocumented sample points throughout the delineation to verify vegetation, hydric soils, and hydrology. We recorded our observations using data forms and geolocated photographs. All areas within the project boundary were surveyed. For some of the wetlands that appear to extend into the adjacent properties, we estimated

their extent by observing them at a distance during the field visit, and through evidence of saturation or crop signatures from aerial photographs.

4 EXISTING CONDITIONS

Landscape Setting

The project area is in the Eastern Broadleaf Forest Ecological Province, Hardwood Hills Subsection (MN DNR 1999). This region consists of glacial features including moraines, outwash plains, and kettle lakes, many of which are connected on the surface by natural streams, rivers, or artificial drainage. This area includes of a mix of vegetation types including forest, prairie, and wetland plant communities. Presettlement vegetation was primarily tallgrass prairies, maple-basswood forests, and oak savannas, but now much of the area has been converted to cultivated agriculture (MN DNR 1999). The current local land use proximate to the project consists of rural residential properties, a hospital, grazing pastures, and agricultural fields. At the time of the delineation some of the wetlands were disturbed due to grazing.

Climactic Conditions:

The weather conditions at the time of the delineation were good. The antecedent precipitation shows wetter than normal conditions (**Table 1 Antecedent Precipitation**, MN State Climatology Office 2019). The site received 1.15 inches of rain in the week before the delineation. The typical water balance for this site shows the dry season begins July 1 (Matsuura et al. 2003).

Table 1: Antecedent precipitation

Values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates	First prior month: September 2019	Second prior month: August 2019	First prior month: July 2019		
Estimated precipitation total for this location	5.78R	5.25R	4.56R		
There is a 30% change this location will have less than:	1.72	2.26	2.37		
There is a 30% change this location will have more than:	3.10	3.70	4.80		
Type of month: Dry Normal wet	wet	wet	normal		
Monthly score	3*3=9	2*3=6	1*2=2		
Multi-month score:	17 (wet)				
6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	17 (wet)				

Hydrology description:

The project area drains generally to the east into tributaries which eventually flow into the Pelican River. However, the end of the project boundary drains to the northeast to Lake Lida (Attachment: D LiDAR

Maps). The project area has many lakes and depressions formed from glaciation. The closest major river is the Pelican River approximately 0.5 miles west of the project boundary along HWY 59.

Soil description:

Dominant soils within the project site areas are vary from well drained glacial drift sediment, to poorly drained organic soils (USDA-NRCS 2019c). The project area is composed of a variety of soil types with slopes ranging between zero and twenty percent (**Attachment E: Hydric Soil Maps**). The dominant soils include Sisseton (Hydric rating: 10 %) and Cathro complex (Hydric rating: 100 %).

Vegetation description:

The wetland plant communities in the survey area are wet prairie, shallow marsh, deep marsh, shrub swamp and hardwood swamp. Dominant species in the wetland areas within the project area (Attachment F: Plant List and Attachment G: Data Forms) include all strata. The tree and shrub species identified are Acer saccharum (sugar maple), Cornus sericea (red osier dogwood), Fraxinus nigra (black ash), Fraxinus pennsylvanica (green ash), Picea mariana (black spruce), Populus balsamifera (balsam poplar), Populus tremuloides (quaking aspen), Rhamnus cathartica (European buckthorn), Rhus glabra (smooth sumac), Ribes americanum (wild black currant), and Salix amygdaloides (peachleaf willow). There are a variety of wetland herbs, the more frequent species include numerous species of Carex, Phalaris arundinacea (reed canary grass), Typha sp. (cattail), Poa pratensis (Kentucky blue grass), Phragmites australis (common reed), Spartina pectinata (prairie cordgrass), Bromus inermis (smooth brome), Calamagrostis canadensis (blue joint), and Agrostis gigantea (redtop). The vine species identified are Vitis riparia (riverbank grape).

Commerce:

Wetland 21a is a riparian wetland adjacent to Lake Lida. Lake Lida has seasonal and residential homes. Some of the seasonal home are owned by residents of other states. Lake Lida also has public access and is used by the public for fishing and water recreation activities.

Aquatic Resources: Results of the field wetland delineation indicate there are 23 wetland areas (total 13.54 acres) and no Other Waters located in the 96.11-acre survey area (Attachment B: Aquatic Resource Delineation and National Wetland Inventory Maps, Table 2). Some of the wetlands are listed in the NWI and some are listed as protected waters by the Minnesota Department of Natural Resources (MN DNR 2019a). Most of the wetlands are natural basin wetlands or formed with the construction of the road ditches (Attachment C: Site Photographs). These are mostly palustrine, emergent, temporarily, or seasonally flooded wetland types (PEM1A/C) (Cowardin et al. 1979). The corresponding Eggers and Reed

(2015) classifications include Wet Prairie, Shallow Marsh, and Deep Marsh. The corresponding Circular 39 classifications include Types 1, 3, 4, 5, and 6 (Shaw and Fredine 1959). **Table 2** shows the field determined classifications for each wetland under each of the previously mentioned classification system.

Site descriptions:

- <u>Wetland 1</u>: constructed stormwater pond wetland. This wetland is not listed by the NWI. Field observations indicate that his wetland can be classified as a PEM1Cx.
- <u>Wetland 2</u>: natural wetland that is listed by the NWI as a PFO1C, PEM1C, and PSS1C. Field observations indicate that this wetland can be classified as PFO1A/C and extends beyond the project boundary to the east. It appears to by connected to a channelized stream and connects to additional wetlands to the west via a culvert under the road.
- <u>Wetland 3</u>: ditch wetland formed with the construction of the road. This wetland is not classified by the NWI. Field observations indicate that this wetland can be classified as PEM1A/C/x.
- <u>Wetland 4a</u>: natural wetland that is listed by the NWI as PFO1A and PEM1A. Field observations indicate this wetland can be classified as PFO1C. It is connected to Wetland 4b by a culvert running under 400th Street. This wetland extends beyond the project boundary to the east.
- <u>Wetland 4b</u>: natural wetland that is not listed by the NWI. Field observations indicate that this wetland can be classified as PSS1A or PEM1A. This wetland extends beyond the project boundary to the east.
- <u>Wetland 5</u>: natural wetland that is listed by the NWI as PFO1C and PEM1C. Field observations indicate this wetland can be classified as PEM1A, PEM1C, and PSS1A. It extends beyond the project boundary to the east.
- <u>Wetland 6</u>: natural wetland listed by the NWI as PEM1C. Field observations indicate that this wetland can be classified as PEM1Ad. It extends beyond the project boundary to the north.
- <u>Wetland 7</u>: natural wetland that is listed by the NWI as PSS1Cd, PUBF, and PEM1Cd. Field observations indicate that this wetland can be classified as PFO1A and PEM1A/C. This wetland extends beyond the project boundary to the north.
- Wetland 8: natural wetland listed by the NWI as PUBF and PEM1C/d. Field observations indicate that this wetland can be classified as PEM1C and PUBF. It extends beyond the project boundary to the north.
- <u>Wetland 9</u>: natural wetland that is listed by the NWI as PEM1C and PUBF. Field observations indicate that this wetland can be classified as PEM1A/C and PSS1C. and extends beyond the project boundary to the north.



- <u>Wetland 10a</u>: natural wetland that is listed by the NWI as PEM1Ad. Field observations indicate this wetland can be classified as PEM1Cd. This wetland extends beyond the project boundary to the north, where it connects with Wetland 10b.
- <u>Wetland 10b</u>: natural wetland that is listed by the NWI as PEM1Ad. Field observations indicate this wetland can be classified as PEM1Cd. It extends beyond the project boundary to the north where it connects with Wetland 10a.
- Wetland 11: natural wetland that is not listed by the NWI. Field observations indicate that this wetland can be classified as PEM1Ad.
- Wetland 12: road ditch wetland that is not classified by the NWI. Field observations indicate this wetland can be classified as PEM1Ad.
- <u>Wetland 13</u>: natural wetland that is listed by the NWI as PEM1Ad and PEM1Cd. Field observations confirm the NWI classifications. This wetland extends beyond the project boundary to the east.
- <u>Wetland 14</u>: natural wetland that is listed by the NWI as PSS1C and PEM1Ad. A portion of this wetland is a ditch wetland. Field observations confirm the NWI classifications within this wetland. This wetland extends beyond the project boundary to the east in some locations.
- <u>Wetland 15</u>: natural wetland that is listed by the NWI as PEM1Ad and PFOAd. Field observations indicate that this wetland can be classified as PFOAd.
- Wetland 16: ditch wetland that is not classified by the NWI. Field observations indicate this wetland can be classified as PEM1Ad.
- <u>Wetland 17</u>: natural wetland that is listed by the NWI as PSS1Ad. Field observations confirm the NWI classification.
- <u>Wetland 18a</u>: natural wetland that is listed by the NWI as a PEM1Ad. Field observations confirm the NWI classification. This wetland extends beyond the project boundary to the north and is connected to 18b via culvert.
- <u>Wetland 18b</u>: natural wetland that is listed by the NWI as PEM1Ad. Field observations confirm the NWI classification. This wetland extends beyond the project boundary to the north. It is connected to 18a via a culvert.
- Wetland 19: natural wetland that is listed by the NWI as PEM1C. Field observations indicate this wetland can be classified as PEM1C. This wetland extends outside of the project boundary to the north.
- <u>Wetland 20</u>: natural wetland that is listed by the NWI as PEM1Ad. Field observations indicate that this wetland can be classified as PEM1C and extends beyond the project boundary to the north.



Wetland 21a: natural wetland that is listed by the NWI as PFOAd and L2UBH. Field observations indicate that this wetland can be classified as PFOA. It extends beyond the project boundary to the north and is connected to Wetland 21b by a culvert.

Wetland 21b: natural wetland that is not listed by the NWI. Field observations indicate that this wetland can be classified as PFOA. It is connected to Wetland 21a by a culvert.

<u>Wetland 22</u>: natural wetland that is not listed by the NWI. Field observations indicate that this wetland can be classified as PEM1Ad.

<u>Wetland 23</u>: natural wetland listed by the NWI as PEM1Ad. Field observations confirm the NWI classification.

Table 2: Delineated Wetlands and their characteristics (data limited to project boundary only) "-" Indicates Not Listed by NWI

		Wetland type					
Wetland Number	NWI Listing	Cowardin et al. 1979	Circular 39 (Shaw and Fredine 1959)	Eggers and Reed (2015)	Wetland area (acres)	Latitude (center)	Longitude (center)
1	-	PEM1Cx	Type 3	Shallow Marsh	0.13	46.553759	-96.083529
2	PFO1C, PSS1C, PEM1C	PFO1A/C	Type 7	Hardwood Swamp	0.93	46.547509	-96.083176
3	-	PEM1A/C/x	Type 1	Wet Prairie	0.03	46.545267	-96.083529
4a	PFO1A, PEM1A	PFO1C	Type 3	Hardwood Swamp	0.78	46.542146	-96.083402
4b	-	PSS1A	Type 6	Shrub Swamp	0.18	46.542137	-96.083369
5	PFO1C	PEM1A, PEM1C, PSS1A	Type 3 Type 6	Shallow Marsh Shrub Swamp	0.35	46.541119	-96.083364
6	PEM1C	PEM1Ad	Type 1	Wet Prairie	0.19	46.536051	-96.076025
7	PEM1Cd, PSS1Cd, PUBF	PFOA, PEM1A/C	Type 1, 7	Wet Prairie, Hardwood Swamp	1.58	46.535569	-96.054399
8	PEM1C, PUBF	PEM1C, PUBF	Type 3, 4	Shallow Marsh, Deep Marsh	0.54	46.535523	-96.048446
9	PEM1C, PUBF	PEM1A/C, PSS1C	Type 3,	Shallow Marsh, Shrub Swamp	0.75	46.535521	-96.045714
10a	PEM1Ad	PEM1Cd	Type 3	Shallow Marsh	0.71	46.535553	-96.040240

10b	PEM1Ad	PEM1Cd	Type 3	Shallow Marsh	0.58	46.535525	-96.036398
11	-	PEM1Ad	Type 1	Wet Prairie	0.03	46.535593	-96.027248
12	-	PEM1Ad	Type 1	Wet Prairie	0.02	46.534750	-96.021608
13	PEM1Cd, PEM1Ad	PEM1Cd, PEM1Ad	Type 1,	Wet Prairie, Shallow Marsh	1.27	46.531859	-96.020727
14	PSS1C, PEM1Ad	PSS1C, PEM1Ad	Type 1, 6	Wet Prairie Shrub Swamp	1.45	46.529350	-96.020773
15	PEM1Ad, PFOA	PFOAd	Type 7	Hardwood Swamp	0.91	46.527030	-96.020640
16	-	PEM1Ad	Type 1	Wet prairie	0.02	46.525957	-96.020303
17	PSS1Ad	PSS1Ad	Type 6	Shrub Swamp	0.34	46.525481	-96.019651
18a	PEM1Ad	PEM1Ad	Type 1	Wet prairie	0.57	46.521237	-96.004078
18b	PEM1Ad	PEM1Ad	Type 1	Wet prairie	0.65	46.521195	-96.001727
19	PEM1C	PEM1C	Type 3	Shallow Marsh	0.17	46.521269	-95.999693
20	PEM1Ad	PEM1C	Type 3	Shallow Marsh	0.09	46.521370	-95.996260
21a	PFOA, L2UBH	PFOA	Type 7	Hardwood Swamp	0.86	46.519064	-95.990499
21b	-	PFOA	Type 7	Hardwood Swamp	0.09	46.517928	-95.989541
22	-	PEM1C	Type 3	Shallow Marsh	0.02	46.517279	-95.989653
23	PEM1Ad	PEM1Ad	Type 1	Wet Prairie	0.31	46.514191	-95.989404
total acres within project boundary					13.54		

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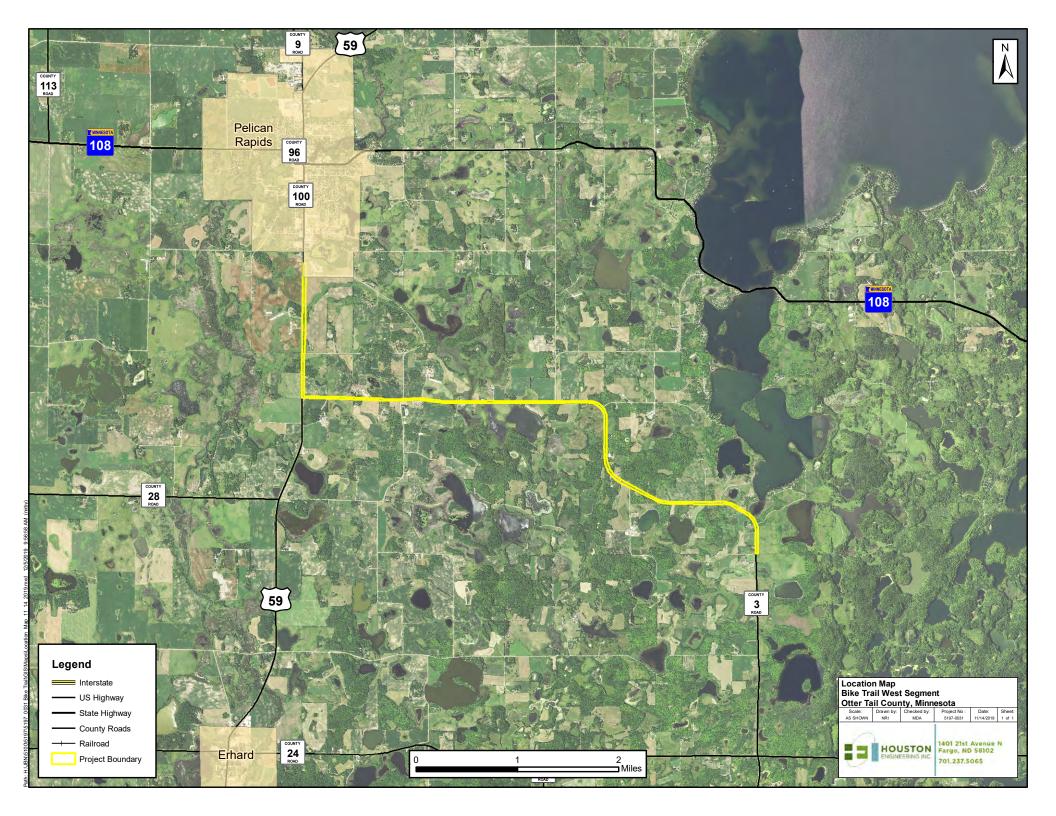
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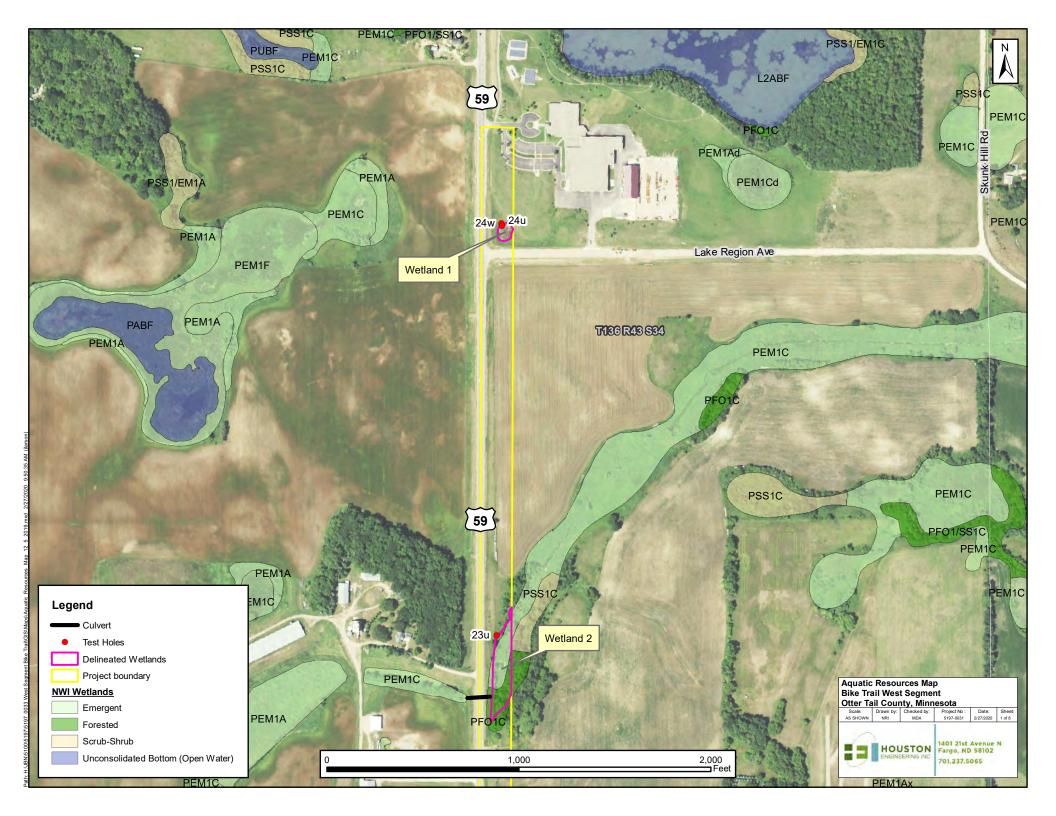
ATTACHMENT A

Location Map

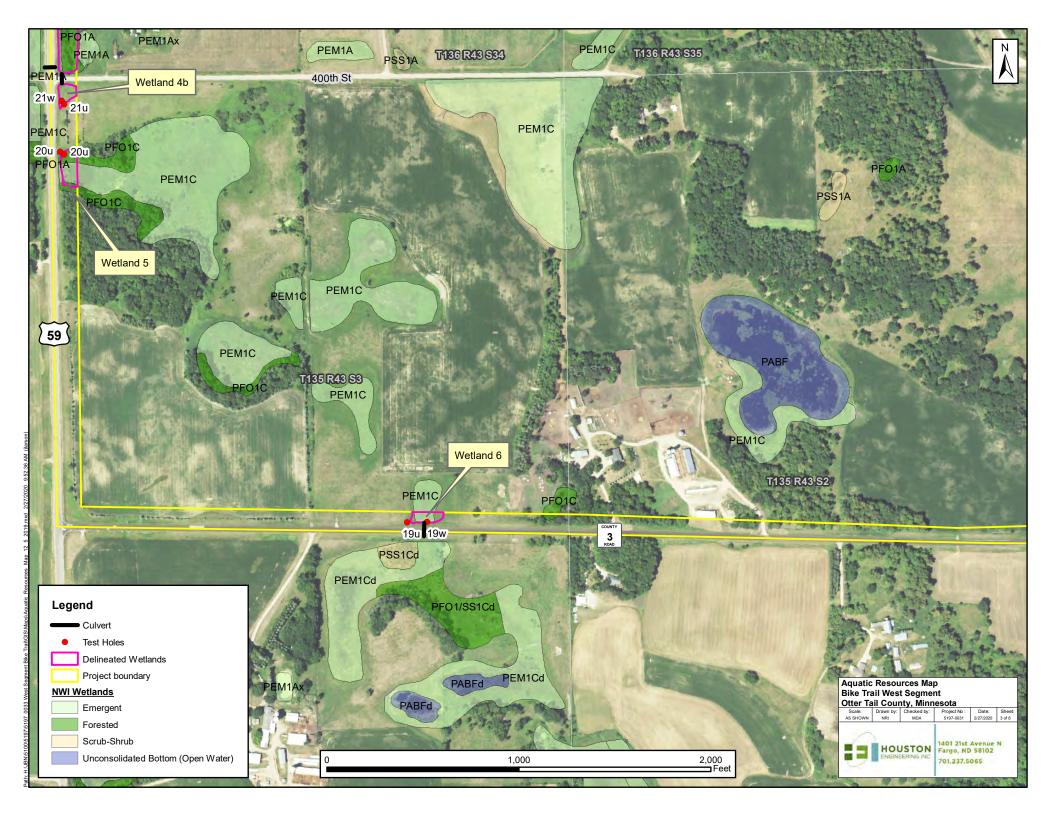


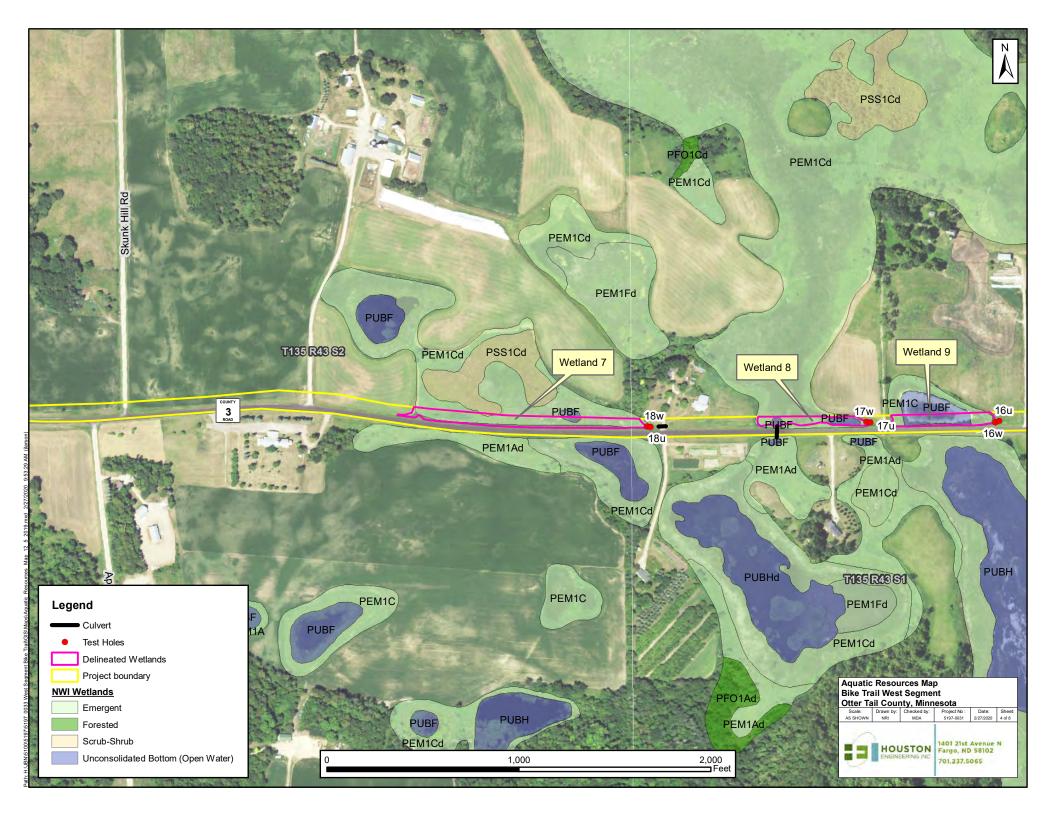
ATTACHMENT B

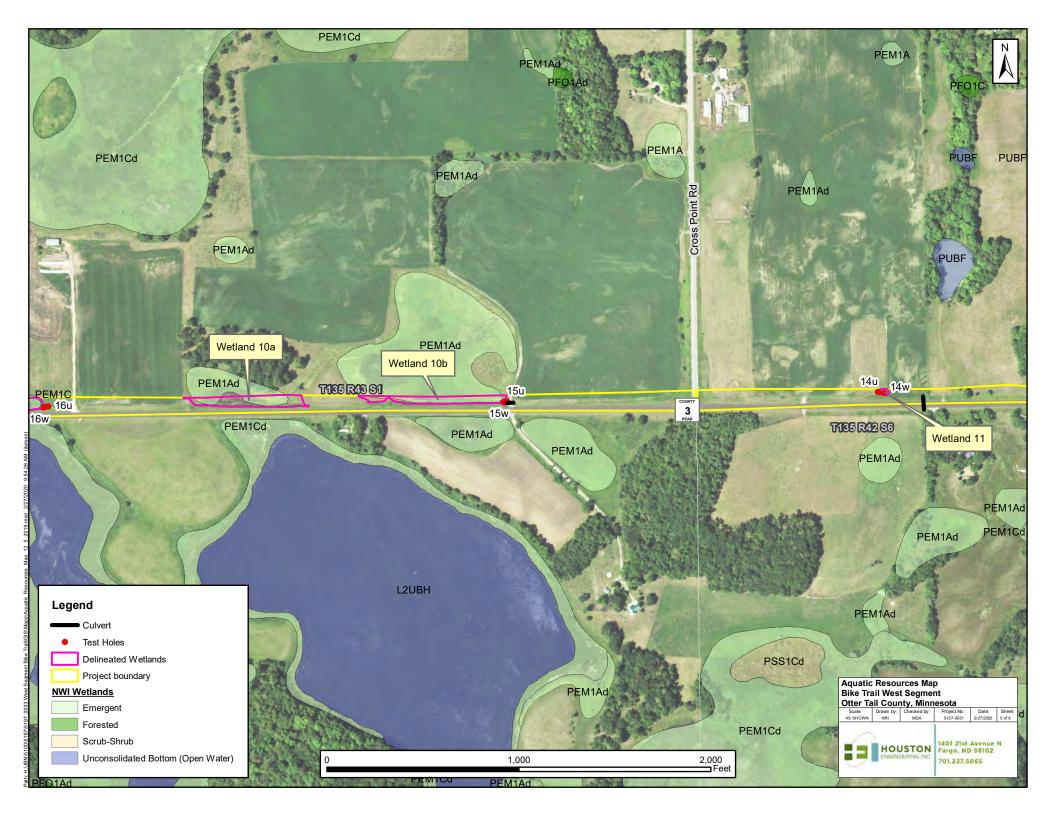
Aquatic Resource Delineation and National Wetland Inventory Maps

