

# **WETLAND DELINEATION REPORT**

**Rubbert Site** 

December, 2012

(Stantec Project # 193702031)



### WETLAND DELINEATION REPORT

### RUBBERT WETLAND MITIGATION SITE WisDOT PROJECT I.D. 6200-11-01 WINNEBAGO COUNTY, WISCONSIN

**December 21, 2012** 

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### **INTRODUCTION**

Stantec Consulting Services, Inc. (Stantec) performed vegetation community mapping as well as a wetland determination and delineation at the Wisconsin Department of Transportation (WisDOT) Rubbert Wetland Mitigation Site in the Town of Clayton, Winnebago County, Wisconsin ("the Project"). The Project was constructed in 2007 by WisDOT to compensate for wetland impacts associated with upgrades to the U. S. Highway 45 (USH 45) corridor. The Project site is approximately 45.8 acres, and is located in Section 17, Township 20 North, Range 16 East (Figure 1). The site is bordered by Winnebago County Trunk II to the south, an abandoned railroad right-of-way to the west, and agricultural lands to the east and north.

The Project site was constructed to establish wetland hydrology on drained agricultural land. Wetland hydrology was established through the construction of a berm and basin on the south and east sides of the project, as well as the removal of drain tile. The purpose and objective of the wetland determination and delineation was to identify the extent and spatial arrangement of wetlands within the Project site. In addition to the wetland delineation, a reconnaissance of the Project was conducted to develop of a vegetation community map, and to determine the distribution and extent of invasive species. Invasive species of concern included purple loosestrife (*Lythrum salicaria*), common reed grass (*Phragmites australis*) and reed canary grass (*Phalaris arundinacea*). The wetland delineation and site reconnaissance was completed by Melissa Curran and Nik Bertagnoli of Stantec on September 7, 2012. One wetland area was identified on the Project.

Wetlands that are considered waters of the U.S. are subject to regulation under Section 404 of the Clean Water Act (CWA) and the jurisdictional regulatory authority lies with the United States Army Corps of Engineers (USACE). Additionally, the Wisconsin Department of Natural Resources (WDNR) has regulatory authority over wetlands, navigable waters, and adjacent lands under Chapter 30 Wisconsin State Statutes, Act 6, and Wisconsin Administrative Code NR 103. Stantec recommends this report be submitted to the WDNR and USACE for final jurisdictional review and concurrence.

### **METHODS**

Wetland determinations were based on the criteria and methods outlined in the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (2009), *United States Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1 (1987), and subsequent guidance documents (USACE 1991, 1992), Guidelines for Submitting Wetland Delineations in Wisconsin to the St. Paul District Corps of Engineers (USACE 1996), and the *Basic Guide to Wisconsin's Wetlands and their Boundaries* (Wisconsin Department of Administration Coastal Management Program 1995).

The wetland determination involved the use of available resources to assist in the assessment such as USGS topographic maps, Natural Resources Conservation Service (NRCS) soil survey, Wisconsin Wetland Inventory (WWI) mapping, a wetland delineation conducted by Stantec staff in 2011, and aerial photography. In addition to these resources, climate data from the National Weather Service (NWS) and the United States Geological Survey (USGS) were also analyzed to help justify conclusions that were reached in the field.

On-site wetland determinations were made using the three criteria (vegetation, soil and hydrology) and technical approach defined in the NC/NE Regional Supplement. According to procedures described in the NC/NE Regional Supplement, areas that under normal circumstances reflect a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology (e.g., inundated or saturated soils) are considered wetlands.

The wetland boundary was surveyed with a Global Positioning System (GPS) capable of sub-meter accuracy and mapped using Geographical Information System (GIS) software.

The vegetation community mapping and invasive species survey was accomplished through use of a meander survey and aerial photography interpretation.

### **RESULTS**

### **Site Description**

The majority of the Project site is comprised of restored wet meadow, emergent and mesic prairie communities. The wet meadow and emergent communities are located in the east half of the Project, while the mesic prairie community is located in the west half of the Project.

The USGS Topographic Map (Figure 1) indicates the Project site is located in a relatively flat area adjacent to an intermittent waterway, known as Arrowhead River, which flows south along the eastern edge of the Property.

Soils mapped on the Project site by the NRCS Soil Survey of Winnebago County include Menasha clay (Mn), Poy silty clay loam (Pt), and Neenah silty clay loam (NhA) (Figure 2). According to the NRCS List of Hydric Soils for Winnebago County, Menasha and Poy soils are hydric, while Neenah soils contain hydric inclusions. Menasha soils consist of very deep, poorly drained soils formed in clayey lacustrine deposits on glacial lake basins and stream terraces. The Poy series consists of very deep poorly

drained soils that are moderately deep to sandy deposits. They formed primarily in clayey water-laid deposits overlying sandy deposits on glacial lake basins and stream terraces. The Neenah series consists of very deep, somewhat poorly drained soils formed in clayey lacustrine deposits on glacial lake basins and stream terraces. The wetland identified on the Project is mostly located within the Menasha and Poy map units. It is important to note that the soil map was created prior to construction of the Project.

The Wisconsin Wetland Inventory (WWI) map indicates the presence of a shrub wetland in the northwest portion of the Project (Figure 3). The area identified as shrub wetland on the WWI met jurisdictional wetland requirements prior to construction of the mitigation site. It is important to note that the wetland map was created prior to construction of the Project.

According to the NWS Oshkosh Weather Station 2.19 inches of rain was recorded in August, and up until the time of the delineation, 0.25 inches of rain had been recorded in September. Rainfall for both August and September was below normal. According to the USGS' Waterwatch Data, stream flows near the Project were below normal. Based on the recorded precipitation and stream flows present near the Project, it was assumed that direct observations of wetland hydrology (inundation or saturation to the surface) may be observed.

