# WETLAND DELINEATION REPORT

Hamm Property 485 Orono Orchard Rd. S., 1401 Orono Lane and 1391 Fox Street Orono, MN 55391

## PREPARED FOR:

Sunde Land Surveying 9001 East Bloomington Freeway, Suite 118 Bloomington, MN 55420

### PREPARED BY:

Pinnacle Engineering, Inc. 11541 95<sup>th</sup> Avenue North Minneapolis, Minnesota 55369

May 24, 2021



Owning Challenges. Winning Trust.

# WETLAND DETERMINATION AND DELINEATION

### FOR:

HAMM PROPERTY
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ORONO, MN 55391

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SUNDE LAND SURVEYING 9001 EAST BLOOMINGTON FREEWAY, SUITE 118 BLOOMINGTON, MN 55420

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PINNACLE ENGINEERING, INC. 11541 95<sup>th</sup> AVENUE NORTH MINNEAPOLIS, MINNESOTA 55369

PINNACLE PROJECT NUMBER: EM20202672

May 24, 2021

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### 1.0 INTRODUCTION

### 1.1 Introduction

Sunde Land Surveying (Sunde) retained Pinnacle Engineering, Inc. (Pinnacle) to conduct a Level 2, On-Site, Wetland Delineation of three parcels of land located at 485 Orono Orchard Road South, 1401 Orono Lane and 1391 Fox Street in Orono, Minnesota. The three parcels are located near the northern shore of Lake Minnetonka, are further divided into four areas by local streets, and total approximately 22.6 acres (Site). The proposed project area is within the N ½ of SW ¼ of Section 30, Township 23N, Range 27W (Lat: 44.968781°, Long: -93.560311°). The Site consists of houses, gardens, fallow fields, wooded areas, and wetlands. The Site is divided into three properties, the northern, eastern, and southern properties. Wetland area located in all of the properties.

The level 2 wetland determination was conducted in substantial conformance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, updated February 25, 1997, and utilizes the Midwest Regional Supplement. The attached report documents the methods and findings of the delineation. The purpose of the wetland delineation was to determine the presence of wetland areas on the Site.

## 1.2 Scope

Pinnacle conducted a Level 2 Onsite Wetland Determination and Delineation in accordance with the criteria established in the <u>1987 U. S. Army Corps of Engineers Wetland Delineation Manual</u>, updated in 1997, utilizing the Midwest Regional Supplement. The work included the following items:

- Review of County Soil Surveys, USGS topographic maps, National Wetland Inventory (NWI) Maps, Public Water Inventory (PWI) maps, and aerial photographs.
- Collect vegetation, soils, and hydrology field data,
- Delineation of the identified wetlands within the Site.
- Place boundary flags, and
- Preparation and submittal of this report summarizing the findings.

### 2.0 BACKGROUND INFORMATION

### 2.1 Site Location and Use

The Site consists of two parcels that total approximately 22.6-acres. The property is located at 485 Orono Orchard Road South and 1401 Orono Lane, Orono, Hennepin County, Minnesota, which is within the N ½ of SW ¼ of Section 30, Township 23N, Range 27W (Lat: 44.968781°, Long: -93.560311°).

The Site consists of houses, out buildings, gardens, wooded areas, access roads, fallow fields, wetlands, and upland areas. The property identification numbers (PIDs) of the properties are 0211723320001 (the northern and central property; 485 Orono Orchard Road South), 0211723340020 (eastern property; 1391 Fox Street) and 0211723330015 (the southern property; 1401 Orono Lane). Fox Street runs through the northern property. Figure 1 shows the Site in its current configuration. The Site was investigated to determine the wetland boundaries of wetland areas located within the three areas of interest.

### 2.2 Surveys and Maps

Pinnacle conducted a review of the Hennepin County Soil Survey, topographic maps, Protected Waters Inventory (PWI), and National Wetland Inventory (NWI) for the vicinity of the Site. The following sections summarize the information available at the time of this review.

### 2.2.1 Topographic Maps

The Site is divided into four areas of interest within the Site. The northern portion of 485 Orono Orchard Road South extends from Fox Street north to the northern property boundary. The elevation of the northern area of the Site is steeply sloping, ranging from approximately 1,000 feet above mean sea level (AMSL) in the northeastern central portion of the Site to approximately 962 feet AMSL in the northeastern portion and 940 AMSL in the southern portion of the northern area of the site near Fox Street.

The southern portion of 485 Orono Orchard Road South lies south of Fox Street and extends south to nearly the intersection of Orono Orchard Road S and Shoreline Drive. The southern portion of 485 Orono Orchard Road South slopes moderately, ranging from approximately 996 feet AMSL in the northeastern portion of southern portion of 485 Orono Orchard Road South to approximately 940 feet AMSL in the western portion of southern portion of 485 Orono Orchard Road South.

The eastern property, 1391 Fox Street, is located east of Orono Orchard Road South, between Fox Street and Shoreline Drive. The eastern property slopes moderately, ranging from approximately 968 feet AMSL in the northern portion to approximately 932 feet AMSL in the southwestern portion of the eastern property.

The southern property, 1401 Orono Lane, extends southward from the intersection of Shoreline Drive and Orono Lane to Lake Minnetonka. This property moderately slopes from approximately 944 feet AMSL in the north central portion of the southern property to approximately 928 feet AMSL where Lake Minnetonka is located. Based on the contour intervals on the topographic map, surficial drainage appears to drain to the south, toward Lake Minnetonka.

### 2.2.2 Soil Survey

The Natural Resources Conservation Service (NRCS) Web Soil Survey map, which is included as Figure 3, was reviewed for information pertaining to the Site soils. The Soil Survey indicated the Site soil units consist of Muskego, Blue Earth, and Houghton soils, ponded, 0 to 1 percent slopes (L16A), Lester loam, 6 to 16 percent slopes, moderately eroded (L22C2, L22D2), Lester loam, 10 to 22 percent slopes (L22E), Hamel, overwash-Hamel complex, 0 to 3 percent slopes (L36A), Angus loam, 2 to 6 percent slopes (L37B), Angus-Kilkenny complex, 2 to 6 percent slopes (L40B), Lester-Kilkenny complex, 6 to 10 percent slopes, moderately eroded (L41C2), Lester-Kilkenny complex, 16 to 22 percent slopes, (L41E), Muskego and Houghton soils, 0 to 1 percent slopes (L50A), and Udorthents, wet substratum, 0 to 2 percent slopes (U2A). Of the identified soil types, Muskego, Blue Earth, and Houghton, Klossner, and Muskego and Houghton soils are considered hydric soils.

### 2.2.3 Wetland Inventory Maps

The United States Fish and Wildlife Service (USFWS)-National Wetland Inventory (NWI) map for the Site area, which is included as Figure 4, depicts three freshwater emergent, persistent, temporarily or seasonally flooded wetlands (PEM1A, PEM1C) in the in the northern property, and one freshwater emergent persistent, seasonally flooded (PEM1C) wetland in the southern portion of the eastern property. A lacustrine, littoral, unconsolidated bottom, permanently flooded (L2UBH) wetland is located adjacent the southern area. NWI maps generally show the approximate location of wetlands as of the time of publication.

### 2.2.4 Public Waters Inventory

The Minnesota Department of Natural Resources (DNR) Public Waters Inventory (PWI) produces a map of the protected wetlands and waters of the State. The PWI map, which is included as Figure 5, identified two Public Waters. One is located in the northeastern portion of the northern area with the identification number: 27086600. The other Public Water (Lake Minnetonka) is located adjacent the southern area with an identification number of 27013302. Additional PWI-mapped Public Water are present to the southwest of the Site.

### 3.0 WETLAND DETERMINATION

## 3.1 Methodology

The wetland determination was made utilizing the techniques of the Routine Onsite Method, as described in the 1987 <u>U. S. Army Corps of Engineers Wetland Delineation Manual</u>, updated February 25, 1997 and utilizing the Midwest Regional Supplement. Determination of hydric soils, site hydrology, and hydrophytic vegetation were made according to the procedures and guidelines described in the manual. Sampling locations were selected to be representative of wetland/upland transition areas.

Scott Thelen of Pinnacle assessed the wetlands within the project area on May 10, 2021. Vegetation, soil, and hydrology indicators were noted during the field event. The characteristics noted for each sampling location are documented in the data forms, which are included in Appendix A. Potential wetland boundaries were collected using a handheld GPS unit and were flagged for review. A figure of the wetland area is included as Figure 2.

The 2021 seasonal antecedent rainfall amounts were within the normal precipitation amounts for this area. Rain in the amount of 0.08 inches occurred the fourteen days prior to the wetland delineation field visit.

### 3.2 Wetland Descriptions

Table 3.2.1 below summarizes the findings of the field investigation. Data forms for the field investigation can be found in Appendix A and photographs in Appendix C.

Table 3.2.1
Wetlands Table
Hamm Property
485 Orono Orchard Road South & 1401 Orono Lane
Orono, Minnesota

Wetland ID	Delineated Wetland Type	Wetland Size ac/sf		NWI Wetland Type	Dominant Wetland Vegetation	Hydric Soil Indicator	Hydrology
W-1	L2UBH	0.12	5,227	L2UBH	reed canary grass, cattails	Depleted Below Dark Surface (A11)	Saturation (A3), et al.
W-2	PEM1A	0.47	20,473	PEM1A	reed canary grass	Depleted Below Dark Surface (A11)	Saturation (A3), et al.
W-3	PEM1C	0.91	39,640	PEM1C	reed canary grass, cattails, buckthorn	Redox Dark Surface (F6)	Saturation (A3), et al.
W-4	PEM1A	0.26	11,326	PEM1A	reed canary grass, cattails	Depleted Below Dark Surface (A11)	Saturation (A3), et al.
W-5	PEM1C	0.07	3,049	PEM1C	reed canary grass, cattails, buckthorn	Redox Dark Surface (F6)	Saturation (A3), et al.

### Wetland Type L2UBH

The NWI Cowardin wetland classification system identifies the L2UBH label for a wetland that consists of all wetlands and deepwater habitats wetlands situated in a topographic depression and total area of at least 20 acres. Similar wetlands and deepwater habitats totaling less than 20 acres are also included in the Lacustrine System if an active waveformed or bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin equals or exceeds 8.2 feet at low water. This classification applies to Wetland 1 which corresponds to Lake Minnetonka and is identified on the NWI map. The soil survey did not indicate hydric soils are located within the Wetland 1 area.

### Wetland Type PEM1A

The NWI Cowardin wetland classification system identifies the PEM1A label for a wetland that consists of a palustrine basin, dominated by persistent emergent vegetation, consisting of erect, rooted, herbaceous hydrophyte species that normally remain standing at least until the beginning of the next growing season, that is temporarily flooded. Surface water is present for brief periods during the growing season, but the water table usually lies well below the ground surface for most of the season. This classification applies to wetlands 2 and 4. Wetlands 2 and 4 are mapped on the NWI map. The soil survey did not indicate hydric soils located within these wetland areas.

## **Wetland Type PEM1C**

The NWI Cowardin wetland classification system identifies the PEM1C label for a wetland that consists of a palustrine basin, dominated by persistent emergent vegetation, consisting of erect, rooted, herbaceous hydrophyte species that normally remain standing at least until the beginning of the next growing season, that is seasonally flooded. Surface water is present for extended periods especially early in the growing season but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface. The NWI map for the Site area indicated one PEM1C wetland contained within the Site boundaries, which corresponds to Wetlands 3. The soils survey did indicate hydric soils located within the Wetland 3 area.

### 4.0 DISCUSSION

Pinnacle conducted a Level 2, On-Site, Wetland Delineation of three parcels of land located at 485 Orono Orchard Road South, 1401 Orono Road and 1391 Fox Street in Orono, Minnesota. The three parcels are located near the northern shore of Lake Minnetonka and total approximately 24.44 acres (Site). The proposed project area is within the N ½ of SW ¼ of Section 30, Township 23N, Range 27W (Lat: 44.968781°, Long: -93.560311°).

The northern property extends from near the intersection of Orono Orchard Road South and Shoreline Drive north to the northern property boundary. The eastern property

extends northeast from the intersection of Shoreline Drive and Orono Orchard South to Fox Street. The southern property extends from the intersection of Shoreline Drive and Orono Lane south to Lake Minnetonka. The Site consists of houses, gardens, fallow fields, wooded areas, and wetlands.

The level 2 delineation was conducted in substantial conformance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, updated February 25, 1997, and utilized the Midwest Regional Supplement.

The elevation of the properties ranges from 1,000 feet AMSL to 940 feet AMSL and from 996 feet AMSL to 940 feet AMSL in the northern property, separated by Fox Street. The eastern property elevation ranges from approximately 968 feet AMSL in the northern portion to approximately 932 feet AMSL. The southern elevation ranges from 944 feet AMSL to 928 feet AMSL, where Lake Minnetonka is located. Based on the contour intervals on the topographic map, surficial drainage appears to drain to the south, toward Lake Minnetonka. The Soil Survey indicated hydric soil are located in the areas of Wetlands 1 (Lake Minnetonka) and 3. According to the NCRS Soil Survey, the remainder of the wetland areas are not located in hydric soils.

The 2021 seasonal antecedent rainfall amounts were within the normal precipitation amounts for this area. Rain in the amount of 0.08 inches occurred the fourteen days prior to the wetland delineation field visit.