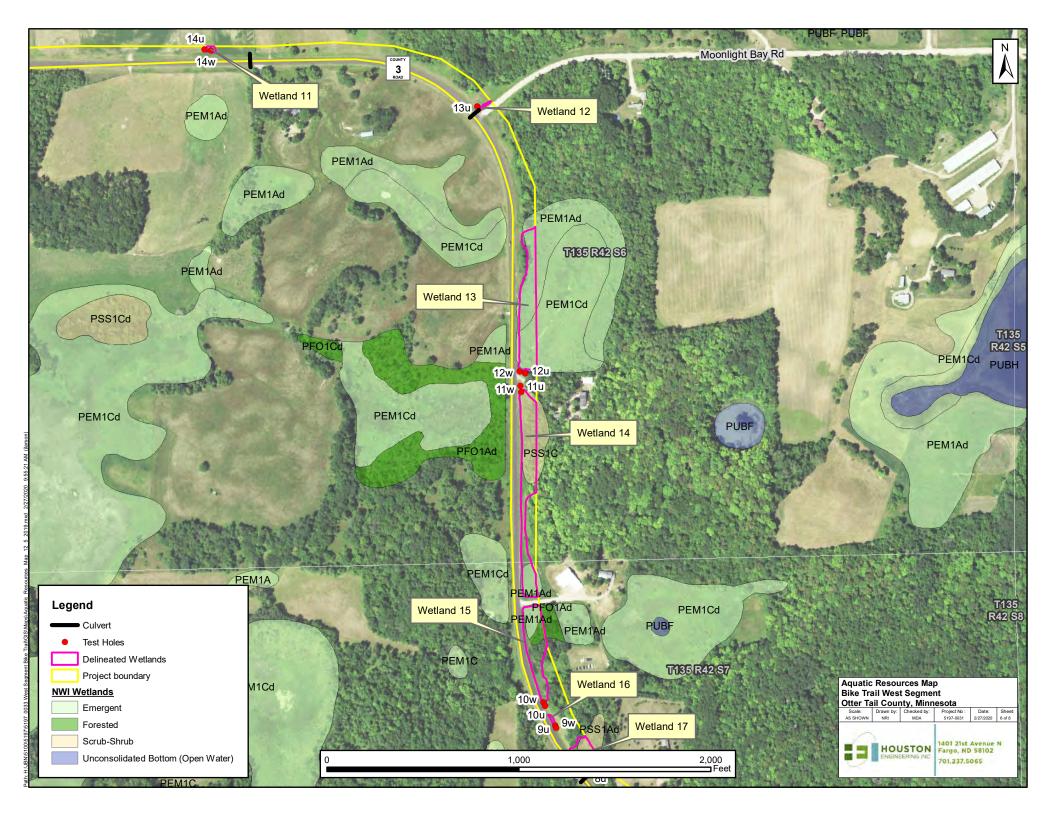


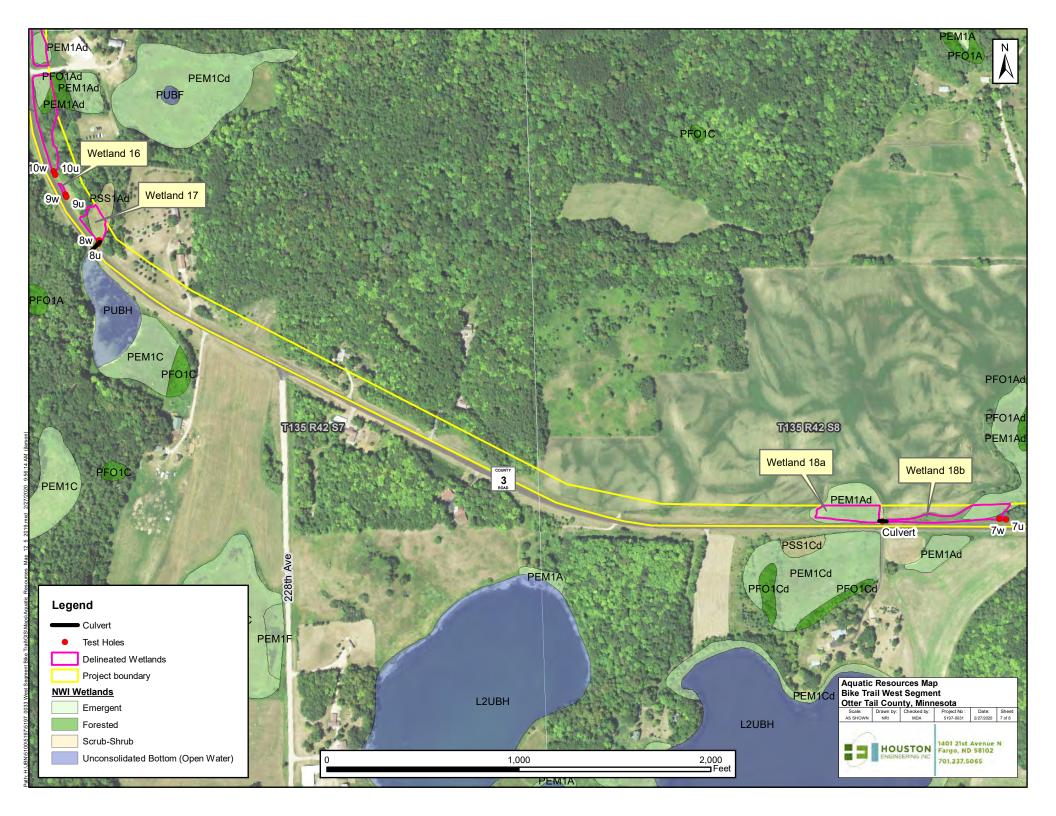


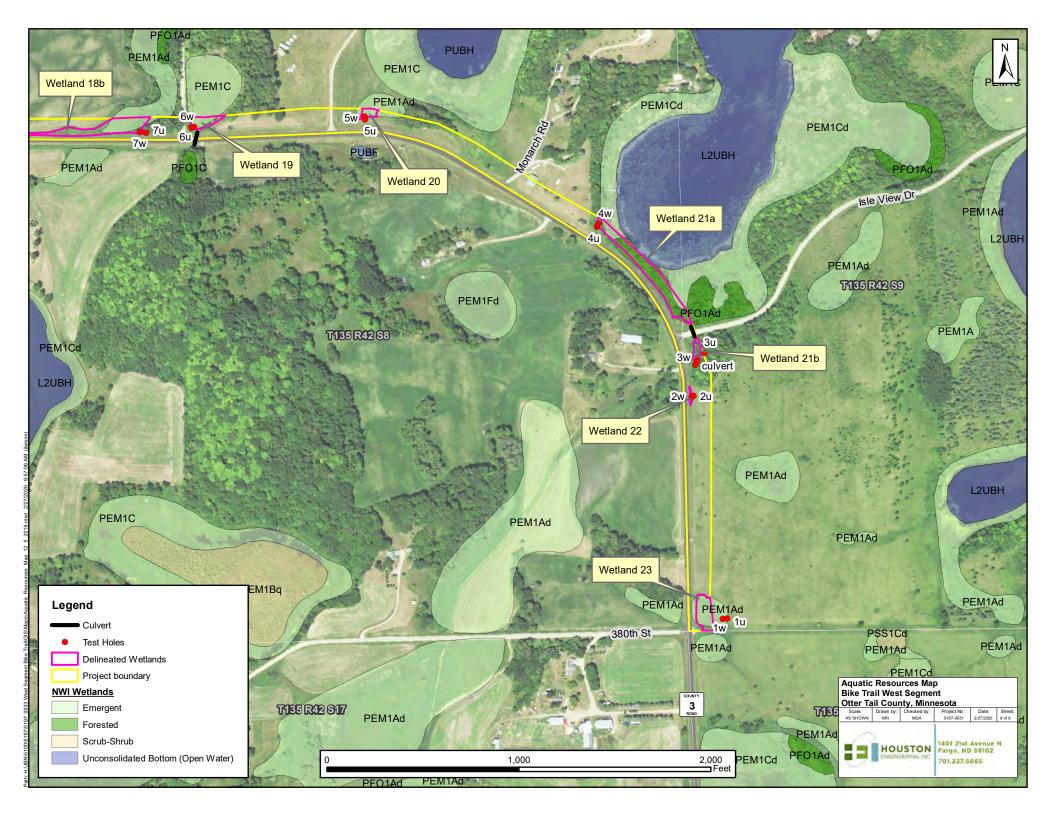












ATTACHMENT C

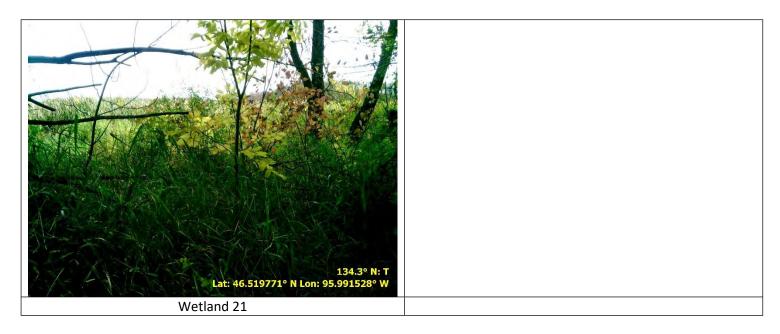
Wetland Site Photographs

Wetland Photographs



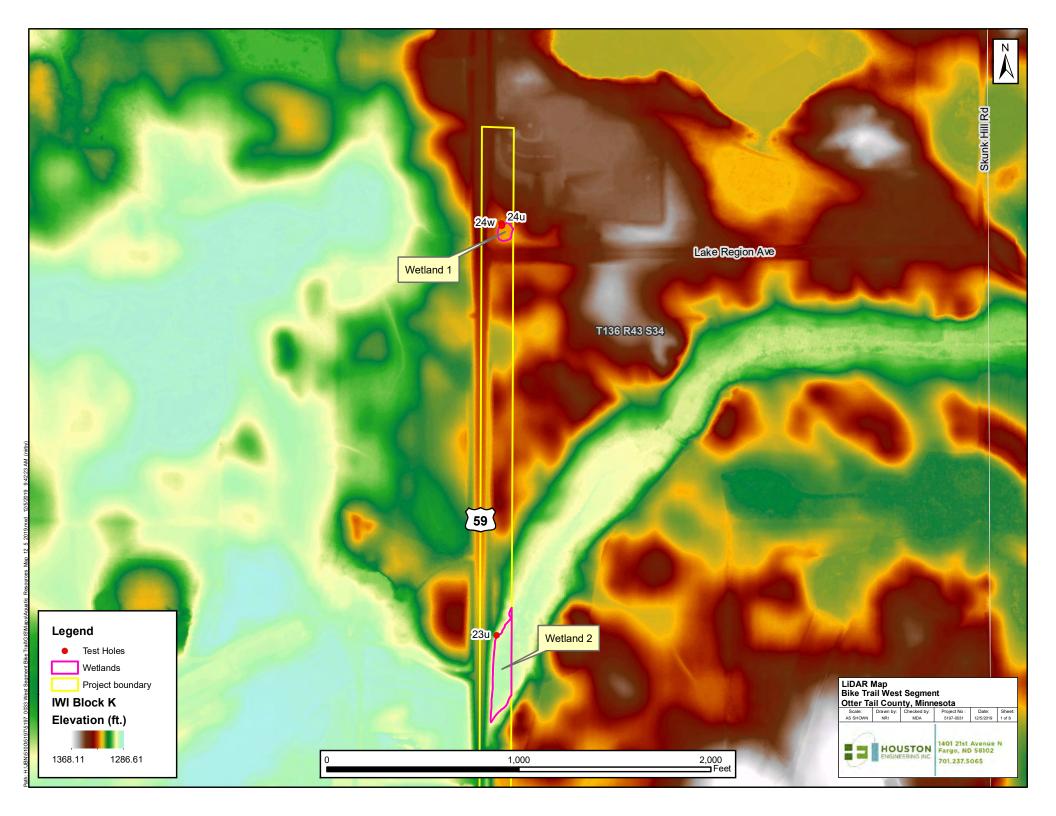


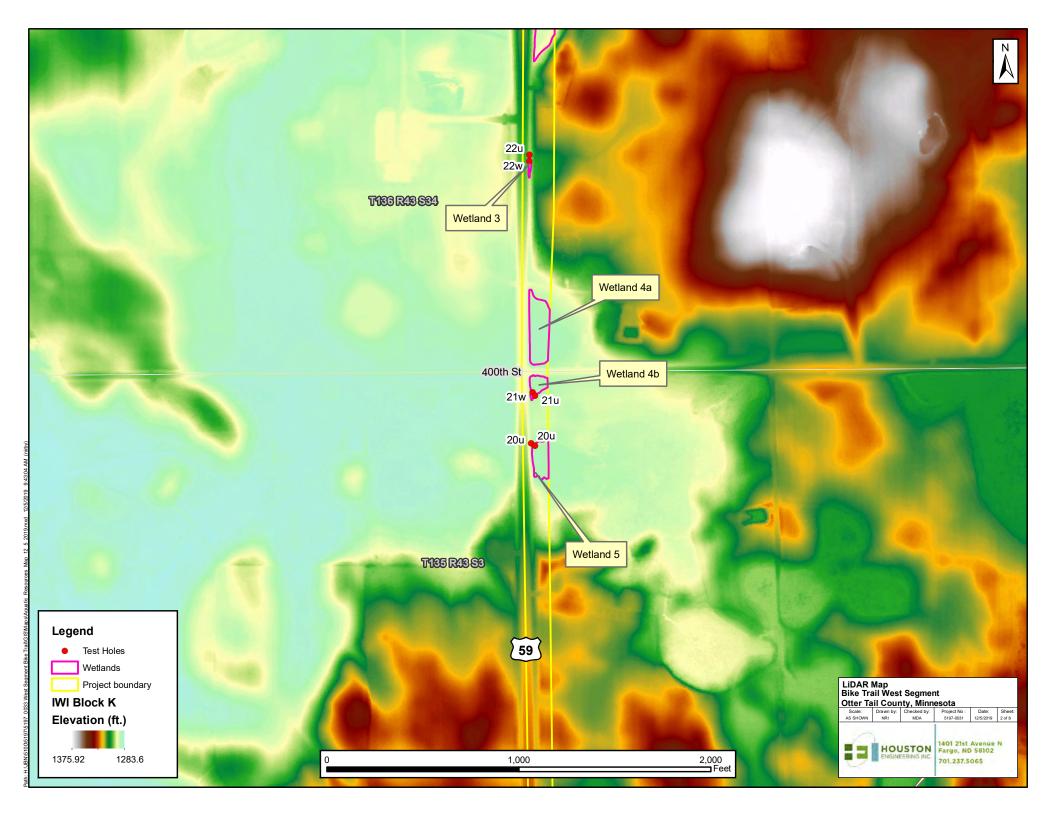


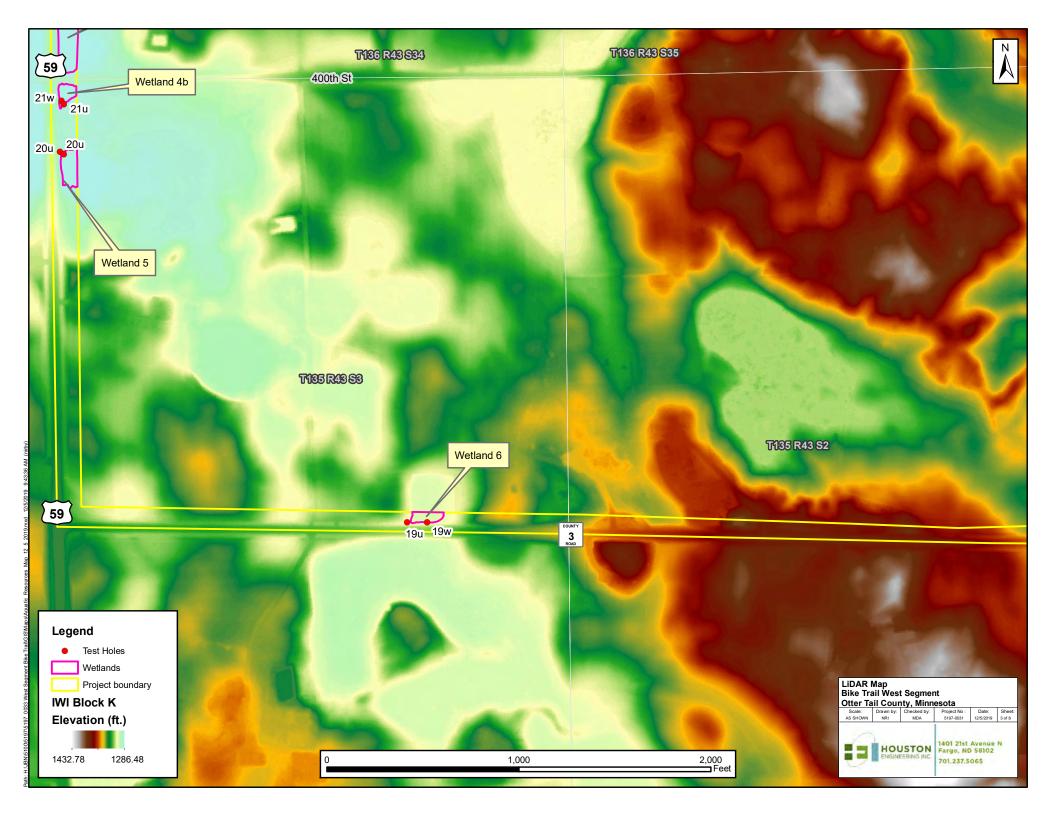


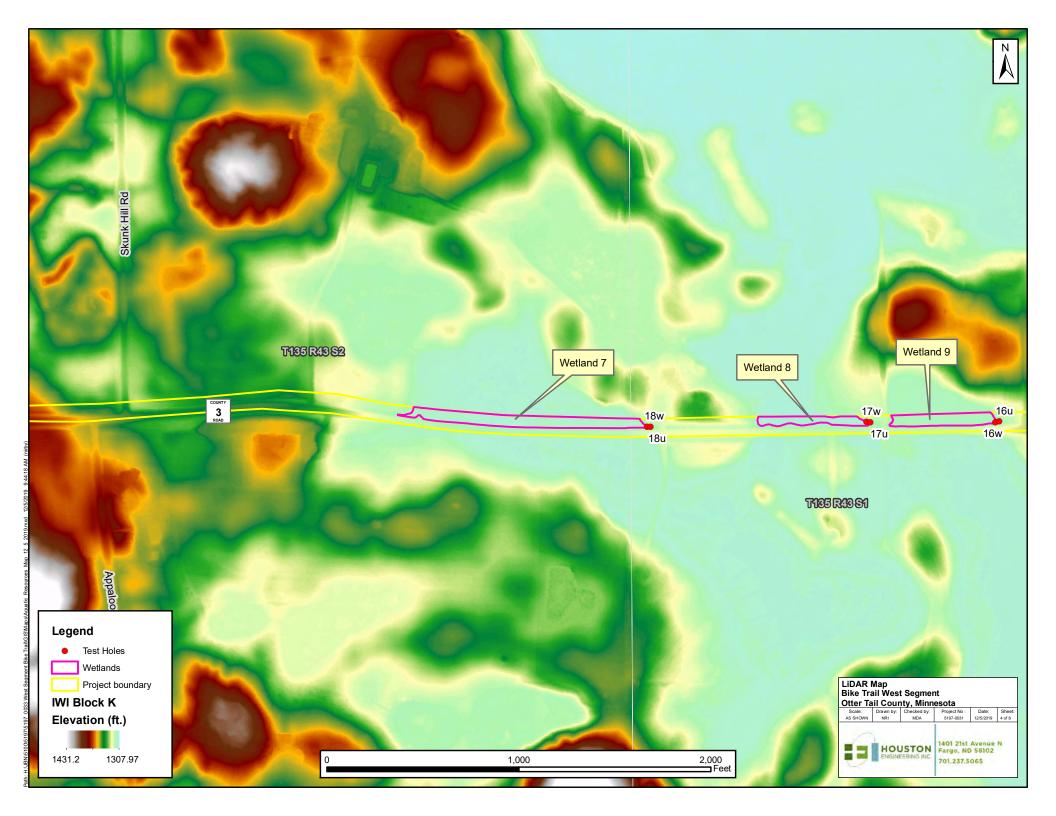
ATTACHMENT D

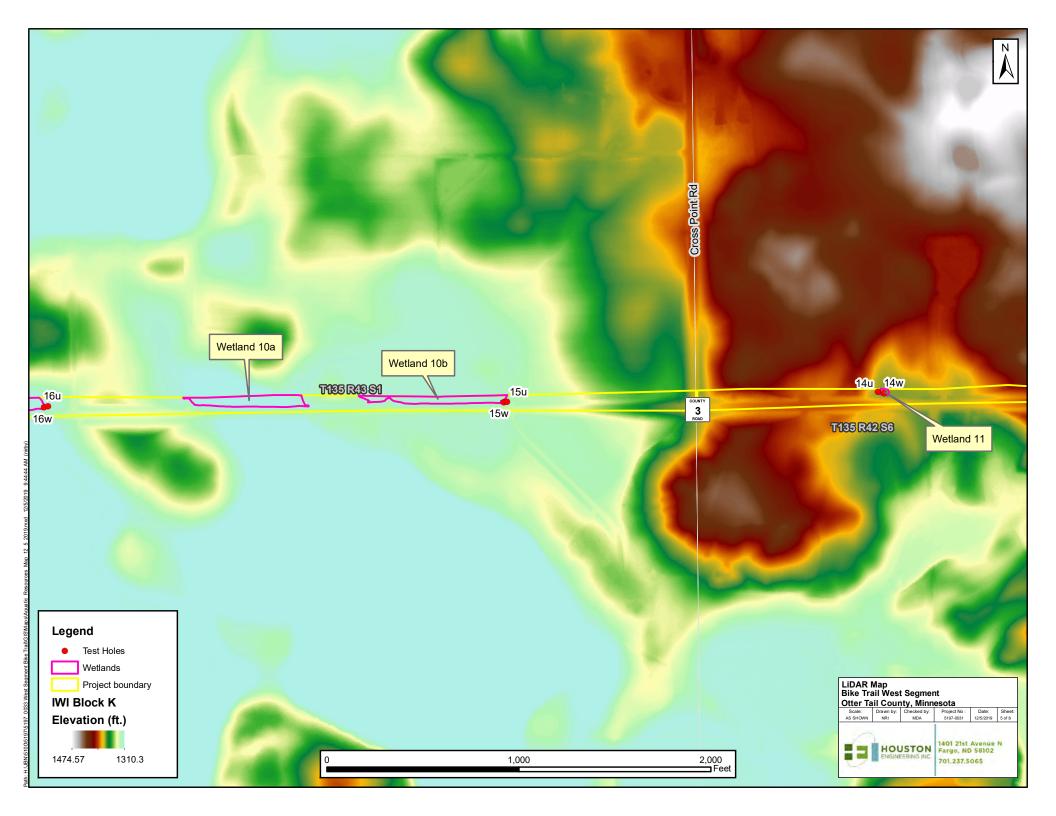
LiDAR Map

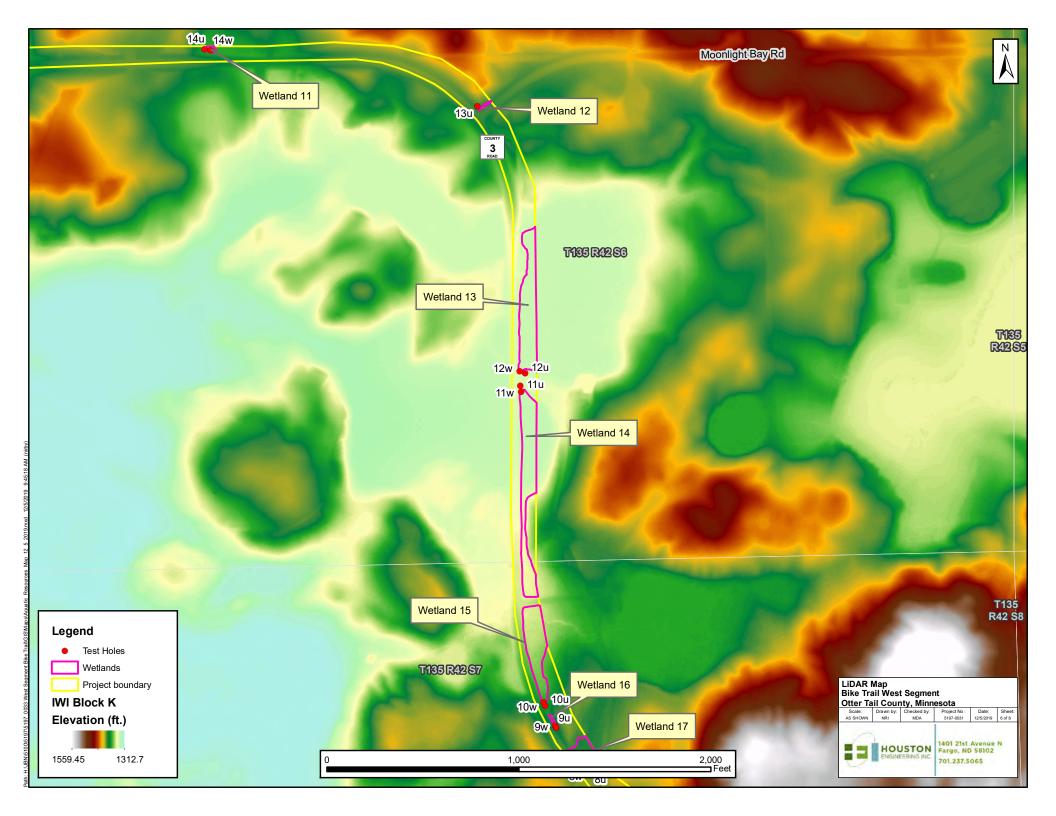


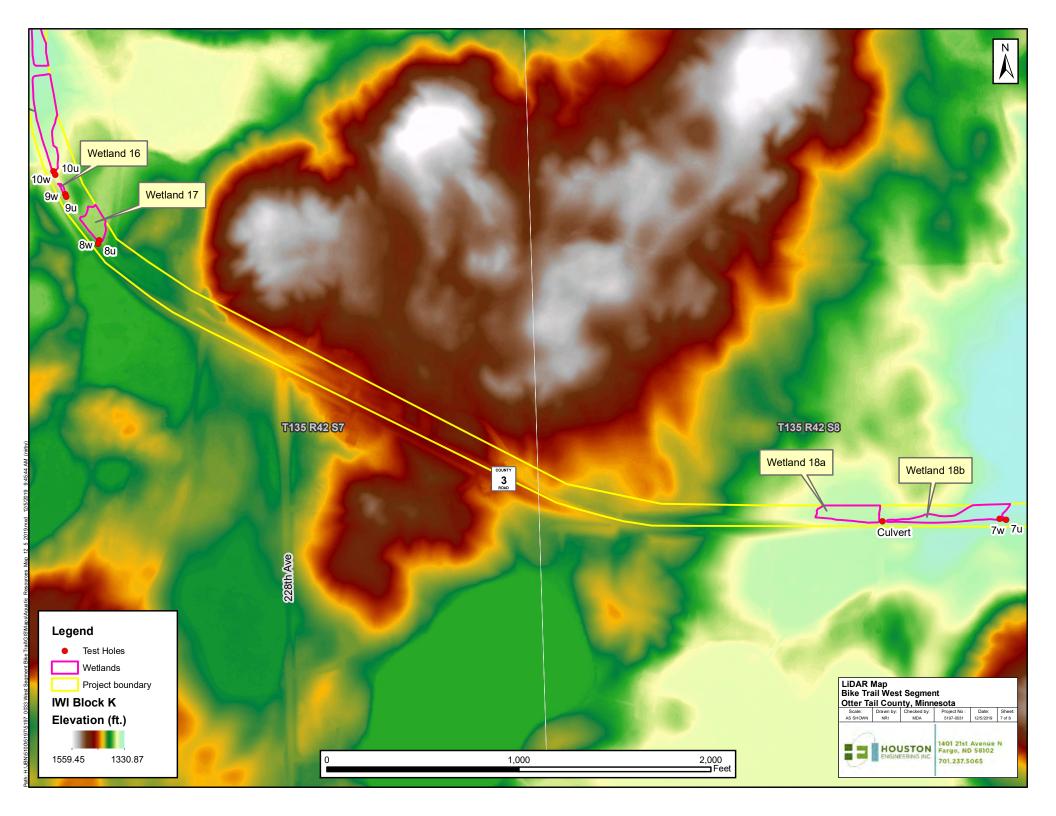


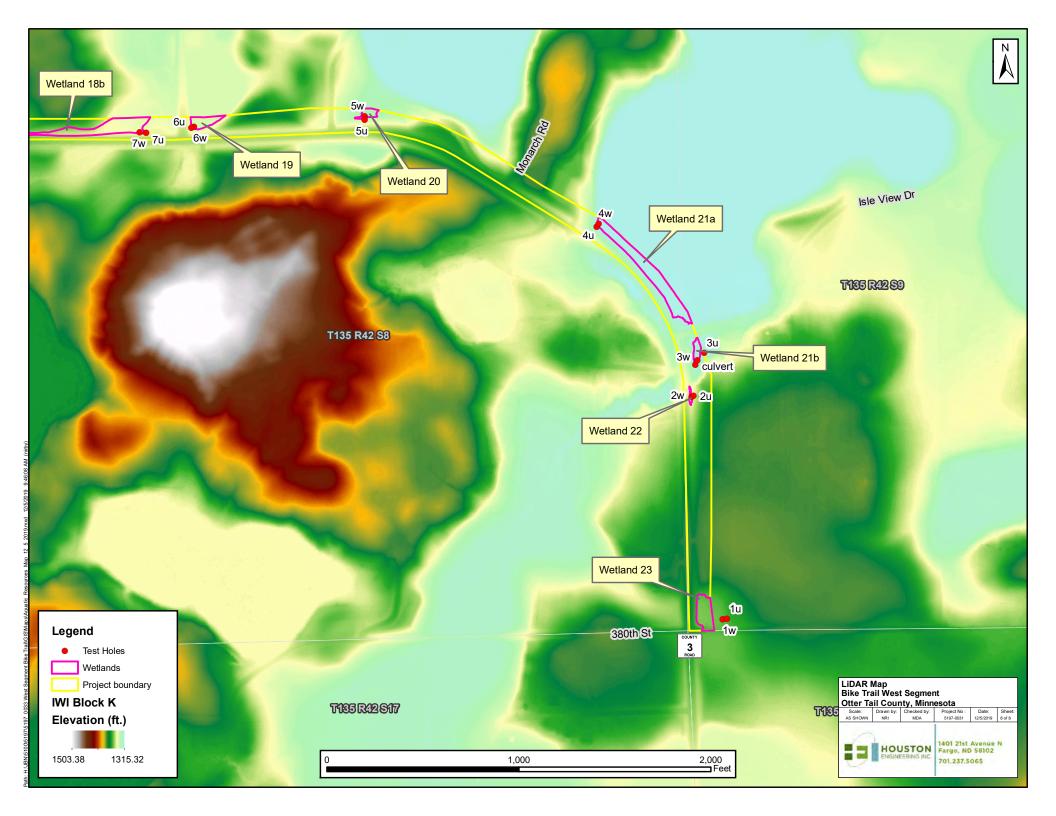






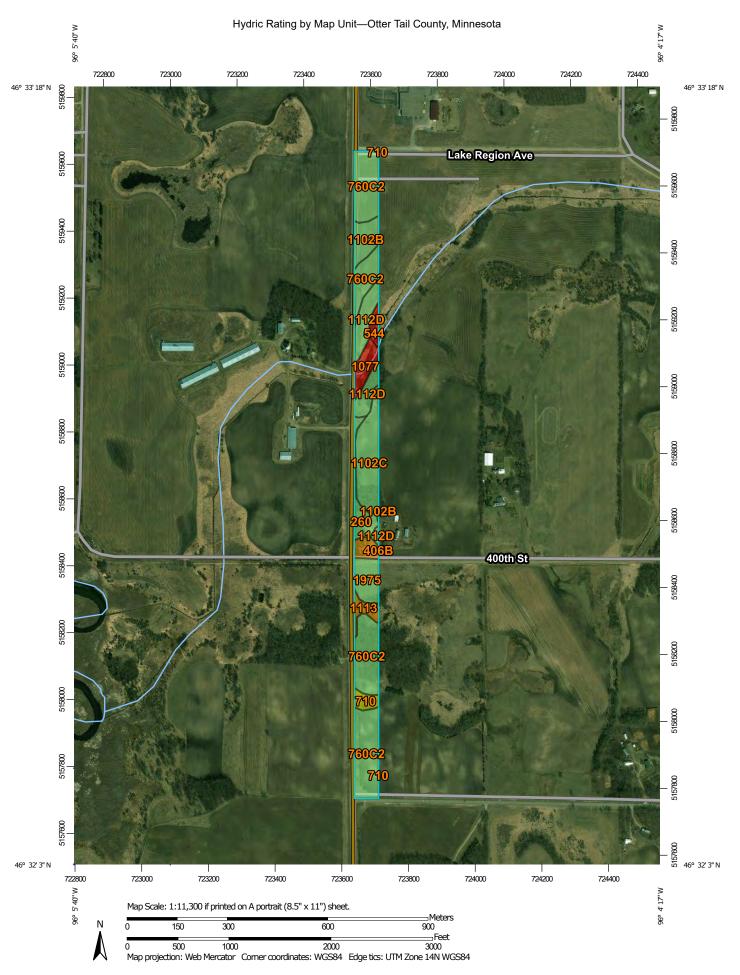






ATTACHMENT E

Hydric Soil Maps



Area of Interest (AOI) Transportation Area of Interest (AOI) Rails Soils Interstate Highways **Soil Rating Polygons** US Routes Hydric (100%) Major Roads Hydric (66 to 99%) Local Roads \sim Hydric (33 to 65%) Background Hydric (1 to 32%) Aerial Photography Not Hydric (0%) Not rated or not available Soil Rating Lines Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Soil Rating Points** Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Water Features** Streams and Canals

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20.000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Otter Tail County, Minnesota Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 25, 2014—Mar 13, 2017

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
260	Duelm loamy sand, 0 to 2 percent slopes	7	1.8	5.3%
375	Forada sandy loam, 0 to 2 percent slopes	85	1.0	3.0%
406B	Dorset sandy loam, 2 to 6 percent slopes	5	0.0	0.0%
544	Cathro muck, occasionally ponded, 0 to 1 percent slopes	100	0.7	1.9%
710	Friberg-Weetown complex	58	0.9	2.5%
760C2	Chapett-Sisseton complex, 6 to 12 percent slopes, eroded	10	14.7	42.1%
1077	Forada and Leafriver soils, frequently ponded, 0 to 1 percent slopes	100	1.7	4.8%
1102B	Chapett-Dorset complex, 1 to 6 percent slopes	6	2.0	5.7%
1102C	Chapett-Dorset complex, 6 to 12 percent slopes, eroded	5	5.0	14.3%
1112D	Chapett-Corliss complex, 12 to 20 percent slopes, eroded	7	3.9	11.2%
1113	Haslie, Seelyeville, and Cathro soils, frequently ponded, 0 to 1 percent slopes	95	1.0	2.9%
1975	Oylen sandy loam	5	2.3	6.5%
Totals for Area of Interest			35.0	100.0%

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

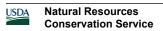
Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

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Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Area of Interest (AOI) Transportation Area of Interest (AOI) Rails Soils Interstate Highways **Soil Rating Polygons** US Routes Hydric (100%) Major Roads Hydric (66 to 99%) Local Roads Hydric (33 to 65%) Background Hydric (1 to 32%) Aerial Photography Not Hydric (0%) Not rated or not available Soil Rating Lines Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Soil Rating Points** Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Water Features** Streams and Canals

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Otter Tail County, Minnesota Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 25, 2014—Mar 13, 2017

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
441B	Almora loam, 2 to 6 percent slopes	2	2.1	13.8%
710	Friberg-Weetown complex	58	0.9	5.7%
760C2	Chapett-Sisseton complex, 6 to 12 percent slopes, eroded	10	1.8	12.0%
760D2	Chapett-Sisseton complex, 12 to 20 percent slopes, eroded	8	4.2	27.8%
1102C	Chapett-Dorset complex, 6 to 12 percent slopes, eroded	5	2.5	16.5%
1112D	Chapett-Corliss complex, 12 to 20 percent slopes, eroded	7	3.3	21.7%
1239	Quam silty clay loam, occasionally ponded, 0 to 1 percent slopes	98	0.4	2.5%
Totals for Area of Interest			15.3	100.0%

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

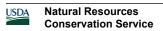
Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.



Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

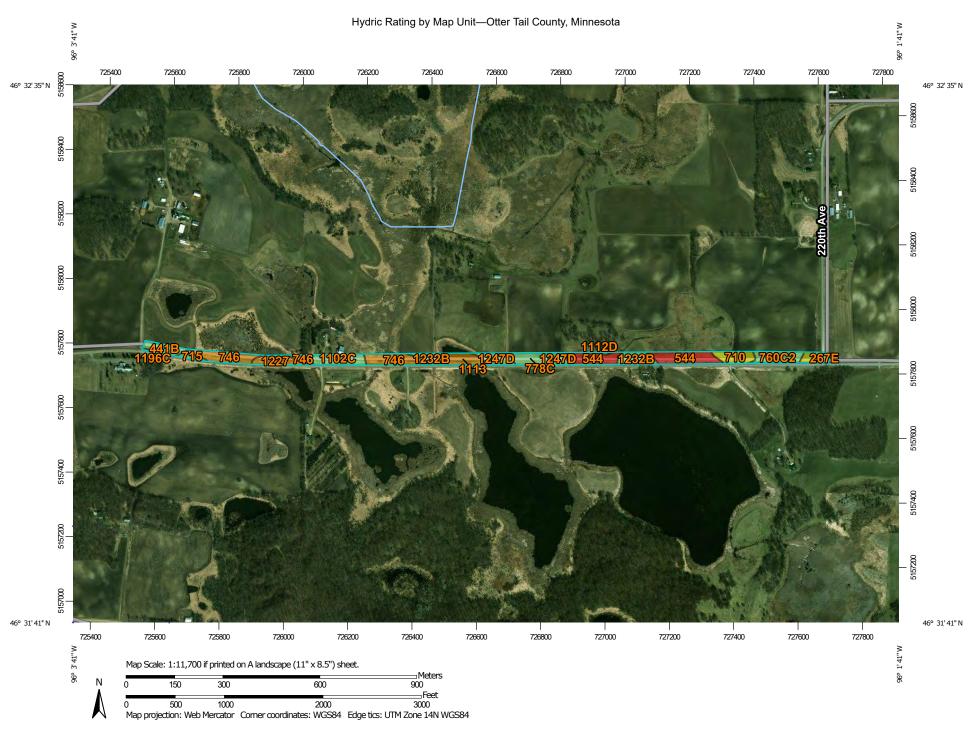
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified



Area of Interest (AOI) Transportation Area of Interest (AOI) Rails Soils Interstate Highways **Soil Rating Polygons** US Routes Hydric (100%) Major Roads Hydric (66 to 99%) Local Roads \sim Hydric (33 to 65%) Background Hydric (1 to 32%) Aerial Photography Not Hydric (0%) Not rated or not available Soil Rating Lines Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Soil Rating Points** Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Water Features** Streams and Canals

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20.000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Otter Tail County, Minnesota Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 25, 2014—Mar 13, 2017

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
267E	Snellman sandy loam, 15 to 30 percent slopes	6	0.2	1.1%
441B	Almora loam, 2 to 6 percent slopes	2	0.9	4.6%
544	Cathro muck, occasionally ponded, 0 to 1 percent slopes	100	3.3	17.7%
710	Friberg-Weetown complex	58	1.5	8.3%
715	Bluffcreek-Clearriver complex	7	0.3	1.8%
746	Haslie muck	98	3.3	18.0%
760C2	Chapett-Sisseton complex, 6 to 12 percent slopes, eroded	10	1.3	7.2%
778C	Dorset-Corliss complex, 6 to 12 percent slopes	5	1.0	5.6%
1102C	Chapett-Dorset complex, 6 to 12 percent slopes, eroded	5	1.4	7.4%
1112D	Chapett-Corliss complex, 12 to 20 percent slopes, eroded	7	0.1	0.3%
1113	Haslie, Seelyeville, and Cathro soils, frequently ponded, 0 to 1 percent slopes	95	1.0	5.5%
1196C	Lida-Two Inlets complex, 8 to 15 percent slopes	4	0.1	0.3%
1227	Quam, Cathro, and Urness soils, frequently ponded, 0 to 1 percent slopes	95	0.9	5.0%
1232B	Chapett loam, 2 to 6 percent slopes	4	1.7	9.3%
1247D	Corliss-Dorset complex, 6 to 20 percent slopes	5	1.4	7.8%
Totals for Area of Interest			18.5	100.0%

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

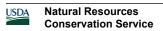
Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.



Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

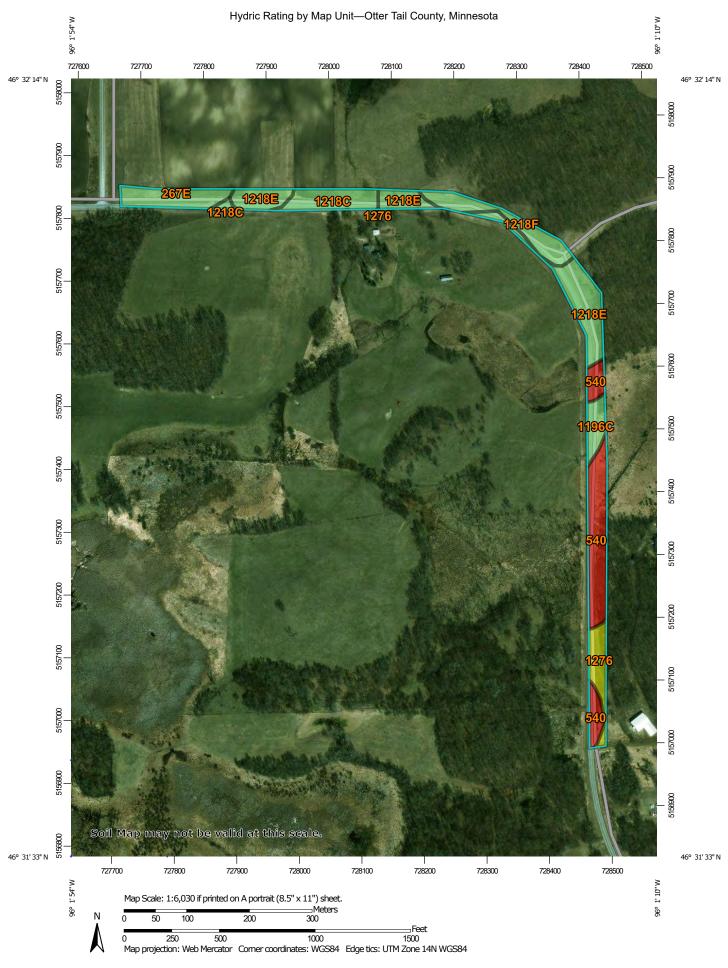
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified



Area of Interest (AOI) Transportation Area of Interest (AOI) Rails Soils Interstate Highways **Soil Rating Polygons** US Routes Hydric (100%) Major Roads Hydric (66 to 99%) Local Roads Hydric (33 to 65%) Background Hydric (1 to 32%) Aerial Photography Not Hydric (0%) Not rated or not available Soil Rating Lines Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Soil Rating Points** Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Water Features** Streams and Canals

