Appendix H

Wetland Delineation Reports

Wetlands and Waters Survey

Lake Charlotte Solar
Martin County, Minnesota

June 16, 2023

PRESENTED TO

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EXECUTIVE SUMMARY

This report presents the findings of a Wetlands and Waters Survey completed on behalf of Lake Charlotte Solar, LLC, for the proposed Lake Charlotte Solar project in Martin County, Minnesota (the Project). The Survey Area includes approximately 1,508 acres of land where solar energy facilities may be developed.

The field surveys completed for the Project identified 33 wetland and water features totaling approximately 20.5 acres within the Survey Area. Each of the identified wetlands and waters in the Survey Area was reviewed for potential jurisdiction with one or more of the following regulating entities:

- U.S. Army Corps of Engineers (USACE) waters of the U.S. (WOTUS) under Section 404 of the Clean Water Act (CWA).
- The Minnesota Wetland Conservation Act (WCA) administered locally by the Martin County Soil and Water Conservation District (SWCD).
- Mapped resources in the Public Waters Inventory (PWI) regulated by the Minnesota Department of Natural Resources (MN DNR) under the Public Waters Work Program.

Table ES-1 summarizes the identified wetland and water resources and their recommended jurisdictional status. However, only the USACE, Martin County SWCD, and MN DNR can make the final determination on the regulatory jurisdiction of wetlands and waters.

Table ES-1: Summary of Wetlands and Waters in the Survey Area and Probable Regulatory Jurisdiction

Aquatic Resource	Cowardin Classification Code(s)[1]	Survey Area		USACE and MN WCA Jurisdiction		USACE and MN DNR		MN WCA Jurisdiction		USACE Jurisdiction		Not Jurisdictional	
		Count	Acres	Count	Acres	Count	Acres	Count	Acres	Count	Acres	Count	Acres
Seasonally Flooded Basin Wetland	PEMA, PFOA	24	17.107[2]	2	0.211	1	0.353[2]	21	16.543[2]	0	0	0	0
Wetland Complex Composed of Multiple Types	PEMA, PEMAx, PEMCx, PSSA,	3	1.737[2]	1	1.389[2]	1	0.283[2]	1	0.065[2]	0	0	0	0
Wetlands Subtotal		***27***	***18.844***[2]	***3***	***1.6***	***2***	***0.636***[2]	***22***	***16.608***[2]	***0***	***0***	***0***	***0***
Pond	PUBGx	1	0.217	0	0	1	0.217	0	0	0	0	0	
Ponds Subtotal		***1***	***0.217***	***0***	***0***	***1***	***0.217***	***0***	***0***	***0***	***0***	***0***	***0***
Lake	L2UBH	2	1.159[2]	0	0	2	1.159[2]	0	0	0	0	0	
Lakes Subtotal		***2***	***1.159***[2]	***0***	***0***	***2***	***1.159***[2]	***0***	***0***	***0***	***0***	***0***	***0***
Intermittent Stream	R4SBC	1	0.237	0	0	0	0	0	0	1	0.237	0	0
Ephemeral Stream	R4SBA	2	0.009	0	0	0	0	0	0	0	0	2	0.009
Streams Subtotal		***3***	***0.246***	***0***	***0***	***0***	***0***	***0***	***0***	***1***	***0.237***	***2***	***0.009***
Total of All Aquatic Resources		**33**	**20.466**[2]	**3**	**1.6**[2]	**5**	**2.012**[2]	**22**	**16.608**[2]	**1**	**0.237**	**2**	**0.009**

[1] Cowardin wetland classification codes are defined in Appendix F of the report.
[2] Acres depicted on Figures 4 and 5 in Appendix A and detail maps in Appendix C may include acreage outside the Survey Area.

TABLE OF CONTENTS

LIST OF TABLES

APPENDICES

1.0 INTRODUCTION

1.1 PURPOSE

Lake Charlotte Solar, LLC proposes to develop the Lake Charlotte Solar project (the Project) in Martin County, Minnesota. Tetra Tech, Inc. (Tetra Tech) has completed surveys to identify and delineate wetlands and waters for the proposed Project within an approximately 1,508-acre area (Survey Area) where the proposed solar energy facility may be developed. The wetlands and waters survey included desktop and field investigations of the Survey Area to identify the presence and location of wetlands and other surface waters and determine which, if any, may be subject to U.S. Army Corps of Engineers (USACE) jurisdiction, Minnesota Department of Natural Resources (MN DNR) jurisdiction, or regulation under the Minnesota Wetland Conservation Act (WCA). This report describes the Survey Area, regulatory framework, methods, survey results and conclusions, and references used to support the conclusions. Appendices include figures illustrating the Survey Area, select reviewed reference materials, survey results, wetland determination data forms, and photographs.

1.2 SITE LOCATION AND ENVIRONMENTAL SETTING

The Survey Area includes approximately 1,508 acres of land where the proposed solar energy facilities may be developed (Appendix A: Figure 1). The Survey Area is located approximately 2 miles north of the city of Fairmont in Martin County, Minnesota and encompasses portions of Sections 7, 8, 16, 17, 18, and 21 in Rutland Township (Township 103 North, Range 30 West).

The landscape of Martin County was affected by the last glacial period, and topography is characterized by gently undulating slopes with small hills and ridges and broad lowland areas with many depressions. The Survey Area is located within a glacial till plain adjacent to one of three chains of lakes located within Martin County. The chains of lakes are thought to be part of a major drainage system that flowed south prior to the last glacial period. As the last glaciers melted, soil partially filled the valley forming the chain of lakes (USDA 1989).

1.3 REGULATORY FRAMEWORK

1.3.1 U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (USACE) has regulatory jurisdiction over waters of the U.S. (WOTUS) under Section 404 of the Clean Water Act (CWA) as defined by 33 CFR Part 328. The extent of the USACE regulatory jurisdiction over WOTUS was defined by the USACE and U.S. Environmental Protection Agency (EPA) in a final rule published in the Federal Register on January 18, 2023, which became effective on March 20, 2023 (88 FR 3004, January 18, 2023). However, the U.S. Supreme Court's May 25, 2023, decision in the case of *Sackett v. EPA*, 598 U.S. ___ (2023) found that only wetlands with a continuous surface connection to bodies that are WOTUS in their own right are WOTUS. As of May 26, 2023, USACE has indicated that they will be interpreting the definition of WOTUS consistent with the Supreme Court's decision (USACE 2023).

The 2023 definition of WOTUS as interpreted consistent with the *Sackett* decision indicates that the USACE has regulatory jurisdiction over traditional navigable waters; tributaries of traditional navigable waters that are relatively permanent; and wetlands adjacent to another jurisdictional water such that the wetland is an indistinguishable part of the jurisdictional water. Relatively permanent tributaries have flowing or standing water year-round or continuously during certain times of the year. Relatively permanent waters do not include surface waters with flowing or standing water for only a short duration in direct response to precipitation.

The USACE is the sole authority in determining whether federal jurisdiction extends to specific wetlands or waters. Suggestions regarding the USACE jurisdiction of wetlands and waters in this report are preliminary and based on Tetra Tech's interpretation of the guidance issued by the USACE and EPA, review of available desktop data, and evidence observed in the field. There are two types of jurisdictional determinations (JDs) that can be requested from USACE to determine the jurisdiction of wetlands and waters. A preliminary JD (PJD) is a nonbinding written indication that for purposes of calculating impacts and determining compensatory mitigation requirements all waters and wetlands in the review area are treated as jurisdictional WOTUS. An approved JD (AJD) is an official USACE determination that jurisdictional WOTUS are either present or absent in the review area. An AJD precisely identifies the limits of those wetlands and waters determined to be jurisdictional under the CWA.

The USACE determines the type of permit, if any, that may be required under the CWA for projects that affect WOTUS. The USACE authorizes certain activities in WOTUS with pre-issued Nationwide Permits (NWPs) and Regional General Permits (RGPs). Impacts of up to 0.5 acres for utility projects such as solar farms may be authorized by NWP 51 for Land-Based Renewable Energy Generation Facilities and/or the Utility RGP with mitigation usually being required if impacts exceed 0.1 acre. In order to use a NWP or RGP, all general and regional conditions must be met. The Minnesota Pollution Control Agency (MPCA) is responsible for issuing 401 Water Quality Certifications in Minnesota (see Section 1.3.4). The USACE St. Paul District has regulatory jurisdiction over the Survey Area.

1.3.2 Minnesota Wetland Conservation Act

The State of Minnesota regulates wetlands under the Minnesota Wetland Conservation Act (WCA) of 1991, currently implemented under MN Rules Chapter 8420. The WCA generally does not apply to public waters and public waters wetlands that have been inventoried by the Minnesota Department of Natural Resources (MN DNR) (see Section 1.3.3) or to "incidental wetlands", which are wetlands created in non-wetland areas by actions that were not intended to create the wetland such as certain ditches or other excavations.

The WCA requires anyone proposing to drain, fill, or excavate a wetland first to try to avoid disturbing the wetland; second, to try to minimize any impact on the wetland; and, finally, to replace any lost wetland acres, functions, and values. The WCA also establishes eight exempt activities that do not require wetland replacement. One of these exemptions is the "de minimis" exemption for minor wetland impacts. The de minimis exemption threshold ranges from 20 square-feet to 10,000 square-feet depending on the impacted wetland's location in the state, the type of wetland, and location inside or outside of a shoreland wetland protection zone (see Section 1.3.6). Impacts below the relevant threshold do not require wetland replacement. The WCA is administered by Local Government Units

(LGU). The Martin County Soil and Water Conservation District (SWCD) is the LGU responsible for administering the WCA for the Project.

1.3.3 Minnesota Department of Natural Resources

The MN DNR Public Waters Work Permit Program applies to those lakes, wetlands, and streams identified on MN DNR Public Water Inventory maps. Proposed projects affecting the course, current, or cross-section of these water bodies require a Public Waters Work Permit from the MN DNR. There are two types of Public Waters Work Permits available from the MN DNR: general and individual permits. General permits are "pre-issued" permits issued on a statewide or county level. If work proposed in public waters or public waters wetlands meets the requirements of a specific general permit, an individual permit is not required. There are also several categories of projects that are excluded from the Public Waters Work Permit requirement; however, these exclusions would not typically apply to solar energy projects.

Minnesota Regulations, Parts 6120.2500 - 6120.3900 provide minimum standards and criteria to be incorporated into local government shoreland management controls that apply to shorelands of public waters of the state (see Section 1.3.3) that are subject to local government land use controls. Each local government is responsible for the administration and enforcement of its shoreland management controls adopted in compliance with these standards and criteria. These standards establish that the minimum shoreland zone is the area within 1,000 feet of the ordinary high water level of all public lakes; and 300 feet from a river or stream, or the landward extent of a floodplain, whichever is greater. The WCA de minimis exemption thresholds for wetlands within the shoreland zone are less than those outside the shoreland zone (see Section 1.3.2).

1.3.4 Minnesota Pollution Control Agency

Section 401 of the CWA requires certification from the state that any discharge authorized by an NWP or RGP does not violate state water quality standards. The MPCA issues 401 Water Quality Certifications for NWPs and RGPs in Minnesota. The MPCA granted water quality certification with conditions for NWP 51 in a letter dated December 21, 2020, and for the Utility RGP in a letter dated February 13, 2018.

2.0 METHODS

2.1 EXISTING INFORMATION REVIEW

Tetra Tech reviewed available information to identify potential wetlands and waters areas within the Survey Area. The following data sources were reviewed:

- National Wetlands Inventory (NWI) (U.S. Fish and Wildlife Service [USFWS] 2022);
- National Hydrography Dataset (NHD) (United States Geological Survey [USGS] 2022);
- MN DNR Public Waters Inventory (PWI) (MN DNR 2020);
- Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) (FEMA 2023);
- FEMA Flood Insurance Rate Map (FIRM) Panel 270641B (FEMA 1988);

- Natural Resources Conservation Service (NRCS) Soil Survey Geographic (gSSURGO) Soils (NRCS 2022);
- MN DNR 2-foot elevation contours (MN DNR 2022);
- Aerial photography from 2010, 2013, 2015, 2017, and 2019 from U.S. Department of Agriculture (USDA) Farm Service Agency (FSA) National Agricultural Imagery Program (NAIP); and
- Historical precipitation data from the Minnesota State Climatology Office (Minnesota State Climatology Office 2023).

2.2 DESKTOP WETLANDS AND WATERS MAPPING

Tetra Tech reviewed aerial photographs, elevation data, NWI, NHD, PWI, and SSURGO soils data to identify potential wetlands and waters within the Survey Area. Using methods described by USACE and the Minnesota Board of Water and Soil Resources (BWSR) (USACE and BWSR 2016), the aerial photographs were reviewed for wetland signatures, and antecedent precipitation was evaluated to determine if the conditions preceding each photograph were normal, wet, or dry. Signatures at locations of potential wetlands and waters on aerial photographs were classified using eight codes (Table 1). The locations of desktop wetlands and waters were digitized using ArcGIS mapping software.

Table 1. Aerial Photograph Wetland Signature Codes

Code	Classification	Implication	Code	Classification	Implication
CS	Crop Stress	Wetland	WS	Wetland Signature	Wetland
DO	Drowned Out	Wetland	AP	Altered Pattern	Wetland
NC	Not Cropped	Wetland	SS	Soil Wetness Signature	Wetland
SW	Standing Water	Wetland	NV/NSS	Normal Vegetative Cover/ No Soil Wetness	Non-wetland

2.3 WETLANDS AND WATERS SURVEY

The wetlands and waters survey included field investigations of all areas of the Survey Area and offsite hydrology review using aerial photography to verify the presence or absence of wetlands and other surface waters in the Survey Area.

2.3.1 Field Survey

Wetlands were delineated in the Survey Area using the level two on-site routine determination method set forth in the Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, Version 2.0 (USACE 2010). Potential wetlands were identified based on the review of existing data and observations made at the time of the survey. A transect was established in a representative transition zone of each potential wetland. The transect consisted of one sample point in the potential wetland, and if wetland criteria were met, one point in non-wetland. Vegetation, soils, and hydrology data were recorded on data forms. Plant species dominance at sample points was based on the percent

cover visually estimated within a 5-foot radius of the sample point for the herbaceous layer, a 15-foot radius for the shrub layer, and a 30-foot radius for tree and vine layers. Wetland indicator status for all plant species followed the National Wetland Plant List, Version 3.5 (USACE 2020). The wetland/non-wetland boundary was established based on the recorded sample point information. If a potential wetland did not meet all three wetland delineation criteria (hydrophytic vegetation, hydric soils, and hydrology) based on observations made at the time of the field visit it was determined to be non-wetland.

Boundaries for non-wetland waters (i.e., ponds and streams) were established based on observations of the ordinary high water mark (OHWM), which is defined as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (51 FR 41251, November 13, 1986).

Wetlands and waters boundaries were established only within the Survey Area. If the boundary extended outside of the Survey Area, generally only that portion of the boundary within the Survey Area was delineated, and observations regarding that portion of the feature extending outside of the Survey Area were recorded. Wetlands and waters were classified according to Circular 39 (Shaw and Fredine 1971), Cowardin (Federal Geographic Data Committee [FGDC] 2013), and plant community (Eggers and Reed 2015) methods.

An Arrow 100 GPS receiver with sub-meter accuracy paired with a tablet running ESRI's Survey123 for ArcGIS application was used in the field to survey the locations of sample points, the wetland/non-wetland boundaries, and OHWM boundaries. Upon completion of the survey, the wetland specialist who captured the field data conducted a quality control review to ensure the spatial and attribute data of the features collected correspond with field observations.

2.3.2 Offsite Hydrology Assessment of Non-Wetland Areas

Historical precipitation records and aerial photography were used to evaluate the long-term history of wetland hydrology in accordance with the USACE and BWSR guidance concerning offsite wetland mapping conventions for agricultural land (USACE and BWSR 2016) for those desktop wetlands and waters within the Survey Area that were determined to be non-wetlands during the field survey. Antecedent precipitation conditions were evaluated for readily available aerial photographs of the Survey Area to determine which aerial photographs were taken following periods of normal precipitation. Antecedent precipitation was classified as normal, wet, or dry by comparing the precipitation during the three months preceding aerial photography dates to the 30-year average using the Minnesota Climatology Office tool (Minnesota State Climatology Office 2023).

The offsite hydrology assessment method generally applies a wetland determination when wetland signatures appear in at least 50 percent of aerial photographs from normal years, and a non-wetland determination when wetland signatures are lacking in more than 70 percent of aerial photographs from those years. The desktop wetlands and waters with a non-wetland field survey determination were reviewed in each of the available aerial photographs with normal antecedent precipitation for wetland signatures as described above in Section 2.2 to verify that wetland hydrology is absent at those locations (i.e., wetland signatures observed in less than 50 percent of

aerial photographs). If aerial photography from at least five normal years was not available, equal numbers of aerial photographs from wet and dry years were selected so that aerial photography from at least five years was reviewed.

The review of historical precipitation records and aerial photography to evaluate the long-term history of wetland hydrology is most effective in agricultural fields planted with annual row crops. Therefore, the assessment was conducted with caution for any areas that did not appear to be planted with annual row crops in one or more of the reviewed aerial photographs.

3.0 RESULTS

3.1 EXISTING INFORMATION REVIEW AND DESKTOP MAPPING

3.1.1 National Wetlands Inventory (NWI)

There are 18 NWI mapped wetlands within the Survey Area totaling approximately 10.3 acres (Appendix A: Figure 2). Freshwater emergent wetlands (PEM1A, PEM1Af, PEM1C) are the dominant wetland type within the Survey Area, with 13 mapped wetlands totaling approximately 9.3 acres. Additionally, 2 freshwater forested/shrub wetlands (PFO1C) totaling approximately 0.3 acre, 1 freshwater pond (PUBF) totaling approximately 0.1 acre, 1 lake (L2UBH) totaling approximately 0.5 acre, and 1 riverine wetland (R2UBFx) less than 0.1 acre in size are mapped by the NWI throughout the Survey Area. Many of the NWI mapped features appear isolated; however, several features appear to connect in larger, multi-community complexes that extend beyond the boundaries of the Survey Area.

3.1.2 National Hydrography Dataset (NHD)

There are three NHD-mapped stream or connector segments totaling approximately 165 feet located within the west-central portion of the Survey Area (Appendix A: Figure 2). Two of the three segments are unnamed perennial streams, and the remaining segment is an unnamed connector. Several other unnamed perennial and intermittent streams, connectors, canal ditches, and artificial paths are also mapped in the vicinity of the Survey Area, most of which are tributaries to one of the lakes located adjacent to the Survey Area. The lakes eventually discharge to Elm Creek, which is located approximately 1.5 miles north of the Survey Area.