Wetland 1 is the shore of Lake Minnetonka. Under the Cowardin system Wetland 1 would be considered a L2UBH deepwater habitat with a forested wetland fringe. Under the Circular 39 system, Wetland 1 is considered a Type 5 wetland. The majority of the wetland fringe is dominated by buckthorn. Hydric soils and wetland hydrology were found to be present. The wetland boundary was determined on the northern edge of the wetland and followed the topography and elevation of the slopes from the upland area to lake Minnetonka. Wetland 1 extends to the south beyond the Site boundary.

Wetland 2 is a basin located in the southern portion of the of northern area of interest. Under the Cowardin system Wetland 2 would be considered a palustrine, emergent, persistent, temporary flooded (PEM1A) basin. Wetland 2 consists of a swale that funnels drainage from the surrounding upland area. A roadway and underlying culvert appear to slow and constrict the drainage of the wetland to the south. Under the Circular 39 system, Wetland 2 is considered a Type 2 wetland. Wetland 2 is dominated by hydrophytes comprised primarily of reed canary grass. Hydric soils were found to be present. Hydrology appeared to be present and was based on water in the sampling hole within 12 inches of the surface. The wetland edge was determined on the southeastern edge of the wetland and followed the vegetation change along the swale.

Wetland 3 is a large basin located in the northeastern portion of the of northern area of interest. Under the Circular 39 system, Wetland 3 is considered a Type 3 wetland. Under the Cowardin system Wetland 3 would be considered a palustrine, emergent, persistent, seasonally flooded (PEM1C) basin. Culverts enter Wetland 3 at various locations along the wetland border. Wetland 3 is dominated by hydrophytes comprised Pinnacle Engineering, Inc. 11541 95 Avenue North Wetland Determination Report

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grass and cattails. Hydric soils were found to present. The wetland is located at the toe of adjacent steep slopes of upland areas that surround the wetland basin. The wetland edge was determined on the southern edge of the wetland and followed the topography and elevation of the slopes from the upland area to the wetland basin. Wetland 3 extends to the northeast beyond the Site boundary.

Wetland 4 is a basin located in the northwestern portion of the of northern area of interest. Under the Cowardin system Wetland 4 would be considered a palustrine, emergent, persistent, temporary flooded (PEM1A) basin. The surrounding upland areas drain into the wetland basin. A swale appears to drain the basin to the southwest during large rainfall events. Under the Circular 39 system, Wetland 4 is considered a Type 2 wetland. Wetland 2 is dominated by hydrophytes primarily comprised of reed canary grass. Hydric soils were found to be present. The wetland edge was determined on the southern edge of the wetland and followed the vegetation change along the wetland basin.

Wetland 5 is a small basin located in the southwestern portion of the of southeastern property. Under the Circular 39 system, Wetland 3 is considered a Type 3 wetland. Under the Cowardin system Wetland 3 would be considered a palustrine, emergent, persistent, seasonally flooded (PEM1C) basin. Wetland 3 is dominated by hydrophytes comprised of lake sedge, reed canary grass, and cattails. Hydric soils were found to present. The wetland is located at the bottom of steep slopes of adjacent upland areas that surround the wetland basin. The wetland edge was determined on the northern edge of the wetland and followed the topography and elevation of the slopes from the upland area to the wetland basin. Wetland 5 extends to the south beyond the Site boundary.

The Local Governmental Unit (LGU), the DNR, and U.S. Army Corps of Engineers will determine the jurisdictional wetland status of the identified wetland areas.

### 5.0 CONCLUSION

Pinnacle performed a Level 2, On-Site, Wetland Delineation of three parcels of land located at 485 Orono Orchard Road South in Orono, Minnesota. The three parcels are located near the northern shore of Lake Minnetonka and total approximately 22.6 acres. The level 2 delineation was conducted in substantial conformance with the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual, updated February 25, 1997, and utilized the Midwest Regional Supplement.

During the field assessment, it was determined that five areas within the Site met all three of the mandatory criteria of a wetland. The wetland boundaries were recorded utilizing a handheld GPS device and were flagged for survey by Sunde Land Surveying. The delineation will be reviewed by the Minnehaha Creek Watershed District which serves as the LGU administering Minnesota's Wetland Conservation Act and the U.S. Army Corps of Engineers, which administers the Clean Water Act

### 6.0 STANDARD OF CARE

Environmental services performed by Pinnacle for the project have been conducted in a manner consistent with the degree of care and technical skill appropriately exercised by environmental professionals currently practicing in this area under similar budget and time constraints. Recommendations or opinions contained in this report represent our professional judgment and are generally based upon available information and currently accepted practices for environmental professionals. Other than this, no other warranty is implied nor is it expressed.

### 7.0 REFERENCES.

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- Eggers, Steve D. and Reed, Donald M., Wetland Plants and Plant Communities of Minnesota and Wisconsin, 1997, U. S. Army Corps of Engineers, St. Paul District.
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- Minnesota Geospatial Commons (https://gisdata.mn.gov/dataset/water-mn-public-waters), NWI data (https://gisdata.mn.gov/dataset/water-nat-wetlands-inv-2009-2014), generated by Scott Thelen using <a href="https://gisdata.mn.gov/">https://gisdata.mn.gov/</a>, May 18, 2021.
- Midwest (Version 2.0) Regional Supplement to the Corps of Engineers Wetland Delineation Manual: January 2010, Washington, D. C.
- United States Department of Agricultural, Natural Resources Conservation Service, Data Gateway <a href="http://datagateway.nrcs.usda.gov/">http://datagateway.nrcs.usda.gov/</a> (May 18, 2021).
- Minnesota Department of Natural Resources, NWI Wetland Finder < https://arcgis.dnr.state.mn.us/ewr/wetlandfinder/>, May 18, 2021.
- U.S. Fish and Wildlife Service National Wetlands Inventory <a href="http://www.fws.gov/wetlands/data/WebMapServices.html">http://www.fws.gov/wetlands/data/WebMapServices.html</a> > (May 18, 2021).
- U.S. Army Corps of Engineers, U. S. Army Corps of Engineers Wetland Delineation Manual, 1987, updated on February 25, 1997, Washington, D. C.