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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Soil Survey Area: Otter Tail County, Minnesota Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 25, 2014—Mar 13, 2017

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
267E	Snellman sandy loam, 15 to 30 percent slopes	6	1.3	11.0%
540	Seelyeville-Seelyeville, ponded, complex, 0 to 1 percent slopes	100	2.9	24.8%
1196C	Lida-Two Inlets complex, 8 to 15 percent slopes	4	0.6	5.3%
1218C	Snellman-Lida complex, 8 to 15 percent slopes	7	1.3	11.1%
1218E	Snellman-Lida complex, 15 to 30 percent slopes	7	3.3	27.7%
1218F	Snellman-Lida complex, 30 to 45 percent slopes	6	1.5	12.7%
1276	Knute-Brandsvold complex, thick solum	34	0.9	7.3%
Totals for Area of Interest			11.7	100.0%

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

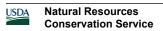
Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.



Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

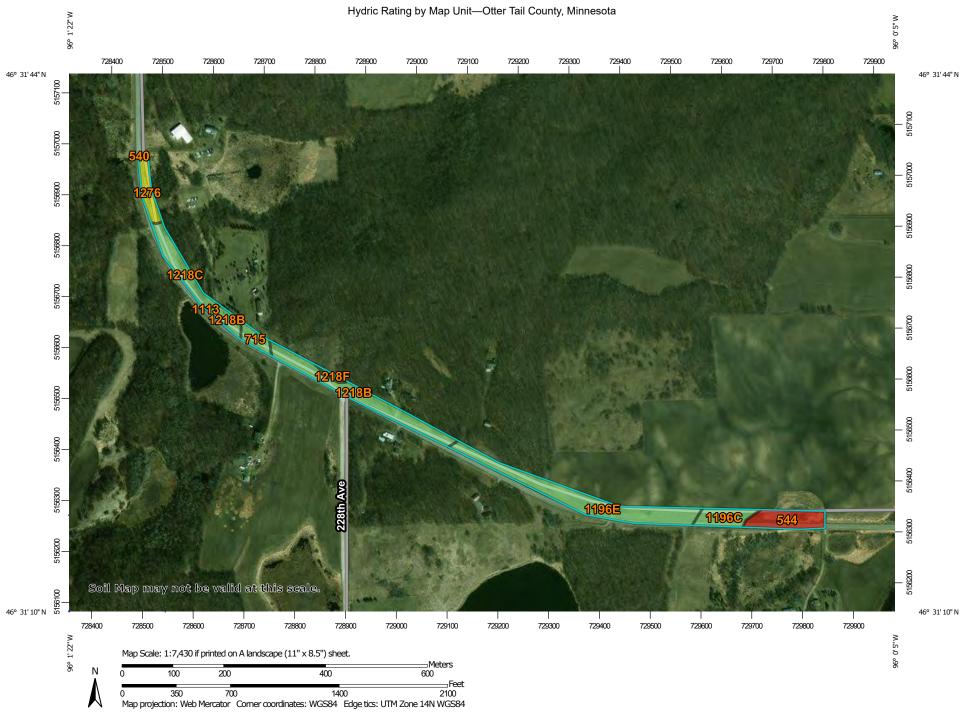
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified



MAP LEGEND

Area of Interest (AOI) Transportation Area of Interest (AOI) Rails Soils Interstate Highways **Soil Rating Polygons** US Routes Hydric (100%) Major Roads Hydric (66 to 99%) Local Roads Hydric (33 to 65%) Background Hydric (1 to 32%) Aerial Photography Not Hydric (0%) Not rated or not available Soil Rating Lines Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Soil Rating Points** Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Water Features** Streams and Canals

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20.000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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Soil Survey Area: Otter Tail County, Minnesota Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 25, 2014—Mar 13, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
540	Seelyeville-Seelyeville, ponded, complex, 0 to 1 percent slopes	100	0.0	0.0%
544	Cathro muck, occasionally ponded, 0 to 1 percent slopes	100	1.3	11.8%
715	Bluffcreek-Clearriver complex	7	0.5	4.3%
1113	Haslie, Seelyeville, and Cathro soils, frequently ponded, 0 to 1 percent slopes	95	0.0	0.0%
1196C	Lida-Two Inlets complex, 8 to 15 percent slopes	4	0.9	8.0%
1196E	Lida-Two Inlets complex, 15 to 30 percent slopes	5	3.5	31.6%
1218B	Snellman-Lida complex, 1 to 8 percent slopes	7	2.9	25.9%
1218C	Snellman-Lida complex, 8 to 15 percent slopes	7	1.2	10.9%
1218F	Snellman-Lida complex, 30 to 45 percent slopes	6	0.1	1.1%
1276	Knute-Brandsvold complex, thick solum	34	0.7	6.3%
Totals for Area of Inter	rest	I	11.1	100.0%

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

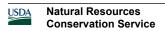
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If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.



Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

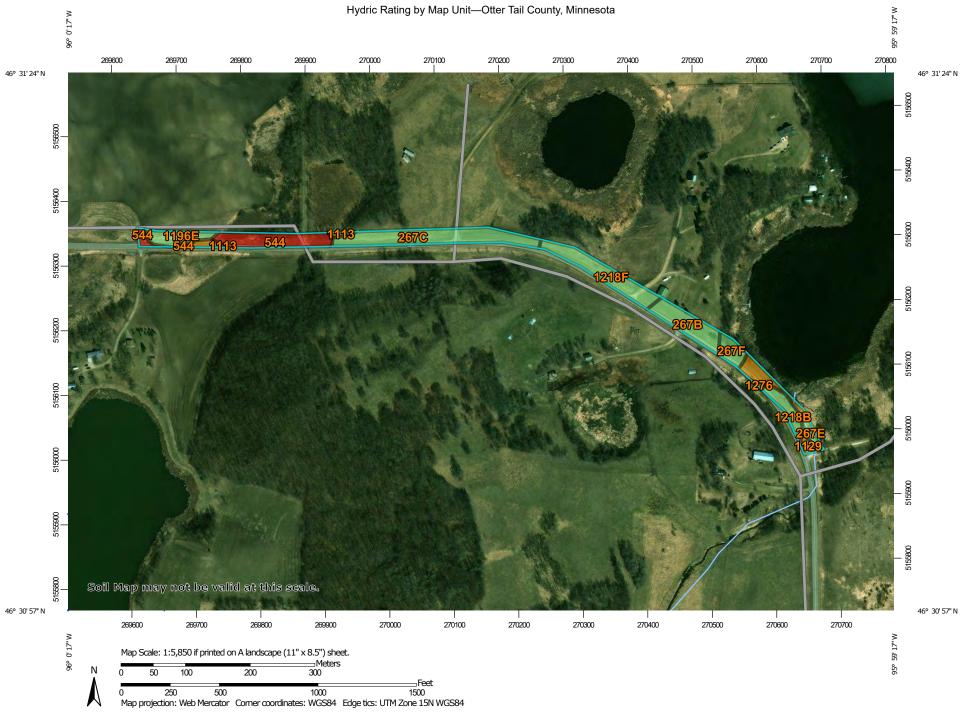
Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower



MAP LEGEND

Area of Interest (AOI) Transportation Area of Interest (AOI) Rails Soils Interstate Highways **Soil Rating Polygons** US Routes Hydric (100%) Major Roads Hydric (66 to 99%) Local Roads Hydric (33 to 65%) Background Hydric (1 to 32%) Aerial Photography Not Hydric (0%) Not rated or not available Soil Rating Lines Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Soil Rating Points** Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Water Features** Streams and Canals

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20.000.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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Soil Survey Area: Otter Tail County, Minnesota Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

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Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
267B	Snellman sandy loam, 1 to 8 percent slopes	7	0.9	12.6%
267C	Snellman sandy loam, 8 to 15 percent slopes	5	1.7	23.6%
267E	Snellman sandy loam, 15 to 30 percent slopes	6	0.2	2.6%
267F	Snellman sandy loam, 30 to 45 percent slopes	8	0.4	5.1%
544	Cathro muck, occasionally ponded, 0 to 1 percent slopes	100	1.1	16.0%
1113	Haslie, Seelyeville, and Cathro soils, frequently ponded, 0 to 1 percent slopes	95	0.6	9.3%
1129	Lindaas silty clay loam, morainic	95	0.1	1.7%
1196E	Lida-Two Inlets complex, 15 to 30 percent slopes	5	0.5	7.0%
1218B	Snellman-Lida complex, 1 to 8 percent slopes	7	0.4	5.9%
1218F	Snellman-Lida complex, 30 to 45 percent slopes	6	1.1	15.9%
1276	Knute-Brandsvold complex, thick solum	34	0.0	0.3%
Totals for Area of Inter	rest	1	7.0	100.0%

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

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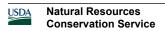
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References:

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Federal Register. September 18, 2002. Hydric soils of the United States.



Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

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Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower



MAP LEGEND

Area of Interest (AOI) Transportation Area of Interest (AOI) Rails Soils Interstate Highways **Soil Rating Polygons** US Routes Hydric (100%) Major Roads Hydric (66 to 99%) Local Roads Hydric (33 to 65%) Background Hydric (1 to 32%) Aerial Photography Not Hydric (0%) Not rated or not available Soil Rating Lines Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Soil Rating Points** Hydric (100%) Hydric (66 to 99%) Hydric (33 to 65%) Hydric (1 to 32%) Not Hydric (0%) Not rated or not available **Water Features** Streams and Canals

MAP INFORMATION

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Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Otter Tail County, Minnesota Survey Area Data: Version 15, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 25, 2014—Mar 13, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
267E	Snellman sandy loam, 15 to 30 percent slopes	6	0.0	0.1%
422B	Bygland silty clay loam, 1 to 6 percent slopes	5	2.0	52.1%
422C	Bygland silty clay loam, 6 to 15 percent slopes	7	1.0	26.9%
1129	Lindaas silty clay loam, morainic	95	0.8	20.9%
Totals for Area of Inter	est	1	3.9	100.0%

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

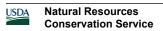
The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.



Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

ATTACHMENT F

Plant List

Genus/Species	Common Name	Indicator Status Midwest region*	Dominant Wetland plants	Dominant Upland Plants	Stratum
Acer saccharum	sugar maple	FACU	Х	х	tree/shrub
Agrostis gigantea	redtop	FACW	Х	х	herb
Alnus incana	speckled alder	FACW		х	herb
Alopecurus arundinaceus	creeping foxtail	FACW	Х		herb
Ambrosia artemisiifolia	ragweed	FACU			herb
Andropogon gerardii	big bluestem	FAC		х	herb
Asclepias syriaca	common milkweed	FACU			herb
Astragalus canadensis	Canada milkvetch	FAC			herb
Bidens frondosa	devils beggerticks	FACW			herb
Bromus inermis	smooth brome	FACU	х	х	herb
Calamagrostis canadensis	blue joint	OBL	х	х	herb
Carex atherodes	wheat sedge	OBL			herb
Carex lacustris	lake sedge	OBL	Х	х	herb
Carex pellita	woolly sedge	OBL	Х		herb
Carex vulpinoidea	common fox sedge	FACW			herb
Celtis occidentalis	hack berry	FACU			shrub
Cirsium arvense	Canadian thistle	FACU		х	herb
Coptis trifolia	three-leaf goldthread	FACW	Х		herb
Cornus sericea	red osier dogwood	FACW	Х		shrub/tree
Elymus repens	quack grass	FACU			herb
Equisetum hyemale	tall scouring rush	FACW		х	herb
Eutrochium maculatum	spotted trumpweed	OBL			herb
Fragaria vesca	woodland strawberry	UPL	Х		herb
Fragaria virginiana	wild strawberry	FACU			herb
Fraxinus nigra	black ash	FACW	Х		tree/shrub
Fraxinus pennsylvanica	green ash	FACW	Х	х	tree/shrub
Melilotus officinalis	yellow sweet clover	UPL			herb
Ostrya virginiana	hop-hornbeam	FACU			shrub
Panicum virgatum	switchgrass	FAC			herb
Phalaris arundinacea	reed canary grass	FACW	Х	х	herb
Phleum pratense	timothy	FACU		х	herb
Phragmites australis	common reed	FACW	Х		shrub
Picea mariana	black spruce	FACW		х	tree/shrub
Plantago major	great plantain	FAC			herb
Poa pratensis	Kentucky blue grass	FAC	х	х	herb
Populus balsamifera	balsam poplar	FACW	Х		tree/shrub
Populus tremuloides	quaking aspen	FAC	х	х	tree/shrub
Pteridium aquilinum	bracken	FACU			herb
Quercus macrocarpa	burr oak	FAC			tree
Rhamnus cathartica	buckthorn	FAC	х		tree/shrub
Rhus glabra	smooth sumac	NL	х	х	tree/shrub

Ribes americanum	wild black currant	FACW	х		tree/shrub
Rosa arkansana	prairie rose	FACU	х		herb
Rumex crispus	curly dock	FAC			herb
Salix amygdaloides	peachleaf willow	FACW	х		tree/shrub
Salix petiolaris	meadow willow	OBL		х	tree/shrub
Scirpus atrovirens	Dark green bulrsuh	OBL	х		herb
Setaria pumila	yellow bristle grass	FAC		х	herb
Solidago canadensis	Canadian goldenrod	FACU			herb
Solidago gigantea	late goldenrod	FACW		х	herb
Solidago rigida	stiff goldenrod	FACU		х	herb
Sonchus arvensis	field sow thistle	FACU			herb
Sorghastrum nutans	Indian grass	FACU		х	herb
Spartina pectinata	prairie cordgrass	FACW	х	х	herb
Sphagnum sp.	moss	FACW		х	herb
Symphoricarpos albus	snowberry	FACU		х	shrub
Symphyotrichum ericoides	white heath aster	FACU			herb
Symphyotrichum laeve	smooth blue aster	FACU			herb
Symphyotrichum Ianceolatum	white panicled American aster	FAC	х		herb
Symphyotrichum novae- angliae	new England aster	FACW			herb
Taraxacum officinale	common dandelion	FACU			herb
Thalictrum dasycarpum	purple meadow rue	FACW			herb
Tilia americana	American basswood	FACU	х	х	tree/shrub
Toxicodendron radicans	eastern poison ivy	FAC			herb
Trifolium pratense	red clover	FACU			herb
Trifolium repens	white clover	FACU			herb
Typha angustifolia	narrow leaf cattail	OBL	х		herb
Typha X glauca	hybrid cattail	OBL			herb
Ulmus americana	American elm	FACW		х	tree/shrub
Ulmus rubra	slippery elm	FAC	Х		tree/shrub
Urtica dioica	stinging nettle	FACW			herb
Verbena hastata	Blue vervain	FACW			herb
Vitis riparia	riverbank grape	FACW			vine
Zanthoxylum americanum	prickly ash	FACU		х	herb
Zizia aptera	golden Alexanders	FACU			herb

^{*} Lichvar RW, Banks DL, Kirchner WN, Melvin NC (2016) The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. 28 April 2016. ISSN 2153 733X

ATTACHMENT G

Aquatic Resource Data Forms
with Data Form and Wetland Number Index Table

Wetland Numbers with Corresponding Data Forms

Wetland Number	Corresponding Data Form
1	24w
2	23w
3	22w
4a	21w
4b	21w
5	20w
6	19w
7	18w
8	17w
9	16w
10a	15w
10b	15w
11	14w
12	13w
13	12w
14	11w
15	10w
16	9w
17	8w
18a	7w
18b	7w
19	6w
20	5w

Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested as a 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 (B	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) 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 (Base) Sparsely Vegetated Concave Surface	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested as a 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 (B	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) 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 (Base) Sparsely Vegetated Concave Surface	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present?	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

Project/Site:		C	ity/County:			Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.):			ι	ocal relief	(concave, conve	x, none):		
Slope (%): Lat:		L	.ong:			Datu	ım:	
Soil Map Unit Name:					NW	l classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	_, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" preser	nt? Yes	No
Are Vegetation, Soil	_, or Hydrology	naturally prob	lematic?	(If ne	eeded, explain an	ny answers in	Remarks.)	
SUMMARY OF FINDINGS	- Attach site ma	showing	sampling	g point l	ocations, tra	nsects, im	portant fea	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes		ls the	e Sampled				
Wetland Hydrology Present?	Yes	No	withi	in a Wetlar	nd? Y	'es	No	ı
Remarks:								
VEGETATION – Use scient	ific names of plant	s.						
Troe Stratum (Plot size:	`		Dominant Species?		Dominance To	est workshee	t:	
Tree Stratum (Plot size: 1					Number of Dor That Are OBL,			(A)
2					Total Number			
3					Species Acros	s All Strata:		(B)
4					Percent of Dor That Are OBL,	ninant Species	s .C:	(A/B)
		=			Prevalence In			(/*5/
Sapling/Shrub Stratum (Plot size						over of:		by:
2.					OBL species			
3					FACW species			
4					FAC species			
5					FACU species		x 4 =	
					UPL species		x 5 =	
Herb Stratum (Plot size:					Column Totals	:	_ (A)	(B)
1 2					Prevalen	ce Index = B/	'A =	
3					Hydrophytic \	/egetation Inc	dicators:	
4.					1 - Rapid ·	Test for Hydro	phytic Vegeta	ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale			
7					4 - Morpho	ological Adapt Remarks or o	ations¹ (Provi n a separate	de supporting sheet)
8					Problemat			
9 10								
			= Total Cov	er	¹ Indicators of h be present, un			
1					Hydrophytic			
2					Vegetation Present?	Yas	No	
			Total Cov	er	I I I I I I I I I I I I I I I I I I I		'''-	
					Hydrophytic	Yes		

Profile Des	cription: (Descr	be to the dept	needed to docu	nent the	indicator	or confirm	the absence of i	ndicators.)
Depth	Matri	x	Redo	x Feature				
(inches)	Color (moist	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
l ———								
		Depletion, RM=	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils ³ :
Histoso	l (A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Prai	rie Redox (A16)
Histic E	pipedon (A2)		Sandy	Redox (S	5)		Dark Surfa	• •
ı —	listic (A3)			d Matrix (,			anese Masses (F12)
	en Sulfide (A4)				neral (F1)			ow Dark Surface (TF12)
1	d Layers (A5)			Gleyed M			Other (Exp	olain in Remarks)
ı —	uck (A10)			d Matrix (,			
	ed Below Dark Su	. ,		Dark Surfa			31	
_	ark Surface (A12				urface (F7))		nydrophytic vegetation and
	Mucky Mineral (S [.] ucky Peat or Peat		Redox	Depressio	ons (F8)			drology must be present, turbed or problematic.
	Layer (if observe						unless dist	dibed of problematic.
	•	•						
							Hydric Soil Pre	sent? Yes No
Depth (ir	nches):							
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicate	ors:						
1			ed; check all that a	(vlac			Secondary I	ndicators (minimum of two required)
		or one to require			(es (BQ)			
_	Water (A1)		Water-Sta		, ,			Soil Cracks (B6)
1 —	ater Table (A2)		Aquatic Fa	•	,		_ ,	e Patterns (B10)
1 —	ion (A3)		True Aqua				_ ′	ason Water Table (C2)
1	Marks (B1)		Hydrogen					Burrows (C8)
	ent Deposits (B2)		Oxidized I					on Visible on Aerial Imagery (C9)
I	posits (B3)		Presence				_	or Stressed Plants (D1)
ı —	at or Crust (B4)		Recent Iro			d Soils (C6		rphic Position (D2)
I —	posits (B5)		Thin Muck				FAC-Ne	eutral Test (D5)
_	ion Visible on Aer	0 , 1		Well Data	(D9)			
Sparse	y Vegetated Cond	cave Surface (B	8) Other (Ex	olain in Re	emarks)			
Field Obse	rvations:							
Surface Wa	ter Present?	Yes N	lo Depth (in	ches):		_		
Water Table	Present?	Yes N	lo Depth (in	ches):		_		
Saturation F	Present?		lo Depth (in				and Hydrology Pr	resent? Yes No No
	pillary fringe)							
Describe Re	ecorded Data (stre	eam gauge, mor	nitoring well, aerial	photos, p	revious ins	pections),	if available:	
Remarks:								
1								
l								

Project/Site:		C	ity/County:			Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.):			ι	ocal relief	(concave, conve	x, none):		
Slope (%): Lat:		L	.ong:			Datu	ım:	
Soil Map Unit Name:					NW	l classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	_, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" preser	nt? Yes	No
Are Vegetation, Soil	_, or Hydrology	naturally prob	lematic?	(If ne	eeded, explain an	ny answers in	Remarks.)	
SUMMARY OF FINDINGS	- Attach site ma	showing	sampling	g point l	ocations, tra	nsects, im	portant fea	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes		ls the	e Sampled				
Wetland Hydrology Present?	Yes	No	withi	in a Wetlar	nd? Y	'es	No	ı
Remarks:								
VEGETATION – Use scient	ific names of plant	s.						
Troe Stratum (Plot size:	`		Dominant Species?		Dominance To	est workshee	t:	
Tree Stratum (Plot size: 1					Number of Dor That Are OBL,			(A)
2					Total Number			
3					Species Acros	s All Strata:		(B)
4					Percent of Dor That Are OBL,	ninant Species	s .C:	(A/B)
		=			Prevalence In			(/*5/
Sapling/Shrub Stratum (Plot size						over of:		by:
2.					OBL species			
3					FACW species			
4					FAC species			
5					FACU species		x 4 =	
					UPL species		x 5 =	
Herb Stratum (Plot size:					Column Totals	:	_ (A)	(B)
1 2					Prevalen	ce Index = B/	'A =	
3					Hydrophytic \	/egetation Inc	dicators:	
4.					1 - Rapid ·	Test for Hydro	phytic Vegeta	ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale			
7					4 - Morpho	ological Adapt Remarks or o	ations¹ (Provi n a separate	de supporting sheet)
8					Problemat			
9 10								
			= Total Cov	er	¹ Indicators of h be present, un			
1					Hydrophytic			
2					Vegetation Present?	Yas	No	
			Total Cov	er	I I I I I I I I I I I I I I I I I I I		'''-	
					Hydrophytic	Yes		

Profile Des	cription: (Descr	be to the dept	needed to docu	nent the	indicator	or confirm	the absence of i	ndicators.)
Depth	Matri	x	Redo	x Feature				
(inches)	Color (moist	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
l ———								
		Depletion, RM=	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils ³ :
Histoso	l (A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Prai	rie Redox (A16)
Histic E	pipedon (A2)		Sandy	Redox (S	5)		Dark Surfa	• •
ı —	listic (A3)			d Matrix (,			anese Masses (F12)
	en Sulfide (A4)				neral (F1)			ow Dark Surface (TF12)
1	d Layers (A5)			Gleyed M			Other (Exp	olain in Remarks)
ı —	uck (A10)			d Matrix (,			
	ed Below Dark Su	. ,		Dark Surfa			31	
_	ark Surface (A12				urface (F7))		nydrophytic vegetation and
	Mucky Mineral (S [.] ucky Peat or Peat		Redox	Depressio	ons (F8)			drology must be present, turbed or problematic.
	Layer (if observe						unless dist	dibed of problematic.
	•	•						
							Hydric Soil Pre	sent? Yes No
Depth (ir	nches):							
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicate	ors:						
1			ed; check all that a	(vlac			Secondary I	ndicators (minimum of two required)
		or one to require			(es (BQ)			
_	Water (A1)		Water-Sta		, ,			Soil Cracks (B6)
1 —	ater Table (A2)		Aquatic Fa	•	,		_ ,	e Patterns (B10)
1 —	ion (A3)		True Aqua				_ ′	ason Water Table (C2)
1	Marks (B1)		Hydrogen					Burrows (C8)
	ent Deposits (B2)		Oxidized I					on Visible on Aerial Imagery (C9)
I	posits (B3)		Presence				_	or Stressed Plants (D1)
ı —	at or Crust (B4)		Recent Iro			d Soils (C6		rphic Position (D2)
I —	posits (B5)		Thin Muck				FAC-Ne	eutral Test (D5)
_	ion Visible on Aer	0 , 1		Well Data	(D9)			
Sparse	y Vegetated Cond	cave Surface (B	8) Other (Ex	olain in Re	emarks)			
Field Obse	rvations:							
Surface Wa	ter Present?	Yes N	lo Depth (in	ches):		_		
Water Table	Present?	Yes N	lo Depth (in	ches):		_		
Saturation F	Present?		lo Depth (in				and Hydrology Pr	resent? Yes No No
	pillary fringe)							
Describe Re	ecorded Data (stre	eam gauge, mor	nitoring well, aerial	photos, p	revious ins	pections),	if available:	
Remarks:								
1								
l								

Project/Site:		C	ity/County:			Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.):			ι	ocal relief	(concave, conve	x, none):		
Slope (%): Lat:		L	.ong:			Datu	ım:	
Soil Map Unit Name:					NW	l classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	_, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" preser	nt? Yes	No
Are Vegetation, Soil	_, or Hydrology	naturally prob	lematic?	(If ne	eeded, explain an	ny answers in	Remarks.)	
SUMMARY OF FINDINGS	- Attach site ma	showing	sampling	g point l	ocations, tra	nsects, im	portant fea	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes		ls the	e Sampled				
Wetland Hydrology Present?	Yes	No	withi	in a Wetlar	nd? Y	'es	No	ı
Remarks:								
VEGETATION – Use scient	ific names of plant	s.						
Troe Stratum (Plot size:	`		Dominant Species?		Dominance To	est workshee	t:	
Tree Stratum (Plot size: 1					Number of Dor That Are OBL,			(A)
2					Total Number			
3					Species Acros	s All Strata:		(B)
4					Percent of Dor That Are OBL,	ninant Species	s .C:	(A/B)
		=			Prevalence In			(/*5/
Sapling/Shrub Stratum (Plot size						over of:		by:
2.					OBL species			
3					FACW species			
4					FAC species			
5					FACU species		x 4 =	
					UPL species		x 5 =	
Herb Stratum (Plot size:					Column Totals	:	_ (A)	(B)
1 2					Prevalen	ce Index = B/	'A =	
3					Hydrophytic \	/egetation Inc	dicators:	
4.					1 - Rapid ·	Test for Hydro	phytic Vegeta	ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale			
7					4 - Morpho	ological Adapt Remarks or o	ations¹ (Provi n a separate	de supporting sheet)
8					Problemat			
9 10								
			= Total Cov	er	¹ Indicators of h be present, un			
1					Hydrophytic			
2					Vegetation Present?	Yas	No	
			Total Cov	er	I I I I I I I I I I I I I I I I I I I		'''-	
					Hydrophytic	Yes		

Profile Des	cription: (Descr	be to the dept	needed to docu	nent the	indicator	or confirm	the absence of i	ndicators.)
Depth	Matri	x	Redo	x Feature				
(inches)	Color (moist	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
l ———								
		Depletion, RM=	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils ³ :
Histoso	l (A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Prai	rie Redox (A16)
Histic E	pipedon (A2)		Sandy	Redox (S	5)		Dark Surfa	• •
ı —	listic (A3)			d Matrix (,			anese Masses (F12)
	en Sulfide (A4)				neral (F1)			ow Dark Surface (TF12)
1	d Layers (A5)			Gleyed M			Other (Exp	olain in Remarks)
ı —	uck (A10)			d Matrix (,			
	ed Below Dark Su	. ,		Dark Surfa			31	
_	ark Surface (A12				urface (F7))		nydrophytic vegetation and
	Mucky Mineral (S [.] ucky Peat or Peat		Redox	Depressio	ons (F8)			drology must be present, turbed or problematic.
	Layer (if observe						unless dist	dibed of problematic.
	•	•						
							Hydric Soil Pre	sent? Yes No
Depth (ir	nches):							
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicate	ors:						
1			ed; check all that a	(vlac			Secondary I	ndicators (minimum of two required)
		or one to require			(es (BQ)			
_	Water (A1)		Water-Sta		, ,			Soil Cracks (B6)
1 —	ater Table (A2)		Aquatic Fa	•	,		_ ,	e Patterns (B10)
1 —	ion (A3)		True Aqua				_ ′	ason Water Table (C2)
1	Marks (B1)		Hydrogen					Burrows (C8)
	ent Deposits (B2)		Oxidized I					on Visible on Aerial Imagery (C9)
I	posits (B3)		Presence					or Stressed Plants (D1)
ı —	at or Crust (B4)		Recent Iro			d Soils (C6		rphic Position (D2)
I —	posits (B5)		Thin Muck				FAC-Ne	eutral Test (D5)
_	ion Visible on Aer	0 , 1		Well Data	(D9)			
Sparse	y Vegetated Cond	cave Surface (B	8) Other (Ex	olain in Re	emarks)			
Field Obse	rvations:							
Surface Wa	ter Present?	Yes N	lo Depth (in	ches):		_		
Water Table	Present?	Yes N	lo Depth (in	ches):		_		
Saturation F	Present?		lo Depth (in				and Hydrology Pr	resent? Yes No No
	pillary fringe)							
Describe Re	ecorded Data (stre	eam gauge, mor	nitoring well, aerial	photos, p	revious ins	pections),	if available:	
Remarks:								
1								
l								

Project/Site:		C	ity/County:			Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.):			ι	ocal relief	(concave, conve	x, none):		
Slope (%): Lat:		L	.ong:			Datu	ım:	
Soil Map Unit Name:					NW	l classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	_, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" preser	nt? Yes	No
Are Vegetation, Soil	_, or Hydrology	naturally prob	lematic?	(If ne	eeded, explain an	ny answers in	Remarks.)	
SUMMARY OF FINDINGS	- Attach site ma	showing	sampling	g point l	ocations, tra	nsects, im	portant fea	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes		ls the	e Sampled				
Wetland Hydrology Present?	Yes	No	withi	in a Wetlar	nd? Y	'es	No	ı
Remarks:								
VEGETATION – Use scient	ific names of plant	s.						
Troe Stratum (Plot size:	`		Dominant Species?		Dominance To	est workshee	t:	
Tree Stratum (Plot size: 1					Number of Dor That Are OBL,			(A)
2					Total Number			
3					Species Acros	s All Strata:		(B)
4					Percent of Dor That Are OBL,	ninant Species	s .C:	(A/B)
		=			Prevalence In			(/*5/
Sapling/Shrub Stratum (Plot size						over of:		by:
2.					OBL species			
3					FACW species			
4					FAC species			
5					FACU species		x 4 =	
					UPL species		x 5 =	
Herb Stratum (Plot size:					Column Totals	:	_ (A)	(B)
1 2					Prevalen	ce Index = B/	'A =	
3					Hydrophytic \	/egetation Inc	dicators:	
4.					1 - Rapid ·	Test for Hydro	phytic Vegeta	ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale			
7					4 - Morpho	ological Adapt Remarks or o	ations¹ (Provi n a separate	de supporting sheet)
8					Problemat			
9 10								
			= Total Cov	er	¹ Indicators of h be present, un			
1					Hydrophytic			
2					Vegetation Present?	Yas	No	
			Total Cov	er	I I I I I I I I I I I I I I I I I I I		'''-	
					Hydrophytic	Yes		

Profile Des	cription: (Descr	be to the dept	needed to docu	nent the	indicator	or confirm	the absence of i	ndicators.)
Depth	Matri	x	Redo	x Feature				
(inches)	Color (moist	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
l ———								
		Depletion, RM=	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils ³ :
Histoso	l (A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Prai	rie Redox (A16)
Histic E	pipedon (A2)		Sandy	Redox (S	5)		Dark Surfa	• •
ı —	listic (A3)			d Matrix (,			anese Masses (F12)
	en Sulfide (A4)				neral (F1)			ow Dark Surface (TF12)
1	d Layers (A5)			Gleyed M			Other (Exp	olain in Remarks)
ı —	uck (A10)			d Matrix (,			
	ed Below Dark Su	. ,		Dark Surfa			31	
_	ark Surface (A12				urface (F7))		nydrophytic vegetation and
	Mucky Mineral (S [.] ucky Peat or Peat		Redox	Depressio	ons (F8)			drology must be present, turbed or problematic.
	Layer (if observe						unless dist	dibed of problematic.
	•	•						
							Hydric Soil Pre	sent? Yes No
Depth (ir	nches):							
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicate	ors:						
1			ed; check all that a	(vlac			Secondary I	ndicators (minimum of two required)
		or one to require			(es (BQ)			
_	Water (A1)		Water-Sta		, ,			Soil Cracks (B6)
1 —	ater Table (A2)		Aquatic Fa	•	,		_ ,	e Patterns (B10)
1 —	ion (A3)		True Aqua				_ ′	ason Water Table (C2)
1	Marks (B1)		Hydrogen					Burrows (C8)
	ent Deposits (B2)		Oxidized I					on Visible on Aerial Imagery (C9)
I	posits (B3)		Presence					or Stressed Plants (D1)
ı —	at or Crust (B4)		Recent Iro			d Soils (C6		rphic Position (D2)
I —	posits (B5)		Thin Muck				FAC-Ne	eutral Test (D5)
_	ion Visible on Aer	0 , 1		Well Data	(D9)			
Sparse	y Vegetated Cond	cave Surface (B	8) Other (Ex	olain in Re	emarks)			
Field Obse	rvations:							
Surface Wa	ter Present?	Yes N	lo Depth (in	ches):		_		
Water Table	Present?	Yes N	lo Depth (in	ches):		_		
Saturation F	Present?		lo Depth (in				and Hydrology Pr	resent? Yes No No
	pillary fringe)							
Describe Re	ecorded Data (stre	eam gauge, mor	nitoring well, aerial	photos, p	revious ins	pections),	if available:	
Remarks:								
1								
l								

Project/Site:		C	ity/County:			Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.):			ι	ocal relief	(concave, conve	x, none):		
Slope (%): Lat:		L	.ong:			Datu	ım:	
Soil Map Unit Name:					NW	l classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	_, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" preser	nt? Yes	No
Are Vegetation, Soil	_, or Hydrology	naturally prob	lematic?	(If ne	eeded, explain an	ny answers in	Remarks.)	
SUMMARY OF FINDINGS	- Attach site ma	showing	sampling	g point l	ocations, tra	nsects, im	portant fea	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes		ls the	e Sampled				
Wetland Hydrology Present?	Yes	No	withi	in a Wetlar	nd? Y	'es	No	ı
Remarks:								
VEGETATION – Use scient	ific names of plant	s.						
Troe Stratum (Plot size:	`		Dominant Species?		Dominance To	est workshee	t:	
Tree Stratum (Plot size: 1					Number of Dor That Are OBL,			(A)
2					Total Number			
3					Species Acros	s All Strata:		(B)
4					Percent of Dor That Are OBL,	ninant Species	s .C:	(A/B)
		=			Prevalence In			(/*5/
Sapling/Shrub Stratum (Plot size						over of:		by:
2.					OBL species			
3					FACW species			
4					FAC species			
5					FACU species		x 4 =	
					UPL species		x 5 =	
Herb Stratum (Plot size:					Column Totals	:	_ (A)	(B)
1 2					Prevalen	ce Index = B/	'A =	
3					Hydrophytic \	/egetation Inc	dicators:	
4.					1 - Rapid ·	Test for Hydro	phytic Vegeta	ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale			
7					4 - Morpho	ological Adapt Remarks or o	ations¹ (Provi n a separate	de supporting sheet)
8					Problemat			
9 10								
			= Total Cov	er	¹ Indicators of h be present, un			
1					Hydrophytic			
2					Vegetation Present?	Yas	No	
			Total Cov	er	I I I I I I I I I I I I I I I I I I I		'''-	
					Hydrophytic	Yes		

Profile Des	cription: (Descr	be to the dept	needed to docu	nent the	indicator	or confirm	the absence of i	ndicators.)
Depth	Matri	x	Redo	x Feature				
(inches)	Color (moist	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
l ———								
		Depletion, RM=	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils ³ :
Histoso	l (A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Prai	rie Redox (A16)
Histic E	pipedon (A2)		Sandy	Redox (S	5)		Dark Surfa	• •
ı —	listic (A3)			d Matrix (,			anese Masses (F12)
	en Sulfide (A4)				neral (F1)			ow Dark Surface (TF12)
1	d Layers (A5)			Gleyed M			Other (Exp	olain in Remarks)
ı —	uck (A10)			d Matrix (,			
	ed Below Dark Su	. ,		Dark Surfa			31	
_	ark Surface (A12				urface (F7))		nydrophytic vegetation and
	Mucky Mineral (S [.] ucky Peat or Peat		Redox	Depressio	ons (F8)			drology must be present, turbed or problematic.
	Layer (if observe						unless dist	dibed of problematic.
	•	•						
							Hydric Soil Pre	sent? Yes No
Depth (ir	nches):							
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicate	ors:						
1			ed; check all that a	(vlac			Secondary I	ndicators (minimum of two required)
		or one to require			(es (BQ)			
_	Water (A1)		Water-Sta		, ,			Soil Cracks (B6)
1 —	ater Table (A2)		Aquatic Fa	•	,		_ ,	e Patterns (B10)
1 —	ion (A3)		True Aqua				_ ′	ason Water Table (C2)
1	Marks (B1)		Hydrogen					Burrows (C8)
	ent Deposits (B2)		Oxidized I					on Visible on Aerial Imagery (C9)
I	posits (B3)		Presence					or Stressed Plants (D1)
ı —	at or Crust (B4)		Recent Iro			d Soils (C6		rphic Position (D2)
I —	posits (B5)		Thin Muck				FAC-Ne	eutral Test (D5)
_	ion Visible on Aer	0 , 1		Well Data	(D9)			
Sparse	y Vegetated Cond	cave Surface (B	8) Other (Ex	olain in Re	emarks)			
Field Obse	rvations:							
Surface Wa	ter Present?	Yes N	lo Depth (in	ches):		_		
Water Table	Present?	Yes N	lo Depth (in	ches):		_		
Saturation F	Present?		lo Depth (in				and Hydrology Pr	resent? Yes No No
	pillary fringe)							
Describe Re	ecorded Data (stre	eam gauge, mor	nitoring well, aerial	photos, p	revious ins	pections),	if available:	
Remarks:								
1								
l								

Project/Site:		City	/County:		Sampling Date:	
Applicant/Owner:				State:	Sampling Point:	
Investigator(s):		Sec	tion, Township, Ra	ange:		
Landform (hillslope, terrace, etc.):			Local relief	(concave, convex, none)	:	
Slope (%): Lat:		Lon	g:		Datum:	
Soil Map Unit Name:						
Are climatic / hydrologic conditions of						
Are Vegetation, Soil,				"Normal Circumstances"		No
Are Vegetation, Soil,				eeded, explain any answe		
SUMMARY OF FINDINGS -			,		,	es, etc.
Hydrophytic Vegetation Present?	Yes	No				
Hydric Soil Present?	Yes		Is the Sample	d Area		
Wetland Hydrology Present?	Yes	No	within a Wetla	nd? Yes	No	
Remarks:						
VEGETATION – Use scientif	ic names of plant	s.				
Torra Observator (Districtor)	``		ominant Indicator	Dominance Test work	(sheet:	
Tree Stratum (Plot size:			oecies? Status	Number of Dominant S That Are OBL, FACW,		(4)
1 2				That Are OBL, FACW,	or FAC:	_ (^)
3				Total Number of Domir Species Across All Stra		(B)
4				'		_ (5)
5				Percent of Dominant S That Are OBL, FACW,	pecies or FAC:	(A/B)
		= T	otal Cover			
Sapling/Shrub Stratum (Plot size:				Prevalence Index wor Total % Cover of:		
1 2				1	x 1 =	_
3					x 2 =	
4				1	x 3 =	
5				FACU species	x 4 =	_
		= T		UPL species	x 5 =	_
Herb Stratum (Plot size:)			Column Totals:	(A)	(B)
1 2.				Prevalence Index	c = B/A =	
3				Hydrophytic Vegetati		
4				1 - Rapid Test for	Hydrophytic Vegetation	
5				2 - Dominance Tes		
6				3 - Prevalence Ind		
7				4 - Morphological /	Adaptations ¹ (Provide su s or on a separate sheet	pporting
8					phytic Vegetation ¹ (Expl	
9					phytic vegetation (Exp.	uii)
10				¹ Indicators of hydric so	il and wetland hydrology	must
Woody Vine Stratum (Plot size: _)	=T	otal Cover	be present, unless dist		
1				Hydrophytic		
2				Vegetation	. No	
		=T	otal Cover	Present? Ye	es No	
Remarks: (Include photo numbers	here or on a separate	e sheet.)				