Two NHD-mapped waterbodies totaling 0.8 acre are located along the western boundary of the Survey Area (Appendix A: Figure 2). The southeastern shore of Martin Lake is located on the northwestern edge of the Survey Area; Martin Lake extends beyond the Survey Area to the west and northwest. A portion of the eastern shore of High Lake is located within the west-central portion of the Survey Area; High Lake extends to the northwest, west, and southwest of the Survey Area. Additional NHD-mapped waterbodies in the vicinity of the Survey Area include Lake Charlotte, located adjacent to the southwest of the Survey Area, and two unnamed waterbodies enveloped by the west-central portion of the Survey Area between Martin Lake and Lake Charlotte.

3.1.3 Public Waters Inventory (PWI)

There are two Public Waters basins totaling approximately 0.6 acre mapped within the Survey Area (Appendix A: Figure 2). The two Public Waters basins, Martin Lake and High Lake, correspond with the NHD-mapped waterbodies. An approximately 165-foot-long segment of a Public Watercourse identified as County Ditch 72 is also mapped in the west-central portion of the Survey Area and corresponds with the three NHD-mapped streams or connector segments.

Additional Public Waters basins mapped in the vicinity include Lake Charlotte, located adjacent to the southwest of the Survey Area, and one unnamed waterbody enveloped by the west-central portion of the Survey Area between Martin Lake and Lake Charlotte. The Public Waters watercourse also extends south from the Survey Area through Lake Charlotte, and north from the Survey Area through the unnamed public water basin enveloped by the Survey Area and Martin Lake.

The approximate shoreland wetland protection zone for these public waters was determined based on the areas defined in Minnesota Regulations, Parts 6120.2500 - 6120.3900 (see Section 1.3.5). This includes a 1,000-foot buffer around all PWI basins and a 300-foot buffer around all PWI watercourses. Approximately 306 acres of the Survey Area are located within the approximate shoreland wetland protection zone (Appendix A: Figure 2).

3.1.4 Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) and Flood Insurance Rate Maps (FIRM)

FEMA NFHL data was not available for the Survey Area (FEMA 2023). FEMA FIRM, Map Number 270641B, effective September 1, 1988, was reviewed and compared to the Survey Area. Based on a review of the FIRM, approximately 1,575 square feet of 100-year floodplain associated with Lake Charlotte are located within the Survey Area.

3.1.5 Soil Survey Geographic (SSURGO) Soils

Soils data for the Survey Area were obtained from the USDA NRCS (NRCS 2022). This information was used to study the distribution of hydric soils within the Survey Area. Soils were categorized according to the five hydric classes listed below based on the hydric rating of the soil series.

- Non-hydric – all soils series components rated as non-hydric
- Predominantly non-hydric – minority of soil components that are considered hydric accounting for 1 to 32 percent of the series
- Partially hydric – a mix of hydric and non-hydric soil components with hydric components accounting for 33 to 65 percent of the series
- Predominantly hydric – majority of soil components that are considered hydric accounting for 66 to 99 percent of the series
- Hydric – all soils series components rated as hydric

The majority of soils within the Survey Area are classified as predominantly hydric (59 percent of the Survey Area). Soils are also classified as predominantly non-hydric (37 percent of the Survey Area), hydric (3 percent of the

Survey Area), non-hydric (less than 1 percent of the Survey Area), and water (less than 1 percent of the Survey Area). Hydric and predominantly hydric soils are found throughout the Survey Area (Appendix A: Figure 3).

3.1.6 Desktop Wetlands and Waters Mapping

Aerial photographs in combination with antecedent precipitation data from the Minnesota State Climatology Office (2023), MN DNR 2-foot elevation contours (MN DNR 2022), and the NWI were reviewed to identify potential wetlands and waters in the Survey Area. Reviewed aerial photographs included images from July 1, 2010 (USDA FSA APFO 2010), July 12, 2013 (USDA FSA APFO 2013), August 1, 2015 (USDA FSA APFO 2015), September 20, 2017 (USDA FSA APFO 2017), and August 19, 2019 (USDA FSA APFO 2019). The antecedent precipitation review showed that all of the reviewed aerial photographs were taken during periods with normal antecedent precipitation.

The desktop data review found 113 potential wetlands and waters within the Survey Area, totaling approximately 54.4 acres (Appendix A: Figure 2). Several of these features at least partially overlap features in the NWI or NHD datasets: 13 potential wetlands and waters intersect NWI mapped resources, and 1 potential wetland/water intersects both NWI and NHD mapped resources. There were 99 potential wetlands and waters at locations that did not have any previously mapped resources in the NWI or NHD and were identified based on aerial photo interpretation and/or elevation data.

3.2 WETLANDS AND WATERS SURVEY

The wetlands and waters field surveys of the Survey Area were conducted from October 18-26, 2022, during a period with normal antecedent precipitation based on methods described in technical guidance (USACE and BWSR 2016) and data from the Minnesota State Climatology Office (2023). Antecedent precipitation data are presented in Table 2.

Each of the 113 desktop potential wetland and water areas in the Survey Area were reviewed during the site visit. Wetlands or waters were confirmed to be present at 29 of the 113 reviewed desktop wetlands and waters locations in the field and were delineated based on the observations made at the time of the field surveys. The remaining 84 field-checked desktop potential wetlands and waters were determined to be non-wetlands within the Survey Area. A total of 33 aquatic resources were identified and delineated including 27 wetlands, 1 pond, 2 lakes, and 3 streams in the Survey Area at the completion of the field surveys[1]. The delineated resources are depicted on Figure 4 (Appendix A) and tables with additional details for each of the delineated wetlands and ponds are included in Appendix B. The following sections include summaries of general field survey results and observations.

[1] The total recorded wetlands and waters reflects that some desktop wetlands and waters were mapped as multiple wetlands and/or waters, while others were combined into a single wetland or water; and some wetlands were delineated at locations not identified during the desktop mapping.

Table 2. Antecedent Precipitation Analysis

Precipitation data for target wetland location:				
County: **Martin**	Township Number: **103N**	**Site visit dates:**		
Township Name: **Ruthland**	Range Number: **30W**	**October 18-26, 2022**		
Nearest Community: **Northrop**	Section Number: **17**			
Score using 1991-2020 normal period				
Values are in inches A 'R' following a monthly total indicates a provisional value derived from radar-based estimates		first prior month: **September 2022**	second prior month: **August 2022**	third prior month: **July 2022**
estimated precipitation total for this location:		**0.59**	**4.94**	**4.09**
there is a 30% chance this location will have less than:		1.86	2.72	2.49
there is a 30% chance this location will have more than:		3.03	4.77	5.10
type of month: dry normal wet		**dry**	**wet**	**normal**
monthly score		**3 * 1 = 3**	**2 * 3 = 6**	**1 * 2 = 2**
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)		**11 (Normal)**		

3.2.1 Wetlands

The wetlands delineated in the Survey Area include 24 Type 1, seasonally flooded basin wetlands (PEMA, PEMAf, PEMAx, PFOA[2]) and 3 wetland complexes composed of multiple wetland types (PEMA, PEMAx, PEMCx, PSSA, PFOA) (Appendix B: Table B-1). Most Type 1, seasonally flooded basins were isolated depressional wetlands and wholly delineated within the Survey Area boundaries.

Wetland determination data forms and photographs for delineated wetlands are provided in Appendix C. General observations of wetland vegetation, soils, and hydrology conditions recorded during the field surveys are summarized below.

3.2.1.1 Vegetation

Natural and weedy vegetation observed in seasonally flooded basin wetlands with undisturbed vegetation consisted primarily of grasses including reed canary grass (*Phalaris arundinacea*) and prairie cordgrass (*Spartina pectinata*). Seasonally flooded basin wetlands within agricultural fields were observed to consist mostly of corn (*Zea mays*) with weedy vegetation including barnyard grass (*Echinochloa crus-galli*) and yellow bristle grass (*Setaria pumila*). Shallow marsh wetlands were observed to consist primarily of reed canary grass and cattails (*Typha* spp.).

Vegetation in shrub swamp wetlands consisted primarily of shrubs including sandbar willow (*Salix interior*). The understory in shrub swamp wetlands frequently included reed canary grass. Seasonally flooded forested wetlands within the Survey Area consisted primarily of black willow (*Salix nigra*). The understory in seasonally flooded forested wetlands consisted of reed canary grass.

Uplands observed near wetlands within the Survey Area were documented in agricultural fields and unmanaged grassland. Upland sample points in agricultural fields consisted mostly of recently harvested corn and soybean

[2] A key to the Cowardin wetland classification systems is provided in Appendix F.

fields or unharvested corn with weedy vegetation, including yellow bristle grass. Upland sample points documented in unmanaged grassland areas were observed to be dominated by grasses including smooth brome (*Bromus inermis*) and flat-stem bluegrass (*Poa compressa*).

3.2.1.2 Soils

Soils observed within the Survey Area were predominantly fine textures ranging from clay to loam. A thick (greater than 12 inches), black (10YR 2/1) A horizon was observed in most locations. The layers below the thick, black A horizon frequently were observed to be depleted and ranged from dark gray (10YR 4/1) with redoximorphic concentrations to light brownish gray (2.5Y 6/2). As a result, the thick dark surface (A12) hydric soil indicator was documented frequently at wetland sample points or assumed to be present if the black A horizon was greater than 40 inches deep sample point.

3.2.1.3 Hydrology

Wetland hydrology criteria established based on the observation of both primary and secondary hydrology indicators for approximately half of the delineated wetlands. Primary hydrology indicators were not frequently observed at wetland sample points; however, recent iron reduction in tilled soils (C6) was occasionally observed. When primary indicators were not observed, hydrology was established on the presence of two or more secondary hydrology indicators. The secondary hydrology indicators that were documented most frequently were geomorphic position (D2), saturation visible on aerial imagery (C9), FAC-neutral test (D5), and stunted or stressed plants (D1), while surface soil cracks (B6) were infrequently observed.

3.2.2 Ponds

One pond was documented in the Survey Area and was observed to consist of an excavated depression. Pond PA020 was collected as part of a larger wetland complex (WA019), had an estimated water depth of 3 feet, and was classified as PUBGx (Appendix B: Table B-2). The pond approximately aligns with a previously mapped resource in the NWI and PWI databases (Section 3.1). Photo documentation of the surveyed pond is provided in Appendix D.

3.2.3 Lakes

Two lakes were documented in the Survey Area. Lake LA029 correlates with the southeast shore of Martin Lake, had an estimated water depth of at least 10 feet, and was classified as L2UBH. Lake LA046 correlates with the northeast shore of Lake Charlotte, had an estimated water depth of at least 10 feet, and was classified as L2UBH (Appendix B: Table B-3). The lakes approximately align with a previously mapped resource in the NWI, NHD, and PWI database (Section 3.1). Photo documentation of the surveyed lakes is provided in Appendix D.

3.2.4 Streams

Three streams were documented in the Survey Area. Stream SA001 was observed to be an ephemeral stream with an average width of 6 feet and an average depth of 3 feet. The stream was dry at the time of survey and appeared to be a tributary to Martin Lake. Stream SA005 was observed to be an intermittent stream with an average

width of 12 feet and an average depth of 4 feet. The stream was dry at the time of the survey and appeared to be a surface connection between High Lake and Martin Lake. Stream SA016 was observed to be an ephemeral stream with an average width of 3 feet and an average depth of 2 feet. The stream was dry at the time of the survey and appeared to be a tributary to High Lake. Streams SA001 and SA016 were classified as R4SBA, and SA005 was classified as R4SBC (Appendix B: Table B-4). Stream SA005 approximately aligns with a previously mapped resource in the NWI database (Section 3.1.1). Photo documentation of the surveyed streams is provided in Appendix D.

3.2.5 Non-Wetland Areas

During the field surveys, several areas that did not meet wetland determination criteria were recorded at desktop potential wetlands and waters locations. Wetland determination data forms were completed at all potential wetland and water locations. In agricultural areas, the non-wetland features were reviewed for wetland signatures in each of the aerial photographs from the following five years with normal antecedent precipitation: July 1, 2010 (USDA FSA APFO 2010), July 12, 2013 (USDA FSA APFO 2013), August 1, 2015 (USDA FSA APFO 2015), September 20, 2017 (USDA FSA APFO 2017), and August 19, 2019 (USDA FSA APFO 2019). Aerial photograph review is most effective in agricultural fields planted with annual row crops; therefore, aerial photograph review was not completed for uncultivated areas, most of which were wooded or unmanaged grassland. Locations of non-wetland sample points are included in Appendix A, Figure 4. Wetland determination data forms, reviewed historical aerial photographs with antecedent precipitation worksheets, and site visit photographs for non-wetland sample points are provided in Appendix E.

3.2.5.1 Agricultural Non-Wetland Areas

During the field surveys 79 sample points that did not meet wetland determination criteria were recorded at 78 desktop potential wetlands and waters locations within agricultural areas. The 78 non-wetland features were reviewed for wetland signatures, and the results are summarized in Table E-1 in Appendix E.

Forty-four of the 78 areas exhibited a wetland signature in more than 50 percent of reviewed aerial photographs. However, field observations did not support a wetland determination at these locations. These areas are discussed in detail below.

Of the 44 areas that exhibited wetland signature in more than 50 percent of reviewed aerial photographs, 42 sample point locations within 41 potential desktop wetland areas did not meet hydric soil criteria, and therefore were determined to be non-wetland.

Soils were not observed at two sample point locations due to landscape position and absence of wetland hydrology indictors observed in the field. Sample point location NWA021A was observed to be on a 20 percent slope near the top of a hill and wetland hydrology was not observed. The air photo signature in some years was likely due to crops being washed out due to the steep slope. Therefore, the area was determined to be non-wetland. Sample point location NWA043A was observed to be a convex location on a slight rise along the edge of a field adjacent to a farmstead. Although the corn had been harvested prior to the field visit, it did not appear to have been stressed

based on stalk diameter and abundant leaf litter. Therefore, wetland hydrology and hydrophytic vegetation were not met, and the area was determined to be non-wetland.

At sample point location NWB103A, one hydric soil indicator (Thick Dark Surface [A12]) was assumed to be present due to presence of an overthickened A horizon; however, based on the presence of upland vegetation (smooth brome and *Setaria faberi* [Japanese bristle grass]) in the adjacent undisturbed ditch; best professional judgement was used to determine the area was non-wetland.

3.2.5.2 Uncultivated Non-Wetland Areas

During the field surveys six sample points within five potential desktop wetland features that did not meet wetland determination criteria were recorded at desktop potential wetlands and waters locations within uncultivated areas.

Sample point NWA006A was documented on a steep slope (15 percent) approximately 10 feet above High Lake in the northwest part of the Survey Area. At the time of the survey, tree canopy vegetation at the sample point was dominated by ash-leaf maple (*Acer negundo*). The understory included eastern prickly gooseberry (*Ribes cynosbati*) and green ash (*Fraxinus pennsylvanica*). The remaining understory was observed to be dead or dormant. The hydrophytic vegetation criteria was met; however, no wetland hydrology indicators were documented at the sample point; therefore, NWA006A was determined to be non-wetland. Wetland vegetation dominated by cattails was observed at the base of the slope along the shore of High Lake, approximately 30 feet south of the sample point.

Sample points NWA022A and NWA022B were documented on a steep slope (20 percent) between 8 and 10 feet above High Lake in the northwestern part of the Survey Area. At the time of the survey, tree canopy vegetation at sample point NWA022A was dominated by green ash and ash-leaf maple. The understory included eastern prickly gooseberry and European buckthorn (*Rhamnus cathartica*). The remaining understory was observed to be dead or dormant. The hydrophytic vegetation criteria was met; however, no primary wetland hydrology indicators and only one secondary wetland hydrology indicator (FAC-neutral test [D5]) were documented at the sample point. Therefore, NWA0022A was determined to be non-wetland. At the time of the survey, tree canopy vegetation at sample point NWA022B was dominated by white oak (*Quercus alba*), American basswood (*Tilia americana*), and common hackberry (*Celtis occidentalis*). The remaining understory was observed to be dead or dormant. The hydrophytic vegetation criteria was not met, and no wetland hydrology indicators were documented at the sample point. Therefore, NWA0022B was determined to be non-wetland. Wetland vegetation dominated by cattails was observed at the base of the slope along the shore of High Lake, approximately 15 to 20 feet west of sample points NWA022A and NWA022B.

Sample point NWA024A was documented on a steep convex hillslope (15 percent) overlooking the valley containing documented stream SA005. At the time of the survey, tree canopy vegetation at sample point NWA024A was dominated by green ash and ash-leaf maple. The understory included eastern prickly gooseberry and smooth brome. The remaining understory was observed to be dead or dormant. The hydrophytic vegetation criteria was met; however, no wetland hydrology indicators were documented at the sample point. Therefore, NWA0024A was

determined to be non-wetland. Similar vegetation was observed throughout the entire wooded portion of the valley along SA005.

Sample point NWA036A was documented within a swale adjacent to an agricultural field. At the time of the survey, vegetation within the swale was dominated by smooth brome. The hydrophytic vegetation criteria was not met, and no primary wetland hydrology indicators and only one secondary wetland hydrology indicator (geomorphic position [D2]) was documented at the sample point. Therefore, sample point NWA036A was determined to be non-wetland.

Sample point NWA037A was documented within a ditch adjacent to an agricultural field and a road. At the time of the survey, vegetation within the ditch was dominated by smooth brome with a small amount (2 percent) of reed canary grass. The hydrophytic vegetation criteria was not met, and no primary wetland hydrology indicators and only one secondary wetland hydrology indicator (geomorphic position [D2]) was documented at the sample point. Therefore, sample point NWA037A was determined to be non-wetland.

3.3 REGULATORY REVIEW

3.3.1 U.S. Army Corps of Engineers

Each of the identified wetlands and waters in the Survey Area was reviewed for potential USACE jurisdiction and an initial jurisdictional determination was recommended. The USACE jurisdictional recommendations for each feature are depicted on Figure 5 (Appendix A) and are listed in Table B-1, B-2, B-3, and B-4 in Appendix B. Only the USACE can make the final determination on their regulatory jurisdiction of wetlands and waters.

The review of delineated wetlands and waters found that 5 of the 27 wetlands, 1 pond, 2 lakes, and 1 of the 3 streams may be considered WOTUS because they are relatively permanent waterbodies or are adjacent to a jurisdictional water. Therefore, these wetlands, pond, lakes, and stream would likely be subject to USACE regulatory jurisdiction under Section 404 of the CWA. The remaining 22 wetlands and 2 streams do not appear to meet the definition of WOTUS as they do not appear to be relatively permanent and are not adjacent to a jurisdictional water. Therefore, these wetlands and streams would not likely be subject to USACE regulatory jurisdiction under Section 404 of the CWA.