#### **Wetland Delineation**

One wetland was identified and delineated within the Project. USACE data sheets were completed for eight sample points along transects through the wetlands and adjacent uplands and are contained in Appendix A. Photographs of the wetland and adjacent lands are contained in Appendix B. The wetland boundaries and sample point locations are shown on Figure 4. Results of the wetland delineation completed by Stantec in 2011 are provided in Appendix C. The wetlands are summarized in Table 1 and described in detail in the following sections.

Table 1. Summary of the wetlands identified within the Project.

Wetland	Wetland Type	Adjacent Surface Waters	Acreage (on-site)
Wetland 1a (W-1a) Restoration Area	WDNR: Shallow Marsh (E1K)/ Wet Meadow (E2K) WisDOT: SM & WM	Directly adjacent to the Arrowhead River	24.7 acres
Wetland 1b (W-1b) Pre-construction wetland	WDNR: Shrub (S3K)/ Forested Wetland (T3K) WisDOT: SS and WS	Directly adjacent to the Arrowhead River	N.A. Not part of this assessment.

### Wetland 1(W-1)

Wetland 1a (W-1a) is a 24.7 acre restored wet meadow/shallow marsh located in the east portion of the Project. Results of the 2012 delineation show the wetland boundary continued to expand, increasing from 2011 by approximately 0.88 acres. This expansion was due to the replacement of cover crops by wet meadow species during the 2011 and 2012 growing seasons.

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#### Vegetation

Dominant plant species identified within W-1a include reed canary grass (*Phalaris arundinacea*), field nut sedge (*Cyperus esculentus*), common sneezeweed (*Helenium autumnale*), shining aster (*Aster puniceus*), black bulrush (*Scirpus atrovirens*), narrow-leaved cattail (*Typha angustifolia*), and blue-joint grass (*Calamagrostis canadensis*). The dominant species within the wetland are comprised mostly of hydrophytic vegetation (OBL, FACW, and/or FAC) and meet the hydrophytic vegetation criterion.

### Hydrology

The wetland appears to have a seasonally inundated/saturated hydroperiod. Primary indicators of wetland hydrology included oxidized rhizospheres on living roots. Secondary indicators of wetland hydrology included the FAC-neutral test and geomorphic position. Therefore, the wetland hydrology criterion was met

#### Soils

Soils within the wetland are mostly mapped by the NRCS as Menasha clay loam (Figure 2). The soils observed at the sample points were not consistent with the Menasha series' characteristics. NRCS field indicators of hydric soil including F6 – Redox Dark Surface and F2 – Loamy Depleted Matrix were observed.

### Wetland Boundary

The wetland boundary was determined based on distinct differences in vegetation, hydrology, and topography consisting of the following: 1) Transition from a wet meadow/emergent wetland complex dominated by hydrophytes to a mesic prairie dominated by upland species; 2) Transition from areas with sufficient evidence of wetland hydrology to areas that lacked wetland hydrology indicators; and 3) Transition from a depressional landscape to a gently sloping landscape.

#### **Pre-construction Wetland**

A pre-construction wetland complex (W-1b) is located in the northwest portion of the Project (Figure 4). W-1b is a shrub/forested wetland dominated by reed canary grass in the herbaceous layer, common buckthorn (*Rhamnus cathartica*) and red-osier dogwood (*Cornus stolonifera*) in the shrub layer, and green ash (*Fraxinus pennsylvanica*) in the tree canopy.

### **Uplands**

Uplands within the Project consist of a mesic prairie planting dominated by, Queen Anne's-lace (*Daucus carota*), big blue-stem (*Andropogon gerardii*), common goldenrod (*Solidago canadensis*), Kentucky bluegrass (*Poa pratensis*), velvet leaf (*Abutilon theophrasti*), Virginia wild rye (*Elymus virginicus*), common ragweed (*Ambrosia artemisiifolia*), alsike clover (*Trifoium hybridum*), and switch grass (*Panicum virgatum*).

Indicators of hydric soil and wetland hydrology were not observed at the upland data plots. Upland plots were located approximately 2-3 feet higher in elevation than the adjacent wetland plots. The uplands are located in a gently sloping landscape (~2-6%), and are not located in topographic positions that are conducive to wetland formation.

### **Vegetation Community Mapping**

Three vegetation communities were identified on the Project (Figure 6) including shallow marsh (SM), wet meadow (M), and upland mesic prairie. A brief description of each community is provided below.

Shallow Marsh (SM)

The shallow marsh comprises 20.22 acres of the site and is dominated by narrow-leaved cattail (*typha angustfolia*). Invasive species of concern within this plant community include reed canary grass, which currently comprises less than 5 percent of the areal coverage.

Wet Meadow (M)

The wet meadow comprises 4.51 acres of the site and is dominated by species such as fox sedge (*Carex vulpinoidea*), black bulrush, and swamp aster (*Aster puniceus*). Other common species include monkey flower, common sneezeweed (*Helenium autumnale*), common ironweed (*Vernonia fasciculata*), grassleaved goldenrod (*Euthamia graminifolia*), and swamp milkweed (*Asclepias incarnata*). Invasive species of concern include reed canary grass.

Mesic Prairie

The mesic prairie comprises 11.67 acres of the site and is dominated by species such as Canada wild-rye, Queen Anne's lace, and timothy. Other common species include red clover (*Trifolium pratense*), common goldenrod (*Solidago canadensis*), common dandelion (*Taraxacum officinale*), white sweet-clover (*Melilotus alba*), and big blue-stem. Invasive species of concern are minimal, represented by only reed canary grass with an estimated 5 percent areal coverage.

