





## WETLAND INVESTIGATION

# CITY OF LAKE ELMO FORMER 3M PARCEL

PORTION OF PARCEL 1602921240002 LAKE ELMO, WASHINGTON CO., MN

> APRIL 16, 2021 AE JOB NO. 16349





**P** 763.412.4000 **F** 763.412.4090 **ae-mn**.com



## TABLE OF CONTENTS

CONTACT INFORMATION	2
EXECUTIVE SUMMARY	3
BACKGROUND	4
METHODOLOGY	4
RESOURCE REVIEW	5
CONCLUSION	9

## **APPENDICES**

Appendix A	FIGURE
Appendix B	ROUTINE ON-SITE DETERMINATION METHOD DATASHEETS
Appendix C	ANTECEDENT PRECIPITATION RECORD
Appendix D	MINNESOTA ROUTINE ASSESSMENT METHODOLOGY (MnRAM)
Appendix E	OFF-SITE AGRICULTURE REVIEW
Appendix F	CREDENTIALS

## **CONTACT INFORMATION**

#### **PREPARED FOR:**

City of Lake Elmo Kristina Handt 3880 Laverne Ave. N., Suite 100 Lake Elmo, MN 55042 khandt@lakeelmo.org

#### **PREPARED BY:**

Dylan Kruzel Environmental Scientist

Alex Yellick Senior Environmental Scientist Certified MN Wetland Delineator #1354

Ben Hodapp Environmental Services Manager Certified MN Wetland Delineator #1016 bhodapp@ae-mn.com

Anderson Engineering of Minnesota, LLC 13605 1<sup>st</sup> Avenue North Suite 100 Plymouth, MN 55441 Phone: (763) 412-4000 Fax: (763) 412-4090

## **EXECUTIVE SUMMARY**

Anderson Engineering of Minnesota, LLC was retained to provide professional wetland services using the 1987 United States Army Corps of Engineers Wetland Delineation Manual (Technical Report Y-87-1; January 1987) and all supplemental guidance documents to identify areas meeting wetland criteria in the project area located in Lake Elmo, Washington County, Minnesota (southern two tracts of parcel 1602921240002). The area is in Section 16, Township 29 North, Range 21 West. The start of the 2021 growing season was determined active based on the presence of greater than two herbaceous species was observed in low-lying areas.

Delineated aquatic resources or, portions thereof, were identified and delineated within the project area and summarized in Table 1 and depicted in Appendix A, Figure 5.

	APPROXIMATE SIZE (ac)	WETLAND TYPE CLASSIFICATION				
WEILAND with in was is at		EGGERS & REED	MnRAM Classification			
1	0.09	Type 1	PEM1A	Seasonally Flooded Basin	Manage 2	
2	0.45	Type 1	PEM1Af	Seasonally Flooded Basin	Manage 2	
3	0.16	Type 1	PEM1Af	Seasonally Flooded Basin	Manage 2	
4	0.33	Type 2	PEM1B	Fresh Wet Meadow	Manage 2	
5	0.46	Type 2	PEM1B	Fresh Wet Meadow	Manage 2	
6	0.82	Type 2/5	PUBF/EM1B	Fresh Wet Meadow /Open Water	Preserve	
7	0.07	Type 3/5	PUBG/EM1Cx	Shallow Marsh /Open Water	Manage 2	

Table 1. Summary of delineated aquatic resources, corresponding sizes, and wetland type classifications.

## BACKGROUND

As requested by The City of Lake Elmo, Anderson Engineering of Minnesota, LLC completed a wetland investigation at the project area located in Lake Elmo, Washington County, Minnesota. The project area is located south of County Road 14 and east of County Road 13 and consists of the southern two tracts of parcel 1602921240002 (Appendix A, Figure 1). The area is in Section 16, Township 29 North, Range 21 West.

The wetland delineation was completed in accordance with the 1987 United States Army Corps of Engineers Wetland Delineation Manual and the published regional supplement to the Army Corps Wetland Delineation Manual, Northcentral Northeast Regional Supplement.

The purpose of this study was to identify areas meeting the technical criteria for wetlands, delineate the jurisdictional extent of the wetland basins, and classify the wetland habitats in the project area.

Fieldwork for this site investigation was completed by Alex Yellick and Dylan Kruzel on April 7, 2021. The weather was partly overcast to rain and approximately 74 degrees Fahrenheit.

## METHODOLOGY

U.S. Geologic Service 7.5" Topographic Quadrangle maps, U.S. Fish and Wildlife Service National Wetland Inventory (NWI) maps, Minnesota Department of Natural Resources Public Water Inventory (PWI) maps, U.S. Department of Agriculture Natural Resources Conservation Service Soil Survey, and available aerial photographs were consulted to initially locate potential wetland habitats.

Routine on-site Determination Method was used during this investigation. In this method, the following procedures were used:

- 1. The vegetative community was sampled in all present strata to determine whether it met hydrophytic vegetation criteria based on the indicators identified in the Northcentral and Northeast Regional Supplement.
- 2. Soil pits were dug using a Dutch auger to depths of sixteen to thirty-six inches. The soil profile was noted in addition to any hydric soil characteristics.
- 3. Signs of wetland hydrology were noted and compared to field criteria such as depth to shallow water table and depth of soil saturation found in the soil pits.

Data from sample points were recorded on Army Corps of Engineers Northcentral and Northeast Region Wetland Determination Data Forms (Appendix B). At least one sample point transect crosses the delineated wetland edge. This transect consists of an upland sample point and a wetland sample point. Other sample points may be in areas which have one or more other wetland criteria present; where questionable conditions exist; or to verify the absence of wetland criteria. Photographs of each resource is included in the resource review summary pages.

Sample points were marked in the field with orange flags. The identified aquatic resource was marked with sequentially numbered pink flags. All sample points and the delineated aquatic resource extent were located using a Trimble Geo XH sub-meter GPS unit.

Delineated resources were evaluated using Board of Soil and Water Resource's Minnesota Routine Assessment Method version 3.2 (MnRAM). Information from desktop and field assessment was evaluated in the system and a

management classification ranging from exceptional quality to low quality is output as Preserve, Manage 1, Manage 2, and Manage 3. Resulting classifications are typically utilized in development planning.

## **RESOURCE REVIEW**

The below described data were reviewed as part of the aquatic resource field delineation. A summary of each resource contained within the project area follows.

#### NATIONAL WETLANDS INVENTORY

The National Wetlands Inventory identifies two palustrine resources in the project area (Appendix A, Figure 2).

#### USDA – NATURAL RESOURCES CONSERVATION SERVICE SOIL SURVEY

Soil survey data for Washington County was obtained and reviewed prior to the delineation. Table 2 provides a list of the mapped soils in the project area. Figure 3 in Appendix A is a map of the soil units with percent hydric components.

MAP UNIT SYMBOL	MAP UNIT NAME	HYDRIC STATUS	HYDRIC RATING	DRAINAGE CLASSIFICATION	PERCENT COVER
153C	Santiago silt loam, 6 to 15 percent slopes	Non-Hydric	0%	Well drained	37.7%
49B	Antigo silt loam, 2 to 6 percent slopes	Non-Hydric	0%	Well drained	13.2%
153B	Santiago silt loam, 2 to 6 percent slopes	Non-Hydric	0%	Well drained	13.0%
49C	Antigo silt loam, 6 to 15 percent slopes	Non-Hydric	0%	Well drained	10.5%
120	Brill silt loam	Predominantly Non-Hydric	5%	Moderately well drained	9.6%
264	Freeon silt loam, 2 to 6 percent slopes	Predominantly Non-Hydric	3%	Moderately well drained	5.1%
896D	Mahtomedi-Kingsley complex, 12 to 25 percent slopes	Non-Hydric	0%	Excessively drained	4.6%
49D	Antigo silt loam, 15 to 35 percent slopes	Non-Hydric	0%	Well drained	3.5%
325	Prebish loam	Predominantly Hydric	95%	Very poorly drained	1.7%
1847	Barronett silt loam, sandy substratum	Predominantly Hydric	90%	Poorly drained	0.7%
342B	Kingsley sandy loam, 2 to 6 percent slopes	Predominately Non-Hydric	3%	Well drained	0.4%

Table 2. Summary of mapped soil units in the project area.

Hydric soils are defined in the Field Indicators of Hydric Soils in the United States: Guide for Identifying and Delineating Hydric Soils, version 8.2, 2018; The 1987 United States Army Corps of Engineers Wetlands Delineation Manual; and The Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0).

#### MINNESOTA DEPARTMENT OF NATURAL RESOURCES PUBLIC WATER INVENTORY

The Minnesota Department of Natural Resources Public Water Inventory for Washington County identifies a specially regulated public water basin (82039900) within the project extent (Appendix A, Figure 4).

#### **30-DAY ROLLING PRECIPITATION DATA**

A review of the 30-day rolling precipitation data collected from the University of Minnesota Climatology Working Group (Appendix D) indicates that precipitation totals for the weeks prior to the site visit were within the range of average in the general project area. The overall hydrologic conditions were suitable for completing an accurate wetland determination and boundary delineation.

#### **OFFSITE HYDROLOGY REVIEW**

An offsite hydrology review was completed in accordance with U.S. Army Corps of Engineers/Board of Soil and Water Resources Guidance for Offsite Hydrology/Wetland Determination (July 2016). A total of nine investigation areas were identified based on review of aerial photos from 2003 to 2020. A total of eight aerial photos (2003, 2004, 2006, 2008, 2009, 2012, 2017, 2020) representing normal precipitation conditions were used in the analysis (Appendix E). The analysis revealed wet signatures  $\geq$  50 percent of normal conditions reviewed in five investigation areas (Areas C, D, E, F, G, I). This data, along with other offsite information (i.e., National Wetland Inventory, County Soil Survey) was used to inform if the secondary hydrology indicator saturation visible on aerial imagery is checked on wetland determination forms.

### **RESOURCE 1**

#### FIELD DELINEATED 4/7/2021

#### FIELD INVESTIGATION CONCLUSION<sup>1</sup>



Wet	land	RESOURCE TYPE
0.09-Act	0.09-Acre(s)	
0.1-Aci	re(s)	TOTAL EST. AREA
Seasonally Flooded	Bain	EGGERS & REED
Ту	pe 1	CIRCULAR 39
PEI	M1A	COWARDIN
Mana	ge 2	MnRAM <sup>2</sup>
DOMINANT HYDROPHYTIC VEGETATION	_	
Alnus incana	Gra	y alder
Phalaris arundinacea	Ree	ed canary grass
Typha ×glauca	Hyb	orid cattail
	,	
HYDRIC SOIL INDICATORS		
Redox Dark Surface	F6	
WETLAND HYDROLOGY DETERMINATION	1	
Surface Water	A1	
Saturation	A3	
Drainage Patterns	B10	
Geomorphic Position	D2	
FAC-Neutral Test	D5	

Viewing North / Abrupt Transition to Wetland Confined to Ditch

DESKTOP REVIEW	
HYDRIC RATING - SOIL UNIT(S)	Non-Hydric - Santiago silt loam, 2 to 6 percent slopes (153B)
NATIONAL WETLAND INVENTORY	N/A
PUBLIC WATER INVENTORY	N/A
AERIAL PHOTO OFFSITE DETERMINATION <sup>3</sup>	N/A
DISCUSSION	
RATIONALE FOR DETERMINATION	The wetland occupies a ditch and the delineated edge is topography driven. The transition to upland is gradual and was determined based on a lack of hydrology and hydrophytic plant community (Appendix A, Figure 5).
ASSOCIATED RESOURCES	Resource is not directly hydrologically connected to an adjacent resource.
ATYPICAL/PROBLEMATIC CONDITIONS	Review of antecedent precipitation on this day was normal and field conditions were adequate for reasonable vegetation and hydrology determinations.
CONSISTENCY WITH DESKTOP REVIEW	Wetland was delineated within non-hydric soil map unit; however, hydric soils are present. Field delineation identified a type 1 wetland not identified by NWI.
POST-TEP REVIEW ADJUSTMENT	N/A
<sup>1</sup> Appendix B contains wetland det	ermination data forms supporting this investigated resource: Wet Point(s): 1A

Up Point(s):

1B

#### **RESOURCE 2**

FIELD DELINEATED 4/7/2021

RESOURCE TYPE TOTAL AREA WITHIN ECB

TOTAL EST. AREA

EGGERS & REED CIRCULAR 39

COWARDIN MnRAM<sup>2</sup>

Witch grass

Watercress

BPJ

A1

A2

A3

С9

D2

D5

FIELD INVESTIGATION CONCLUSION<sup>1</sup> Wetland

0.45-Acre(s) 0.45-Acre(s)

> Type 1 PEM1Af

Manage 2

Seasonally Flooded Bain

DOMINANT HYDROPHYTIC VEGETATION Panicum capillare

Best Professional Judgement WETLAND HYDROLOGY DETERMINATION

Nasturtium officinale

HYDRIC SOIL INDICATORS

Surface Water

Saturation

High Water Table

Aerial Saturation Visible

Geomorphic Position

**FAC-Neutral Test** 

_	the second	

/iewing West	/ Gradual	Transition	to Wetland	
--------------	-----------	------------	------------	--

viewing v	vest / Gradual Transition to welland
DESKTOP REVIEW	
HYDRIC RATING - SOIL UNIT(S)	Predominantly Non-Hydric - Brill silt Ioam (120)
NATIONAL WETLAND INVENTORY	N/A
PUBLIC WATER INVENTORY	N/A
AERIAL PHOTO OFFSITE DETERMINATION <sup>3</sup>	Area C: 7 of 8 normal years with wet signatures – field verification required
DISCUSSION	
RATIONALE FOR DETERMINATION	The wetland occupies low landscape position within a farmed area and the delineated edge is topography driven. The transition to upland is gradual and was determined based on a lack of hydric soil profile and hydrology (Appendix A, Figure 5).
ASSOCIATED RESOURCES	Resource is not directly hydrologically connected to an adjacent resource.
ATYPICAL/PROBLEMATIC CONDITIONS	Farmed area and normal circumstances are not present. Review of antecedent precipitation on this day was normal and field conditions were adequate for reasonable vegetation and hydrology determinations.
CONSISTENCY WITH DESKTOP REVIEW	Wetland was delineated within predominantly non-hydric soil map unit; however, hydric soils were observed. Field delineation identified a type 1 wetland not noted by NWI.
POST-TEP REVIEW ADJUSTMENT	N/A
<sup>1</sup> Appendix B contains wetland det	ermination data forms supporting this investigated resource: Wet Point(s): 2A

Up Point(s): 2B

<sup>2</sup> Appendix E contains MnRAM output

١.

<sup>3</sup> Appendix F contains Aerial Photo Off-site Determination

### **RESOURCE 3**

FIELD DELINEATED 4/7/2021

FIELD INVESTIGAT	ION (	CONCLUSION <sup>1</sup>
W	/etland	RESOURCE TYPE
0.16-A	Acre(s)	TOTAL AREA WITHIN ECB
0.16-A	Acre(s)	TOTAL EST. AREA
Seasonally Floode	d Bain	EGGERS & REED
-	Туре 1	CIRCULAR 39
PI	EM1Af	COWARDIN
Mar	nage 2	MnRAM <sup>2</sup>
DOMINANT HYDROPHYTIC VEGETATION		
Panicum capillare	Wite	ch grass
Phragmites australis	Cor	nmon reed
HYDRIC SOIL INDICATORS		
Redox Dark Surface	F6	
WETLAND HYDROLOGY DETERMINATION	1	
Surface Water	A1	
High Water Table	A2	
Saturation	A3	
Aerial Saturation Visible	C9	
Geomorphic Position	D2	
FAC-Neutral Test	D5	
	20	

Viewing North / Gradual Transition to Wetland

DESKTOP REVIEW	
HYDRIC RATING - SOIL UNIT(S)	Non-Hydric - Santiago silt loam, 6 to 15 percent slopes (153C)
NATIONAL WETLAND INVENTORY	N/A
PUBLIC WATER INVENTORY	N/A
AERIAL PHOTO OFFSITE DETERMINATION <sup>3</sup>	Area F: 5 of 8 normal years with wet signatures – field verification required
DISCUSSION	

RATIONALE FOR DETERMINATION	The wetland occupies low landscape position and the delineated edge is topography driven. The transition to upland is gradual and was determined based on a lack of hydrology, hydrophytic plant community, and hydric soil profile (Appendix A, Figure 5).
ASSOCIATED RESOURCES	Resource is not directly hydrologically connected to an adjacent resource.
ATYPICAL/PROBLEMATIC CONDITIONS	Area is within a farmed field and normal circumstances are not present. Review of antecedent precipitation on this day was normal and field conditions were adequate for reasonable vegetation and hydrology determinations.
CONSISTENCY WITH DESKTOP REVIEW	Wetland was delineated within predominantly non-hydric soil map unit; however, hydric soils were observed. Field delineation identified a type 1 wetland not noted by NWI.
POST-TEP REVIEW ADJUSTMENT	N/A
<sup>1</sup> Appendix B contains wetland det	ermination data forms supporting this investigated resource: Wet Point(s): 3A

Up Point(s): 3B

### **RESOURCE 4**

#### FIELD DELINEATED 4/7/2021

RESOURCE TYPE

TOTAL AREA WITHIN ECB

#### FIELD INVESTIGATION CONCLUSION<sup>1</sup> Wetland

0.33-Acre(s)



0.33-Acr	re(s)	TOTAL EST. AREA
Fresh Wet Mea	Fresh Wet Meadow	
Ту	Type 2	
PEI	M1B	COWARDIN
Mana	Manage 2	
DOMINANT HYDROPHYTIC VEGETATION		
Panicum capillare	Wite	ch grass
Phalaris arundinacea	Ree	d canary grass
Nasturtium officinale		ercress
HYDRIC SOIL INDICATORS		
Redox Dark Surface F6		
WETLAND HYDROLOGY DETERMINATION		
High Water Table	A2	
Saturation A3		
Aerial Saturation Visible C9		
Geomorphic Position D2		
FAC-Neutral Test D5		
The float a rost	20	

Viewing East / Gradual Transition to Wetland

<b>DESKTOP REVIEW</b>	
HYDRIC RATING - SOIL UNIT(S)	Predominantly Non-Hydric - Freeon silt Ioam, 2 to 6 percent slopes (264)
NATIONAL WETLAND INVENTORY	N/A
PUBLIC WATER INVENTORY	N/A
AERIAL PHOTO OFFSITE DETERMINATION <sup>3</sup>	Area G: 8 of 8 normal years with wet signatures – field verification required
DISCUSSION	
RATIONALE FOR DETERMINATION	The wetland occupies low landscape position and the delineated edge is topography driven. The transition to upland is gradual and was determined based on a lack of hydrology (Appendix A, Figure 5).
ASSOCIATED RESOURCES	Resource is not directly hydrologically connected to an adjacent resource.
ATYPICAL/PROBLEMATIC CONDITIONS	Review of antecedent precipitation on this day was normal and field conditions were adequate for reasonable vegetation and hydrology determinations. 2021 growing season marked by presence of emergence of reed canary grass and other species within the basin and elsewhere.
CONSISTENCY WITH DESKTOP REVIEW	Wetland was delineated within predominantly non-hydric soil map unit; however, hydric soils were observed. Field delineation identified a type 2 wetland not noted by NWI. VBWD MnRAM assessment mapped this resource as Manage 1; however, low habitat quality and isolated landscape position resulted in a determination of Manage 2.
POST-TEP REVIEW ADJUSTMENT	N/A
<sup>1</sup> Appendix B contains wetland det	ermination data forms supporting this investigated resource: Wet Point(s): 4A

Appendix B contains wetland determination data forms supporting this investigated resource:

Wet Point(s): Up Point(s): 4B

#### **RESOURCE 5**

RESOURCE 5	I	IELD DEL	INEATED 4/7/2021
	FIELD INVESTIGAT	ION	
	W	/etland	RESOURCE TYPE
	0.46-	Acre(s)	TOTAL AREA WITHIN ECB
	0.46-4	Acre(s)	TOTAL EST. AREA
NOV MAS	Fresh Wet M	eadow	EGGERS & REED
W ALL WHEN WHEN THE PARTY		Туре 2	CIRCULAR 39
	P	PEM1B	COWARDIN
NY TALE OF MERINE AND A SUPER CONTRACTOR	Mai	nage 2	MnRAM <sup>2</sup>
	DOMINANT HYDROPHYTIC VEGETATION		
	Phalaris arundinacea	Ree	ed canary grass
	HYDRIC SOIL INDICATORS		
and the second provide the second second	Thick Dark Surface	A12	)
ALC: NOT THE REPORT OF THE PARTY OF THE PART	WETLAND HYDROLOGY DETERMINATION		
the second s	High Water Table	A2	
	Saturation	A3	
	Geomorphic Position	D2	
	FAC-Neutral Test	D5	
Viewing North / Gradual Transition to Wetland			
DESKTOP REVIEW			
HYDRIC RATING - SOIL UNIT(S) Predominantly Hydric - Prebish Ioam (325)			
NATIONAL WETLAND INVENTORY N/A			

HYDRIC RATING - SOIL UNIT(S)	Predominantly Hydric - Prebish Ioam (325)
NATIONAL WETLAND INVENTORY	N/A
PUBLIC WATER INVENTORY	N/A
AERIAL PHOTO OFFSITE DETERMINATION <sup>3</sup>	N/A
DISCUSSION	
	The wetland occupies a sloped landscape position and the delineated edge is topography- and watershed catchment-

	hydric soil profile (Appendix A, Figure 5).		
ASSOCIATED RESOURCES	Resource is not directly hydrologically connected to an adjacent resource.		
ATYPICAL/PROBLEMATIC CONDITIONS	Review of antecedent precipitation on this day was normal and field conditions were adequate for reasonable vegetation and hydrology determinations. 2021 growing season marked by presence of emergence of reed canary grass and other species within the basin and elsewhere.		
CONSISTENCY WITH DESKTOP REVIEW	Wetland was delineated within predominantly hydric soil map unit and soil investigation confirmed status. Field delineation identified a type 2 wetland not noted by NWI.		
POST-TEP REVIEW ADJUSTMENT	N/A		
<sup>1</sup> Appendix B contains wetland det	termination data forms supporting this investigated resource: Wet Point(s): 5A		

Up Point(s): 5B

#### **RESOURCE 6**

#### FIELD DELINEATED 4/7/2021

RESOURCE TYPE TOTAL AREA WITHIN ECB

TOTAL EST. AREA

EGGERS & REED CIRCULAR 39

COWARDIN

Reed canary grass

MnRAM<sup>2</sup>

 FIELD INVESTIGATION CONCLUSION<sup>1</sup>

 Wetland
 RESOURCE TYPE

0.82-Acre(s) 5.09-<u>Acre(s)</u>

Type 2/5 PUBF/EM1B

Preserve

BPJ

D2

D5

Fresh Wet Meadow/Open Water

DOMINANT HYDROPHYTIC VEGETATION Phalaris arundinacea

Best Professional Judgement

wetland hydrology determination Geomorphic Position

HYDRIC SOIL INDICATORS

FAC-Neutral Test

Viewing Northwest / Gradual Transition to Wetland

DESKTOP REVIEW	
HYDRIC RATING - SOIL UNIT(S)	Predominantly Hydric - Barronett silt loam, sandy substratum (1847)
NATIONAL WETLAND INVENTORY	N/A
PUBLIC WATER INVENTORY	N/A
AERIAL PHOTO OFFSITE DETERMINATION <sup>3</sup>	N/A

DIS	CI	ICC		N
	CL	122	IU	IN

RATIONALE FOR DETERMINATION	The wetland occupies low landscape position and the delineated edge is topography driven. The transition to upland is gradual and was determined based on a lack of hydrology (Appendix A, Figure 5).
ASSOCIATED RESOURCES	Resource extends offsite to the west.
ATYPICAL/PROBLEMATIC CONDITIONS	A pipeline right-of-way transects the area and soils were not investigated for safety reasons. Review of antecedent precipitation on this day was normal and field conditions were adequate for reasonable vegetation and hydrology determinations. 2021 growing season marked by presence of emergence of reed canary grass and other species within the basin and elsewhere.
CONSISTENCY WITH DESKTOP REVIEW	Wetland was delineated within predominantly hydric soil map unit and soil investigation confirmed status. Field delineation identified a type 2/5, which disagrees with type 1/3/5 noted by NWI. Type 1/3 wetland may be present offsite.
POST-TEP REVIEW ADJUSTMENT	N/A

<sup>1</sup>Appendix B contains wetland determination data forms supporting this investigated resource: Wet Point(s):

Wet Point(s): 6A Up Point(s): 6B

<sup>2</sup> Appendix E contains MnRAM output

<sup>3</sup> Appendix F contains Aerial Photo Off-site Determination

#### **RESOURCE 7**

FIELD DELINEATED 4/7/2021 

	FIELD INVESTIGATI	ON CONCLUSION <sup>1</sup>
	Wet	tland RESOURCE TYPE
	0.07-Ac	re(s) TOTAL AREA WITHIN ECB
	0.07-Ac	re(s) TOTAL EST. AREA
	Shallow Marsh/Open W	
		e 3/5 CIRCULAR 39
	PUBG/EN	
	Mana	ige 2 MnRAM <sup>2</sup>
THE REPORT OF A PARTY	DOMINANT HYDROPHYTIC VEGETATION	
A State of the second sec	Salix fragilis	Crack willow
	Populus tremuloides	Quaking aspen
	Alnus incana	Speckled alder
and the second	Phalaris arundinacea	Reed canary grass
	Solidago canadensis	Giant goldenrod
		0
	HYDRIC SOIL INDICATORS	
	Redox Dark Surface	F6
	WETLAND HYDROLOGY DETERMINATION	
	High Water Table	A2
	Saturation	A3
	Water Stained Leaves	B9
	Geomorphic Position	D2
	FAC-Neutral Test	D5
Viewing North / Abrupt Transition to Wetland		

<b>DESKTOP REVIEW</b>	
HYDRIC RATING - SOIL UNIT(S)	Non-Hydric - Antigo silt loam, 2 to 6 percent slopes (49B)
NATIONAL WETLAND INVENTORY	N/A
PUBLIC WATER INVENTORY	N/A
AERIAL PHOTO OFFSITE DETERMINATION <sup>3</sup>	N/A
DISCUSSION	

DISCOSSION	
RATIONALE FOR DETERMINATION	The wetland occupies low landscape position and the delineated edge is topography driven. The transition to upland is abrupt and was determined based on a lack of hydrology and hydric soil profile (Appendix A, Figure 5).
ASSOCIATED RESOURCES	Resource is not directly hydrologically connected to an adjacent resource.
ATYPICAL/PROBLEMATIC CONDITIONS	Review of antecedent precipitation on this day was normal and field conditions were adequate for reasonable vegetation and hydrology determinations. 2021 growing season marked by presence of emergence of reed canary grass and other species within the basin and elsewhere.
CONSISTENCY WITH DESKTOP REVIEW	Wetland was delineated within non-hydric soil map unit; however, hydric soils were observed. Field delineation identified a type 3/5 wetland and disagrees with Type 5 noted by NWI. Type 3 emergent vegetation was observed.
POST-TEP REVIEW ADJUSTMENT	N/A

<sup>1</sup>Appendix B contains wetland determination data forms supporting this investigated resource:

Wet Point(s): Up Point(s): 7A 7B

## **INVESTIGATION AREA A**

FIELD INVESTIGATED 4/7/2021

	FIELD INVESTIGATION CONCLUSION <sup>1</sup>		
the fee		Dry Land RESOURCE TYPE	
		DOMINANT VEGETATION	
		None	
	The second s	HYDRIC SOIL INDICATORS	
		None	
a state of the second	The second s	WETLAND HYDROLOGY DETERMINATION	
Viewin	g Northwest / Dry Land Flow Path	Drainage patterns Aerial Saturation Visible	B10 C9
DESKTOP REVIEW			
HYDRIC RATING - SOIL UNIT(S)	Predominantly Non-Hydric - Brill silt loam (120)		
NATIONAL WETLAND INVENTORY	N/A		
PUBLIC WATER INVENTORY	N/A		
AERIAL PHOTO OFFSITE DETERMINATION <sup>2</sup>	Area D: 4 of 8 normal years with wet signatures - field verification r	required	
DISCUSSION			
RATIONALE FOR DETERMINATION	Aerial photo review of the investigated area revealed sufficie review indicated that an absence of hydrophytic plant comm determined that the area did not meet wetland criteria and w	unity and hydric soil profile. Based	d on this information it was
	Review of antecedent precipitation on this day was normal a		

Review of antecedent precipitation on this day was normal and field conditions were adequate for reasonable vegetation ATYPICAL/PROBLEMATIC CONDITIONS and hydrology determinations. The soil survey and NWI desktop findings are consistent with on-site field conditions. CONSISTENCY WITH DESKTOP REVIEW

POST-TEP REVIEW ADJUSTMENT N/A

<sup>1</sup>Appendix B contains wetland determination data forms supporting this investigated resource:

Wet Point(s): Up Point(s): IA-A

N/A

<sup>2</sup> Appendix F contains Aerial Photo Off-site Determination

FIELD INVESTIGATED 4/7/2021

## **INVESTIGATION AREA B**

FIELD INVESTIGATION CONCLUSION<sup>1</sup>

			ESTIGATION	CONCLUSIO
			Dry Land	RESOURCE TYPE
	wing South / Dry Land Swale	DOMINANT VEGETATION Acer negundo Arctium minus Setaria pumila HYDRIC SOIL INDICATOR None WETLAND HYDROLOGY Surface Water High Water Table Saturation Drainage patterns Aerial Saturation N Geomorphic Posit	DETERMINATION A1 A2 A3 B1 /isible C8	x elder mmon burdock Ilow foxtail
DESKTOP REVIEW			•	
HYDRIC RATING - SOIL UNIT(S)	Non-Hydric - Santiago silt loam, 6 to 15 percent slopes (153C)			
NATIONAL WETLAND INVENTORY	N/A			
PUBLIC WATER INVENTORY	N/A			
AERIAL PHOTO OFFSITE DETERMINATION <sup>2</sup>	Area E: 6 of 8 normal years with wet signatures - field verification	required		
DISCUSSION				
RATIONALE FOR DETERMINATION	Aerial photo review of the investigated area revealed sufficie review indicated that an absence of hydrophytic plant comm determined that the area did not meet wetland criteria and w	unity and hydric soil as dryland (Appendi	profile. Based on t x A, Figure 5).	his information it wa
ATYPICAL/PROBLEMATIC CONDITIONS	The area is a farmed field and normal circumstances are no normal and field conditions were adequate for reasonable ve season was active based on the emergence of common bur	egetation and hydrolo dock.	ogy determinations	
CONSISTENCY WITH DESKTOP REVIEW	The soil survey and NWI desktop findings are consistent wit	h on-site field conditi	ons.	
POST-TEP REVIEW ADJUSTMENT	N/A			
	termination data forms supporting this investigated resource:	Wet Point(s): Up Point(s):	N/A IA-B	

<sup>2</sup> Appendix F contains Aerial Photo Off-site Determination

## **INVESTIGATION AREA C**

FIELD INVESTIGATED 4/7/2021

		FIELD INVESTIGAT	ION CONCLUSION <sup>1</sup>
The Manual Staller	A STREET OF AN ASSA	Dry	Land RESOURCE TYPE
and the second second		DOMINANT VEGETATION	
20.00 × 20.00		Panicum capillare	Witch grass
B	and the second second second	HYDRIC SOIL INDICATORS	
Carl States	A CALL AND A CALL	None	
The second s	and the second	WETLAND HYDROLOGY DETERMINATION	
Viewi	ng South / Dry Land Depression	Geomorphic Position	D2
DESKTOP REVIEW			
HYDRIC RATING - SOIL UNIT(S)	Non-Hydric - Antigo silt loam, 6 to 15 percent slopes (49C)		
NATIONAL WETLAND INVENTORY	N/A		
PUBLIC WATER INVENTORY	N/A		
AERIAL PHOTO OFFSITE DETERMINATION <sup>2</sup>	Area I: 3 of 8 normal years with wet signatures - field verification re	equired	
DISCUSSION			
	Aprial photo review of the investigated area revealed sufficie	nt wat signatures to warrant furth	or investigation Field

RATIONALE FOR DETERMINATION	Aerial photo review of the investigated area revealed sufficient wet signatures to warrant further investigation. Field review indicated that an absence of hydric soil profile and wetland hydrology. Based on this information it was determined that the area did not meet wetland criteria and was dryland (Appendix A, Figure 5).					
ATYPICAL/PROBLEMATIC CONDITIONS	The area is a farmed field and normal circumstances are not present. Review of antecedent precipitation on this day was normal and field conditions were adequate for reasonable vegetation and hydrology determinations.					
CONSISTENCY WITH DESKTOP REVIEW	The soil survey and NWI desktop findings are consistent with on-site field conditions.					
POST-TEP REVIEW ADJUSTMENT	N/A					
<sup>1</sup> Appendix B contains wetland det	ermination data forms supporting this investigated resource: Wet Point(s): N/A					

Wet Point(s): Up Point(s): IA-C

<sup>2</sup> Appendix F contains Aerial Photo Off-site Determination

## CONCLUSION

A total of seven wetlands, or portions thereof, were identified and delineated within the project area and in accordance with the 1987 United States Army Corps of Engineers Wetland Delineation Manual.