3.3.2 Minnesota Wetland Conservation Act

The review of wetlands found that 25 of the 27 wetlands identified in the Survey Area are regulated under the WCA, and 3 of these wetlands (WA004, WA007, and WA045) are located at least partially within the approximate shoreland zone (i.e., within 1,000 feet of a public water basin or 300 feet of a public watercourse). Project activities affecting these wetlands would require approval from the LGU. The WCA jurisdictional recommendations for each feature are depicted on Figure 5 (Appendix A) and are listed in Table B-1, B-2, and B-3 in Appendix B.

Certain activities are exempt from the wetland replacement provisions of WCA. Tetra Tech reviewed the WCA de minimis exemption standards (MN Rules 8420.0420, Subp. 8) and found that up to 10,000 square-feet of Type 1, Type 2, Type 6, or Type 7 wetland outside of the shoreland zone may be permanently impacted by the Project to qualify for the de minimis exemption and would not require a replacement plan for wetlands. Within the shoreland

zone, the de minimis exemption for permanent impacts to Type 1, Type 2, Type 6, or Type 7 wetlands is reduced to 400 square feet. The de minimis exemption for permanent impacts to all Type 3, Type 5, or Type 8 wetlands and ponds is limited to 100 square-feet. The de minimis exemption amount is determined by considering all wetland impacts associated with a project. If the impacted wetlands have more than one de minimis amount, the exemption amount for the entire project is the smallest of the applicable thresholds. If the total project impacts exceed the relevant de minimis exemption amount, the exemption is no longer applicable, and all wetland impacts associated with the project are subject to the replacement plan provisions of WCA (8420.0500 to 8420.0630).

3.3.3 Minnesota Department of Natural Resources

A review of the delineated wetlands and waters within the Survey Area against the PWI found 2 wetlands, 1 pond, and 2 lakes, may be public waters subject to the requirements of the DNR Public Waters Work Program. The MN DNR jurisdictional recommendations for each feature are depicted on Figure 5 (Appendix A) and are listed in Tables B-1, B-2, B-3, and B-4 in Appendix B.

Wetlands WA018 and WA019, and pond PA020 are located in the northwest portion of the Survey Area, adjacent to Lake Charlotte, which is a PWI public water basin, and County Ditch 72, which is a PWI public water watercourse. Lake LA029 is the Martin Lake public water basin located along the northwestern boundary of the Survey Area. Lake LA046 is the Lake Charlotte public water basin located along the west-central boundary of the Survey Area. A permit from the MN DNR may be required if the Project will impact or cross wetlands WA018 and WA019, pond PA020, or lakes LA029 and LA046.

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2013. Martin County, Minnesota. ortho_1-1_1n_s_mn091_2013_1

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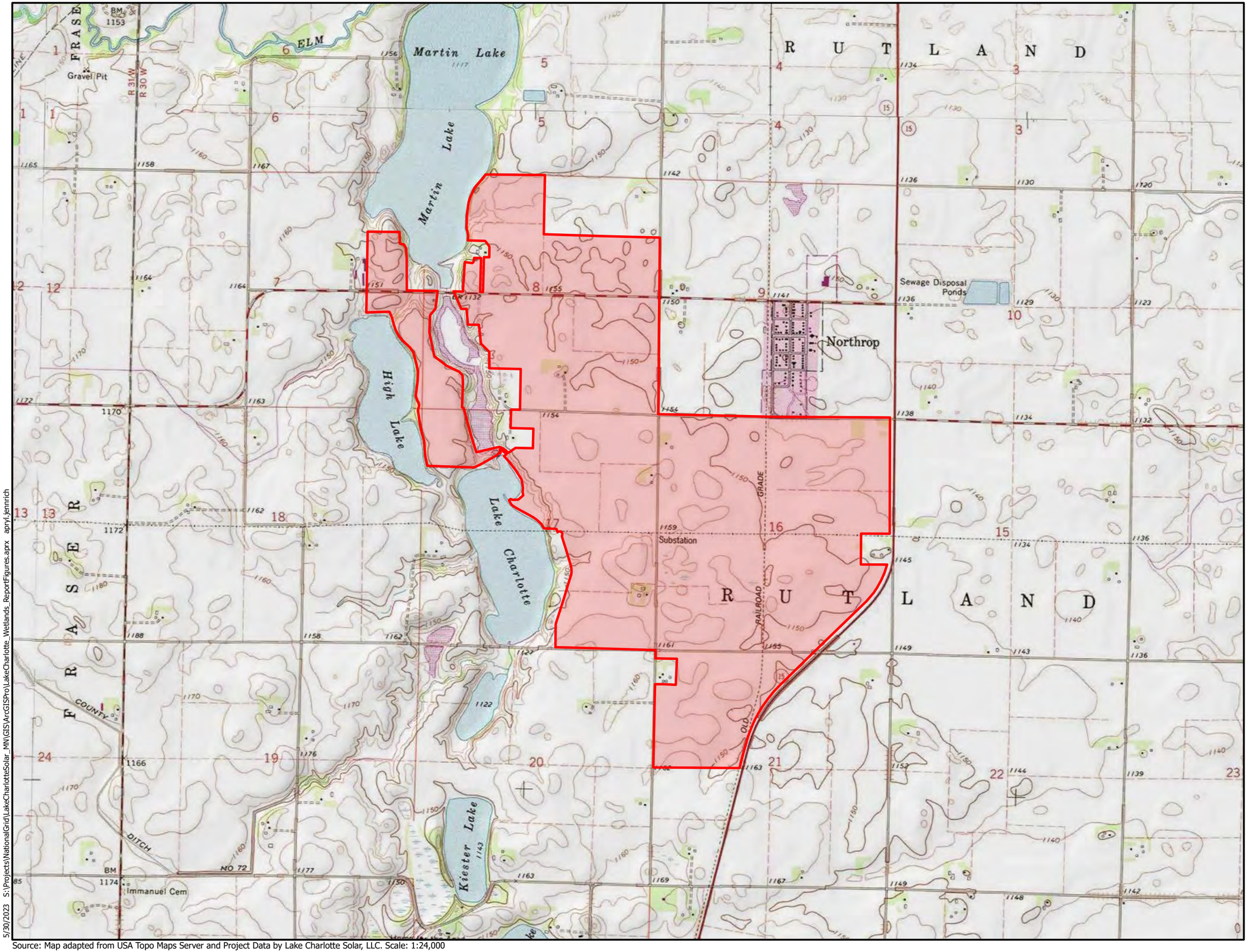
APPENDIX A: FIGURES 1 – 5



Survey Area

0 0.25 0.5 Mile

N

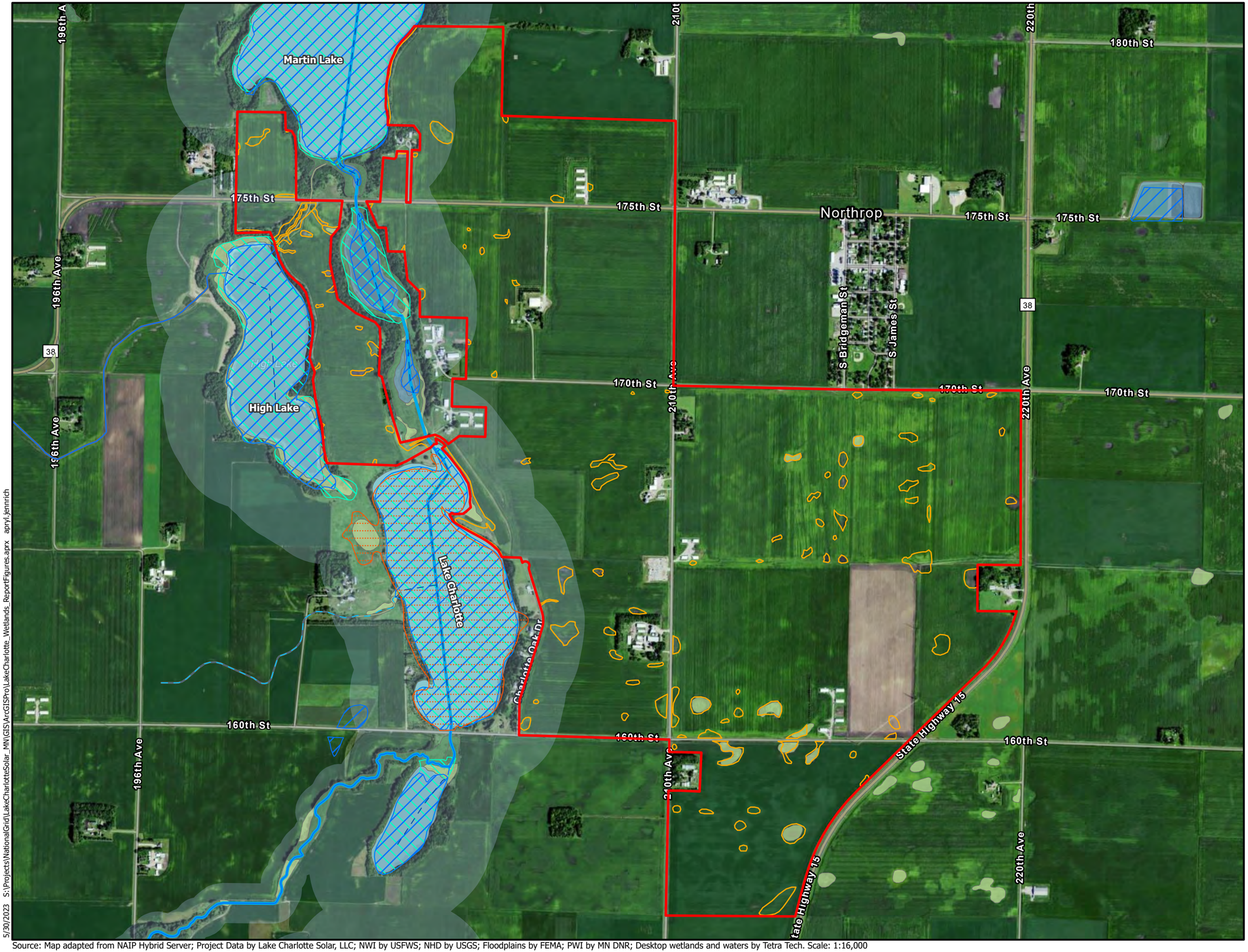
Figure 1
Survey Area Location

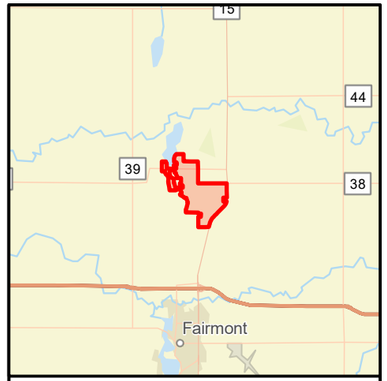
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

5/30/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from USA Topo Maps Server and Project Data by Lake Charlotte Solar, LLC. Scale: 1:24,000





- Survey Area
- Desktop Potential Wetlands and Waters
- 100-year Floodplain (Lake Charlotte only)
- Approximate Shoreland Zone*

NHD Classification

- Intermittent Stream
- Perennial Stream/River
- Canal/Ditch
- Artificial Path
- NHD Lake/Pond

Public Waters Inventory

- Public Water Watercourse
- Public Water Basin

NWI Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

*300 feet from PWI watercourses and 1,000 feet from PWI basins/wetlands.

0 0.25 Mile

N

Figure 2
Desktop Wetlands and Waters Mapping

Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

Source: Map adapted from NAIP Hybrid Server; Project Data by Lake Charlotte Solar, LLC; NWI by USFWS; NHD by USGS; Floodplains by FEMA; PWI by MN DNR; Desktop wetlands and waters by Tetra Tech. Scale: 1:16,000

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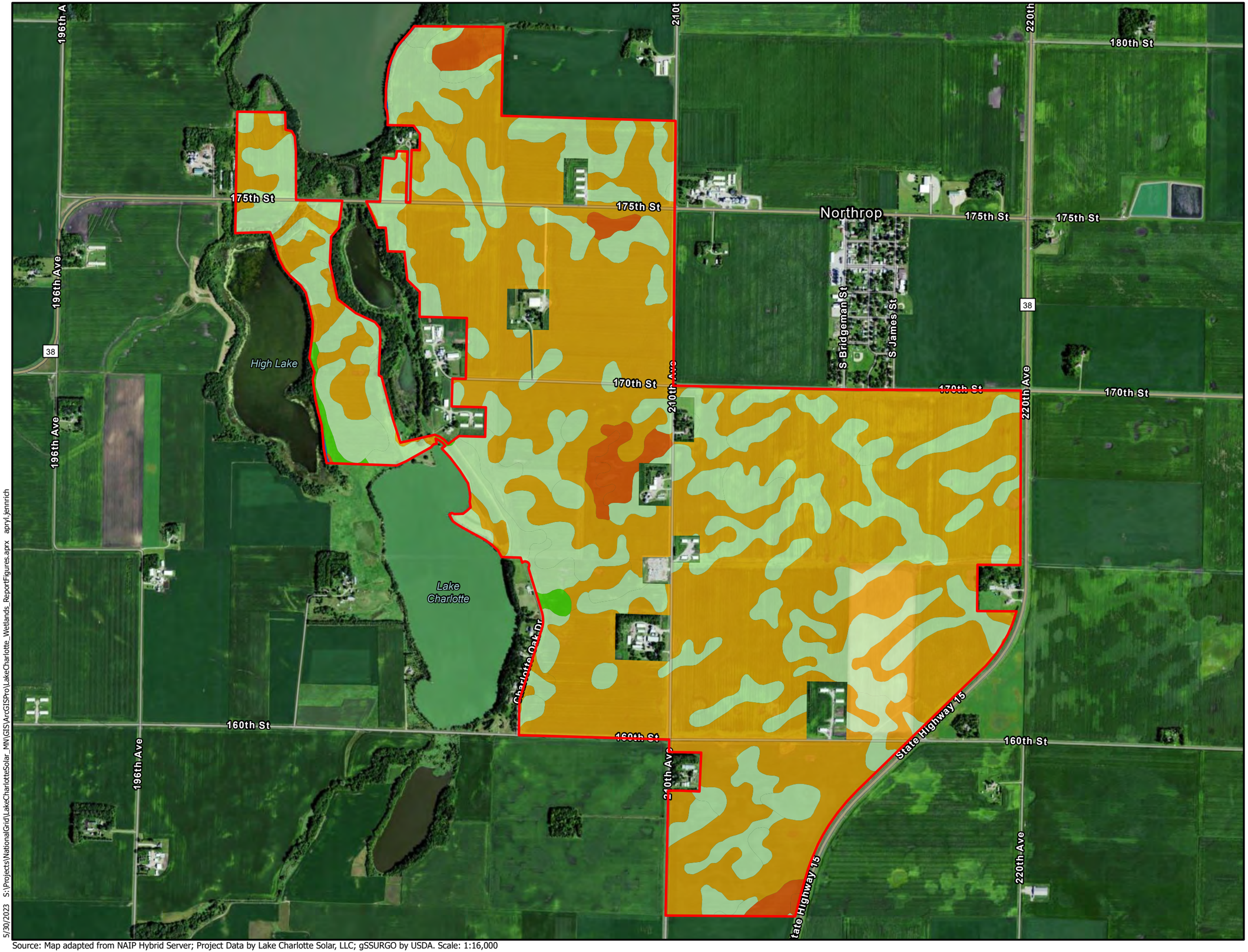

Figure 3
SSURGO Soils

Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

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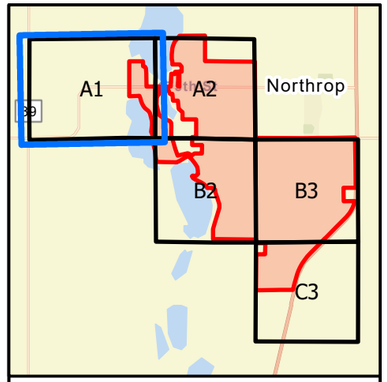
Source: Map adapted from NAIP Hybrid Server; Project Data by Lake Charlotte Solar, LLC; gSSURGO by USDA. Scale: 1:16,000



- Survey Area
- Desktop Potential Wetlands and Waters
- Non-Wetland Sample Plot

Delineated Wetlands and Waters

- Surveyed Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

0 250 500 750 Feet

N

Figure 4 - A1
Wetlands and Waters Survey Results

Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

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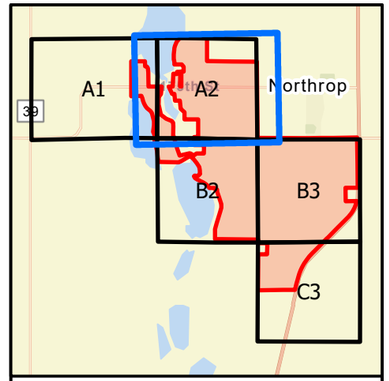
Source: Map adapted from NAIP Hybrid Server; Project Data by Lake Charlotte Solar, LLC; gSSURGO by USDA. Scale: 1:6,500