### **Invasive Species**

Stantec conducted a reconnaissance of the Project to determine the presence and distribution of select non-native invasive plant species. Species targeted for evaluation included reed canary grass, purple loosestrife, and common reed grass. Results of the reconnaissance are illustrated on Figure 5 and briefly described below:

- A) Reed Canary Grass: This species was noted as scattered pockets throughout the wet meadow, shallow marsh and mesic prairie communities of the Project. Larger clones with an established localized areal coverage greater than 20 percent were located throughout the Project (Figure 5). Many of these areas had been treated with herbicide. Herbicide treatments to areas with greater than 30 percent areal coverage of reed canary grass are recommended to reduce the extent of this species within the Project. Adaptive management techniques, including a combination of mowing, herbicide treatments and re-seeding with native species, are recommended. Further monitoring is also recommended to ensure that new infestations do not occur within the Project.
- B) Purple Loosestrife: This species was not observed during the 2012 growing season.
- C) Common Reed Grass: This species was located in a dense clump along the ditch on the south portion of the project area adjacent to Winnebago County Trunk II (Figure 5). Herbicide

treatments and continued monitoring is recommended to ensure this species does not expand its range within the project.

D) Stantec also noted scattered clones of white sweet clover throughout the mesic prairie (Figure 5). This species can become invasive in upland areas. Eradication of this species is recommended.

### Other

Other aspects not specifically required for this project's report were given consideration during the site visit. These other aspects include incidental wildlife observations, habitat quality, and structural observations.

Wildlife Observations

Wildlife observed during the site visit included mallards (*Anas platyrhynchos*), blue winged teal (*Anas discors*), and red-winged blackbirds (*Agelaius phoeniceus*).

Habitat Quality

The Project provides high quality shallow marsh habitat for many species. Dabbling ducks and geese such as mallards, Canada geese (*Branta canadensis*), and blue-winged teal likely use the project for nesting, while other waterfowl such as coots (*Fulica americana*), shovelers (*Spatula clypeata*), and greenwinged teal (*Anas carolinensis*) likely use the area as a stop-over area during spring and fall migration. Wading birds such as the great blue heron and great egret (*Casmerodius albus*) likely use the Project as a food source, while the American bittern (*Botaurus lentiginosus*) likely uses the area as a stop-over during migration. Other wading birds that may use the Project include the rails (*Rallus* and *Laterallus* sp.). The semi-permanent to permanent hydroperiod of the wetland provides habitat to amphibian species such as the Leopard frog (*Rana pipiens*), green frog, and tiger salamander (*Ambystoma tigrinum*). Mammals adapted to aquatic conditions, such as muskrat and mink (*Mustela vison*) likely use the Project as denning and foraging habitat.

### **Environmental Considerations**

This report is limited to the identification of state and/or federally regulated wetlands within the Project site. However, there may be other regulated environmental features within the site, including but not limited to historical or archeological features, endangered or threatened species, navigable waters and/or floodplains, etc. Federal, state, and local units of government and regional planning organizations may have regulatory authority to control or restrict land uses within or in close proximity to these features. Stantec can assist with identification and/or assessment of additional regulated resources at your request, to the extent that the work is within our range of expertise.

### **CONCLUSION**

Stantec performed a wetland determination and delineation and habitat mapping of the WisDOT Rubbert Wetland Mitigation Site in the Town of Clayton, Winnebago County, Wisconsin. The Property is located in Section 17, Township 20 North, Range 16 East, Town of Clayton, Winnebago County, Wisconsin. The purpose and objective of the wetland determination and delineation was to identify the extent and

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spatial arrangement of wetlands within the Project. In addition to the wetland delineation, a reconnaissance of the Project was conducted to aid in the development of a vegetation community map, and to determine the distribution and extent of invasive species. Invasive species of concern included purple loosestrife, common reed grass, and reed canary grass.

One 24.7 acre wetland was identified on the Project. Adjacent uplands are comprised of mesic prairie. Wetlands and their boundaries were surveyed and mapped. Three distinct plant communities were observed at the site: wet meadow (M), shallow marsh (SM), and upland mesic prairie. Reed canary grass and purple loosestrife were both observed within the Project area, and common reed grass was observed on the Project boundary. Reed canary grass was noted in both the upland mesic prairie and wet meadow communities. One dense clump of common reed grass was noted on the south project boundary adjacent to Winnebago County Trunk II.

The USACE has regulatory authority over waters of the U.S. including adjacent wetlands, and the WDNR has regulatory authority over wetlands, navigable waters, and adjacent lands under Chapter 30 Wisconsin State Statutes, Act 6, and NR 103 Wisconsin Administrative Code. Local jurisdictions may have additional regulatory authority through shoreland or wetland zoning ordinances.

Prior to beginning work at this site or disturbing or altering wetlands, waterways, or adjacent lands in any way, Stantec recommends that the owner obtain the necessary permits or other agency regulatory review and concurrence with regard to the proposed work to comply with applicable regulations. Stantec can assist with identification and/or assessment of additional regulated resources at your request, to the extent that the work is within our range of expertise.

The information provided by Stantec regarding wetland boundaries is a scientific-based analysis of the wetland and upland conditions present on the site at the time of the fieldwork. The delineation was performed by experienced and qualified professionals using standard practices and sound professional judgment. The ultimate decision on wetland boundaries rests with the USACE and, in some cases, the WDNR or a local unit of government. As a result, there may be adjustments to boundaries based upon review by a regulatory agency. An agency determination can vary from time to time depending on various factors including, but not limited to recent precipitation patterns and the season of the year. In addition, the physical characteristics of the site can change over time, depending on the weather, vegetation patterns, drainage activities on adjacent parcels, or other events. Any of these factors can change the nature and extent of wetlands on the site.