The wetlands in the project area may be regulated by several agencies at the local, state, and/or federal level. Activities which may potentially impact wetlands should be discussed in advance with the appropriate regulating agency regarding potential permit requirements. The Local Government Unit (LGU) responsible for implementing the Minnesota Wetland Conservation Act at this project location is Valley Branch Watershed District (District).

The District may require vegetated buffers and setbacks around all regulated wetland areas. Wetland buffers must meet the standards specified by the District for any project that is regulated under the Wetland Conservation Act.

This wetland investigation meets the standards and criteria described in the 1987 United States Army Corps of Engineers Wetland Delineation Manual and all applicable subsequent guidance for an on-site determination. The results reflect the conditions present at the time of the delineation.

I certify that I performed the field analysis and/or wrote the report for this wetland determination.

Dylan Kruzel Environmental Scientist

April 16, 2021 Date

I certify that I performed the field analysis and/or wrote the report for this wetland determination.

Alex Yellick Sr. Environmental Scientist MN Certified Wetland Delineator #1354

April 16, 2021 Date

I certify that I performed the field analysis and/or reviewed work completed by above staff.

Benjamin J. Hodapp Environmental Services Manager MN Certified Wetland Delineator #1016

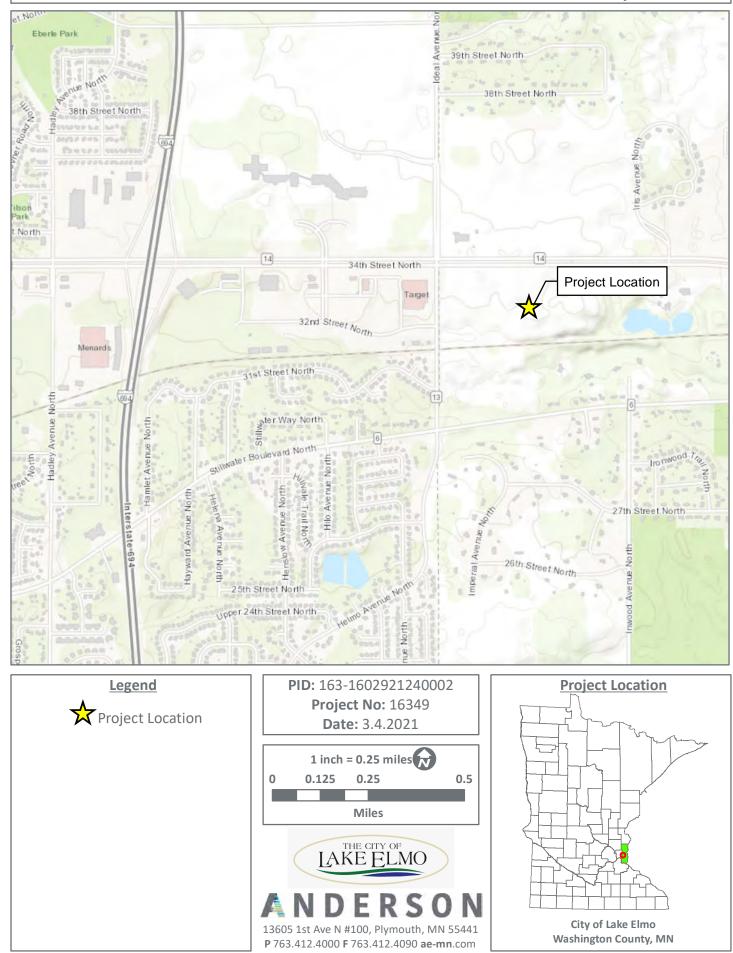
April 16, 2021 Date



## Appendix A

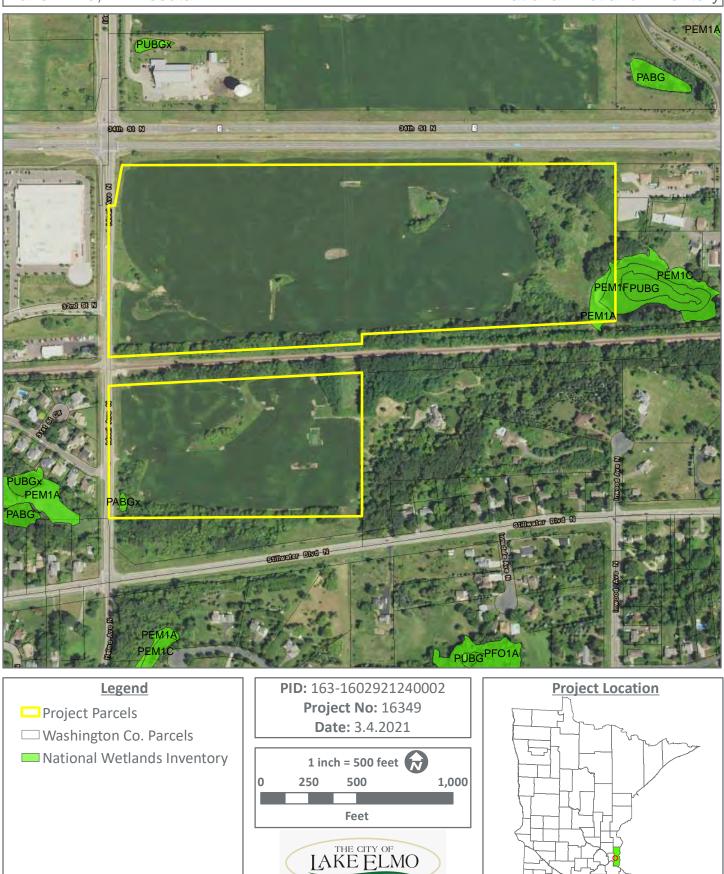
FIGURES

## Figure 1 Project Location



SOURCE: MnDNR, USDA, ESRI, TIGER, Bing, Washington Co., Anderson Engineering

## Figure 2 National Wetland Inventory

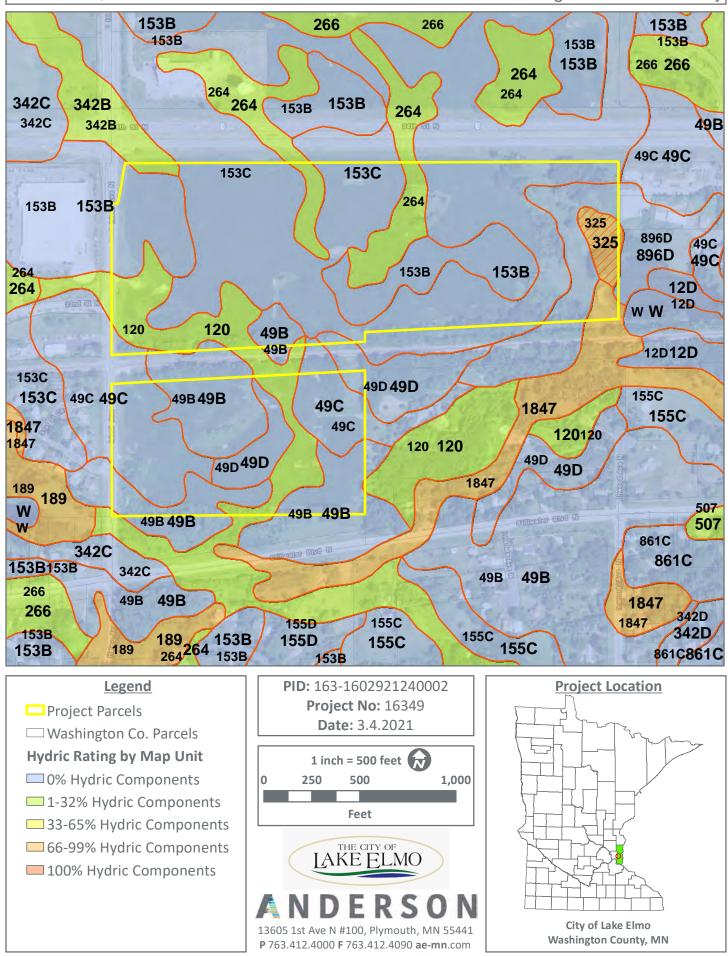


13605 1st Ave N #100, Plymouth, MN 55441 P 763.412.4000 F 763.412.4090 ae-mn.com



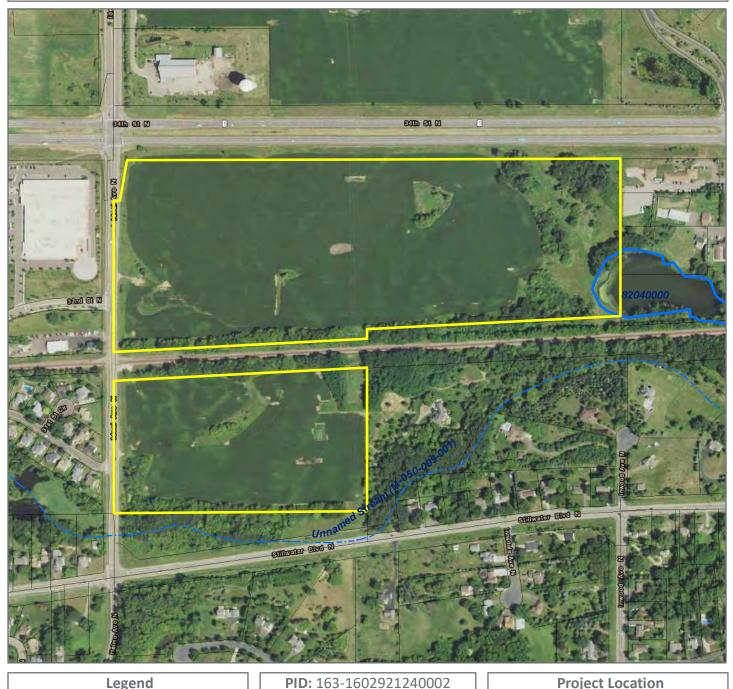
**City of Lake Elmo** 

Figure 3 Washington Co. Soil Survey



SOURCE: MnDNR, USDA, ESRI, TIGER, Bing, Washington Co., Anderson Engineering

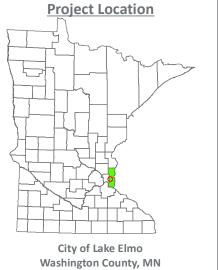
## Figure 4 MnDNR Public Water Inventory



#### Legend

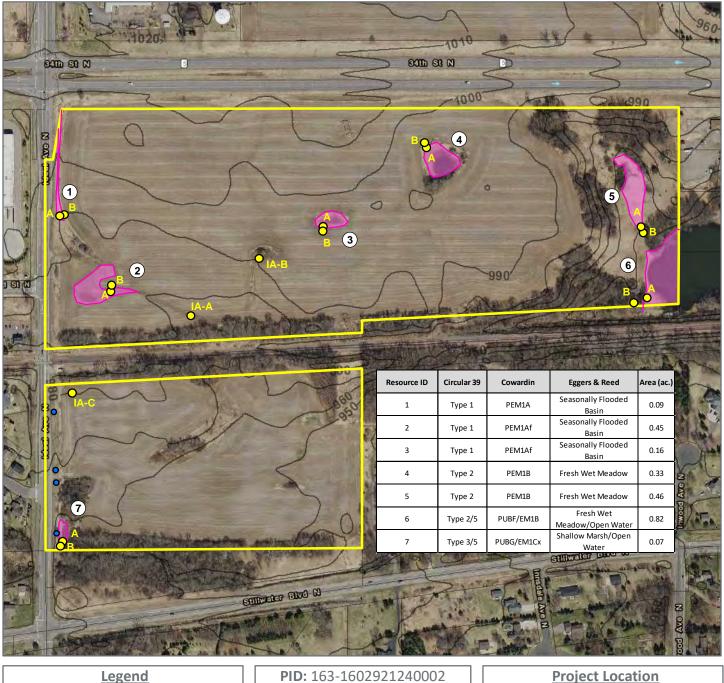
Project Parcels □ Washington Co. Parcels **MN DNR Inventoried** Public Waterbasin **MN DNR Inventoried** Public Watercourse





SOURCE: MnDNR, USDA, ESRI, TIGER, Bing, Washington Co., Anderson Engineering

## Figure 5 Delineation



Legend
Project Parcels
Washington Co. Parcels
Wetland Field Delineated
4/7/2021
Sample Point
Culvert





SOURCE: MnDNR, USDA, ESRI, TIGER, Bing, Washington Co., Anderson Engineering

## Appendix B ROUTINE ON-SITE DETERMINATION METHOD DATASHEETS

Project/Site:	PID: 163-1602921240002	2	City/Count	ty: Lake	Elmo/Washin	igton County	Sampling Date:	04/07/2021
Applicant/Owner:	(	City of Lake Elmo			St		Sampling Point:	1A
Investigator(s):	Alex Yellick, Dylan Kruz	zel	Section, To	ownship, Rang			6, T29N, R21W	
Landform (hillslope, terrace, e	tc): Till plain	Local r	elief (concav	ve, convex, no	ne):	Concave	Slop	e (%): 0
Subregion (LRR or MLRA):				9607415			786 Datu	m: WGS 84
Soil Map Unit Name:						NWI classifica	tion:	
Are climatic / hydrologic condi	tions on the site typical for	this time of year?	Yes	No	(lf no,	, explain in Rema	rks.)	
Are Vegetation, Soi	il, or Hydrology	significantl	ly disturbed?	? Ar	e "Normal Cir	cumstances" pres	sent? Yes	No
Are Vegetation, Soi	il, or Hydrology	naturally p	roblematic?	(If	needed, expl	ain any answers i	n Remarks.)	
SUMMARY OF FINDING	GS - Attach site map	showing sam	npling poi	int locatio	ns, transed	cts, importan	t features, etc.	
Hydrophytic Vegetation Pre	sent? Yes	X No		Is the Sampl	ed Area			
Hydric Soil Present?		X No		within a Wet	land?	Yes >	K No	
Wetland Hydrology Present	? Yes	X No		If yes, optiona	al Wetland Site			
Remarks: (Explain alternati Seasonally flo	ve procedures here or in a oded basin, type1, PEM1A		side ditch th	at transitions	to down gradi	ent erosional feat	ure.	
HYDROLOGY								
Wetland Hydrology Indica	itors:							
Primary Indicators (minimur		ll that apply)				Secondary Indi	cators (minimum of	two required)
X Surface Water (A1)		Water-Staine	d Leaves (B	(9)		<b>,</b>	oil Cracks (B6)	the required)
High Water Table (A2)		Aquatic Faun		-)		X Drainage I	· · ·	
X Saturation (A3)		Marl Deposits					Lines (B16)	
Water Marks (B1)		Hydrogen Su	lfide Odor (C	C1)			on Water Table (C2)	1
Sediment Deposits (B2	2)	Oxidized Rhiz	zospheres o	on Living Roots	s (C3)		urrows (C8)	
Drift Deposits (B3)		Presence of I	Reduced Iro	n (C4)		Saturation	Visible on Aerial In	nagery (C9)
Algal Mat or Crust (B4	)	Recent Iron F	Reduction in	Tilled Soils (C	(6)	Stunted or	Stressed Plants (D	01)
Iron Deposits (B5)		Thin Muck Su	urface (C7)			X Geomorph	nic Position (D2)	
Inundation Visible on A	Aerial Imagery (B7)	Other (Explai	in in Remark	(s)		Shallow A	quitard (D3)	
Sparsely Vegetated Co	oncave Surface (B8)					Microtopo	graphic Relief (D4)	
						FAC-Neut	ral Test (D5)	
Field Observations:								
Surface Water Present?	Yes X No	Depth (inch	es).	0				
Water Table Present?	Yes X No		-	0				
Saturation Present?	Yes X No		·	-	Wetland Hvd	Irology Present?	Yes X	No
(includes capillary fringe)				0	Weddina Hyd	liology ricocht.		
Describe Recorded Data (s	tream gauge, monitoring w	ell, aerial photos, p	previous insp	pections), if av	ailable:			
Remarks:								
Remarko.								

/EGETATION - Use scientific names of plants.				Sampling Point: 1A
Tree Stratum (Plot size: 30 )	Absolute %Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:         Number of Dominant Species         That Are OBL, FACW, or FAC:       1         (A)
1. Alnus / Alder       2	5	Yes		Total Number of Dominant         Species Across All Strata:       2         (B)
4 5				Percent of Dominant Species That Are OBL, FACW, or FAC:
6 7		= Total Cove		Prevalence Index worksheet: Total % Cover of: Multiply by:
Sapling/Shrub Stratum         (Plot size:)           1.            2.            3.		- 		OBL species5 $x 1 = 5$ FACW species95 $x 2 = 190$ FAC species0 $x 3 = 0$ FACU species0 $x 4 = 0$ UPL species0 $x 5 = 0$
5 6				Column Totals:         100         (A)         195         (B)           Prevalence Index = B/A =         1.95
7	0	= Total Cove		Hydrophytic Vegetation Indicators:           X         1 - Rapid Test for Hydrophytic Vegetation           2 - Dominance Test is >50%
Phalaris arundinacea / Reed canarygrass, Reed canary gras <u>Typha ×glauca / Hybrid cattail</u>	5	Yes No	FACW OBL	X       3 - Prevalence Index ≤3.01        4 - Morphological Adaptations (Provide supporting        Problematic Hydrophytic Vegetation1 (Explain)
5.           6.           7.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8				Definitions of Vegetation Strata
10 11				<b>Tree</b> - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
12	100	= Total Cove		<b>Sapling/shrub</b> - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
Woody Vine Stratum         (Plot size:30)           1.			·	<b>Herb</b> - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2			·	Woody vines - All woody vines greater than 3.28 ft in height.
ч	0	= Total Cove	er	Hydrophytic       Vegetation       Present?     Yes X
Remarks: (Explain alternative procedures here or in a separate	report.)			

~	~	•	
s	()	L	
J	Ś		_

Profile Desc Depth	ription: (Describe to t Matrix	he depth ne		e indicator	or confirm	the absen	ce of indicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 2/2	100		/0	Турс		Loam	Remains
4-16	10YR 6/2	80	10YR 5/6	20	C	М	Loam	
- 10	1011(0/2		1011000				Loam	
	·						· ·	
		·					·	
	·						· ·	
	·	·		·			·	
	·						· ·	
	·						· ·	
	·	·		·			·	
		·						
		·					·	
<sup>1</sup> Type: C=Cor	ncentration, D=Depletio	on, RM=Redu	ced Matrix, MS=Masl	ked Sand Gra	ains.		<sup>2</sup> Location:	PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Indicators for I	Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Polyvalue Belov	V Surface (S8	B) (LRR R,	MLRA 149	B) 2 cm Muck	(A10) (LRR K, L, MLRA 149B)
	pipedon (A2)		Thin Dark Surfa	-			·	rie Redox (A16) (LRR K, L, R)
Black Hi	stic (A3)		Loamy Mucky M	lineral (F1)	(LRR K, L)		5 cm Muck	y Peat or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)		Loamy Gleyed N				Dark Surfa	ice (S7) (LRR K, L)
	d Layers (A5)		Depleted Matrix				Polyvalue	Below Surface (S8) (LRR K, L)
	d Below Dark Surface (	A11)	X Redox Dark Sur					Surface (S9) (LRR K, L)
Thick Da	ark Surface (A12)	,	Depleted Dark S	Surface (F7)				anese Masses (F12) (LRR K, L, R)
	lucky Mineral (S1)		Redox Depressi					Floodplain Soils (F19) (MLRA 149B)
	Bleyed Matrix (S4)			( )				dic (TA6) (MLRA 144A, 145, 149B)
	Redox (S5)							it Material (F21)
	Matrix (S6)							ow Dark Surface (TF12)
	rface (S7) (LRR R, MI	_RA 149B)						plain in Remarks)
	(acc (c) / ( <b>_</b> , ,						011101 (274)	
<sup>3</sup> Indicators of	hydrophytic vegetation	and wetland	hydrology must be p	resent, unles	s disturbed	l or problem	natic.	
Restrictive L	ayer (if observed):							
Туре:								
Depth (in	ches):						Hydric Soil Preser	nt? Yes X No
Demenden								
Remarks:								

Project/Site:	PID: 163-1	1602921240002		City/Cour	nty: L	ake Elmo/Wash	ington County	Samplir	ng Date:	04/07/2021
Applicant/Owner:		City c	of Lake Elmo	-			State: MN	Samplin	ng Point:	1B
Investigator(s):	Alex Yel	lick, Dylan Kruzel		Section, 1	Township, F	ange:		S16, T29N, R	21W	
Landform (hillslope, terra	ce, etc):	Till Plain - TS	Local re	elief (conca	ave, convex	, none):	Concave	9	Slope	(%): 1
Subregion (LRR or MLRA	4):	К	Lat:	44.9	9609207	Long:	-92.943	81598	Datum	n: WGS 84
Soil Map Unit Name:			153B				NWI classif	ication:	N	None
Are climatic / hydrologic of			2			·	o, explain in Re	,		
Are Vegetation							ircumstances" p		Yes X	K No
Are Vegetation							plain any answe			
SUMMARY OF FIN	DINGS - Atta	ch site map sh	owing sam	pling po	oint locat	ions, transe	ects, import	ant feature	es, etc.	
Hydrophytic Vegetation	ו Present?	Yes	No X	_	Is the Sa	npled Area				
Hydric Soil Present?		Yes	No X	_	within a V	Vetland?	Yes	No	) <u>X</u>	_
Wetland Hydrology Pre	esent?	Yes X	No	_	If yes, opt	ional Wetland S	site ID:			
Remarks: (Explain alte Sampled		res here or in a sepa vithin a vegetated er		drology me	et due to re	cent rainfall. Are	ea is determined	dryland.		
HYDROLOGY										
Wetland Hydrology Ir	ndicators:									
Primary Indicators (mir		quired; check all tha	t apply)				Secondary I	ndicators (mir	nimum of t	wo required)
X Surface Water (A		· · ·	Water-Staine	d Leaves (I	B9)			Soil Cracks		, <u>, , , , , , , , , , , , , , , , </u>
X High Water Table	(A2)	_	Aquatic Faun	a (B13)			Draina	ge Patterns (E	310)	
X Saturation (A3)			Marl Deposits	s (B15)			Moss T	rim Lines (B1	6)	
Water Marks (B1)			Hydrogen Su		. ,			ason Water Ta	• • •	
Sediment Deposit	. ,		Oxidized Rhiz		-	oots (C3)		n Burrows (C8	-	
Drift Deposits (B3	-		Presence of F		• •	(22)		ion Visible on		
Algal Mat or Crus			Recent Iron F			s (C6)		l or Stressed	-	· )
Iron Deposits (B5 Inundation Visible			Thin Muck Su Other (Explai	• • •				rphic Position / Aquitard (D3)		
Sparsely Vegetate	-	• • • •			K5)			pographic Re	-	
								eutral Test (D		
						T		,	, 	
Field Observations:										
Surface Water Present		<u>X</u> No	Depth (inch	·	0					
Water Table Present?	Yes		Depth (inch	·	0	Watland U	/drology Prese	•• <b>?</b> Voo	. v	No
Saturation Present? (includes capillary fring	Yes	<u>X</u> No	Depth (inch	es):	0	wetland Hy	arology Prese	nt? Yes	<u>    X    </u>	No
(includes capillary initig	Je)									
Describe Recorded Da	ita (stream gaug	e, monitoring well, a	erial photos, p	revious ins	spections), i	f available:				
Remarks: Recent ra	ainfall resulted in	ponding								

VEGETATION - Use scientific names of plants.				San	pling Point:	1	В
				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species		01	(A) (B)
5				That Are OBL, FACW, or FAC:		0.0	(A/B)
6 7	0	= Total Cov	er	Prevalence Index worksheet Total % Cover of:	Mult	tiply by:	
Sapling/Shrub Stratum       (Plot size: 15 )         1.				OBL species     0       FACW species     10       FAC species     0       FACU species     90       UPL species     0       Column Totals:     100       Prevalence Index = B/A	x 1 = x 2 = x 3 = x 4 = x 5 = (A)	0 20 0 360 0 380 3.8	(B)
7.			FACU FACW	Hydrophytic Vegetation India         1 - Rapid Test for Hydroph         2 - Dominance Test is >50         3 - Prevalence Index ≤3.0         4 - Morphological Adaptat         Problematic Hydrophytic M         ¹Indicators of hydric soil and w         be present, unless disturbed o	nytic Vegeta )% ions (Provid /egetation <sup>1</sup> etland hydro	le supporti (Explain) blogy musi	C
8.	100	= Total Cov	er	Definitions of Vegetation Str Tree - Woody plants 3 in. (7.6 breast height (DBH), regardless Sapling/shrub - Woody plants greater than or equal to 3.28 ft Herb - All herbaceous (non-wo size, and woody plants less that Woody vines - All woody vine height.	cm) or more s of height. less than 3 (1 m) tall. body) plants an 3.28 ft tal	in. DBH a , regardles II.	and ss of
4Remarks: (Explain alternative procedures here or in a separate r	0	= Total Cov	<u> </u>	Hydrophytic Vegetation	No	X	

~	~	•	
s	()	L	
J	Ś		_

	ription: (Describe to f	the depth ne			or confirm	the absence	e of indicator	'S.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	Features %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 2/2	100		/0	Туре	LUC	Loam	I CIIIdik5
4-10	10YR 4/4	100			·		Loam	·
10-24	10YR 3/2	60	10YR 4/4	40	С	М	Loam	Distinct redox
10-24	1011372	0	1011( 4/4	40			LUam	Distillet redux
					·			
					·			
					·			
<sup>1</sup> Type: C=Cor	ncentration, D=Depletion	on, RM=Redu	uced Matrix, MS=Mask	ked Sand Gr	ains.		²Loca	ation: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Indicator	s for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Polyvalue Below	V Surface (S	8) <b>(LRR R</b> ,	MLRA 149B)	2 cm	Muck (A10) (LRR K, L, MLRA 149B)
Histic Ep	oipedon (A2)		Thin Dark Surface	ce (S9) (LR	RR R, MLRA	A 149B)	Coas	t Prairie Redox (A16) (LRR K, L, R)
Black Hi			Loamy Mucky M		(LRR K, L)			Mucky Peat or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)		Loamy Gleyed N					Surface (S7) (LRR K, L)
	l Layers (A5)		Depleted Matrix					value Below Surface (S8) (LRR K, L)
	d Below Dark Surface (	(A11)	Redox Dark Sur	. ,				Dark Surface (S9) (LRR K, L)
	ark Surface (A12)		Depleted Dark S					Manganese Masses (F12) (LRR K, L, R)
	lucky Mineral (S1)		Redox Depressi	ons (F8)				mont Floodplain Soils (F19) (MLRA 149B)
	Bleyed Matrix (S4)							c Spodic (TA6) (MLRA 144A, 145, 149B)
	edox (S5)							Parent Material (F21)
	Matrix (S6)							Shallow Dark Surface (TF12)
Dark Su	rface (S7) (LRR R, M	LRA 149B)					Othe	r (Explain in Remarks)
<sup>3</sup> Indicators of	hydrophytic vegetatior	n and wetland	I hydrology must be pr	resent, unles	ss disturbed	or problema	tic.	
Restrictive L	ayer (if observed):							
Туре:								
Depth (in	ches):						Hydric Soil F	Present? Yes No X
Remarks:								

Project/Site:       PID: 163-1602921240002       City/County:       Lake Elmo/Washington County       Sampling Date:       04/07/2         Applicant/Owner:       City of Lake Elmo       State:       MN       Sampling Point:       2A         Investigator(s):       Alex Yellick, Dylan Kruzel       Section, Township, Range:       S16, T29N, R21W       2A         Landform (hillslope, terrace, etc):       Till Plain - TS       Local relief (concave, convex, none):       Concave       Slope (%):         Subregion (LRR or MLRA):       K       Lat:       44.9952239       Long:       -92.94305361       Datum:       WG         Soil Map Unit Name:       153C       NVI classification:       None         Are vegetation      , soil      , or Hydrology       significantly disturbed?       Are "Normal Circumstances" present?       Yes      No         Are Vegetation      , soil	0 8 84
Landform (hillslope, terrace, etc):       Till Plain - TS       Local relief (concave, convex, none):       Concave       Slope (%):         Subregion (LRR or MLRA):       K       Lat:       44.9952239       Long:       -92.94305361       Datum:       WG         Soil Map Unit Name:       153C       NWI classification:       None         Are climatic / hydrologic conditions on the site typical for this time of year?       Yes       X       No       (If no, explain in Remarks.)         Are Vegetation       , Soil       , or Hydrology       significantly disturbed?       Are "Normal Circumstances" present?       Yes       No         Are Vegetation       , Soil       , or Hydrology       naturally problematic?       (If needed, explain any answers in Remarks.)         SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.       Is the Sampled Area         Hydrophytic Vegetation Present?       Yes       X       No       Is the Sampled Area         within a Wetland?       Yes       X       No	-
Subregion (LRR or MLRA):       K       Lat:       44.9952239       Long:       -92.94305361       Datum:       WG         Soil Map Unit Name:       153C       NWI classification:       None         Are climatic / hydrologic conditions on the site typical for this time of year?       Yes       X       No       (If no, explain in Remarks.)         Are Vegetation       , Soil       , or Hydrology       significantly disturbed?       Are "Normal Circumstances" present?       Yes       No         Are Vegetation       , Soil       , or Hydrology       naturally problematic?       (If needed, explain any answers in Remarks.)       No         SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.       Is the Sampled Area         Hydrophytic Vegetation Present?       Yes       X       No       Is the Sampled Area         within a Wetland?       Yes       X       No       Yes       X       No	-
Soil Map Unit Name:       153C       NWI classification:       None         Are climatic / hydrologic conditions on the site typical for this time of year?       Yes       X       No       (If no, explain in Remarks.)         Are Vegetation       , Soil       , or Hydrology       significantly disturbed?       Are "Normal Circumstances" present?       Yes       No         Are Vegetation       , Soil       , or Hydrology       naturally problematic?       (If needed, explain any answers in Remarks.)         SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.       Is the Sampled Area         Hydrophytic Vegetation Present?       Yes       X       No       Is the Sampled Area         within a Wetland?       Yes       X       No       Ves       X       No	<u>3</u> 84
Are climatic / hydrologic conditions on the site typical for this time of year?       Yes       X       No       (If no, explain in Remarks.)         Are Vegetation       , Soil       , or Hydrology       significantly disturbed?       Are "Normal Circumstances" present?       Yes       No         Are Vegetation       , Soil       , or Hydrology       naturally problematic?       (If needed, explain any answers in Remarks.)         SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.         Hydrophytic Vegetation Present?       Yes       X       No       Is the Sampled Area         Hydric Soil Present?       Yes       X       No       within a Wetland?       Yes       X       No	
Are Vegetation      , Soil      , or Hydrology	
Are Vegetation       , Soil       , or Hydrology       naturally problematic?       (If needed, explain any answers in Remarks.)         SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.         Hydrophytic Vegetation Present?       Yes       X       No       Is the Sampled Area         Hydric Soil Present?       Yes       X       No       within a Wetland?       Yes       X       No	
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.         Hydrophytic Vegetation Present?       Yes       X       No       Is the Sampled Area         Hydric Soil Present?       Yes       X       No       within a Wetland?       Yes       X       No	Х
Hydrophytic Vegetation Present?     Yes     X     No     Is the Sampled Area       Hydric Soil Present?     Yes     X     No     within a Wetland?     Yes     X     No	
Hydric Soil Present?         Yes X         No         within a Wetland?         Yes X         No	
Wetland Hydrology Present? Yes X No If yes optional Wetland Site ID:	
Remarks: (Explain alternative procedures here or in a separate report.) Farmed seasonally flooded basin (type 1, PEM1Af) located at the mouth of an erosional rill. Field appears the have been left fallow the year prior.	
HYDROLOGY	
Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (minimum of two required	d)
X       Surface Water (A1)       Water-Stained Leaves (B9)       Surface Soil Cracks (B6)	
X       High Water Table (A2)       Aquatic Fauna (B13)       Drainage Patterns (B10)	
X       Saturation (A3)       Marl Deposits (B15)       Moss Trim Lines (B16)	
Water Marks (B1) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2)	
Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Crayfish Burrows (C8)	
Drift Deposits (B3) Presence of Reduced Iron (C4) X Saturation Visible on Aerial Imagery (C9)	
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1)	
Iron Deposits (B5) Thin Muck Surface (C7) X Geomorphic Position (D2)	
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Shallow Aquitard (D3)	
Sparsely Vegetated Concave Surface (B8) Microtopographic Relief (D4)	
FAC-Neutral Test (D5)	
Field Observations:	
Surface Water Present?     Yes     X     No     Depth (inches):     0	
Water Table Present?         Yes X         No         Depth (inches):         0	
Saturation Present?         Yes X         No         Depth (inches):         0         Wetland Hydrology Present?         Yes X         No	
(includes capillary fringe)	
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	.0)
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	;9).
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	;9).
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	;9).
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	;9).
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	;9).
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	:9).
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	;9).
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	;9).
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	:9).
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	;9).
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	:9).
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	:9).
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	29).