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Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested as a 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 (B	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) 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 (Base) Sparsely Vegetated Concave Surface	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present?	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested as a 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 (B	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) 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 (Base) Sparsely Vegetated Concave Surface	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present?	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested as a 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 (B	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) 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 (Base) Sparsely Vegetated Concave Surface	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present?	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested as a 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 (B	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) 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 (Base) Sparsely Vegetated Concave Surface	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present?	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
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Project/Site:		c	ity/County	:		Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
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Project/Site:		c	ity/County	:		Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested as a 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 (B	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) 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 (Base) Sparsely Vegetated Concave Surface	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present?	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

Project/Site:		c	ity/County	:		Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested as a 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 (B	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) 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 (Base) Sparsely Vegetated Concave Surface	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present?	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested as a 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 (B	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) 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 (Base) Sparsely Vegetated Concave Surface	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present?	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested as a 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 (B	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) 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 (Base) Sparsely Vegetated Concave Surface	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present?	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested as a 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 (B	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) 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 (Base) Sparsely Vegetated Concave Surface	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present?	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
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Project/Site:		c	ity/County	:		San	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
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Project/Site:		c	ity/County	:		Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
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SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested as a 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 (B	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) 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 (Base) Sparsely Vegetated Concave Surface	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Water Table Present? Yes Water Table Present?	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

Project/Site:		c	ity/County	:		Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

Profile Description: (Describe to the de	pth needed to document the indicator or	confirm the absence of indicators.)
Depth Matrix	Redox Features	
(inches) Color (moist) %	Color (moist) % Type ¹	Loc ² Texture Remarks
	1=Reduced Matrix, MS=Masked Sand Grain	
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Redox (S5)	Dark Surface (S7)
Black Histic (A3)	Stripped Matrix (S6)	Iron-Manganese Masses (F12)
Hydrogen Sulfide (A4)	Loamy Mucky Mineral (F1)	Very Shallow Dark Surface (TF12)
Stratified Layers (A5)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
2 cm Muck (A10)	Depleted Matrix (F3)	
Depleted Below Dark Surface (A11)	Redox Dark Surface (F6)	31
Thick Dark Surface (A12)	Depleted Dark Surface (F7)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) 5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed):		unless disturbed of problematic.
_ , , ,		
Type:		Hydric Soil Present? Yes No
Depth (inches):		
Remarks:		
HYDROLOGY		
Wetland Hydrology Indicators:	uired: check all that apply)	Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ		Secondary Indicators (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1)	Water-Stained Leaves (B9)	Surface Soil Cracks (B6)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requ Surface Water (A1) High Water Table (A2)	Water-Stained Leaves (B9) Aquatic Fauna (B13)	Surface Soil Cracks (B6)Drainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requestions) Surface Water (A1) High Water Table (A2) Saturation (A3)	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9)Aquatic Fauna (B13)True Aquatic Plants (B14)Hydrogen Sulfide Odor (C1)	Surface Soil Cracks (B6)Drainage Patterns (B10)Dry-Season Water Table (C2)Crayfish Burrows (C8)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living 	 Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Roots (C3) Saturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	 Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) 	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested in the second in the	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested as a 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 (B	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested) 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 (Base) Sparsely Vegetated Concave Surface	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	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)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Base) Sparsely Vegetated Concave Surface Field Observations:	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Soils (C6) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface) Field Observations: Surface Water Present? Yes	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S 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) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5)
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
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Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators: Primary Indicators (minimum of one is requested 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 (Based Sparsely Vegetated Concave Surface Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge, manual capillary fringe)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled S Thin Muck Surface (C7) Gauge or Well Data (D9) (B8) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) g Roots (C3) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) Geomorphic Position (D2) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No

Project/Site:		c	ity/County	:		Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.): _			ا	Local relief	(concave, conve	x, none):		
Slope (%): Lat:			.ong:			Datu	um:	
Soil Map Unit Name:					NWI	classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" prese	nt? Yes	No
Are Vegetation, Soil	, or Hydrology	naturally prob	olematic?	(If ne	eded, explain an	y answers in	Remarks.)	
SUMMARY OF FINDINGS -	- Attach site mar	showing	samplin	g point l	ocations, tra	nsects, im	portant fe	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes	No		e Sampled				
Wetland Hydrology Present?	Yes	No	with	in a Wetlar	nd? Y	'es	No	
Remarks:								
VEGETATION – Use scienti	fic names of plant	s						
	no names er plant		Dominant	Indicator	Dominance Te	est workshee	rt:	
Tree Stratum (Plot size:		% Cover	Species?	Status	Number of Dor That Are OBL,			(A)
2					Total Number	of Dominant		
3					Species Acros	s All Strata:		(B)
4					Percent of Don	ninant Specie	s	
5					That Are OBL,	FACW, or FA	.C:	(A/B)
Sapling/Shrub Stratum (Plot size					Prevalence In			
1						over of:		/ by:
2					OBL species			
3					FACW species FAC species			
4 5					FACU species			
					UPL species			
Herb Stratum (Plot size:					Column Totals	:	(A)	(B)
1					Prevalen	ce Index = B/	/A =	
2 3					Hydrophytic V			
4					1 - Rapid	•		ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale	ence Index is:	≤3.0 ¹	
7 8					4 - Morpho data in	ological Adapt Remarks or o	ations¹ (Provi on a separate	de supporting sheet)
9.					Problemat	ic Hydrophytic	c Vegetation ¹	(Explain)
10					1			
Woody Vine Stratum (Plot size:				/er	¹Indicators of h			
1					Hydrophytic			
2					Vegetation Present?	Yes	No	
Demonstrate (Incolorate in texts in the	a hana as an a sana s		= Total Cov	/er				
Remarks: (Include photo number		=		ver		Yes	No	

SOIL Sampling Point: _____

Profile Des	cription: (Descr	be to the dept	needed to docu	nent the	indicator	or confirm	the absence of i	ndicators.)
Depth	Matri	x	Redo	x Feature				
(inches)	Color (moist	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
l ———								
		Depletion, RM=	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils ³ :
Histoso	l (A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Prai	rie Redox (A16)
Histic E	pipedon (A2)		Sandy	Redox (S	5)		Dark Surfa	• •
ı —	listic (A3)			d Matrix (,			anese Masses (F12)
	en Sulfide (A4)				neral (F1)			ow Dark Surface (TF12)
1	d Layers (A5)			Gleyed M			Other (Exp	olain in Remarks)
ı —	uck (A10)			d Matrix (,			
	ed Below Dark Su	. ,		Dark Surfa			31	
_	ark Surface (A12				urface (F7))		nydrophytic vegetation and
	Mucky Mineral (S [.] ucky Peat or Peat		Redox	Depressio	ons (F8)			drology must be present, turbed or problematic.
	Layer (if observe						unless dist	dibed of problematic.
	•	•						
							Hydric Soil Pre	sent? Yes No
Depth (ir	nches):							
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicate	ors:						
1			ed; check all that a	(vlac			Secondary I	ndicators (minimum of two required)
		or one to require			(es (BQ)			
_	Water (A1)		Water-Sta		, ,			Soil Cracks (B6)
1 —	ater Table (A2)		Aquatic Fa	•	,		_ ,	e Patterns (B10)
1 —	ion (A3)		True Aqua				_ ′	ason Water Table (C2)
1	Marks (B1)		Hydrogen					Burrows (C8)
	ent Deposits (B2)		Oxidized I					on Visible on Aerial Imagery (C9)
I	posits (B3)		Presence					or Stressed Plants (D1)
ı —	at or Crust (B4)		Recent Iro			d Soils (C6		rphic Position (D2)
I —	posits (B5)		Thin Muck				FAC-Ne	eutral Test (D5)
_	ion Visible on Aer	0 , 1		Well Data	(D9)			
Sparse	y Vegetated Cond	cave Surface (B	8) Other (Ex	olain in Re	emarks)			
Field Obse	rvations:							
Surface Wa	ter Present?	Yes N	lo Depth (in	ches):		_		
Water Table	Present?	Yes N	lo Depth (in	ches):		_		
Saturation F	Present?		lo Depth (in				and Hydrology Pr	resent? Yes No No
	pillary fringe)							
Describe Re	ecorded Data (stre	eam gauge, mor	nitoring well, aerial	photos, p	revious ins	pections),	if available:	
Remarks:								
1								
l								

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WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site:		C	ity/County:			Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.):			ι	ocal relief	(concave, conve	x, none):		
Slope (%): Lat:		L	.ong:			Datu	ım:	
Soil Map Unit Name:					NW	l classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	_, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" preser	nt? Yes	No
Are Vegetation, Soil	_, or Hydrology	naturally prob	lematic?	(If ne	eeded, explain an	ny answers in	Remarks.)	
SUMMARY OF FINDINGS	- Attach site ma	showing	sampling	g point l	ocations, tra	nsects, im	portant fea	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes		ls the	e Sampled				
Wetland Hydrology Present?	Yes	No	withi	in a Wetlar	nd? Y	'es	No	ı
Remarks:								
VEGETATION – Use scient	ific names of plant	s.						
Troe Stratum (Plot size:	`		Dominant Species?		Dominance To	est workshee	t:	
Tree Stratum (Plot size: 1					Number of Dor That Are OBL,			(A)
2					Total Number			
3					Species Acros	s All Strata:		(B)
4					Percent of Dor That Are OBL,	ninant Species	s .C:	(A/B)
		=			Prevalence In			(/*5/
Sapling/Shrub Stratum (Plot size						over of:		by:
2.					OBL species			
3.					FACW species			
4					FAC species			
5					FACU species		x 4 =	
					UPL species		x 5 =	
Herb Stratum (Plot size:					Column Totals	:	_ (A)	(B)
1 2					Prevalen	ce Index = B/	'A =	
3					Hydrophytic \	/egetation Inc	dicators:	
4.					1 - Rapid ·	Test for Hydro	phytic Vegeta	ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale			
7					4 - Morpho	ological Adapt Remarks or o	ations¹ (Provi n a separate	de supporting sheet)
8					Problemat			
9 10								
			= Total Cov	er	¹ Indicators of h be present, un			
1					Hydrophytic			
2					Vegetation Present?	Yae	No	
			Total Cov	er	I I I I I I I I I I I I I I I I I I I		'''-	
					Hydrophytic	Yes		

SOIL Sampling Point: _____

Profile Des	cription: (Descr	be to the dept	needed to docu	nent the	indicator	or confirm	the absence of i	ndicators.)
Depth	Matri	x	Redo	x Feature				
(inches)	Color (moist	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
l ———								
		Depletion, RM=	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils ³ :
Histoso	l (A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Prai	rie Redox (A16)
Histic E	pipedon (A2)		Sandy	Redox (S	5)		Dark Surfa	• •
ı —	listic (A3)			d Matrix (,			anese Masses (F12)
	en Sulfide (A4)				neral (F1)			ow Dark Surface (TF12)
1	d Layers (A5)			Gleyed M			Other (Exp	olain in Remarks)
ı —	uck (A10)			d Matrix (,			
	ed Below Dark Su	. ,		Dark Surfa			31	
_	ark Surface (A12				urface (F7))		nydrophytic vegetation and
	Mucky Mineral (S [.] ucky Peat or Peat		Redox	Depressio	ons (F8)			drology must be present, turbed or problematic.
	Layer (if observe						unless dist	dibed of problematic.
	•	•						
							Hydric Soil Pre	sent? Yes No
Depth (ir	nches):							
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicate	ors:						
1			ed; check all that a	(vlac			Secondary I	ndicators (minimum of two required)
		or one to require			(es (BQ)			
_	Water (A1)		Water-Sta		, ,			Soil Cracks (B6)
1 —	ater Table (A2)		Aquatic Fa	•	,		_ ,	e Patterns (B10)
1 —	ion (A3)		True Aqua				_ ′	ason Water Table (C2)
1	Marks (B1)		Hydrogen					Burrows (C8)
	ent Deposits (B2)		Oxidized I					on Visible on Aerial Imagery (C9)
I	posits (B3)		Presence					or Stressed Plants (D1)
ı —	at or Crust (B4)		Recent Iro			d Soils (C6		rphic Position (D2)
I —	posits (B5)		Thin Muck				FAC-Ne	eutral Test (D5)
_	ion Visible on Aer	0 , 1		Well Data	(D9)			
Sparse	y Vegetated Cond	cave Surface (B	8) Other (Ex	olain in Re	emarks)			
Field Obse	rvations:							
Surface Wa	ter Present?	Yes N	lo Depth (in	ches):		_		
Water Table	Present?	Yes N	lo Depth (in	ches):		_		
Saturation F	Present?		lo Depth (in				and Hydrology Pr	resent? Yes No No
	pillary fringe)							
Describe Re	ecorded Data (stre	eam gauge, mor	nitoring well, aerial	photos, p	revious ins	pections),	if available:	
Remarks:								
1								
l								

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WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site:		C	ity/County:			Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.):			ι	ocal relief	(concave, conve	x, none):		
Slope (%): Lat:		L	.ong:			Datu	ım:	
Soil Map Unit Name:					NW	l classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	_, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" preser	nt? Yes	No
Are Vegetation, Soil	_, or Hydrology	naturally prob	lematic?	(If ne	eeded, explain an	ny answers in	Remarks.)	
SUMMARY OF FINDINGS	- Attach site ma	showing	sampling	g point l	ocations, tra	nsects, im	portant fea	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes		ls the	e Sampled				
Wetland Hydrology Present?	Yes	No	withi	in a Wetlar	nd? Y	'es	No	ı
Remarks:								
VEGETATION – Use scient	ific names of plant	s.						
Troe Stratum (Plot size:	`		Dominant Species?		Dominance To	est workshee	t:	
Tree Stratum (Plot size: 1					Number of Dor That Are OBL,			(A)
2					Total Number			
3					Species Acros	s All Strata:		(B)
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Sapling/Shrub Stratum (Plot size						over of:		by:
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4					FAC species			
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					UPL species		x 5 =	
Herb Stratum (Plot size:					Column Totals	:	_ (A)	(B)
1 2					Prevalen	ce Index = B/	'A =	
3					Hydrophytic \	/egetation Inc	dicators:	
4.					1 - Rapid ·	Test for Hydro	phytic Vegeta	ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale			
7					4 - Morpho	ological Adapt Remarks or o	ations¹ (Provi n a separate	de supporting sheet)
8					Problemat			
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					Hydrophytic	Yes		

SOIL Sampling Point: _____

Profile Des	cription: (Descr	be to the dept	needed to docu	nent the	indicator	or confirm	the absence of i	ndicators.)
Depth	Matri	x	Redo	x Feature				
(inches)	Color (moist	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
l ———								
		Depletion, RM=	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils ³ :
Histoso	l (A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Prai	rie Redox (A16)
Histic E	pipedon (A2)		Sandy	Redox (S	5)		Dark Surfa	• •
ı —	listic (A3)			d Matrix (,			anese Masses (F12)
	en Sulfide (A4)				neral (F1)			ow Dark Surface (TF12)
1	d Layers (A5)			Gleyed M			Other (Exp	olain in Remarks)
ı —	uck (A10)			d Matrix (,			
	ed Below Dark Su	. ,		Dark Surfa			31	
_	ark Surface (A12				urface (F7))		nydrophytic vegetation and
	Mucky Mineral (S [.] ucky Peat or Peat		Redox	Depressio	ons (F8)			drology must be present, turbed or problematic.
	Layer (if observe						unless dist	dibed of problematic.
	•	•						
							Hydric Soil Pre	sent? Yes No
Depth (ir	nches):							
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicate	ors:						
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		or one to require			(es (BQ)			
_	Water (A1)		Water-Sta		, ,			Soil Cracks (B6)
1 —	ater Table (A2)		Aquatic Fa	•	,		_ ,	e Patterns (B10)
1 —	ion (A3)		True Aqua				_ ′	ason Water Table (C2)
1	Marks (B1)		Hydrogen					Burrows (C8)
	ent Deposits (B2)		Oxidized I					on Visible on Aerial Imagery (C9)
I	posits (B3)		Presence					or Stressed Plants (D1)
ı —	at or Crust (B4)		Recent Iro			d Soils (C6		rphic Position (D2)
I —	posits (B5)		Thin Muck				FAC-Ne	eutral Test (D5)
_	ion Visible on Aer	0 , 1		Well Data	(D9)			
Sparse	y Vegetated Cond	cave Surface (B	8) Other (Ex	olain in Re	emarks)			
Field Obse	rvations:							
Surface Wa	ter Present?	Yes N	lo Depth (in	ches):		_		
Water Table	Present?	Yes N	lo Depth (in	ches):		_		
Saturation F	Present?		lo Depth (in				and Hydrology Pr	resent? Yes No No
	pillary fringe)							
Describe Re	ecorded Data (stre	eam gauge, mor	nitoring well, aerial	photos, p	revious ins	pections),	if available:	
Remarks:								
1								
l								

US Army Corps of Engineers Midwest Region – Version 2.0

WETLAND DETERMINATION DATA FORM – Midwest Region

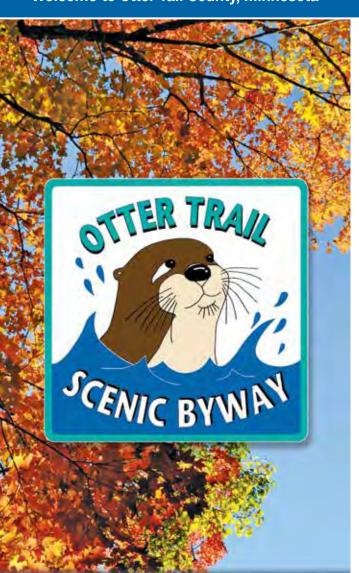
Project/Site:		C	ity/County:			Sam	npling Date: _	
Applicant/Owner:					State:	Sam	npling Point: _	
Investigator(s):		s	Section, To	wnship, Ra	nge:			
Landform (hillslope, terrace, etc.):			ι	ocal relief	(concave, conve	x, none):		
Slope (%): Lat:		L	.ong:			Datu	ım:	
Soil Map Unit Name:					NW	l classification	:	
Are climatic / hydrologic conditions	on the site typical for the	his time of yea	r? Yes	No _	(If no, exp	olain in Remar	ks.)	
Are Vegetation, Soil	_, or Hydrology	significantly d	listurbed?	Are '	Normal Circums	tances" preser	nt? Yes	No
Are Vegetation, Soil	_, or Hydrology	naturally prob	lematic?	(If ne	eeded, explain an	ny answers in	Remarks.)	
SUMMARY OF FINDINGS	- Attach site ma	showing	sampling	g point l	ocations, tra	nsects, im	portant fea	atures, etc.
Hydrophytic Vegetation Present?	Yes	No						
Hydric Soil Present?	Yes		ls the	e Sampled				
Wetland Hydrology Present?	Yes	No	withi	in a Wetlar	nd? Y	'es	No	ı
Remarks:								
VEGETATION – Use scient	ific names of plant	s.						
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Tree Stratum (Plot size: 1					Number of Dor That Are OBL,			(A)
2					Total Number			
3					Species Acros	s All Strata:		(B)
4					Percent of Dor That Are OBL,	ninant Species	s .C:	(A/B)
		=			Prevalence In			(/*5/
Sapling/Shrub Stratum (Plot size						over of:		by:
2.					OBL species			
3					FACW species			
4					FAC species			
5					FACU species		x 4 =	
					UPL species		x 5 =	
Herb Stratum (Plot size:					Column Totals	:	_ (A)	(B)
1 2					Prevalen	ce Index = B/	'A =	
3					Hydrophytic \	/egetation Inc	dicators:	
4.					1 - Rapid ·	Test for Hydro	phytic Vegeta	ation
5					2 - Domina	ance Test is >	50%	
6					3 - Prevale			
7					4 - Morpho	ological Adapt Remarks or o	ations¹ (Provi n a separate	de supporting sheet)
8					Problemat			
9 10								
			= Total Cov	er	¹ Indicators of h be present, un			
1					Hydrophytic			
2					Vegetation Present?	Yae	No	
			Total Cov	er	I I I I I I I I I I I I I I I I I I I		'''-	
					Hydrophytic	Yes		

SOIL Sampling Point: _____

Profile Des	cription: (Descr	be to the dept	needed to docu	nent the	indicator	or confirm	the absence of i	ndicators.)
Depth	Matri	x	Redo	x Feature				
(inches)	Color (moist	%	Color (moist)	%	_Type ¹	_Loc ²	Texture	Remarks
l ———								
		Depletion, RM=	Reduced Matrix, M	S=Maske	d Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils ³ :
Histoso	l (A1)		Sandy	Gleyed Ma	atrix (S4)		Coast Prai	rie Redox (A16)
Histic E	pipedon (A2)		Sandy	Redox (S	5)		Dark Surfa	• •
ı —	listic (A3)			d Matrix (,			anese Masses (F12)
	en Sulfide (A4)				neral (F1)			ow Dark Surface (TF12)
1	d Layers (A5)			Gleyed M			Other (Exp	olain in Remarks)
ı —	uck (A10)			d Matrix (,			
	ed Below Dark Su	. ,		Dark Surfa			31	
_	ark Surface (A12				urface (F7))		nydrophytic vegetation and
	Mucky Mineral (S [.] ucky Peat or Peat		Redox	Depressio	ons (F8)			drology must be present, turbed or problematic.
	Layer (if observe						unless dist	dibed of problematic.
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							Hydric Soil Pre	sent? Yes No
Depth (ir	nches):							
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicate	ors:						
1			ed; check all that a	(vlac			Secondary I	ndicators (minimum of two required)
		or one to require			(es (BQ)			
_	Water (A1)		Water-Sta		, ,			Soil Cracks (B6)
1 —	ater Table (A2)		Aquatic Fa	•	,		_ ,	e Patterns (B10)
1 —	ion (A3)		True Aqua				_ ′	ason Water Table (C2)
1	Marks (B1)		Hydrogen					Burrows (C8)
	ent Deposits (B2)		Oxidized I					on Visible on Aerial Imagery (C9)
I	posits (B3)		Presence					or Stressed Plants (D1)
ı —	at or Crust (B4)		Recent Iro			d Soils (C6		rphic Position (D2)
I —	posits (B5)		Thin Muck				FAC-Ne	eutral Test (D5)
_	ion Visible on Aer	0 , 1		Well Data	(D9)			
Sparse	y Vegetated Cond	cave Surface (B	8) Other (Ex	olain in Re	emarks)			
Field Obse	rvations:							
Surface Wa	ter Present?	Yes N	lo Depth (in	ches):		_		
Water Table	Present?	Yes N	lo Depth (in	ches):		_		
Saturation F	Present?		lo Depth (in				and Hydrology Pr	resent? Yes No No
	pillary fringe)							
Describe Re	ecorded Data (stre	eam gauge, mor	nitoring well, aerial	photos, p	revious ins	pections),	if available:	
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Appendix C Scenic Byway Map



A State Scenic Byway in the West Central Lakes Area

Discovery Around Every Curve!

Traveling the Otter Trail Scenic Byway, you'll discover a land steeped in tradition and beauty. From more than 1,000 sparkling lakes and wildlife-filled wetlands to 19th century flour mills, scenic trails and spectacular roadside sculptures, the Byway offers something for everyone.

Tou'll find many intriguing historic sites, informational markers, and the rich natural and cultural resources that make this picturesque route an attraction for visitors from around the world.

Otter Tail County is one of Minnesota's most

productive agricultural regions as well as one

of its best-known all-season recreational areas.

With fishing and watersports, golfing, hunting,

snowmobiling and cross-country skiing, this

lovely land of lakes and forests is the perfect

year-round vacation spot for the entire family.



The Byway connects many of the county's scenic and historic locales. You'll pass by tribal hunting grounds and battle sites of great Indian nations. You'll trace the routes of fur traders and explorers. You'll learn about an old Mormon colony, the first permanent white settlement in the

county. You'll see where towns were platted, boomed and died. You'll also discover the important roles played by railroads and European immigrants in developing the region.

So let's hit the trail! You're in for adventure, scenic beauty and a fascinating learning experience on the Otter Trail Scenic Byway.

Use this guide to plan your scenic tour

Byway Sites

We've selected 23 LOCATIONS we think you'll find interesting, both historically and culturally. Many have kiosks or display panels containing information about the site, and many have other features such as trails, picnic facilities and opportunities to view wildlife.

Services

The various communities along the Otter Trail Scenic Byway offer everything you'll need: food, lodging, restrooms, fuel, emergency services and lots of unique shopping opportunities.

Starting Point

You can begin your tour at any point - "A" through "S" - along the 150 mile loop of the Otter Trail Scenic Byway. Be sure to watch for the colorful Otter Trail signs which provide directions along the way.

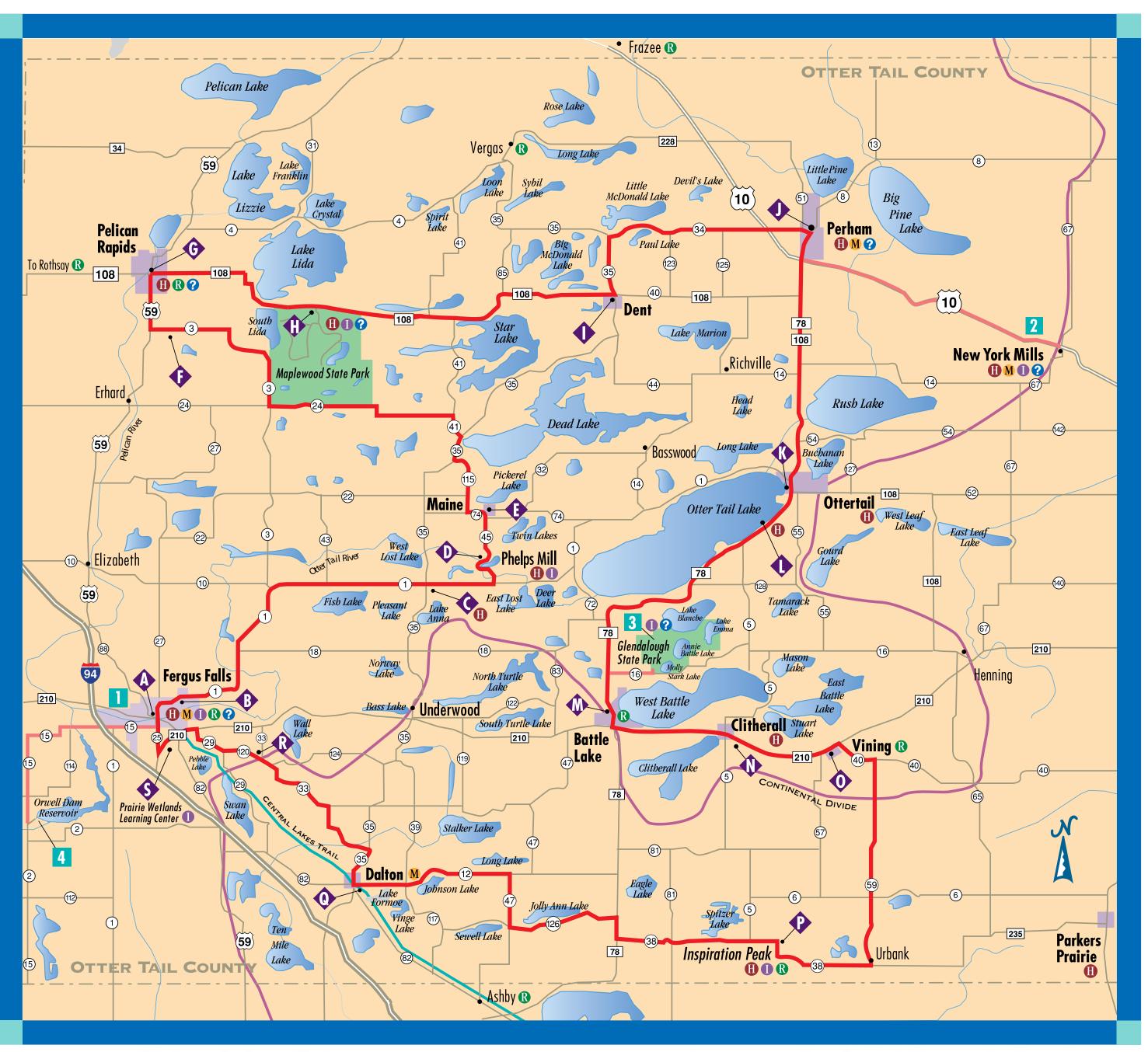
Always Drive Safely

The Byway has many curves and turns as it winds throughout the county. Always watch your speed and look for pedestrians, especially children and tourists, blind driveways, slowmoving farm equipment (be careful as you pass) and wildlife as you enjoy your drive.