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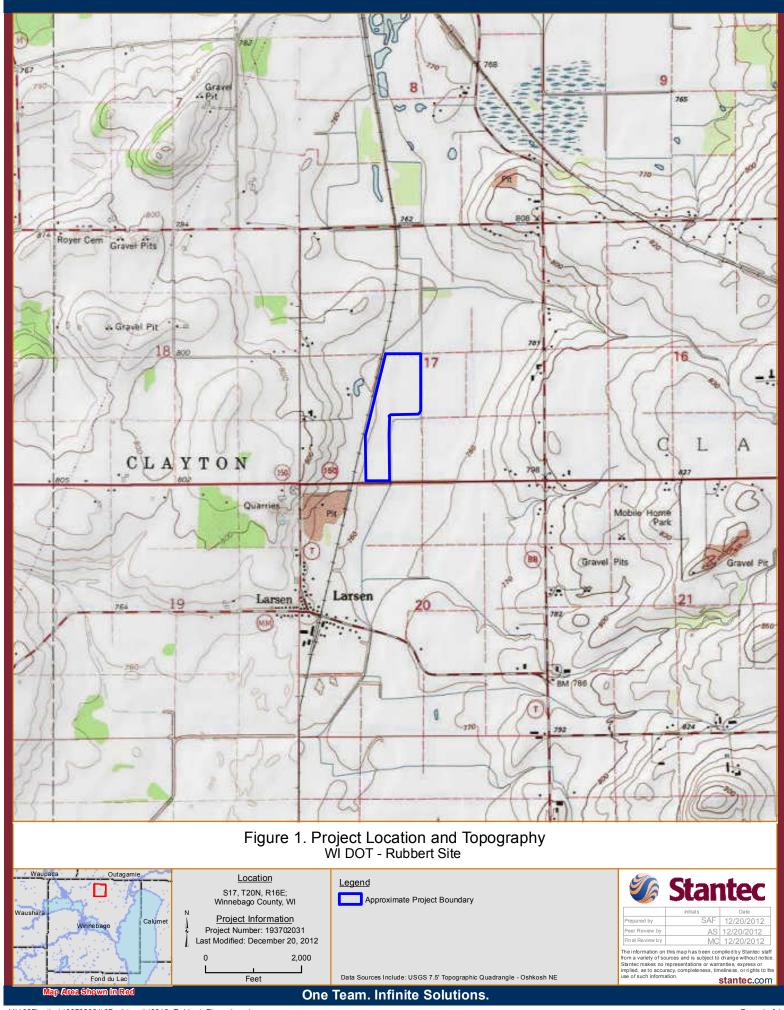
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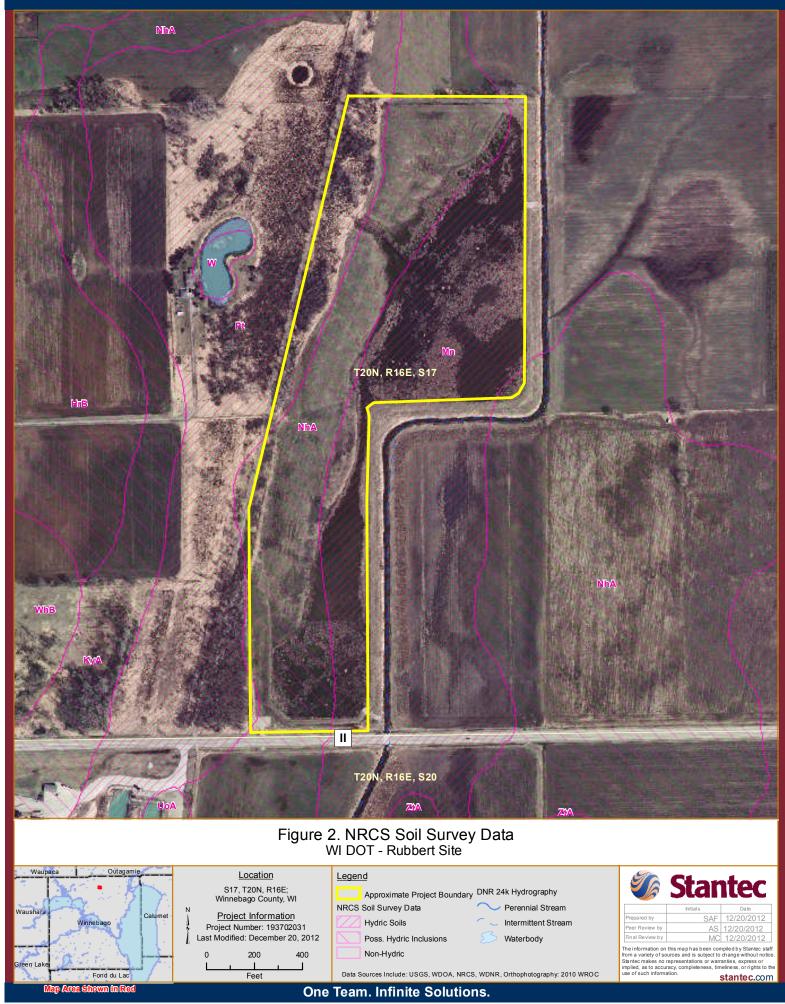
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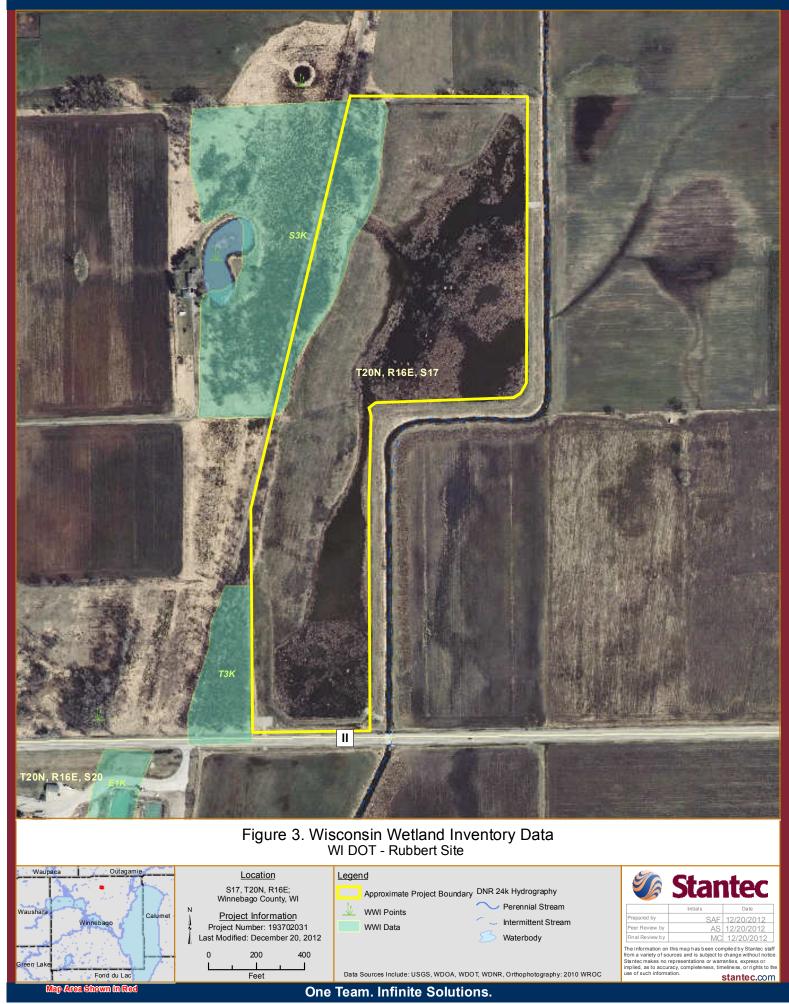
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**FIGURES** 