/EGETATION - Use scientific names of plants.				Sampling Point: 2A	
<u>Tree Stratum</u> (Plot size: <u>30</u> ) 1 2.		Dominant Species?		Total Number of Dominant	(A)
3. 4. 5.				Percent of Dominant Species	(B) (A/B)
6 7				Prevalence Index worksheet:	
Sapling/Shrub Stratum (Plot size: 15 )				Total % Cover of:Multiply by:OBL species5 $x 1 = 5$ FACW species0 $x 2 = 0$ FAC species95 $x 3 = 285$ FACU species0 $x 4 = 0$ UPL species0 $x 5 = 0$	- - - -
56				Column Totals:         100         (A)         290           Prevalence Index = B/A =         2.9	_ (B)
7.	0 95 5		FAC OBL	Hydrophytic Vegetation Indicators:         1 - Rapid Test for Hydrophytic Vegetation         X       2 - Dominance Test is >50%         X       3 - Prevalence Index ≤3.01         4 - Morphological Adaptations (Provide supporting         Problematic Hydrophytic Vegetation1 (Explain)         1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	3
89 10 11 12 Woody Vine Stratum (Plot size:30)				<ul> <li>Definitions of Vegetation Strata</li> <li>Tree - Woody plants 3 in. (7.6 cm) or more in diameter breast height (DBH), regardless of height.</li> <li>Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.</li> </ul>	d
1				<ul> <li>Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</li> <li>Woody vines - All woody vines greater than 3.28 ft in height.</li> </ul>	UI
	0	= Total Cov	er	Hydrophytic       Vegetation       Present?     Yes X No	
Remarks: (Explain alternative procedures here or in a separation	ate report.)				

0	0		
3	υ	I	L

Profile Desci Depth	Matrix			ox Features		the absent	ce of indicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-24	10YR 2/2	100					Loam	Komano
021	1011(2)2						Louin	
				<u> </u>				
					·			
		<u> </u>						
<sup>1</sup> Type: C=Cor	centration, D=Depletic	on, RM=Redu	iced Matrix, MS=Mas	sked Sand Gr	ains.		<sup>2</sup> Locatio	n: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Indicators fo	or Problematic Hydric Soils <sup>3</sup> :
Histosol			Polyvalue Belo	w Surface (S	8) (LRR R.	MLRA 1491		uck (A10) (LRR K, L, MLRA 149B)
	vipedon (A2)		Thin Dark Surfa				·	rairie Redox (A16) (LRR K, L, R)
Black Hi						(1430)		
			Loamy Mucky					ucky Peat or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)		Loamy Gleyed					rface (S7) (LRR K, L)
	Layers (A5)		Depleted Matri					ie Below Surface (S8) (LRR K, L)
	Below Dark Surface (	(A11)	Redox Dark Su					rk Surface (S9) (LRR K, L)
	rk Surface (A12)		Depleted Dark					nganese Masses (F12) (LRR K, L, R)
	lucky Mineral (S1)		Redox Depress	sions (F8)				nt Floodplain Soils (F19) <b>(MLRA 149B)</b>
	leyed Matrix (S4)							podic (TA6) (MLRA 144A, 145, 149B)
Sandy R	edox (S5)						Red Par	rent Material (F21)
Stripped	Matrix (S6)						Very Sh	allow Dark Surface (TF12)
							N/ 0// /F	
Dark Su	face (S7) (LRR R, M	LRA 149B)					X Other (E	Explain in Remarks)
Dark Su	face (S7) (LRR R, M	LRA 149B)					X Other (E	explain in Remarks)
	face (S7) <b>(LRR R, M</b> i		l hydrology must be	present, unles	ss disturbed	or problem		xplain in Remarks)
<sup>3</sup> Indicators of			l hydrology must be j	present, unles	ss disturbed	or problem		xpiain in Remarks)
<sup>3</sup> Indicators of	hydrophytic vegetatior		l hydrology must be j	present, unles	ss disturbed	or problem		xpiain in Remarks)
<sup>3</sup> Indicators of Restrictive L	hydrophytic vegetatior ayer (if observed):		l hydrology must be	present, unles	ss disturbed	or problem	atic.	
<sup>3</sup> Indicators of Restrictive L Type:	hydrophytic vegetatior ayer (if observed):		l hydrology must be p	present, unles	ss disturbed	or problem		
<sup>3</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches):	n and wetland					atic. Hydric Soil Pres	sent? Yes X No
<sup>3</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches):	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (indicators) Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>3</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (ind Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>a</sup> Indicators of <b>Restrictive L</b> Type: Depth (indicators) Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No
<sup>3</sup> Indicators of <b>Restrictive L</b> Type: Depth (indicators) Remarks:	hydrophytic vegetatior ayer (if observed): ches): Hydrophytic vegetation	n and wetland					atic. Hydric Soil Pres	sent? Yes <u>X</u> No

Project/Site:	PID: 163-1602921240002		City/County:	Lake Elmo/Wa	ashington County	Sampling Date:	04/07/2021		
Applicant/Owner:		. , ,		State: MN	Sampling Point:	2B			
	Alex Yellick, Dylan Kruzel		Section, Towr	ship, Range:		S16, T29N, R21W			
	etc): Till Plain - FS		elief (concave,	convex, none):			e (%): 1		
Subregion (LRR or MLRA):		Lat:	-	· · · · · · · · · · · · · · · · · · ·	g: -92.94309		m: WGS 84		
Soil Map Unit Name:		153C			NWI classifica	tion:	None		
Are climatic / hydrologic cond	ditions on the site typical for th	is time of year?	Yes X	No (	(If no, explain in Rema	rks.)			
Are Vegetation , Se	oil, or Hydrology	significant	ly disturbed?	Are "Norma	al Circumstances" pres	sent? Yes	No X		
	oil , or Hydrology				explain any answers i	n Remarks.)			
	IGS - Attach site map			locations, trar	nsects, importan	t features, etc.			
Hydrophytic Vegetation Pr	-			the Sampled Area		•			
Hydric Soil Present?	Yes			thin a Wetland?		No X			
Wetland Hydrology Preser		NoX	_	es, optional Wetlan			-		
- Wolland Hydrology Proces									
	tive procedures here or in a se s the have been left fallow the		was the prior ye	ear crop rotation.					
HYDROLOGY									
Wetland Hydrology Indic	ators:								
Primary Indicators (minimu	um of one required; check all t	hat apply)			Secondary Indi	cators (minimum of t	wo required)		
Surface Water (A1)	· · · · ·		ed Leaves (B9)			oil Cracks (B6)			
High Water Table (A2	)	Aquatic Faur	na (B13)		Drainage I	Patterns (B10)			
Saturation (A3)		Marl Deposit	s (B15)		Moss Trim	Moss Trim Lines (B16)			
Water Marks (B1)		Hydrogen Su	Ilfide Odor (C1)		Dry-Season Water Table (C2)				
Sediment Deposits (E	32)	Oxidized Rhi	zospheres on L	iving Roots (C3)	Crayfish B	urrows (C8)			
Drift Deposits (B3)	_	Presence of	Reduced Iron (0	C4)	Saturation	Visible on Aerial Im	agery (C9)		
Algal Mat or Crust (B	4)	Recent Iron F	Reduction in Till	ed Soils (C6)	Stunted or	Stressed Plants (D	1)		
Iron Deposits (B5)	_	Thin Muck Si	urface (C7)		Geomorph	ic Position (D2)			
Inundation Visible on	Aerial Imagery (B7)	Other (Explai	in in Remarks)		Shallow A	quitard (D3)			
Sparsely Vegetated C	Concave Surface (B8)				Microtopo	graphic Relief (D4)			
					FAC-Neut	al Test (D5)			
Field Observations:									
Surface Water Present?	Yes No X	Depth (inch	ies).						
Water Table Present?	Yes No X								
Saturation Present?		Depth (inch	,	Wetland	Hydrology Present?	Yes	No X		
(includes capillary fringe)					i nyarology i roconci				
(									
Describe Recorded Data (	stream gauge, monitoring well	l, aerial photos, p	previous inspec	tions), if available:					
Remarks:									

EGETATION - Use scientific names of plants.					Samp	pling Poin	it:	2B	
Tree Stratum (Plot size: 30 )	Absolute %Cover	Dominant Species?	Indicator Status	Dominance Test w Number of Domina That Are OBL, FAC	ant Species		2	(A)	
1.       2.				Total Number of Do Species Across All			3	(B)	
3 4 5				Percent of Domina That Are OBL, FAC	•		66.7	_ (A/B)	
6 7				Prevalence Index	worksheet:				
	0 = Total Cover		Total % Cove	Multiply by:					
Sapling/Shrub Stratum (Plot size: 15 )		_		OBL species	0	x 1 =	0		
<u> </u>				FACW species	0	x 2 =	0		
2.				FAC species	10	x 3 =	30		
3.				FACU species	5	x 4 =	20		
4.				UPL species	0	x 5 =	0		
5.				Column Totals:	15	(A)	50	(B)	
6				Prevalence I	ndex = B/A =		3.33		
7				Hydrophytic Vogo	tation Indic:	atore			
	0 = Total Cover			Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation					
Herb Stratum (Plot size: 5 )							ation		
1. Rumex crispus / Curly dock	5	Yes	FAC	X2 - Dominance Test is >50% $\_$ 3 - Prevalence Index <3.01					
2. Arctium minus / Common burdock	5	Yes	FACU	4 - Morphological Adaptations (Provide supporting					
Urtica dioica / Stinging nettle	5	Yes	FAC	Problematic H					
5 6				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			st		
8.				Definitions of Veg	jetation Stra	ta			
9 10 11				<b>Tree</b> - Woody plan breast height (DBH	l), regardless	of height	t.		
12	15	= Total Cov	ver	Sapling/shrub - W greater than or equ				and	
Woody Vine Stratum (Plot size:30) 1				Herb - All herbaced size, and woody pla				ss of	
2 3				Woody vines - All height.				in	
4		= Total Cov	/er	Hydrophytic Vegetation Present?	Yes 📝	<u>K</u> No	)		
Remarks: (Explain alternative procedures here or in a separa	ate report.)								

~	~	•	
s	()	L	
J	Ś		_

	Matrix			x Features					_	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-16	10YR 2/2	100					Loam			
16-24	10YR 2/2	80	7.5YR 3/4	20			Loam	Distinct re	dox	
		·								
Гуре: С=Со	ncentration, D=Depletion	on, RM=Redu	uced Matrix, MS=Mas	ked Sand Gr	ains.		²Loc	ation: PL=Po	ore Lining, M=	Matrix.
vdric Soil	Indicators:						Indicator	rs for Proble	ematic Hydric	Soile <sup>3</sup>
Histoso			Polyvalue Belov	w Surface (S	8) (LRR R.	MLRA 149			) (LRR K, L, N	
	pipedon (A2)		Thin Dark Surfa	-			·	•	dox (A16) (LI	
	istic (A3)		Loamy Mucky M	/lineral (F1)	(LRR K, L)					(LRR K, L, R)
	en Sulfide (A4)		Loamy Gleyed	Matrix (F2)	,		Darl	k Surface (S	7) (LRR K, L)	
Stratifie	d Layers (A5)		Depleted Matrix						Surface (S8)	
 Deplete	d Below Dark Surface (	A11)	Redox Dark Su						ce (S9) (LRR	
Thick D	ark Surface (A12)		Depleted Dark	Surface (F7)			Iron	-Manganese	Masses (F12)	(LRR K, L, R)
Sandy M	Mucky Mineral (S1)		Redox Depress	ions (F8)			Piec	Imont Floodp	olain Soils (F19	9) <b>(MLRA 149B)</b>
Cundyn										
	Gleyed Matrix (S4)						Mes	ic Spodic (TA	A6) (MLRA 1	44A, 145, 149B)
Sandy C	Gleyed Matrix (S4) Redox (S5)							ic Spodic (TA Parent Mate		44A, 145, 149B)
Sandy C	• • •						Red	Parent Mate		
Sandy ( Sandy F Stripped	Redox (S5)	LRA 149B)					Red Very	Parent Mate	erial (F21) ırk Surface (TF	
Sandy ( Sandy F Stripped Dark Su	Redox (S5) I Matrix (S6) Irface (S7) <b>(LRR R, M</b>		t hydrology must be r	resent unles	ss disturbed	l or problem	Red Very Othe	Parent Mate Shallow Da	erial (F21) ırk Surface (TF	
Sandy ( Sandy F Stripped Dark Su	Redox (S5) d Matrix (S6) Irface (S7) <b>(LRR R, M</b> f hydrophytic vegetation		d hydrology must be p	resent, unles	ss disturbed	l or problem	Red Very Othe	Parent Mate Shallow Da	erial (F21) ırk Surface (TF	
Sandy ( Sandy F Stripped Dark Su ndicators of	Redox (S5) I Matrix (S6) Irface (S7) <b>(LRR R, M</b>		l hydrology must be p	resent, unles	ss disturbed	l or problem	Red Very Othe	Parent Mate Shallow Da	erial (F21) ırk Surface (TF	
Sandy ( Sandy F Stripped Dark Su ndicators of cestrictive I	Redox (S5) d Matrix (S6) Irface (S7) <b>(LRR R, M</b> f hydrophytic vegetation		d hydrology must be p	resent, unles	ss disturbed	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) ırk Surface (TF	
Sandy ( Sandy F Stripped Dark Su ndicators of Restrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		d hydrology must be p	resent, unles	ss disturbec	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su ndicators of estrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		d hydrology must be p	resent, unles	ss disturbec	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su adicators of estrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		l hydrology must be p	resent, unles	ss disturbec	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su adicators of strictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		l hydrology must be p	resent, unles	ss disturbec	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su adicators of estrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		I hydrology must be p	resent, unles	ss disturbec	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su adicators of estrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		ł hydrology must be p	resent, unles	ss disturbec	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su ndicators of estrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		d hydrology must be p	resent, unles	ss disturbed	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su ndicators of estrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		I hydrology must be p	resent, unles	ss disturbec	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su ndicators of estrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		I hydrology must be p	resent, unles	ss disturbec	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su ndicators of estrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		d hydrology must be p	resent, unles	as disturbed	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su ndicators of Restrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		d hydrology must be p	resent, unles	ss disturbec	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su ndicators of Restrictive I	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		d hydrology must be p	resent, unles	ss disturbed	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su ndicators of Restrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		d hydrology must be p	resent, unles	ss disturbec	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su ndicators of Restrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		d hydrology must be p	resent, unles	ss disturbed	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su ndicators of Restrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		d hydrology must be p	resent, unles	ss disturbed	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)
Sandy ( Sandy F Stripped Dark Su ndicators of estrictive I Type: Depth (ir	Redox (S5) d Matrix (S6) urface (S7) <b>(LRR R, M</b> f hydrophytic vegetation <b>Layer (if observed)</b> :		d hydrology must be p	resent, unles	ss disturbed	l or problem	Red Very Othe	Parent Mate / Shallow Da er (Explain in	erial (F21) Irk Surface (TF n Remarks)	:12)

Project/Site:	PID: 1	163-16 <sup>,</sup>	02921	240002		Citv	/Countv	v:	Lake El	mo/Washi	naton Co	ountv	Sampl	ling Date:	04/07/2021
					of Lake E						state:	MN		ling Point:	3A
Investigator(s):	Ale	x Yellic	k, Dyl	an Kruzel			tion, To	wnship,	, Range:			S16	5, T29N,	-	
Landform (hillslope, terrace	, etc):		Till P	lain - TS	Lo	cal relief (	concav	e, conv	ex, none	e):	C	Concave		Slope	e (%): 0
Subregion (LRR or MLRA):			K		La	at:	44.99	592319		Long:	-	-92.93966	066	Datun	m: WGS 84
Soil Map Unit Name:					153	С					NWI	classificat	ion:	١	None
Are climatic / hydrologic cor									No	(If no	o, explair	n in Remar	ks.)		
Are Vegetation, s												nces" pres			No X
Are Vegetation, s										-		answers i			
SUMMARY OF FINDI	<u>NGS - /</u>	Attac	h sit	e map s	howing	samplin	g poi	int loc	ations	, transe	cts, in	nportant	featur	res, etc.	
Hydrophytic Vegetation F	'resent?		Ye	es X	No			ls the S	Sampled	Area					
Hydric Soil Present?			Ye	es X	No		1	within a	a Wetlan	nd?		Yes X	<u> </u>	No	_
Wetland Hydrology Prese	ent?		Ye	es X	No		1	lf yes, o	ptional V	Vetland Si	te ID:				
Remarks: (Explain alterna Farmed sea							s to hav	ve been	n left fallo	ow the yea	r prior. C	Corn was th	ne prior y	/ear crop ro	tation.
HYDROLOGY															
Wetland Hydrology Indi	cators:		_												
Primary Indicators (minim	num of on	e requi	ired; c	heck all th	at apply)						Seco	ndary India	cators (m	ninimum of t	two required)
X Surface Water (A1)				_	Water-S	tained Lea	ves (BS	9)			:	Surface So	oil Cracks	s (B6)	
X High Water Table (A	.2)			_		Fauna (B1						Drainage F			
X Saturation (A3)				_	- '	posits (B15						Moss Trim	``	,	
Water Marks (B1)				_	_ , .	en Sulfide (	•	'				•		Table (C2)	
Sediment Deposits (	(BZ)			_	_	d Rhizosph		-	Roots (	.3)		Crayfish B		us) on Aerial Ima	$a_{n}$
Drift Deposits (B3) Algal Mat or Crust (B	24)				-	e of Reduc		• •						d Plants (D1	
Iron Deposits (B5)	54)			_		ck Surface		Tilleu O				Geomorph			')
Inundation Visible or	n Aerial Ir	nagerv	(B7)		-	Explain in R		s)				Shallow Ad			
Sparsely Vegetated				)				-,				Microtopog			
											Х	FAC-Neutr	al Test (I	D5)	
Field Observations:															
Surface Water Present?		Vec	x	No	Denth	(inches):		1							
Water Table Present?				No		(inches):		0	-						
Saturation Present?				No		(inches):		0	- w	etland Hv	droloav	Present?	Ye	es X	No
(includes capillary fringe)						(		Ţ	-	<b>,</b>					
Describe Recorded Data	(stream ç	jauge,	monit	oring well,	aerial pho	tos, previo	us insp	ections	), if avail	able:					
Remarks: Offsite Area	F: 63% v	vet sigr	nature	s with adja	acent mapp	bed hydric	soils ar	nd no N'	WI. Field	l verificatio	on suppo	orts saturat	ion visib	le on aerial	imagery (C9).

VEGETATION - Use scientific names of plants.					Sampling Poi	nt:	3A
Tree Stratum (Plot size:30)	Absolute %Cover	Dominant Species?	Indicator Status	Dominance Test worksl Number of Dominant Spe That Are OBL, FACW, or	ecies FAC:	2	_ (A)
1 2 3				Total Number of Dominar Species Across All Strata		2	(B)
4 5				Percent of Dominant Spe That Are OBL, FACW, or		100.0	_ (A/B)
6 7				Prevalence Index works	sheet:		
		= Total Cov	er	Total % Cover of:	M	lultiply by:	
Sapling/Shrub Stratum (Plot size: 15 )		_		OBL species 0	x 1 =	0	
				FACW species 80	) x 2 =	160	
2.				FAC species 20		60	
3				FACU species 0		0	
4				UPL species 0	x 5 =	0	
5				Column Totals: 10	0 (A)	220	(B)
6.				Prevalence Index =	B/A =	2.2	
7	·			Hydrophytic Vegetation	Indicators:		
	0	= Total Cov	rer	1 - Rapid Test for Hy		etation	
Herb Stratum (Plot size: 5 )				X 2 - Dominance Test			
1. Phragmites australis ssp. americanus / American common re		Yes	FACW	X 3 - Prevalence Index			
2. Panicum capillare / Old witch grass	20	Yes	FAC	4 - Morphological Ac		vide suppor	rtina
3 4				Problematic Hydropl			-
5.		-					- 4
6.				<sup>1</sup> Indicators of hydric soil a	,	0,	St
7.				be present, unless distur	bed or problem	auc.	
8				Definitions of Vegetatio	n Strata		
9 10 11				<b>Tree</b> - Woody plants 3 in. breast height (DBH), rega			eter at
12				Sapling/shrub - Woody	plants less thar	n 3 in. DBH	and
	100	= Total Cov	rer	greater than or equal to 3	.28 ft (1 m) tall		
Woody Vine Stratum         (Plot size:30)           1.				Herb - All herbaceous (ne size, and woody plants le			ess of
2. 3.				Woody vines - All woody height.	vines greater	than 3.28 ft	: in
4	0	= Total Cov	er	Hydrophytic Vegetation Present? Ye	•s <u>X</u> N	0	
Remarks: (Explain alternative procedures here or in a separate	report.)			•			

~	~	•	
s	()	L	
J	Ś		_

	ription: (Describe to t	he depth ne			or confirm	the abse	nce of indicator	s.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	Features %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-4	10YR 2/2	100		/0	туре	LOC	Sandy Loam	Tremarks
4-12	10YR 2/2	98	10YR 3/4	2	C	М	Sandy Loam	Distinct redox
12-16	7.5YR 5/2	80	7.5YR 4/4	20	 C	M	Sandy Loam	Distinct redox
12-10	1.511( 5/2	0	1.011(-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1			111		Distillet redox
					·			
					·			
					·			
	·				·			
	·				·			
	·				·			
	·				·			
<sup>1</sup> Type: C=Cor	ncentration, D=Depletion	on, RM=Redu	uced Matrix, MS=Mask	ed Sand Gr	ains.		²Loca	ation: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators						Indicators	s for Problematic Hydric Soils <sup>3</sup> :
Histosol			Polyvalue Below	· Surface (S				Muck (A10) (LRR K, L, MLRA 149B)
							·	t Prairie Redox (A16) (LRR K, L, R)
Black Hi								Mucky Peat or Peat (S3) (LRR K, L, R)
								Surface (S7) (LRR K, L)
	d Layers (A5)							value Below Surface (S8) (LRR K, L)
	• • •	(11)						Dark Surface (S9) (LRR K, L)
·		<u>, , , , , , , , , , , , , , , , , , , </u>						Manganese Masses (F12) (LRR K, L, R)
								nont Floodplain Soils (F19) (MLRA 149B)
	, ,							c Spodic (TA6) (MLRA 144A, 145, 149B)
	Depleted Below Dark Surface (A11)       X       Redox Dark Surfa         hick Dark Surface (A12)       Depleted Dark Su						Parent Material (F21)	
		on (A2)       Thin Dark Surface (SS         A3)       Loamy Mucky Mineral         fide (A4)       Loamy Gleyed Matrix         ers (A5)       Depleted Matrix (F3)         w Dark Surface (A11)       X         race (A12)       Depleted Dark Surface (I         Mineral (S1)       Redox Depressions (F         Matrix (S4)       (S5)         (S7)       (LRR R, MLRA 149B)         ophytic vegetation and wetland hydrology must be present         (if observed):						Shallow Dark Surface (TF12)
		RA 149B)						r (Explain in Remarks)
<sup>3</sup> Indicators of	hydrophytic vegetatior	and wetland	I hydrology must be p	resent, unles	ss disturbec	l or problei	matic.	
Restrictive L	ayer (if observed):							
Type:	<b>,</b>							
Depth (in	ches):						Hydric Soil P	resent? Yes X No
	·							
Remarks:								

Project/Site:	PID: 163-1602921240002	City/C	County: Lak	e Elmo/Washingto	on County	Sampling Date:	04/07/2021
Applicant/Owner:	City	of Lake Elmo		State	: MN	Sampling Point:	3B
Investigator(s):	Alex Yellick, Dylan Kruzel	Section	on, Township, Rar	ige:	S16	, T29N, R21W	
Landform (hillslope, terrace,	etc): Till Plain - FS	Local relief (co	oncave, convex, n	one):	None	Slope	e (%): 1
Subregion (LRR or MLRA):	ĸ	Lat:	44.9959174	Long:	-92.93966	B69 Datur	m: WGS 84
Soil Map Unit Name:					NWI classificat	ion:	
Are climatic / hydrologic cond	ditions on the site typical for this	time of year? Yes	X No	(If no, ex	plain in Remar	,	
	oil, or Hydrology			Are "Normal Circun	mstances" pres	ent? Yes	No X
	oil, or Hydrology			If needed, explain	•		
SUMMARY OF FINDIN	IGS - Attach site map sh	nowing sampling	point locatio	ons, transects	s, important	features, etc.	
Hydrophytic Vegetation Pro	esent? Yes	No X	Is the Samp	oled Area			
Hydric Soil Present?	Yes	No X	within a We	tland?	Yes	No X	
Wetland Hydrology Preser	nt? Yes	No X	If yes, option	nal Wetland Site ID	D:		_
	tive procedures here or in a sep ned to be dry land. Field appear		low the year prior	. Corn was the pric	or year crop ro	tation.	
HYDROLOGY							
Wetland Hydrology Indic	ators						
	um of one required; check all the	at apply)		S	Secondary India	cators (minimum of t	two required)
Surface Water (A1)		Water-Stained Leave	es (B9)			il Cracks (B6)	
High Water Table (A2	)	Aquatic Fauna (B13	. ,	_		Patterns (B10)	
Saturation (A3)		Marl Deposits (B15)		_	Moss Trim	Lines (B16)	
Water Marks (B1)		Hydrogen Sulfide Od	dor (C1)	_	Dry-Seaso	n Water Table (C2)	
Sediment Deposits (E	32)	Oxidized Rhizosphe	res on Living Roo	ts (C3)	Crayfish B	urrows (C8)	
Drift Deposits (B3)		Presence of Reduce	d Iron (C4)	_		Visible on Aerial Im	
Algal Mat or Crust (B4	4)	Recent Iron Reduction		C6) _		Stressed Plants (D	1)
Iron Deposits (B5)		Thin Muck Surface (	,	-		ic Position (D2)	
Inundation Visible on		Other (Explain in Re	marks)	-		uitard (D3)	
Sparsely Vegetated C	Jondave Sunace (Do)			_		raphic Relief (D4) al Test (D5)	
Field Observations:							
Surface Water Present?	Yes <u>No X</u>	Depth (inches):					
Water Table Present?	Yes X No	Depth (inches):	16				
Saturation Present?	Yes X No	Depth (inches):	13	Wetland Hydrol	logy Present?	Yes	No X
(includes capillary fringe)							
Describe Recorded Data (	stream gauge, monitoring well, a	aerial photos, previous	inspections) if s	vailable:			
Describe Recorded Data (	stream gauge, monitoring weil, a			valiable.			
Remarks: Hydrology cri	iteria not met.						

EGETATION - Use scientific names of plants.	Sampling Point:	3B			
Tree Stratum       (Plot size:				Dominance Test worksheet:         Number of Dominant Species         That Are OBL, FACW, or FAC:       0         Total Number of Dominant         Species Across All Strata:       0         Percent of Dominant Species         That Are OBL, FACW, or FAC:       0.0	(A) (B) (A/B)
6		= Total Cov		Total % Cover of:     Multiply by:       OBL species     0     x 1 =     0	
2				OBL species0 $x = 0$ FACW species0 $x = 0$ FAC species0 $x = 0$ FACU species0 $x = 0$ UPL species0 $x = 0$ Column Totals:0(A)Prevalence Index = B/A =0.0	(B)
erb Stratum       (Plot size:)	0		er	Hydrophytic Vegetation Indicators:         1 - Rapid Test for Hydrophytic Vegetation         2 - Dominance Test is >50%         3 - Prevalence Index ≤3.01         4 - Morphological Adaptations (Provide support Problematic Hydrophytic Vegetation1 (Explain)         1Indicators of hydric soil and wetland hydrology multiple present, unless disturbed or problematic.	1)
				Definitions of Vegetation Strata Tree - Woody plants 3 in. (7.6 cm) or more in diam breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH	
	0	_		<ul> <li>greater than or equal to 3.28 ft (1 m) tall.</li> <li>Herb - All herbaceous (non-woody) plants, regardl size, and woody plants less than 3.28 ft tall.</li> <li>Woody vines - All woody vines greater than 3.28 height.</li> </ul>	less of
4	0	= Total Cov	er	Hydrophytic       Vegetation       Present?     Yes NoX	

Sample location in previously farmed agriculture field.

0	0		
3	υ	I	L

	ription: (Describe to t	he depth nee			or confirm	the abse	nce of indicator	's.)			
Depth (inches)	Matrix	0/		K Features	Turant	1	Tautura			_	
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	5	
0-16	10YR 2/2	100					Sandy Loam				
16-24	7.5YR 5/2	80	7.5YR 4/6	20	C	М	Sandy Loam	Prominen	t redox		
				_							
	·										
								·			
	·										
<sup>1</sup> Type: C=Cor	ncentration, D=Depletion	on, RM=Redu	ced Matrix, MS=Masl	ked Sand Gr	ains.		<sup>2</sup> Loca	ation: PL=P	ore Lining, M=	Matrix.	
Hydric Soil I	ndicators:						Indicators	s for Probl	ematic Hydri	c Soils³:	
Histosol	(A1)		Polyvalue Belov	v Surface (S	8) <b>(LRR R</b> ,	MLRA 14	9B) 2 cm	Muck (A10	) (LRR K, L,	MLRA 149E	3)
Histic Fr	pipedon (A2)		Thin Dark Surfa		, .		·		edox (A16) (L		
						(1400)					
	stic (A3)		Loamy Mucky M		(LRR K, L)				at or Peat (S3)		., R)
Hydroge	en Sulfide (A4)		Loamy Gleyed I	Matrix (F2)			Dark	Surface (S	7) <b>(LRR K, L</b>	.)	
Stratified	d Layers (A5)		Depleted Matrix	(F3)			Polyv	alue Below	/ Surface (S8)	(LRR K, L	.)
Depleted	d Below Dark Surface (	A11)	Redox Dark Su	face (F6)			Thin	Dark Surfa	ce (S9) (LRR	K, L)	
	ark Surface (A12)	,	Depleted Dark S						Masses (F12		I R)
								-	-		
·	lucky Mineral (S1)		Redox Depress	IONS (F8)					plain Soils (F1		
	Bleyed Matrix (S4)								A6) <b>(MLRA</b> '	144A, 145, <i>*</i>	149B)
Sandy R	Redox (S5)						Red	Parent Mate	erial (F21)		
Stripped	Matrix (S6)						Verv	Shallow Da	ark Surface (T	F12)	
	rface (S7) (LRR R, MI	RA 149B)							n Remarks)	,	
Туре:	ayer (if observed):										
Depth (in	ches):						Hydric Soil P	resent?	Yes	No	Х
Remarks:	Hydric soil criteria not r	mot									
	Hyunc son chiena not i	net.									