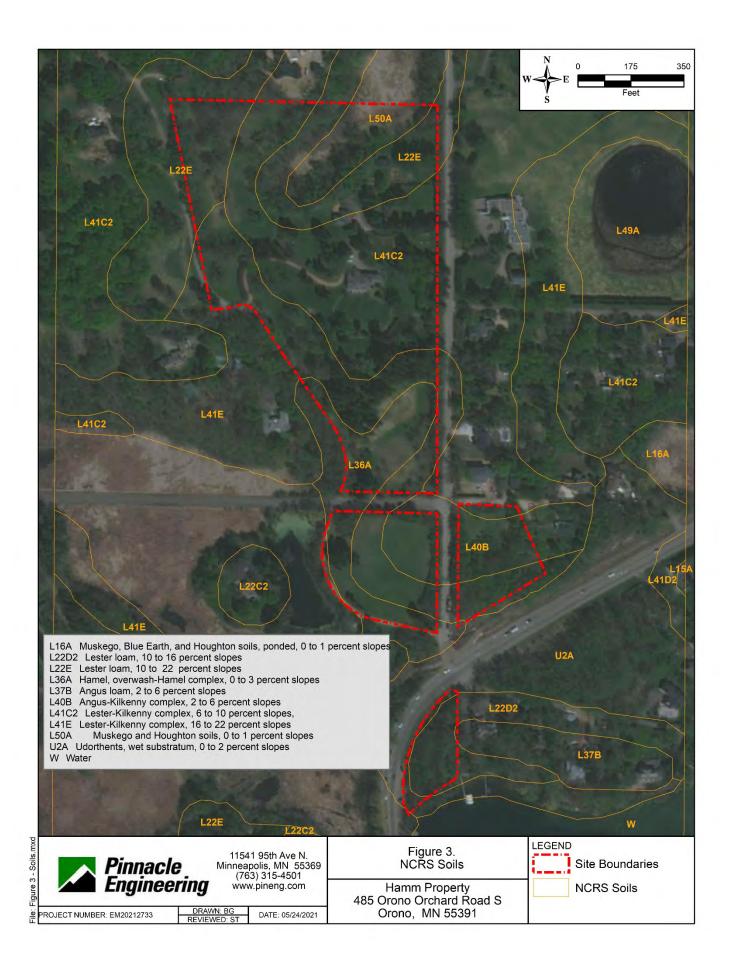
# FIGURE 1 Site Location Map



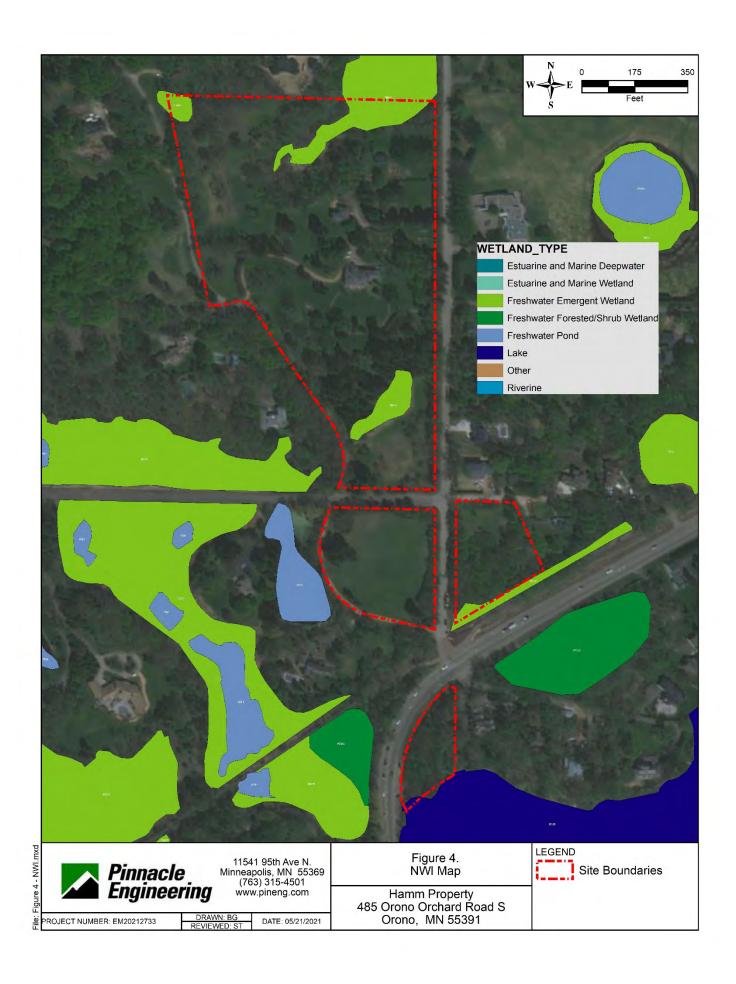
# FIGURE 2 Site Layout



# FIGURE 3 Soil Survey



# FIGURE 4 National Wetland Inventory

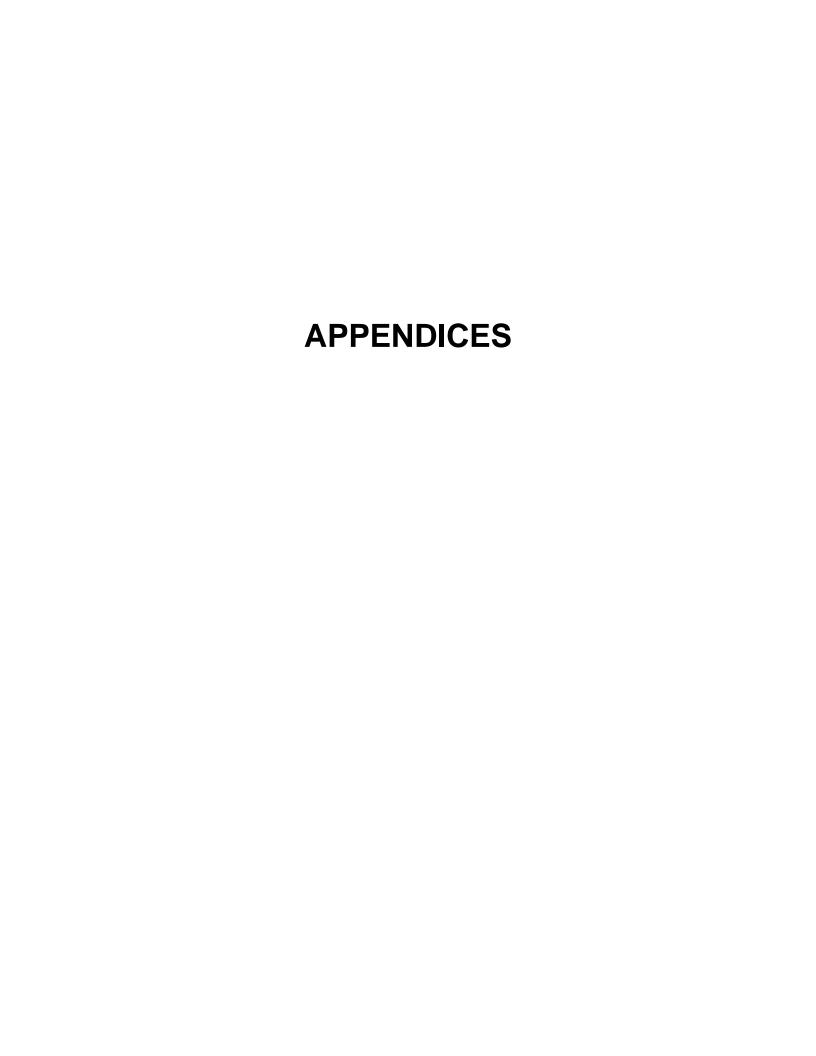


# FIGURE 5 Public Waters Inventory



# FIGURE 6 Wetland Communities Sketch





# APPENDIX A Midwest Data Forms

# WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 485 Orono Orchard Rd. S.		City/Cou	Sampling Date	e: <u>5/10/</u>	2021		
Applicant/Owner: Sunde Land Surveying				State: MN	Sampling Poir	nt: W	′1-1U
Investigator(s): ST		Section, T	ownship, Rar	nge: S30, T23N, R27W	I		
Landform (hillside, terrace, etc.): depressional		1	Local relief (c	oncave, convex, none):	concave		
Slope (%): 0-1 Lat: 44.968781°		Long: -	93.560311°		Datum: WGS 19	984	
Soil Map Unit Name: Lester loam				NWI classif	ication: L2UBH		
Are climatic / hydrologic conditions on the site typical	al for this time of	year?	Yes X	No (If no, exp	lain in Remarks	.)	
Are Vegetation, Soil, or Hydrology	significantly d	isturbed? A	re "Normal C	ircumstances" present?	Yes X	No	
Are Vegetation, Soil, or Hydrology	naturally prob	lematic? (	If needed, exp	olain any answers in Rer	narks.)		
SUMMARY OF FINDINGS – Attach site i	map showin	g samplin	g point lo	cations, transects,	important fe	eatures	, etc.
Hydrophytic Vegetation Present? Yes	No X	ls the	Sampled Ar	03			
	No X		n a Wetland?		No X		
	No X						
Remarks:		l .					
VEGETATION – Use scientific names of p	Absolute	Dominant	Indicator				
<u>Tree Stratum</u> (Plot size: 30 )	% Cover	Species?	Status	Dominance Test wor	ksheet:		
Fraxinus pennsylvanica	20	Yes	FACW	Number of Dominant	Species That		
2				Are OBL, FACW, or F	AC:	2	(A)
3				Total Number of Domi	nant Species	4	(D)
4 5.				Across All Strata:		4	_(B)
J	20 =	Total Cover		Percent of Dominant S Are OBL, FACW, or F	•	50.0%	(A/B)
Sapling/Shrub Stratum (Plot size: 15	)				_		-` ′
Rhamnus cathartica	20	Yes	FAC	Prevalence Index wo	rksheet:		
2				Total % Cover of		iply by:	_
3				OBL species 0		0	_
4 5.				FACW species 20 FAC species 20		40 60	_
J		Total Cover		FACU species 80		320	-
Herb Stratum (Plot size: 5 )		10101 00101		UPL species 0		0	-
1. Glechoma hederacea	60	Yes	FACU	Column Totals: 12	0 (A)	420	(B)
2. Taraxacum officinale	20	Yes	FACU	Prevalence Index =	= B/A = 3	3.50	_
3							
4				Hydrophytic Vegetat			
5.				1 - Rapid Test for		getation	
6.				2 - Dominance Te 3 - Prevalence Ind			
7. 8.				4 - Morphological		rovide sur	porting
9.					s or on a separa		
10.				Problematic Hydro	ophytic Vegetati	on¹ (Expla	ain)
	80 =	Total Cover		<sup>1</sup> Indicators of hydric so	oil and wetland h	nydrology	must
Woody Vine Stratum (Plot size: 15	)			be present, unless dis	turbed or proble	matic.	
1				Hydrophytic			
2		Total Cover		Vegetation Present? Yes	No	<b>v</b>	
Demonstra (Inches and		- i otai Cover		Present? Yes	No		
Remarks: (Include photo numbers here or on a sep	parate sheet.)						

US Army Corps of Engineers

SOIL Sampling Point: W1-1U

		to the depth				ator or o	onfirm the absence	of indicators.	.)	
Depth	Matrix			x Featur						
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-6	10YR 2/1	100					Loamy/Clayey			
6-12	10YR 3/1	100					Loamy/Clayey			
12-18	10YR 5/4	100					Loamy/Clayey			
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RM=F	Reduced Matrix, N	//S=Mas	ked Sand	d Grains	. <sup>2</sup> Locatio	n: PL=Pore Li	ning, M=Matri	x.
Hydric Soil I								ors for Probler		
Histosol	(A1)		Sandy Gle				Coa	ast Prairie Redo	ox (A16)	
Histic Ep	ipedon (A2)		Sandy Red					-Manganese M		
Black His	` '		Stripped M	•	5)			d Parent Materia	, ,	
	n Sulfide (A4)		Dark Surfa	` '				y Shallow Dark		)
	Layers (A5)		Loamy Mu	•	. ,		Oth	er (Explain in R	Remarks)	
2 cm Mu	, ,	(0.4.4)	Loamy Gle	-						
	Below Dark Surface rk Surface (A12)	e (A11)	Depleted Nedox Dai	,	,		3Indiant	ors of hydrophy	tio vogototion	and
l ——	ucky Mineral (S1)		Depleted [		` '			land hydrology	•	
	cky Peat or Peat (S3	3)	Redox De					ess disturbed o		51 IC,
_	_ayer (if observed):		RROGEN BO		- (1 0)		- Control		- problematic.	
Type:	Layer (ii observea).									
Depth (in	iches):		_				Hydric Soil Prese	nt?	Yes	No X
Remarks:							.,,			
	m is revised from Mi	dwest Regio	nal Supplement \	/ersion 2	2.0 to inc	lude the	NRCS Field Indicate	ors of Hydric So	ils. Version 7.	.0. 2015
	//www.nrcs.usda.gov	_							,	-,
HYDROLO	GY									
Wetland Hyd	drology Indicators:									
Primary India	cators (minimum of c	ne is require						ary Indicators (		vo required)
	Water (A1)		Water-Sta		, ,			face Soil Crack		
ı —	ter Table (A2)		Aquatic Fa	,	,			inage Patterns	, ,	
Saturatio			True Aqua					-Season Water		
	arks (B1)		Hydrogen					yfish Burrows (	,	······ (CO)
	t Deposits (B2) osits (B3)		Oxidized F			_		uration Visible on ted or Stresse	-	
· ·	t or Crust (B4)		Recent Iro		,	,		omorphic Positi	, ,	
	osits (B5)		Thin Muck			1100 0011	. ,	C-Neutral Test (	, ,	
	on Visible on Aerial II	magery (B7)	Gauge or		, ,				()	
	Vegetated Concave	• • • • •								
Field Observ	vations:									
Surface Wat	er Present? Ye	S	No X	Depth (i	nches):					
Water Table	Present? Ye	s	No X	Depth (i	nches):					
Saturation Pr	resent? Ye	s	No X	Depth (i	nches):		Wetland Hydrol	ogy Present?	Yes	No X
(includes cap										
Describe Red	corded Data (stream	gauge, mon	itoring well, aeria	l photos	, previou	s inspec	tions), if available:			
Domestil										
Remarks: Standing wat	er near sampling po	int								
Cianumy Wal	.o. noai sampiing po									

# WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 485 Orono Orchard Rd. S.		City/County: Orono/Hennepin Sampling Date: 5/					
Applicant/Owner: Sunde Land Surveying				State: MN	Sampling Poir	nt: W	1-1W
Investigator(s): ST		Section, T	ownship, Ra	nge: S30, T23N, R27W	1		
Landform (hillside, terrace, etc.): depressional			Local relief (d	concave, convex, none):	concave		
Slope (%): 0-1 Lat: 44.968781°		Long: -	93.560311°		Datum: WGS 19	984	
Soil Map Unit Name: Lester loam				NWI classif	ication: L2UBH		
Are climatic / hydrologic conditions on the site typical	for this time o	of year?	Yes X	No (If no, exp	lain in Remarks	····	
Are Vegetation, Soil, or Hydrology	significantly of	disturbed? A	Are "Normal (	Circumstances" present?	Yes X	No	
Are Vegetation, Soil, or Hydrology	naturally prob	olematic? (	If needed, ex	plain any answers in Rer	narks.)	'	_
SUMMARY OF FINDINGS – Attach site m	=		g point lo	cations, transects,	important fo	eatures	, etc.
Hydrophytic Vegetation Present? Yes X N	lo	Is the	Sampled A	rea			
	lo		n a Wetland		No		
	lo						
Remarks: Wetland is located on the shore of Lake Minnetonka.  VEGETATION – Use scientific names of place.							
VEGETATION USE SCIENTING HAITIES OF PIC	Absolute	Dominant	Indicator				
Tree Stratum (Plot size: 30 )	% Cover	Species?	Status	Dominance Test wor	ksheet:		
Fraxinus pennsylvanica     Control	30	Yes	FACW	Number of Dominant S Are OBL, FACW, or F	•	3	(A)
3. 4.				Total Number of Domi	nant Species	3	(B)
5.				Percent of Dominant S	Species That		
	30	=Total Cover		Are OBL, FACW, or F	AC:	100.0%	_(A/B)
Sapling/Shrub Stratum (Plot size: 15	.)						
Rhamnus cathartica 2.	10	Yes	<u>FAC</u>	Prevalence Index wo Total % Cover of		inly by:	
				OBL species 0		tiply by:	_
				FACW species 10		200	_
5.				FAC species 10		30	_
	10	=Total Cover		FACU species 10		40	_
Herb Stratum (Plot size: 5 )				UPL species 0	x 5 =	0	_
Phalaris arundinacea	60	Yes	FACW	Column Totals: 12	0 (A)	270	(B)
2. Glechoma hederacea	10	No	FACU	Prevalence Index :	= B/A =2	2.25	_
3. Solidago gigantea	10	No	FACW				
4				Hydrophytic Vegetat			
5				1 - Rapid Test for		getation	
6.				X 2 - Dominance Te			
7.				X 3 - Prevalence Inc			
8 9.				4 - Morphological	s or on a separa		
10.				Problematic Hydro			
Woody Vine Stratum (Plot size: 15	80	=Total Cover		<sup>1</sup> Indicators of hydric so be present, unless dis	oil and wetland h	hydrology	
1.	.′			Hydrophytic			
2.				Vegetation			
	:	=Total Cover		Present? Yes	X No_		
Remarks: (Include photo numbers here or on a sepa	arate sheet.)			<u> </u>			

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SOIL Sampling Point: W1-1W

		to the dept				ator or o	confirm the absence	of indicators	s.)	
Depth	Matrix			x Featur		. 2	_			
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-6	10YR 2/1	100					Loamy/Clayey			
6-12	10YR 3/1	95	10YR 4/6	5	<u> </u>	M	Loamy/Clayey	Promine	nt redox conce	entrations
12-18	10YR 5/4	100					Loamy/Clayey			
<sup>1</sup> Type: C=Co	oncentration, D=Dep	etion, RM=	Reduced Matrix, M	1S=Mas	ked Sand	d Grains	. <sup>2</sup> Location	n: PL=Pore L	ining, M=Matrix	<b>K</b> .
Hydric Soil	Indicators:						Indicato	rs for Proble	matic Hydric	Soils <sup>3</sup> :
Histosol			Sandy Gle		rix (S4)			st Prairie Red		
	ipedon (A2)		Sandy Red					Manganese N		
Black His	` '		Stripped M	•	5)			Parent Mater	, ,	
	n Sulfide (A4) Layers (A5)		Dark Surfa Loamy Mu	` '	oral (E1)			r Shallow Darl er (Explain in I	Surface (F22)	)
2 cm Mu			Loamy Gle	-				a (⊏xpiaiii iii i	Remarks)	
	l Below Dark Surface	(A11)	Depleted N							
	rk Surface (A12)	, (, (, 1, 1,	X Redox Dar	,	,		<sup>3</sup> Indicato	rs of hydroph	ytic vegetation	and
	ucky Mineral (S1)		Depleted D	ark Sur	face (F7)				must be prese	
5 cm Mu	cky Peat or Peat (S3	3)	Redox Dep	ression	s (F8)		unle	ss disturbed o	or problematic.	
Restrictive I	_ayer (if observed):									
Type:										
Depth (in	nches):		<u> </u>				Hydric Soil Presen	it?	Yes X	No
	m is revised from Mi //www.nrcs.usda.gov	_					NRCS Field Indicator ()	rs of Hydric S	oils, Version 7.	0, 2015
HYDROLO	GY									
_	drology Indicators:									
-	cators (minimum of c	ne is require	ed; check all that a	apply)			Seconda	ry Indicators	(minimum of tv	vo required)
Surface	Water (A1)		Water-Stai	ned Lea	ves (B9)		Surf	ace Soil Crac	ks (B6)	
High Wa	ter Table (A2)		Aquatic Fa	una (B1	3)		Drai	nage Patterns	s (B10)	
X Saturation	on (A3)		True Aqua				Dry-	Season Wate	r Table (C2)	
	arks (B1)		Hydrogen S					fish Burrows	` '	
	t Deposits (B2)		Oxidized R	•		-	· · · —		on Aerial Imag	jery (C9)
	osits (B3)		Presence of			'			ed Plants (D1)	
	t or Crust (B4) osits (B5)		Recent Iron Thin Muck			lied Soli	• •	morphic Posit -Neutral Test	. ,	
	on Visible on Aerial I	magery (B7)			` '		<u>X</u> FAC	-Neuliai 165i	(D3)	
	Vegetated Concave	. , ,	<u> </u>							
Field Obser					,					
Surface Wat		S	No X	Depth (i	nches):					
Water Table	Present? Ye	s			nches):					
Saturation P	resent? Ye	s X	No	Depth (i	nches):	8	Wetland Hydrolo	gy Present?	Yes X	No
(includes cap	oillary fringe)				_					
Describe Re	corded Data (stream	gauge, moi	nitoring well, aeria	l photos	, previou	s inspec	tions), if available:			
Domestics										
Remarks: Standing wat	ter near sampling po	int								
- Clariding wal	.c. noar sampling po									

# WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 485 Orono Orchard Rd. S.		City/County: Orono/Hennepin Sampling Date:					
Applicant/Owner: Sunde Land Surveying				State: MN	Sampling Poir	ıt: W	/2-1U
Investigator(s): ST		Section, T	ownship, Ra	nge: S30, T23N, R27V	V		
Landform (hillside, terrace, etc.): depressional			Local relief (d	concave, convex, none):	concave		
Slope (%): <u>2-6</u> Lat: <u>44.968781°</u>		Long: -	93.560311°		Datum: WGS 19	984	
Soil Map Unit Name: Hamel loam				NWI classi	fication: PEM1A		
Are climatic / hydrologic conditions on the site typica	I for this time o	of year?	Yes X	No (If no, exp	olain in Remarks	.)	
Are Vegetation, Soil, or Hydrology	_significantly	disturbed? A	Are "Normal (	Circumstances" present?	Yes X	No	
Are Vegetation, Soil, or Hydrology	_naturally prol	olematic? (	If needed, ex	plain any answers in Re	marks.)		
SUMMARY OF FINDINGS – Attach site r	nap showir	ng samplin	g point lo	cations, transects,	important fe	atures	, etc.
Hydrophytic Vegetation Present? Yes X	No	Is the	Sampled A	rea			
	No X		n a Wetland		No X		
	No X						
Remarks: Wetland appears to be a swale draining a hill to a b  VEGETATION – Use scientific names of p		nd culvert.					
VEGETATION – Use scientific flames of ρ	Absolute	Dominant	Indicator	<u> </u>			
Tree Stratum (Plot size: 30 )	% Cover	Species?	Status	Dominance Test wo	rksheet:		
1.				Number of Dominant	•		(4)
2.				Are OBL, FACW, or F		1	_ (A)
3				Total Number of Dom Across All Strata:	inant Species	1	(B)
5.				Percent of Dominant	— Species That		_(5)
		=Total Cover		Are OBL, FACW, or F	•	100.0%	(A/B)
Sapling/Shrub Stratum (Plot size: 15	_)						
1.				Prevalence Index wo		nly by	
2. 3.				Total % Cover of OBL species		ply by: 0	-
4				FACW species (		0	-
5.				FAC species 5		150	-
		=Total Cover		FACU species 1		40	_
Herb Stratum (Plot size: 5 )				UPL species 0	x 5 =	0	_
Poa pratensis	50	Yes	FAC	Column Totals: 6	0 (A)	190	(B)
2. Taraxacum officinale	10	No	FACU	Prevalence Index	= B/A = <u>3</u>	.17	_
3.				Huduanhudia Vanatat	ion Indicators.		
4 5.				Hydrophytic Vegetat		actation	
				1 - Rapid Test for X 2 - Dominance Te		jelalion	
7.				3 - Prevalence Inc			
8.				4 - Morphological		ovide su	pporting
9.				data in Remark	s or on a separa	te sheet)	
10.				Problematic Hydr	ophytic Vegetation	on¹ (Expla	ain)
Woody Vine Stratum (Plot size: 15		=Total Cover		<sup>1</sup> Indicators of hydric s be present, unless dis		, ,,	must
1				Hydrophytic			·
2		<del></del>		Vegetation			
		=Total Cover		Present? Yes	X No		
Remarks: (Include photo numbers here or on a sep	parate sheet.)						

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SOIL Sampling Point: W2-1U

Depth     Matrix     Redox Features       (inches)     Color (moist)     %     Type¹     Loc²     Texture     Removed	
(inches) Color (moist) % Color (moist) % Type Loc Texture Rem	
	arks
0-8 10YR 3/1 100 Loamy/Clayey	
8-15 10YR 2/1 100 Loamy/Clayey	
15-21 10YR 3/1 95 10YR 4/6 5 C PL/M Loamy/Clayey Prominent redox	concentrations
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, Matrix, MS=Masked Sand Grains.	Motrix
Hydric Soil Indicators:  Indicators for Problematic H	
Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16)	-
Histic Epipedon (A2) Sandy Redox (S5) Iron-Manganese Masses (	•
Black Histic (A3)  Stripped Matrix (S6)  Red Parent Material (F21)	
Hydrogen Sulfide (A4)  Dark Surface (S7)  Very Shallow Dark Surface	
Stratified Layers (A5) Loamy Mucky Mineral (F1) Other (Explain in Remarks	
2 cm Muck (A10) Loamy Gleyed Matrix (F2)	
Depleted Below Dark Surface (A11) Depleted Matrix (F3)	
Thick Dark Surface (A12)  Redox Dark Surface (F6)  3Indicators of hydrophytic vegetations.	etation and
Sandy Mucky Mineral (S1)  Depleted Dark Surface (F7)  wetland hydrology must be	e present,
5 cm Mucky Peat or Peat (S3)Redox Depressions (F8) unless disturbed or proble	matic.
Restrictive Layer (if observed):	
Туре:	
Depth (inches): Hydric Soil Present? Yes	No X
Remarks:	
This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Ver	sion 7.0, 2015
Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)	
HYDROLOGY	
Wetland Hydrology Indicators:	m of two required)
Wetland Hydrology Indicators:	m of two required)
Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)  Secondary Indicators (minimum	m 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)	•
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of minimum of minimu	•
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of minimum of minimu	(C2)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of minimum of minimu	(C2) al Imagery (C9)
Wetland Hydrology Indicators:Primary Indicators (minimum of one is required; check all that apply)Secondary Indicators (minimum of minimum of m	(C2) al Imagery (C9) s (D1)
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 (C1)Water Marks (B1)Hydrogen Sulfide Odor (C1)Crayfish Burrows (C8)Sediment Deposits (B2)Oxidized Rhizospheres on Living Roots (C3)Saturation Visible on Aeric Stunted or Stressed PlantDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed PlantAlgal Mat or Crust (B4)Recent Iron Reduction in Tilled Soils (C6)Geomorphic Position (D2)Iron Deposits (B5)Thin Muck Surface (C7)FAC-Neutral Test (D5)	(C2) al Imagery (C9) s (D1)
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 (Cay)Water Marks (B1)Hydrogen Sulfide Odor (C1)Crayfish Burrows (C8)Sediment Deposits (B2)Oxidized Rhizospheres on Living Roots (C3)Saturation Visible on AeriaDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed PlantAlgal Mat or Crust (B4)Recent Iron Reduction in Tilled Soils (C6)Geomorphic Position (D2)Iron Deposits (B5)Thin Muck Surface (C7)FAC-Neutral Test (D5)Inundation Visible on Aerial Imagery (B7)Gauge or Well Data (D9)	(C2) al Imagery (C9) s (D1)
Wetland Hydrology Indicators:Primary Indicators (minimum of one is required; check all that apply)Secondary Indicators (minimum of minimum of 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 (C1)Water Marks (B1)Hydrogen Sulfide Odor (C1)Crayfish Burrows (C8)Sediment Deposits (B2)Oxidized Rhizospheres on Living Roots (C3)Saturation Visible on AeriaDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed PlantAlgal Mat or Crust (B4)Recent Iron Reduction in Tilled Soils (C6)Geomorphic Position (D2)Iron Deposits (B5)Thin Muck Surface (C7)FAC-Neutral Test (D5)Inundation Visible on Aerial Imagery (B7)Gauge or Well Data (D9)Sparsely Vegetated Concave Surface (B8)Other (Explain in Remarks)	(C2) al Imagery (C9) s (D1)
Wetland Hydrology Indicators:Primary Indicators (minimum of one is required; check all that apply)Secondary Indicators (minimum of minimum of minimum of 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 (Cay)Water Marks (B1)Hydrogen Sulfide Odor (C1)Crayfish Burrows (C8)Sediment Deposits (B2)Oxidized Rhizospheres on Living Roots (C3)Saturation Visible on AeriaDrift Deposits (B3)Presence of Reduced Iron (C4)Stunted or Stressed PlantAlgal Mat or Crust (B4)Recent Iron Reduction in Tilled Soils (C6)Geomorphic Position (D2)Iron Deposits (B5)Thin Muck Surface (C7)FAC-Neutral Test (D5)Inundation Visible on Aerial Imagery (B7)Gauge or Well Data (D9)Sparsely Vegetated Concave Surface (B8)Other (Explain in Remarks)	(C2) al Imagery (C9) s (D1)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of 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 (Crayfish Burrows (C8)         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 Plant         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Gauge or Well Data (D9)         Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)	(C2) al Imagery (C9) s (D1)
Wetland Hydrology Indicators:         Primary Indicators (minimum of one is required; check all that apply)       Secondary Indicators (minimum of minimum of 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 (Crayfish Burrows (C8)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)       Crayfish Burrows (C8)         Sediment Deposits (B2)       Oxidized Rhizospheres on Living Roots (C3)       Saturation Visible on Aerial Presence of Reduced Iron (C4)       Stunted or Stressed Plant (C4)         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Gauge or Well Data (D9)         Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)         Field Observations:         Surface Water Present?       Yes       No       X       Depth (inches):         Water Table Present?       Yes       No       X       Depth (inches):	(C2) al Imagery (C9) s (D1)
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 (Crayfish Burrows (C8)         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 Plant         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Gauge or Well Data (D9)         Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)         Field Observations:         Surface Water Present?       Yes       No       X       Depth (inches):       Wetland Hydrology Present?       Yes         Saturation Present?       Yes       No       X       Depth (inches):	(C2) al Imagery (C9) s (D1)
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 (Crayfish Burrows (C8)         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 Plant         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Gauge or Well Data (D9)         Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)         Field Observations:         Surface Water Present?       Yes       No       X       Depth (inches):       Wetland Hydrology Present? Yes         Saturation Present?       Yes       No       X       Depth (inches):       Wetland Hydrolo	(C2) al Imagery (C9) s (D1)
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 (Crayfish Burrows (C8)         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 Plant         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Gauge or Well Data (D9)         Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)         Field Observations:         Surface Water Present?       Yes       No       X       Depth (inches):       Wetland Hydrology Present?       Yes         Saturation Present?       Yes       No       X       Depth (inches):	(C2) al Imagery (C9) s (D1)
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 (Crayfish Burrows (C8)         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 Plant         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Gauge or Well Data (D9)         Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)         Field Observations:         Surface Water Present?       Yes       No       X       Depth (inches):       Wetland Hydrology Present? Yes         Saturation Present?       Yes       No       X       Depth (inches):       Wetland Hydrolo	(C2) al Imagery (C9) s (D1)
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 (Crayfish Burrows (C8)         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 Plant         Algal Mat or Crust (B4)       Recent Iron Reduction in Tilled Soils (C6)       Geomorphic Position (D2)         Iron Deposits (B5)       Thin Muck Surface (C7)       FAC-Neutral Test (D5)         Inundation Visible on Aerial Imagery (B7)       Gauge or Well Data (D9)         Sparsely Vegetated Concave Surface (B8)       Other (Explain in Remarks)         Field Observations:         Surface Water Present?       Yes       No       No       Depth (inches):       Wetland Hydrology Present? Yes         Water Table Present?       Yes       No       X       Depth (inches):       Wetland Hydro	(C2) al Imagery (C9) s (D1)

# WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 485 Orono Orchard Rd. S.		City/Cou	inty: Orono/l	Hennepin	Sampling Dat	.e: <u>5/10/</u>	/2021
Applicant/Owner: Sunde Land Surveying				State: MN	Sampling Poir	nt: W	'2-1W
Investigator(s): ST		Section, T	Γownship, Ra	ange: S30, T23N, R27W			
Landform (hillside, terrace, etc.): depressional			Local relief (d	concave, convex, none): c	concave		
Slope (%): 2-6 Lat: 44.968781°		Long:	·93.560311°		Datum: WGS 1	984	
Soil Map Unit Name: Hamel loam				NWI classifi	cation: PEM1A	1	
Are climatic / hydrologic conditions on the site typical	for this time o	of year?	Yes X	No (If no, expl	lain in Remarks	·····	
Are Vegetation , Soil , or Hydrology	significantly of	disturbed? A	Are "Normal (	Circumstances" present?	Yes X	No	
Are Vegetation, Soil, or Hydrology	naturally prol	olematic? (	If needed, ex	xplain any answers in Rem	narks.)		_
SUMMARY OF FINDINGS – Attach site m						eatures	, etc.
Hydrophytic Vegetation Present? Yes X N	lo	Is the	Sampled A	rea			
	lo		n a Wetland'		No		
	lo						
Remarks:							
A culvert appears to drain the wetland at the souther	n end of the v	vetland under	a roadway.				
VEGETATION – Use scientific names of pla	ante						
VEGETATION — Use scientific flames of pie	Absolute	Dominant	Indicator	<del></del>			
Tree Stratum (Plot size:30)	% Cover	Species?	Status	Dominance Test worl	ksheet:		
1				Number of Dominant S	•		
2				Are OBL, FACW, or FA	_	11	_ (A)
3. 4.				Total Number of Domii Across All Strata:	nant Species	1	(B)
5.				Percent of Dominant S	- Procios That		_(D)
·		=Total Cover		Are OBL, FACW, or FA	•	100.0%	(A/B)
Sapling/Shrub Stratum (Plot size: 15	)						_ ` ′
1				Prevalence Index wo			
2				Total % Cover of:		tiply by:	_
3.				OBL species 0		0	_
5.				FACW species 80 FAC species 0		160 0	-
J		=Total Cover		FACU species 0		0	-
Herb Stratum (Plot size: 5 )				UPL species 0		0	_
1. Phalaris arundinacea	80	Yes	FACW	Column Totals: 80	(A)	160	(B)
2.				Prevalence Index =	: B/A = 2	2.00	_
3							
4				Hydrophytic Vegetati			
5				1 - Rapid Test for		getation	
6 7.				X 2 - Dominance Tes X 3 - Prevalence Ind			
				4 - Morphological		rovide sur	pporting
9.				data in Remarks			
10.				Problematic Hydro	phytic Vegetati	on¹ (Expla	ain)
	80	=Total Cover		<sup>1</sup> Indicators of hydric so	il and wetland l	hydrology	must
Woody Vine Stratum (Plot size: 15	.)			be present, unless dist	urbed or proble	matic.	
1.				Hydrophytic			
2		=Total Cover		Vegetation	V Na		
Describe (Inches L. C.		= rotal Cover		Present? Yes_	X No_		
Remarks: (Include photo numbers here or on a sepa	arate sneet.)						