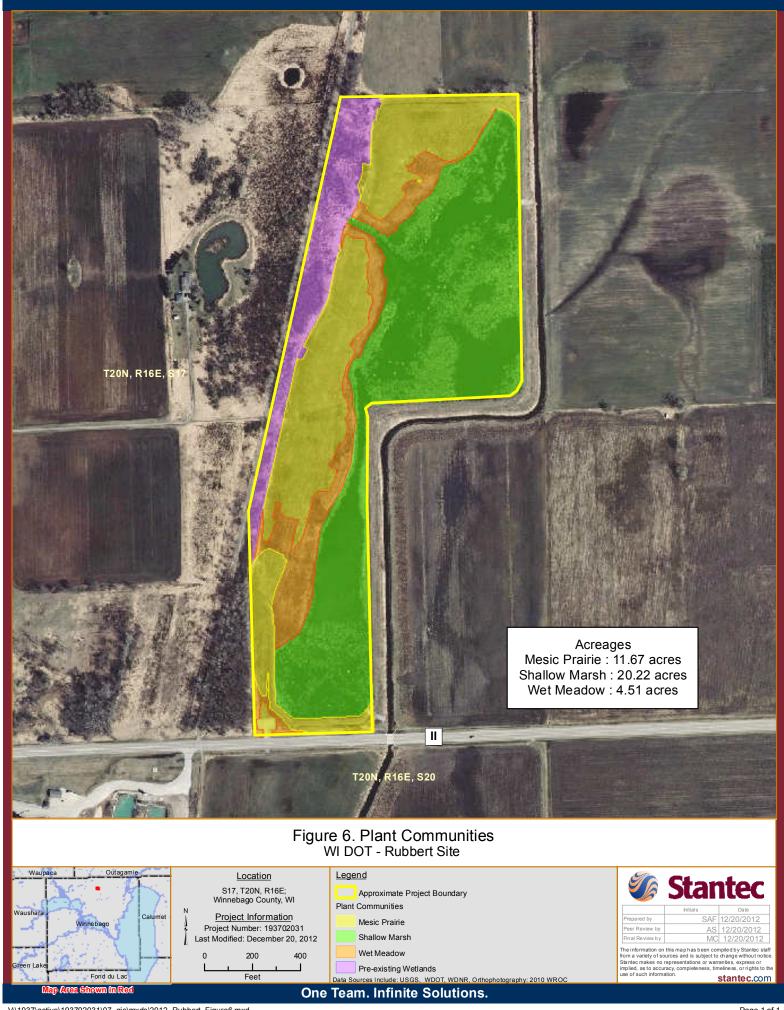












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# APPENDIX A US ARMY CORPS OF ENGINEERS DATA SHEETS



**Northcentral and Northeast Region** 

Ruppert Mitigation Bank Site 09/07/12 Project/Site: Stantec Project #: 193702031 Date: Applicant: Wisconsin Department of Transportation County: Winnebago Investigator #1: Curran, M. State: Wisconsin Investigator #2: Bertagnoli, N. Soil Unit: Neenah silty clay loam NWI/WWI Classification: N/A Wetland ID: W1 Landform: Hillslope Local Relief: Convex Sample Point: A-1u Slope (%): 2-6% Latitude: N/A Longitude: N/A Datum: N/A Community ID: Mesic Prairie Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) Section: 17 Are Vegetation □, Soil ⊡, or Hydrology □ significantly disturbed? Are normal circumstances present? 20 N Township: Are Vegetation  $\square$ , Soil  $\square$ , or Hydrology  $\square$  naturally problematic? 16 Ε Range: Dir: SUMMARY OF FINDINGS ☐ Yes ☑ No Hydrophytic Vegetation Present? Hydric Soils Present? ☐ Yes ☑ No Is This Sampling Point Within A Wetland? Wetland Hydrology Present? ☐ Yes ☑ No ■ Yes 
✓ No According to the Army Corps of Engineers NC/NE Supplement, three parameters are required to meet jurisdictional wetland requirements. Although hydric soils are present at Remarks: the sample plot, the lack of hydrophytic vegetation and wetland hydrology indicate the sample plot is located in a mesic prairie. **HYDROLOGY** Wetland Hydrology Indicators (Check here if indicators are not present ☑): Secondary: Primary: ☐ B9 - Water-Stained Leaves ☐ A1 - Surface Water ☐ B6 - Surface Soil Cracks ☐ A2 - High Water Table ☐ B13 - Aquatic Fauna ☐ B10 - Drainage Patterns ☐ A3 - Saturation □ B15 - Marl Deposits ☐ B16 - Moss Trim Lines B1 - Water Marks ☐ C1 - Hydrogen Sulfide Odor ☐ C2 - Dry-Season Water Table C3 - Oxidized Rhizospheres on Living Roots B2 - Sediment Deposits ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery **B3** - Drift Deposits ☐ C4 - Presence of Reduced Iron B4 - Algal Mat or Crust ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☐ B5 - Iron Deposits ☐ C7 - Thin Muck Surface B7 - Inundation Visible on Aerial Imagery D3 - Shallow Aquitard ☐ Other (Explain) ☐ B8 - Sparsely Vegetated Concave Surface ☐ D4 - Microtopographic Relief ☐ D5 - FAC-Neutral Test **Field Observations: Surface Water Present?** Depth: (in.) ☐ Yes ☑ No **Wetland Hydrology Present?** ☐ Yes ☑ No Water Table Present? (in.) ☐ Yes ☑ No Depth: **Saturation Present?** (in.) ☐ Yes ☑ No Depth: N/A Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: The sample plot is located on a knoll, approximately 2 feet higher in elevation than the adjacent wetland plot. No evidence of wetland Remarks: hydrology was observed at the sample plot. SOILS Map Unit Name: Neenah silty clay loam Series Drainage Class: somewhat poorly Taxonomy (Subgroup): Aquollic Hapludalfs Field Observations Confirm Mapped Type? ☐ Yes ☑ No Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Locaiton: PL=Pore Lining, M=Matrix) **Texture** Matrix Top Bottom Mottles (e.g. clay, sand, loam) Color (Moist) Depth Color (Moist) % % Location Depth Horizon Type 10YR 3/2 50 ------0 6 Clay loam 10YR 4/3 50 2/3 10YR 60 **10YR** 4/6 C 14 10 Clay M 10YR 30 14 18 3 10YR 4/2 90 10YR 4/6 10 C M Clay --------**NRCS Hydric Soil Field Indicators** (check here if indicators are not present □): Indicators for Problematic Soils 1 A1- Histosol □ A10 - 2 cm Muck (LRR K, L, MLRA149B)
 ☐ S8 - Polyvalue Below Surface A2 - Histic Epipedon ☐ A16 - Coast Prairie Redox (LRR K, L, R) (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) A3 - Black Histic ☐ A4 - Hydrogen Sulfide (LRR R, MLRA 149B) ☐ S7 - Dark Surface (LRR K, L) ☐ F1 - Loamy Muck Mineral ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ A5 - Stratified Layers ☐ S9 - Thin Dark Surface (LRR K, L) A11 - Depleted Below Dark Surface (LRR K, L) ☐ F2 - Loamy Gleyed Matrix A12 - Thick Dark Surface ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ S1 - Sandy Muck Mineral ☐ F3 - Depleted Matrix F6 - Redox Dark Surface ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**) S4 - Sandy Gleyed Matrix ☐ TF2 - Red Parent Material S5 - Sandy Redox F7 - Depleted Dark Surface S6 - Stripped Matrix ☐ F8 - Redox Depressions ☐ TF12 - Very Shallow Dark Surface S7 - Dark Surface (LRR R, MLRA 149B) ☐ Other (Explain in Remarks) <sup>1</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. **Restrictive Layer Hydric Soil Present?** Type: N/A Depth: N/A ☐ Yes ☑ No (If Observed) The soil at the sample plot meets the NRCS F6 - Redox Dark Surface indicator. Remarks:



## Northcentral and Northeast Region

Ruppert Mitigation Bank Site Project/Site: Wetland ID: W1 Sample Point A-1u **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 10 meter radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1. --Number of Dominant Species that are OBL, FACW, or 2. FAC: 1 (A) 3. 4. Total Number of Dominant Species Across All Strata: 5. Percent of Dominant Species That Are OBL, FACW, or 6. FAC: **25.0%** (A/B) ----7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: 10. x 1 =OBL spp. 0 Total Cover = x 2 =FACW spp. x 3 =FAC spp. 15 45 x 4 =Sapling/Shrub Stratum (Plot size: 5 meter radius) FACU spp. 40 160 UPL spp. x = 51. 40 200 2. 3. Total 115 (B) 4. 5. Prevalence Index = B/A = 3.870 6. ----7. 8. **Hydrophytic Vegetation Indicators:** 9. □Yes Rapid Test for Hydrophytic Vegetation ✓ No 10. ✓ No □Yes Dominance Test is > 50% Total Cover = ✓ No □Yes Prevalence Index is ≤ 3.0 \* □Yes ☑ No Morphological Adaptations (Explain) \* □Yes ☑ No Herb Stratum (Plot size: 2 meter radius) Problem Hydrophytic Vegetation (Explain) \* Υ ABUTILON THEOPHRASTI 20 **FACU** 1. \* Indicators of hydric soil and wetland hydrology must be 2. DAUCUS CAROTA 40 Υ **UPL** present, unless disturbed or problematic. Υ 3. Elymus virginicus 20 **FACW FACU** Ambrosia artemisiifolia Υ **Definitions of Vegetation Strata:** 4. 20 5. SONCHUS ARVENSIS 5 Ν FAC Tree - Woody plants 3 in. (7.6cm) or more in 6 **FAC** Erigeron annuus 10 Ν diameter at breast height (DBH), regardless of 7. ---haiaht 8. --9. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, 12. -----regardless of size, and woody plants less than 13. --2 20 ft tall 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 115 Woody Vine Stratum (Plot size: 10 meter radius) 1. 2. --3. **Hydrophytic Vegetation Present** ☐ Yes ☑ No 5. 4. Total Cover =

0

Vegetation at the sample plot is not hydrophytic.

# **Additional Remarks:**

Remarks:



**Northcentral and Northeast Region** 

Stantec										•	
Project/Site:		tigation Bank Site				Stante	c Project #:	193702031		Date:	09/07/12
Applicant:	Wisconsin	Wisconsin Department of Transportation								County:	Winnebago
Investigator #1:	Curran, M.	Curran, M. Investigator #2: Bertagnoli, N.								State:	Wisconsin
Soil Unit:	Neenah sil	Neenah silty clay loam NWI/WWI Classification: N/A								Wetland ID:	W1
Landform:	Depression	n e e e e e e e e e e e e e e e e e e e		Loc	al Relief:	Concave	е			Sample Point:	A-1w
Slope (%):	0-2%	Latitude	: N/A	L	ongitude:	N/A		Datum:	N/A	Community ID:	Wet Meadow
Are climatic/hyd	drologic cond	ditions on the site ty	pical for	this time	of year?	(If no, explai	in in remarks)		No	Section:	17
Are Vegetation	□ , Soil ☑,	or Hydrology □ sig	nificantly	disturbe	ed?	Are	normal circu	ımstances pre	esent?	Township:	20 N
I		or Hydrology □ na	-				Yes	s □ No		Range:	16 Dir: <b>E</b>
<b>SUMMARY OF</b>		, ,,	<i>y</i> 1								
Hydrophytic Ve		sent?		✓ Yes	□ No			Hydric Soils I	Present?		
Wetland Hydrol	•			☑ Yes	_					Within A Wetla	
Remarks:		e plot is located in a	a wet mea					io Triio Camp	ing i onic	vvidimi / v voda	ana. <b>2 100 2 110</b>
rtomanto.	The campi	o piot lo locatou iii e	Wothiod								
HADBOLOCA											
HYDROLOGY											
		ators (Check here i	if indicato	ors are no	ot presen	t □):					
Primary				_	<b>5</b> 6 147 .	<b>a</b>			Secondary:		
	A1 - Surface				B9 - Wate					B6 - Surface So	
	A2 - High Wa A3 - Saturation				B13 - Aqu	rl Deposits				B10 - Drainage B16 - Moss Trir	
lä	B1 - Water M			H	C1 - Hydr	•				C2 - Dry-Seaso	
	B2 - Sedimei						spheres on Liv	ving Roots		C8 - Crayfish B	
	B3 - Drift De	posits					educed Iron	J		•	Visible on Aerial Imagery
	B4 - Algal Ma						eduction in Tille	ed Soils			Stressed Plants
	B5 - Iron Dep				C7 - Thin		face			D2 - Geomorph	
		on Visible on Aerial Im	• .	Ц	Other (Ex	plain)				D3 - Shallow A	
	bo - Sparser	y Vegetated Concave	Suriace							D4 - Microtopog D5 - FAC-Neuti	
Field Observat	tiono.										
					<i>(</i> ; )						
Surface Water		☐ Yes ☑ No	Depth:		(in.)			Wetland Hyd	drology Pr	esent?	Yes □ No
Water Table Pr		☐ Yes ☑ No	Depth:		(in.)			•	O,		
Saturation Pres	sent?	☐ Yes ☑ No	Depth:		(in.)						
Describe Record	ded Data (str	eam gauge, monitori	ing well a	erial nho	tos previo	aug ingno	otiona) if ava	ilabla:	N/A		
		5 5 7	g wo, a	ionai pilo	ios, picvi	ous mspe	Clioris), ii ava	liable.	I N/ / \		
Remarks:	The preser										
Remarks:	The preser	nce of 2 secondary									
	The preser										
SOILS		nce of 2 secondary	indicators		sample pl	ot provide	es evidence	of wetland hyd	drology.		
SOILS Map Unit Name	): :	nce of 2 secondary  Neenah silty clay lo	indicators oam		sample plo	ot provide eries Drai	es evidence inage Class:	of wetland hyd	drology. oorly	□ No	
SOILS  Map Unit Name Taxonomy (Sub	e: ogroup):	Neenah silty clay k Aquollic Hapludalf	indicators pam	s at the s	Semple plo	ot provide eries Drai servation	es evidence inage Class: s Confirm M	of wetland hyd somewhat po apped Type?	drology. oorly □ Yes		ocaiton: PI =Pore Lining M=Matrix)
SOILS  Map Unit Name Taxonomy (Sub	e: ogroup): otion (Describe to	Neenah silty clay k Aquollic Hapludalf	indicators pam	s at the s	Se Field Obs	ot provide eries Drai servation	es evidence inage Class: s Confirm M	of wetland hydesomewhat postapped Type?	drology. oorly □ Yes		ocaiton: PL=Pore Lining, M=Matrix)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip	e: ogroup): otion (Describe to Bottom	Neenah silty clay lo Aquollic Hapludalf o the depth needed to document t	oam s he indicator or o	confirm the abs	Se Field Observe of indicate	eries Drai servation	inage Class: s Confirm M	somewhat po apped Type? pletion, RM=Reduced M Mottles	oorly  Yes	//Coated Sand Grains; L	Texture
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth	e: ogroup): otion (Describe to	Neenah silty clay k Aquollic Hapludalf	color	confirm the abs  Matrix (Moist)	Seence of indicator	eries Drai servation ors.) (Type: C=	inage Class: S Confirm M Concentration, D=Dep	somewhat po apped Type? pletion, RM=Reduced M Mottles %	oorly  Yes  latrix, CS=Covered	Coated Sand Grains; L	Texture (e.g. clay, sand, loam