Project/Site:	PID: 163-1602921240002	City/Co	unty: Lake El	Imo/Washington County	Sampling Date: 04/07/2021
Applicant/Owner:		of Lake Elmo		State: MN	Sampling Point: 4A
Investigator(s):	Alex Yellick, Dylan Kruzel	Section	, Township, Range:	S16	6, T29N, R21W
Landform (hillslope, terrace, e	tc): Till Plain - TS	Local relief (con	icave, convex, none	e): Concave	Slope (%): 1
Subregion (LRR or MLRA):	К	Lat: 44	1.99693275	Long: -92.93801	136 Datum: WGS 84
Soil Map Unit Name:		264		NWI classificat	tion: None
Are climatic / hydrologic condi	tions on the site typical for this	time of year? Yes	X No	(If no, explain in Rema	rks.)
Are Vegetation , Sol	il , or Hydrology	significantly disturb	ed? Are "	"Normal Circumstances" pres	sent? Yes X No
Are Vegetation , Sol				eded, explain any answers i	
SUMMARY OF FINDIN	GS - Attach site map sh			. transects. importan	t features. etc.
	· · · · · ·	• • •			
Hydrophytic Vegetation Pre Hydric Soil Present?	sent? Yes X Yes X	No	Is the Sampled within a Wetlan		K No
		No			K No
Wetland Hydrology Present	? Yes <u>X</u>	No	il yes, optional v	Wetland Site ID:	
	ve procedures here or in a sep adow (Type 2, PEM1B)	arate report.)			
HYDROLOGY					
Wetland Hydrology Indica	itors:				
Primary Indicators (minimu	m of one required; check all tha	at apply)		Secondary Indi	cators (minimum of two required)
Surface Water (A1)		Water-Stained Leaves	s (B9)	Surface So	oil Cracks (B6)
X High Water Table (A2)		Aquatic Fauna (B13)		Drainage F	Patterns (B10)
X Saturation (A3)		Marl Deposits (B15)		Moss Trim	Lines (B16)
Water Marks (B1)		Hydrogen Sulfide Odo	or (C1)	Dry-Seasc	on Water Table (C2)
Sediment Deposits (B2	2)	Oxidized Rhizosphere	s on Living Roots (	C3) Crayfish B	Burrows (C8)
Drift Deposits (B3)	_	Presence of Reduced	Iron (C4)	Saturation	Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4	)	Recent Iron Reduction	n in Tilled Soils (C6)	Stunted or	Stressed Plants (D1)
Iron Deposits (B5)		Thin Muck Surface (C	7)	X Geomorph	nic Position (D2)
Inundation Visible on A	verial Imagery (B7)	Other (Explain in Rem	narks)	Shallow A	quitard (D3)
Sparsely Vegetated Co	oncave Surface (B8)			Microtopo	graphic Relief (D4)
				X FAC-Neutr	ral Test (D5)
Field Observations:					
Surface Water Present?	Yes No X	Dopth (inchos):			
		_ Depth (inches):	10		
Water Table Present? Saturation Present?		_ Depth (inches):		atland Uvdralagy Dracant?	
	Yes X No	Depth (inches):		etland Hydrology Present?	Yes X No
(includes capillary fringe)					
Describe Recorded Data (s	tream gauge, monitoring well, a	aerial photos, previous i	inspections), if avail	able:	
Remarks:					
	: 100% wet signatures with adj	jacent mapped hydric so	oils and no NWI. Fie	Id verification supports satur	ration visible on aerial imagery (C9).

EGETATION - Use scientific names of plants.					Samp	oling Poir	nt:	4A
	Absolute 6Cover	Dominant Species?	Indicator Status	Dominance Test Number of Domin That Are OBL, FA	ant Species		1	_ (A)
1.				Total Number of E Species Across A			1	_ (B)
4				Percent of Domin That Are OBL, FA	•		100.0	_ (A/B)
6				Prevalence Inde	x worksheet:			
		= Total Cov	rer	Total % Cov	er of:	M	ultiply by:	
		_		OBL species	0	x 1 =	0	
1,				FACW species	95	x 2 =	190	
2.				FAC species	0	x 3 =	0	
				FACU species	5	x 4 =	20	
4.				UPL species	0	x 5 =	0	
-				Column Totals:	100	(A)	210	(B)
6				Prevalence	Index = B/A =		2.1	
7				Hydrophytic Veg	etation Indica	ators:		
-	0	= Total Cov	rer	X 1 - Rapid Tes			tation	
Herb Stratum (Plot size: 5 )				X 2 - Dominane		-		
1. Phalaris arundinacea / Reed canarygrass, Reed canary gras	95	Yes	FACW	X 3 - Prevalence				
2. Ambrosia artemisiifolia / Annual ragweed, Common ragweed	5	No	FACU	4 - Morpholo			ido ournord	tina
3					• •	•	• •	ung
ł					Hydrophytic Ve	egetation	· (Explain)	
5								
)				<sup>1</sup> Indicators of hyd			0,	st
7			_	be present, unles	s disturbed or	problema	atic.	
3				Definitions of Ve	getation Stra	ta		
9				<b>Tree</b> - Woody pla breast height (DB				eter at
12				Sapling/shrub -				and
- Woody Vine Stratum (Plot size: 30)	100	= Total Cov	er	greater than or ec Herb - All herbac		. ,		oo of
, , 1,				size, and woody p				55 01
2				Woody vines - A height.	ll woody vines	greater t	han 3.28 ft	in
4	0	= Total Cov		Hydrophytic				
-	0			Vegetation				

~	~	•	
s	()	L	
J	Ś		_

Profile Desci Depth	ription: (Describe to th Matrix	ne depth nee		e indicator	or confirm	the absence	e of indicato	rs.)
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-6	7.5YR 3/2	100					Loam	
6-24	7.5YR 3/2	80	7.5YR 4/4	20	С	М	Loam	Distinct redox
					·			
				·				
17					:		21	
Type: C=Cor	centration, D=Depletio	n, RM=Redu	ced Matrix, MS=Mask	ed Sand Gra	ains.		2LOC	ation: PL=Pore Lining, M=Matrix.
Black Hi Hydroge Stratifiec Depleted Sandy M Sandy G Sandy R Sandy R L Stripped Dark Sur	(A1) bipedon (A2)	.RA 149B)	<ul> <li>Polyvalue Below</li> <li>Thin Dark Surfad</li> <li>Loamy Mucky M</li> <li>Loamy Gleyed N</li> <li>Depleted Matrix</li> <li>X Redox Dark Sur</li> <li>Depleted Dark S</li> <li>Redox Depression</li> </ul>	ce (S9) <b>(LR</b> ineral (F1) <b>(</b> Matrix (F2) (F3) face (F6) surface (F7) ons (F8)	R R, MLRA LRR K, L)	A 149B)	) 2 cm Coas 5 cm Dark Poly Thin Pied Pied Red Very Othe	s for Problematic Hydric Soils <sup>3</sup> : a Muck (A10) (LRR K, L, MLRA 149B) st Prairie Redox (A16) (LRR K, L, R) a Mucky Peat or Peat (S3) (LRR K, L, R) a Surface (S7) (LRR K, L) value Below Surface (S8) (LRR K, L) Dark Surface (S9) (LRR K, L) Manganese Masses (F12) (LRR K, L, R) mont Floodplain Soils (F19) (MLRA 149B) ic Spodic (TA6) (MLRA 144A, 145, 149B) Parent Material (F21) Shallow Dark Surface (TF12) er (Explain in Remarks)
Туре:	ayer (if observed):						Hydric Soil F	Present? Yes X No
Remarks:								

Project/Site:	PID: 163-1602921240002	C	City/County:	Lake Elmo/Washir	ngton County	Sampling Date:	04/07/2021
Applicant/Owner:	City of L	ake Elmo		St	tate: MN	Sampling Point:	4B
	Alex Yellick, Dylan Kruzel	S	Section, Township	, Range:	S16	6, T29N, R21W	
Landform (hillslope, terrace, e	tc): Till Plain - FS	Local relie	ef (concave, con	/ex, none):	None	Slope	e (%): 2
Subregion (LRR or MLRA):		Lat:	44.9969327	5 Long:	-92.93801	36 Datur	n: WGS 84
Soil Map Unit Name:		264			NWI classificat	ion: N	None
Are climatic / hydrologic condi	tions on the site typical for this time	e of year? Y	res X	No (If no	, explain in Remar	ks.)	
Are Vegetation, Soi	I, or Hydrology	significantly of	disturbed?	Are "Normal Cir	cumstances" pres	ent? Yes 2	XNo
Are Vegetation, Soi	I, or Hydrology	naturally prob	blematic?	(If needed, expl	ain any answers i	n Remarks.)	
SUMMARY OF FINDING	GS - Attach site map shov	ving samp	ling point lo	cations, transe	cts, important	features, etc.	
Hydrophytic Vegetation Pres	sent? Yes X N	No	Is the	Sampled Area			
Hydric Soil Present?		No O		a Wetland?	Yes	No X	
Wetland Hydrology Present	? Yes 1	No X	lf yes,	optional Wetland Sit	e ID:		
	ve procedures here or in a separat logy is absent. Area determined to		I				
HYDROLOGY							
Wetland Hydrology Indica	tors:						
	n of one required; check all that ap	vla			Secondary India	cators (minimum of t	iwo required)
Surface Water (A1)	· · · · · ·	ater-Stained L	_eaves (B9)			oil Cracks (B6)	<u></u>
High Water Table (A2)	Ac	uatic Fauna (	(B13)		Drainage F	Patterns (B10)	
Saturation (A3)	M:	arl Deposits (I	B15)		Moss Trim	Lines (B16)	
Water Marks (B1)	Hy	drogen Sulfic	de Odor (C1)		Dry-Seaso	n Water Table (C2)	
Sediment Deposits (B2	.) O	kidized Rhizos	spheres on Living	J Roots (C3)	Crayfish B	urrows (C8)	
Drift Deposits (B3)	Pr	esence of Re	duced Iron (C4)		Saturation	Visible on Aerial Im	agery (C9)
Algal Mat or Crust (B4)	Re	ecent Iron Red	duction in Tilled S	Soils (C6)	Stunted or	Stressed Plants (D	1)
Iron Deposits (B5)		in Muck Surfa	. ,			ic Position (D2)	
Inundation Visible on A		her (Explain i	n Remarks)			quitard (D3)	
Sparsely Vegetated Co	ncave Surface (B8)					graphic Relief (D4)	
					X FAC-Neutr	al Test (D5)	
Field Observations:							
Surface Water Present?	Yes <u>No X</u> [	Depth (inches	):				
Water Table Present?		Depth (inches	): 14	_			
Saturation Present?	Yes X No [	Depth (inches	): 13	Wetland Hyd	Irology Present?	Yes	No X
(includes capillary fringe)							
			,.				
Describe Recorded Data (si	tream gauge, monitoring well, aeria	al photos, pre	vious inspections	i), if available:			
Remarks:							
Wetland hydro	logy not met.						

GETATION - Use scientific names of plants.					Sam	oling Poin	t:4	4B
	Absolute %Cover	Dominant Species?	Indicator Status	Dominance Test Number of Domin That Are OBL, FA	ant Species		1	_ (A)
				Total Number of E Species Across A			1	(B)
				Percent of Domin That Are OBL, FA	•		100.0	_ (A/B
				Prevalence Index	x worksheet:			
	0	= Total Cov	er	Total % Cov	er of:	Mu	Itiply by:	
apling/Shrub Stratum (Plot size: 15 )		-		OBL species	0	x 1 =	0	
				FACW species	90	x 2 =	180	
				FAC species	0	x 3 =	0	
				FACU species	0	x 4 =	0	
				UPL species	10	x 5 =	50	
				Column Totals:	100	(A)	230	(
				Prevalence	Index = B/A =		2.3	
				Hydrophytic Veg	etation Indica	ators:		
	0	= Total Cov	er	X 1 - Rapid Tes	•		ation	
erb Stratum (Plot size: 5)				X 2 - Dominano				
Phalaris arundinacea / Reed canarygrass, Reed canary gras	90	Yes	FACW	X 3 - Prevalence				
Abutilon / Indian mallow	10	No	UPL		gical Adaptatio		ide support	ting
				Problematic	Hydrophytic V	egetation	' (Explain)	•
				<sup>1</sup> Indicators of hyd				t
				be present, unles	s disturbed or	problema	tic.	
		<u> </u>		Definitions of Ve	getation Stra	ta		
)				<b>Tree</b> - Woody pla breast height (DB				ter at
<u></u>		= Total Cov		Sapling/shrub - \			3 in. DBH a	and
/oody Vine Stratum (Plot size: 30)	100		e	greater than or ec Herb - All herbace	•	. ,	s regardle	ee of
		<u> </u>		size, and woody p				33 01
				Woody vines - A height.	ll woody vines	greater t	han 3.28 ft	in
	0	= Total Cov	er	Hydrophytic Vegetation Present?	Yes >	K No		

~	~	•	
s	()	L	
J	Ś		_

0-6         7.5YR 3/2         100         Image: constraint of the system of t	6-24       7.5YR 3/2       80       7.5YR 4/4       20       C       M       Loam       Distinct redox         Image: Strate in the	6-24       7.5YR 3/2       80       7.5YR 4/4       20       C       M       Loam       Distinct redox         Image: Second	(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
6-24       7.5YR 3/2       80       7.5YR 4/4       20       C       M       Loam       Distinct redox         Image: Strate in the	6-24       7.5YR 3/2       80       7.5YR 4/4       20       C       M       Loam       Distinct redox         Image: Strate in the	6-24       7.5YR 3/2       80       7.5YR 4/4       20       C       M       Loam       Distinct redox         Image: Second	0-6	7.5YR 3/2	100					Loam			
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Redox Depressions (F8)         Stripped Matrix (S6)       Redox Depresent, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	tydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Thick Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Depleted Dark Surface (S5)         Stripped Matrix (S6)       Der present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Sandy Gleyed Matrix (S4)         Sandy Redox (S5)       Depleted present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	6-24		80	7.5YR 4/4	20	С	М	Loam	Distinct re	edox	
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Redox Depressions (F8)         Stripped Matrix (S6)       Redox Depresent, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	tydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Thick Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Depleted Dark Surface (S5)         Stripped Matrix (S6)       Der present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Sandy Gleyed Matrix (S4)         Sandy Redox (S5)       Depleted present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:											
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Redox Depressions (F8)         Stripped Matrix (S6)       Redox Depresent, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	tydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Thick Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Depleted Dark Surface (S5)         Stripped Matrix (S6)       Der present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Sandy Gleyed Matrix (S4)         Sandy Redox (S5)       Depleted present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:											
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Redox Depressions (F8)         Stripped Matrix (S6)       Redox Depresent, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	tydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Thick Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Depleted Dark Surface (S5)         Stripped Matrix (S6)       Der present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Sandy Gleyed Matrix (S4)         Sandy Redox (S5)       Depleted present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:		<u>.</u> .									
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Redox Depressions (F8)         Stripped Matrix (S6)       Redox Depresent, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	tydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Thick Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Depleted Dark Surface (S5)         Stripped Matrix (S6)       Der present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Sandy Gleyed Matrix (S4)         Sandy Redox (S5)       Depleted present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:											
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Redox Depressions (F8)         Stripped Matrix (S6)       Redox Depresent, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	tydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Thick Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Depleted Dark Surface (S5)         Stripped Matrix (S6)       Der present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Sandy Gleyed Matrix (S4)         Sandy Redox (S5)       Depleted present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:			. <u> </u>								
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Redox Depressions (F8)         Stripped Matrix (S6)       Redox Depresent, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	tydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Thick Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Depleted Dark Surface (S5)         Stripped Matrix (S6)       Der present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Sandy Gleyed Matrix (S4)         Sandy Redox (S5)       Depleted present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:											
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Redox Depressions (F8)         Stripped Matrix (S6)       Redox Depresent, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	tydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Thick Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Depleted Dark Surface (S5)         Stripped Matrix (S6)       Der present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Sandy Gleyed Matrix (S4)         Sandy Redox (S5)       Depleted present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:											
Hydric Soil Indicators:       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Redox Depressions (F8)         Stripped Matrix (S6)       Redox Depresent, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	tydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Thick Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Depleted Dark Surface (S5)         Stripped Matrix (S6)       Der present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Sandy Gleyed Matrix (S4)         Sandy Redox (S5)       Depleted present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:											
tydric Soil Indicators:       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Polyvalue Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Redox Depressions (F8)         Stripped Matrix (S6)       Priedmont Floodplain Solis (F12)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (TF12)         Other (Explain in Remarks)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (If observed):       Yes         Type:	tydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR K, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1)         Stratified Layers (A5)       Depleted Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Thick Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)         Sandy Redox (S5)       Depleted Dark Surface (S5)         Stripped Matrix (S6)       Der present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:	Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)         Stratified Layers (A5)       Depleted Matrix (F3)         Depleted Below Dark Surface (A11)       X         Redox Dark Surface (F6)       Thin Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Sandy Gleyed Matrix (S4)         Sandy Redox (S5)       Depleted present, unless disturbed or problematic.         Restrictive Layer (If observed):       Type:         Type:											
tydric Soil Indicators:       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Stratified Layers (A5)       Depleted Matrix (F2)       Dark Surface (S9) (LRR K, L)         Stratified Layers (A5)       Depleted Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A11)       X       Redox Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Solis (F19) (MLRA 149B)       Solis (F19) (MLRA 1449B)         Sandy Redox (S5)       Sandy Redox (S5)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       User Solis (Irl 0)       Very Shallow Dark Surface (TF12)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Hydric Soil Present? Yes X No       No         Type:	tydric Soil Indicators:       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Stratified Layers (A5)       Depleted Matrix (F2)       Dark Surface (S9) (LRR K, L)         Stratified Layers (A5)       Depleted Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Solis (F19) (MLRA 149B)         Sandy Redox (S5)       Sandy Redox (S5)       Red Parent Material (F21)         Stripped Matrix (S6)       Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Hydric Soil Present? Yes X No         Type:	Indicators:       Indicators:       Indicators for Problematic Hydric Soils*:         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)       5 cm Muck (A10) (LRR K, L, R)         Stratified Layers (A5)       Depleted Matrix (F2)       Dark Surface (S7) (LRR K, L)         Stratified Layers (A5)       Depleted Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A11)       X       Redox Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Solis (F19) (MLRA 149B)         Sandy Redox (S5)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (TF12)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Hydric Soil Present? Yes X No         Type:	Type: C=Co	ncentration, D=Depletion	on, RM=Redu	ced Matrix, MS=Mas	ked Sand Gr	ains.		<sup>2</sup> Loc	ation: PL=P	ore Lining, M=N	latrix.
Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Dark Surface (S7) (LRR K, L)         Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 144B)         Sandy Redox (S5)       Stripped Matrix (S6)       Red Parent Material (F21)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Very Snallow Dark Surface (TF12)         Type:	Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Dark Surface (S7) (LRR K, L)         Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Thick Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Redox (S5)       Sandy Redox (S5)       Peleted Matrix (S6)       Redox Depressions (F8)         Stripped Matrix (S6)       Stripped Matrix (S6)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:       Yes       X       No         Type:       Depth (inches):       Hydric Soil Present?       Yes       X       No	Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Dark Surface (S7) (LRR K, L)         Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Thick Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Redox (S5)       Sandy Redox (S5)       Peiedmont Floodplain Soils (F19) (MLRA 144B)         Stripped Matrix (S6)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Hydric Soil Present? Yes X No         Type:	ludric Soil	Indicators								-	
Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Dark Surface (S7) (LRR K, L)         Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 144A, 145, 149B)         Sandy Redox (S5)       Sandy Redox (S5)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Mere Soil Present? Yes X No         Type:	Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Dark Surface (S7) (LRR K, L)         Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)       Piedmont Floodplain Soils (F19) (MLRA 1449B)         Sandy Redox (S5)       Sandy Redox (S5)       Red ox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 1449B)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Other (Explain in Remarks)         Type:	Histic Epipedon (A2)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Dark Surface (S7) (LRR K, L)         Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F6)       Thin Dark Surface (S1) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 1449B)         Sandy Redox (S5)       Sandy Redox (S5)       Red Parent Material (F21)         Stripped Matrix (S6)       Dark Surface (TF12)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Hydric Soil Present? Yes X No	-			Polyvalue Belov	v Surface (S	8) <b>(I RR R</b>	MI RA 149B			-	
Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Dark Surface (S7) (LRR K, L)         Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Redox (S5)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:         Type:       Depth (inches):         Depth (inches):       Yes	Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Dark Surface (S7) (LRR K, L)         Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Redox (S5)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:         Type:       Depth (inches):         Depth (inches):       Yes _ X No	Black Histic (A3)       Loamy Mucky Mineral (F1) (LRR K, L)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Dark Surface (S7) (LRR K, L)         Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Redox (S5)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (TF12)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Hydric Soil Present? Yes X No       No						, ,		·	-		-
Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Dark Surface (S7) (LRR K, L)         Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Redox (S5)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Yes X       No         Type:	Hydrogen Sulfide (A4)       Loamy Gleyed Matrix (F2)       Dark Surface (S7) (LRR K, L)         Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Redox (S5)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Yes X       No         Type:	Hydrogen Sulfide (A4)       Loamy Gleved Matrix (F2)       Dark Surface (S7) (LRR K, L)         Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Redox (S5)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Stripped Matrix (S6)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Hydric Soil Present? Yes X No       No         Type:										· / ·	
Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Sandy Redox (S5)       Stripped Matrix (S6)       Red Parent Material (F21)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (TF12)         Other (Explain in Remarks)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:         Type:	Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Redox (S5)       Redox Depressions (F8)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Stripped Matrix (S6)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Hydric Soil Present? Yes X No       No	Stratified Layers (A5)       Depleted Matrix (F3)       Polyvalue Below Surface (S8) (LRR K, L)         Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Redox (S5)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)       Red Parent Material (F21)         Stripped Matrix (S6)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Hydric Soil Present? Yes X No       No					. ,	(,,			-		,_,_,
Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Redox (S5)       Redox Depressions (F8)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Sandy Redox (S5)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Restrictive Layer (if observed):         Type:	Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Sandy Redox (S5)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Restrictive Layer (if observed):         Type:	Depleted Below Dark Surface (A11)       X       Redox Dark Surface (F6)       Thin Dark Surface (S9) (LRR K, L)         Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Sandy Redox (S5)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Very Shallow Dark Surface (TF12)         Type:											(LRR K, L)
Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Gleyed Matrix (S4)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Sandy Redox (S5)       Red Parent Material (F21)         Stripped Matrix (S6)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:         Type:       Depth (inches):         Depth (inches):       Yes	Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Gleyed Matrix (S4)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Sandy Redox (S5)       Red Parent Material (F21)         Stripped Matrix (S6)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):         Type:	Thick Dark Surface (A12)       Depleted Dark Surface (F7)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Redox Depressions (F8)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Redox (S5)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Stripped Matrix (S6)       Red Parent Material (F21)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (TF12)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Other (Explain in Remarks)         Restrictive Layer (if observed):       Type:		• • •	A11)								
Sandy Mucky Mineral (S1) Redox Depressions (F8)   Sandy Gleyed Matrix (S4) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)   Sandy Redox (S5) Red Parent Material (F21)   Stripped Matrix (S6) Very Shallow Dark Surface (TF12)   Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks)	Sandy Mucky Mineral (S1) Redox Depressions (F8)   Sandy Gleyed Matrix (S4) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)   Sandy Redox (S5) Red Parent Material (F21)   Stripped Matrix (S6) Very Shallow Dark Surface (TF12)   Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks)	Sandy Mucky Mineral (S1) Redox Depressions (F8)   Sandy Gleyed Matrix (S4) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)   Sandy Redox (S5) Red Parent Material (F21)   Stripped Matrix (S6) Very Shallow Dark Surface (TF12)   Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks)			,								
Sandy Gleyed Matrix (S4)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Sandy Redox (S5)       Red Parent Material (F21)         Stripped Matrix (S6)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Other (Explain in Remarks)         Restrictive Layer (if observed):       Type:         Depth (inches):       Yes       X       No	Sandy Gleyed Matrix (S4)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Sandy Redox (S5)       Red Parent Material (F21)         Stripped Matrix (S6)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Other (Explain in Remarks)         Restrictive Layer (if observed):       Type:       Hydric Soil Present?       Yes       X       No	Sandy Gleyed Matrix (S4)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Sandy Redox (S5)       Red Parent Material (F21)         Stripped Matrix (S6)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Other (Explain in Remarks)         Restrictive Layer (if observed):       Type:       Hydric Soil Present?       Yes       X       No				Redox Depress	ions (F8)			Pied	mont Flood	plain Soils (F19)	(MLRA 149B)
Stripped Matrix (S6)       Very Shallow Dark Surface (TF12)         Dark Surface (S7)       (LRR R, MLRA 149B)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):         Type:         Depth (inches):         Hydric Soil Present?         Yes         X	Stripped Matrix (S6)       Very Shallow Dark Surface (TF12)         Dark Surface (S7)       (LRR R, MLRA 149B)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):         Type:         Depth (inches):         Yes         X         No	Stripped Matrix (S6)       Very Shallow Dark Surface (TF12)         Dark Surface (S7)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Other (Explain in Remarks)         Restrictive Layer (if observed):       Type:         Depth (inches):       Yes         X       No	Sandy (	Gleyed Matrix (S4)									
Dark Surface (S7)       (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Restrictive Layer (if observed):         Type:	Dark Surface (S7)       (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Restrictive Layer (if observed):         Type:	Dark Surface (S7)       (LRR R, MLRA 149B)       Other (Explain in Remarks)         Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Restrictive Layer (if observed):         Type:	Sandy F	Redox (S5)						Red	Parent Mate	erial (F21)	
Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.   Restrictive Layer (if observed):  Type:  Depth (inches): Hydric Soil Present? Yes X No	Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.    Restrictive Layer (if observed):  Type:  Depth (inches): Hydric Soil Present? Yes X No	Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	Stripped	d Matrix (S6)						Very	Shallow Da	ark Surface (TF1	2)
Restrictive Layer (if observed):	Restrictive Layer (if observed):	Restrictive Layer (if observed):	Dark Su	urface (S7) (LRR R, M	LRA 149B)					Othe	er (Explain ir	n Remarks)	
Restrictive Layer (if observed):	Restrictive Layer (if observed):	Restrictive Layer (if observed):											
Type:	Type:	Type:	Indicators of	f hydrophytic vegetatior	n and wetland	hydrology must be p	resent, unles	s disturbed	or problema	tic.			
Depth (inches):	Depth (inches):	Depth (inches):		over (if cheering)									
				Layer (il observeu):								V V	NI-
Remarks:	lemarks:	Remarks:	Туре:	-						Hvdric Soil H	resent?	Yes X	NO
			Туре:	-									
			Type: Depth (ir	-									
			Type: Depth (ir	-									
			Type: Depth (ir	-									
			Type: Depth (ir	-									
			Type: Depth (ir	-									
			Type: Depth (ir	-									
			Type: Depth (ir	-									
			Type: Depth (ir	-									
			Type: Depth (ir	-									
			Type: Depth (ir	-									
			Type: Depth (ir	-									
			Type: Depth (ir	-									

Project/Site:	PID: 163-160292124000	)2	City/Cou	nty: Lak	e Elmo/Washi	ington County	Sampling Date:	04/07/2021
Applicant/Owner:		City of Lake Elmo			S	State: MN	Sampling Point:	5A
Investigator(s):	Alex Yellick, Dylan Kru	izel	Section,	Township, Rar	nge:	S16	, T29N, R21W	
Landform (hillslope, terrace,	etc): Till Plain - 1	rs Local r	elief (conc	ave, convex, n	ione):	Concave	Slope	e (%): 0
Subregion (LRR or MLRA):	,К	Lat:		99599742	Long:	-92.934522		· · ·
Soil Map Unit Name:		325			0	NWI classificati	on:	None
Are climatic / hydrologic cond	ditions on the site typical fo	r this time of year?	Yes	X No	(If nc	o, explain in Remarl	(s.)	
Are Vegetation, So					`	ircumstances" prese	,	X No
	pil , or Hydrology					, blain any answers in		
SUMMARY OF FINDIN					-	•	-	
Hydrophytic Vegetation Pr Hydric Soil Present?	esent? Yes Yes	X No X No	_	Is the Samp within a We		Vee V	Ne	
,			_				No	_
Wetland Hydrology Preser	nt? Yes	X No		ii yes, optioi	nal Wetland Si			
Área is down additionally p	tive procedures here or in a gradient of an erosional gu resent at higher elevations wetland is a fresh wet mea	lly. Areas of higher		appear steep a	nd do not sup	port wetland hydrol	ogy. Non-hydrophyl	lic species are
HYDROLOGY								
Wetland Hydrology Indic	ators:							
	um of one required; check a	all that apply)				Secondary Indic	ators (minimum of t	two required)
Surface Water (A1)	· ·	Water-Staine	d Leaves	(B9)		Surface So	il Cracks (B6)	i
X High Water Table (A2	)	Aquatic Faun	na (B13)			Drainage P	atterns (B10)	
X Saturation (A3)		Marl Deposits	s (B15)			Moss Trim	Lines (B16)	
Water Marks (B1)		Hydrogen Su	Ifide Odor	(C1)		Dry-Seasor	Water Table (C2)	
Sediment Deposits (E	32)	Oxidized Rhi	zospheres	on Living Roo	its (C3)	Crayfish Bu	irrows (C8)	
Drift Deposits (B3)		Presence of I	Reduced I	ron (C4)		Saturation V	Visible on Aerial Im	agery (C9)
Algal Mat or Crust (B4	4)	Recent Iron F	Reduction	in Tilled Soils (	(C6)	Stunted or	Stressed Plants (D	1)
Iron Deposits (B5)		Thin Muck St	urface (C7	)		X Geomorphi	c Position (D2)	
Inundation Visible on	Aerial Imagery (B7)	Other (Explai	in in Rema	ırks)		Shallow Aq	uitard (D3)	
Sparsely Vegetated C	oncave Surface (B8)					Microtopog	raphic Relief (D4)	
						X FAC-Neutra	al Test (D5)	
Field Observations:								
Surface Water Present?	Yes No	X Depth (inch	Dec).					
Water Table Present?	Yes X No	Depth (inch Depth (inch		0				
Saturation Present?	Yes X No	Depth (inch	·	0	Wetland Hy	drology Present?	Yes X	No
(includes capillary fringe)		Deptil (illeri	<u> </u>	0	wedand riy	arology i resent:		
(mendees capinary imige)								
Describe Recorded Data (	stream gauge, monitoring v	vell, aerial photos, p	previous in	spections), if a	available:			
Remarks:								

VEGETATION - Use scientific names of plants.					Samp	oling Poin	it:	5A
<u>Tree Stratum</u> (Plot size: <u>30</u> ) 1		Dominant Species?		Dominance Test Number of Domin That Are OBL, FA Total Number of D	ant Species CW, or FAC: Dominant		1	_ (A)
2. 3.				Species Across A	Il Strata:		1	_ (B)
4				Percent of Domina That Are OBL, FA	•		100.0	(A/B)
o 7				Prevalence Index	k worksheet:			
	0	= Total Cov	ver	Total % Cove			ultiply by:	
Sapling/Shrub Stratum (Plot size: 15 )				OBL species	0	x 1 =	0	
1				FACW species	100	x 2 =	200	
2				FAC species	0	x 3 =	0	
3				FACU species	0	x 4 =	0	
4				UPL species	0	x 5 =	0	
5				Column Totals:	100	(A)	200	(B)
6				Prevalence	Index = B/A =		2.0	
7		= Total Cov		Hydrophytic Veg	etation Indica	ators:		
Herb Stratum         (Plot size:5_)           1. Phalaris arundinacea / Reed canarygrass, Reed canary gras           2	100	Yes	FACW	Problematic I	ce Test is >50% ce Index ≤3.01 gical Adaptatic Hydrophytic Ve	ons (Provegetation	ide support ¹ (Explain)	-
6. 7.				<sup>1</sup> Indicators of hydr be present, unless		-		st
89				Definitions of Ve	getation Strat	ta		
10 11				<b>Tree</b> - Woody plar breast height (DB	nts 3 in. (7.6 cr H), regardless	m) or mo	re in diame t.	ter at
12				Sapling/shrub - \			3 in. DBH a	and
	100	= Total Cov	ver	greater than or eq	ual to 3.28 ft (	1 m) tall.		
Woody Vine Stratum         (Plot size:30)           1.				Herb - All herbace size, and woody p				ss of
2 3 4.				Woody vines - Al height.	I woody vines	greater t	han 3.28 ft	in
	0	= Total Cov	ver	Hydrophytic Vegetation Present?	Yes X	K No	)	
Remarks: (Explain alternative procedures here or in a separate	report.)			1				

~	~	•	
s	()	L	
J	Ś		_

	ription: (Describe to t Matrix	he depth ne		e indicator	or confirm	the absend	ce of indicato	rs.)
Depth (inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-24	10YR 2/1	100		/0	Турс		Loam	
24-32	10YR 6/1	80	10YR 4/6	20	С	М	Sand	Prominent redox
		- <u> </u>						
		<u> </u>				<u> </u>		
						·		
		<u> </u>				<u> </u>		
<sup>1</sup> Type: C=Cor	ncentration, D=Depletic	on, RM=Redu	uced Matrix, MS=Mask	ked Sand Gra	ains.		²Loc	ation: PL=Pore Lining, M=Matrix.
							la dia atau	
Hydric Soil In Histosol			Polyvalue Below	v Surface (SS				s for Problematic Hydric Soils <sup>3</sup> : Muck (A10) (LRR K, L, MLRA 149B)
	oipedon (A2)		Thin Dark Surfa	-			·	st Prairie Redox (A16) (LRR K, L, R)
Black Hi			Loamy Mucky M					n Mucky Peat or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)		Loamy Gleyed N		(,,			Surface (S7) (LRR K, L)
	Layers (A5)		Depleted Matrix					value Below Surface (S8) (LRR K, L)
	d Below Dark Surface (	A11)	Redox Dark Sur					Dark Surface (S9) (LRR K, L)
X Thick Da	ark Surface (A12)		Depleted Dark S	Surface (F7)			Iron-	Manganese Masses (F12) (LRR K, L, R)
Sandy M	lucky Mineral (S1)		Redox Depressi	ons (F8)			Pied	mont Floodplain Soils (F19) (MLRA 149B)
Sandy G	Bleyed Matrix (S4)						Mes	ic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy R	ledox (S5)							Parent Material (F21)
	Matrix (S6)							Shallow Dark Surface (TF12)
Dark Su	rface (S7) (LRR R, MI	LRA 149B)					Othe	er (Explain in Remarks)
<sup>3</sup> Indicators of	hydrophytic vegetation	and wetland	I hydrology must be p	resent, unles	s disturbed	l or problema	atic.	
Restrictive L	ayer (if observed):							
Туре:								
Depth (in	ches):						Hydric Soil I	Present? Yes X No
Remarks:								
Remarks.								