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SOIL Sampling Point: W2-1W

l				ator or c	onfirm the absence	of indicators.)
Depth Matrix		x Featur		. 2		
(inches) Color (moist) %	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4 10YR 2/1 100					Loamy/Clayey	
4-12 10YR 2/1 95	10YR 4/6	5	C	PL/M	Loamy/Clayey	Prominent redox concentrations
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=	Reduced Matrix M	M-Pl	ked Sand		<sup>2</sup> l ocation	: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	reduced Matrix, IV	10-Mas	ica Garic	J Clairis.		s for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)	Sandy Gle	ved Mat	rix (S4)			t Prairie Redox (A16)
Histic Epipedon (A2)	Sandy Red		,			Manganese Masses (F12)
Black Histic (A3)	Stripped M		6)			Parent Material (F21)
Hydrogen Sulfide (A4)	Dark Surfa	ce (S7)			Very	Shallow Dark Surface (F22)
Stratified Layers (A5)	Loamy Mu	cky Mine	eral (F1)		Other	r (Explain in Remarks)
2 cm Muck (A10)	Loamy Gle	yed Mat	rix (F2)			
Depleted Below Dark Surface (A11)	Depleted N	,	,			
Thick Dark Surface (A12)	X Redox Dar					s of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted D					nd hydrology must be present,
5 cm Mucky Peat or Peat (S3)	? Redox Dep	ression	s (F8)		unles	s disturbed or problematic.
Restrictive Layer (if observed):						
Type:						
Depth (inches):					Hydric Soil Present	? Yes X No
Remarks:	10 1 1				NDOO E' III I' .	(11 1: 0 !! )/ : 70 0045
This data form is revised from Midwest Region Errata. (http://www.nrcs.usda.gov/Internet/FS						s of Hydric Soils, Version 7.0, 2015
Errata: (http://www.mcs.usua.gov/mcmcv/ c	DE_BOOOMEIVIO	11103172	-ρ2_0012	_00.d00x	·)	
HYDROLOGY						
Wetland Hydrology Indicators:						
Primary Indicators (minimum of one is requir	ed; check all that a	apply)			Secondar	ry Indicators (minimum of two required)
Surface Water (A1)	Water-Stai	ned Lea	ves (B9)		Surfa	ice Soil Cracks (B6)
High Water Table (A2)	Aquatic Fa	una (B1	3)		Drain	age Patterns (B10)
Saturation (A3)	True Aqua				Dry-S	Season Water Table (C2)
Water Marks (B1)	Hydrogen S	Sulfide C	Odor (C1)	)	Crayf	ish Burrows (C8)
Sediment Deposits (B2)	Oxidized R			-		ration Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Presence of			,		red or Stressed Plants (D1)
Algal Mat or Crust (B4)	Recent Iron			lled Soils	• •	norphic Position (D2)
Iron Deposits (B5)	Thin Muck		, ,		<u>X</u> FAC-	Neutral Test (D5)
	Gauge or \					
Inundation Visible on Aerial Imagery (B7	Q) Other (Eve		elliai No)			
Sparsely Vegetated Concave Surface (B	8)Other (Exp	iaiii iii i			T	
Sparsely Vegetated Concave Surface (B Field Observations:	<u> </u>		nahaa):			
Sparsely Vegetated Concave Surface (B Field Observations: Surface Water Present? Yes	No X	Depth (i				
Sparsely Vegetated Concave Surface (B  Field Observations: Surface Water Present? Water Table Present? Yes	No X No X	Depth (i	nches):		Wetland Hydrolog	gy Present? Yes X No
Sparsely Vegetated Concave Surface (B  Field Observations: Surface Water Present? Water Table Present? Saturation Present? Yes X	No X No X	Depth (i			Wetland Hydrolog	gy Present? Yes X No
Sparsely Vegetated Concave Surface (B  Field Observations: Surface Water Present? Water Table Present? Yes	No X No X No	Depth (i Depth (i Depth (i	nches): _ nches): _	10		gy Present? Yes X No
Sparsely Vegetated Concave Surface (B  Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	No X No X No	Depth (i Depth (i Depth (i	nches): _ nches): _	10		gy Present? Yes X No
Sparsely Vegetated Concave Surface (B  Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	No X No X No	Depth (i Depth (i Depth (i	nches): _ nches): _	10		gy Present? Yes X No
Sparsely Vegetated Concave Surface (B  Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes X (includes capillary fringe)  Describe Recorded Data (stream gauge, mo	No X No X No	Depth (i Depth (i Depth (i	nches): _ nches): _	10		gy Present? Yes X No

# WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 485 Orono Orchard Rd. S.		City/County: Orono/Hennepin Sampling Date: 5					
Applicant/Owner: Sunde Land Surveying				State: MN	Sampling Poi	int: W	/3-1U
Investigator(s): ST		Section, T	ownship, Rai	nge: S30, T23N, R27V	V		
Landform (hillside, terrace, etc.): depressional		!	Local relief (c	oncave, convex, none):	concave		
Slope (%): 0-1 Lat: 44.968781°		Long: -	93.560311°		Datum: WGS 1	984	
Soil Map Unit Name: Lester loam				NWI clas	sification: PEM1	1C	
Are climatic / hydrologic conditions on the site typical	for this time of	of year?	Yes X	No (If no, exp	olain in Remarks	s.)	
Are Vegetation, Soil, or Hydrology	significantly	disturbed? A	re "Normal C	ircumstances" present?	Yes X	No	
Are Vegetation, Soil, or Hydrology	naturally prol	blematic? (	If needed, exp	olain any answers in Rei	marks.)		_
SUMMARY OF FINDINGS – Attach site m	=		g point lo	cations, transects,	important f	eatures	, etc.
Hydrophytic Vegetation Present? Yes N	lo X	Is the	Sampled Ar	ea			
	lo X		n a Wetland?		No X		
	lo X						
Remarks: Culverts and natural drainage appear to enter the we		various location	ns.				
VEGETATION – Use scientific names of plants							
<u>Tree Stratum</u> (Plot size: 30 )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test wo	rksheet:		
1.	70 0010.	орос.ос.		Number of Dominant			
2.				Are OBL, FACW, or F	•	1	(A)
3				Total Number of Dom	inant Species		
4				Across All Strata:	_	2	_ (B)
5		=Total Cover		Percent of Dominant Are OBL, FACW, or F	•	50.0%	(A/B)
Sapling/Shrub Stratum (Plot size: 15	)	= Folai Covei		Ale OBL, LACW, OLL	<u> </u>	30.076	_(A/B)
1	.′			Prevalence Index wo	orksheet:		
2.				Total % Cover of	: Mul	tiply by:	_
3				OBL species	x 1 =	0	_
4				FACW species 0		0	_
5		<del></del>		FAC species 2		60	_
Herb Stratum (Plot size: 5 )		=Total Cover		FACU species 7 UPL species 0		280 0	_
1. Glechoma hederacea	60	Yes	FACU	Column Totals: 9	<del></del>	340	(B)
Alliaria petiolata	20	Yes	FAC	Prevalence Index	·       _	3.78	_(_)
Solidago canadensis	10	No	FACU				_
4.				Hydrophytic Vegetat	ion Indicators:		
5.				1 - Rapid Test for	Hydrophytic Ve	getation	
6				2 - Dominance Te	est is >50%		
7				3 - Prevalence Inc			
8				4 - Morphological	Adaptations' (P s or on a separ		
9.				Problematic Hydr	•	,	
10	90	=Total Cover					
Woody Vine Stratum (Plot size: 15	)	_		<sup>1</sup> Indicators of hydric s be present, unless dis			must
1.	·			Hydrophytic			
2.				Vegetation			
		=Total Cover		Present? Yes	No _	X	
Remarks: (Include photo numbers here or on a sepa	arate sheet.)						

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SOIL Sampling Point: W3-1U

	cription: (Describe	o the dept				tor or o	confirm the abser	nce of indicators	s.)	
Depth	Matrix			x Featur		. 2				
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-10	10YR 2/1	100					Loamy/Clayey	<u>/</u>		
10-15	10YR 3/1	100					Loamy/Clayey	<u> </u>		
15-18	10YR 4/1	95	10YR 4/6	5	C	M	Loamy/Clayey	/ Promine	ent redox conc	entrations
			_							
										,
1Typo: C-C	oncentration, D=Depl	otion PM-I	Poducod Matrix N		kod Sano		21 000	ation: PL=Pore L	ining M-Matr	iv
Hydric Soil		etion, ixivi–i	rteduced Matrix, I	vio–ivias	Keu Jane	Oranis		ators for Proble		
Histosol			Sandy Gle	ved Mat	rix (S4)			Coast Prairie Red	-	
	pipedon (A2)		Sandy Red	-				ron-Manganese N	` ,	
Black Hi			Stripped M					Red Parent Mater		
Hydroge	n Sulfide (A4)		Dark Surfa		•			ery Shallow Darl	k Surface (F2	2)
Stratified	d Layers (A5)		Loamy Mu	cky Mine	eral (F1)			Other (Explain in	Remarks)	
2 cm Mu	ıck (A10)		Loamy Gle	eyed Mat	trix (F2)					
Depleted	d Below Dark Surface	(A11)	Depleted N	Иatrix (F	3)					
	ark Surface (A12)		Redox Dai		. ,			cators of hydroph		
	lucky Mineral (S1)		Depleted [					vetland hydrology		
5 cm Mu	icky Peat or Peat (S3	)	Redox Dep	oression	s (F8)		U	ınless disturbed o	or problematic	•
	Layer (if observed):									
Type:								_		
Depth (ir	nches):						Hydric Soil Pre	sent?	Yes	No X
Remarks:										
	m is revised from Mic ://www.nrcs.usda.gov							ators of Hydric S	oils, Version 7	7.0, 2015
Litala. (IIIIp.	//www.mcs.usua.gov	internet/i c	BL_DOCOMENTS	/11105142	2p2_0312	.93.uuc	^)			
HYDROLO	OGY									
Wetland Hy	drology Indicators:									
-	cators (minimum of o	ne is require	ed; check all that	apply)			Seco	ndary Indicators	(minimum of t	wo required)
Surface	Water (A1)		Water-Sta	ined Lea	aves (B9)		s	Surface Soil Crac	ks (B6)	
High Wa	ater Table (A2)		Aquatic Fa	auna (B1	3)			Orainage Patterns	s (B10)	
Saturation			True Aqua					Ory-Season Wate	r Table (C2)	
	larks (B1)		Hydrogen					Crayfish Burrows		
	nt Deposits (B2)		Oxidized F	•		•		Saturation Visible		
	posits (B3)		Presence		,	,		Stunted or Stress		)
	at or Crust (B4)		Recent Iro			lled Soil		Geomorphic Posit		
	oosits (B5)	(DZ)	Thin Muck		, ,		t	FAC-Neutral Test	(D5)	
	on Visible on Aerial Ir  Vegetated Concave	0 , ,			` '					
Field Obser		Surface (De	b)Other (Exp	naiii iii r	(emarks)		1			
Surface Wat		2	No X	Depth (i	nches).					
Water Table		s <u>——</u>			nches):					
Saturation P				Depth (i			Wetland Hydr	ology Present?	Yes	No X
(includes car				(-	_			g,		· · · · · · · · · · · · · · · · · · ·
,	corded Data (stream	gauge, mor	nitoring well, aeria	l photos	, previous	s inspec	tions), if available	:		
Remarks:										