Survey Area

Desktop Potential Wetlands and Waters

Non-Wetland Sample Plot

Delineated Wetlands and Waters

Surveyed Wetland

Surveyed Pond

Surveyed Lake

Surveyed Stream

0 250 500 750 Feet

N

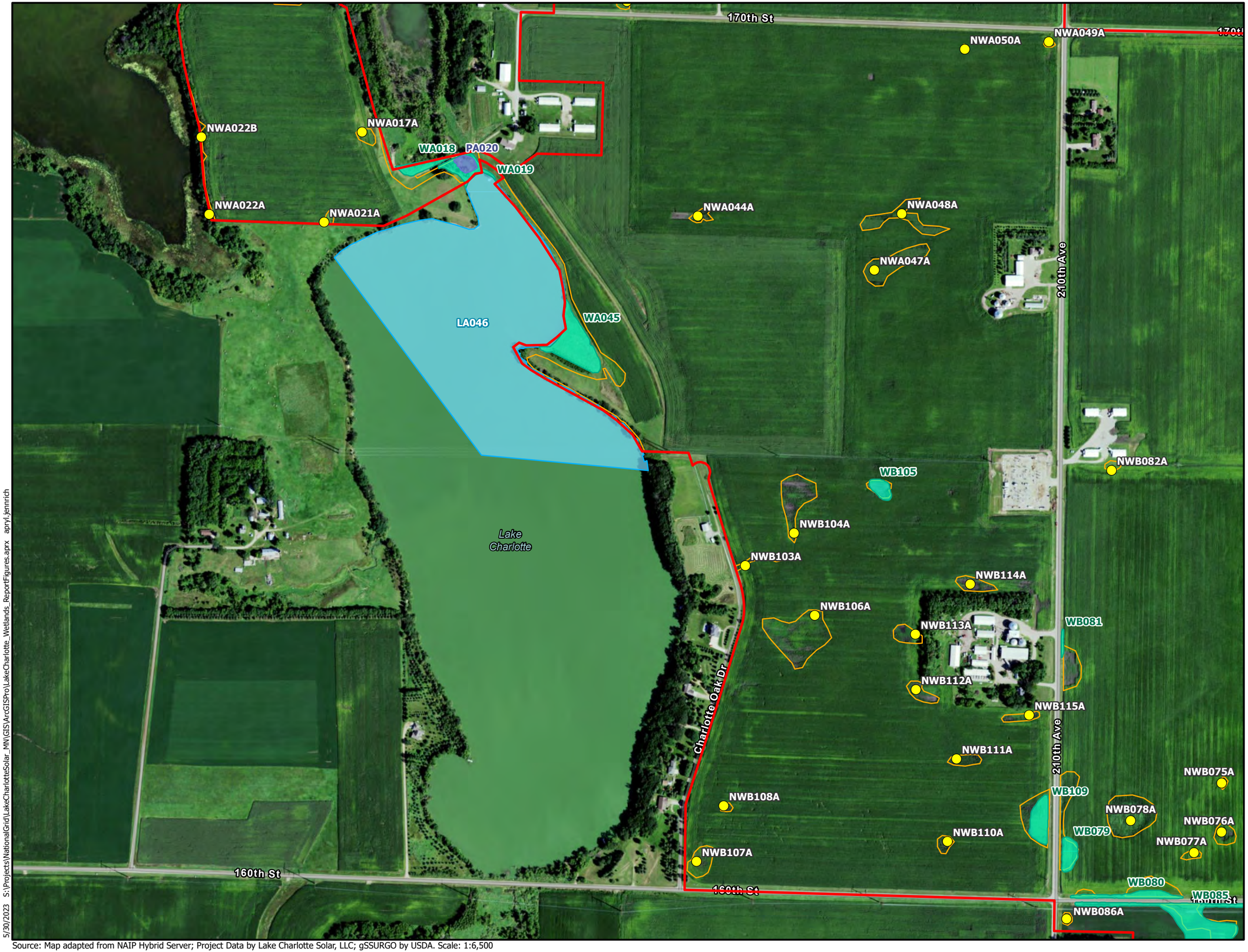
Figure 4 - A2 Wetlands and Waters Survey Results

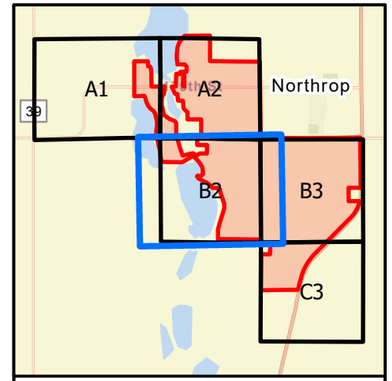
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

5/30/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from NAIP Hybrid Server; Project Data by Lake Charlotte Solar, LLC; gSSURGO by USDA. Scale: 1:6,500





Survey Area

Desktop Potential Wetlands and Waters

Non-Wetland Sample Plot

Delineated Wetlands and Waters

Surveyed Wetland

Surveyed Pond

Surveyed Lake

Surveyed Stream

0 250 500 750 Feet

N

Figure 4 - B2 Wetlands and Waters Survey Results

Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

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Source: Map adapted from NAIP Hybrid Server; Project Data by Lake Charlotte Solar, LLC; gSSURGO by USDA. Scale: 1:6,500

Survey Area

Desktop Potential Wetlands and Waters

Non-Wetland Sample Plot

Delineated Wetlands and Waters

Surveyed Wetland

Surveyed Pond

Surveyed Lake

Surveyed Stream

0 250 500 750 Feet

N

Figure 4 - B3
Wetlands and Waters Survey Results

Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

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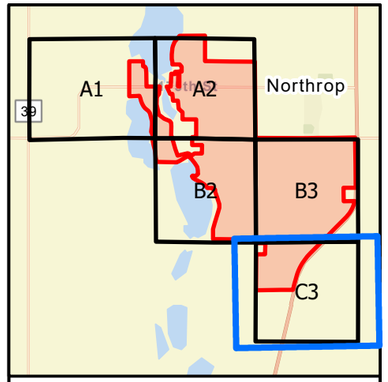
Source: Map adapted from NAIP Hybrid Server; Project Data by Lake Charlotte Solar, LLC; gSSURGO by USDA. Scale: 1:6,500



Survey Area

Desktop Potential Wetlands and Waters

Non-Wetland Sample Plot

Delineated Wetlands and Waters

Surveyed Wetland

Surveyed Pond

Surveyed Lake

Surveyed Stream

0 250 500 750 Feet

N

Figure 4 - C3 Wetlands and Waters Survey Results

Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

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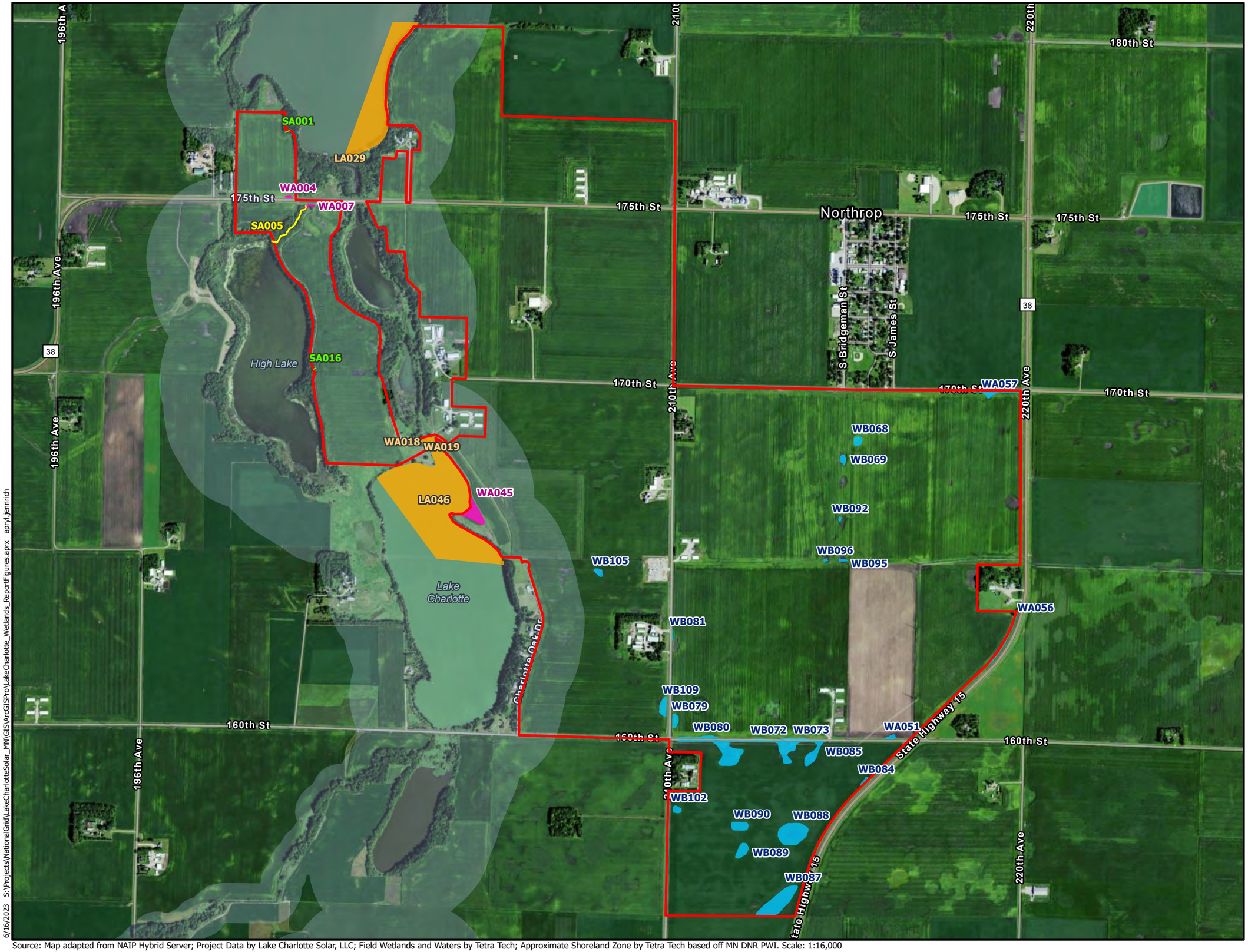
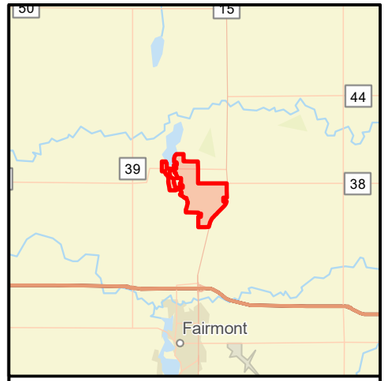
Source: Map adapted from NAIP Hybrid Server; Project Data by Lake Charlotte Solar, LLC; gSSURGO by USDA. Scale: 1:6,500





Survey Area

Approximate Shoreland Zone*

Recommended Regulatory Jurisdiction**

- LGU
- USACE and LGU
- USACE and MN DNR
- USACE
- Not Jurisdictional

*300 feet from PWI watercourses and 1,000 feet from PWI basins/wetlands.
**Suggestions regarding the jurisdiction of wetlands and waters are preliminary and must be verified by the USACE, LGU, and MN DNR.

0 0.25 Mile

Figure 5
Wetlands and Waters Jurisdiction

Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/16/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_Report\Figures.aprx apryl.jennrich

Source: Map adapted from NAIP Hybrid Server; Project Data by Lake Charlotte Solar, LLC; Field Wetlands and Waters by Tetra Tech; Approximate Shoreland Zone by Tetra Tech based off MN DNR PWI. Scale: 1:16,000

APPENDIX B: SURVEYED WETLANDS AND WATERS

Table B-1: Surveyed Wetlands

Wetland ID	Wetland Classification[1]		Total Surveyed Area (acres)	Surveyed Area within Survey Area (acres)	Regulatory Jurisdiction		
	Circular 39	Cowardin Class			USACE	MN WCA[2]	MN Public Water
WA004	Type 1	PEMAx/PEMAf	0.088	0.088	Yes	Yes - SZ	No
WA007	Type 1	PEMA	0.123	0.123	Yes	Yes - SZ	No
WA018	Type 6, Type 1	PSSA/ PEMA/ PFOA	0.343	0.283	Yes	No	Yes
WA019	Type 1	PFOA/PEMA	0.416	0.353	Yes	No	Yes
WA045	Type 1, Type 6	PEMA/PSSA	1.393	1.389	Yes	Yes - SZ	No
WA051	Type 1	PEMAf/PEMAx	0.202	0.202	No	Yes	No
WA056	Type 1, Type 3	PEMAx/PEMCx	0.454	0.065	No	Yes	No
WA057	Type 1	PEMAf/PEMAx	0.432	0.423	No	Yes	No
WB068	Type 1	PEMAf	0.361	0.361	No	Yes	No
WB069	Type 1	PEMAf	0.253	0.253	No	Yes	No
WB072	Type 1	PEMAx	0.052	0.052	No	Yes	No
WB073	Type 1	PEMAx	0.197	0.192	No	Yes	No
WB079	Type 1	PEMAf	0.384	0.384	No	Yes	No
WB080	Type 1	PEMAx	0.444	0.444	No	Yes	No
WB081	Type 1	PEMAx	0.056	0.056	No	Yes	No
WB084	Type 1	PEMAf	0.159	0.159	No	Yes	No
WB085	Type 1	PEMAf/PEMAx	5.489	5.489	No	Yes	No
WB087	Type 1	PEMAf	2.974	2.974	No	Yes	No
WB088	Type 1	PEMAf	2.754	2.754	No	Yes	No
WB089	Type 1	PEMAf	0.698	0.698	No	Yes	No
WB090	Type 1	PEMAf	0.713	0.713	No	Yes	No
WB092	Type 1	PEMAf	0.063	0.063	No	Yes	No
WB095	Type 1	PEMAf	0.114	0.114	No	Yes	No
WB096	Type 1	PEMAf	0.062	0.062	No	Yes	No
WB102	Type 1	PEMAf	0.282	0.282	No	Yes	No
WB105	Type 1	PEMAf	0.278	0.278	No	Yes	No
WB109	Type 1	PEMAf	0.590	0.590	No	Yes	No

[1] See Appendix F for a key to the Circular 39 and Cowardin wetland classification system.
[2] "Yes – SZ" indicates wetland is within the approximate shoreland zone

Table B-2: Surveyed Ponds

Wetland ID	Wetland Classification[3]		Surveyed Area (acres)	Regulatory Jurisdiction		
	Circular 39	Cowardin Class		USACE	MN WCA[4]	MN Public Water
PA020	Type 5	PUBGx	0.217	Yes	No	Yes

Table B-3: Surveyed Lake

Lake ID	Lake Name	Cowardin Class	Total Surveyed Area (acres)	Surveyed Area within Survey Area (acres)	Regulatory Jurisdiction		
					USACE Jurisdiction	MN WCA	MN Public Water
LA029	Martin Lake	L2UBH	15.277	0.683	Yes	No	Yes
LA046	Lake Charlotte	L2UBH	35.650	0.476	Yes	No	Yes

Table B-4: Surveyed Streams

Stream ID	Flow Regime	Cowardin Class[1]	Stream Name	Average Width (feet)	Surveyed Length (feet)	Surveyed Area (acres)	Regulatory Jurisdiction	
							USACE	MN Public Water
SA001	Ephemeral	R4SBA	--	6	70	0.007	No	No
SA005	Intermittent	R4SBC	--	12	870	0.237	Yes	No
SA016	Ephemeral	R4SBA	--	3	47	0.002	No	No

[3] See Appendix F for a key to the Circular 39 and Cowardin wetland classification system.
[4] "Yes – SZ" indicates wetland is within the approximate shoreland zone

APPENDIX C: WETLAND DETERMINATION DATA FORMS AND PHOTOGRAPHS

Wetland ID

WA004

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/18/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA004A

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.7 T103N R30W

Landform (hillslope, terrace, etc.): Ditch | Local relief (concave, convex, none): Concave

Slope (%): 5 | Lat: 43.73889 | Long: -94.46966 | Datum: WGS84

Soil Map Unit Name: Clarion-Swanlake complex, 2 to 6 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes — **Is the sampled area within a wetland? Yes**

Wetland Hydrology Present? Yes — If yes, optional wetland site ID: WA004

Remarks:

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	99	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	99 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	99	x 2 =	198
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	99 (A)		198 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

X Rapid test for hydrophytic vegetation

X Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Bare ground: 0%

SOIL

Sampling Point: WA004A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

Potential underground utility conflict. Hydric soils assumed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/18/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA004B

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.7 T103N R30W

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None

Slope (%): 0 | Lat: 43.73899 | Long: -94.46965 | Datum: WGS84

Soil Map Unit Name: Clarion-Swanlake complex, 2 to 6 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil , or hydrology Significantly disturbed? Are "normal circumstances present? No

Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? No **Is the sampled area within a wetland? No**

Wetland Hydrology Present? Yes If yes, optional wetland site ID: WA004

Remarks:

Recently harvested agricultural field.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Harvested agricultural field. Bare ground: 100%

SOIL

Sampling Point: WA004B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-5	10YR 2/1	100					Clay Loam	
5-8	10YR 2/1	95	10YR 3/3	5	C	PL	Clay Loam	Distinct or Prominent
8-12	10YR 2/1	100					Clay Loam	
12-16	10YR 2/1	90	10YR 5/3	10	D	M	Sandy Clay	
16-18	2.5Y 5/4	100					Sandy Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: Very Compacted Soil

Depth (inches): 18

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WA004A.

Direction: East	Photo ID: delin_photo-20221018-212409.jpg	Date: 10/18/2022

Overview of upland sample point WA004B.

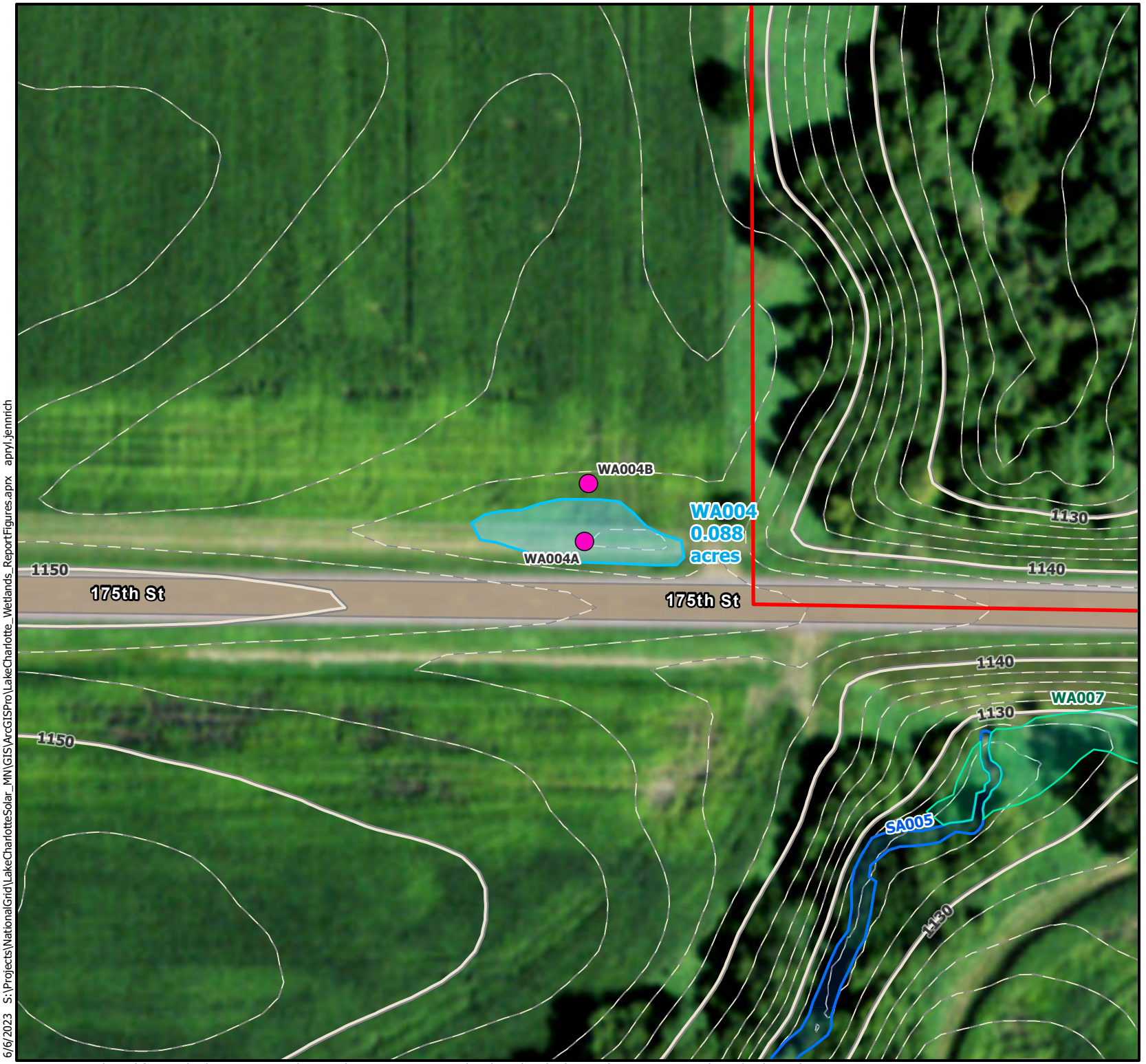
Direction: North	Photo ID: delin_photo-20221018-214223.jpg	Date: 10/18/2022
Project Name: Lake Charlotte		Feature ID: WA004

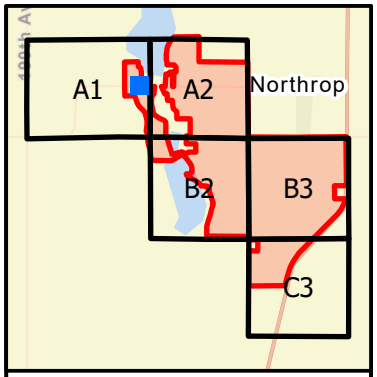
Overview of wetland WA004.