Project/Site:	PID: 163-1602921240002	City/Cou	nty: Lake Elmo/Wa	ashington County	Sampling Date: 04/07/2021
Applicant/Owner:				State: MN	Sampling Point: 5B
Investigator(s):			Township, Range:	_	5, T29N, R21W
Landform (hillslope, terrace, et		Local relief (conc	ave, convex, none):	None	Slope (%): 5
Subregion (LRR or MLRA):				g:92.934487	701 Datum: WGS 84
Soil Map Unit Name:		325		NWI classificat	ion: None
Are climatic / hydrologic condit	ions on the site typical for this time	of year? Yes	X No (	If no, explain in Remar	ks.)
Are Vegetation , Soil	, or Hydrologys	significantly disturbe	d? Are "Norma	al Circumstances" pres	ent? Yes X No
	, or Hydrology r			explain any answers in	n Remarks.)
SUMMARY OF FINDING	GS - Attach site map show	ing sampling p	oint locations, trar	nsects, important	features, etc.
Hydrophytic Vegetation Pres	-	o X	Is the Sampled Area		
Hydric Soil Present?		o X	within a Wetland?	Yes	No X
Wetland Hydrology Present		0	If yes, optional Wetlan		
	e procedures here or in a separate s a hill slope that does not support l		nity or wetland hydrology	v. Area was determined	to be dry land.
HYDROLOGY					
Wetland Hydrology Indicat	ors:				
	n of one required; check all that app	alv)		Secondary India	cators (minimum of two required)
Surface Water (A1)	· · · · · ·	ter-Stained Leaves	(B9)		bil Cracks (B6)
X High Water Table (A2)		uatic Fauna (B13)		X Drainage F	
X Saturation (A3)	Ma	rl Deposits (B15)		Moss Trim	Lines (B16)
Water Marks (B1)		drogen Sulfide Odor	(C1)	Dry-Seaso	n Water Table (C2)
Sediment Deposits (B2	) Oxi	dized Rhizospheres	on Living Roots (C3)	Crayfish B	urrows (C8)
Drift Deposits (B3)	Pre	sence of Reduced I	ron (C4)	Saturation	Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Re	cent Iron Reduction	in Tilled Soils (C6)	Stunted or	Stressed Plants (D1)
Iron Deposits (B5)	Thi	n Muck Surface (C7	)	Geomorph	ic Position (D2)
Inundation Visible on A	erial Imagery (B7) Oth	ner (Explain in Rema	arks)	Shallow Ac	quitard (D3)
Sparsely Vegetated Co	ncave Surface (B8)			Microtopog	raphic Relief (D4)
				FAC-Neutr	al Test (D5)
Field Observations:					
Surface Water Present?	Yes No X Do	epth (inches):			
Water Table Present?		epth (inches):	0		
Saturation Present?		epth (inches):		I Hydrology Present?	Yes X No
(includes capillary fringe)				r nyurology i resent:	
(includes capillary inlige)					
Describe Recorded Data (st	ream gauge, monitoring well, aerial	l photos, previous in	spections), if available:		
Dementer					
Remarks:					

VEGETATION - Use scientific names of plants.					Samp	ling Point	: 5	5B
Tree Stratum         (Plot size:30)           1            2			Indicator Status	Dominance Test w Number of Dominar That Are OBL, FAC Total Number of Do Species Across All	nt Species W, or FAC: minant		1	(A) _ (B)
3 4 5 6.				Percent of Dominar That Are OBL, FAC	•		50.0	_ (A/B)
6 7 Sapling/Shrub Stratum (Plot size: 15 )		_ = Total Cov	rer	Prevalence Index of Total % Cover OBL species		<u>Mul</u> x 1 =	ltiply by: 0	_
1. Rhamnus cathartica / European buckthorn         2.         3.         4.         5.         6.		Yes	FAC	FACW species FAC species FACU species UPL species Column Totals: Prevalence In	0 30 95 5 130 adex = B/A =	x 2 = x 3 = x 4 = x 5 = (A)	0 90 380 25 495 3.81	(B)
7      Herb Stratum (Plot size:5)     1. Poa pratensis / Kentucky blue grass     2. Bromus inermis / Smooth brome, Smooth brome, Hungarian     3. Solidago altissima / Canada goldenrod     4 5 6 7			FACU UPL FACU	Hydrophytic Veget 1 - Rapid Test t 2 - Dominance 3 - Prevalence 4 - Morphologia Problematic Hy <sup>1</sup> Indicators of hydric be present, unless of	for Hydrophy Test is >50% Index ≤3.0¹ cal Adaptatic ydrophytic Ve soil and wel	rtic Vegeta 6 ons (Provid egetation <sup>1</sup> tland hydr	de supporti (Explain) ology must	-
8.	100	= Total Cov	er	Definitions of Vege Tree - Woody plants breast height (DBH) Sapling/shrub - Wo greater than or equa Herb - All herbaceo size, and woody pla Woody vines - All w height.	s 3 in. (7.6 cr ), regardless oody plants I al to 3.28 ft ( pus (non-woo ants less thar	m) or more of height. ess than 3 1 m) tall. dy) plants n 3.28 ft ta	3 in. DBH a s, regardles	and ss of
4 Remarks: (Explain alternative procedures here or in a separate r	0 report.)	= Total Cov	er	Hydrophytic Vegetation Present?	Yes	No	X	

~	~	•	
s	()	L	
J	Ś		_

Profile Desc Depth	ription: (Describe to t Matrix	he depth ne		n <b>e indicator</b> x Features	or confirm	the absen	ce of indicato	rs.)
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-14	10YR 2/1	100					Loam	
14-16	10YR 4/2	90	7.5YR 4/3	10	C	М	Loam	Faint redox
	·							
					- <u> </u>			
					- <u> </u>			
<sup>1</sup> Type: C=Co	ncentration, D=Depletion	on, RM=Redu	ced Matrix, MS=Mas	ked Sand G	rains.		<sup>2</sup> Loc	ation: PL=Pore Lining, M=Matrix.
Hydric Soil I								rs for Problematic Hydric Soils <sup>3</sup> :
Histosol			Polyvalue Belov					n Muck (A10) <b>(LRR K, L, MLRA 149B)</b>
	pipedon (A2)		Thin Dark Surfa					st Prairie Redox (A16) (LRR K, L, R)
	stic (A3)		Loamy Mucky N	. ,	(LRR K, L)			n Mucky Peat or Peat (S3) (LRR K, L, R)
• •	en Sulfide (A4)		Loamy Gleyed					K Surface (S7) (LRR K, L)
	d Layers (A5)		Depleted Matrix					value Below Surface (S8) (LRR K, L)
	d Below Dark Surface (	(A11)	Redox Dark Su					Dark Surface (S9) (LRR K, L)
	ark Surface (A12)		Depleted Dark					-Manganese Masses (F12) (LRR K, L, R)
·	Aucky Mineral (S1)		Redox Depress	ions (F8)				Imont Floodplain Soils (F19) (MLRA 149B)
	Bleyed Matrix (S4)							ic Spodic (TA6) (MLRA 144A, 145, 149B)
	Redox (S5)							Parent Material (F21)
	Matrix (S6)							/ Shallow Dark Surface (TF12)
Dark Su	rface (S7) (LRR R, M	LRA 149B)					Othe	er (Explain in Remarks)
<sup>3</sup> Indicators of	hydrophytic vegetatior	n and wetland	hydrology must be p	resent, unle	ss disturbed	l or problem	atic.	
Restrictive L	ayer (if observed):							
Type:	Rock							
Depth (in	ches):	16					Hydric Soil I	Present? Yes No X
· 、	,							
Remarks:								

Project/Site:	PID: 163-16	6029212400	02	City/Cou	inty: Lak	e Elmo/Washi	ngton County	Sampling Date:	04/07/2021
Applicant/Owner:			City of Lake Elmo	_ `	·		State: MN	Sampling Point:	6A
	Alex Yellio		,	Section,	Township, Rar	nge:	S16	, T29N, R21W	
Landform (hillslope, terrace,					ave, convex, n	-	Concave		(%): 0
Subregion (LRR or MLRA):	-	К	Lat:		99515183	Long:	-92.934343		· · ·
Soil Map Unit Name:			1847			0	NWI classificati		EM1F/C/A
Are climatic / hydrologic con	ditions on the s	site typical fo	or this time of year?	Yes	X No	(If no	, explain in Remarl		
, ,	oil , c					·	ircumstances" pres	,	K No
Are Vegetation , S			naturally				lain any answers in		
SUMMARY OF FINDI						-	-		
			· · · · ·				oto, important		
Hydrophytic Vegetation P	resent?	Yes	X No X No		Is the Samp		Vee V	No	
Hydric Soil Present?	- 10	Yes			within a We			No	_
Wetland Hydrology Prese	nt?	Yes	X No		ii yes, optior	nal Wetland Si			
Remarks: (Explain alterna Fresh Wet M PWI Basin 8	leadow/Open v		a separate report.) 2/5, PUBF/EM/1B).						
HYDROLOGY									
Wetland Hydrology India	catore:								
Primary Indicators (minim		uirad: abaak	all that apply)				Secondary India	ators (minimum of t	wo roquirod)
Surface Water (A1)		lileu, check	Water-Stain	od Loovee	(B0)			il Cracks (B6)	wo required)
High Water Table (A2	2)		Aquatic Fau		(69)			atterns (B10)	
Saturation (A3)	-)		Marl Deposi					Lines (B16)	
Water Marks (B1)			Hydrogen S		(C1)			Water Table (C2)	
Sediment Deposits (	32)				on Living Roo	ts (C3)	Crayfish Bu		
Drift Deposits (B3)	52)		Presence of		-			Visible on Aerial Ima	agery (C9)
Algal Mat or Crust (B	4)				in Tilled Soils (	(C6)		Stressed Plants (D1	
Iron Deposits (B5)	- /		Thin Muck S			,	X Geomorphi		,
Inundation Visible on	Aerial Imager	v (B7)	Other (Expla				Shallow Aq		
Sparsely Vegetated			<u> </u>					raphic Relief (D4)	
		()					X FAC-Neutra		
Field Observations:									
Surface Water Present?	Yes _	No	X Depth (inc						
Water Table Present?	Yes _	No	X Depth (inc	·					
Saturation Present?	Yes	No	X Depth (inc	hes):		Wetland Hy	drology Present?	Yes X	No
(includes capillary fringe)									
Describe Recorded Data	(stream gauge	monitorina	well aerial photos	previous in	spections) if a	vailable <sup>.</sup>			
	(ou ourn guugo,	, mormoring	itoli, donai priotoo,						
Remarks:									
1									

VEGETATION - Use scientific names of plants.					Samp	oling Poin	t:	6A
Tree Stratum (Plot size:30)	Absolute %Cover	Dominant Species?	Indicator Status	Dominance Test Number of Domin That Are OBL, FA	ant Species CW, or FAC:		1	_ (A)
1.       2.       3.				Total Number of E Species Across A			1	(B)
4 5				Percent of Domin That Are OBL, FA	•		100.0	_ (A/B)
6 7				Prevalence Index	x worksheet:			
	0	= Total Cov	er	Total % Cov	er of:	Mu	Itiply by:	
Sapling/Shrub Stratum (Plot size: 15 )		_		OBL species	0	x 1 =	0	
1				FACW species	100	x 2 =	200	
2.				FAC species	0	x 3 =	0	
3				FACU species	0	x 4 =	0	
4				UPL species	0	x 5 =	0	
5				Column Totals:	100	(A)	200	(B)
6				Prevalence	Index = B/A =		2.0	
7	0	= Total Cov	er	Hydrophytic Veg X 1 - Rapid Tes			ation	
Herb Stratum       (Plot size:5_)         1.       Phalaris arundinacea / Reed canarygrass, Reed canary gras         2.		Yes	FACW			ons (Provi		
5 6 7				<sup>1</sup> Indicators of hyd be present, unles			0,	st
8				Definitions of Ve	getation Stra	ta		
10. 11.				<b>Tree</b> - Woody plat breast height (DB				eter at
12			<u> </u>	Sapling/shrub -	Woody plants I	ess than	3 in. DBH a	and
	100	= Total Cov	er	greater than or ec	qual to 3.28 ft (	1 m) tall.		
Woody Vine Stratum         (Plot size:30)           1.			<u> </u>	Herb - All herbace size, and woody p				ss of
2 3 4.				Woody vines - A height.	ll woody vines	greater th	han 3.28 ft	in
	0	= Total Cov	er	Hydrophytic Vegetation Present?	Yes>	<u>(</u> No		
Remarks: (Explain alternative procedures here or in a separate	report.)			1				

#### US Army Corps of Engineers

SOIL

Profile Desc Depth	ription: (Describe to tl Matrix	he depth ne		<b>he indicator</b> x Features	or confirm	the absen	ce of indicators.)	
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Туре1	LOC <sup>2</sup>	Texture	Remarks
	·			 				
<sup>1</sup> Type: C=Co	ncentration, D=Depletio	n, RM=Redu	iced Matrix, MS=Mas	ked Sand Gr	rains.		<sup>2</sup> Location	: PL=Pore Lining, M=Matrix.
Black H Hydroge Stratifie Deplete Thick D Sandy N Sandy C Sandy F Sandy F Dark Su		_RA 149B)	Polyvalue Belov     Thin Dark Surfa     Loamy Mucky M     Loamy Gleyed I     Depleted Matrix     Redox Dark Sur     Depleted Dark S     Redox Depress	ace (S9) <b>(LF</b> Mineral (F1) Matrix (F2) < (F3) rface (F6) Surface (F7) sions (F8)	RR R, MLRA (LRR K, L)	A 149B)	B) 2 cm Muc Coast Pra 5 cm Muc Dark Surf Polyvalue Thin Dark Iron-Mang Piedmont Mesic Sp Red Pare Very Shal X Other (Ex	Problematic Hydric Soils <sup>3</sup> : ck (A10) (LRR K, L, MLRA 149B) airie Redox (A16) (LRR K, L, R) cky Peat or Peat (S3) (LRR K, L, R) face (S7) (LRR K, L) e Below Surface (S8) (LRR K, L) c Surface (S9) (LRR K, L) ganese Masses (F12) (LRR K, L, R) t Floodplain Soils (F19) (MLRA 149B) oodic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) llow Dark Surface (TF12) cplain in Remarks)
Restrictive I Type: Depth (ir	Layer (if observed):						Hydric Soil Prese	ent? Yes <u>X</u> No
		12 for when	onsite inspection is r	necessary in				ional judgement and guidance from the . Observed vegetation was dominated

Project/Site:	PID: 163-160	2921240002		City/Count	ty: Lake	Elmo/Washin	gton County	Sampling D	ate: 04/0	7/2021
Applicant/Owner:			of Lake Elmo	,			ate: MN	Sampling P		6B
Investigator(s):	Alex Yellick	, Dylan Kruzel		Section, To	ownship, Rang			16, T29N, R21V		
Landform (hillslope, terrace,	, etc):	Till Plain - FS	Local r	elief (concav	ve, convex, no	ne):			Slope (%):	3
Subregion (LRR or MLRA):			Lat:	44.9	950853	Long:	-92.9346	5647	Datum: V	VGS 84
Soil Map Unit Name:			1847				NWI classific	ation:	None	
Are climatic / hydrologic con	ditions on the sit	e typical for this t	time of year?	Yes X	No	(lf no,	explain in Rem	arks.)		
Are Vegetation, S				-		e "Normal Cir	cumstances" pr	esent? Yes	s X N	lo
Are Vegetation , S						needed, expla	ain any answers	s in Remarks.)		
SUMMARY OF FINDIN	NGS - Attach	site map sh	owing san	npling poi	int locatio	ns, transed	ts, importa	nt features,	etc.	
Hydrophytic Vegetation Pr		Yes X	-		Is the Sampl		-	,		
Hydric Soil Present?			No		within a Wet		Yes	No	x	
Wetland Hydrology Prese	nt?	Yes	No X				e ID:	110	<u></u>	
				_	n yee, option					
Remarks: (Explain alterna Sample poin		here or in a sepa nat does not supp		ydrology. Are	ea was detern	nined to be dry	/ land.			
HYDROLOGY										
Wetland Hydrology India	cators:									
Primary Indicators (minim Surface Water (A1) High Water Table (A2 Saturation (A3) Water Marks (B1)	um of one require		t apply) Water-Staine Aquatic Faun Marl Deposits Hydrogen Su	na (B13) s (B15)	,		Surface Drainage Moss Tri	dicators (minimu Soil Cracks (B6) Patterns (B10) m Lines (B16) son Water Table		uired)
Sediment Deposits (B	B2)				on Living Roots	s (C3)		Burrows (C8)	(02)	
Drift Deposits (B3)	52)		Presence of I	-	-	s (03)		on Visible on Aer	rial Imagery ((	.9)
Algal Mat or Crust (B	34)				Tilled Soils (C	(6)		or Stressed Plar		50)
						-)			. ,	
Iron Deposits (B5)			I NIN IVIUCK SU				X Geomori	DIC POSILION (D2	<u>&lt;)</u>	
Iron Deposits (B5) Inundation Visible on	) Aerial Imagery (	(B7)	Thin Muck Su Other (Explai	. ,	(S)			ohic Position (D2 Aquitard (D3)	2)	
Inundation Visible on			Other (Explai	. ,	(S)		Shallow	Aquitard (D3)		
				. ,	(S)		Shallow Microtop			
Inundation Visible on Sparsely Vegetated 0				. ,	ks)		Shallow Microtop	Aquitard (D3) ographic Relief		
Inundation Visible on Sparsely Vegetated 0 Field Observations:	Concave Surface	e (B8)	Other (Explai	in in Remark	(S)		Shallow Microtop	Aquitard (D3) ographic Relief		
Inundation Visible on Sparsely Vegetated 0 Field Observations: Surface Water Present?	Concave Surface	e (B8)	Other (Explai	in in Remark			Shallow Microtop	Aquitard (D3) ographic Relief		
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?	Concave Surface Yes Yes	e (B8)	Other (Explai	in in Remark es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?	Concave Surface Yes Yes Yes	e (B8)	Other (Explai	in in Remark es): es):		Wetland Hyd	Shallow Microtop	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	X
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?	Concave Surface Yes Yes Yes	e (B8)	Other (Explai	in in Remark es): es):		Wetland Hyd	Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	X
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	<u>×</u>
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	<u>x</u>
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	<u>x</u>
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	
Inundation Visible on         Sparsely Vegetated 0         Field Observations:         Surface Water Present?         Water Table Present?         Saturation Present?         (includes capillary fringe)         Describe Recorded Data (	Concave Surface Yes Yes Yes	≥ (B8) No X No X No X	Other (Explai	es): es): es):			Shallow Microtop FAC-Net	Aquitard (D3) ographic Relief utral Test (D5)	(D4)	

#### VEGETATION - Use scientific names of plants.

VEGETATION - Use scientific names of plants.				Sam	pling Point:		6B
				Dominance Test worksheet:			
				Number of Dominant Species			
	Absolute	Dominant	Indicator	That Are OBL, FACW, or FAC:		3	(A)
Tree Stratum (Plot size: 30 )	%Cover	Species?	Status				
1. Acer negundo / Boxelder, Box elder	30	Yes	FAC	Total Number of Dominant			
2. Populus tremuloides / Quaking aspen	15	Yes	FAC	Species Across All Strata:		4	(B)
3. Populus deltoides / Eastern cottonwood	10	No	FAC				
4. Salix fragilis / Crack willow	10	No	FACW	Percent of Dominant Species			
5				That Are OBL, FACW, or FAC:	7	75.0	(A/B)
6							
7				Prevalence Index worksheet:			
	65	= Total Cov	er	Total % Cover of:		iply by:	
Sapling/Shrub Stratum (Plot size: 15 )				OBL species 0	x 1 =	0	
1. Rhamnus cathartica / European buckthorn	40	Yes	FAC	FACW species 10	x 2 =	20	
2				FAC species 100	x 3 =	300	
3				FACU species 35	x 4 =	140	
4				UPL species 0	x 5 =	0	
5.				Column Totals: 145	(A)	460	(B)
6				Prevalence Index = B/A =	:;	3.17	
7							
	40	= Total Cov	er	Hydrophytic Vegetation Indic		tion.	
Herb Stratum (Plot size: 5 )		_		1 - Rapid Test for Hydroph		uon	
1. Alliaria petiolata / Garlic-mustard	25	Yes	FACU	X 2 - Dominance Test is >50			
2. Plantago major / Common plantain	5	No	FACU	3 - Prevalence Index ≤3.01			·
3. Geum aleppicum / Aleppo avens, Aleppo or yellow avens	5	No	FAC	4 - Morphological Adaptati		• •	ing
4. Arctium minus / Common burdock	5	No	FACU	Problematic Hydrophytic V	egetation' (	(Explain)	
5.							
6.				<sup>1</sup> Indicators of hydric soil and we		0,	τ
7				be present, unless disturbed or	problematio	С.	
8.				Definitions of Vegetation Stra	Ita		
9.				Dominione en regenation en e			
10				Tree - Woody plants 3 in. (7.6 c	m) or more	in diame	ter at
11				breast height (DBH), regardless			
12.				Sapling/shrub - Woody plants	less than 3	in DBH a	and
	40	= Total Cov	er	greater than or equal to 3.28 ft			
Woody Vine Stratum (Plot size: 30)		-		Herb - All herbaceous (non-wo	odv) nlants	renardles	ss of
1.				size, and woody plants less that			55 01
2.		_		Woody vines - All woody vines	areater the	an 3 28 ft	in
3.				height.	greater the	20 1L	
4.							
	0	= Total Cov	er	Hydrophytic			
		-		Vegetation			
				Present? Yes	X No		

Remarks: (Explain alternative procedures here or in a separate report.)

Quaking aspen (FACU) was determined FAC based on BWSR guidance for LRR K.

~	~	•	
s	()	L	
J	Ś		_

	ription: (Describe to t	he depth nee			or confirm	the abse	nce of indicator	s.)		
Depth	Matrix			K Features	T	1 2	Terreture		Deves	
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-4	10YR 3/2	100					Sand Silt Loam	<u> </u>		
4-6	10YR 5/2	60	10YR 4/6	40	<u> </u>	М	Sand Silt Loam		dox	<u> </u>
6-16	10YR 2/2	98	10YR 3/3	2			Sand Silt Loam	Faint redox		
16-24	10YR 2/2	100					Sandy silt loarr			<u> </u>
. <u></u>		<u> </u>								
		<u> </u>								
<sup>1</sup> Type: C=Cor	ncentration, D=Depletic	on, RM=Reduc	ed Matrix, MS=Masl	ked Sand Gra	ains.		<sup>2</sup> Loca	tion: PL=Pore	Lining, M=Ma	trix.
Hydric Soil I	ndicators:						Indicators	for Problema	atic Hydric So	oils³:
Histosol			Polyvalue Belov	v Surface (S8	3) (LRR R.	MLRA 14		Muck (A10) (L	•	
	pipedon (A2)	-	Thin Dark Surfa	-			·	t Prairie Redox		
Black Hi		-	Loamy Mucky M			,		Mucky Peat or		
	n Sulfide (A4)	-	Loamy Gleyed N		,			Surface (S7)		, _,,
	Layers (A5)	-	X Depleted Matrix					alue Below Su		RRKI)
	Below Dark Surface (	-	Redox Dark Sur					Dark Surface (		
	ark Surface (A12)		Depleted Dark St	( )				Janganese Ma		
		-								
	lucky Mineral (S1)	-	Redox Depress	005 (F8)				nont Floodplair		
	ileyed Matrix (S4)							Spodic (TA6)		A, 145, 149B)
	edox (S5)							Parent Material		
	Matrix (S6)							Shallow Dark S		)
Dark Su	face (S7) (LRR R, MI	LRA 149B)					Other	(Explain in Re	emarks)	
<sup>3</sup> Indicators of	hydrophytic vegetation	and wetland I	nydrology must be p	resent unles	s disturbed	l or problei	matic			
			.) di ciogydoi 20 p							
	ayer (if observed):									
Type:	ab a a \						Undria Cail D			No
Depth (in	cnes):						Hydric Soil P	resent?	Yes X	No
Remarks:										

Project/Site:	PID: 163-1	60292124000	2	City/County:	Lake Elmo/W	ashington County	Samplin	g Date:	04/07/2021
Applicant/Owner:		(	City of Lake Elmo			State: MN	Samplin	g Point:	7A
Investigator(s):			zel	Section, Towns	hip, Range:		S16, T29N, R	21W	
Landform (hillslope, terra				elief (concave, c	onvex, none):	Conca	/e	Slope (	%): 0
Subregion (LRR or MLR	RA):	К	Lat:	44.99231	533 Lon	ng: -92.94	386203	Datum:	WGS 84
Soil Map Unit Name:			49B			NWI class		PA	BGx
Are climatic / hydrologic	conditions on the	site typical for	this time of year?	Yes X	No	(If no, explain in Re	emarks.)		
Are Vegetation						al Circumstances"		Yes X	No
Are Vegetation						, explain any answ	ers in Remarks	5.)	
SUMMARY OF FIN					ocations, tra	nsects, impor	ant feature	s, etc.	
Hydrophytic Vegetatio	on Present?	Yes	X No	ls ti	e Sampled Area	· ·		-	
Hydric Soil Present?			X No		•	Yes	X No		
Wetland Hydrology Pr	resent?		X No			nd Site ID:			
wettand Hydrology H		103							
Remarks: (Explain alt									
			UBG/EM1Cx). Area to the offsite s						
	•		utlet hydrology fron				•	ine wetiand	along the
HYDROLOGY			allot iljaiology iloi						
Wetland Hydrology I		u vine du ob o oly o	ll that analy)			Casandan	Indiantara (min	increase of the	
Primary Indicators (m		quired; check a	11 27				Indicators (min		o required)
Surface Water (A	,		X Water-Staine	( )			e Soil Cracks (	. ,	
X High Water Table	e (A2)		Aquatic Faur				ige Patterns (B	,	
X Saturation (A3)			Marl Deposit	( )			Trim Lines (B1	,	
Water Marks (B1	,			lfide Odor (C1)			eason Water Ta		
Sediment Depos				zospheres on Liv	• • •		sh Burrows (C8	-	(22)
Drift Deposits (B				Reduced Iron (C	,		tion Visible on	-	
Algal Mat or Crus	. ,			Reduction in Tille	d Solls (C6)		d or Stressed I	. ,	
Iron Deposits (B	-		Thin Muck Si	. ,			orphic Position		
	e on Aerial Image	• • •	Other (Explai	in in Remarks)			w Aquitard (D3		
Sparsely Vegeta	ted Concave Surfa	ace (B8)					opographic Re	. ,	
						X FAC-N	leutral Test (D5	5)	
Field Observations:									
Surface Water Preser	nt? Yes	No	X Depth (inch	es):					
Water Table Present?		X No							
Saturation Present?	Yes	X No			Wetland	d Hydrology Pres	ent? Yes	х	No
(includes capillary frin									
(	5-7								
Describe Recorded D	ata (stream gauge	e, monitoring w	vell, aerial photos, p	previous inspecti	ons), if available:				
Remarks:									
Remarks.									

VEGETATION	V - Use scier	ntific nam	nes of pla	nts.		
				Absolute	Dominant	Indicato
Tree Stratum	(Plot size:	30	)	%Cover	Species?	Status
1. Populus tre	muloides / Quak	king aspen		15	Yes	FAC

				Dominance Test wo				
	Absolute	Dominant	Indicator	Number of Dominan That Are OBL, FACV			5	(A)
Tree Stratum (Plot size: 30 )	%Cover	Species?	Status	That Ale OBL, FACE	N, UI FAC.		J	(A)
1. Populus tremuloides / Quaking aspen	15	Yes	FAC	Total Number of Don	ninant			
2. Salix fragilis / Crack willow	15	Yes	FACW	Species Across All S			5	(B)
3.					Juana.		•	(2)
4.			·	Percent of Dominant	t Species			
5.				That Are OBL, FACV			100.0	(A/B)
6.			·	,				. ,
7.				Prevalence Index w	vorksheet:			
	30	= Total Cove	er	Total % Cover	of:	M	ultiply by:	
Sapling/Shrub Stratum (Plot size: 15 )		-		OBL species	0	x 1 = _	0	
1. Alnus incana ssp. rugosa / Speckled alder	20	Yes	FACW	FACW species	75	x 2 = _	150	
2.				FAC species	15	x 3 = _	45	_
3				FACU species	0	x 4 =	0	_
4.				UPL species	0	x 5 = _	0	_
5				Column Totals:	90	(A)	195	(B)
6				Prevalence Inc	dex = B/A =		2.17	_
7				Hydrophytic Vegeta	ation Indian	tore:		
	20	= Total Cove	er	1 - Rapid Test for			tation	
Herb Stratum (Plot size: 5)				X 2 - Dominance		-	lation	
1. Phalaris arundinacea / Reed canarygrass, Reed canary gras	20	Yes	FACW	X 3 - Prevalence I		0		
2. Solidago gigantea / Smooth goldenrod	20	Yes	FACW	4 - Morphologic		ne (Prov	ido sunnarti	na
3				Problematic Hy	-			ing
4						getation	(Explain)	
5				<sup>1</sup> Indicators of hydric	soil and wat	tland byd	rology must	
6				be present, unless d			0,	
7						probleme		
8				Definitions of Vege	tation Strat	ta		
9								
10				Tree - Woody plants				er at
11				breast height (DBH),	, regardless	of heigh	t.	
12	40	= Total Cove	er	Sapling/shrub - Wo greater than or equa				nd
Woody Vine Stratum         (Plot size:30)           1.				Herb - All herbaceou size, and woody plar				s of
2.			·	Woody vines - All w				n
3				height.	iccuy vinco	groutor t	nan 0.20 m	
4	0	= Total Cove	er	Hydrophytic				
				Vegetation				
				Present?	Yes X	<u> </u>	)	

Remarks: (Explain alternative procedures here or in a separate report.)

Quaking aspen (FACU) was determined FAC based on BWSR guidance for LRR K.