Environmental Stewardship

We're proud of our historic, cultural and natural resources and are glad to share them with you. However, we ask you to remember that taking plants or animals from their natural environments may harm or destroy fragile habitats – and may also be illegal. Please don't litter or leave any items behind. We also ask that you respect not only the historic sites but also the private property along the Scenic Byway.





This brochure provides information to support the many sites along the Byway. Corresponding interpretive sites along the route provide more detailed information and historical perspectives. The Otter Trail Scenic Byway makes a particularly spectacular fall color drive - with colors typically peaking in late September.

Central Dam

Fergus Falls (I) M (I) (R)

Side Trip #1

Barnhard School (II) Phelps Mill (1) (1)

Central Lutheran Church

Pelican Rapids (1) (2) (3) Maplewood State Park 🕕 🕕 🕜

Dent

Perham **M**M

Side Trip #2 (1) M (1) ??

Ottertail City

🕩 Otter Tail Lake 🕕

Side Trip #3

♠ Battle Lake

Dalton

👍 Inspiration Peak 🕕 🕕 🚯

Dane Prairie Town Hall

🔥 Prairie Wetlands \, 🕦 **Learning Center**

Side Trip #4 Orwell Lake and Dam

Otter Trail Scenic Byway

B DISCOVERY SITE SIDE TRIP HISTORICAL MARKER

MUSEUM

INTERPRETATION

ROADSIDE SCULPTURE INFORMATION

CONTINENTAL DIVIDE CENTRAL LAKES TRAIL

Miles





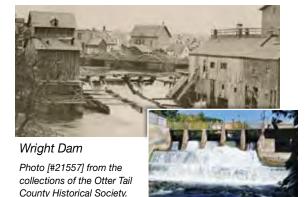
Let's hit the trail. You're in for an adventure!

Otter Trail Scenic Byway

BYWAY SITE A Dams

Location: On Cascade Street, between Lincoln and Washington in downtown Fergus Falls.

The river has always been important to Fergus Falls. Sawmills, flour mills and woolen mills were built along its banks, and the rapids were harnessed for hydropower. A working turbine is above the rushing river at the Central (formerly Wright) Dam site walkway. For a pleasant stroll, visit the Riverwalk, a half-mile brickwork path along the Otter Tail River.



BYWAY SITE B

Fergus Falls: River City

Location: On the southeast corner of Friberg and Summit, at the river parking area.

Fergus Falls is a river city, and it was the rapids along the river that lured James Whitford to set up a townsite here in 1857. He named the location after his employer, James Fergus. Fergus Falls became the county seat in 1872; the arrival of the railroad in 1879 assured the city's success. A cyclone that struck Fergus Falls in June 1919 killed

62 people and injured 200. The storm damaged more than two-thirds of the city.

Fergus Falls is now a bustling city and Otter Tail County seat. Performing arts, a history museum, environmental learning center and art galleries offer entertainment and education to residents and visitors. Shopping varies from the quaint to national chain favorites. A world-

class equestrian center, bee farm, model-car museum and major conference center help draw people to the region. Nature's finest - tallgrass prairies, lakes and rivers - draw enthusiasts to relax and enjoy Fergus Falls. The Pine to Prairie Birding Trail, Central Lakes Trail and golf courses



Central Dam - current day

Lincoln Avenue in 1871 Photo [#12108] from the collections of the Otter Tail

County Historical Society.



Lincoln Ave. - current day

SIDE TRIP 1

round out Fergus

Falle with re

offerings.

Fergus Falls: Otter Tail **County Historical Museum**

Location: 1110 West Lincoln Ave., Fergus Falls. Considered one of the best local history museums in Minnesota, a trip to the museum's exhibit gallery reveals over 100 permanent and changing displays. While strolling past the stunningly realistic dioramas and authentically furnished period rooms, visitors are carried back in time to recreated sounds of 19th century agricultural life and a 1915 main street. In the Chicken Scratch Theater guests watch the award winning production "Changes and Challenges: This Great Field of Agriculture." The entire family can play Museum Bingo which requires keen eyes and makes a visit fun and educational. The museum also has an extensive genealogy library and gift shop.

Visit www.OTCHS.org or call 218-736-6038 for more information.

For Byway Information



Otter Trail Scenic Byway 800-726-8959 www.VisitFergusFalls.com info@VisitFergusFalls.com

Helpful Resources

Fergus Falls Convention & Visitors Bureau www.VisitFergusFalls.com 800-726-8959

800-634-6112 **Explore Minnesota** Fergus Falls Area www.ExploreMinnesota.com **Chamber of Commerce** 888-TOURISM (868-7476) www.FergusFalls.com

218-736-6951 Tourism Pelican Rapids **Chamber of Commerce** www.PelicanRapidsChamber.com

Otter Tail Country www. Otter Tail Country. com800-423-4571 218-863-1221

40M.11/13

the Arts and Cultural Heritage Fund.



Perham Chamber

of Commerce

www.Perham.com

Education was a priority for settlers in Otter Tail County; as soon as an area had enough children, citizens applied to the county to form a school district. By 1938 the number of rural school districts had grown to 289, more than any other county in Minnesota.

BYWAY SITE C

Rural Schools

Location: At the southeast corner of the

intersection of County Roads 35 and 1.

The Barnhard School, built of local fieldstone in 1939, is on the National

Register of Historic Places. A WPA project, it was designed by

local architect E.O. Broaten in art deco-moderne style. BYWAY SITE D Phelps Mill National

Location: On County Road 45, halfway between Fergus Falls and Pelican Rapids.

Historic District

The three-story mill, built in 1889, was powered by two 7,000-pound turbines. It produced between 60 and 75 barrels of flour daily, making Otter Tail County the largest flour-producing area west of Minneapolis at that time. Inside



the mill, visitors can enjoy the self-guided tour and video. Cross the street and shop at the mill's historic general store.

Visit www.co.otter-tail.mn.us/phelpsmill or call (218) 826-6159 for more information.

The Phelps Mill Festival, held every year during the second weekend in July, offers high quality art in a variety of mediums. In addition to shopping, the festival features great entertainment on the main stage and around the grounds each day.

Visit www.PhelpsMillFestival.com for more information.

BYWAY SITE (E)

Maine Stagecoach Stop

Location: At the intersection of County Roads 45 and 74, between Fergus Falls and Perham.

In 1889, after brief stints as a school teacher and store clerk, W.L. Wilson launched his new store and stagecoach stop here, halfway between Fergus Falls and Perham. The 45-mile trip took a day each way. Widely known as a generous man, Wilson often "carried over" lines of credit for settlers during lean years until the next crop was harvested.



Churches & Cemeteries

Location: Central Lutheran Church, south of Pelican Rapids off Highway 59 on County Road 3.

Scores of picturesque churches are tucked among the hills and lakes of Otter Tail County. Though simple in design, they symbolize the faith, community and tradition of the early settlers. Along with the many churches, some 240 cemeteries also dot the landscape.

BYWAY SITE G

Pelican Rapids: The Immigrant Story

Location: The parking lot on the northeast corner of State Highways 59 and 108, facing Pelican Pete, the World's Largest Pelican.

In 1868, two employees of the British Northwest Company, while working to establish trading posts with the Ojibwa, discovered these rapids and spread the word to the cities of St. Cloud and St. Paul. Hearing the



news, a young Swedish immigrant named John M. Johnson set out on the Red River Oxcart Trail and became the first settler to file a claim in Pelican Township. Ten years later, one of the area's most industrious immigrants arrived. R. L. Frazee not only built a flour mill, bank, hardware store and post office, he also hired men to change the natural

Today, Pelican Rapids annually celebrates the Pelican Fest, recognizing the new wave of settlers from Eastern Europe, Central America, Mexico, Africa and Asia.

On the north end of town, between State Highway 59 and Hwy 9 is the Township Historical Monument. Constructed of split fieldstone with inset bronze plaques the monument memorializes the early history of these communities and was dedicated on September 22, 1946.

Another historic marker just north of town on State Highway 59 identifies Pelican Rapids' earliest immigrant, "Minnesota Woman." Her skeleton was discovered in 1931 and is believed to be 10,000 years old.

BYWAY SITE H **Maplewood State Park**

Location: East of Pelican Rapids on State Highway 108.

This beautiful and scenic 9,200 acre park is nestled between the state's eastern forests and western prairies. Autumn brings a stunning display of brilliant reds, oranges and



gold to these rolling maple Maplewood State Park

lakes and many ponds offer water lovers places to swim, fish, boat and simply relax. A wide variety of fishing opportunities are available. The park offers a beautiful picnic shelter along with a sandy swimming beach along the shore of Lake Lida.

Drive along the 4.5 mile scenic Park Drive to observe wildlife: the park is host to 150 species of birds and 50 species of mammals. An extensive trail system offers 25 miles of hiking and 20 miles of horse-back riding trails. Cross-country skiers and snowmobilers find excellent trail opportunities during the winter. The park also offers several camping areas with a wide variety of camping facilities. A Trail Center has information on watchable wildlife, archeological sites and interpretive trails.

Visit www.dnr.state.mn.us/maplewood or call 218-863-8383 for more information.



Dent

Location: At the intersection of State Highway 108 and

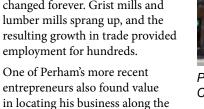
Platted in 1903, Dent grew as a major wood shipping center. Heavy timber, interspersed with farms, covered most of the area. Much of the open land you see today was cleared as Dent was coming of age. Pay for grubbing (removing) stumps

In the early years, Dent was a thriving village with a lumber yard, creamery, feed mill, restaurants, railway station and a busy barrel factory.

BYWAY SITE

Perham: Railroads and Industry

Before the arrival of the railroad, it took nearly 14 days in two-wheeled oxcarts to travel from Perham to St. Cloud, the nearest railroad town. When the Northern Pacific Railway laid tracks through Perham in 1871, the city's economic future changed forever. Grist mills and lumber mills sprang up, and the resulting growth in trade provided employment for hundreds.



Chamber of Commerce

railroad line. In 1947 "Tuffy" Nelson launched Pine Lakes Feed Co., which grew into the highly successful Tuffy's Pet Foods. Tuffy and his son Kenny founded the Barrel O'Fun snack food company in 1973 and Kenny's Candy in 1987.

In Their Own Words museum is a Veteran's Museum that invites visitors to experience the memories and events of those who were there. Today, Perham is a thriving economic community with specialty shops, restaurants, tranquil lakes, pristine golf courses, a biking trail, abundant wildlife and parks.

SIDE TRIP 2

New York Mills: Regional Cultural Center/Finn Creek **Open Air Museum**

Location: Southeast of Perham at the intersection of U.S. Highway 10 and County Road 67.

Located in the 1885 Olaf Pary building, the New York Mills Regional Cultural Center sponsors an on-going schedule of art exhibitions and cultural events including the annual Great American Think Off. Due to the Cultural Center, New York Mills has received national attention as a haven for art and culture in rural Americ

Finn Creek Open Air Museum is patterned after the 1894 farmstead of Sifert and Wilhelmina Tapio. The original site had nine known structures of which the sauna and farmhouse survive. Finn Creek sponsors an annual folk festival which celebrates Finnish culture through food, dance and music.

Visit www.kulcher.org or call 218-385-3339 for more

BYWAY SITE (K)

Ottertail City: Boom & Bust

Location: Halfway between Battle Lake and Perham at the intersection of State Highways 78 and 108.

The term "boom and bust" sums up the colorful history of Ottertail City. It boomed as the headquarters of the Northern Pacific Railway – boasting a population of 1,200, a jail and 27 saloons in its heyday – but busted when local landowners couldn't come to final terms with the railroad, and the tracks were re-routed north to Perham. Ottertail City not only lost the railroad, it also lost the designation of "county seat" not once, but twice.

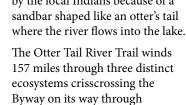
Visit www.VisitOttertail.com or call 218-367-2250

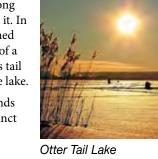
for more information. BYWAY SITE **(**

Otter Tail Lake

Location: Approximately 13 miles south of Perham on the lake side of State Highway 78. Pull into the wayside rest area (not the public boat access) on the west side of the roadway facing Otter Tail Lake.

Abundant wildlife made this area the prime hunting ground of the Ojibwa and Dakota people long before Europeans discovered it. In fact, Otter Tail Lake was named by the local Indians because of a sandbar shaped like an otter's tail





coniferous forests, deciduous forests and prairie grasslands. Along the way, it flows through thirty lakes, the largest of which is its namesake.

Later, enterprising voyageurs and traders established outposts for the biggest trading firms of the time, including the rival Northwest, Astor and Hudson Bay companies. An early fur trader set up a trading post on the lake's eastern shore, now the location of Ottertail City.

Today, Otter Tail Lake, the largest lake of the 1,048 lakes in Otter Tail County, features clear blue water, great fishing and water activity, resorts, restaurants and a golf course.

BYWAY SITE M **Battle Lake**

Location: The picnic/rest area on the west side of State Highway 78, at the foot of the Chief Wenonga roadside statue. This lakeshore is the site of historic battles between Dakota and Anishanabe (Ojibwa) warriors. In 1795, after being badly beaten by a large Dakota war party, the Anishanabe tribe, led

win-ing," meaning "where but few survived." The Prospect House, a Georgian-style "mansion," is a treasure in its own right. The house, which was built in 1882, features

by young Chief Wenonga, renamed the lake "ish-quan-a-de-

a Civil War Museum in the lower level. It is listed on the National Register of Historic Places and has been continually inhabited by descendants of Cap Colehour since its construction.

From Battle Lake, a 12 mile long paved trail passes through

woods and prairie looping through Glendalough State Park and offering striking views of Annie Battle and Molly Stark



lakes along the way.

SIDE TRIP 3

Glendalough State Park

Location: The park entrance is north off county Road 16, 1.8 miles east of State Highway 78.

Nine miles of pristine lakeshore and almost 2,000 acres of woodlands and prairie provide a scenic backdrop for hiking, biking, picnicking, fishing, swimming, snowshoeing, and cross-country skiing. Following a primitive theme, this park offers cart-in and canoe-in tent camping, camper cabins, and yurts alongside Annie Battle Lake, Minnesota's first Heritage Fishery. A paved bike and pedestrian trail loops through the forest and prairie, and the historic lodge recounts Glendalough's past as a private game farm and retreat. Wildlife and wildflowers abound along the park's many hiking trails. Equipment rentals are available.

Visit www.dnr.state.mn.us/glendalough or call



BYWAY SITE N Clitherall

Location: At the roadside pulloff east of County Road 5 on the south side of State Highway 210.

The first permanent white settlers in Otter Tail County were the Cutlerites, a Mormon sect founded by Alpheus Cutler. They established homesteads on Clitherall Lake in 1865 and built the first church and school in the area. The Cutlerites lived as a colony, sharing land, tools and



Photo [#2560] from the collections of the Otter Tail County Historical Society.

BYWAY SITE 0

labor.

Vining Roadside Sculptures

Location: On the south side of State Highway 210 at the "foot" statue in downtown Vining.

This is where you'll find a bare foot weighing 1,200 pounds and standing 12 feet tall, a giant metal coffee cup supported by a stream of pouring coffee, an enormous square knot, a larger than life-sized watermelon slice and other huge roadside figures. It's an outdoor gallery of mammoth metal sculptures along the streets of Vining, created by Ken Nyberg.



Roadside Sculpture in Vining

OTHER ROADSIDE SCULPTURES

Unique roadside attractions and other sculptures can be found at various locations in and near Otter Tail County, including:

Ashby: The Coot

Battle Lake: Chief Wenonga, American Indian Woman

Fergus Falls: Otto the Otter, The Goose, The Working Man, George B. Wright, Joe Whitford, Madison School and the Continental Divide

Frazee: The Giant Turkey

Ottertail: The Otter Pelican Rapids: Pelican Pete

Rothsay: The Giant Prairie Chicken Urbank: The Virgin Mary

Vergas: The Loon

BYWAY SITE (P) **Inspiration Peak**

Location: The entrance is off County Road 38, two miles west of Urbank (follow signs).

Minnesota's Nobel-Prize-winning author Sinclair Lewis praised the "enchanted peace and seclusion of this place." Inspiration Peak



Inspiration Peak, rising 400 feet above the surrounding terrain, is the highest point in central Minnesota. A paved footpath with several rest stops along the way, offers spectacular views of three counties and nine lakes

Visit www.co.otter-tail.mn.us/inspirationpeak for more

BYWAY SITE **Q**

Dalton

Location: The entrance to the Threshermen's Grounds is one block south of the junction of County Roads 35

Wanting to share the colorful history of farming with younger generations, St. Olaf Township brothers George and Ralph Melby and their nephew Kenneth Bratvold organized the first threshermen's reunion in October 1954. Since then, the



Threshing Grounds Photo by Steve Melby

Lake Region Pioneer Threshermen's Association has sponsored a show each September, featuring vintage tractors, threshing machines and exhibits. A number of antique buildings have been reproduced or relocated to the site to create a small historical village.

BYWAY SITE R **Rural Architecture:** Dane Prairie Town Hall

Location: At the northwest corner of the junction of County Roads 120 and 33.

The landscape of Otter Tail County is dotted with graceful farm houses, barns, outbuildings, and abandoned rural school buildings. Organized in 1870 the Dane Prairie Township has more lakes within



Round Barn, Otter Tail County

BYWAY SITE S Prairie Wetlands **Learning Center**

its limits than any other in the county.

Location: 602 State Highway 210 East, between I-94 and County Road 82 on the south side of 210 East.

The Prairie Wetlands Learning Center offers interpretive and educational programs focusing on the prairie pothole region, and is the first residential environmental education center operated by the U.S. Fish and Wildlife Service. Open to the public, this 330 acre site includes 3.5 miles of walking trails, 28 wetlands and acres of restored tallgrass prairie. The Visitor Center includes interactive exhibits, a sod house theater with interpretive videos, and the Bluestem Store which features books and gifts related



Prairie Wetlands Learning Center

to the prairie pothole region.

The Visitor Center is open Monday through Friday from 8 am to 4 pm, and some Saturdays for special programs. The trails are open dawn to dusk daily. Trail maps and program schedules are available in the office and at the information kiosk near the parking lot.

Visit www.fws.gov/refuge/Fergus_Falls_wmd or call 218-998-4480 for more information.

SIDE TRIP 4

Orwell Lake and Dam Wildlife Viewing Area

Location: Six miles southwest of Fergus Falls on County Road 15; the picnic area is on the east side of the roadway between County Roads 114 and 2. Orwell Lake, created by a federal dam, is the

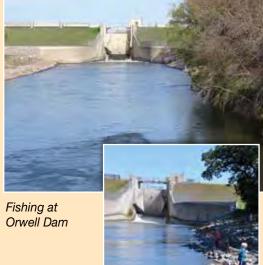
perfect spot for watching wildlife in a natural setting.

The Department of Natural Resources maintains a

2,000-acre wildlife sanctuary adjacent to the lake's recreation areas, providing food and shelter for many animals all year long. Bank fishing is popular at the Orwell Lake recreation

area. The site is equipped with picnic shelters, a

playground and restrooms.



Appendix D

Phase I Archaeological Survey: Perham to Pelican Rapids Regional Trail-Segment 2 - CSAH 34 to TH 108 At Maplewood State Park

PHASE I ARCHAEOLOGICAL SURVEY

PERHAM TO PELICAN RAPIDS REGIONAL TRAIL – SEGMENT 2: CSAH 34 TO TH 108 AT MAPLEWOOD STATE PARK

OTTER TAIL COUNTY, MINNESOTA

SHPO FILE NO.2018-1191

Report Prepared for:

Houston Engineering, Inc. 7550 Meridian Circle North, Suite 120 Maple Grove, MN 55369

James Cummings Principal Investigator McFarlane Consulting LLC 684 Orleans Street

Report Authors:

Saint Paul, MN 55107

Joseph McFarlane and James Cummings Project Report 2019.012 September 2019

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1.0 EXECUTIVE SUMMARY

Otter Tail County plans to construct a multi-use regional trail in Otter Tail County, Minnesota (Exhibit 1). The Perham to Pelican Rapids Regional Trail (Project) began construction of Segment 1 in 2019, adjacent to County State Aid Highway (CSAH) 34 from the City of Perham to the intersection of CSAH 34 and CSAH 35. Additional segments that will be constructed include Segment 2, a 13.9-mile segment of trail between the intersection of CSAH 34 and CSAH 35 and Trunk Highway (TH) 108 at Maplewood State Park and Segment 3. Segment 3 is a 5.5-mile segment of trail between Maplewood State Park and the City of Pelican Rapids (Exhibit 1). The trail segment through Maplewood State Park, connecting Segments 2 and 3, will be constructed by the Minnesota Department of Natural Resources (MN DNR).

In accordance to the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act, the Minnesota State Historic Preservation Office (SHPO) reviewed the proposed project and recommended a Phase Ia archaeological literature review be completed to assess the potential for intact archaeological sites within in the Project area (Exhibit 8).

In March 2019, Otter Tail County completed a Phase Ia archaeological literature review of the entire 19.4-mile corridor for trail Segments 2 and 3. The Phase Ia report recommended Phase I archaeological survey to determine the presence or absence of potentially significant and intact archaeological resources within the project APE (Rufledt, 2019).

In July 2019, Houston Engineering Inc. contracted with McFarlane Consulting LLC to perform a Phase I archaeological survey of the 13.9-mile trail segment at the intersection of CSAH 34/35 to TH 108 at Maplewood State Park. Trail Segment 2 is located within Edna, Dora, and Lida townships in Otter Tail County, Minnesota. The Phase I Archaeological survey was conducted in July 2019.

Phase I Survey Results and Recommendations

The Dora Catholic Cemetery is located on the southeast corner of the 440th street and Co. Hwy 41 intersection in section 15 of Dora Township (Exhibits 2 and 3). The northern border of the cemetery and existing right-of-way limit is approximately 32 feet south of the 440th Street centerline (Exhibit 5.2). The existing 440th street right-of-way is ditched to the cemetery fence. A 25-foot right-of-way acquisition along the south side of 440th street would extend into the Dora Cemetery. Installation of the trail in this area must remain within the graded right-of-way or be moved to the north side of 440th Street. If these recommendations are followed, we propose a finding of "No Adverse Effect".

The remainder of the Project APE was thoroughly examined. The field inspection determined that the Project APE consists of road right-of-way that is typically ditched to a depth of one to three feet and occasionally deeper. Portions of the Project APE that are on the outside edges of the proposed right-of-way acquisition consist of plowed agricultural land, scrub/new growth forest and wetlands. No archaeological materials or surface features were observed. Subsurface testing was conducted to determine the presence or absence of stratigraphically intact soil horizons with the potential to contain intact archaeological deposits. The subsurface test results demonstrate that these areas are unlikely to contain soil horizons suitable for intact archaeological deposits within the Project APE. We propose a finding of "No Properties Affected" for the remainder of the Project APE with the following qualifications:

- The survey was performed only within the project boundaries as defined in this report. If the APE is altered beyond those boundaries, additional testing may be required.
- Standard survey techniques cannot always detect buried features (e.g. pits, graves). If archaeological materials are discovered during construction the immediate discovery area should be avoided until the significance of the find can be assessed.

• If human remains or a suspected burial area is encountered during project operations, activity in the immediate area must cease. The Office of the State Archaeologist and the Otter Tail County Sheriff's office must be contacted for further assistance. The Minnesota's Private Cemeteries Act (307.08) prohibits the intentional disturbance of human burials.

James Cummings Principal Investigator 10/11/2019 Date

2.0 Introduction

Otter Tail County plans to construct a multi-use regional trail in Otter Tail County, Minnesota (Exhibit 1). The Perham to Pelican Rapids Regional Trail (Project) began construction of Segment 1 in 2019, adjacent to County State Aid Highway (CSAH) 34 from the City of Perham to the intersection of CSAH 34 and CSAH 35. Additional segments that will be constructed include Segment 2, a 13.9-mile segment of trail between the intersection of CSAH 34 and CSAH 35 and Trunk Highway (TH) 108 at Maplewood State Park and Segment 3. Segment 3 is a 5.5-mile segment of trail between Maplewood State Park and the City of Pelican Rapids (Exhibit 2). The trail segment through Maplewood State Park, connecting Segments 2 and 3, will be constructed by the Minnesota Department of Natural Resources (MN DNR).

In accordance to the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act, the Minnesota State Historic Preservation Office (SHPO) reviewed the proposed project and recommended a Phase Ia archaeological literature review be completed to assess the potential for intact archaeological sites within in the Project area (Exhibit 8).

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In July 2019, Houston Engineering Inc. contracted with McFarlane Consulting LLC to perform a Phase I archaeological survey of the 13.9-mile trail segment at the intersection of CSAH 34/35 to TH 108 at Maplewood State Park. Trail Segment 2 is located within Edna, Dora, and Lida townships in Otter Tail County, Minnesota. The Phase I Archaeological survey was conducted in July 2019.

3.0 PROJECT INFORMATION

3.1 Area of Potential Effect (APE)

For archaeological purposes, the APE is defined as any area where ground disturbing activities are likely to occur. Ground disturbing activities will be confined to 13.9 miles of trail at the intersection CSAH 34/35 to TH 108 at Maplewood State Park (Exhibits 2 and 3). The construction limits are defined as the existing right-of-way plus 25 feet of proposed right-of-way acquisition along one side of the existing road. The total project APE is approximately 130 acres.

4.0 RESEARCH DESIGN

4.1 Research Objectives

Research objectives were designed to meet survey requirements of the Secretary of the Interior's Standards for Identification and Evaluation, and the Office of the State Archaeologist's (OSA) *State Archaeologist's Manual for Archaeological Projects in Minnesota* (Anfinson 2011). The objectives included:

- Survey all known historic properties within or adjacent to the Project APE.
- Determine the presence or absence of previously unknown historic properties within the Project APE.
- Provide management recommendations to guide Project layout designs to minimize the adverse effects on all, if any, cultural resources within the Project APE.

4.2 Methodology

4.2.1 Background Research and Recommendations

An Archaeological Literature review and assessment of the Perham to Pelican Rapids Trail Project's Area of Potential Effect (APE) was performed in March 2019 (Rufledt, 2019). The Archaeological Literature review and assessment identified seven areas within 150 feet of the proposed Perham to Maplewood State Park trail segment that have a moderate to high potential of containing intact archaeological resources. Four additional areas were identified during the windshield survey that warranted Phase I survey (Table 1, Exhibits 2 and 3).