Direction: West	Photo ID: f_photo-20221018-214433.jpg	Date: 10/18/2022

Overview of wetland WA004.

Direction: West	Photo ID: f_photo-20221018-214504.jpg	Date: 10/18/2022
Project Name: Lake Charlotte		Feature ID: WA004





Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WA004
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 25 50 75 100 Feet

N

Wetland ID WA004

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,000

Wetland ID

WA007

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/19/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA007A

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.7 T103N R30W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 43.7385 | Long: -94.46856 | Datum: WGS84

Soil Map Unit Name: Coland clay loam, 0 to 2 percent slopes, frequently flooded | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes

Wetland Hydrology Present? Yes

Is the sampled area within a wetland? Yes

If yes, optional wetland site ID: WA007

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Status
1.			
2.			
3.			
4.			
5.			
		=Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	

Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100	=Total Cover	

Woody Vine Stratum (Plot size: 15)			
1.			
2.			
		=Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		200 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

X Rapid test for hydrophytic vegetation

X Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Bare ground: 0%

SOIL

Sampling Point: WA007A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-6	10YR 2/1	100					Clay Loam	
6-20	10YR 2/1	100					Clay	
20-38	10YR 2/1	100					Sandy Clay	
38-40	2.5Y 3/1	100					Sandy Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

A12 Assumed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/19/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA007B

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.7 T103N R30W

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Concave

Slope (%): 10 | Lat: 43.73845 | Long: -94.46854 | Datum: WGS84

Soil Map Unit Name: Coland clay loam, 0 to 2 percent slopes, frequently flooded | NWI Classification: PEM1C

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? Yes

Wetland Hydrology Present? No

Is the sampled area within a wetland? No

If yes, optional wetland site ID: WA007

Remarks:

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	100	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column totals	100 (A)		400 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Bare ground: 0%

SOIL

Sampling Point: WA007B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	10YR 2/2	100					Loam	
12-22	10YR 2/1	100					Clay	
22-36	10YR 2/1	100					Clay	
36-39	10YR 2/1	95	2.5Y 5/3	5	D	M	Sandy Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

A12 Assumed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WA007A.

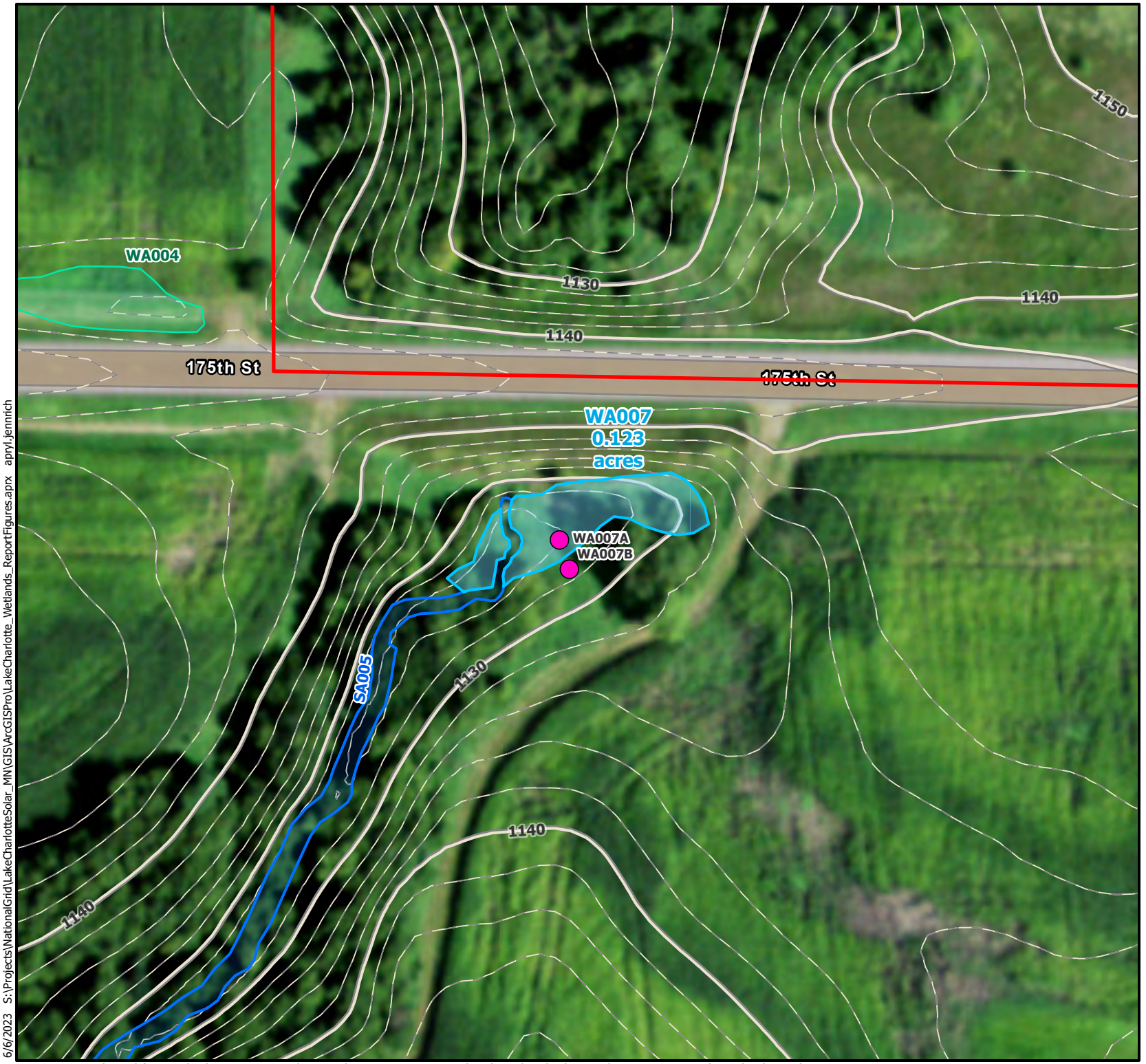
Direction: North	Photo ID: delin_photo-20221019-134419.jpg	Date: 10/19/2022

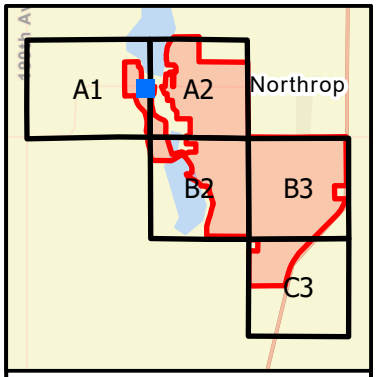
Overview of upland sample point WA007B.

Direction: Southeast	Photo ID: delin_photo-20221019-135434.jpg	Date: 10/19/2022
Project Name: Lake Charlotte		Feature ID: WA007

Overview of wetland WA007.

Direction: North	Photo ID: f_photo-20221019-135539.jpg	Date: 10/19/2022
Project Name: Lake Charlotte		Feature ID: WA007





Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WA007
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 25 50 75 100 Feet

N

Wetland ID WA007

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,000

Wetland ID

WA018

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/19/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA018A

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.17 T103N R30W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 43.72884 | Long: -94.46275 | Datum: WGS84

Soil Map Unit Name: Delft clay loam, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes — **Is the sampled area within a wetland? Yes**

Wetland Hydrology Present? Yes — If yes, optional wetland site ID: WA018

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Status
1. *Juniperus virginiana*	5	Y	FACU
2.			
3.			
4.			
5.			
	5	=Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1. *Salix interior*	5	Y	FACW
2.			
3.			
4.			
5.			
	5	=Total Cover	

Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	95	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95	=Total Cover	

Woody Vine Stratum (Plot size: 15)			
1.			
2.			
		=Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column totals	105 (A)		220 (B)

Prevalence Index = B/A = 2.1

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

X Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Bare ground: 0%

SOIL

Sampling Point: WA018A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-40	10YR 2/1	100					Clay Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

A12 Assumed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/19/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA018B

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.17 T103N R30W

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 43.7288 | Long: -94.46279 | Datum: WGS84

Soil Map Unit Name: Clarion-Storden complex, 6 to 10 percent slopes, moderately eroded | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? Yes

Wetland Hydrology Present? No

Is the sampled area within a wetland? No

If yes, optional wetland site ID: WA018

Remarks:

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	70	Y	FACU
2. *Poa compressa*	20	N	FACU
3. *Trifolium pratense*	10	N	FACU
4. *Setaria pumila*	2	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	102 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	2	x 3 =	6
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column totals	102 (A)		406 (B)

Prevalence Index = B/A = 3.98

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Bare ground: 0%

SOIL

Sampling Point: WA018B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-23	10YR 2/1	100					Clay Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 23

Hydric Soil Present? Yes

Remarks:

A12 Assumed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WA018A.

Direction: North	Photo ID: delin_photo-20221019-192953.jpg	Date: 10/19/2022

Overview of upland sample point WA018B.

Direction: Southwest	Photo ID: delin_photo-20221019-193414.jpg	Date: 10/19/2022
Project Name: Lake Charlotte		Feature ID: WA018

Overview of wetland WA018.

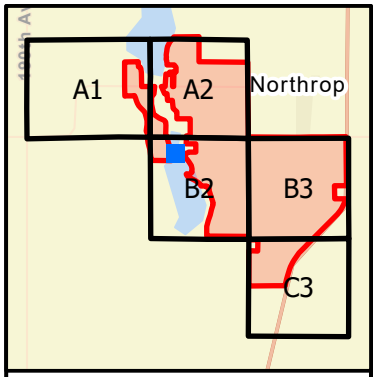
Direction: North	Photo ID: f_photo-20221019-193757.jpg	Date: 10/19/2022

Overview of wetland WA018.

Direction: Northeast	Photo ID: f_photo-20221019-193843.jpg	Date: 10/19/2022
Project Name: Lake Charlotte		Feature ID: WA018

Overview of wetland WA018.

Direction: West	Photo ID: f_photo-20221019-194514.jpg	Date: 10/19/2022
Project Name: Lake Charlotte		Feature ID: WA018



Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WA018
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 25 50 75 100 Feet

N

Wetland ID WA018

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,000

Wetland ID

WA019

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/19/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA019A

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.17 T103N R30W

Landform (hillslope, terrace, etc.): Toeslope | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 43.72884 | Long: -94.46154 | Datum: WGS84

Soil Map Unit Name: Clarion-Storden complex, 6 to 10 percent slopes, moderately eroded | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes

Wetland Hydrology Present? Yes

Is the sampled area within a wetland? Yes

If yes, optional wetland site ID: WA019

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Status
1. *Salix nigra*	30	Y	OBL
2.			
3.			
4.			
5.			
	30	=Total Cover	

Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	

Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	90	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90	=Total Cover	

Woody Vine Stratum (Plot size: 15)			
1.			
2.			
		=Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	120 (A)		210 (B)

Prevalence Index = B/A = 1.75

Hydrophytic Vegetation Indicators:

X Rapid test for hydrophytic vegetation

X Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Bare ground: 0%

SOIL

Sampling Point: WA019A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-30	10YR 2/1	100					Clay Loam	
30-39	2.5Y 5/1	98	2.5Y 5/6	2	C	PL	Sandy Clay	Distinct or Prominent

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches): ___
Water Table Present?	Yes	___	No	X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/19/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA019B

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.17 T103N R30W

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex

Slope (%): 10 | Lat: 43.72879 | Long: -94.4616 | Datum: WGS84

Soil Map Unit Name: Clarion-Storden complex, 6 to 10 percent slopes, moderately eroded | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? No

Wetland Hydrology Present? No

Is the sampled area within a wetland? No

If yes, optional wetland site ID: WA019

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	70	Y	FACU
2. *Poa compressa*	20	Y	FACU
3. *Setaria pumila*	5	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column totals	95 (A)		375 (B)

Prevalence Index = B/A = 3.95

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Bare ground: 0%

SOIL

Sampling Point: WA019B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-6	10YR 2/1	100					Clay Loam	
6-12	10YR 2/1	85	2.5Y 5/4	15	C	PL/M	Clay	Distinct or Prominent
12-20	2.5Y 6/4	99	10YR 5/6	1	C	PL	Sandy Clay Trace Gravel	Distinct or Prominent

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? Yes ___ No X Depth (inches): ___

(includes capillary fringe)

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WA019A.

Direction: North	Photo ID: delin_photo-20221019-195808.jpg	Date: 10/19/2022

Overview of upland sample point WA019B.

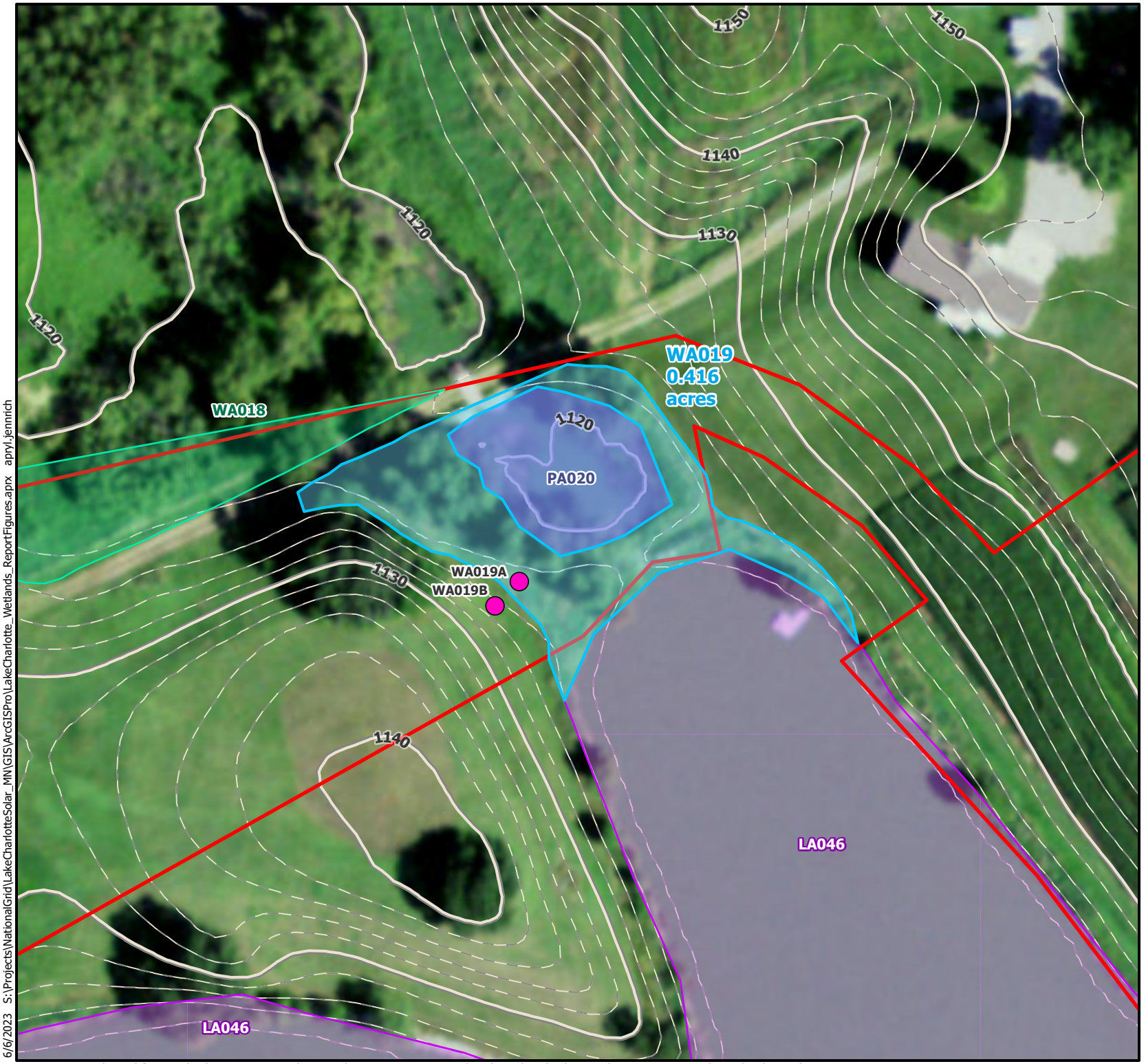
Direction: South	Photo ID: delin_photo-20221019-200514.jpg	Date: 10/19/2022
Project Name: Lake Charlotte		Feature ID: WA019

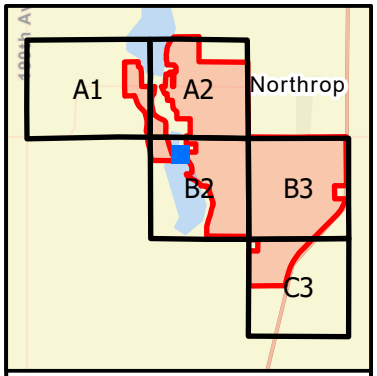
Overview of wetland WA019.

Direction: Northeast	Photo ID: f_photo-20221019-200655.jpg	Date: 10/19/2022

Overview of wetland WA019.