Sampling Point:

7A

~	~	•	
s	()	L	
J	Ś		_

Depth	Matrix	the depth ne	eded to document th	e indicator Features	or confirm	the abse	nce of indicators	s.)		
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	R	emarks	
0-4	10YR 3/2	100		/0	Турс		Sandy Loam		cinarka	
4-8		95	10YR 4/6	5	C	М		Prominent redox		
4-0	10YR 3/2	95	101R 4/0	5	<u> </u>	IVI	Sandy Loam	Prominent redux		
	<u></u>									
			-							
	· -									
<sup>1</sup> Type: C=Co	ncentration, D=Depleti	on, RM=Redu	ced Matrix, MS=Mask	ed Sand Gr	ains.		²Loca	tion: PL=Pore Lini	ing, M=Matrix	
Hydric Soil I	ndicators:						Indicators	o for Problematic	Hydric Soils	<sup>3</sup> :
Histosol			Polyvalue Below	Surface (Sa	B) (LRR R.	MLRA 149		Muck (A10) (LRR	•	
	pipedon (A2)		Thin Dark Surfac					t Prairie Redox (A		
	istic (A3)		Loamy Mucky M					Mucky Peat or Pe		
	en Sulfide (A4)		Loamy Gleyed N		(=====; =)			Surface (S7) (LR	. , .	1, 2, 1,
	d Layers (A5)		Depleted Matrix					alue Below Surfac		
	d Below Dark Surface	( 1 1 1 )						Dark Surface (S9)		κ, <b>μ</b> )
		(ATT)								
	ark Surface (A12)		Depleted Dark S					Manganese Masse		
	/lucky Mineral (S1)		Redox Depression	ons (F8)				nont Floodplain So		
	Gleyed Matrix (S4)							c Spodic (TA6) (N		45, 149B)
	Redox (S5)							Parent Material (F2		
Chrimmen	d Matrix (S6)						Very	Shallow Dark Surf	ace (TF12)	
Supped										
	Inface (S7) (LRR R, M	ILRA 149B)					Other	r (Explain in Rema	irks)	
		ILRA 149B)					Other	r (Explain in Rema	irks)	
Dark Su			hydrology must be pr	esent, unles	s disturbec	l or probler		r (Explain in Rema	rks)	
Dark Su <sup>3</sup> Indicators of	Irface (S7) (LRR R, M		hydrology must be pr	esent, unles	s disturbec	l or probler		r (Explain in Rema	rks)	
Dark Su <sup>3</sup> Indicators of	rface (S7) <b>(LRR R, M</b>	n and wetland	hydrology must be pr	esent, unles	s disturbec	l or probler		· (Explain in Rema	rks)	
Dark Su <sup>3</sup> Indicators of Restrictive L	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbec	l or probler				
Dark Su <sup>3</sup> Indicators of Restrictive I Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbec	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of Restrictive I Type:	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbec	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of <b>Restrictive I</b> Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbec	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of Restrictive I Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbec	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of <b>Restrictive I</b> Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbec	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of <b>Restrictive I</b> Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of <b>Restrictive I</b> Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of <b>Restrictive I</b> Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of <b>Restrictive I</b> Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbec	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of Restrictive I Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of Restrictive I Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of Restrictive I Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of Restrictive I Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of Restrictive I Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of Restrictive I Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of Restrictive I Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of Restrictive I Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of Restrictive I Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of <b>Restrictive I</b> Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo
Dark Su <sup>3</sup> Indicators of <b>Restrictive I</b> Type: Depth (ir	rface (S7) <b>(LRR R, M</b> hydrophytic vegetation ayer (if observed): Rock	n and wetland	hydrology must be pr	esent, unles	s disturbed	l or probler	natic.			lo

Project/Site:	PID: 163-1602921240002		Citv/County:	Lake Elmo/V	Vashington County	Sampling Date:	04/07/2021
Applicant/Owner:		of Lake Elmo			State: MN	Sampling Point:	7B
Investigator(s):			Section Tov	vnship, Range:		6, T29N, R21W	
Landform (hillslope, terrace, e		Local r		, convex, none):			e (%): 2
Subregion (LRR or MLRA):		Lat:			ng:92.943862		
Soil Map Unit Name:		49B			NWI classificat		None
· · ·	itions on the site typical for this		Yes X	No	(If no, explain in Remar		
, ,	il, or Hydrology	-			nal Circumstances" pres		X No
	il , or Hydrology				l, explain any answers i		
	GS - Attach site map sl			-			
		-			· · · · · · · · · · · · · · · · · · ·	. ioutui 00, 0to.	
Hydrophytic Vegetation Pre				s the Sampled Area		No. V	
Hydric Soil Present?	Yes		_	vithin a Wetland?		No	_
Wetland Hydrology Present	t? Yes	No X	_ "	yes, optional Wetla			
	ve procedures here or in a sep ology and hydric soils are not p		as determined	l dry land.			
HYDROLOGY							
Wetland Hydrology Indica	ators:						
Primary Indicators (minimu	m of one required; check all the	at apply)			Secondary India	cators (minimum of t	wo required)
Surface Water (A1)		Water-Staine	d Leaves (B9	)	Surface So	oil Cracks (B6)	
High Water Table (A2)		Aquatic Faur	ia (B13)		Drainage F	Patterns (B10)	
Saturation (A3)		Marl Deposit	s (B15)		Moss Trim	Lines (B16)	
Water Marks (B1)		Hydrogen Su	lfide Odor (C	1)	Dry-Seaso	n Water Table (C2)	
Sediment Deposits (B2	2)	Oxidized Rhi	zospheres on	Living Roots (C3)	Crayfish B	urrows (C8)	
Drift Deposits (B3)	_	Presence of	Reduced Iron	(C4)		Visible on Aerial Ima	
Algal Mat or Crust (B4	)	-		illed Soils (C6)		Stressed Plants (D	1)
Iron Deposits (B5)		Thin Muck Si	. ,			ic Position (D2)	
Inundation Visible on A		Other (Explai	in in Remarks	)		quitard (D3)	
Sparsely Vegetated Co	oncave Surface (B8)					graphic Relief (D4)	
					X FAC-Neutr	al lest (D5)	
Field Observations:							
Surface Water Present?	Yes No X	Depth (inch	es):				
Water Table Present?	Yes No X	Depth (inch	es):				
Saturation Present?	Yes No X	Depth (inch	es):	Wetlan	d Hydrology Present?	Yes X	No
(includes capillary fringe)							
Describe Recorded Data (s	tream gauge, monitoring well,	aerial photos, p	previous inspe	ections), if available:			
Remarks:							
Remarks.							

#### VEGETATION - Use scientific names of plants

VEGETATION - Use scientific names of plants.				Sampling Point:7B	
Tree Stratum (Plot size: 30)	Absolute %Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:         Number of Dominant Species         That Are OBL, FACW, or FAC:       4	)
1. Salix fragilis / Crack willow	15	Yes	FACW	Total Number of Dominant	
2. Populus tremuloides / Quaking aspen	15	Yes	FAC	Species Across All Strata: 5 (B)	)
3.			·	()	,
4.			<u></u>	Percent of Dominant Species	
			·	That Are OBL, FACW, or FAC: 80.0 (A/	/B)
5 6			·		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
7.			. <u> </u>	Prevalence Index worksheet:	
	30	= Total Cove	er	Total % Cover of: Multiply by:	
Sapling/Shrub Stratum (Plot size: 15)		-		OBL species 0 x 1 = 0	
1. Alnus incana ssp. rugosa / Speckled alder	20	Yes	FACW	FACW species 55 x 2 = 110	
2.			·	FAC species 15 x 3 = 45	
3.				FACU species 25 x 4 = 100	
3 4.				UPL species 0 x 5 = 0	
-			·	Column Totals: 95 (A) 255	(B)
			· · <u> </u>	Prevalence Index = B/A = 2.68	
			· · <u> </u>		
7	20	= Total Cove		Hydrophytic Vegetation Indicators:	
Herb Stratum (Plot size: 5 )	20	10121 0000		<ol> <li>1 - Rapid Test for Hydrophytic Vegetation</li> </ol>	
1. <i>Phalaris arundinacea</i> / Reed canarygrass, Reed canary gras	20	Yes	FACW	X 2 - Dominance Test is >50%	
<ol> <li>2. Solidago altissima / Canada goldenrod</li> </ol>	10	Yes	FACU	X 3 - Prevalence Index ≤3.0 <sup>1</sup>	
3. Taraxacum officinale ssp. ceratophorum / Common dandelio		No	FACU	4 - Morphological Adaptations (Provide supporting	
<ol> <li>Alliaria petiolata / Garlic-mustard</li> </ol>	5	No No	FACU	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
•	5	No No			
5. <u>Glechoma hederacea / Ground ivy</u>			FACU	<sup>1</sup> Indicators of hydric soil and wetland hydrology must	
6 7			·	be present, unless disturbed or problematic.	
0					
				Definitions of Vegetation Strata	
9 10			·	Tree - Woody plants 3 in. (7.6 cm) or more in diameter a	+
11				breast height (DBH), regardless of height.	ıı
12.			. <u> </u>	Sapling/shrub - Woody plants less than 3 in. DBH and	
		= Total Cove	er	greater than or equal to 3.28 ft (1 m) tall.	
Woody Vine Stratum         (Plot size:30)           1.				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	F
2.				Woody vines - All woody vines greater than 3.28 ft in	
3.				height.	
4.					
	0	= Total Cove	er	Hydrophytic	
				Vegetation	
				Present?         Yes X         No	
Demarka, (Evalain alternativa preseduras hare ar in a consulta				1	

Remarks: (Explain alternative procedures here or in a separate report.)

Quaking aspen (FACU) was determined FAC based on BWSR guidance for LRR K.

0	0		
3	υ	I	L

Profile Desci Depth	ription: (Describe to th Matrix	e depth nee		e indicator o Features	or confirm	the abser	ce of indicators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-8	10YR 4/4	100					Sandy Loam	
<sup>1</sup> Type: C=Cor	centration, D=Depletion	n, RM=Reduc	ed Matrix, MS=Mask	ed Sand Gra	ains.		<sup>2</sup> Locatio	n: PL=Pore Lining, M=Matrix.
Black His Hydroge Stratified Depletec Thick Da Sandy M Sandy G Sandy R Stripped Dark Sur	(A1) ipedon (A2)	- - RA 149B)	Polyvalue Below Thin Dark Surfac Loamy Mucky Mi Loamy Gleyed M Depleted Matrix ( Redox Dark Surf Depleted Dark Surf Redox Depressio	e (S9) <b>(LR</b> ineral (F1) <b>(</b> latrix (F2) (F3) ace (F6) urface (F7) ons (F8)	R R, MLRA LRR K, L)	.149B)	B) 2 cm Mu Coast P 5 cm Mu Dark Su Polyvalu Thin Da Iron-Ma Piedmoo Mesic S Red Par Very Sh Other (E	br Problematic Hydric Soils <sup>3</sup> : Luck (A10) (LRR K, L, MLRA 149B) trairie Redox (A16) (LRR K, L, R) Lucky Peat or Peat (S3) (LRR K, L, R) In Surface (S9) (LRR K, L) In Floodplain Soils (F12) (LRR K, L, R) In Floodplain Soils (F19) (MLRA 149B) Epodic (TA6) (MLRA 144A, 145, 149B) rent Material (F21) allow Dark Surface (TF12) Explain in Remarks)
Туре:	ayer (if observed): Rock ches):	8					Hydric Soil Pres	sent? Yes NoX
Remarks:								

Project/Site:	PID: 163-	-1602921240002		City/County	r: Lake	Elmo/Washir	ngton County	Sampling Date:	04/07/2021
Applicant/Owner:			of Lake Elmo				ate: MN	Sampling Point:	IA-A
		ellick, Dylan Kruzel		Section, Tov	wnship, Rang	e:	S16	5, T29N, R21W	
Landform (hillslope, terra			Local r	elief (concave	e, convex, no	ne):	None	Slope	e (%): 3
Subregion (LRR or MLR					4.9	-			m: WGS 84
Soil Map Unit Name:			120				NWI classificat	tion:	None
Are climatic / hydrologic	conditions on th	e site typical for this	time of year?	Yes X	No	(lf no	, explain in Remai	rks.)	
Are Vegetation X	, Soil	, or Hydrology	significant	ly disturbed?	Ar	e "Normal Cir	cumstances" pres	sent? Yes	No X
Are Vegetation	, Soil	, or Hydrology	naturally p	oroblematic?	(If	needed, expl	ain any answers i	n Remarks.)	
SUMMARY OF FIN	DINGS - Atta	ach site map sh	owing san	npling poir	nt locatior	ns, transed	cts, important	t features, etc.	
Hydrophytic Vegetatio	n Present?	Yes	No X		s the Sample	ed Area	•		
Hydric Soil Present?		Yes			within a Wetl		Yes	No X	
Wetland Hydrology Pr	resent?	Yes X		_	f yes, optiona				_
	pears to have be	res here or in a sepa en left fallow the yea nd was determined to	r prior. Corn w	vas the prior y	year crop rota	tion. Sample	point is a hill slop	e that does not sup	port hydric soils.
HYDROLOGY									
Wetland Hydrology I	ndicators								
Primary Indicators (mi		auired: check all tha	t annly)				Secondary Indi	cators (minimum of	two required)
		quirea, oneok an tha		d Leaves (B9	2)			oil Cracks (B6)	two required)
				•	,		X Drainage F	· · · ·	
Saturation (A3)	(/(=)	Aquatic Fauna (B13) Marl Deposits (B15)					·	Lines (B16)	
Water Marks (B1	)		•	Ifide Odor (C	:1)			n Water Table (C2)	
Sediment Depos			Oxidized Rhi		,	(C3)	Crayfish Burrows (C8)		
Drift Deposits (B3			Presence of	•	0	()		Visible on Aerial Im	agery (C9)
Algal Mat or Crus				Reduction in 1	. ,	6)		Stressed Plants (D	
Iron Deposits (B5			Thin Muck Si			- /		ic Position (D2)	,
Inundation Visible	-	ery (B7)	Other (Explai	. ,	3)			quitard (D3)	
Sparsely Vegetat	ted Concave Sur	face (B8)					Microtopog	graphic Relief (D4)	
							FAC-Neutr	al Test (D5)	
Field Observations:	10 V			`					
Surface Water Presen		s <u>No X</u>		es):					
Water Table Present?		s <u>No X</u>	- • •	es):		Matland I live	lucio en Cuco en to	Vee V	No
Saturation Present?		sNoX	Depth (Inch	es):		wetland Hyd	Irology Present?	Yes X	No
(includes capillary frin	ge)								
Describe Recorded Da	ata (stream gaud	ge, monitoring well, a	erial photos, p	previous inspe	ections), if av	ailable:			
			. ,	·	,,				
Remarks: Offsite A imagery		signatures with mapp	ped predomina	antly non-hyd	ric soils and r	no NWI. Field	verification suppo	orts saturation visibl	e on aerial

EGETATION - Use scientific names of plants.				Sampling Point: IA-A
ree Stratum (Plot size: <u>30</u> )	Absolute %Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:         Number of Dominant Species         That Are OBL, FACW, or FAC:       0         (A)         Total Number of Dominant
			- <u> </u>	Species Across All Strata: 0 (B)
  				Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 (A/B)
			·	Prevalence Index worksheet:
		= Total Cov	er	Total % Cover of: Multiply by:
apling/Shrub Stratum (Plot size:15)				OBL species0 $x = 0$ FACW species0 $x = 0$ FAC species0 $x = 0$
				FACU species         0         x 4 =         0           UPL species         0         x 5 =         0
				Column Totals:0(A)0(BPrevalence Index = $B/A =$ 0.0
Herb Stratum     (Plot size:5)				Hydrophytic Vegetation Indicators:         1 - Rapid Test for Hydrophytic Vegetation         2 - Dominance Test is >50%         3 - Prevalence Index ≤3.01         4 - Morphological Adaptations (Provide supporting         Problematic Hydrophytic Vegetation1 (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Definitions of Vegetation Strata
0 1				<b>Tree</b> - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
2	0	= Total Cov		<b>Sapling/shrub</b> - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
/oody Vine Stratum (Plot size: 30 )				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
				<b>Woody vines</b> - All woody vines greater than 3.28 ft in height.
	0	= Total Cov	er	Hydrophytic       Vegetation       Present?     Yes NoX

A sample area an unvegetated fallow farm field. Litter indicates the prior rotation was corn crop. Wetland hydrology and hydric soils are not present. Area is not thought to support a predominance of hydrophytic vegetation.

~	~	•	
s	()	L	
J	Ś		_

	ription: (Describe to t	he depth neede			or confirm	the absen	nce of indicators.)	
Depth (in all a a)	Matrix			Features	T	1 2	Tautura	Demonster
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-8	10YR 4/3	100					Loam	
8-12	10YR 5/6	100		·			Clay Loam	
		·		·				
		·		·				
		·		·			·	
				·			·	
				·			·	
		·		·				
		·		·		<u> </u>	·	
		·		·		<u> </u>	·	
		·		·				
<sup>1</sup> Type: C=Cor	ncentration, D=Depletion	n, RM=Reduce	d Matrix, MS=Mask	ed Sand Gra	ains.		<sup>2</sup> Location: PL=	Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Indicators for Pro	blematic Hydric Soils <sup>3</sup> :
Histosol			Polyvalue Below	Surface (S8	B) (LRR R,	<b>MLRA 149</b>		10) (LRR K, L, MLRA 149B)
	pipedon (A2)		Thin Dark Surfac				· `	Redox (A16) (LRR K, L, R)
Black Hi			_ Loamy Mucky M			,		Peat or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)		Loamy Gleyed M					(S7) (LRR K, L)
	Layers (A5)	· · · · · · · · · · · · · · · · · · ·	Depleted Matrix					ow Surface (S8) (LRR K, L)
	Below Dark Surface (	A11)	Redox Dark Sur					face (S9) (LRR K, L)
	ark Surface (A12)	·	Depleted Dark S	Surface (F7)			Iron-Mangane	se Masses (F12) (LRR K, L, R)
Sandy M	lucky Mineral (S1)		Redox Depressi	ons (F8)			Piedmont Floo	odplain Soils (F19) <b>(MLRA 149B)</b>
Sandy G	ileyed Matrix (S4)		_				Mesic Spodic	(TA6) (MLRA 144A, 145, 149B)
Sandy R	edox (S5)						Red Parent M	aterial (F21)
Stripped	Matrix (S6)						Very Shallow	Dark Surface (TF12)
Dark Su	rface (S7) (LRR R, MI	_RA 149B)					Other (Explain	n in Remarks)
<sup>3</sup> Indicators of	hydrophytic vegetation	and wetland hy	/drology must be pr	esent, unles	s disturbed	or problem	natic.	
Restrictive L Type:	ayer (if observed):							
Depth (in	ches):		_				Hydric Soil Present?	Yes NoX
Remarks:								

Project/Site:	PID: 163-1602921240002		City/County	r: Lake E	Imo/Washing	ton County	Sampling Da	te: 04/07/2021
		ity of Lake Elmo	, ,			ite: MN	Sampling Poi	
Investigator(s):	Alex Yellick, Dylan Kruz	el	Section, To	wnship, Range	:	S1	6, T29N, R21W	
Landform (hillslope, terrace, e	etc): Till Plain - B	S Local r	elief (concave	e, convex, none	e):	Concave	S	Slope (%): 1
Subregion (LRR or MLRA):			44.99	561551	Long:	-92.94077		Datum: WGS 84
Soil Map Unit Name:		120				NWI classifica		None
Are climatic / hydrologic cond	litions on the site typical for	his time of year?	Yes X	No	(lf no,	explain in Rema	rks.)	
Are Vegetation, Sc	, or Hydrology	significantl	ly disturbed?	Are	"Normal Circ	umstances" pre	sent? Yes	X No
Are Vegetation , Sc					eeded, expla	in any answers	in Remarks.)	
SUMMARY OF FINDIN	GS - Attach site map	showing sam	npling poi	nt locations	s, transec	ts, importan	t features, e	tc.
Hydrophytic Vegetation Pre				s the Sampled				
Hydric Soil Present?	Yes		_	within a Wetla		Yes	No	x
Wetland Hydrology Presen			_	f yes, optional				<u></u>
			- '	i yoo, optional				
Sample was t	ive procedures here or in a staken in existing rock pile wit mmunity and was determine	h down gradient d	Irainage vege	etated in comm	on burdock. A	Area does not si	upport hydric soi	ls or hydrophytic
HYDROLOGY								
Wetland Hydrology Indica								
		that apply)				Secondary Indi	iaatara (minimun	n of two required)
	im of one required; check all		d Loovos (PC	2)			oil Cracks (B6)	n of two required)
X         Surface Water (A1)         Water-Staine           X         High Water Table (A2)         Aquatic Faur				<i>)</i>			Patterns (B10)	
X Saturation (A3)	1	Marl Deposits					Lines (B16)	
Water Marks (B1)		Hydrogen Su		1)			on Water Table (	(2)
Sediment Deposits (B	2)				C2)			02)
	2)		-	Living Roots (	(5)		Burrows (C8)	l Imagany (CO)
Drift Deposits (B3)	4)	Presence of I		. ,	<b>`</b>		Visible on Aeria	
Algal Mat or Crust (B4	t)			Tilled Soils (C6	)		r Stressed Plants	. ,
Iron Deposits (B5)	Aprial Imagent (DZ)	Thin Muck Su		- )			nic Position (D2)	
Inundation Visible on	••••	Other (Explai	in in Remarks	5)			quitard (D3)	24)
Sparsely Vegetated C	oncave Surface (B8)						graphic Relief (E	J4)
						FAC-Neul	ral Test (D5)	
Field Observations:								
Surface Water Present?	Yes X No	Depth (inch	es):	0				
Water Table Present?	Yes X No	Depth (inch	es):	8				
Saturation Present?	Yes X No	Depth (inch	es):	0 <b>W</b>	etland Hydr	ology Present?	Yes X	KNo
(includes capillary fringe)								
Describe Recorded Data (s	stream gauge, monitoring we	ell, aerial photos, p	previous insp	ections), if avai	lable:			
investigation.	thought to be recent precipit		•	,	0,7			
aerial imagery	/ (C9).							

#### VEGETATION - Use scientific names of plants.

EGETATION - Use scientific names of plants.				Sampling Point: IA-B
				Dominance Test worksheet: Number of Dominant Species
	Absolute	Dominant	Indicator	That Are OBL, FACW, or FAC: 1 (A)
	%Cover	Species?	Status	
I. Acer negundo / Boxelder, Box elder	45	Yes	FAC	Total Number of Dominant
	40	165	FAC	
				Species Across All Strata: <u>3</u> (B)
3				Descent of Deminent Creation
i				Percent of Dominant Species
				That Are OBL, FACW, or FAC: <u>33.3</u> (A/B
·				Prevalence Index worksheet:
·		= Total Cove		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15 )	40	10(a) 0010	1	$\overline{OBL \text{ species } 0}  \overline{x \ 1 = 0}$
;				FACW species 0 x 2 = 0
				FAC species $45 \times 3 = 135$
<u> </u>				FACU species $100 \times 4 = 400$
3				UPL species $0 \times 5 = 0$
ł				Column Totals: 145 (A) 535 (E
5 5				Prevalence Index = $B/A = 3.69$
	0	= Total Cove		Hydrophytic Vegetation Indicators:
Herb Stratum (Plot size: 5)	0	10(a) 0010	1	1 - Rapid Test for Hydrophytic Vegetation
1. Arctium minus / Common burdock	80	Yes	FACU	2 - Dominance Test is >50%
2. Setaria pumila ssp. pumila / Yellow foxtail, Yellow bristle gras	20	Yes	FACU	3 - Prevalence Index ≤3.0 <sup>1</sup>
				4 - Morphological Adaptations (Provide supporting
3				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
4				
5				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
7				
8				Definitions of Vegetation Strata
9				
10				<b>Tree</b> - Woody plants 3 in. (7.6 cm) or more in diameter at
11				breast height (DBH), regardless of height.
12	100	= Total Cove		<b>Sapling/shrub</b> - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
Woody Vine Stratum (Plot size: 30 )	100	_ = 10(a) 0000	1	
1				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2				Woody vines - All woody vines greater than 3.28 ft in height.
4				
	0	= Total Cove	r	Hydrophytic
		_		Vegetation
				Present? Yes No X

~	~	•	
s	()	L	
J	Ś		_

Depth Matrix		eded to document th Redox	x Features				- 1		
(inches) Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remark	s
0-14 7.5YR 3/2	100					Sandy Loam			
14-18 7.5YR 3/2	90	7.5YR 4/4	10			Sandy Loam	Distinct re	edox	
18-24 10YR 4/2	90	10YR 4/6	10	C	М	Loam	Prominen	t redox	
			- <u> </u>						
ype: C=Concentration, D=Dep	etion, RM=Red	uced Matrix, MS=Mas	ked Sand Gra	ains.		²Loca	ation: PL=P	ore Lining, M	=Matrix.
<ul> <li>Histosol (A1)</li> <li>Histic Epipedon (A2)</li> <li>Black Histic (A3)</li> <li>Hydrogen Sulfide (A4)</li> <li>Stratified Layers (A5)</li> <li>Depleted Below Dark Surface</li> <li>Thick Dark Surface (A12)</li> <li>Sandy Mucky Mineral (S1)</li> <li>Sandy Gleyed Matrix (S4)</li> <li>Sandy Redox (S5)</li> <li>Stripped Matrix (S6)</li> <li>Dark Surface (S7) (LRR R</li> </ul>	, MLRA 149B)	Polyvalue Belov Thin Dark Surfa Loamy Mucky M Depleted Matrix Redox Dark Su Depleted Dark S Redox Depress	ice (S9) <b>(LR</b> Mineral (F1) ( Matrix (F2) (F3) frace (F6) Surface (F7) ions (F8)	R R, MLRA (LRR K, L)	A 149B)	Coas 5 cm Dark Polyv Thin Iron-I Piedr Mesie Red Very Othe	t Prairie Re Mucky Pea Surface (S' ralue Below Dark Surfac Manganese mont Floodp c Spodic (T Parent Mate Shallow Da	dox (A16) ( <b>I</b> at or Peat (S3 7) ( <b>LRR K, I</b> v Surface (S8) ce (S9) ( <b>LRF</b> Masses (F1 blain Soils (F A6) ( <b>MLRA</b>	) (LRR K, L, R) -) ) (LRR K, L) R K, L) 2) (LRR K, L, R 19) (MLRA 1498 144A, 145, 1498
estrictive Layer (if observed) Type: Depth (inches):						Hydric Soil P	resent?	Yes	No X
emarks:									

# WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site:	PID: 163-1602921240002		City/County:	Lake Elmo/Was	shington County	Sampling Date:	04/07/2021
Applicant/Owner:	Ci	ty of Lake Elmo	· · <u> </u>		State: MN	Sampling Point:	IA-C
Investigator(s):	Alex Yellick, Dylan Kruze		Section, Townsh			, T29N, R21W	
Landform (hillslope, terrace,	etc): Till Plain - TS	Local r	elief (concave, co	nvex, none):	Concave	Slope	e (%): 0
Subregion (LRR or MLRA):	К		44.9	Long:	-92.9	Datur	n: WGS 84
Soil Map Unit Name:		49C			NWI classificat	ion:	None
Are climatic / hydrologic cond	litions on the site typical for th	nis time of year?	Yes X	No(If	no, explain in Remar	ks.)	
Are Vegetation, So	pil, or Hydrology	significant	y disturbed?	Are "Normal	Circumstances" pres	ent? Yes	No X
Are Vegetation, So	il, or Hydrology	naturally p	roblematic?	(If needed, e	explain any answers in	n Remarks.)	
SUMMARY OF FINDIN	IGS - Attach site map	showing san	pling point lo	ocations, trans	sects, important	features, etc.	
Hydrophytic Vegetation Pro	esent? Yes X	No	ls the	Sampled Area	•	-	
Hydric Soil Present?	Yes			n a Wetland?	Yes	No X	
Wetland Hydrology Presen			_	, optional Wetland			-
				, optional frontana			
	tive procedures here or in a s is the prior rotation was corn o		drology and hydrid	soils are not pres	ent. Area was determ	ined to be dry land.	
HYDROLOGY							
Wetland Hydrology Indic	ators:						
	um of one required; check all	that apply)			Secondary Indic	ators (minimum of t	wo required)
Surface Water (A1)	· _ ·		d Leaves (B9)			il Cracks (B6)	
High Water Table (A2	)	Aquatic Faun	a (B13)		Drainage F	atterns (B10)	
Saturation (A3)	-	Marl Deposits	s (B15)		Moss Trim	Lines (B16)	
Water Marks (B1)	_	Hydrogen Su	lfide Odor (C1)		Dry-Seaso	n Water Table (C2)	
Sediment Deposits (B		Oxidized Rhi	zospheres on Livi	ng Roots (C3)	Crayfish Bu	urrows (C8)	
Drift Deposits (B3)	_	Presence of I	Reduced Iron (C4	)	Saturation	Visible on Aerial Im	agery (C9)
Algal Mat or Crust (B4	4)	Recent Iron F	Reduction in Tilled	Soils (C6)	Stunted or	Stressed Plants (D	1)
Iron Deposits (B5)	_	Thin Muck Su	urface (C7)		X Geomorph	ic Position (D2)	
Inundation Visible on	Aerial Imagery (B7)	Other (Explai	n in Remarks)		Shallow Ac	uitard (D3)	
Sparsely Vegetated C	oncave Surface (B8)				Microtopog	raphic Relief (D4)	
					FAC-Neutr	al Test (D5)	
Field Observations:							
Surface Water Present?	Yes No X	C Depth (inch	es).				
Water Table Present?	Yes No X			—			
Saturation Present?		Depth (inch	·	Wetland I	Hydrology Present?	Yes	No X
(includes capillary fringe)		<u> </u>					<u></u>
(							
Describe Recorded Data (	stream gauge, monitoring we	ll, aerial photos, p	previous inspection	ns), if available:			
	: 38% wet signatures with adj OES NOT support saturation			hydric soils and no	NWI. Because wetla	nd hydrology is not	present, field
			<b>U J U</b> = <b>J</b>				

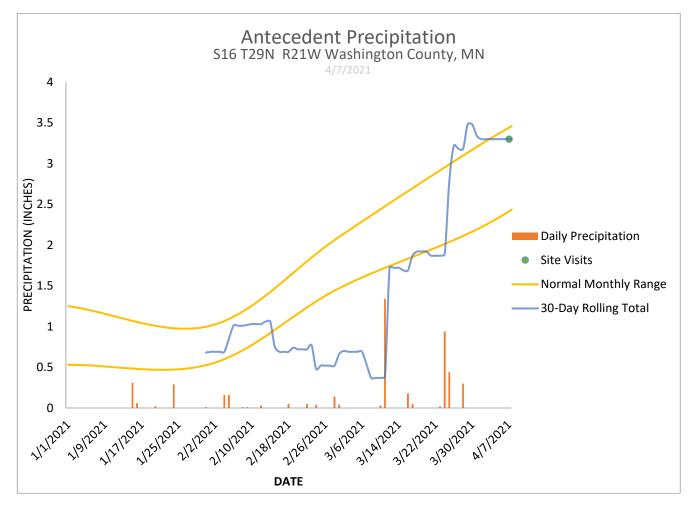
/EGETATION - Use scientific names of plants.					Sam	oling Poin	t: <u>I</u> A	A-C
Tree Stratum (Plot size: 30 )	Absolute %Cover	Dominant Species?	Indicator Status	Dominance Test Number of Domin That Are OBL, FA	ant Species		1	_ (A)
1.       2.				Total Number of E Species Across A			1	(B)
3 4 5 6.				Percent of Domin That Are OBL, FA	•		100.0	_ (A/B)
6		-		Prevalence Index	x worksheet:			
	0	= Total Cov	/er	Total % Cov	er of:		Itiply by:	
Sapling/Shrub Stratum (Plot size: 15 )		_		OBL species	0	x 1 =	0	
1				FACW species	0	x 2 =	0	
2				FAC species	100	x 3 =	300	
3				FACU species	0	×4=_	0	
4.				UPL species	0	x 5 = _	0	
5				Column Totals:	100 Index = B/A =	(A)	300 3.0	(B)
6				Prevalence			3.0	
7				Hydrophytic Veg	etation Indic	ators:		
	0	= Total Cov	/er	1 - Rapid Tes	st for Hydroph	ytic Veget	ation	
Herb Stratum (Plot size: 5 )	100	Vaa	EAC	X 2 - Dominand	ce Test is >50°	%		
1. Panicum capillare / Old witch grass	100	Yes	FAC	X 3 - Prevalence	ce Index ≤3.0¹			
2				4 - Morpholo	gical Adaptati	ons (Prov	ide support	ting
3.				Problematic	Hydrophytic V	egetation	' (Explain)	
4 5.								
				<sup>1</sup> Indicators of hyd	ric soil and we	tland hyd	rology mus	st
6				be present, unles	s disturbed or	problema	tic.	
8.				Definitions of Ve	getation Stra	ta		
9								
10 11				Tree - Woody plan breast height (DB				ter at
12				Sapling/shrub -	Noody plants	less than	3 in. DBH a	and
	100	= Total Cov	ver	greater than or ec	ual to 3.28 ft	(1 m) tall.		
Woody Vine Stratum         (Plot size:30)           1.				Herb - All herbace size, and woody p				ss of
2				Woody vines - A height.	ll woody vines	greater ti	han 3.28 ft	in
4	0	= Total Cov		Hydrophytic				
	0	_ = 10tai COV	'ei	Vegetation Present?	Yes	K No	1	

0	~		
3	υ	I	L

	ription: (Describe to th	ne depth neede			or confirm	the abser	nce of indicators	s.)			
Depth (inchoo)	Matrix	%		Features	Ture e1	1.0.02	Taxtura		Demeril	-	
(inches) 0-8	Color (moist) 10YR 4/3	100	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Loam		Remark	5	
8-12	10YR 5/6	100		- <u> </u>	·						
0-12	101R 5/0	100		<u></u>	·		Clay Loam				
		<u> </u>		·	·						
		<u> </u>		·	·						
					·						
				·	·						
		<u> </u>			·						
				<u> </u>	·						
		<u> </u>			·						
					·						
				- <u></u>	·						
<sup>1</sup> Type: C=Cor	ncentration, D=Depletion	n, RM=Reduce	d Matrix, MS=Mask	ed Sand Gr	ains.		²Loca	tion: PL=Po	ore Lining, M	=Matrix.	
Hydric Soil II	ndicators:						Indicators	for Proble	matic Hydri	c Soils³:	
Histosol			Polyvalue Below	/ Surface (S	8) <b>(LRR R</b> ,	MLRA 149	<b>B)</b> 2 cm	Muck (A10)	) (LRR K, L,	MLRA 149B	)
Histic Ep	oipedon (A2)		Thin Dark Surfac	ce (S9) (LR	RR R, MLRA	A 149B)	Coas	t Prairie Re	dox (A16) <b>(I</b>	.RR K, L, R)	
Black Hi	stic (A3)		Loamy Mucky M	lineral (F1)	(LRR K, L)		5 cm	Mucky Pea	t or Peat (S3	) (LRR K, L,	R)
Hydroge	n Sulfide (A4)		Loamy Gleyed N	/latrix (F2)			Dark	Surface (S7	7) <b>(LRR K, I</b>	_)	
Stratified	I Layers (A5)		Depleted Matrix	(F3)			Polyv	alue Below	Surface (S8	) (LRR K, L)	)
Depleted	Below Dark Surface (A	A11)	Redox Dark Sur	face (F6)			Thin I	Dark Surfac	e (S9) (LRF	R K, L)	
Thick Da	ark Surface (A12)		Depleted Dark S	Surface (F7)			Iron-N	Manganese	Masses (F12	2) <b>(LRR K,</b>	L, R)
Sandy M	lucky Mineral (S1)		Redox Depressi	ons (F8)			Piedn	nont Floodp	lain Soils (F	19) <b>(MLRA 1</b>	49B)
Sandy G	leyed Matrix (S4)						Mesic	Spodic (TA	A6) (MLRA	144A, 145, 1	49B)
Sandy R	edox (S5)						Red F	Parent Mate	erial (F21)		
Stripped	Matrix (S6)						Very	Shallow Da	rk Surface (T	F12)	
Dark Su	rface (S7) (LRR R, ML	.RA 149B)					Other	· (Explain in	Remarks)		
<sup>3</sup> Indicators of	hydrophytic vegetation	and wetland hy	drology must be pr	esent, unles	ss disturbed	l or problen	natic.				
	ayer (if observed):										
Type:	ah ao):						Undria Cail D		Vaa	No	V
	ches):		_				Hydric Soil P	resent?	Yes	No	<u>×</u>
Remarks:											

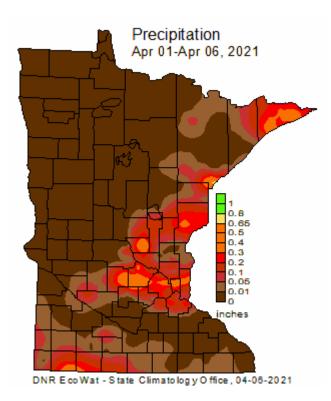
# Appendix C ANTECEDENT PRECIPITATION RECORD

**Appendix C, Figure 1.** Graph of recent precipitation in comparison with the normal range of precipitation in the general site location. Daily precipitation data is plotted independently and as a 30-day rolling total up to the date of the site visit. The normal range is plotted from precipitation data recorded from 1981 to 2010. The normal range is represented in this graph with two lines, the 30<sup>th</sup> percentile and the 70<sup>th</sup> percentile of the period-of-record data distribution.