Table 1	Table 1: Phase 1a Archaeological Assessment and Visual Survey Summary							
ID	Township	Legal Location	Cultural/Temporal Affiliation					
Α	Edna	T136N, R40W, section 16	Moderate to high Precontact archaeological potential					
В	Edna	T136N, R40W, section 17	Moderate to high historic archaeological potential					
С	Edna	T136N, R40W, section 17	Moderate to high historic archaeological potential					
D	Edna	T136N, R40W, section 18	Moderate to high Precontact archaeological potential					
Е	Dora	T136N, R41W, section 12	Weimann Community Cemetery					
F	Dora	T136N, R41W, section 15	Moderate to high Precontact archaeological potential					
G	Dora	T136N, R41W, section 15	Dora Catholic Cemetery					
Н	Dora	T136N, R41W, section 16	Dora Township Town Hall					
I	Dora	T136N, R41W, section 28	Moderate to high Precontact archaeological potential					
J	Lida	T136N, R42W, section 25	Moderate to high Precontact archaeological potential					
K	Lida	T136N, R42W, section 26	Moderate to high historic archaeological potential					
L	Lida	T136N, R42W, section 34	Moderate to high historic archaeological potential					

4.2.2 Field Survey

The general field methodology used during this survey included:

- Windshield survey of entire APE to identify distinguish areas with significant disturbance from areas that do not.
- Pedestrian survey was conducted in all areas identified in the Phase Ia report with moderate to high
 archaeological potential. Pedestrian survey was conducted along parallel transects not more than 5
 meters apart. Significant buffers for landscape features that may indicate earthworks, burial mounds,
 cemeteries, artifacts, features, architectural remains and other evidence of human occupation or
 utilization was included.
- Subsurface testing was used to assess soil integrity and locate buried cultural materials. Testing methods included ¾ inch soil probes and standard shovel tests. Soil probes were used to assess stratigraphic integrity and identify areas with enough stratigraphic integrity to warrant shovel testing. Shovel tests were typically 35 to 40 centimeters (cm) in diameter and were excavated to sterile subsoil. All excavated soil was screened through ¼ inch hardware cloth and examined for artifacts and ecofacts. Soil descriptions, generalized colors and basic stratigraphy were recorded for each test. All test holes were backfilled. Shovel tests were not placed in areas with steep slopes (>10%), or in areas covered with standing water.
- Test locations were recorded with a handheld Delorme GPS unit with +/- 6-foot accuracy.

Field notes were taken documenting landscape, vegetation, surface visibility, subsurface test results, disturbed areas and the presence or absence of cultural materials. The entire APE was photo documented.

5.0 Phase I Survey Results

A windshield survey was conducted of the entire Project APE. The visual survey determined that most of the Project APE is ditched or graded right-of-way with little to no potential of containing intact archaeological deposits. All areas with moderate to high archaeological potential were pedestrian surveyed along transect intervals no greater than 5m apart. Surface visibility ranged from poor to excellent. No cultural materials were observed. Photographs and descriptions were recorded at representative locations of the Project corridor (Exhibits 2 and 3). Sample photographs are presented in Exhibits 4, 5 and 6. Additional project photographs are available upon request.

Portions of the proposed right-of-way acquisition with moderate to high potential warranted subsurface testing. A total of 27 subsurface tests were conducted, all with negative results. The subsurface tests determined that most of the APE lacks the stratigraphic integrity to contain intact archaeological deposits. Survey results for all areas identified as having moderate to high archaeological are presented below.

5.1 Survey Area A

Survey Area A is located on the southwest side of 370th Avenue in Section 16, T136N, R40W (Exhibit 2). The Project APE is approximately 100 feet southwest of Little McDonald Lake, an area with moderate to high Precontact archaeological potential. The existing right-of-way is graded road ditch and the proposed right-of-way acquisition is tilled agricultural field (Exhibit 4.1).

Surface visibility was good between the corn rows and the pedestrian survey was negative. Two shovel tests were placed within the APE, both tests were negative. Test soil profiles determined that the plow-zone cuts directly into subsoil and the immediate area lacks the stratigraphic integrity necessary to contain intact archaeological deposits. Seven soil probes placed at 15-meter intervals along the APE determined that the plow-zone (Ap) is in direct contact with sterile subsoil along the entire Area A corridor. No additional archaeological testing is warranted.

5.2 Survey Area B

Survey Area B is located on the south side of 370th Avenue in Section 17, T136N, R40W (Exhibit 2). The Project APE is considered to have moderate to high historic archaeological potential. The existing right-of-way is graded road ditch which extends into the proposed right-of-way acquisition. The outermost edge of the APE is tilled agricultural field. Surface visibility was poor, and no cultural materials were observed.

Four soil probes placed at 15-meter intervals along the outer edge of APE determined that the plow-zone cuts directly into sterile subsoil lacks the stratigraphic integrity necessary to contain intact archaeological deposits. No additional archaeological testing is warranted.

5.3 Survey Area C

Survey Area C is located on the south side of 370th Avenue in Section 17, T136N, R40W (Exhibit 2). The Project APE is considered to have moderate to high historic archaeological potential. The existing right-of-way is graded road ditch that extends into the proposed right-of-way acquisition (Exhibit 4.2). The outermost edge of the APE is tilled agricultural field. Surface visibility was good between corn rows and no cultural materials were recovered. Subsoil is incorporated into the plow-one demonstrating a lack of stratigraphic integrity. No additional archaeological testing is warranted.

5.4 Survey Area D

Survey Area D is located on the south side of 370th Avenue in Section 18, T136N, R40W (Exhibit 2). The Project APE crosses a small wetland and has moderate to high Precontact archaeological potential. 370th

Avenue crosses the wetland on a raised roadbed. The existing right-of-way consists of fill and graded road ditch that extends beyond the proposed right-of-way acquisition (Exhibit 4.3). No additional archaeological testing is warranted.

5.5 Survey Area E

Survey Area E is located on the south side of 370th Avenue in Section 13, T136N, R41W (Exhibit 2). The Weimann Community Cemetery is on the north side of 370th Avenue and will be avoided. The existing right-of-way is graded road ditch and the proposed right-of-way acquisition is tilled agricultural field (Exhibit 4.4). Surface visibility was good between the corn rows and the pedestrian survey was negative. No additional archaeological testing is warranted.

5.6 Survey Area F

Survey Area F is located on the south side of 440th Street in Section 15, T136N, R41W (Exhibits 2 and 3). The APE is approximately 200 feet north of Berend Lake and has moderate to high Precontact archaeological potential. The existing right-of-way is graded road ditch and the proposed right-of-way acquisition is gently sloped fallow field (Exhibit 5.1). Surface visibility was generally poor but numerous rodent burrows provided good soil exposure. No cultural materials were found during the pedestrian survey. Due to the proposed trail's proximity to Berend Lake, two shovel tests were placed within the APE. Both tests were negative and test profiles identified a plow-zone cutting directly into subsoil. Five soil probes placed at 15-meter intervals determined that the plow-zone cuts into subsoil throughout the APE. Because the APE lacks the stratigraphic integrity to contain intact cultural deposits, no additional archaeological testing is warranted.

5.7 Survey Area G

The Dora Catholic Cemetery is located on the southeast corner of the 440th street and Co. Hwy 41 intersection in section 15 of Dora Township (Exhibits 2 and 3). The northern border of the cemetery and existing right-of-way limit is approximately 32 feet south of the 440th Street centerline (Exhibit 5.2). The existing 440th street right-of-way is ditched to the cemetery fence. A 25-foot right-of-way acquisition along the south side of 440th street would extend into the Dora Cemetery. We recommend that the proposed trail be moved to the north side of 440th Street to avoid the cemetery.

The Co. Hwy 41 centerline is approximately 69 feet west of the Dora Cemetery (Exhibit 5.3). The existing Co Hwy 41 right-of-way ditch is approximately 50 feet wide and a 20-foot wide cemetery parking area is between the ditch and the cemetery fence. The cemetery will be avoided if the proposed trail remains within the existing Co. Hwy 41 right-of-way.

5.8 Survey Area H

Survey Area H is located on the west side of Co. Rd. 41 in Section 16, T136N, R41W (Exhibits 2 and 3). The Project APE has moderate to high historic archaeological potential. The existing right-of-way is graded road ditch that extends beyond the proposed right-of-way acquisition (Exhibit 5.4). No additional archaeological testing is warranted.

5.9 Survey Area I

Survey Area I is located on the south side of Co. Rd. 41 in Section 28, T136N, R41W (Exhibit 3). The Project APE is approximately 150 feet south of an unnamed 30-acre body of water and has moderate to high Precontact archaeological potential. The existing right-of-way is graded road ditch that extends beyond most of the proposed right-of-way acquisition (Exhibit 6.1). The outer edge of the APE contains patches of scrub and new growth forest. Pedestrian survey was negative. Three soil probes placed within the APE identified disturbed soils in direct contact with subsoil. No additional archaeological testing is warranted.

5.10 Survey Area J

Survey Area J is located on the south side of 268th Avenue in Section 25, T136N, R42W (Exhibit 3). The Project APE is approximately 100 feet south of Beinigen Lake and has moderate to high Precontact archaeological potential. The existing right-of-way is graded road ditch that extends into the proposed right-of-way acquisition (Exhibit 6.2). The outer edge of the APE contains patches of scrub and new growth forest. Pedestrian survey within the wooded portions of the APE was negative. Two soil probes placed within the outer edges of the APE identified disturbed soils in direct contact with subsoil. No additional archaeological testing is warranted.

5.11 Survey Area K

Survey Area K is located on the west side of 200th Avenue/415th Street in Section 26, T136N, R42W (Exhibit 3). The Project APE is considered to have moderate to high historic archaeological potential. The existing right-of-way is graded road ditch that extends beyond the proposed right-of-way acquisition (Exhibit 6.3). No additional archaeological testing is warranted.

5.12 Survey Area L

Survey Area L is located on the west side of 200th Avenue/415th Street in Section 34, T136N, R42W (Exhibit 3). The Project APE is approximately 150 feet west of Slim Lake and has moderate to high Precontact archaeological potential. The existing right-of-way is graded road ditch that extends into the proposed right-of-way acquisition (Exhibit 6.4). The outermost edge of the APE is tilled agricultural field. The cover crop was alfalfa with poor soil exposure. Three soil probes placed within the outer edges of the APE identified disturbed soils in direct contact with subsoil. No additional archaeological testing is warranted.

6.0 CONCLUSION

Phase I Survey Results and Recommendations

The Dora Catholic Cemetery is located on the southeast corner of the 440th street and Co. Hwy 41 intersection in section 15 of Dora Township (Exhibits 2 and 3). The northern border of the cemetery and existing right-of-way limit is approximately 32 feet south of the 440th Street centerline (Exhibit 5.2). The existing 440th street right-of-way is ditched to the cemetery fence. A 25-foot right-of-way acquisition along the south side of 440th street would extend into the Dora Cemetery. Installation of the trail in this area must remain within the graded right-of-way or be moved to the north side of 440th Street. If these recommendations are followed, we propose a finding of "No Adverse Effect".

The remainder of the Project APE was thoroughly examined. The field inspection determined that the Project APE consists of road right-of-way that is typically ditched to a depth of one to three feet and occasionally deeper. Portions of the Project APE that are on the outside edges of the proposed right-of-way acquisition consist of plowed agricultural land, scrub/new growth forest and wetlands. No archaeological materials or surface features were observed. Subsurface testing was conducted to determine the presence or absence of stratigraphically intact soil horizons with the potential to contain intact archaeological deposits. The subsurface test results demonstrate that these areas are unlikely to contain soil horizons suitable for intact archaeological deposits within the Project APE. We propose a finding of "No Properties Affected" with the following qualifications:

- The survey was performed only within the project boundaries as defined in this report. If the APE is altered beyond those boundaries, additional testing may be required.
- Standard survey techniques cannot always detect buried features (e.g. pits, graves). If archaeological
 materials are discovered during construction the immediate discovery area should be avoided until the
 significance of the find can be assessed.
- If human remains or a suspected burial area is encountered during project operations, activity in the immediate area must cease. The Office of the State Archaeologist and the Ottertail County Sheriff's office must be contacted for further assistance. The Minnesota's Private Cemeteries Act (307.08) prohibits the intentional disturbance of human burials.

7.0 REFERENCES

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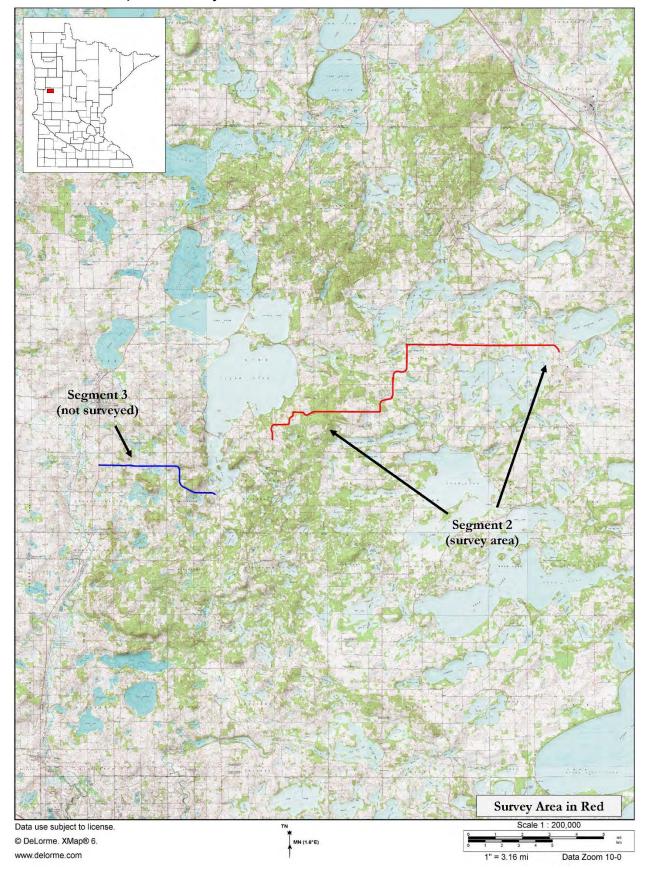
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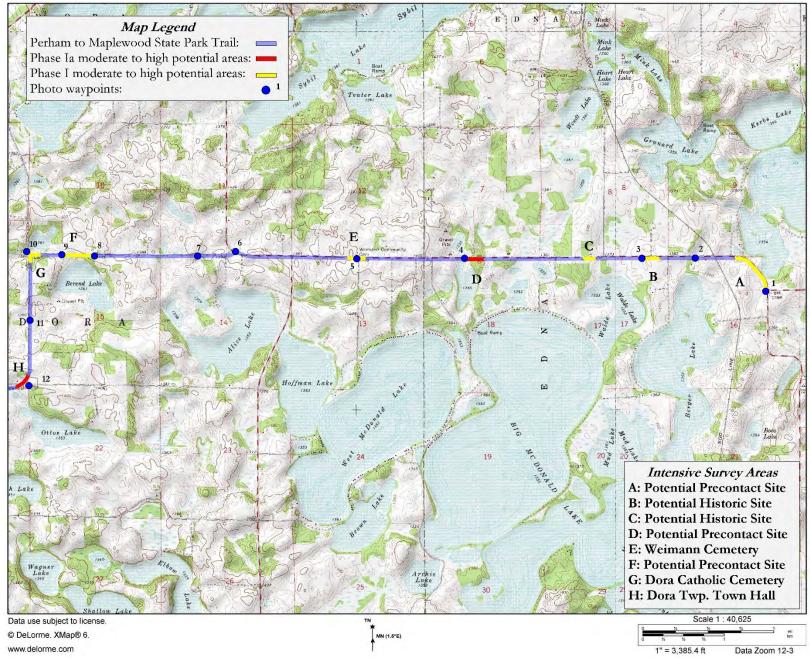
2016 General Land Office Records. <u>www.glorecords.blm.gov</u> Bureau of Land Management, Washington D.C.

8.0 EXHIBITS

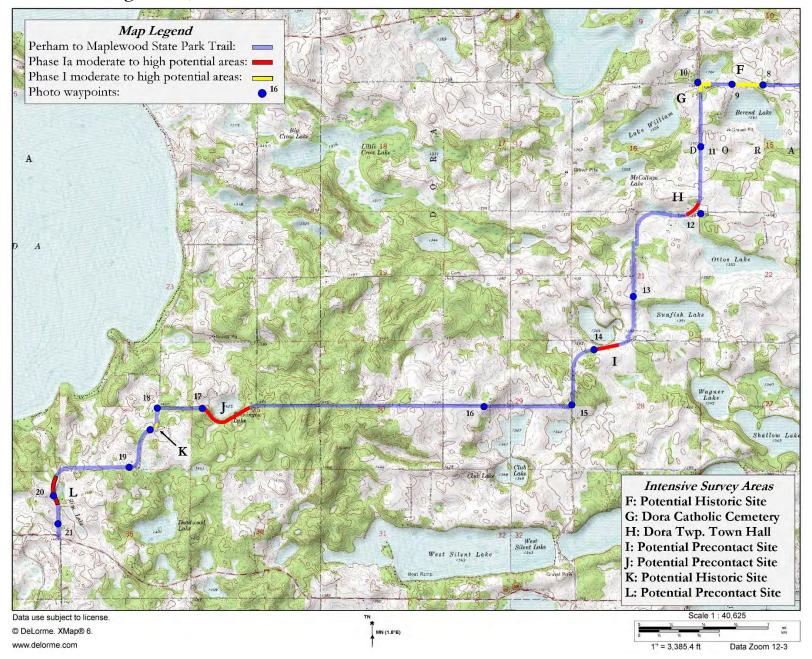
8.1 Exhibit 1: Project Vicinity



8.2 Exhibit 2: Trail Segment 2, East



8.3 Exhibit 3: Trail Segment 2, West



8.4 Exhibit 4: Project Photographs of Survey Areas A though E



4.1: Survey conditions at area A, facing north (Wpt-1).



4.2: Survey conditions at area B, facing east (wpt-3).



4.3: Survey conditions at area D, facing east (Wpt-4).



4.4: Survey conditions at area E, facing west (Wpt-5).

8.5 Exhibit 5: Project Photographs of Survey Areas F through H



5.1: Survey conditions at area F, facing east (Wpt-9).



5.2: Survey conditions at area G, facing east (Wpt-10).



5.3: Survey conditions at area G, facing south (Wpt-10).



5.4: Survey conditions at area H, facing west (Wpt-12).

8.6 Exhibit 6: Project Photographs of Survey Areas I through L



6.1: Survey conditions at area I, facing east (Wpt-14).



6.2: Survey conditions at area J, facing southeast (Wpt-17).



6.3: Survey conditions at area K, facing north (Wpt-19).



6.4: Survey conditions at area L, facing north (Wpt-12).

8.7 Exhibit 7: Subsurface Test Results

		SHOVEL TEST RESULTS		1	
Survey ID	Test	Soil Profile	Date	Comments	Crew
A	ST-1	0-10cm: light grey-brown sandy loam with gravel (Ap) 10-33cm: light brown loam sand with gravel 33-40cm: yellow brown silt sand, oxidized & mineral stained	07/22/19	Ap in sharp contact with subsoil	JM
A	ST-2	0-18cm: light grey-brown sandy loam with gravel (Ap) 18-30cm: light brown loam sand with gravel 30-40cm: yellow brown silt sand, oxidized & mineral stained	07/22/19	Ap in sharp contact with subsoil	JM
F	ST-1	0-21cm: grey brown sandy loam (Ap) 21-28cm: brown sandy loam 26-45cm: yellow brown silt sand, oxidized & mineral stained	07/22/19	Ap in sharp contact with subsoil	JM
F	ST-2	0-23cm: grey brown sandy loam (Ap) 23-32cm: brown sandy loam 32-45cm: yellow brown silt sand, oxidized & mineral stained	07/22/19	Ap in sharp contact with subsoil	JM
	070.4	SOIL PROBE RESULTS	1 = /== /+=	1	** *
A	SP-1	0-14cm: light grey-brown sandy loam with gravel (Ap) 14-30cm: light brown loam sand with gravel 30-66cm: yellow brown silt sand, oxidized & mineral stained	07/22/19	Ap in sharp contact with subsoil	JM
A	SP-2	0-10cm: light grey-brown sandy loam with gravel (Ap) 10-34cm: light brown loam sand with gravel	07/22/19	Ap in sharp contact with subsoil	JM
A	SP-3	0-10cm: light grey-brown sandy loam with gravel (Ap) 10-34cm: light brown loam sand with gravel	07/22/19	Ap in sharp contact with subsoil	JM
A	SP-4	0-8cm: light grey-brown sandy loam with gravel (Ap) 8-34cm: light brown loam sand with gravel	07/22/19	Ap in sharp contact with subsoil	JM
A	SP-5	0-16cm: light grey-brown sandy loam with gravel (Ap) 16-34cm: light brown loam sand with gravel	07/22/19	Ap in sharp contact with subsoil	JM
A	SP-6	0-18cm: light grey-brown sandy loam with gravel (Ap) 18-34cm: light brown loam sand with gravel	07/22/19	Ap in sharp contact with subsoil	JM
A	SP-7	0-20cm: light grey-brown sandy loam with gravel (Ap) 20-34cm: light brown loam sand with gravel	07/22/19	Ap in sharp contact with subsoil	JM
В	SP-1	0-22cm: light grey-brown sandy loam (Ap) 22-30cm: light brown loam sand, mineral staining 30-34Cm: yellow brown silt sand, oxidized & mineral stained	07/22/19	Ap in sharp contact with subsoil	JM
В	SP-2	0-18cm: light grey-brown sandy loam with gravel (Ap) 18-34cm: light brown loam sand with gravel	07/22/19	Ap in sharp contact with subsoil	JM
В	SP-3	0-18cm: light grey-brown sandy loam with gravel (Ap) 18-34cm: light brown loam sand with gravel	07/22/19	Ap in sharp contact with subsoil	JM
В	SP-4	0-20cm: light grey-brown sandy loam with gravel (Ap)	07/22/19	Ap in sharp contact with	JM
F	SP-1	20-34cm: light brown loam sand with gravel 0-19cm: grey brown sandy loam (Ap) 19-26cm: brown sandy loam 26-45cm: yellow brown silt sand, oxidized & mineral stained	07/22/19	subsoil Ap in sharp contact with subsoil	JM
F	SP-2	0-21cm: grey brown sandy loam (Ap) 21-28cm: brown sandy loam 26-45cm: yellow brown silt sand, oxidized & mineral stained	07/22/19	Ap in sharp contact with subsoil	JM
F	SP-3	0-23cm: grey brown sandy loam (Ap) 23-32cm: brown sandy loam 32-45cm: yellow brown silt sand, oxidized & mineral stained	07/22/19	Ap in sharp contact with subsoil	JM
F	SP-4	0-20cm: grey brown sandy loam (Ap) 20-28cm: brown sandy loam 28-45cm: yellow brown silt sand, oxidized & mineral stained	07/22/19	Ap in sharp contact with subsoil	JM
F	SP-5	0-19cm: grey brown sandy loam (Ap) 19-26cm: brown sandy loam 26-45cm: yellow brown silt sand, oxidized & mineral stained	07/22/19	Ap in sharp contact with subsoil	JM
I	SP-1	0-16cm: light grey brown sandy loam, disturbed 16-24cm: light brown loam sand mottled with silt lenses 24-40cm: light brown silt sand, oxidized	7/23/19	Disturbed topsoil in sharp contact with subsoil	JM
I	SP-2	0-18cm: light grey brown sandy loam, disturbed 18-36cm: light brown silt sand, oxidized	7/23/19	Disturbed to subsoil	JM
I	SP-3	0-22cm: light grey brown sandy loam disturbed 22-36cm: light brown silt sand, oxidized	7/23/19	Disturbed to subsoil	JM
J	SP-1	0-28cm: grey brown loam sand, disturbed	7/23/19	disturbed	JM
J	SP-2	28-35cm: olive brown mottled silt with iron staining 0-34cm: grey brown loam sand, disturbed 34.40cm; olive brown mottled silt with iron staining	7/23/19	disturbed	JM
L	SP-1	34-40cm: olive brown mottled silt with iron staining 0-18cm: light grey-brown sandy loam with some gravel (Ap)	7/23/19	Ap in sharp contact with	JM
L	SP-2	18-34cm: light brown loam sand with gravel 0-22cm: light grey-brown sandy loam with gravel (Ap)	7/23/19	subsoil Ap in sharp contact with	JM
L	SP-3	22-34cm: light brown loam sand with gravel 0-20cm: light grey-brown sandy loam with gravel (Ap)	7/23/19	subsoil Ap in sharp contact with	JM
		20-34cm: light brown loam sand with gravel		subsoil	,

8.8 Exhibit 7: SHPO Letter



March 15, 2018

Ms. Nicole Zappetillo SRF Consulting Group One Carlson Parkway North, Suite 150 Minneapolis, MN 55447-4443

RE: Perham to Pelican Rapids Regional Trail - Phase 3, Right of Way Acquisition

Otter Tail County SHPO Number: 2018-1191

Dear Ms. Zappetillo:

Thank you for the opportunity to comment on the above project. It is being reviewed pursuant to the responsibilities given the State Historic Preservation Office by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

Due to the nature and location of the proposed project, we recommend that a Phase IA literature review and archaeological assessment be completed to assess the potential for intact archaeological sites in the project area. If, as a result of this assessment, a Phase I archaeological survey is recommended, this survey should be completed. The survey must meet the requirements of the Secretary of the Interior's Standards for Identification and Evaluation, and should include an evaluation of National Register eligibility for any properties that are identified. If there are any properties listed in the National or State Registers of Historic Places that are identified within or adjacent to the project area, an assessment of effect on these properties should be completed.

For a list of consultants who have expressed an interest in undertaking this type of research and archaeological surveys, please visit the website http://www.mnhs.org/shpo/preservation-directory, and select "Archaeologists, Contract" in the "Specialties" box.

We will reconsider the need for survey if the project area can be documented as previously surveyed or disturbed. Any previous survey work must meet contemporary standards. **Note**: plowed areas and right-of-way are not automatically considered disturbed. Archaeological sites can remain intact beneath the plow zone and in undisturbed portions of the right-of-way.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36 CFR § 800. If this project is considered for federal financial assistance, or requires a federal permit or license, then review and consultation with our office will need to be initiated by the lead federal agency. Be advised that comments and recommendations provided by our office for this state-level review may differ from findings and determinations made by the federal agency as part of review and consultation under Section 106.

If you have any questions regarding our review of this project, please contact our Environmental Review Section at (651) 201-3285.

Sincerely,

Sarah J. Beimers

Environmental Review Manager

Sarang. Banners

Department of Administration
203 Administration Building, 50 Sherburne Avenue, Saint Paul, MN 55155
651-201-3287 | MNSHPO@state.mn.us | mn.gov/admin/shpo

Appendix E

Phase I Archaeological Survey: Perham to Pelican Rapids Regional Trail-Segment 3 - Maplewood State Park to Pelican Rapids

PHASE I ARCHAEOLOGICAL SURVEY

PERHAM TO PELICAN RAPIDS REGIONAL TRAIL – SEGMENT 3: Maplewood State Park to Pelican Rapids

OTTER TAIL COUNTY, MINNESOTA

SHPO FILE NO.2018-1191

Report Prepared for:

Houston Engineering, Inc.

7550 Meridian Circle North, Suite 120

Maple Grove, MN 55369

James Cummings

Principal Investigator

McFarlane Consulting LLC

684 Orleans Street

Saint Paul, MN 55107

Report Authors:

Joseph McFarlane and James Cummings

Project Report 2019.012B

May 2020

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Executive Summary

Otter Tail County plans to construct a multi-use regional trail in Otter Tail County, Minnesota (Exhibit 1). The Perham to Pelican Rapids Regional Trail (Project) began construction of Segment 1 in 2019, adjacent to County State Aid Highway (CSAH) 34 from the City of Perham to the intersection of CSAH 34 and CSAH 35. Additional segments that will be constructed include Segment 2, a 13.9-mile segment of trail between the intersection of CSAH 34 and CSAH 35 and Trunk Highway (TH) 108 at Maplewood State Park and Segment 3. Segment 3 is a 6.5-mile segment of trail between Maplewood State Park and the City of Pelican Rapids (Exhibit 2). The trail segment through Maplewood State Park, connecting Segments 2 and 3, will be constructed by the Minnesota Department of Natural Resources (MN DNR).

In accordance to the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act, the Minnesota State Historic Preservation Office (SHPO) reviewed the proposed project and recommended a Phase Ia archaeological literature review be completed to assess the potential for intact archaeological sites within in the Project area (Exhibit 8).

In March 2019, Otter Tail County completed a Phase Ia archaeological literature review of the entire 19.4-mile corridor for trail Segments 2 and 3. The Phase Ia report recommended Phase I archaeological survey to determine the presence or absence of potentially significant and intact archaeological resources within the project APE (Rufledt, 2019).

In July 2019, Phase I archaeological survey was completed for Segment 2. Segment 2 survey results and recommendations are presented in *Perham to Pelican Rapids Regional Trail-Segment 2: CSAH 34 to TH 108 at Maplewood State* Park (McFarlane, 2019).