Direction: North	Photo ID: f_photo-20221019-200812.jpg	Date: 10/19/2022
Project Name: Lake Charlotte		Feature ID: WA019





Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WA019
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 25 50 75 100 Feet

N

Wetland ID WA019

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,000

Wetland ID

WA045

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/20/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA045A

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.17 T103N R30W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 43.72606 | Long: -94.45855 | Datum: WGS84

Soil Map Unit Name: Delft clay loam, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes — **Is the sampled area within a wetland? Yes**

Wetland Hydrology Present? Yes — If yes, optional wetland site ID: WA045

Remarks:

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	95	Y	FACW
2. *Asclepias syriaca*	1	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	96 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	0	x 3 =	0
FACU species	1	x 4 =	4
UPL species	0	x 5 =	0
Column totals	96 (A)		194 (B)

Prevalence Index = B/A = 2.02

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

X Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Bare ground: 0%

SOIL

Sampling Point: WA045A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-36	10YR 2/1	100					Clay Loam	
36-39	10YR 2/1	95	10YR 4/1	5	D	M	Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

A12 Assumed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/20/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA045B

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.17 T103N R30W

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): Convex

Slope (%): 2 | Lat: 43.72609 | Long: -94.45844 | Datum: WGS84

Soil Map Unit Name: Delft clay loam, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? Yes

Wetland Hydrology Present? No

Is the sampled area within a wetland? No

If yes, optional wetland site ID: WA045

Remarks:

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Bromus Inermis*	99	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	99	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
		=Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	99	x 4 =	396
UPL species	0	x 5 =	0
Column totals	99 (A)		396 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Bare ground: 0%

SOIL

Sampling Point: WA045B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-38	10YR 2/1	100					Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

A12 Assumed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WA045A.

Direction: West	Photo ID: delin_photo-20221020-210549.jpg	Date: 10/20/2022

Overview of upland sample point WA045B.

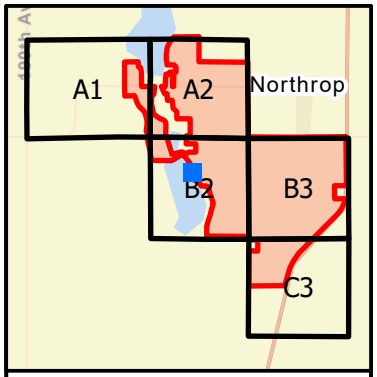
Direction: Northeast	Photo ID: delin_photo-20221020-211124.jpg	Date: 10/20/2022
Project Name: Lake Charlotte		Feature ID: WA045

Overview of wetland WA045.

Direction: West	Photo ID: f_photo-20221020-211213.jpg	Date: 10/20/2022

Overview of wetland WA045.

Direction: Southeast	Photo ID: f_photo-20221020-212645.jpg	Date: 10/20/2022
Project Name: Lake Charlotte		Feature ID: WA045



Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WA045
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 25 50 75 100 Feet

N

Wetland ID WA045

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,000

Wetland ID

WA051

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/21/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA051A

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 1 | Lat: 43.71721 | Long: -94.43512 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes | **Is the sampled area within a wetland? Yes**

Wetland Hydrology Present? Yes | If yes, optional wetland site ID: WA051

Remarks:

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation*

X (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Agricultural field. Bare ground: 100%

SOIL

Sampling Point: WA051A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-40	10YR 2/1	100					Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

A12 Assumed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/21/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA051B

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None

Slope (%): 0 | Lat: 43.71728 | Long: -94.43512 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? No — **Is the sampled area within a wetland? No**

Wetland Hydrology Present? No — If yes, optional wetland site ID: WA051

Remarks:

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Zea mays*	60	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	60 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	60	x 5 =	300
Column totals	60 (A)		300 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Agricultural field. Bare ground: 40%

SOIL

Sampling Point: WA051B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-24	10YR 2/1	100					Clay	
24-28	10YR 2/1	90	2.5Y 4/2	10	D	M	Clay	
28-36	2.5Y 3/2	99	2.5Y 4/2	1	D	M	Clay	
36-39	2.5Y 5/4	97	10YR 5/6	3	C	PL	Clay	Distinct or Prominent

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WA051A.

Direction: South	Photo ID: delin_photo-20221021-132218.jpg	Date: 10/21/2022

Overview of upland sample point WA051B.

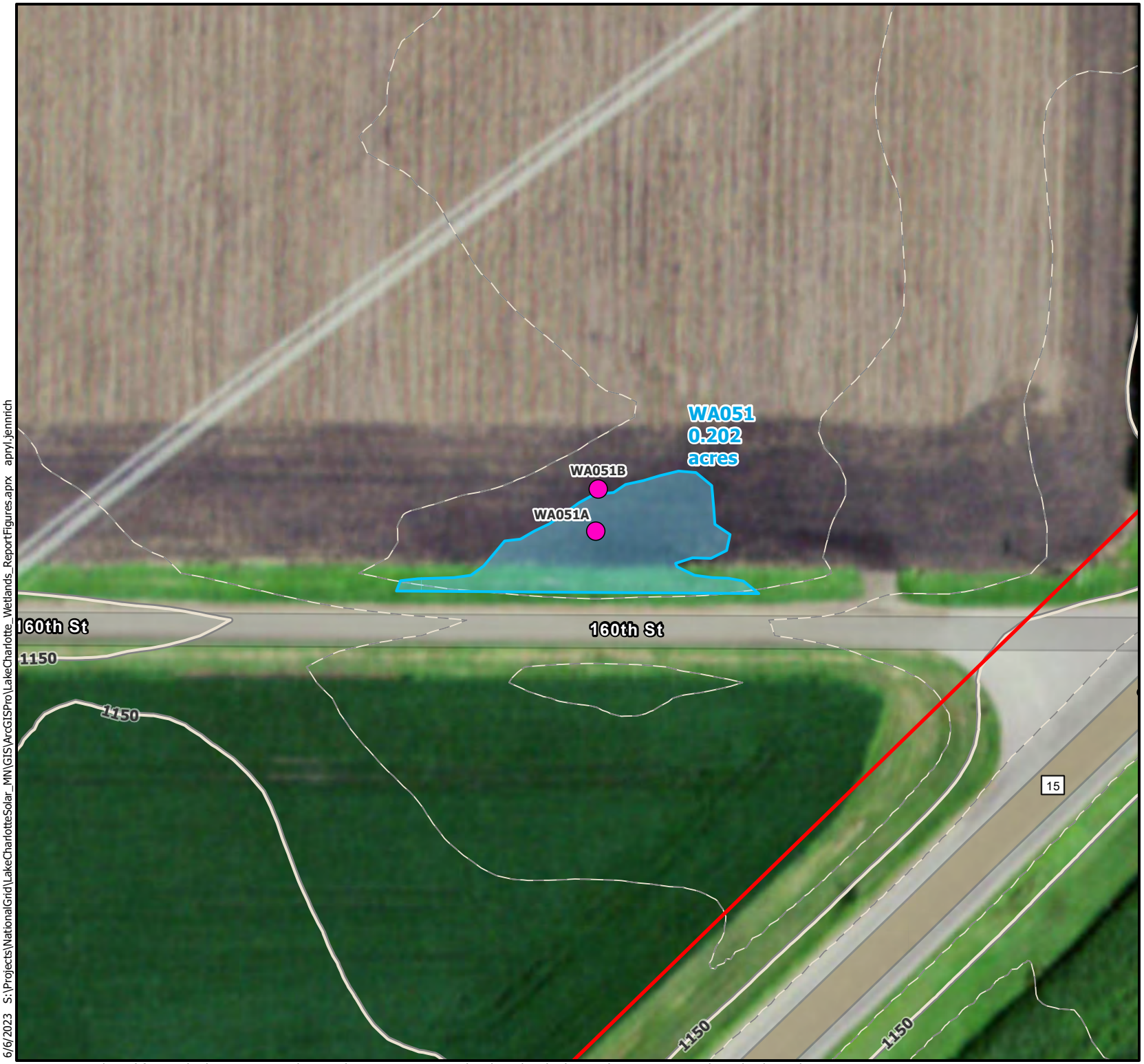
Direction: West	Photo ID: delin_photo-20221021-133209.jpg	Date: 10/21/2022
Project Name: Lake Charlotte		Feature ID: WA051

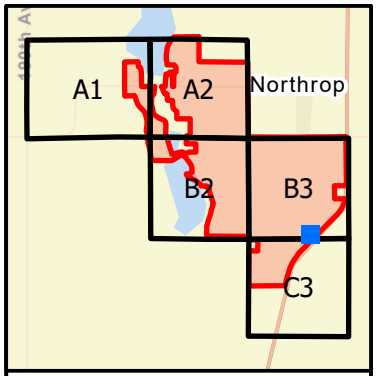
Overview of wetland WA051.

Direction: North	Photo ID: f_photo-20221021-133339.jpg	Date: 10/21/2022

Overview of wetland WA051.

Direction: West	Photo ID: f_photo-20221021-133545.jpg	Date: 10/21/2022
Project Name: Lake Charlotte		Feature ID: WA051





Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WA051
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 25 50 75 100 Feet

N

Wetland ID WA051

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,000

Wetland ID

WA056

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/21/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA056A

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Ditch | Local relief (concave, convex, none): Concave

Slope (%): 5 | Lat: 43.72223 | Long: -94.42815 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes

Wetland Hydrology Present? Yes

Is the sampled area within a wetland? Yes

If yes, optional wetland site ID: WA056

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	50	Y	FACW
2. *Typha angustifolia*	50	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		150 (B)

Prevalence Index = B/A = 1.5

Hydrophytic Vegetation Indicators:

X Rapid test for hydrophytic vegetation

X Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Bare ground: 0%

SOIL

Sampling Point: WA056A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

Potential underground utility conflict. Hydric soils assumed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/21/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA056B

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex

Slope (%): 10 | Lat: 43.72223 | Long: -94.42809 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? No — **Is the sampled area within a wetland? No**

Wetland Hydrology Present? No — If yes, optional wetland site ID: WA056

Remarks:

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Bromus inermis*	50	Y	FACU
2. *Poa compressa*	30	Y	FACU
3. *Lotus corniculatus*	10	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
		=Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	90	x 4 =	0
UPL species	0	x 5 =	0
Column totals	0 (A)		0 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Bare ground: 0%

SOIL

Sampling Point: WA056B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

Potential underground utility conflict.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	___
Water Table Present?	Yes	___	No	___	Depth (inches):	___
Saturation Present? (includes capillary fringe)	Yes	___	No	___	Depth (inches):	___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WA056A.

Direction: Southwest	Photo ID: delin_photo-20221021-145808.jpg	Date: 10/21/2022

Overview of upland sample point WA056B.

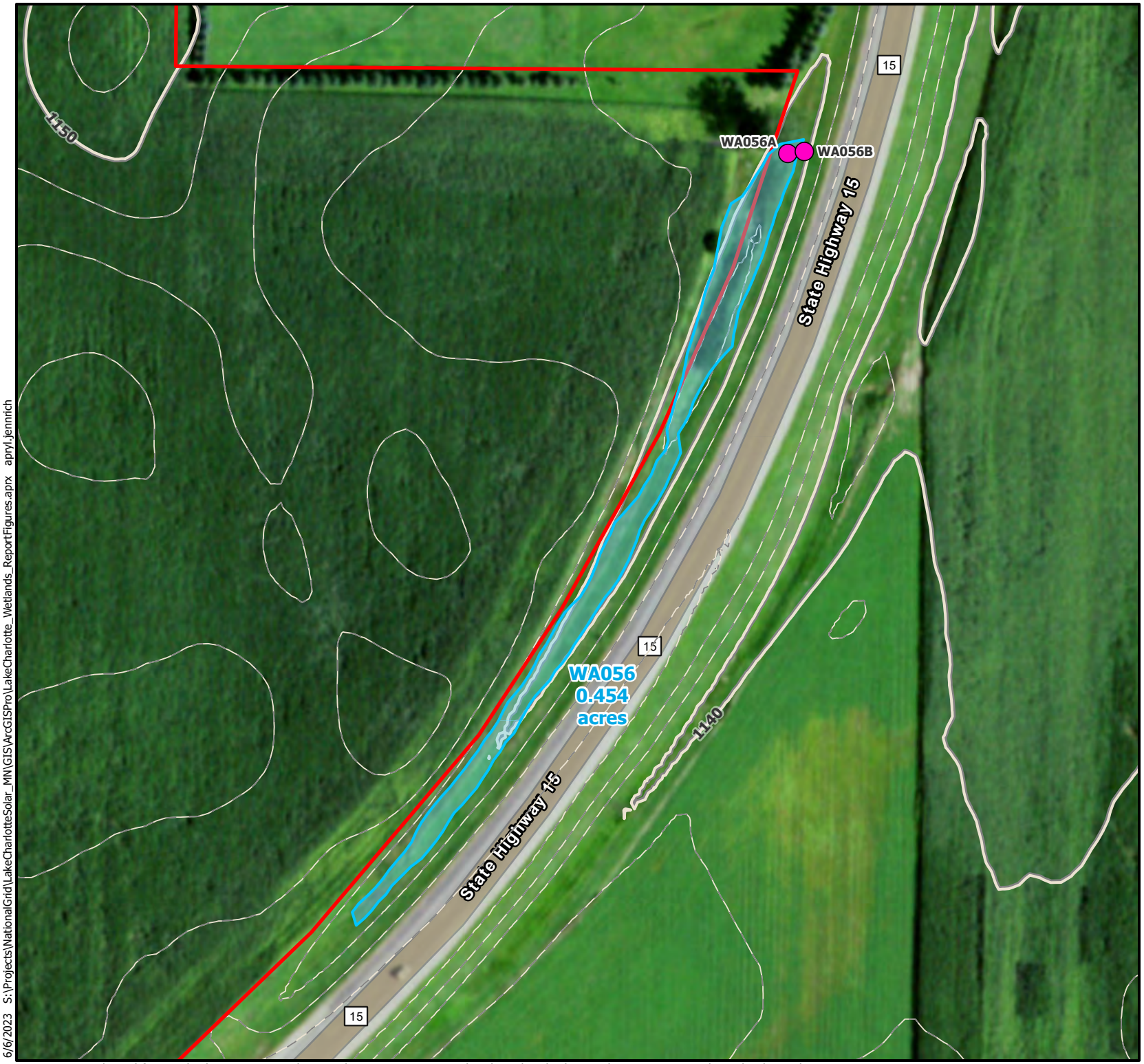
Direction: South	Photo ID: delin_photo-20221021-150025.jpg	Date: 10/21/2022
Project Name: Lake Charlotte		Feature ID: WA056

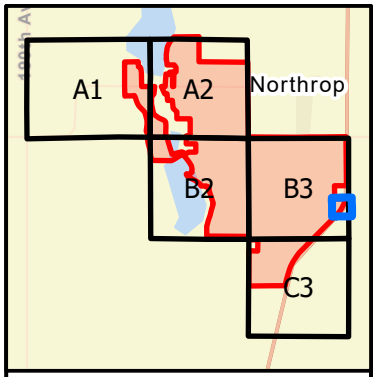
Overview of wetland WA056.

Direction: Southwest	Photo ID: f_photo-20221021-145951.jpg	Date: 10/21/2022

Overview of wetland WA056.

Direction: Southwest	Photo ID: f_photo-20221021-151413.jpg	Date: 10/21/2022
Project Name: Lake Charlotte		Feature ID: WA056





Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WA056
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 40 80 120 160 Feet

N

Wetland ID WA056

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,500

Wetland ID

WA057

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/21/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA057A

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.9 T103N R30W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 43.7313 | Long: -94.42974 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes | **Is the sampled area within a wetland? Yes**

Wetland Hydrology Present? Yes | If yes, optional wetland site ID: WA057

Remarks:

Recently tilled agricultural field. Recently harvested agricultural field.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ =Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	____	x 1 =	____
FACW species	____	x 2 =	____
FAC species	____	x 3 =	____
FACU species	____	x 4 =	____
UPL species	____	x 5 =	____
Column totals	____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation*

X (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Recently tilled agricultural field. Bare ground: 100%

SOIL

Sampling Point: WA057A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-20	10YR 2/1	100					Clay	
20-23	10YR 2/1	85	2.5Y 4/2	15	D	M	Clay	
23-35	2.5Y 5/2	98	10YR 5/6	2	C	PL	Sandy Clay	Distinct or Prominent

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	___
Water Table Present?	Yes	___	No	X	Depth (inches):	___
Saturation Present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/21/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WA057B

Investigator(s): Apryl Jennrich | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None

Slope (%): 1 | Lat: 43.73124 | Long: -94.4297 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? No **Is the sampled area within a wetland? No**

Wetland Hydrology Present? No If yes, optional wetland site ID: WA057

Remarks:

Recently tilled agricultural field. Recently harvested agricultural field.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Recently tilled agricultural field. Bare ground: 100%

SOIL

Sampling Point: WA057B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-32	10YR 2/1	100					Clay	
32-39	10YR 2/2	98	2.5Y 4/2	2	D	M	Sandy Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WA057A.

Direction: Northeast	Photo ID: delin_photo-20221021-160201.jpg	Date: 10/21/2022

Overview of upland sample point WA057B.

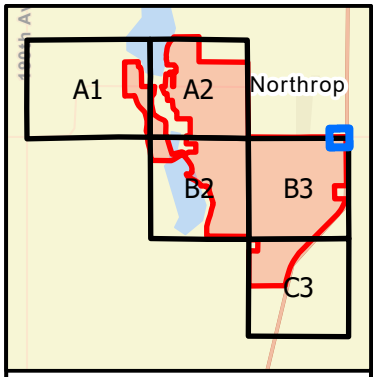
Direction: South	Photo ID: delin_photo-20221021-161059.jpg	Date: 10/21/2022
Project Name: Lake Charlotte		Feature ID: WA057

Overview of wetland WA057.

Direction: West	Photo ID: f_photo-20221021-161150.jpg	Date: 10/21/2022

Overview of wetland WA057.