Source: Minnesota State Climatology Office

**Appendix C, Figure 2.** Minnesota State Climatology Office map depicting total precipitation for the week of the site visit.



# Appendix D MINNESOTA ROUTINE ASSESSMENT METHODOLOGY (MnRAM)

# Management Classification Report for 16349 W1

## of Lake Elmo Former 3M Parcel

ID: 246

WASHINGTON County Watershed, # Corps Bank Service Area

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 2

Functional rank of this we based on MnRAM data		Self-defined classification value settings for this management leve		
Low	Vegetative Diversity/Integrity		Moderate	
Moderate	Habitat Structure (wildlife)		Moderate	
Not Applicable	Amphibian Habitat		Low	
Not Applicable	Fish Habitat		Moderate	
Not Applicable	Shoreline Protection		Low	
Low	Aesthetic/Cultural/Rec/Ed and Habitat	Moderate /	Low	
Exceptional	Stormwater/Urban Sensitivity and Vegetative Diversi	ty -/	-	
Moderate	Wetland Water Quality and Vegetative Diversity	-/	-	
High	Characteristic Hydrology and Vegetative Diversity	-/	-	
Moderate	Flood/Stormwater Attenuation*		-	
Not Applicable	Commericial use*		-	
Moderate	Downstream Water Quality*		-	

The critical function that caused this wetland to rank as **Manage 2** was **Maintenance of Characteristic Wildlife Habitat Structure** 

Details of the formula for this action are shown below:

# Maintenance of Characteristic Wildlife Habitat Str (Q3e\*2+Q39+Q37+Q40+Q41+(Q23+Q24+Q25)/3+Q13+Q20)/9

Question	Value	Description
13	1	Outlet: hydrologic regime
20	0.1	Stormwater runoff
23	1	Buffer width
24	0.1	Adjacent area Management
25	0.1	Adjacent area diversity
37	0.1	Vegetation cover interspersion
39	0.1	Detritus
3e	0.1	<no description="" found=""></no>

\* The classification value settings for these functions are not adjustable

# Management Classification Report for 16349 W1

# of Lake Elmo Former 3M Parcel

ID: 246

WASHINGTON County Watershed, # Corps Bank Service Area

- 40 0.5 Wetland interspersion/landscape
- 41 0.5 Wildlife barriers
- This report was printed on: Friday, April 16, 2021

\* The classification value settings for these functions are not adjustable

# **MnRAM: Site Response Record**

For Wetland: 16349 W1 Location: 82-029-21-16-001

## **City of Lake Elmo Former 3M Parcel**

Plant Community: Seasonally Cowardin Classification: PEM1A	<b>y Flooded Ba</b> Circular 39: Type 1				
4 Listed, rare, special species?	No				
5 Rare community or habitat?	No				
6 Pre-European-settlement condit	ion? No				
Hydrogeomorphology / topography:7Depressional/FlowThru					
8-1 Maximum water depth	0 inches				
8-2 % inundated	0%				
9 Immediate drainagelocal WS	2 acres				
10 Esimated size/existing site:	(see #66)				
<i>11-Upland Soil</i> 153B					

153B 11-Wetland Soil

12	Outlet for flood control	А
13	Outlet for hydro regime	А
14	Dominant upland land use	В
15	Wetland soil condition	В
16	Vegetation (% cover)	100%
17	Emerg. veg flood resistance	С
18	Sediment delivery	А
19	Upland soils (soil group)	В
20	Stormwater runoff	С
21	Subwatershed wetland density	В
22	Channels/sheet flow	А
23	Adjacent buffer width	) feet
Adj	acent area management	
24-		0%

24 <b>-</b> B	Manicured	0%
24 <b>-</b> C	Bare	100%

#### Adjacent area diversity/structure

25 <b>-</b> A	Native	0%
25 <b>-</b> B	Mixed	0%
25 <b>-</b> C	Sparse	100%

#### Adjacent area slope

26-A	Gentle	100%
26-B	Moderate	0%
26-C	Steep	0%

27 Downstream sens./WQ protect. С

В

No

0%

No

No

С NA

С

В

В

0 feet

- 28 Nutrient loading
- 29 Shoreline wetland?

#### Shoreline Wetland

- 30 Rooted veg., % cover
- 31 Wetland in-water width 32 Emerg. veg. erosion resistance
- 33 Erosion potential of site
- 34 Upslope veg./bank protection
- 35 Rare wildlife?
- 36 Scare/Rare/S1/S2 community 37 Vegetative cover
- 38 Veg. community interspersion
- 39 Wetland detritus
- 40 Interspersion on landscape
- 41 Wildlife barriers

#### Amphibian-breeding potential

42	Hydroperiod adequacy	Inadequate
43	Fish presence	А
44	Overwintering habitat	
45	Wildlife species (list)	
46	Fish habitat quality	NA
47	Fish species (list)	
48	Unique/rare opportunity	No
<i>49</i>	Wetland visibility	В
50	Proximity to population	No
51	Public ownership	С
52	Public access	С
53	Human influence on wetland	В
54	Human influence on viewshea	В
55	Spatial buffer	В
56	Recreational activity potentia	l C
	<i>c</i> · <i>i</i> · <i>i</i> · <i>i</i> · ·	
57	Commercial crophydro impo	act NA

#### Groundwater-specific questions

58	Wetland soils	Recharge
59	Subwatershed land use	Recharge
60	Wetland size/soil group	Recharge
61	Wetland hydroperiod	Recharge
62	Inlet/Outlet configuration	Recharge
63	Upland topo relief	Recharge
Ad	ditional information	
64	Restoration potential	No
65	LO affected by restoration	
66	Existing size	0.09
	Restorable size	0.01
	Potential new wetland	0.01
67	Average width of pot. buffer	0 feet
68	Ease of potential restoration	1
69	Hydrologic alterations	0
70	Potential wetland type	0
71	Stormwater sensitivity	B
/1		В

. WS#

#### For functional ratings, please run the Summary tab report. This report printed on: 4/16/2021

Service Area:

# Management Classification Report for 16349 W1

## of Lake Elmo Former 3M Parcel

ID: 246

WASHINGTON County Watershed, # Corps Bank Service Area

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 2

Functional rank of this we based on MnRAM data		Self-defined classif ettings for this mana	
Low	Vegetative Diversity/Integrity		Moderate
Moderate	Habitat Structure (wildlife)		Moderate
Not Applicable	Amphibian Habitat		Low
Not Applicable	Fish Habitat		Moderate
Not Applicable	Shoreline Protection		Low
Low	Aesthetic/Cultural/Rec/Ed and Habitat	Moderate /	Low
Exceptional	Stormwater/Urban Sensitivity and Vegetative Diversit	ty -/	-
Low	Wetland Water Quality and Vegetative Diversity	-/	-
Moderate	Characteristic Hydrology and Vegetative Diversity	-/	-
Moderate	Flood/Stormwater Attenuation*		-
Not Applicable	Commericial use*		-
Moderate	Downstream Water Quality*		-

The critical function that caused this wetland to rank as **Manage 2** was **Maintenance of Characteristic Wildlife Habitat Structure** 

Details of the formula for this action are shown below:

# Maintenance of Characteristic Wildlife Habitat Str (Q3e\*2+Q39+Q37+Q40+Q41+(Q23+Q24+Q25)/3+Q13+Q20)/9

Question	Value	Description
13	1	Outlet: hydrologic regime
20	0.5	Stormwater runoff
23	0.5	Buffer width
24	0.1	Adjacent area Management
25	0.1	Adjacent area diversity
37	0.1	Vegetation cover interspersion
39	0.1	Detritus
3e	0.1	<no description="" found=""></no>

\* The classification value settings for these functions are not adjustable

# Management Classification Report for 16349 W1

# of Lake Elmo Former 3M Parcel

ID: 246

WASHINGTON County Watershed, # Corps Bank Service Area

- 40 0.5 Wetland interspersion/landscape
- 41 0.5 Wildlife barriers
- This report was printed on: Friday, April 16, 2021

\* The classification value settings for these functions are not adjustable

# **MnRAM: Site Response Record**

For Wetland: 16349 W1 Location: 82-029-21-16-001

## **City of Lake Elmo Former 3M Parcel**

	Flooded Ba Fircular 39: Type 1
<ul><li><i>4 Listed, rare, special species?</i></li><li><i>5 Rare community or habitat?</i></li></ul>	No No
6 Pre-European-settlement condition	n? No
<i>Hydrogeomorphology / topograp</i> 7 Depression	<i>hy:</i> onal/Isolated
<ul><li>8-1 Maximum water depth</li><li>8-2 % inundated</li></ul>	0 inches 0%
9 Immediate drainagelocal WS	5 acres
10 Esimated size/existing site:	(see #66)
11-Upland Soil 120	

120 11-Wetland Soil

12	Outlet for flood control		А
13	Outlet for hydro regime		А
14	Dominant upland land use		С
15	Wetland soil condition		С
16	Vegetation (% cover)	1	00%
17	Emerg. veg flood resistance		NA
18	Sediment delivery		С
19	Upland soils (soil group)		В
20	Stormwater runoff		В
21	Subwatershed wetland density		В
22	Channels/sheet flow		Α
23	Adjacent buffer width	01	eet
4 di	acent area management		
лиј 24-		(	)%
24-	/1 / ////		

24-B	Manicured	0%
24 <b>-</b> C	Bare	100%

#### Adjacent area diversity/structure

25 <b>-</b> A	Native	0%
25 <b>-</b> B	Mixed	0%
25 <b>-</b> C	Sparse	100%

#### Adjacent area slope

26-A	Gentle	100%
26-B	Moderate	0%
26 <b>-</b> C	Steep	0%

27 Downstream sens./WQ protect. С

В

No

0%

No

No

С NA

С

В

В

0 feet

- 28 Nutrient loading
- 29 Shoreline wetland?

#### Shoreline Wetland

- 30 Rooted veg., % cover
- 31 Wetland in-water width
- 32 Emerg. veg. erosion resistance 33 Erosion potential of site
- 34 Upslope veg./bank protection
- 35 Rare wildlife?
- 36 Scare/Rare/S1/S2 community 37 Vegetative cover
- 38 Veg. community interspersion
- 39 Wetland detritus
- 40 Interspersion on landscape
- 41 Wildlife barriers

#### Amphibian-breeding potential

42	Hydroperiod adequacy	Inadequate
43	Fish presence	А
44	Overwintering habitat	
45	Wildlife species (list)	
46	Fish habitat quality	NA
47	Fish species (list)	
48	Unique/rare opportunity	No
<i>49</i>	Wetland visibility	В
50	Proximity to population	No
51	Public ownership	С
52	Public access	С
53	Human influence on wetland	В
54	Human influence on viewshea	l C
55	Spatial buffer	С
56	Recreational activity potentia	l C
57	Commercial crophydro impo	act NA

#### 

50	oundwater-specific questio Wetland soils	Recharge
58	Subwatershed land use	Recharge
59		0
60	Wetland size/soil group	Recharge
61	Wetland hydroperiod	Recharge
62	Inlet/Outlet configuration	Recharge
63	Upland topo relief	Recharge
Ad	ditional information	
64	Restoration potential	No
65	LO affected by restoration	
66	Existing size	0.45
	Restorable size	0
	Potential new wetland	0
67	Average width of pot. buffer	0 fee
68	Ease of potential restoration	1
69	Hydrologic alterations	0
	Potential wetland type	0
70		
70 71	Stormwater sensitivity	C

. WS#

#### For functional ratings, please run the Summary tab report. This report printed on: 4/16/2021

Service Area:

# Management Classification Report for 16349 W3

## of Lake Elmo Former 3M Parcel

ID: 248

WASHINGTON County Watershed, # Corps Bank Service Area

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 2

Functional rank of this we based on MnRAM data		Self-defined classification value settings for this management level	
Low	Vegetative Diversity/Integrity		Moderate
Moderate	Habitat Structure (wildlife)		Moderate
Not Applicable	Amphibian Habitat		Low
Not Applicable	Fish Habitat		Moderate
Not Applicable	Shoreline Protection		Low
Low	Aesthetic/Cultural/Rec/Ed and Habitat	Moderate /	Low
Exceptional	Stormwater/Urban Sensitivity and Vegetative Diversi	ty -/	-
Low	Wetland Water Quality and Vegetative Diversity	-/	-
Moderate	Characteristic Hydrology and Vegetative Diversity	-/	-
Moderate	Flood/Stormwater Attenuation*		-
Not Applicable	Commericial use*		-
Moderate	Downstream Water Quality*		-

The critical function that caused this wetland to rank as **Manage 2** was **Maintenance of Characteristic Wildlife Habitat Structure** 

Details of the formula for this action are shown below:

# Maintenance of Characteristic Wildlife Habitat Str (Q3e\*2+Q39+Q37+Q40+Q41+(Q23+Q24+Q25)/3+Q13+Q20)/9

Question	Value	Description
13	1	Outlet: hydrologic regime
20	0.5	Stormwater runoff
23	0.5	Buffer width
24	0.1	Adjacent area Management
25	0.1	Adjacent area diversity
37	0.1	Vegetation cover interspersion
39	0.1	Detritus
3e	0.1	<no description="" found=""></no>

\* The classification value settings for these functions are not adjustable

# Management Classification Report for 16349 W3

# of Lake Elmo Former 3M Parcel

ID: 248

WASHINGTON County Watershed, # Corps Bank Service Area

- 40 0.5 Wetland interspersion/landscape
- 41 0.5 Wildlife barriers
- This report was printed on: Friday, April 16, 2021

\* The classification value settings for these functions are not adjustable

# **MnRAM: Site Response Record**

For Wetland: 16349 W3 Location: 82-029-21-16-001

## **City of Lake Elmo Former 3M Parcel**

	Flooded Ba Fircular 39: Type 1
<ul><li><i>4 Listed, rare, special species?</i></li><li><i>5 Rare community or habitat?</i></li></ul>	No No
6 Pre-European-settlement condition	n? No
<i>Hydrogeomorphology / topograp</i> 7 Depression	<i>hy:</i> onal/Isolated
<ul><li>8-1 Maximum water depth</li><li>8-2 % inundated</li></ul>	0 inches 0%
9 Immediate drainagelocal WS	5 acres
10 Esimated size/existing site:	(see #66)
11-Upland Soil 120	

120 11-Wetland Soil

12	Outlet for flood control		А
13	Outlet for hydro regime	Γ	А
14	Dominant upland land use		С
15	Wetland soil condition	Ī	С
16	Vegetation (% cover)	1	00%
17	Emerg. veg flood resistance		NA
18	Sediment delivery	Ī	С
19	Upland soils (soil group)	Ī	В
20	Stormwater runoff	Ī	В
21	Subwatershed wetland density	Ī	В
22	Channels/sheet flow	Ī	А
23	Adjacent buffer width	0 fe	et
Adj 24-	acent area management A Full	0	%
4 <b>-</b>	<i>/1</i> ····		

24-B	Manicured	0%
24 <b>-</b> C	Bare	100%

#### Adjacent area diversity/structure

25 <b>-</b> A	Native	0%
25 <b>-</b> B	Mixed	0%
25 <b>-</b> C	Sparse	100%

#### Adjacent area slope

26-A	Gentle	100%
26-B	Moderate	0%
26 <b>-</b> C	Steep	0%

27 Downstream sens./WQ protect. С

В

No

0%

No

No

С NA

С

В

В

0 feet

- 28 Nutrient loading
- 29 Shoreline wetland?

#### Shoreline Wetland

- 30 Rooted veg., % cover
- 31 Wetland in-water width
- 32 Emerg. veg. erosion resistance 33 Erosion potential of site
- 34 Upslope veg./bank protection
- 35 Rare wildlife?
- 36 Scare/Rare/S1/S2 community 37 Vegetative cover
- 38 Veg. community interspersion
- 39 Wetland detritus
- 40 Interspersion on landscape
- 41 Wildlife barriers

#### Amphibian-breeding potential

42	Hydroperiod adequacy	Inadequate
43	Fish presence	А
44	Overwintering habitat	
45	Wildlife species (list)	
46	Fish habitat quality	NA
47	Fish species (list)	
48	Unique/rare opportunity	No
<i>49</i>	Wetland visibility	В
50	Proximity to population	No
51	Public ownership	С
52	Public access	С
53	Human influence on wetland	В
54	Human influence on viewshea	C
55	Spatial buffer	С
56	Recreational activity potentia	l C
57	Commercial crophydro impo	act NA

#### Groundwater-specific questions

Gro	undwater-specific questio	ns
58	Wetland soils	Recharge
59	Subwatershed land use	Recharge
60	Wetland size/soil group	Recharge
61	Wetland hydroperiod	Recharge
62	Inlet/Outlet configuration	Recharge
63	Upland topo relief	Recharge
Ad	ditional information	
64	Restoration potential	No
65	LO affected by restoration	
66	Existing size	0.16
	Restorable size	0
	Potential new wetland	0
67	Average width of pot. buffer	0 feet
68	Ease of potential restoration	1
69	Hydrologic alterations	0
70	Potential wetland type	0
71	Stormwater sensitivity	С
72	Additional treatment needs	С
Wate	ershed	

. WS#

#### For functional ratings, please run the Summary tab report. This report printed on: 4/16/2021

Service Area:

# Management Classification Report for 16349 W4

## of Lake Elmo Former 3M Parcel

ID: 249

WASHINGTON County Watershed, # Corps Bank Service Area

Based on the MnRAM data input from field and office review and using the classification settings as shown below, this wetland is classified as Manage 2

Functional rank of this we based on MnRAM data		Self-defined classification value settings for this management level	
Low	Vegetative Diversity/Integrity		Moderate
Moderate	Habitat Structure (wildlife)		Moderate
Not Applicable	Amphibian Habitat		Low
Not Applicable	Fish Habitat		Moderate
Not Applicable	Shoreline Protection		Low
Low	Aesthetic/Cultural/Rec/Ed and Habitat	Moderate /	Low
Moderate	Stormwater/Urban Sensitivity and Vegetative Diversi	ty -/	-
Low	Wetland Water Quality and Vegetative Diversity	-/	-
Moderate	Characteristic Hydrology and Vegetative Diversity	-/	-
Moderate	Flood/Stormwater Attenuation*		-
Not Applicable	Commericial use*		-
Moderate	Downstream Water Quality*		-

The critical function that caused this wetland to rank as **Manage 2** was **Maintenance of Characteristic Wildlife Habitat Structure** 

Details of the formula for this action are shown below:

# Maintenance of Characteristic Wildlife Habitat Str (Q3e\*2+Q39+Q37+Q40+Q41+(Q23+Q24+Q25)/3+Q13+Q20)/9

Question	Value	Description
13	1	Outlet: hydrologic regime
20	0.5	Stormwater runoff
23	0.5	Buffer width
24	1	Adjacent area Management
25	0.5	Adjacent area diversity
37	0.1	Vegetation cover interspersion
39	0.1	Detritus
3e	0.1	<no description="" found=""></no>

\* The classification value settings for these functions are not adjustable

# Management Classification Report for 16349 W4

ID: 249

# of Lake Elmo Former 3M Parcel

WASHINGTON County Watershed, # **Corps Bank Service Area** 

- 40 0.5 Wetland interspersion/landscape
- 41 0.5 Wildlife barriers
- This report was printed on: Friday, April 16, 2021

\* The classification value settings for these functions are not adjustable

# **MnRAM: Site Response Record**

For Wetland: 16349 W4 Location: 82-029-21-16-001

## City of Lake Elmo Former 3M Parcel

Plant Community: Fresh (Wet Cowardin Classification: PEM1B	t <b>) Meadow</b> Circular 39: Type 2
<ul><li><i>4 Listed, rare, special species?</i></li><li><i>5 Rare community or habitat?</i></li></ul>	No No
6 Pre-European-settlement condition	on? No
Hydrogeomorphology / topograp 7 Depress	o <i>hy:</i> ional/Isolated
<ul><li>8-1 Maximum water depth</li><li>8-2 % inundated</li></ul>	0 inches 0%
9 Immediate drainagelocal WS	5 acres
10 Esimated size/existing site:	(see #66)
11-Upland Soil 264	

264

11-Wetland Soil

12	Outlet for flood control	А
13	Outlet for hydro regime	А
14	Dominant upland land use	С
15	Wetland soil condition	С
16	Vegetation (% cover)	100%
17	Emerg. veg flood resistance	NA
18	Sediment delivery	С
19	Upland soils (soil group)	В
20	Stormwater runoff	В
21	Subwatershed wetland density	В
22	Channels/sheet flow	А
23	Adjacent buffer width	) feet
Adj	iacent area management	
24-		100%

24 <b>-</b> B	Manicured	0%
24 <b>-</b> C	Bare	0%

#### Adjacent area diversity/structure

25-A	Native	0%
25 <b>-</b> B	Mixed	100%
25 <b>-</b> C	Sparse	0%

#### Adjacent area slope

26-A	Gentle	100%
26-B	Moderate	0%
26 <b>-</b> C	Steep	0%

27 Downstream sens./WQ protect. C

В

No

0%

No

No

C NA

С

В

В

0 feet

- 28 Nutrient loading
- *29 Shoreline wetland?*

#### Shoreline Wetland

- 30 Rooted veg., % cover31 Wetland in-water width
- 32 Emerg. veg. erosion resistance
- 33 Erosion potential of site
- 34 Upslope veg./bank protection
- 35 Rare wildlife?
- 36 Scare/Rare/S1/S2 community37 Vegetative cover
- 38 Veg. community interspersion
- *39* Wetland detritus
- 40 Interspersion on landscape
- 41 Wildlife barriers

#### Amphibian-breeding potential

42	Hydroperiod adequacy	Inadequate
43	Fish presence	А
44	Overwintering habitat	
45	Wildlife species (list)	
46	Fish habitat quality	NA
47	Fish species (list)	
48	Unique/rare opportunity	No
<i>49</i>	Wetland visibility	В
50	Proximity to population	No
51	Public ownership	С
52	Public access	С
53	Human influence on wetland	В
54	Human influence on viewshed	C
55	Spatial buffer	С
56	Recreational activity potentia	l C
57	Commercial crophydro impo	act NA

#### Groundwater-specific questions

58	Wetland soils	Recharge
59	Subwatershed land use	Recharge
<i>60</i>	Wetland size/soil group	Recharge
61	Wetland hydroperiod	Recharge
62	Inlet/Outlet configuration	Recharge
63	Upland topo relief	Discharge
Ad	ditional information	
64	Restoration potential	No
65	LO affected by restoration	
66	Existing size	0.33
	Restorable size	0
	Potential new wetland	0
67	Average width of pot. buffer	0 feet
68	Ease of potential restoration	ı
69	Hydrologic alterations	0
70	Potential wetland type	0
~ 1	Stormwater sensitivity	C
71		

WS#

Service Area:

For functional ratings, please run the Summary tab report. This report printed on: 4/16/2021





Valley Branch Watershed District-wide MnRAM Assessment 4/16/2021

\* Field validation resulted in a different determination from VBWD assessment. See Appendix D for documentation.

# Appendix E

**OFF-SITE AGRICULTURE REVIEW** 

# Offsite Hydrology Review Investigation Areas



# Legend

- Project Parcels
- Washington Co. Parcels
- Investigation Area
- Excluded Area



**PID:** 163-1602921240002



SOURCE: MnDNR, USDA, ESRI, TIGER, Bing, Washington Co., Anderson Engineering

#### Wetland Hydrology from Aerial Imagery - Recording Form

Project: Comm #:	City of Lake Elmo - 16349		Date: 4/5/2021 Legal: S 6, T 102N, R31W			County: Washington Lat/Long: 44.995, -92.939					
Image Date	Image Source	Climate Condition (wet, dry, normal)				Image	e Interpret	ation			
		(wet, dry, normal)	Area A	Area B	Area C	Area D	Area E	Area F	Area G	Area H	Area I
2020	MnGEO	Normal	NV	NV	SS	NV	WS	WS	WS	NV	NV
2019	FSA	Wet	CS	CS	CS	CS	WS	CS	WS	CS	CS
2018	Google Earth	Wet	NV	NV	SS	NV	SS	SS	WS	NV	NV
2017	FSA	Normal	NV	NV	CS	NV	CS	CS	WS	CS	CS
2016	MnGEO	Wet	NV	NV	NV	NV	SS	SS	WS	NV	NV
2015	FSA	Wet	NV	NV	CS	CS	CS	CS	WS	NV	NV
2014	Google Earth	Wet	NV	NV	SS	NV	SS	SS	WS	NV	NV
2013	FSA	Wet	CS	CS	CS	CS	CS	CS	WS	CS	CS
2012	Google Earth	Normal	NV	NV	NV	NV	SS	SS	WS	NV	NV
2010	FSA	Wet	NV	NV	AP	NV	AP	AP	WS	CS	NV
2009	FSA	Normal	NV	NV	CS	CS	CS	NV	WS	NV	CS
2008	FSA	Normal	NV	NV	CS	NV	NV	NV	WS	NV	NV
2006	Google Earth	Normal	NV	NV	SS	SS	SS	SS	WS	NV	NV
2004	USGS	Normal	NV	NV	CS	CS	CS	SS	WS	NV	NV
2003	FSA	Normal	CS	NV	DO	DO	CS	DO	WS	CS	CS
	Number of Normal         8									3	

Acronyms:		
WS-wetland signature	SS-soil wetness signature	CS-crop stress
NC-not cropped	AP-altered pattern	NV-nomal vegetatic cover
DO - drowned out	SW-standing water	NSS-no soil wetness signature

#### Wetland Hydrology from Aerial Imagery - Recording Form

 Project:
 City of Lake Elmo - Ideal Avenue Property

 Comm #:
 16349

 Decision Matrix.