Project/Site: 485 Orono Orchard Rd. S.		City/Cou	nty: Orono/I	Hennepin	Sampling Dat	te: <u>5/10</u>	/2021
Applicant/Owner: Sunde Land Surveying				State: MN	Sampling Poi	nt: W	/3-1W
Investigator(s): ST		Section, T	ownship, Ra	ange: S30, T23N, R27V	V		
Landform (hillside, terrace, etc.): depressional			Local relief (	concave, convex, none):	concave		
Slope (%): 0-1 Lat: 44.968781°		Long: -	93.560311°		Datum: WGS 1	984	
Soil Map Unit Name: Lester loam				NWI classit	fication: PEM1C	;	
Are climatic / hydrologic conditions on the site typical	for this time o	f year?	Yes X	No (If no, exp	olain in Remarks	3.)	
Are Vegetation, Soil, or Hydrology	significantly of	listurbed? A	Are "Normal (	Circumstances" present?	Yes X	No	
Are Vegetation, Soil, or Hydrology	naturally prob	olematic? (	If needed, ex	cplain any answers in Rer	marks.)	·	_
SUMMARY OF FINDINGS – Attach site m			g point lo	cations, transects,	important f	eatures	, etc.
Hydrophytic Vegetation Present? Yes X N	lo	Is the	Sampled A	rea			
	lo		n a Wetland		No		
	lo						
Remarks: Culverts and natrual drainages appers to enter the w	etland area						
Converte and mandar drainages appelle to office the w	cliaria arca.						
VEGETATION – Use scientific names of pla	ants.						
T 0: (D) (1: 00 )	Absolute	Dominant	Indicator				
Tree Stratum (Plot size: 30 ) 1.	% Cover	Species?	Status	Dominance Test wor			
2.				Number of Dominant Are OBL, FACW, or F	•	2	(A)
3.	·			Total Number of Dom	_		_ (' ')
4.				Across All Strata:	_	2	(B)
5.				Percent of Dominant	Species That		
	, <del></del>	=Total Cover		Are OBL, FACW, or F	AC:	100.0%	_ (A/B)
Sapling/Shrub Stratum (Plot size: 15	)			Prevalence Index wo			
1. 2.				Total % Cover of		tiply by:	
3.	· · · · · · · · · · · · · · · · · · ·			OBL species 20			_
4.	·			FACW species 10	0 x 2 =	20	_
5.				FAC species 20	0 x 3 =	60	_
	:	=Total Cover		FACU species5	x 4 =	20	_
Herb Stratum (Plot size: 5 )				UPL species 0	x 5 =	0	_
Glechoma hederacea	5	No	FACU	Column Totals: 55	· ·	120	_ (B)
2. Alliaria petiolata	20	Yes	FAC	Prevalence Index :	= B/A =2	2.18	_
Solidago gigantea     Carex lacustris	10	No Yes	FACW OBL	Hydrophytic Vegetat	ion Indicators		
		162	OBL	1 - Rapid Test for			
56.				X 2 - Dominance Te		getation	
7.				X 3 - Prevalence Inc			
8.				4 - Morphological	Adaptations <sup>1</sup> (P	rovide su	pporting
9.	·			data in Remark	s or on a separ	ate sheet)	)
10.				Problematic Hydro	ophytic Vegetat	ion¹ (Expla	ain)
	55	=Total Cover		<sup>1</sup> Indicators of hydric s		, ,,	must
Woody Vine Stratum (Plot size: 15	)			be present, unless dis	turbed or proble	matic.	
1.				Hydrophytic			
2		=Total Cover		Vegetation Present? Yes	Y No		
		= i Ulai Cover		Present fes	X No_		
Remarks: (Include photo numbers here or on a sepa	rate sheet.)						

SOIL Sampling Point: W3-1W

	cription: (Describe	o the dept				tor or o	confirm the abse	nce of indicators.)	)
Depth	Matrix			x Featur		. 2			
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks
0-4	10YR 2/1	100					Loamy/Claye	<u> </u>	
4-6	10YR 3/1	100					Loamy/Claye	<u> </u>	
6-12	10YR 3/1	95	10YR 4/6	5	С	M	Loamy/Claye	y Prominen	t redox concentrations
			_						
			_						
1 <sub>T. m. a.</sub> C. C			Dadwaad Matrix N				21.22	etien. Di Dene Lie	inn M. Matrix
Hydric Soil	oncentration, D=Depl	etion, Rivi=i	Reduced Matrix, N	/IS=IVIAS	ked Sand	Grains		ation: PL=Pore Lin	natic Hydric Soils <sup>3</sup> :
Histosol			Sandy Gle	ved Mat	riv (S4)			Coast Prairie Redox	
	pipedon (A2)		Sandy Red	-				ron-Manganese Ma	` '
Black Hi			Stripped M					Red Parent Materia	
	n Sulfide (A4)		Dark Surfa		<i>3</i> ,			/ery Shallow Dark	, ,
	Layers (A5)		Loamy Mu	, ,	eral (F1)			Other (Explain in Re	
2 cm Mu			Loamy Gle	•	, ,			` '	,
	Below Dark Surface	(A11)	Depleted N	-					
	rk Surface (A12)	,	X Redox Dar	k Surfac	e (F6)		<sup>3</sup> Indi	cators of hydrophyt	ic vegetation and
Sandy M	lucky Mineral (S1)		Depleted [	Dark Sur	face (F7)		\	wetland hydrology r	must be present,
5 cm Mu	cky Peat or Peat (S3	)	Redox Dep	oression	s (F8)		ι	unless disturbed or	problematic.
Restrictive	Layer (if observed):								
Type:			<u></u>						
Depth (inches):         Hydric Soil Present?         Yes X         No									
Remarks:									
								ators of Hydric Soi	ls, Version 7.0, 2015
Errata. (http:	//www.nrcs.usda.gov	Internet/FS	E_DOCUMENTS	/nrcs142	2p2_0512	293.doc	x)		
HYDROLO	iGY								
_									
_	drology Indicators: cators (minimum of o	no is roquir	od: chock all that	annly)			Soco	andary Indicators (n	ninimum of two required)
	water (A1)	ne is require	Water-Sta		,,,oo (BO)				ninimum of two required)
	ter Table (A2)		Aquatic Fa		` '			Surface Soil Cracks Drainage Patterns (	
Saturation	` ,		True Aqua	,	,			Dry-Season Water	
	arks (B1)		Hydrogen					Crayfish Burrows (C	` '
	t Deposits (B2)		Oxidized F						n Aerial Imagery (C9)
	osits (B3)		Presence			_		Stunted or Stressed	
	t or Crust (B4)		Recent Iro		,	,		Geomorphic Positio	
	osits (B5)		Thin Muck	Surface	(C7)			FAC-Neutral Test (I	
Inundation	on Visible on Aerial Ir	nagery (B7)	Gauge or \	Well Dat	a (D9)				
Sparsely	Vegetated Concave	Surface (Ba	B) Other (Exp	lain in R	Remarks)				
Field Obser	vations:								
Surface Wat	er Present? Ye	s	No X	Depth (i	nches):				
Water Table	Present? Ye	s	No X	Depth (i	nches):				
Saturation P	resent? Ye	s	No X	Depth (i	nches):		Wetland Hyd	rology Present?	Yes X No
(includes cap	oillary fringe)								
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks:									
inemarks.									
Ī									

Project/Site: 485 Orono Orchard Rd. S.		City/Cou	nty: Orono/l	Hennepin	Sampling Dat	te: <u>5/10</u>	)/2021
Applicant/Owner: Sunde Land Surveying				State: MN	Sampling Poi	nt:V	V4-1U
Investigator(s): ST		Section, 1	Township, Ra	nge: S30, T23N, R27W	ı		
Landform (hillside, terrace, etc.): depressional			Local relief (d	concave, convex, none):	concave		
Slope (%): 0-1 Lat: 44.968781°		Long: -	93.560311°	1	Datum: WGS 1	984	
Soil Map Unit Name: Lester loam				NWI class	ification: PEM1	С	
Are climatic / hydrologic conditions on the site typical f	or this time o	f year?	Yes X	No (If no, exp	lain in Remarks	S.)	
Are Vegetation , Soil , or Hydrology				Circumstances" present?			
Are Vegetation, Soil, or Hydrology				plain any answers in Ren			_
SUMMARY OF FINDINGS – Attach site m						eatures	s, etc.
Hydrophytic Vegetation Present? Yes N	o X	Is the	Sampled A	rea			
	o X		n a Wetland		No X		
	o X						
Remarks:							
<b>VEGETATION</b> – Use scientific names of pla	ants.						
Trac Stratum (Diet size: 20	Absolute	Dominant	Indicator	Deminence Test wer	lrahaat.		
<u>Tree Stratum</u> (Plot size: <u>30</u> )  1. Fraxinus pennsylvanica	% Cover 5	Species? Yes	Status FACW	Dominance Test wor			
2.		163	TACW	Number of Dominant S Are OBL, FACW, or Factor	•	3	(A)
3.				Total Number of Domi	_		_` ′
4.				Across All Strata:	_	6	(B)
5.				Percent of Dominant S	pecies That		_
	5	=Total Cover		Are OBL, FACW, or F.	AC: _	50.0%	_ (A/B)
Sapling/Shrub Stratum (Plot size: 15	)						
Rhamnus cathartica 2.	10	Yes	<u>FAC</u>	Prevalence Index wo		tialı bı	
3.				Total % Cover of: OBL species 0		tiply by: 0	_
				FACW species 5		10	_
5.				FAC species 20		60	_
	10	=Total Cover		FACU species 30	) x 4 =	120	_
Herb Stratum (Plot size: 5 )				UPL species 0		0	_
Glechoma hederacea	10	Yes	FACU	Column Totals: 55		190	_ (B)
2. Alliaria petiolata	10	Yes	FAC	Prevalence Index =	: B/A =	3.45	_
3. Solidago canadensis	10	Yes	FACU	Hydrophytic Vegetati	Indiantana		
4. Carex gravida 5.	10	Yes	FACU	' ' '			
5. 6.				1 - Rapid Test for 2 - Dominance Te		getation	
7.				3 - Prevalence Ind			
8.				4 - Morphological		rovide su	pporting
9.				data in Remark	s or on a separ	ate sheet)	)
10				Problematic Hydro	phytic Vegetati	ion <sup>1</sup> (Expl	ain)
	40	=Total Cover		<sup>1</sup> Indicators of hydric so			/ must
Woody Vine Stratum (Plot size: 15	)			be present, unless dist	urbed or proble	matic.	
1				Hydrophytic			
2		=Total Cover		Vegetation Present? Yes	No	×	
Describer (Include whether week are been as				11636111: 165_	No		
Remarks: (Include photo numbers here or on a sepa	rate sneet.)						

SOIL Sampling Point: W4-1U

	ription: (Describe t	o the dept				tor or o	confirm the ab	sence of indicator	s.)	
Depth	Matrix			ox Featur		. 2				
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-8	10YR 2/1	100					Loamy/Cla	yey		
8-15	10YR 3/1	100					Loamy/Cla	yey		
15-18	10YR 4/1	100					Loamy/Cla	yey		
1			Dankara d Matric				2,	DI Dani I	ining M. Mate	•
Hydric Soil I	oncentration, D=Depl	etion, Rivi=i	Reduced Matrix,	MS=Mas	ked Sand	Grains		ocation: PL=Pore I dicators for Proble		
-			Sandy Gl	avad Mat	riv (S1)		111	Coast Prairie Red	-	30115 .
Histosol	ipedon (A2)		Sandy Glo	-			_	Coast Frame Rec Iron-Manganese	, ,	
							_	Red Parent Mate		
Black His	n Sulfide (A4)		Stripped I  Dark Surf		)		_	Very Shallow Dar	` '	2)
	Layers (A5)		Loamy M	, ,	orol (E1)				,	<b>2</b> )
	• • •			•	, ,			Other (Explain in	Remarks)	
2 cm Mu	` ,	(444)	Loamy GI	-						
	Below Dark Surface rk Surface (A12)	(A11)	Depleted Redox Da				310	ndicators of hydroph	vatio vogototio	a and
	ucky Mineral (S1)		Depleted		, ,		11		-	
	cky Peat or Peat (S3		Redox De					wetland hydrolog unless disturbed		
		)	Redux De	pression	5 (1 0)	1		uniess disturbed	or problematic	•
	_ayer (if observed):									
Type:	1 \		<u>—</u>						v	N V
Depth (in	iches):		_				Hydric Soil F	resent?	Yes	No X
Remarks:										
	m is revised from Mic //www.nrcs.usda.gov/							dicators of Hydric S	ioils, Version i	7.0, 2015
Enaia. (mip./	//www.fiics.usua.gov/	internet/F3	BE_DOCUMENTS	5/11105 142	2p2_0312	.93.u00	x)			
HYDROLO	GY									
Wetland Hvo	drology Indicators:									
_	cators (minimum of o	ne is require	ed; check all that	apply)			Se	econdary Indicators	(minimum of t	two required)
-	Water (A1)		Water-Sta		ives (B9)			Surface Soil Crac	ks (B6)	*
High Wa	ter Table (A2)		Aquatic F	auna (B1	3)			<ul> <li>Drainage Pattern</li> </ul>	s (B10)	
Saturation	n (A3)		True Aqua	atic Plant	s (B14)			Dry-Season Wate	er Table (C2)	
Water Ma			Hydrogen		, ,	)		Crayfish Burrows		
	t Deposits (B2)		Oxidized				oots (C3)	Saturation Visible		igery (C9)
Drift Dep	osits (B3)		Presence	of Reduc	ced Iron (	C4)		Stunted or Stress	ed Plants (D1	)
Algal Ma	t or Crust (B4)		Recent Ire	on Reduc	tion in Ti	lled Soil	s (C6)	Geomorphic Posi	tion (D2)	
Iron Dep	osits (B5)		Thin Mucl	k Surface	e (C7)			FAC-Neutral Test	t (D5)	
Inundation	on Visible on Aerial In	nagery (B7)	Gauge or	Well Dat	a (D9)			<del></del>		
Sparsely	Vegetated Concave	Surface (B	8) Other (Ex	plain in R	Remarks)					
Field Observ	vations:									
Surface Wate	er Present? Yes	3	No X	Depth (i	nches):					
Water Table	Present? Yes	<del></del>	No X	Depth (i	_					
Saturation Pr	resent? Yes	3	No X	Depth (i	_		Wetland H	ydrology Present?	Yes	No X
(includes cap	oillary fringe)		_ <del></del>		_					
Describe Red	corded Data (stream	gauge, mor	nitoring well, aeri	al photos	, previous	sinspec	ctions), if availab	ble:		
Remarks:										