Direction: West	Photo ID: f_photo-20221021-161254.jpg	Date: 10/21/2022
Project Name: Lake Charlotte		Feature ID: WA057



Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WA057
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 40 80 120 160 Feet

N

Wetland ID WA057

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,500

Wetland ID

WB068

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB068A

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None

Slope (%): 0 | Lat: 43.72938 | Long: -94.43739 | Datum: WGS84

Soil Map Unit Name: Crippin loam, 1 to 3 percent slopes | NWI Classification: PEM1Af

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes | **Is the sampled area within a wetland? Yes**

Wetland Hydrology Present? Yes | If yes, optional wetland site ID: WB068

Remarks:

Recently tilled agricultural field. Recently harvested agricultural field.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation*

X (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Recently tilled agricultural field. Bare ground: 100%

SOIL

Sampling Point: WB068A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-15	10YR 2/1	90					Clay	
	2.5Y 3/2	10						Mixed Matrix
15-25	2.5Y 6/2	100					Very Fine Sandy Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB068B

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): Convex

Slope (%): 1 | Lat: 43.72939 | Long: -94.43756 | Datum: WGS84

Soil Map Unit Name: Crippin loam, 1 to 3 percent slopes | NWI Classification: PEM1Af

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? Yes **Is the sampled area within a wetland? No**

Wetland Hydrology Present? No If yes, optional wetland site ID: WB068

Remarks:

Recently tilled agricultural field. Recently harvested agricultural field.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Recently tilled agricultural field. Nearby corn and visible chaff appeared healthy. Bare ground: 100%

SOIL

Sampling Point: WB068B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-15	10YR 2/1	100					Clay Loam	
15-20	10YR 2/1	100					Clay	
20-28	10YR 3/1	80	2.5Y 5/3	20	C	PL/M	Clay	Distinct or Prominent
28-40	2.5Y 6/2	100					Very Fine Sandy Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

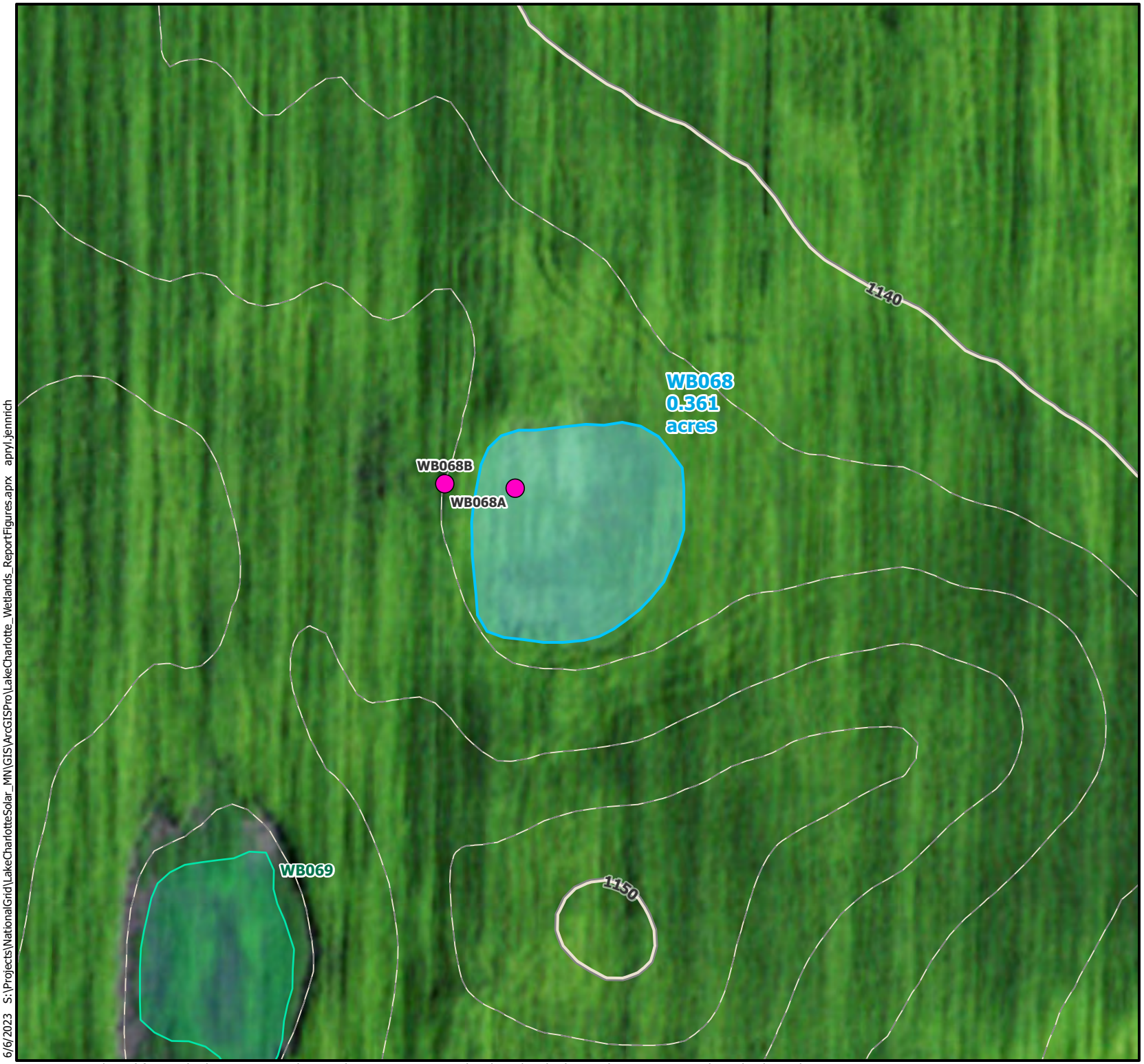
Overview of wetland sample point WB068A.

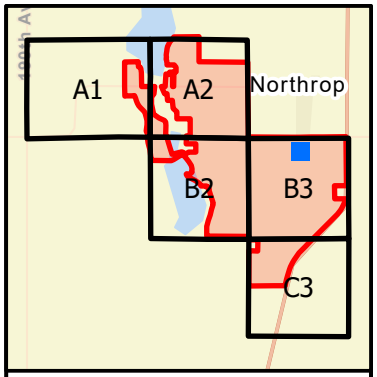
Direction: East	Photo ID: delin_photo-20221024-160914.jpg	Date: 10/24/2022

Overview of upland sample point WB068B.

Direction: West	Photo ID: delin_photo-20221024-161814.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB068

Overview of wetland WB068.		
Direction: East	Photo ID: f_photo-20221024-161851.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB068





Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WB068
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

N

0 25 50 75 100 Feet

Wetland ID WB068

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,000

Wetland ID

WB069

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB069A

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 43.72856 | Long: -94.438 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes | **Is the sampled area within a wetland? Yes**

Wetland Hydrology Present? Yes | If yes, optional wetland site ID: WB069

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Zea mays*	25	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	25 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	25	x 5 =	125
Column totals	25 (A)		125 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation*

X (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Agricultural field. Corn appeared stressed. Bare ground: 75%

SOIL

Sampling Point: WB069A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-40	10YR 2/1	100					Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

A12 Assumed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB069B

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex

Slope (%): 2 | Lat: 43.72862 | Long: -94.43785 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? Yes **Is the sampled area within a wetland? No**

Wetland Hydrology Present? No If yes, optional wetland site ID: WB069

Remarks:

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Zea mays*	40	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	40 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	40	x 5 =	200
Column totals	40 (A)		200 (B)

Prevalence Index = B/A = 5

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Agricultural field. Corn appears healthy. Bare ground: 60%

SOIL

Sampling Point: WB069B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-18	10YR 2/1	100					Clay Loam	
18-30	10YR 3/1	90	10YR 4/4	10	C	PL	Clay Loam	Distinct or Prominent
30-40	10YR 3/1	97	2.5Y 5/6	3	C	PL	Clay	Distinct or Prominent

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

A12 Assumed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WB069A.

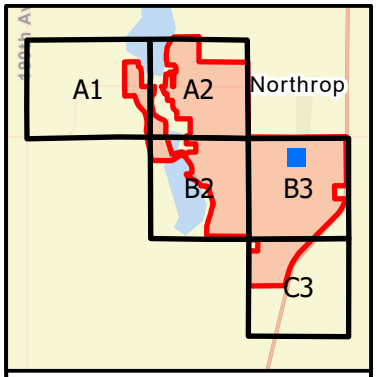
Direction: South	Photo ID: delin_photo-20221024-163313.jpg	Date: 10/24/2022

Overview of upland sample point WB069B.

Direction: North	Photo ID: delin_photo-20221024-164450.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB069

Overview of wetland WB069.

Direction: South	Photo ID: f_photo-20221024-164618.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB069



Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WB069
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 25 50 75 100 Feet

N

Wetland ID WB069

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,000

Wetland ID

WB072

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB072A

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Ditch | Local relief (concave, convex, none): Concave

Slope (%): 5 | Lat: 43.71706 | Long: -94.44227 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes

Wetland Hydrology Present? Yes

Is the sampled area within a wetland? Yes

If yes, optional wetland site ID: WB072

Remarks:

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		200 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

X Rapid test for hydrophytic vegetation

X Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Bare ground: 0%

SOIL

Sampling Point: WB072A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

Potential underground utility conflict. Hydric soils assumed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB072B

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None

Slope (%): 0 | Lat: 43.71711 | Long: -94.44227 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? No **Is the sampled area within a wetland? No**

Wetland Hydrology Present? No If yes, optional wetland site ID: WB072

Remarks:

Recently tilled agricultural field. Recently harvested agricultural field.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Recently tilled agricultural field. Bare ground: 100%

SOIL

Sampling Point: WB072B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-6	10YR 2/1	100					Clay Loam	
6-9	10YR 2/1	95	10YR 4/4	5	C	PL	Clay Loam	Distinct or Prominent
9-13	2.5Y 3/2	70					Clay Loam	
	2.5Y 5/3	30						Mixed Matrix
13-20	2.5Y 5/3	100					Clay Loam	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

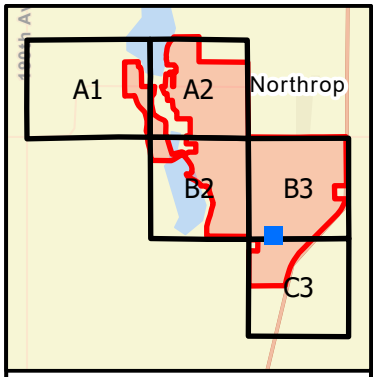
Overview of wetland sample point WB072A.		
Direction: South	Photo ID: delin_photo-20221024-181642.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB072

Overview of upland sample point WB072B.		
Direction: North	Photo ID: delin_photo-20221024-182507.jpg	Date: 10/24/2022

Project Name: Lake Charlotte	Feature ID: WB072

Overview of wetland WB072.

Direction: West	Photo ID: f_photo-20221024-182607.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB072



Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WB072
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 25 50 75 100 Feet

N

Wetland ID WB072

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,000

Wetland ID

WB073

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB073A

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Ditch | Local relief (concave, convex, none): Concave

Slope (%): 5 | Lat: 43.71708 | Long: -94.44066 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes — **Is the sampled area within a wetland? Yes**

Wetland Hydrology Present? Yes — If yes, optional wetland site ID: WB073

Remarks:

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	95	Y	FACW
2. *Xanthium strumarium*	2	N	FAC
3. *Rumex crispus*	2	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	99	=Total Cover	
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	4	x 3 =	12
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	99 (A)		202 (B)

Prevalence Index = B/A = 2.04

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

X Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Bare ground: 0%

SOIL

Sampling Point: WB073A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

Potential underground utility conflict. Hydric soils assumed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches): ___
Water Table Present?	Yes	___	No	___	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes	___	No	___	Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB073B

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None

Slope (%): 0 | Lat: 43.71715 | Long: -94.44066 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: PEM1Af

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? No | **Is the sampled area within a wetland? No**

Wetland Hydrology Present? No | If yes, optional wetland site ID: WB073

Remarks:

Recently tilled agricultural field. Recently harvested agricultural field.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Recently tilled agricultural field. Bare ground: 100%

SOIL

Sampling Point: WB073B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-30	10YR 2/1	100					Clay	
30-36	2.5Y 5/3	100					Fine Sandy Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WB073A.

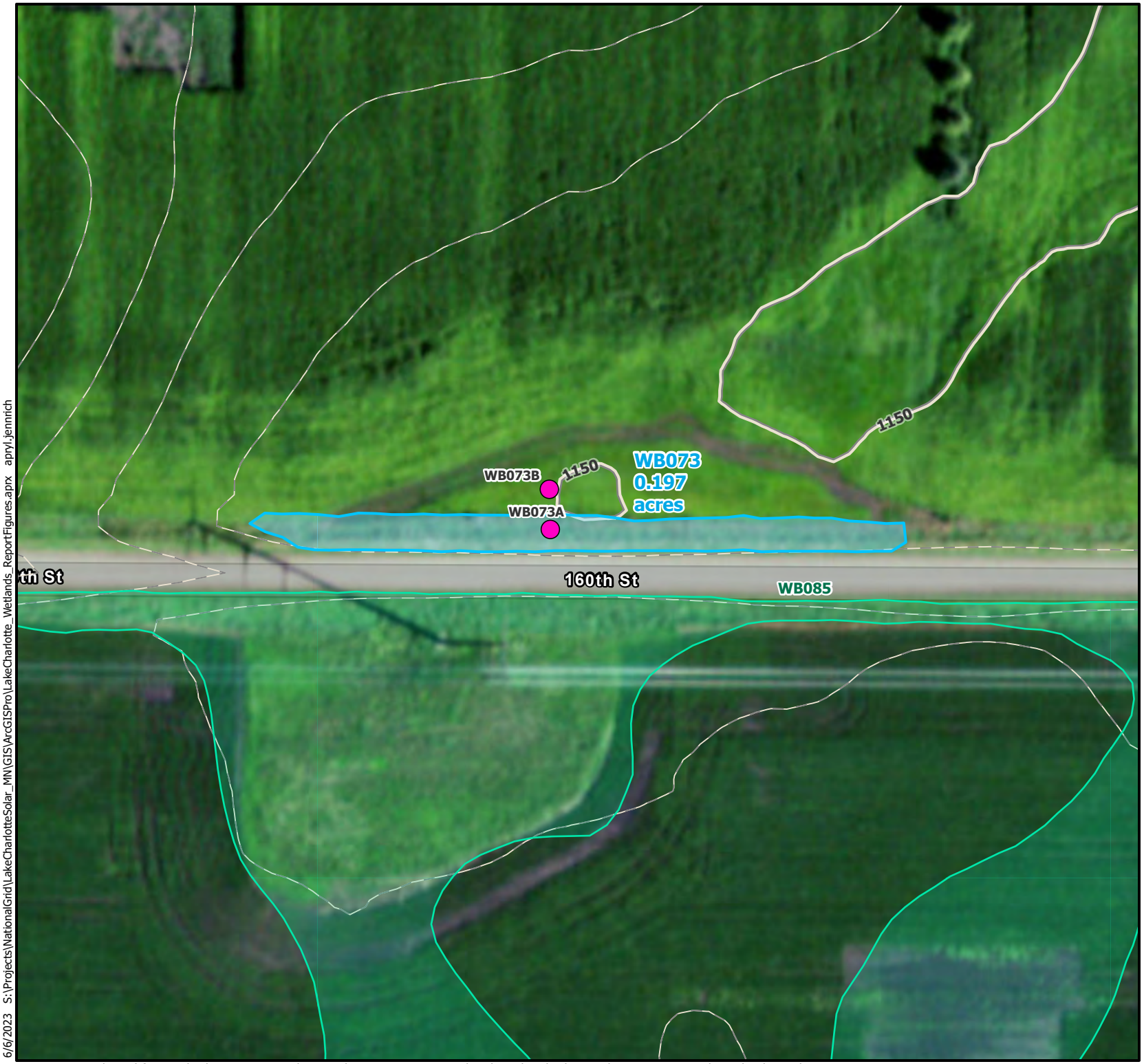
Direction: South	Photo ID: delin_photo-20221024-184601.jpg	Date: 10/24/2022

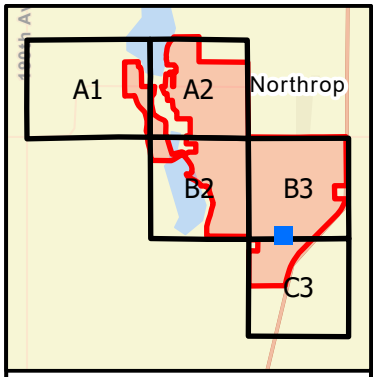
Overview of upland sample point WB073B.

Direction: North	Photo ID: delin_photo-20221024-184452.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB073

Overview of wetland WB073.

Direction: East	Photo ID: f_photo-20221024-184933.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB073





Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WB073
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 25 50 75 100 Feet

N

Wetland ID WB073

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,000

Wetland ID

WB079

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB079A

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 2 | Lat: 43.7177 | Long: -94.44731 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes | **Is the sampled area within a wetland? Yes**

Wetland Hydrology Present? Yes | If yes, optional wetland site ID: WB079

Remarks:

Recently tilled agricultural field. Recently harvested agricultural field.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation*

X (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Recently tilled agricultural field. Bare ground: 100%

SOIL

Sampling Point: WB079A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	10YR 2/1	100					Clay	
16-19	2.5Y 3/1	100					Clay	
19-28	5Y 6/2	100					Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches): ___
Water Table Present?	Yes	___	No	X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB079B

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Hillslope | Local relief (concave, convex, none): Convex

Slope (%): 4 | Lat: 43.71766 | Long: -94.44699 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? Yes **Is the sampled area within a wetland? No**

Wetland Hydrology Present? No If yes, optional wetland site ID: WB079

Remarks:

Recently tilled agricultural field. Recently harvested agricultural field.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Recently tilled agricultural field. Bare ground: 100%

SOIL

Sampling Point: WB079B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	10YR 2/1	100					Clay Loam	
12-18	2.5Y 6/1	100					Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 18

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WB079A.