Date: 4/5/2021 Legal: S 6, T 102N, R31W County: Washington Lat/Long: 44.995, -92.939

Hydric Soils Present	NWI Mapped	Percent with wet signatures from Exhibit 1	Field Verification Required	Wetland ?
YES	Yes	>50%	No	Yes
YES	Yes	30-50%	No	Yes
YES	Yes	<30%	Yes	Yes if other hydrology indicators present
YES	No	>50%	% No Yes	
YES	No	30-50%	Yes	Yes if other hydrology indicators present
YES	No	<30%	No	No
No	Yes	>50%	No	Yes
No	Yes	30-50%	No	Yes
No	Yes	<30%	No	No
No	No	>50%	Yes	Yes if other hydrology indicators present
No	No	30-50%	Yes	Yes if other hydrology indicators present
No	No	<30%	No	No

#### TABLE 1

Area	Hydric Soils Present	NWI Mapped	Percent with wet signtures from Exhibit 1	Other Hydrolgy Indicators Present <sup>1</sup>	Wetland?
А	NO	NO	13.00%		NO
В	NO	NO	0.00%		NO
С	NO	NO	88.00%		FIELD VERIFICATION REQUIRED
D	NO	NO	50.00%		FIELD VERIFICATION REQUIRED
E	NO	NO	75.00%		FIELD VERIFICATION REQUIRED
F	NO	NO	63.00%		FIELD VERIFICATION REQUIRED
G	NO	NO	100.00%		FIELD VERIFICATION REQUIRED
Н	NO	NO	25.00%		NO
I	NO	NO	38.00%		FIELD VERIFICATION REQUIRED

<sup>1</sup> Answer N/A if field verification is not required and was not conducted

Wetland Hydrology from Aerial Imagery - Recording Form

Project: City of Lake Elmo - Ideal Avenue Property Comm #: 16349 Precipitation Data Date: 4/5/2021 Legal: S 6, T 102N, R31W County: Washington Lat/Long: 44.995, -92.939

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	ANN	Precipitation Condition
2020	1.72	5.82	7.85	4.25	2.85	1.24	2.78	32.74	Normal
2019	4.17	6.68	2.74	5.26	6.65	4.90	5.64	45.16	Wet
2018	2.48	3.26	4.87	3.69	3.95	6.10	4.01	35.48	Wet
2017	3.48	6.16	3.38	2.54	6.20	1.52	4.36	31.91	Normal
2016	3.01	2.56	4.61	6.03	8.98	5.98	3.30	42.45	Wet
2015	2.12	4.79	5.06	6.91	3.33	5.59	3.07	40.34	Wet
2014	7.42	4.56	10.71	2.52	3.81	2.27	1.60	38.90	Wet
2013	4.98	5.75	7.45	2.00	0.91	1.63	3.81	33.32	Wet
2012	3.41	7.52	3.67	5.47	1.29	0.52	1.22	29.95	Normal
2011	3.29	3.83	4.67	8.33	4.95	0.78	0.94	32.87	Normal
2010	2.24	3.64	5.87	5.34	5.32	5.97	1.91	37.99	Wet
2009	1.65	0.70	3.48	2.41	7.17	0.56	6.80	28.72	Normal
2008	4.38	2.97	3.98	2.35	3.57	2.78	2.13	27.84	Normal
2007	1.59	3.65	1.30	1.89	6.28	5.55	4.51	32.44	Normal
2006	4.18	3.07	2.73	1.46	7.92	3.34	0.56	29.47	Normal
2005	2.39	3.53	6.01	2.98	5.58	5.32	5.78	38.67	Wet
2004	2.72	6.71	4.27	3.02	1.82	4.23	3.26	32.13	Normal
2003	2.16	6.80	5.90	2.52	0.60	2.82	1.15	26.89	Normal
2002	3.71	3.47	8.94	6.40	6.54	4.27	4.89	42.16	Wet
2001	7.28	4.02	5.72	1.81	3.23	3.55	1.39	34.07	Wet

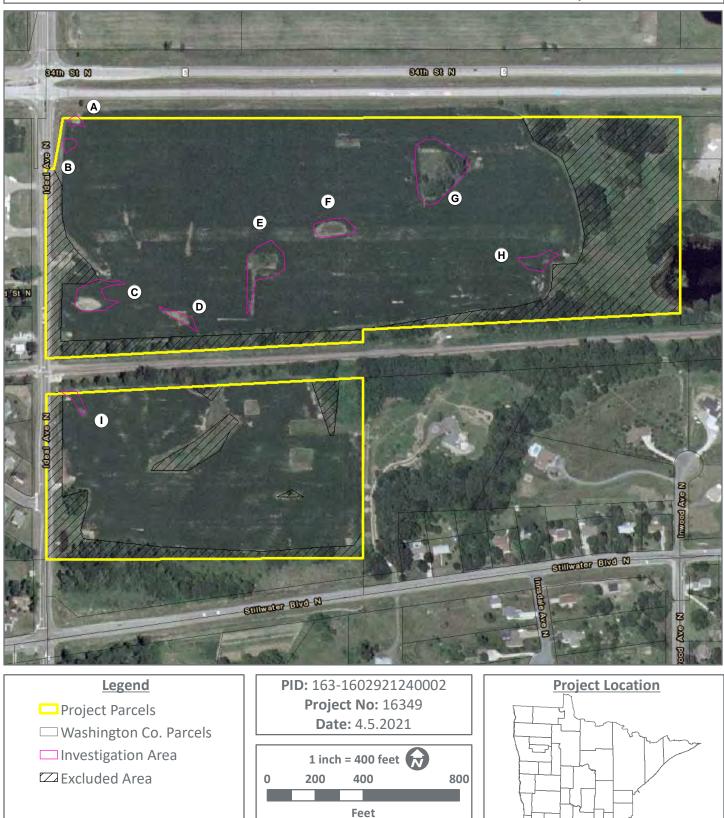
#### color key:

total is in lowest 30th percentile of the period-of-record distribution

total is => 30th and <= 70th percentile

total is in highest 30th percentile of the period-of-record distribution

# 2003 FSA Aerial Image Normal Precipitation Condition



THE CITY OF

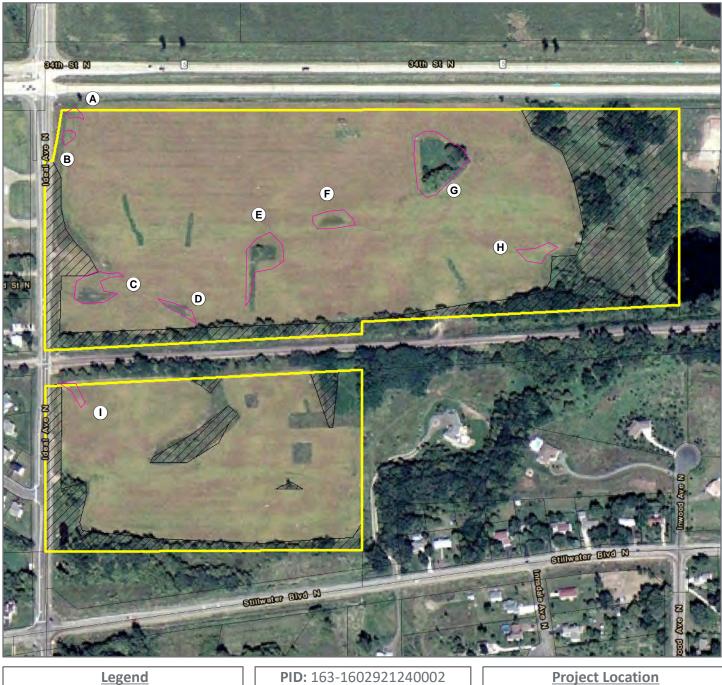
13605 1st Ave N #100, Plymouth, MN 55441

P 763.412.4000 F 763.412.4090 ae-mn.com

**City of Lake Elmo** 

Washington County, MN SOURCE: MnDNR, USDA, ESRI, TIGER, Bing, Washington Co., Anderson Engineering

# 2004 USGS Aerial Image Normal Precipitation Condition



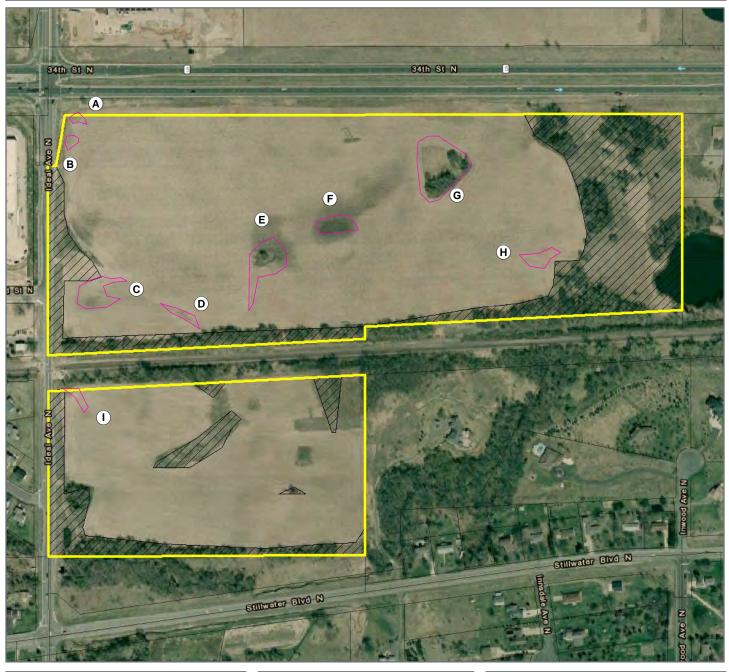
- □ Project Parcels
- □ Washington Co. Parcels
- Investigation Area
- 🖾 Excluded Area





SOURCE: MnDNR, USDA, ESRI, TIGER, Bing, Washington Co., Anderson Engineering

# 2006 Google Earth Aerial Image Normal Precipitation Condition

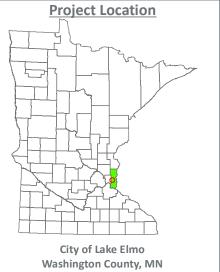


# Legend Project Parcels Washington Co. Parcels Investigation Area

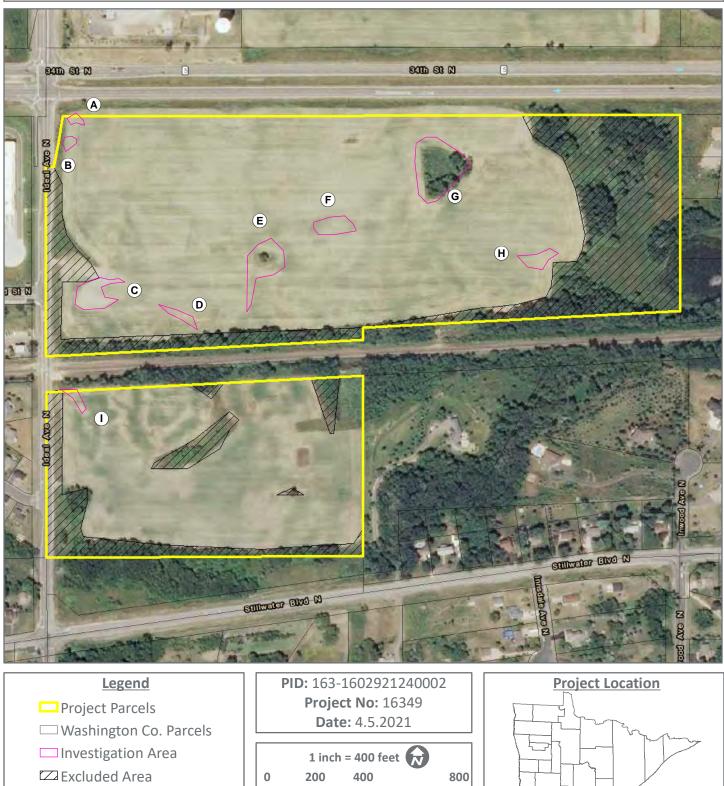
🖾 Excluded Area



**PID:** 163-1602921240002

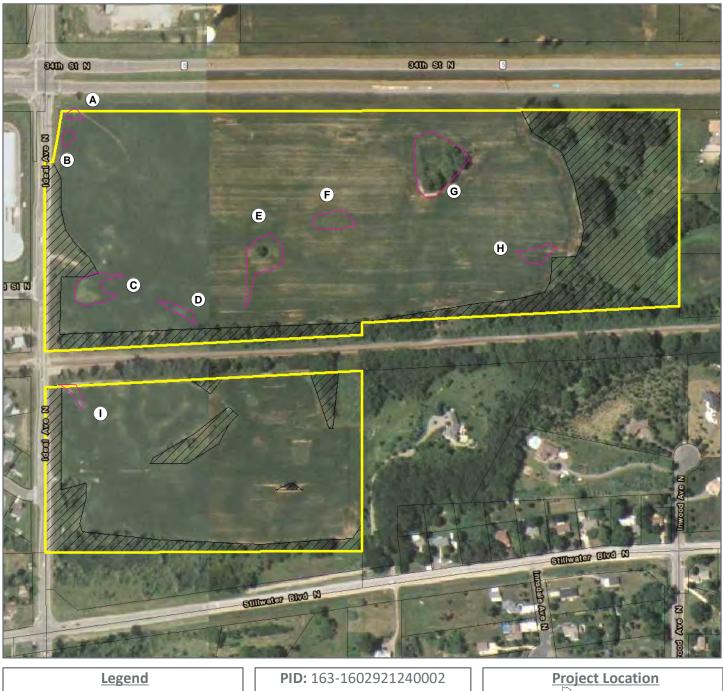


# 2008 FSA Aerial Image Normal Precipitation Condition





# 2009 FSA Aerial Image Normal Precipitation Condition

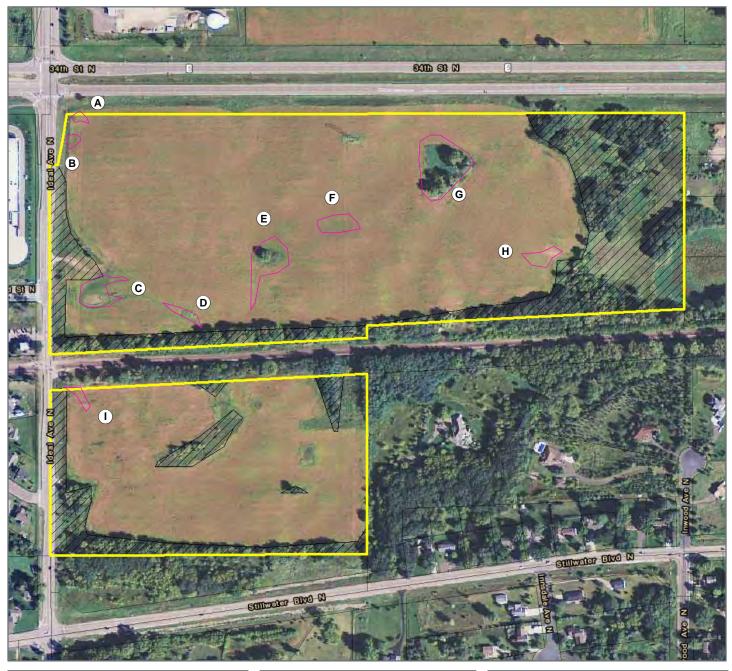








# **2010 FSA Aerial Image** Wet Precipitation Condition



# Legend

- Project Parcels
- □ Washington Co. Parcels
- Investigation Area
- 🖾 Excluded Area



**PID:** 163-1602921240002



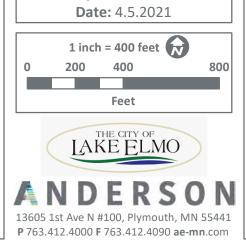


SOURCE: MnDNR, USDA, ESRI, TIGER, Bing, Washington Co., Anderson Engineering

# 2012 Google Earth Aerial Image Normal Precipitation Condition





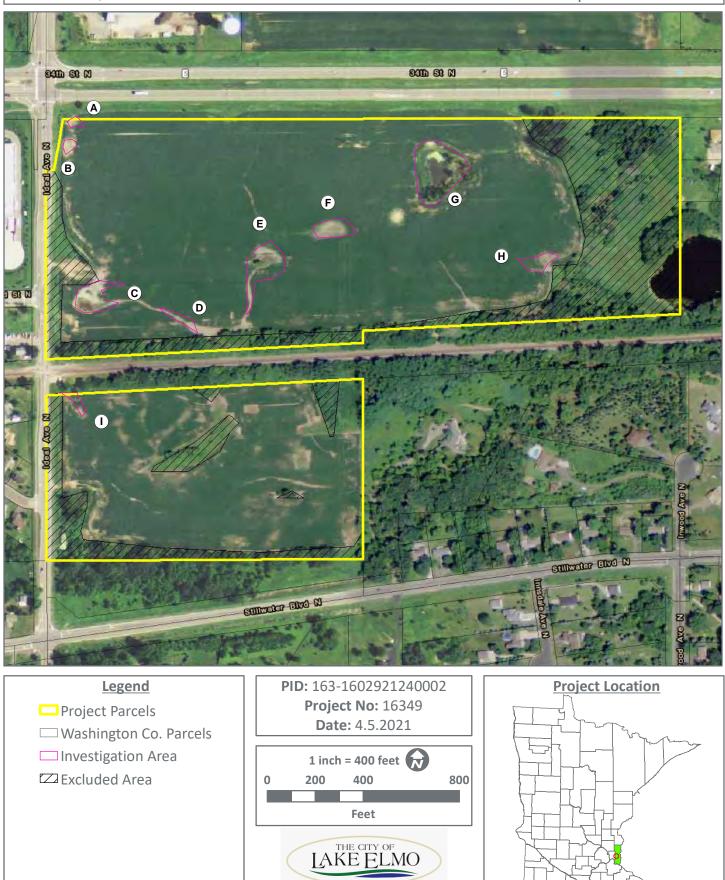


**Project No:** 16349



SOURCE: MnDNR, USDA, ESRI, TIGER, Bing, Washington Co., Anderson Engineering

# **2013 FSA Aerial Image** Wet Precipitation Condition



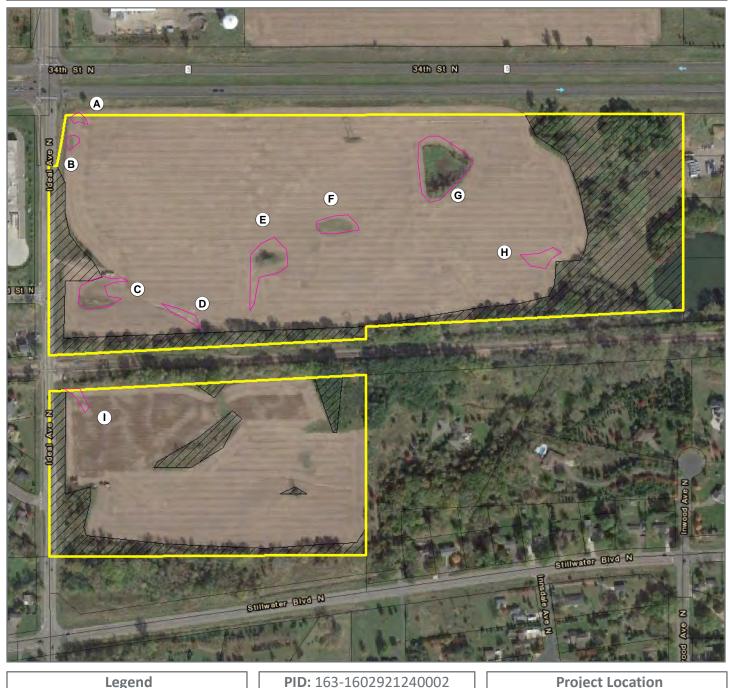
 INDERSON

 13605 1st Ave N #100, Plymouth, MN 55441

 P 763.412.4000 F 763.412.4090 ae-mn.com



# 2014 Google Earth Aerial Image Wet Precipitation Condition



# Legend Project Parcels

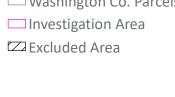
- □ Washington Co. Parcels
- Investigation Area
- Excluded Area

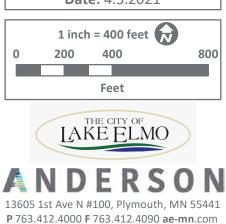




# **2015 FSA Aerial Image** Wet Precipitation Condition

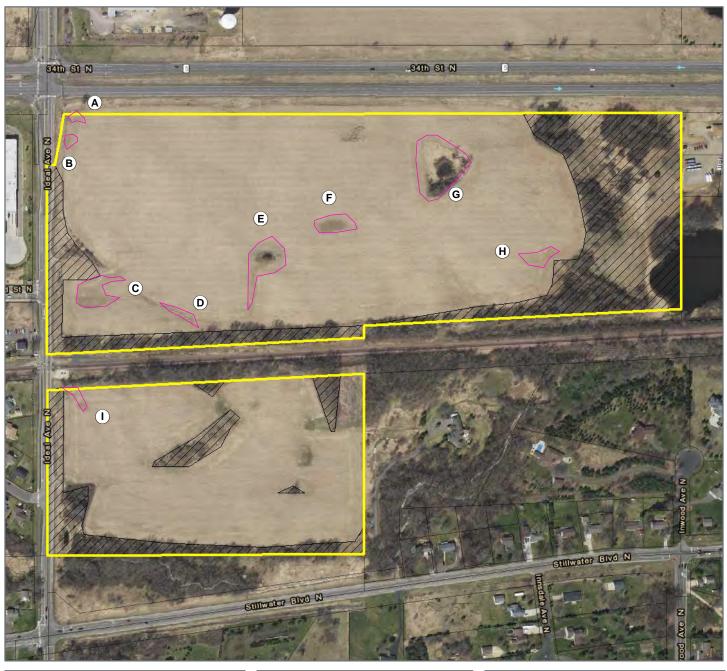








# 2016 MnGEO Aerial Image Wet Precipitation Condition



# <u>Legend</u>

- Project Parcels
- □ Washington Co. Parcels
- Investigation Area
- 🖾 Excluded Area



**PID:** 163-1602921240002

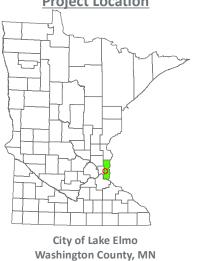


SOURCE: MnDNR, USDA, ESRI, TIGER, Bing, Washington Co., Anderson Engineering

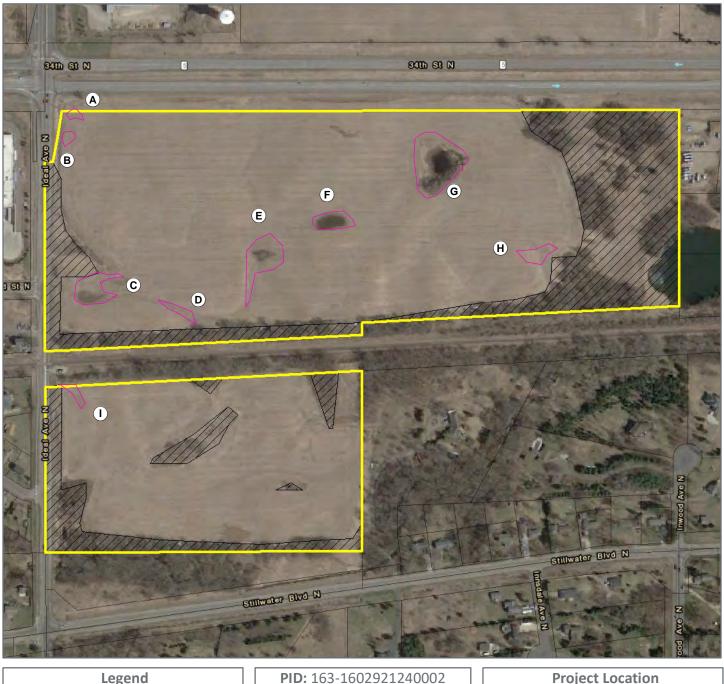
# 2017 FSA Aerial Image Normal Precipitation Condition







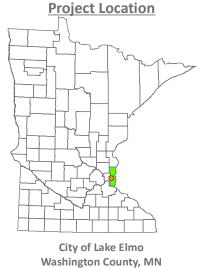
# 2018 Google Earth Aerial Image Wet Precipitation Condition



# Legend Project Parcels

- □ Washington Co. Parcels
- Investigation Area
- 🖾 Excluded Area





SOURCE: MnDNR, USDA, ESRI, TIGER, Bing, Washington Co., Anderson Engineering

# 2019 FSA Aerial Image Wet Precipitation Condition



# Legend

- Project Parcels
- □ Washington Co. Parcels
- Investigation Area
- Z Excluded Area





SOURCE: MnDNR, USDA, ESRI, TIGER, Bing, Washington Co., Anderson Engineering

# 2020 MnGEO Aerial Image Normal Precipitation Condition



# Legend

- Project Parcels
- □ Washington Co. Parcels
- Investigation Area
- Excluded Area



**PID:** 163-1602921240002



Appendix F

CREDENTIALS

# **A N D E R S O N**

#### CERTIFICATIONS

Professional Wetland Scientist #1832 MN Certified Wetland Delineator #1016

## EDUCATION

MS Water Resources Management University of Wisconsin-Madison

BS Biology; Ecology Minnesota State University- Mankato

#### SPECIALIZED TRAINING

Wetland Delineation & Management Training Richard Chinn Environmental Training, Inc.

Wetland Plant Identification Biotic Consultants Inc.

Plant Identification for Wetland Delineation University of Wisconsin-La Crosse

Watershed Academy Web Certificate United States Environmental Protection Agency

#### **PROFESSIONAL ASSOCIATIONS**

Society of Wetland Scientists MN Wetland Professionals Association (WPA) MN WPA President 2010 Wisconsin Wetlands Association Association of State Wetland Managers Minnesota Native Plant Society Ecological Society of America

#### **TOTAL EXPERIENCE**

19 years

#### YEARS WITH CURRENT FIRM

2004 to Present

#### **PUBLICATIONS & PRESENTATIONS**

The Future of Rowan Creek Watershed: Connecting Land Use and Management with Water Quality. 2003. Water Resources Management Workshop 2002, Gaylord Nelson Institute for Environmental Studies, University of Wisconsin, Madison.

The Tumultuous World of Drainage Districts: An Analysis of Existing Management Arrangements, with Recommendations. Working Paper Series 2002-1. Water Resources Institutions and Policies, Department of Urban and Regional Planning, University of Wisconsin, Madison.

South Shore Lake Bemidji Remediation & Restoration, Society of American Military Engineers meeting June 22, 2016, St Paul, MN.

# Benjamin Hodapp, PWS

Environmental Services Manager

# SUMMARY OF EXPERIENCE

Benjamin Hodapp, an Environmental Specialist and Senior Project Manager, brings a broad background of knowledge and experience in the environmental field to the Anderson Engineering team. Benjamin has a unique combination of multi-disciplinary academic training and work experience at various levels of federal, state and local government and private consulting.

Benjamin's project experience includes natural resource inventory and assessment; wetland delineation, mitigation design and monitoring; regulatory permitting; agency and stakeholder coordination; environmental impact assessment, environmental document preparation and public outreach.

### **REPRESENTATIVE PROJECTS**

**Southwest Light Rail Transit- Metropolitan Council – Minneapolis, MN:** Project manager for wetland delineation and permitting efforts in support of multidisciplinary consultant team for preparation of Final Environmental Impact Statement for proposed 16 mile light rail alignment. Project tasks included completion of wetland delineations, preparation of all federal, state and local wetland permits and wetland mitigation plans, quality assurance and quality control of all deliverable products.

Harriet Island to South St. Paul Regional Trail – City of St Paul, City of South St. Paul and Dakota County – St Paul, MN: Project manager for wetland delineation, mapping and assessment efforts in support of multi-disciplinary consultant team responsible for preliminary engineering and final design. Project tasks included project management oversight and coordination, supervising field staff in completion of both off-site and on-site wetland determinations, boundary delineations, GPS mapping and functional assessments. Oversaw preparation of and responsible for quality assurance and quality control of all deliverable products.

**Crosstown Blvd. Pedestrian Trail – City of Andover – Andover, MN:** Project Manager for wetland delineation associated with proposed City trail improvements. Services included a wetland delineation, GPS mapping and functional assessment document findings and coordination and approval of findings with federal, state and local regulatory agencies.

**Bennett Family Park Improvements – Minnetonka, MN:** Project Manager for wetland delineation associated with proposed baseball complex improvements. Services included a wetland delineation, GPS mapping and functional assessment document findings and coordination and approval of findings with federal, state and local regulatory agencies.

Section 401/404 Wetland Permitting – Fort McCoy Commemorative Park Expansion – Fort McCoy, WI: Provided project management services for Section 401/404 permitting associated with proposed wetland impacts resulting from the Commemorative Park Expansion Project at the Fort McCoy U.S. Army installation. Project tasks included project management, developing a wetland mitigation strategy in compliance with Section 401/404 and state wetland permitting requirements and oversight and quality control in preparing Section 401/404 permit application.

# **A N D E R S O N**

### **EDUCATION**

MS Environmental & Conservation Sciences North Dakota State University

BS Biological Sciences North Dakota State University

## CERTIFICATIONS

MN Certified Wetland Delineator #1354

MnDNR Tree Inspector #201005102

Erosion and Stormwater Management Construction Site Management

HAZWOPER 40-hour Training

**TOTAL EXPERIENCE** 7 years

**YEARS WITH CURRENT FIRM** 2018 to present

# **Alex Yellick**

Sr. Environmental Scientist

#### SUMMARY OF EXPERIENCE

Alex Yellick, an Environmental Associate, brings a broad range of knowledge and experience in the environmental field to the Anderson Engineering team. Prior to his employment with Anderson Engineering of MN, LLC, Alex worked as a certified wetland delineator and has background in biologic assessments, regulatory review/permitting and Phase I Environmental Site Assessments. The skills that Alex developed through his educational background and experience make him proficient in assessing and addressing a range of environmental issues, and clearly communicating solutions to clients and various regulatory agencies.

Alex's project experience includes biological assessments of urban and rural wetlands, environmental compliance oversight, stormwater best management practices design and compliance, and Phase I site assessments. Alex has experience with Global Positioning Systems, Geographic Information Systems, and AutoCAD.

### **REPRESENTATIVE PROJECTS**

Wetland Delineation/Assessment – Various Locations: services included wetland delineation and assessment of permitting requirements in support of linear construction projects and real-estate transactions. Project tasks included completion of wetland field delineations following the 1987 United States Army Corps of Engineers Wetland Manual and Midwest Regional Supplement, boundary delineations, GPS mapping, and preparation of reports to document findings and assess wetland impacts.

**Permitting and Compliance Activities – Minnesota, Arkansas, Mississippi, Oklahoma, and Texas:** Services included environmental permitting and operational compliance assistance associated with linear project construction and maintenance activities. Project tasks included assessment of proposed project environmental impacts to Federal and State regulated waters, floodplains, threatened and endangered species, historic properties, air quality, and local jurisdictional requirements, and preparation of permit applications and associated materials.

**Stormwater Permitting and Compliance Activities – Greater Minneapolis-St. Paul Metropolitan Area:** Provided National Pollution Discharge Elimination System permitting and compliance support to linear construction project activities. Project tasks consisted of evaluating project workspaces for appropriate stormwater best management practices, preparation of stormwater plans/permits, permit compliance inspections and post-construction restoration inspections, and preparation of reports to document inspection findings.

**Phase I Environmental Site Assessment – Various Locations:** Prepared Phase I Environmental Site Assessments of residential, commercial, industrial, and vacant properties in accordance with ASTM E1527-13. Project tasks generally included environmental desktop review, regulatory file review, site inspections, interviews, and preparation of reports to document findings.

# ANDERSON

#### EDUCATION

Bachelor of Science: Wildlife Biology Minor: Wetlands Ecology and Biology

Bemidji State University – Bemidji

#### SPECIALIZED TRAINING

S-130 Basic Wildland Firefighter

S-190 Introduction to Fire Behavior

L-180 Human Factors in the Wildland Fire Service

Certified Open Water Diver

**OSHA 10 Hour Training** 

#### **PROFESSIONAL ASSOCIATIONS**

MN Wetland Professionals Association (WPA)

The Wildlife Society (TWS)

**TOTAL EXPERIENCE** 

2 years

#### YEARS WITH CURRENT FIRM

2020 to present

#### SUMMARY OF EXPERIENCE

Dylan Kruzel, an Environmental Associate, brings a broad background of knowledge and experience in the environmental field to the Anderson Engineering team. Prior to his employment with Anderson Engineering of MN, LLC, Dylan worked for the Soil and Water Conservation District (SWCD) of Becker County as a Conservation Technician. He conducted field evaluations for conservation plans, monitored conservation easements, and provided available natural resource program information to landowners with conservation concerns. He has also assisted in the design and installation of various native habitat, shoreline restoration, rain garden, and storm water mitigation projects. The skills that Dylan has developed through his educational background and experience make him proficient in assessing and addressing a range of ecological indications and environmental issues.

**Dylan J. Kruzel** 

**Environmental Scientist** 

Dylan's project and educational experience includes conservation management practices, habitat management evaluations, species identification, regulatory permitting, environmental document preparation, wetland delineation and classifications. Dylan has experience with Collector for ArcGIS, Geographic Information Systems, Global Positioning Systems, and Realtime Landscape Architect.

#### **REPRESENTATIVE PROJECTS**

**Wetland Delineation/Reporting – Various Locations:** Services included wetland delineation and reporting in support of linear construction projects and real-estate transactions for federal, state, and local agencies, as well as private companies. Project tasks included completion of wetland field delineations following the 1987 Corps of Engineers Wetland Delineation Manual and Regional Supplement: Midwest Region, and Northcentral and Northeast Region, GPS mapping, and preparation of reports to document findings and assess wetland impacts.

**Permitting Specialist** – **MN:** Services include preparation of permit applications in accordance with the Minnesota Wetland Conservation Act to support the planning, design, and mitigation for residential, commercial, and state land development projects.

**NEPA Documentation – MN:** Services include preparation of Categorical Exclusion Determination documents in accordance with the Minnesota Department of Transportation Highway Project Development Process and the Department of Veteran Affairs (VA) NEPA Interim Guidance for Projects. Tasks include evaluation, coordination, and responding to assist project managers in environmental documentation for Minnesota highways and VA health care facilities.

**Project Book – US Department of Veteran Affairs (VA) – Dallas VA Medical Center, TX:** Project Coordinator to guide a multidisciplinary team in development of a project book for expansion of and upgrades to the Dallas VA Medical Center. The project consists of organizing and collection of pre-design information that will serve as the foundation of all future design work by defining project requirements and refining cost elements. Efforts involve close coordination with members of the design team.

**Land Alterations and Field Monitoring – Becker County SWCD – MN:** Services include performing the following general activities in compliance with federal, state, and local regulations: assisting in site evaluations and installing for various cost share projects like conservation easements, management practices, and shoreland alterations.