In May 2020, McFarlane Consulting LLC completed the Phase I archaeological survey of Segment 3. The survey was conducted by Joseph McFarlane under the direct supervision of Principal Investigator James Cummings.

Segment 3 Phase I Survey Results and Recommendations

The Segment 3 Project APE was thoroughly examined. The field inspection determined that the Project APE consists of road right-of-way that is typically ditched to a depth of one to three feet and occasionally deeper. Portions of the Project APE that are on the outside edges of the proposed right-of-way acquisition consist of plowed agricultural land, scrub/new growth forest and wetlands. No archaeological materials or surface features were observed. Subsurface testing was conducted to determine the presence or absence of stratigraphically intact soil horizons with the potential to contain intact archaeological deposits. The subsurface test results demonstrate that these areas are unlikely to contain soil horizons suitable for intact archaeological deposits within the Project APE. We propose a finding of "No Properties Affected" with the following qualifications:

- 1. The survey was performed only within the project boundaries as defined in this report. If the APE is altered beyond those boundaries, additional testing may be required.
- 2. Standard survey techniques cannot always detect buried features (e.g. pits, graves). If archaeological materials are discovered during construction the immediate discovery area should be avoided until the significance of the find can be assessed.
- 3. If human remains or a suspected burial area is encountered during project operations, activity in the immediate area must cease. The Office of the State Archaeologist and the Ottertail County Sheriff's office must be contacted for further assistance. The Minnesota's Private Cemeteries Act (307.08) prohibits the intentional disturbance of human burials.

James Cummings

Principal Investigator

5/28/2020

Date

Introduction

Otter Tail County plans to construct a multi-use regional trail in Otter Tail County, Minnesota (Exhibit 1). The Perham to Pelican Rapids Regional Trail (Project) began construction of Segment 1 in 2019, adjacent to County State Aid Highway (CSAH) 34 from the City of Perham to the intersection of CSAH 34 and CSAH 35. Additional segments that will be constructed include Segment 2, a 13.9-mile segment of trail between the intersection of CSAH 34 and CSAH 35 and Trunk Highway (TH) 108 at Maplewood State Park and Segment 3. Segment 3 is a 6.5-mile segment of trail between Maplewood State Park and the City of Pelican Rapids (Exhibit 2). The trail segment through Maplewood State Park, connecting Segments 2 and 3, will be constructed by the Minnesota Department of Natural Resources (MN DNR).

In accordance to the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act, the Minnesota State Historic Preservation Office (SHPO) reviewed the proposed project and recommended a Phase Ia archaeological literature review be completed to assess the potential for intact archaeological sites within in the Project area (Exhibit 8).

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In July 2019, McFarlane Consulting LLC conducted a Phase I archaeological survey of Segment 2, the 13.9-mile trail segment at the intersection of CSAH 34/35 to TH 108 at Maplewood State Park. Trail Segment 2 is located within Edna, Dora, and Lida townships in Otter Tail County, Minnesota. The Phase I Archaeological survey results and recommendations are presented in *Perham to Pelican Rapids Regional Trail-Segment 2: CSAH 34 to TH 108 at Maplewood State* Park (McFarlane, 2019).

In May 2020, McFarlane Consulting LLC conducted the Phase I archaeological survey of Segment 3. The survey was conducted by Joseph McFarlane under the direct supervision of Principal Investigator James Cummings.

Project Information

Area of Potential Effect (APE)

For archaeological purposes, the APE is defined as any area where ground disturbing activities are likely to occur. Ground disturbing activities will be confined to 6.5 miles of trail from the intersection of Ottertail Co Rd 3 and Isle View Drive at Maplewood State Park to the southern city limits of Pelican Rapids on US 59 (Exhibits 2 and 3). The construction limits are defined as the existing right-of-way plus proposed right-of-way acquisition along the north side of the Ottertail Co 3, and the existing right-of-way plus proposed right-of-way acquisition along the east side of US 59 (Exhibits 2 and 3). The total project APE is approximately 56 acres.

Research Design

Research Objectives

Research objectives were designed to meet survey requirements of the Secretary of the Interior's Standards for Identification and Evaluation, and the Office of the State Archaeologist's (OSA) *State Archaeologist's Manual for Archaeological Projects in Minnesota* (Anfinson 2011). The objectives included:

1. Survey all known historic properties within or adjacent to the Project APE.

- 2. Determine the presence or absence of previously unknown historic properties within the Project APE.
- 3. Provide management recommendations to guide Project layout designs to minimize the adverse effects on all, if any, cultural resources within the Project APE.

Methodology

Background Research and Recommendations

An Archaeological Literature review and assessment of the Perham to Pelican Rapids Trail Project's Area of Potential Effect (APE) was performed in March 2019 (Rufledt, 2019). The Archaeological Literature review identified two archaeological sites within one mile of the segment 3 APE. Four areas additional areas were identified within 200 feet of segment 3 that have a moderate to high potential of containing intact archaeological/historic resources (Table 1, Exhibit 2).

Table 1: Phase 1a	Archaeological Assessmo	ent and Visual Survey Summary	
Site Number	Distance from APE	Site Name-Context	
21OT0037	3965′ @ 33º	Precontact artifact scatter.	T135N, R42W, section 4
21OT0038	1 mile @ 13º	Precontact lithic scatter.	T135N, R42W, section 4 & 5
Α	130′ @ 180º	Central Lutheran Cemetery	T135N, R43W, section 1
В	Within APE	moderate to high potential	T135N, R43W, section 2
С	Within APE	moderate to high potential	T135N, R42W, section 6 & 7
D	Within APE	moderate to high potential	T135N, R42W, section 8
E	1120′ @ 180º	Lake Lida Cemetery	T135N, R42W, section 8

Field Survey

The general field methodology used during this survey included:

- 1. Windshield survey of entire APE to identify distinguish areas with significant disturbance from areas that do not.
- 2. Pedestrian survey was conducted in all areas identified in the Phase Ia report with moderate to high archaeological potential. Pedestrian survey was conducted along parallel transects not more than 5 meters apart. Significant buffers for landscape features that may indicate earthworks, burial mounds, cemeteries, artifacts, features, architectural remains and other evidence of human occupation or utilization was included.
- 3. Subsurface testing was used to assess soil integrity and locate buried cultural materials. Testing methods included ¾ inch soil probes and standard shovel tests. Soil probes were used to assess stratigraphic integrity and identify areas with enough stratigraphic integrity to warrant shovel testing. Shovel tests were typically 35 to 40 centimeters (cm) in diameter and were excavated to sterile subsoil. All excavated soil was screened through ¼ inch hardware cloth and examined for artifacts and ecofacts. Soil descriptions, generalized colors and basic stratigraphy were recorded for each test. All test holes were backfilled. Shovel tests were not placed in areas with steep slopes (>10%), or in areas covered with standing water.

4. Test locations were recorded with a handheld Delorme GPS unit with +/- 6-foot accuracy.

Field notes were taken documenting landscape, vegetation, surface visibility, subsurface test results, disturbed areas and the presence or absence of cultural materials. The entire APE was photo documented.

Phase I Survey Results

A windshield survey was conducted of the entire Project APE. The visual survey determined that most of the Project APE is ditched or graded right-of-way with little to no potential of containing intact archaeological deposits. All areas with greater than 30% soil exposure were pedestrian surveyed along transect intervals no greater than 5m apart. No cultural materials were observed.

Portions of the proposed right-of-way acquisition warranted subsurface testing. A total of 28 subsurface tests were conducted. The subsurface tests determined that most of the APE lacks the stratigraphic integrity to contain intact archaeological deposits (Exhibit 7). Survey results for all areas identified as having moderate to high archaeological are presented below.

Photographs and descriptions were recorded at representative locations of the Project corridor. Sample photographs are presented in Exhibits 4, 5 and 6. Additional project photographs are available upon request. Survey results for all areas identified as having moderate to high archaeological within 200 feet of the segment 3 APE are presented below.

Survey Area A: Central Lutheran Church and Cemetery

Central Lutheran Cemetery is located on the south side of Ottertail Co. Rd. 3 in Section 1, T135N, R43W (Exhibit 2). The Project APE is approximately 130 feet north of the cemetery on the north side of Ottertail Co. Rd. 3. (Exhibit 4.1). Surface visibility was greater than 30% and the pedestrian survey was negative. The Central Lutheran Cemetery will be avoided and a finding of "No Properties Affected" is recommended.

Survey Area B

Survey Area B is located on both sides of Ottertail Co. Rd. 3 in Section 2, T135N, R43W, and is considered to have moderate to high historic archaeological potential (Exhibit 2). No right-of-way acquisition is proposed in Survey Area B and the trail will be confined to the existing right-of-way. The existing right-of-way is graded road ditch and wetlands (Exhibit 4.2). Four subsurface tests were placed with the highest ground. The subsurface tests determined that most of the APE lacks the stratigraphic integrity to contain intact archaeological deposits and no additional archaeological testing is warranted.

Survey Area C

Survey Area C is located on both sides of Ottertail Co. Rd. 3 in Sections 6 and 7, T135N, R42W, and is considered to have moderate to high historic archaeological potential (Exhibit 2). No right-of-way acquisition is proposed in Survey Area C and the trail will be confined to the existing right-of-way. The existing right-of-way is graded road ditch and landscaped (Exhibits 4.3 and 4.4). A private driveway will be crossed by the proposed trail. The entire segment 3 APE lacks the stratigraphic integrity necessary to contain intact archaeological deposits and no additional archaeological testing is warranted.

Survey Area D

Survey Area D is located on both sides of Ottertail Co. Rd. 3 in Section 8, T135N, R42W (Exhibit 2). The segment 3 APE is adjacent to Lake Lida and has moderate to high Precontact archaeological potential. No right-of-way

acquisition is proposed in Survey Area C and the trail will be confined to the existing right-of-way. The existing right-of-way consists of fill and graded road ditch that extends beyond the proposed right-of-way acquisition (Exhibits 5.1 and 5.2). No additional archaeological testing is warranted.

Conclusion

Segment 3 Phase I Survey Results and Recommendations

The Segment 3 Project APE was thoroughly examined. The field inspection determined that the Project APE consists of road right-of-way that is typically ditched to a depth of one to three feet and occasionally deeper. Portions of the Project APE that are on the outside edges of the proposed right-of-way acquisition consist of plowed agricultural land, scrub/new growth forest and wetlands. No archaeological materials or surface features were observed. Subsurface testing was conducted to determine the presence or absence of stratigraphically intact soil horizons with the potential to contain intact archaeological deposits. The subsurface test results demonstrate that these areas are unlikely to contain soil horizons suitable for intact archaeological deposits within the Project APE. We propose a finding of "No Properties Affected" with the following qualifications:

- 1. The survey was performed only within the project boundaries as defined in this report. If the APE is altered beyond those boundaries, additional testing may be required.
- 2. Standard survey techniques cannot always detect buried features (e.g. pits, graves). If archaeological materials are discovered during construction the immediate discovery area should be avoided until the significance of the find can be assessed.
- 3. If human remains or a suspected burial area is encountered during project operations, activity in the immediate area must cease. The Office of the State Archaeologist and the Ottertail County Sheriff's office must be contacted for further assistance. The Minnesota's Private Cemeteries Act (307.08) prohibits the intentional disturbance of human burials.

References

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2011 State Archaeologist's Manual for Archaeological Projects in Minnesota. Office of the State Archaeologist, Ft. Snelling.

Farm Service Agency

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2019 Archaeological Literature Review and Assessment for the Perham to Pelican Rapids Trail Project. SRF Project No. 1103.000. 106 Group, Minneapolis.

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U. S. Department of the Interior.

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Exhibits

Exhibit 1: Project Vicinity

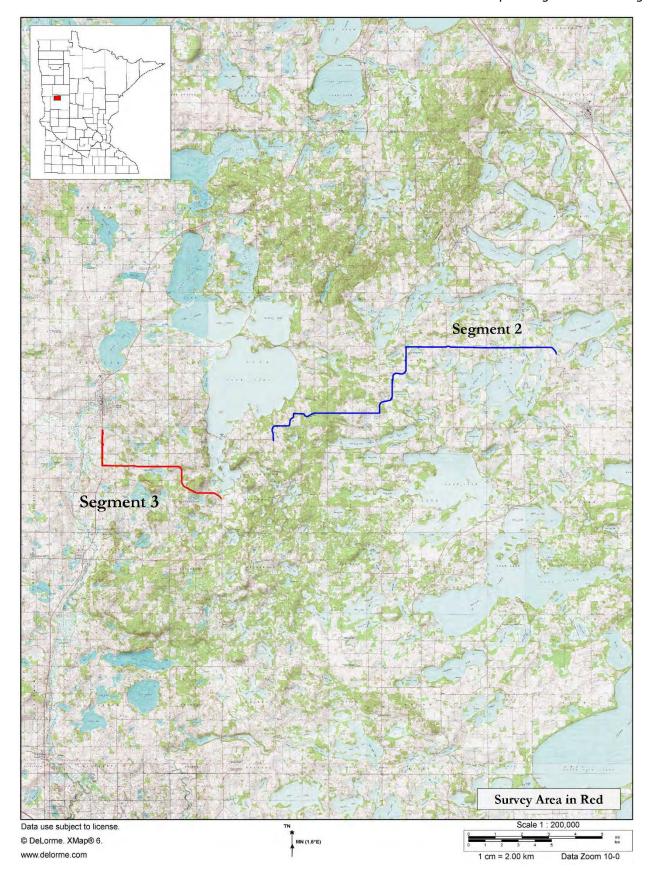


Exhibit 2: Trail Segment 3, West

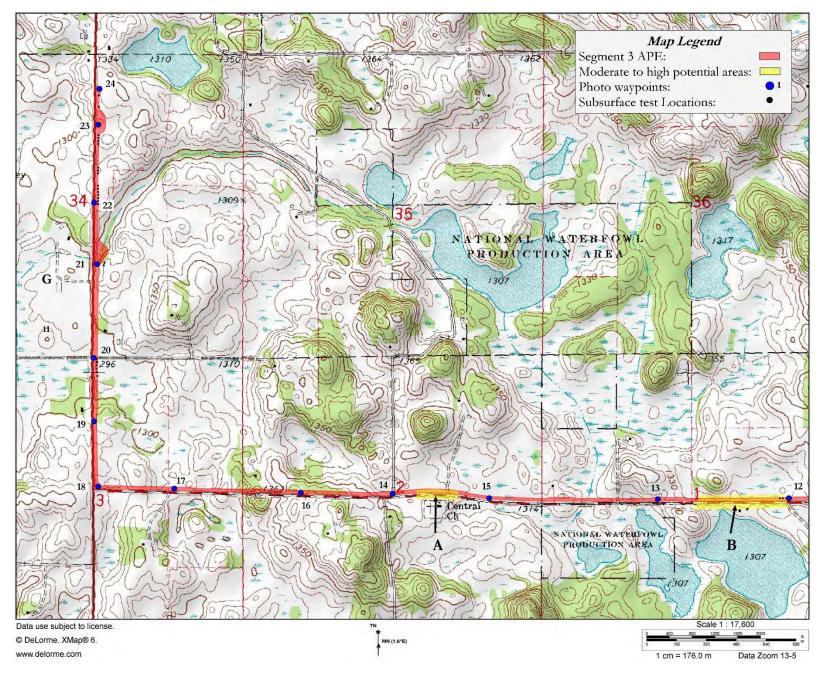


Exhibit 3: Trail Segment 3, East

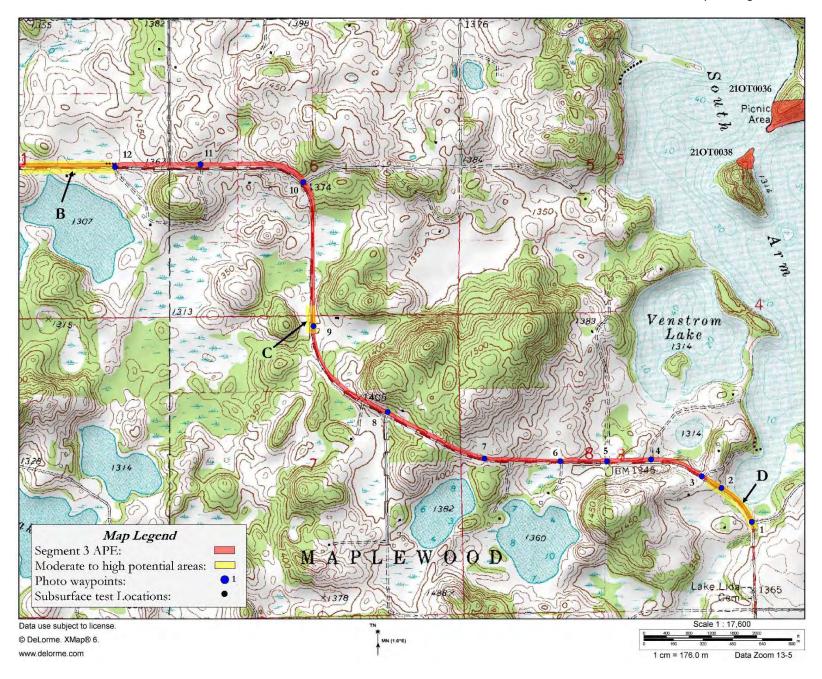


Exhibit 4: Project Photographs of Survey Areas A though C



4.1: Survey conditions at area A, facing east (Wpt-14).



4.2: Survey conditions at area B, facing west (wpt-12).



4.3: Survey conditions at area C, facing south (Wpt-9).



4.4: Survey conditions at area C, facing north (Wpt-9).

Exhibit 5: Project Photographs of Survey Area D and General Photographs



5.1: Survey conditions at area D, facing northwest (Wpt-1).



5.2: Survey conditions at area D, facing southeast (Wpt-2).



5.3: Survey conditions on Co. Rd. 3, facing east (Wpt-7).

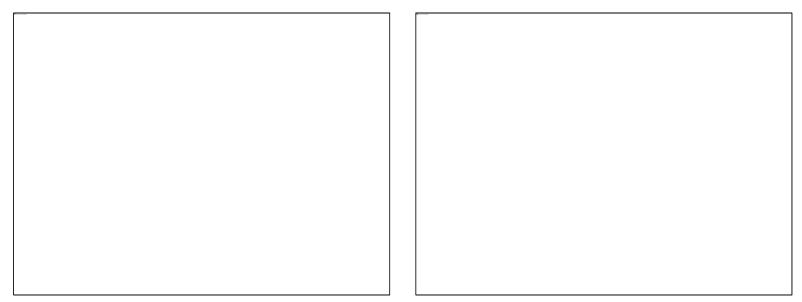


5.4: Survey conditions on Co. Rd. 3, facing east (Wpt-10).



6.1: Survey conditions on Co. Rd. 3, facing west (Wpt-17).

6.2: Survey conditions on US 59, facing south (Wpt-19).



6.3: Survey conditions on US 59, facing south (Wpt-22).

6.4: Survey on US 59, facing south (Wpt-24).

Exhibit 7: Subsurface Test Results

MODERATE TO HIGH POTENTIAL AREA TEST RESULTS

Area	Test	Soil Profile	Date	Comments	Crew
В	B SP-25	0-18cm: black sandy loam with gravel (Ap).	05/22/19	Ap in sharp contact with	JM
	18-30cm: olive-brown gleyed silt, oxidized & mineral stained.		wetland subsoil		
B SP-26	0-20cm: black sandy loam with gravel (Ap).	05/22/19	Ap in sharp contact with wetland subsoil	JM	
	20-30cm: olive-brown gleyed silt, oxidized & mineral stained.				
B SP-27	0-22cm: black sandy loam with gravel (Ap).		Ap in sharp contact with wetland subsoil	JM	
		22-30cm: olive-brown gleyed silt, oxidized & mineral stained.		wedand subson	
B SP-28	0-24cm: black sandy loam with gravel (Ap).	05/22/19	Ap in sharp contact with wetland subsoil	JM	
		24-30cm: olive-brown gleyed silt, oxidized & mineral stained.		wettand subson	
		SOIL PROBE RESULTS			
Wpt	Test	Soil Profile	Date	Comments	Crew
25	SP-1	0-30cm: black sandy loam with gravel (Ap).	05/21/20	Ap in sharp contact with subsoil	JM
		30-40cm: olive-brown gleyed silt.		3403011	
		40-50cm: wet, yellow brown silt sand, oxidized & mineral stained.			
26	SP-2	0-30cm: black sandy loam with gravel (Ap).	05/21/20	Ap in sharp contact with subsoil	JM
		30-40cm: olive-brown gleyed silt.		045001	
		40-50cm: wet, yellow brown silt sand, oxidized & mineral stained.			
27	27 SP-3	0-30cm: black sandy loam with gravel (Ap).	05/21/20	Ap in sharp contact with subsoil	JM
		30-40cm: olive-brown gleyed silt.		0	
		40-50cm: wet, yellow brown silt sand, oxidized & mineral stained.			
38	38 SP-4	0-40cm: light grey-brown sandy loam with gravel (Ap).	05/21/20	Ap in sharp contact with subsoil	JM
		40-55cm: light brown loam sand with gravel.		0	
		55-60cm: light yellow brown find sand.			
29	SP-5	0-30cm: black silt (Ap).	05/21/20	Ap in sharp contact with subsoil	JM
		30-40cm: olive-brown gleyed silt.			
30	SP-6	0-30cm: black silt (Ap).	05/21/20	Ap in sharp contact with subsoil	JM
		30-40cm: olive-brown gleyed silt.			
32	SP-7	0-14cm: grey-brown sandy loam with gravel (Ap).	05/21/20	Ap in sharp contact with subsoil	JM
		14-30cm: yellow brown fine sand.			
33	SP-8	0-18cm: grey-brown sandy loam with gravel (Ap). 05/21/20		Ap in sharp contact with subsoil	JM
		18-30cm: yellow brown fine sand.			
35 SP-9	SP-9	0-6cm: brown fine sandy with gravel (Ap)		Ap in sharp contact with subsoil	JM
		6-20cm: compact light brown silty fine sand with gravel (AP)			
		20-25cm: hard pan with gravel.			
36	SP-10	0-8cm: brown fine sandy with gravel (Ap)	05/21/20	Ap in sharp contact with subsoil	JM
		8-18cm: compact light brown silty fine sand with gravel (AP)			

		18-25cm: hard pan with gravel.			
37	SP-11	0-8cm: brown fine sandy with gravel (Ap)	05/21/20	Ap in sharp contact with	JM
		8-18cm: compact light brown silty fine sand with gravel (AP)		subsoil	
		18-25cm: hard pan with gravel.			
38	SP-12	0-12cm: brown fine sandy with gravel (Ap)	05/21/20	Ap in sharp contact with	JM
		12-16cm: compact light brown silty fine sand with gravel (AP)		subsoil	
		16-20cm: hard pan with gravel.			
39	SP-13	0-8cm: brown fine sandy with gravel (Ap)	05/22/19	Ap in sharp contact with	JM
		8-18cm: compact light brown silty fine sand with gravel (AP)		subsoil	
		18-25cm: hard pan with gravel.			
40	40 SP-14	0-10cm: brown fine sandy with gravel (Ap)	05/22/19	Ap in sharp contact with	JM
	10-18cm: compact light brown silty fine sand with gravel (AP)		subsoil		
		18-25cm: hard pan with gravel.			
41	SP-15	0-4cm: brown fine sandy with gravel (Ap)	05/22/19	Ap in sharp contact with	JM
		4-10cm: compact light brown silty fine sand with gravel (AP)		subsoil	
		10-20cm: hard pan with gravel.			
42	SP-16	0-10cm: brown fine sandy with gravel (Ap)	05/22/19	Ap in sharp contact with	JM
	10-18cm: compact light brown silty fine sand with gravel (AP)		subsoil		
		18-20cm: hard pan with gravel.			
46 SP-17	0-10cm: brown fine sandy with gravel (Ap)	05/22/19	Disturbed topsoil in sharp	JM	
		10-18cm: compact light brown silty fine sand with gravel (AP)		contact with subsoil	
		18-20cm: hard pan with gravel.			
44	SP-18	0-12cm: brown fine sandy with gravel (Ap)	05/22/19	Disturbed to subsoil	JM
		11-18cm: compact light brown silty fine sand with gravel (AP)			
		18-20cm: hard pan with gravel.			
45	SP-19	0-10cm: brown fine sandy with gravel (Ap)	05/22/19	Disturbed to subsoil	JM
		10-18cm: compact light brown silty fine sand with gravel (AP)			
		18-20cm: hard pan with gravel.			
46	SP-20	0-8cm: brown fine sandy with gravel (Ap)	05/22/19	disturbed	JM
		8-18cm: compact light brown silty fine sand with gravel (AP)			
		18-20cm: hard pan with gravel.			
47	SP-21	0-10cm: brown fine sandy with gravel (Ap)	05/22/19	disturbed	JM
		10-18cm: compact light brown silty fine sand with gravel (AP)			
		18-24cm: hard pan with gravel.			
48 SP-22	0-10cm: brown fine sandy with gravel (Ap)	05/22/19	Ap in sharp contact with	JM	
		10-18cm: compact light brown silty fine sand with gravel (AP)		subsoil	
		18-25cm: hard pan with gravel.			
49	SP-23	0-12cm:grey-brown fine sandy with gravel (Ap)	05/22/19	Ap in sharp contact with	JM

12-22cm: compact light brown silty fine sand with gravel (AP)

22-30cm: hard pan with gravel.

50 $\,$ SP-24 $\,$ 0-14cm: grey-brown fine sandy with gravel (Ap)

14-18cm: compact light brown silty fine sand with gravel (AP)

18-25cm: hard pan with gravel.

05/22/19 Ap in sharp contact with JM subsoil

subsoil

Exhibit 7: SHPO Letter



March 15, 2018

Ms. Nicole Zappetillo SRF Consulting Group One Carlson Parkway North, Suite 150 Minneapolis, MN 55447-4443

RE: Perham to Pelican Rapids Regional Trail - Phase 3, Right of Way Acquisition

Otter Tail County

SHPO Number: 2018-1191

Dear Ms. Zappetillo:

Thank you for the opportunity to comment on the above project. It is being reviewed pursuant to the responsibilities given the State Historic Preservation Office by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

Due to the nature and location of the proposed project, we recommend that a Phase IA literature review and archaeological assessment be completed to assess the potential for intact archaeological sites in the project area. If, as a result of this assessment, a Phase I archaeological survey is recommended, this survey should be completed. The survey must meet the requirements of the Secretary of the Interior's Standards for Identification and Evaluation, and should include an evaluation of National Register eligibility for any properties that are identified. If there are any properties listed in the National or State Registers of Historic Places that are identified within or adjacent to the project area, an assessment of effect on these properties should be completed.

For a list of consultants who have expressed an interest in undertaking this type of research and archaeological surveys, please visit the website http://www.mnhs.org/shpo/preservation-directory, and select "Archaeologists, Contract" in the "Specialties" box.

We will reconsider the need for survey if the project area can be documented as previously surveyed or disturbed. Any previous survey work must meet contemporary standards. **Note**: plowed areas and right-of-way are not automatically considered disturbed. Archaeological sites can remain intact beneath the plow zone and in undisturbed portions of the right-of-way.

Please note that this comment letter does not address the requirements of Section 106 of the National Historic Preservation Act of 1966 and 36 CFR § 800. If this project is considered for federal financial assistance, or requires a federal permit or license, then review and consultation with our office will need to be initiated by the lead federal agency. Be advised that comments and recommendations provided by our office for this state-level review may differ from findings and determinations made by the federal agency as part of review and consultation under Section 106.

If you have any questions regarding our review of this project, please contact our Environmental Review Section at (651) 201-3285.

Sincerely,

Sarah J. Beimers

Environmental Review Manager

Sarang Bamura

Department of Administration

203 Administration Building, 50 Sherburne Avenue, Saint Paul, MN 55155

651-201-3287 | MNSHPO@state.mn.us | mn.gov/admin/shpo