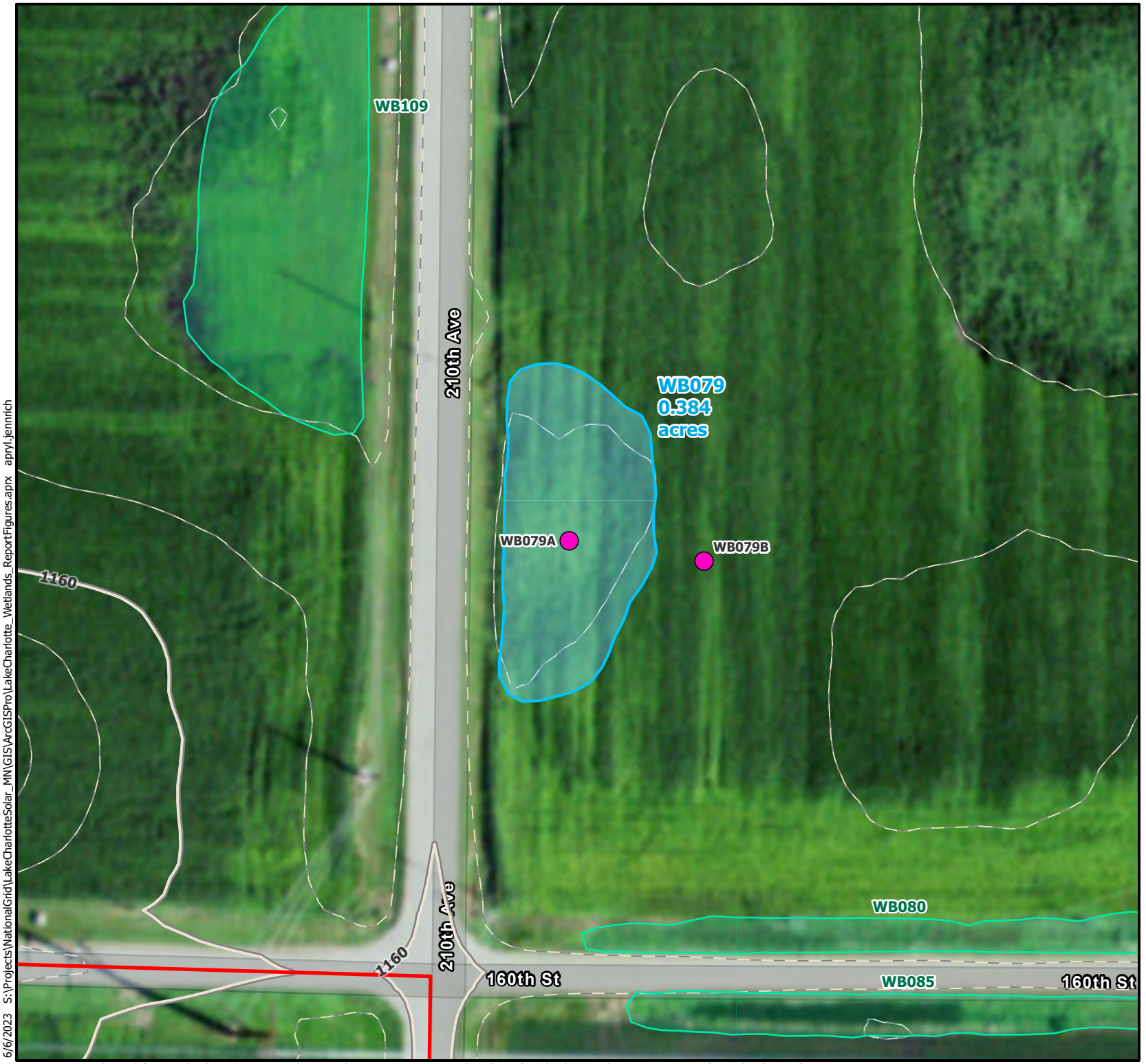
Direction: East	Photo ID: delin_photo-20221024-202601.jpg	Date: 10/24/2022

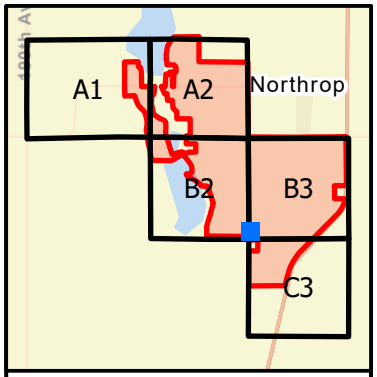
Overview of upland sample point WB079B.

Direction: East	Photo ID: delin_photo-20221024-203240.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB079

Overview of wetland WB079.

Direction: West	Photo ID: f_photo-20221024-203345.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB079





Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WB079
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 25 50 75 100 Feet

N

Wetland ID WB079

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,000

Wetland ID

WB080

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB080A

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Ditch | Local relief (concave, convex, none): Concave

Slope (%): 5 | Lat: 43.71701 | Long: -94.44702 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes | **Is the sampled area within a wetland? Yes**

Wetland Hydrology Present? Yes | If yes, optional wetland site ID: WB080

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		

Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		

Herb Stratum (Plot size: 5)			
1. *Spartina pectinata*	60	Y	FACW
2. *Phalaris arundinacea*	35	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95	=Total Cover	

Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	95 (A)		190 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

X Rapid test for hydrophytic vegetation

X Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Bare ground: 0%

SOIL

Sampling Point: WB080A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

Potential underground utility conflict. Hydric soils assumed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB080B

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None

Slope (%): 0 | Lat: 43.7171 | Long: -94.44702 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? No **Is the sampled area within a wetland? No**

Wetland Hydrology Present? No If yes, optional wetland site ID: WB080

Remarks:

Recently tilled agricultural field. Recently harvested agricultural field.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Recently tilled agricultural field. Bare ground: 100%

SOIL

Sampling Point: WB080B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-13	10YR 2/1	100					Clay	
13-20	10YR 4/1	100					Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WB080A.

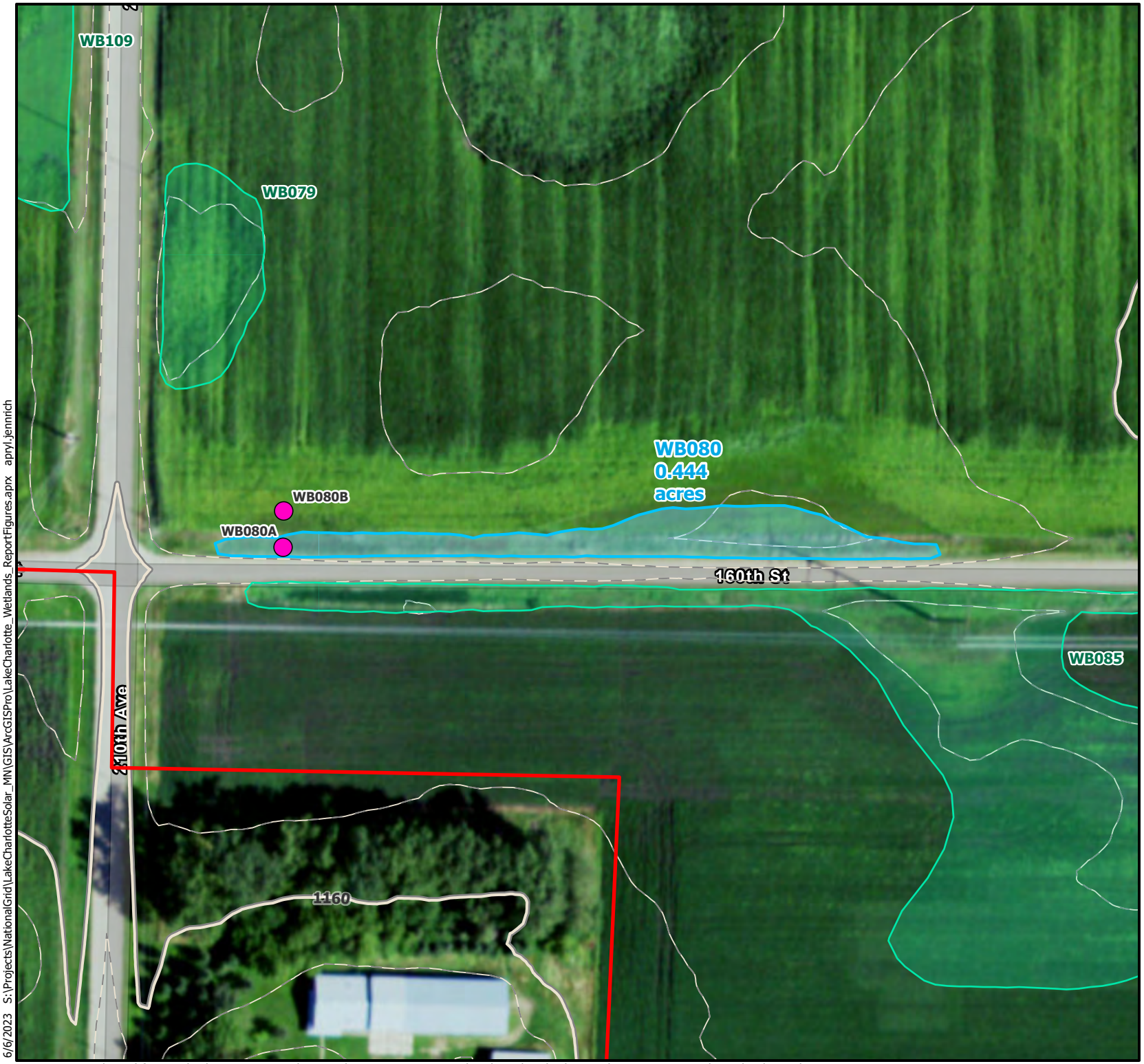
Direction: South	Photo ID: delin_photo-20221024-204627.jpg	Date: 10/24/2022

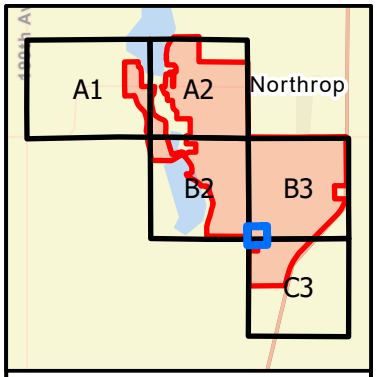
Overview of upland sample point WB080B.

Direction: North	Photo ID: delin_photo-20221024-204454.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB080

Overview of wetland WB080.

Direction: East	Photo ID: f_photo-20221024-204809.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB080





Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WB080
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 40 80 120 160 Feet

N

Wetland ID WB080

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,500

Wetland ID

WB081

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB081A

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Ditch | Local relief (concave, convex, none): Concave

Slope (%): 5 | Lat: 43.72106 | Long: -94.44754 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation ____, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? Yes

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes | **Is the sampled area within a wetland? Yes**

Wetland Hydrology Present? Yes | If yes, optional wetland site ID: WB081

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Spartina pectinata*	70	Y	FACW
2. *Phalaris arundinacea*	30	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 =Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	100 (A)		200 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

X Rapid test for hydrophytic vegetation

X Dominance test is >50%

___ Prevalence index is ≤3.0*

___ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Bare ground: 0%

SOIL

Sampling Point: WB081A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

Potential underground utility conflict. Hydric soils assumed.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/24/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB081B

Investigator(s): Susan Mayer | Section, Township, Range: Sec.16 T103N R30W

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None

Slope (%): 1 | Lat: 43.72106 | Long: -94.44743 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil , or hydrology Significantly disturbed? Are "normal circumstances present? No

Are vegetation , soil , or hydrology naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? No — **Is the sampled area within a wetland? No**

Wetland Hydrology Present? No — If yes, optional wetland site ID: WB081

Remarks:

Recently tilled agricultural field. Recently harvested agricultural field.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: 15)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Recently tilled agricultural field. Bare ground: 100%

SOIL

Sampling Point: WB081B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	10YR 2/1	100					Clay	
12-18	10YR 2/1	70	2.5Y 4/1	20	D	M	Clay	
			2.5Y 6/2	10	D	M		
18-28	5Y 5/3	90	7.5YR 6/8	5	C	PL	Clay	Distinct or Prominent
			2.5Y 6/8	5	C	PL		Distinct or Prominent

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WB081A.

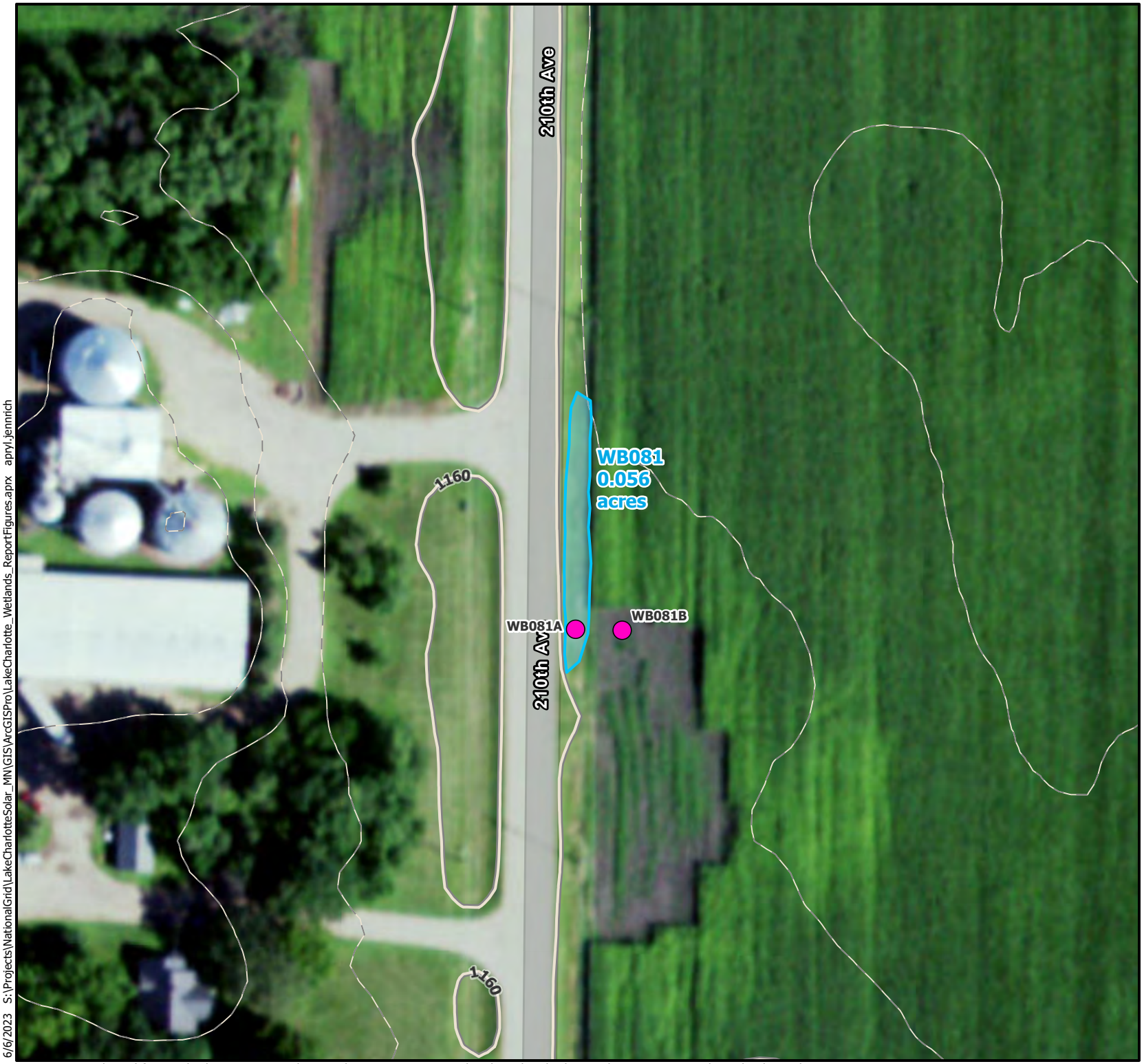
Direction: West	Photo ID: delin_photo-20221024-212303.jpg	Date: 10/24/2022

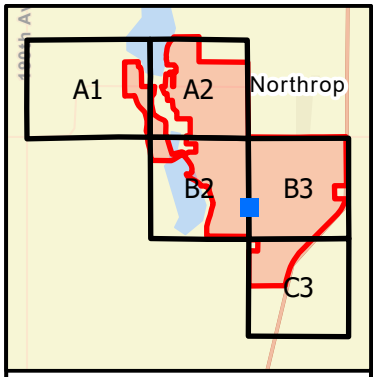
Overview of upland sample point WB081B.

Direction: East	Photo ID: delin_photo-20221024-212338.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB081

Overview of wetland WB081.

Direction: North	Photo ID: f_photo-20221024-212706.jpg	Date: 10/24/2022
Project Name: Lake Charlotte		Feature ID: WB081





Survey Area

Wetland Survey

- Wetland Sample Plot
- Delineated Wetland WB081
- Other Delineated Wetland
- Surveyed Pond
- Surveyed Lake
- Surveyed Stream

2-foot Elevation Contour

- Index
- Intermediate

0 25 50 75 100 Feet

N

Wetland ID WB081

Wetland Delineation
Lake Charlotte Solar
Martin County, Minnesota

TETRA TECH

6/6/2023 S:\Projects\NationalGrid\LakeCharlotteSolar_MN\GIS\ArcGISPro\LakeCharlotte_Wetlands_ReportFigures.aprx apryl.jennrich

Source: Map adapted from Hybrid NAIP Server; Elevation by MN DNR; Project data by Lake Charlotte Solar, LLC; Tetra Tech Wetlands. Scale: 1:1,000

Wetland ID

WB084

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/25/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB084A

Investigator(s): Susan Mayer | Section, Township, Range: Sec.21 T103N R30W

Landform (hillslope, terrace, etc.): Depression | Local relief (concave, convex, none): Concave

Slope (%): 1 | Lat: 43.71528 | Long: -94.43667 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes

Hydric Soil Present? Yes | **Is the sampled area within a wetland? Yes**

Wetland Hydrology Present? Yes | If yes, optional wetland site ID: WB084

Remarks:

Recently harvested agricultural field.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation*

X (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes

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

Harvested agricultural field. Bare ground: 100%

SOIL

Sampling Point: WB084A

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-3	10YR 2/1	100					Clay	
3-10	10YR 3/1	100					Clay	
10-40	10YR 2/1	100					Clay	

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	___
Water Table Present?	Yes	___	No	X	Depth (inches):	___
Saturation Present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Wetland Hydrology Present? Yes

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Lake Charlotte | City/County: Martin | Sampling Date: 10/25/2022

Applicant/Owner: Lake Charlotte Solar, LLC | State: MN | Sampling Point: WB084B

Investigator(s): Susan Mayer | Section, Township, Range: Sec.21 T103N R30W

Landform (hillslope, terrace, etc.): Plain | Local relief (concave, convex, none): None

Slope (%): 1 | Lat: 43.71536 | Long: -94.43678 | Datum: WGS84

Soil Map Unit Name: Canisteo-Glencoe complex, 0 to 2 percent slopes | NWI Classification: NA

Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)

Are vegetation X, soil ____, or hydrology ____ Significantly disturbed? Are "normal circumstances present? No

Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? No

Hydric Soil Present? No **Is the sampled area within a wetland? No**

Wetland Hydrology Present? No If yes, optional wetland site ID: WB084

Remarks:

Recently harvested agricultural field.

VEGETATION -- Use scientific names of plants.

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	=Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	=Total Cover		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: % (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ Rapid test for hydrophytic vegetation

____ Dominance test is >50%

____ Prevalence index is ≤3.0*

____ Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? No

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

Harvested agricultural field. Bare ground: 100%

SOIL

Sampling Point: WB084B

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-6	10YR 2/1	100					Clay	
6-13	10YR 2/1	50					Clay	
	2.5Y 7/6	50						Mixed Matrix

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils*:

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

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 13

Hydric Soil Present? No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes	___	No	X	Depth (inches):	___
Water Table Present?	Yes	___	No	X	Depth (inches):	___
Saturation Present? (includes capillary fringe)	Yes	___	No	X	Depth (inches):	___

Wetland Hydrology Present? No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Overview of wetland sample point WB084A.

Direction: Northeast	Photo ID: delin_photo-20221025-134807.jpg	Date: 10/25/2022

Overview of upland sample point WB084B.

Direction: Northeast	Photo ID: delin_photo-20221025-135520.jpg	Date: 10/25/2022
Project Name: Lake Charlotte		Feature ID: WB084