US Army Corps of Engineers

Midwest Region – Version 2.0

Project/Site: 485 Orono Orchard Rd. S.		City/Cou	nty: Orono/l	Hennepin	Sampling Da	ate: <u>5/10</u>	/2021
Applicant/Owner: Sunde Land Surveying				State: MN	Sampling Po	int: W	/4-1W
Investigator(s): ST		Section, 7	Township, Ra	nge: S30, T23N, R27V	٧		
Landform (hillside, terrace, etc.): depressional			Local relief (d	concave, convex, none):	concave		
Slope (%):0-1 Lat: _44.968781°		Long:	93.560311°		Datum: WGS	1984	
Soil Map Unit Name: Lester loam				NWI classi	fication: PEM1	С	
Are climatic / hydrologic conditions on the site typica	I for this time o	f year?	Yes X	No (If no, ex	olain in Remark	(s.)	
Are Vegetation , Soil , or Hydrology	significantly of	disturbed? A	Are "Normal (	Circumstances" present?	Yes X	No	
Are Vegetation, Soil, or Hydrology			If needed, ex	plain any answers in Re	marks.)		_
SUMMARY OF FINDINGS – Attach site r	<del></del>				,	features	, etc.
Hydrophytic Vegetation Present? Yes X	No	Is the	Sampled A	rea			
Hydric Soil Present? Yes X	No	withi	n a Wetland	? Yes X	No		
Wetland Hydrology Present? Yes X	No						
Remarks:							
<b>VEGETATION</b> – Use scientific names of p		<u> </u>	1 1 .				
Tree Stratum (Plot size: 30 )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test wo	rksheet:		
1. Fraxinus pennsylvanica	10	Yes	FACW	Number of Dominant			
2.				Are OBL, FACW, or F	•	4	(A)
3.				Total Number of Dom	inant Species		_
4				Across All Strata:	· =	4	(B)
5	_			Percent of Dominant			
0 15 (0) 1 0 (0)	10	=Total Cover		Are OBL, FACW, or F	AC:	100.0%	_ (A/B)
Sapling/Shrub Stratum (Plot size: 15	_)			Prevalence Index wo			
1 2.				Total % Cover of		ıltiply by:	
3.					0 x 1 =	20	_
4.				· · · · · · · · · · · · · · · · · · ·	0 x 2 =	120	_
5.				FAC species 2	0 x 3 =	60	_
		=Total Cover		FACU species (	x 4 =	0	_
Herb Stratum (Plot size: 5 )					x 5 =	0	_
1. Phalaris arundinacea	40	Yes	FACW		00 (A)	200	_(B)
2. Alliaria petiolata	10	Yes No	FACW	Prevalence Index	= B/A =	2.00	_
Solidago gigantea     Carex lacustris	20	Yes	OBL	Hydrophytic Vegetat	ion Indicators	-	
5		100		1 - Rapid Test for			
6.				X 2 - Dominance Te		-9	
7.				X 3 - Prevalence In			
8.	_			4 - Morphological			
9					ks or on a sepa		•
10				Problematic Hydr			,
Washin Visa Obstant	90	=Total Cover		<sup>1</sup> Indicators of hydric s			must
Woody Vine Stratum (Plot size: 15	_)			be present, unless dis	turbea or probl	ematic.	
2.				Hydrophytic Vegetation			
	<del></del>	=Total Cover			X No		
Pamarke: (Include photo numbers here or on a con				1			
Remarks: (Include photo numbers here or on a sep	parate sheet.)						

SOIL Sampling Point: W4-1W

	cription: (Describe	to the depth				ator or o	confirm the al	osence of	findicators	i.)	
Depth	Matrix			x Featur		. 2					
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture			Remarks	
0-6	10YR 2/1	100					Loamy/Cla	ayey			
6-12	10YR 3/1	95	10YR 4/6	5	<u>C</u>	PL/M	Loamy/Cla	ayey	Promine	nt redox conce	entrations
1Type: C-C	oncentration, D=Dep	Jetion RM-F	Peduced Matrix N	 /S_Mas	ked San	d Grains		ocation:	PI –Pore I i	ning, M=Matri	<u> </u>
Hydric Soil		iletion, ixivi–i	reduced Matrix, I	/IO-IVIAS	Keu San	u Oranis				matic Hydric	
Histosol			Sandy Gle	ved Mat	rix (S4)				Prairie Red	•	
	pipedon (A2)		Sandy Red				_			lasses (F12)	
Black His			Stripped M				_		arent Materi		
Hydroge	n Sulfide (A4)		Dark Surfa	ice (S7)			_	Very S	hallow Dark	Surface (F22	)
Stratified	Layers (A5)		Loamy Mu	cky Mine	eral (F1)		_	Other	(Explain in F	Remarks)	
2 cm Mu	ck (A10)		Loamy Gle	eyed Mat	trix (F2)		_				
Depleted	Below Dark Surface	e (A11)	Depleted N	∕latrix (F	3)						
Thick Da	rk Surface (A12)		X Redox Dar	k Surfac	e (F6)		<sup>3</sup> l			tic vegetation	
	lucky Mineral (S1)		Depleted [			)				must be pres	ent,
5 cm Mu	cky Peat or Peat (S	3)	Redox Dep	oression	s (F8)			unless	disturbed o	r problematic.	
Restrictive I	Layer (if observed):										
Type:			_								
Depth (ir	nches):		_				Hydric Soil	Present?	•	Yes X	No
	m is revised from Mi //www.nrcs.usda.gov	-						ndicators	of Hydric So	oils, Version 7	.0, 2015
HYDROLO	)GY										
_											
-	drology Indicators: cators (minimum of c		od: check all that	annly)			9	Secondary	Indicators (	minimum of ty	vo required)
	Water (A1)	nie is require	Water-Sta		ives (R9)				e Soil Crack		<u>wo required)</u>
	ter Table (A2)		Aquatic Fa		, ,	'			ge Patterns		
Saturation	` '		True Aqua	`	,		_		-	r Table (C2)	
	arks (B1)		Hydrogen			)	_		sh Burrows (		
Sedimen	t Deposits (B2)		Oxidized F				oots (C3)	Satura	tion Visible	on Aerial Imag	gery (C9)
Drift Dep	osits (B3)		Presence	of Reduc	ced Iron	(C4)		Stunte	d or Stresse	ed Plants (D1)	
Algal Ma	t or Crust (B4)		Recent Iro	n Reduc	tion in Ti	illed Soil	ls (C6)	X Geom	orphic Posit	ion (D2)	
Iron Dep	osits (B5)		Thin Muck	Surface	e (C7)		<u></u>	X FAC-N	leutral Test	(D5)	
	on Visible on Aerial I	0, , ,	Gauge or \								
Sparsely	Vegetated Concave	Surface (B8	B)Other (Exp	olain in R	Remarks)						
Field Obser											
Surface Wat		es			nches): _						
Water Table		es			nches): _		1		<b>D</b> 40	<b>v</b> v	
Saturation P		es	No X	Deptn (I	nches):		wetiand F	hyarology	/ Present?	Yes X	No
(includes car	corded Data (stream	aguae man	itoring well acris	Inhotoo	proviou	e inence	tions) if avails	able:			
Describe Re	corded Data (Stream	gauge, mon	moning well, aerla	ı priotos	, previou	s mspec	اردانانه), ۱۱ avalla	able.			
Remarks:											
	ter near sampling po	int in deeper	portion of wetlan	d area.							

Project/Site: 485 Orono Orchard Rd. S.		City/Cou	nty: Orono/l	Hennepin	Sampling Dat	e: <u>5/10</u>	/2021
Applicant/Owner: Sunde Land Surveying				State: MN	Sampling Poir	nt: <u>V</u>	/5-1U
Investigator(s): ST		Section, 7	Γownship, Ra	inge: S30, T23N, R27W	i		
Landform (hillside, terrace, etc.): depressional			Local relief (d	concave, convex, none):	concave		
Slope (%): 0-1 Lat: 44.968781°		Long: -	93.560311°	1	Datum: WGS 1	984	
Soil Map Unit Name: Udorthents, wet substratum					ification: PEM1	С	
Are climatic / hydrologic conditions on the site typical	for this time of	f year?	Yes X	No (If no, exp	lain in Remarks	;.)	
Are Vegetation , Soil , or Hydrology				Circumstances" present?			
Are Vegetation, Soil, or Hydrology	-			plain any answers in Ren		-	_
SUMMARY OF FINDINGS – Attach site m						eatures	, etc.
Hydrophytic Vegetation Present? YesN	lo X	Is the	Sampled A	rea			
	No X		n a Wetland		No X		
	No X						
Remarks:		•					
VECETATION Line estantific names of al	0.040						
<b>VEGETATION</b> – Use scientific names of pl	Absolute	Dominant	Indicator	1			
<u>Tree Stratum</u> (Plot size: 30 )	% Cover	Species?	Status	Dominance Test wor	ksheet:		
1. Ulmus pumila	10	Yes	UPL	Number of Dominant S	Species That		
2. Tilia americana	10	Yes	FACU	Are OBL, FACW, or F	AC: _	1	(A)
3				Total Number of Domi	nant Species		
4				Across All Strata:	_	6	_ (B)
5	20	=Total Cover		Percent of Dominant S	•	16.7%	(
Sapling/Shrub Stratum (Plot size: 15		= rotal Cover		Are OBL, FACW, or FA	4C	10.7%	_ (A/B)
1. Rhamnus cathartica	_/ 	Yes	FAC	Prevalence Index wo	rksheet:		
2.				Total % Cover of:		iply by:	
3.				OBL species 0		0	_
4.				FACW species 0	x 2 =	0	_
5				FAC species 20	) x 3 =	60	_
	20	=Total Cover		FACU species 30		120	_
Herb Stratum (Plot size: 5 )	40	.,	E4011	UPL species 20		100	<b>-</b> (D)
Glechoma hederacea     Carex gravida	10	Yes	FACU	Column Totals: 70		280	_ (B)
Carex gravida     Carex pensylvanica	10	Yes Yes	FACU UPL	Prevalence Index =	: D/A =	1.00	-
1		103		Hydrophytic Vegetati	on Indicators:		
5.				1 - Rapid Test for			
6.	•			2 - Dominance Te		<b>J</b>	
7.				3 - Prevalence Ind	ex is ≤3.0 <sup>1</sup>		
8.				4 - Morphological			
9				data in Remark	•	,	
10				Problematic Hydro	. , .	` '	,
Woody Vine Stratum (Plot size: 15	) 30	=Total Cover		<sup>1</sup> Indicators of hydric so be present, unless dist			must
1.				Hydrophytic			
2.				Vegetation			
		=Total Cover	<u></u>	Present? Yes	No	X	
Remarks: (Include photo numbers here or on a sepa	arate sheet.)						

SOIL Sampling Point: W5-1U

	cription: (Describe	to the depti				ator or o	confirm the abs	ence of indicators	5.)	
Depth	Matrix			x Featur		. 2				
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-8	10YR 2/1	100					Loamy/Clay			
8-16	10YR 4/1	100					Loamy/Clay	ey		
16-20	10YR 4/1	95	5YR 4/6	5	<u>C</u>	M	Loamy/Clay	ey Promine	nt redox conce	entrations
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RM=F	Reduced Matrix, M	1S=Mas	ked Sand	d Grains	Local Local Physics	cation: PL=Pore L	ining, M=Matri	X.
Hydric Soil	Indicators:						Ind	icators for Proble	matic Hydric	Soils <sup>3</sup> :
Histosol			Sandy Gle		rix (S4)			Coast Prairie Red		
	pipedon (A2)		Sandy Red					Iron-Manganese N		
Black His	` '		Stripped M	•	5)			Red Parent Mater	, ,	
	n Sulfide (A4) I Layers (A5)		Dark Surfa Loamy Mu	` '	oral (E1)			Very Shallow Dark Other (Explain in I		(.)
2 cm Mu			Loamy Gle	-				Other (Explain in I	Remarks)	
	Below Dark Surface	e (A11)	Depleted N							
	rk Surface (A12)	3 (7111)	Redox Dar	`	,		<sup>3</sup> Inc	dicators of hydroph	vtic vegetation	and
Sandy M	lucky Mineral (S1)		Depleted D	ark Sur	face (F7)	)		wetland hydrology		
5 cm Mu	5 cm Mucky Peat or Peat (S3) Redox Depressions (F8)					unless disturbed or problematic.				
Restrictive I	Layer (if observed):	1								
Type:			_							
Depth (ir	nches):		_				Hydric Soil Pr	resent?	Yes	No X
	m is revised from Mi //www.nrcs.usda.gov	_						icators of Hydric So	oils, Version 7	.0, 2015
HYDROLO	GY									
_	drology Indicators:									
_	cators (minimum of c		ed; check all that a	apply)			Sec	condary Indicators	(minimum of ty	wo required)
	Water (A1)	•	Water-Stai		ves (B9)			Surface Soil Crack		
High Wa	ter Table (A2)		Aquatic Fa	una (B1	3)			Drainage Patterns		
Saturation	on (A3)		True Aqua					Dry-Season Wate	r Table (C2)	
	arks (B1)		Hydrogen S					Crayfish Burrows	` '	
	t Deposits (B2)		Oxidized R			_	oots (C3)	Saturation Visible		
	osits (B3)		Presence of			` '		Stunted or Stresse	, ,	
	t or Crust (B4) osits (B5)		Recent Iron Thin Muck			illed Soil		Geomorphic Posit FAC-Neutral Test		
	on Visible on Aerial I	magery (B7)						- AO Nediai Test	(D3)	
	Vegetated Concave	0, ,								
Field Obser	vations:	`	<u>,                                     </u>		<u>, , , , , , , , , , , , , , , , , , , </u>					
Surface Wat	er Present? Ye	es	No X	Depth (i	nches):					
Water Table	Present? Ye	es	No X	Depth (i	nches):					
Saturation P	resent? Ye	es	No X	Depth (i	nches):		Wetland Hy	drology Present?	Yes	No X
(includes cap										
Describe Re	corded Data (stream	gauge, mor	nitoring well, aeria	l photos	, previou	s inspec	ctions), if availabl	e:		
Remarks:										
	ter near sampling po	int in deeper	r portion of wetlan	d area.						
			,							

US Army Corps of Engineers

Midwest Region – Version 2.0

Project/Site: 485 Orono Orchard Rd. S.		City/Cou	inty: Orono/l	Hennepin		Sampling Da	ate: <u>5/10</u>	)/2021
Applicant/Owner: Sunde Land Surveying				State:	MN	Sampling Po	oint: <u>V</u>	√5-1W
Investigator(s): ST		Section, 7	Γownship, Ra	inge: S30, T2	3N, R27W	1		
Landform (hillside, terrace, etc.): depressional			Local relief (d	concave, conve	ex, none):	concave		
Slope (%): 0-1 Lat: 44.968781°		Long:	·93.560311°			Datum: WGS	1984	
Soil Map Unit Name: Udorthents, wet substratum					NWI class	sification: PEM	1C	
Are climatic / hydrologic conditions on the site typica	I for this time o	of year?	Yes X	No	(If no, exp	lain in Remark	(s.)	
Are Vegetation , Soil , or Hydrology	significantly of	disturbed? /	Are "Normal (	Circumstances'	present?	Yes X	No	
Are Vegetation, Soil, or Hydrology	_	olematic? (	If needed, ex	plain any answ	ers in Rer	narks.)		_
SUMMARY OF FINDINGS – Attach site i	<u>—</u>		g point lo	cations, tra	nsects,	important	features	s, etc.
Hydrophytic Vegetation Present? Yes X	No	Is the	Sampled A	rea		-		
Hydric Soil Present? Yes X	No	withi	n a Wetland	? Y	es X	No		
Wetland Hydrology Present? Yes X	No							
Remarks:								
VEGETATION – Use scientific names of p		Dominant	Indiantar					
Tree Stratum (Plot size: 30 )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance	Test wor	ksheet:		
1. Tilia americana	5	Yes	FACU	Number of I	Dominant S	Species That		
2.				Are OBL, F		•	3	(A)
3				Total Numb	er of Domi	nant Species		
4				Across All S	Strata:	-	4	(B)
5		T-1-1 0				Species That	75.00/	(A /D)
Sapling/Shrub Stratum (Plot size: 15	5	=Total Cover		Are OBL, F	ACW, or F	AC:	75.0%	(A/B)
1. Rhamnus cathartica	/ 	Yes	FAC	Prevalence	Index wo	rksheet		
2.		100	1710		6 Cover of:		ıltiply by:	
3.				OBL specie			30	_
4.				FACW spec	cies 20	) x 2 =	40	_
5				FAC specie		x 3 =	15	_
	5	=Total Cover		FACU spec			20	_
Herb Stratum (Plot size: 5	00	V	ODI	UPL specie			0	— <sub>(D)</sub>
Carex lacustris     Phalaris arundinacea	20	Yes Yes	OBL FACW	Column Tot	als: 60 ce Index =		105 1.75	(B)
3.		165	FACV	Flevaleli	ce muex =	: D/A =	1.75	_
4.				Hydrophyti	c Vegetati	ion Indicators	<del></del>	
5.					_	Hydrophytic V		
6.				X 2 - Dom			· ·	
7				X 3 - Prev				
8						Adaptations <sup>1</sup> (I		
9.						s or on a sepa		•
10		=Total Cover				ophytic Vegeta		
Woody Vine Stratum (Plot size: 15	50	= Fotal Cover				oil and wetland turbed or probl		/ must
1.	_'			·		urbed of probl	emane.	
2.				Hydrophyti Vegetation				
	<u> </u>	=Total Cover		Present?	Yes	X No		
Remarks: (Include photo numbers here or on a seg	parate sheet.)			1				

SOIL Sampling Point: W5-1W

	-	to the depti				ator or c	onfirm the absenc	e of indicators.	.)	
Depth	Matrix			x Featur		. 2	_			
(inches) C	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	_	Remarks	
0-4	10YR 2/1	100					Loamy/Clayey	_		
4-8	10YR 4/1	100					Loamy/Clayey	_		
8-16	10YR 4/1	95	5YR 4/6	5	С	M	Loamy/Clayey	Prominer	nt redox concen	trations
	_		_							
			_					_		
<sup>1</sup> Type: C=Concen	ntration D=Deni	etion RM=F	Reduced Matrix N	/S=Masl	ked Sand		<sup>2</sup> l ocatio	on: PL=Pore Li	ning M=Matrix	
Hydric Soil Indica			Toddood mann, i					ors for Probler		oils³:
Histosol (A1)			Sandy Gle	yed Matı	rix (S4)			ast Prairie Redo	•	
Histic Epipedo	on (A2)		Sandy Red		` ,			n-Manganese M		
Black Histic (A	A3)		Stripped M	latrix (S6	6)		Re	d Parent Materia	al (F21)	
Hydrogen Sulf	fide (A4)		Dark Surfa	ice (S7)			Ve	ry Shallow Dark	Surface (F22)	
Stratified Laye	ers (A5)		Loamy Mu	cky Mine	eral (F1)		Oth	ner (Explain in R	temarks)	
2 cm Muck (A	•		Loamy Gle	eyed Mat	rix (F2)					
· ·	w Dark Surface	(A11)	X Depleted N				2			
Thick Dark Su	, ,		Redox Dar		` '			tors of hydrophy	-	
Sandy Mucky	` ,		Depleted [					tland hydrology		t,
	Peat or Peat (S3	)	Redox Dep	oressions	s (F8)		uni	ess disturbed of	r problematic.	
Restrictive Layer	(if observed):									
Type:			_							
Depth (inches	):		<u> </u>				Hydric Soil Prese	ent?	Yes X	No
Remarks:										
Errata. (http://www		_					NRCS Field Indicate	ors of Hydric So	ils, Version 7.0,	2015
Litata. (IIIIp.//www	v.mcs.usua.gov	/internet/1 3	L_DOCOMENTS	/11103142	.ρ2_0312	.33.000	.)			
HYDROLOGY										
Wetland Hydrolo	av Indicators:									
Primary Indicators		ne is require	ed; check all that	apply)			Second	dary Indicators (	minimum of two	required)
Surface Water	r (A1)	•	Water-Sta	ined Lea	ves (B9)		Su	rface Soil Crack	s (B6)	
High Water Ta	able (A2)		Aquatic Fa	una (B1	3)		Dra	ainage Patterns	(B10)	
X Saturation (A3	3)		True Aqua	tic Plant	s (B14)		Dry	/-Season Water	Table (C2)	
Water Marks (	(B1)		Hydrogen	Sulfide C	Odor (C1)	)	Cra	ayfish Burrows (	C8)	
Sediment Dep			Oxidized R			_	• • —	turation Visible	-	ry (C9)
Drift Deposits	` '		Presence			,		inted or Stresse		
Algal Mat or C			Recent Iro			lled Soils		omorphic Positi		
Iron Deposits	(B5)		Thin Muck		` '		<u>X</u> FA	C-Neutral Test (	D5)	
	المنسمة مامانه		Gauge or \	well Data						
Inundation Vis	sible on Aerial Ir	0 , , ,	Othor (Evr	Jain in D						
Inundation Vis Sparsely Vege	etated Concave	0 , , ,	B)Other (Exp	lain in R	emarks)		1			
Inundation Vis Sparsely Vege Field Observation	etated Concave	Surface (B8	<u>,                                     </u>							
Inundation Vis Sparsely Vege Field Observation Surface Water Pre	etated Concave ns: esent? Ye	Surface (B8	No X	Depth (ii	nches):					
Inundation Vis Sparsely Vege Field Observation Surface Water Pre Water Table Prese	etated Concave  ns: essent? Ye ent? Ye	Surface (B8	No X No X	Depth (ii Depth (ii	nches): _		Wetland Hydrol	logy Present?	Yes X	No
Inundation Vis Sparsely Vege Field Observation Surface Water Presentation Presentation Presentation	etated Concave ns: esent? Ye ent? Ye it? Ye	Surface (B8	No X No X	Depth (ii Depth (ii	nches):		Wetland Hydrol	logy Present?	Yes_X_	No
Inundation Vis Sparsely Vege Field Observation Surface Water Pre Water Table Prese	etated Concave ns: esent? Ye ent? Ye tt? Ye fringe)	Surface (B8	No X No X No	Depth (ii Depth (ii Depth (ii	nches): _ nches): _ nches): _	9		logy Present?	Yes_X_	No
Inundation Vis Sparsely Vege Field Observation Surface Water Presentation Presentation Presentation (includes capillary)	etated Concave ns: esent? Ye ent? Ye tt? Ye fringe)	Surface (B8	No X No X No	Depth (ii Depth (ii Depth (ii	nches): _ nches): _ nches): _	9		logy Present?	Yes X	No
Inundation Vis Sparsely Vege Field Observation Surface Water Presentation Presentat	etated Concave ns: esent? Ye ent? Ye it? Ye fringe) d Data (stream	Surface (B8 s s x gauge, mor	No X No X No	Depth (ii Depth (ii Depth (ii	nches): _ nches): _ nches): _	9		logy Present?	Yes_X_	No
Inundation Vis Sparsely Vege Field Observation Surface Water Pres Water Table Prese Saturation Presen (includes capillary Describe Recorde	etated Concave ns: esent? Ye ent? Ye it? Ye fringe) d Data (stream	Surface (B8 s s x gauge, mor	No X No X No	Depth (ii Depth (ii Depth (ii	nches): _ nches): _ nches): _	9		logy Present?	Yes_X_	No

# APPENDIX B Wetland Boundary Application

## **PART ONE: Applicant Information**

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

**Applicant/Landowner Name:** Edward H Hamm, Trustee

Mailing Address: 408 St Peter ST, Suite 434, St. Paul, MN 55102

Phone:

E-mail Address:

Authorized Contact (do not complete if same as above): Pinnacle Engineering, Inc.

Mailing Address: 11541 95<sup>th</sup> Avenue North, Maple Grove, MN 55369

**Phone:** 612-432-5590

E-mail Address: sthelen@pineng.com

**Agent Name:** Scott Thelen

Mailing Address: 11541 95<sup>th</sup> Avenue North, Maple Grove, MN 55369

Phone: 612.432.5590

E-mail Address: sthelen@pineng.com

#### PART TWO: Site Location Information

County: Hennepin County City/Township: Orono

Parcel ID and/or Address: 0211723320001 and 0211723330015

Legal Description (Section, Township, Range): Sec30, T23N, R27W

Lat/Long (decimal degrees): Lat: 44.968781°, Long: -93.5603119°

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

Approximate size of site (acres) or if a linear project, length (feet): 22.6 - acre

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

http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform 4345 2012oct.pdf

## **PART THREE: General Project/Site Information**

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

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

Potential grounds improvement project.

Project Name and/or Number:

# PART FOUR: Aquatic Resource Impact<sup>1</sup> Summary

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

Aquatic Resource ID (as noted on overhead view)	Aquatic Resource Type (wetland, lake, tributary etc.)	drain, or remove	Impact	Size of Impact <sup>2</sup>	Overall Size of Aquatic Resource <sup>3</sup>	Existing Plant Community Type(s) in Impact Area <sup>4</sup>	County, Major Watershed #, and Bank Service Area # of Impact Area <sup>5</sup>

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

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

### **PART FIVE: Applicant Signature**

	All I I I I I I I Applicant oign	atare				
Check here if you are requesting a <u>pre-application</u> consultation with the Corps and LGU based on the information you have provided. Regulatory entities will not initiate a formal application review if this box is checked.						
By signature below, I attest that the information in this application is complete and accurate. I further attest that I possess the authority to undertake the work described herein.						
Signature:  Authentison  6/23/2021 12:26:53 PM CDT	Date:	May 24, 2021				
I hereby authorize to act on i	my behalf as my agent in the processing of this	s application and to furnish, upon request,				

supplemental information in support of this application.

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

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

<sup>&</sup>lt;sup>4</sup>Use Wetland Plants and Plant Community Types of Minnesota and Wisconsin 3<sup>rd</sup> Ed. as modified in MN Rules 8420.0405 Subp. 2.

<sup>&</sup>lt;sup>5</sup>Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

\_\_\_\_

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

Project Name and/or Number:

# Attachment A Request for Delineation Review, Wetland Type Determination, or Jurisdictional Determination

By submission of the enclosed wetland delineation report, I am requesting that the U.S. Army Corps of Engineers, St. Paul District (Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):
Wetland Type Confirmation
Delineation Concurrence. Concurrence with a delineation is a written notification from the Corps and a decision from the LG concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).
Preliminary Jurisdictional Determination. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.
Approved Jurisdictional Determination. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.
In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the Guidelines for Submitting Wetland Delineations in Minnesota (2013). <a href="http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx">http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx</a>

# APPENDIX C Wetland Photographs



View of Wetland 1 from northern edge looking southwest.



View of Wetland 1 from northern edge looking south.



View of Wetland 2 near southeastern edge looking northwest.



View of Wetland 2 near northwestern edge looking southeast.



View of Wetland 3 from southwestern edge looking northeast.



View of Wetland 3 from southeastern edge looking northwest.



View of Wetland 4 from southwestern edge of basin looking north.



View of Wetland 4 from southwestern edge looking northeast.



View of Wetland 5 from northeastern edge of basin.



View of Wetland 5 from eastern edge looking west.