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SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth	e: ogroup): otion (Describe to Bottom	Neenah silty clay lo Aquollic Hapludalf o the depth needed to document t	color	confirm the abs  Matrix (Moist)	Seence of indicator	eries Drai servation ors.) (Type: C=	inage Class: S Confirm M Concentration, D=Dep	somewhat po apped Type? pletion, RM=Reduced M Mottles %	oorly  Yes  latrix, CS=Covered	Coated Sand Grains; L	Texture (e.g. clay, sand, loam
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0	e: ogroup): otion (Describe to Bottom Depth 7	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon	color 10YR	confirm the abs  Matrix (Moist)  3/1	Seence of indicate	eries Draiservation  Colo  10YR	inage Class: as Confirm M Concentration, D=De	somewhat postapped Type?  pletion, RM=Reduced M  Mottles  % 2	oorly  Yes  Atrix, CS=Covered  Type  C	Location	Texture (e.g. clay, sand, loam Clay loam
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SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 7	Bottom Depth 7 18 Soil Field In	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon  1 2 ndicators (check he	Color 10YR 10YR	confirm the abs Matrix (Moist) 3/1 5/3 cators ar	Semple plosence of indicators  % 98 95 re not pre S8 - Polyv (LRR R, N	cries Draiservation cries	inage Class: Is Confirm M Concentration, D=De  or (Moist) 4/6 5/6 : w Surface B)	somewhat por apped Type? pletion, RM=Reduced M	Type C C for Probler A10 - 2 cm	Location  M  M      matic Soils <sup>1</sup> Muck (LRR K, L	Texture (e.g. clay, sand, loam Clay loam Clay , MLRA149B) LRR K, L, R)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 7	Bottom Depth 7 18 Soil Field Ir A1- Histosol A2 - Histic El A3 - Black Hi	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon  1 2 ndicators (check he	Color 10YR 10YR	confirm the abs Matrix (Moist) 3/1 5/3 cators ar	Semple ploses Seence of indicators  % 98 95 re not pre S8 - Polyv (LRR R, N S9 - Thin	cries Draiservation cries	inage Class: s Confirm M Concentration, D=De or (Moist) 4/6 5/6 :w Surface B) ace	somewhat postapped Type? pletion, RM=Reduced M Mottles % 2 5 Indicators	Type C C for Problem A10 - 2 cm A16 - Coast S3 - 5cm Mi	Location  M  M      matic Soils <sup>1</sup> Muck (LRR K, L	Texture (e.g. clay, sand, loam  Clay loam  Clay       MLRA149B)  LRR K, L, R) at (LRR K, L, R)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 7 NRCS Hydric	Bottom Depth 7 18 Soil Field Ir A1- Histosol A2 - Histic E  A3 - Black Hi	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon  1 2 ndicators (check here) pipedon istic en Sulfide	Color 10YR 10YR	confirm the abs Matrix (Moist) 3/1 5/3 cators ar	Semple ploses Seence of indicators  % 98 95 re not pre S8 - Polyv (LRR R, N S9 - Thin	cries Draiservation Servation Ors.) (Type: C=  Colo 10YR 10YR sent	inage Class: Is Confirm M Concentration, D=De  or (Moist) 4/6 5/6 : w Surface B) ace B)	somewhat por apped Type? pletion, RM=Reduced M Mottles % 2 5 Indicators	Type C C for Probler A10 - 2 cm M S3 - 5cm M S7 - Dark S	Location  M  M     matic Soils <sup>1</sup> Muck (LRR K, L Prairie Redox (Iucky Peat of Pea	Texture (e.g. clay, sand, loam Clay loam Clay , MLRA149B) LRR K, L, R) at (LRR K, L, R) L)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 7 NRCS Hydric	Bottom Depth 7 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black Hi A4 - Hydroge A5 - Stratified A11 - Deplete	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon  1 2 ndicators (check here) pipedon istic en Sulfide d Layers ed Below Dark Surface	color 10YR 10YR ere if indicators	confirm the abs Matrix (Moist) 3/1 5/3 cators ar	Semple please Se	cries Draiservation cries	inage Class: Is Confirm M Concentration, D=De  or (Moist) 4/6 5/6 : w Surface B) ace B) lineral	somewhat por apped Type? pletion, RM=Reduced M  Mottles  % 2 5 Indicators	Type C C for Probler A10 - 2 cm A16 - Coast S3 - 5cm Mi S7 - Dark S S8 - Polyval S9 - Thin Da	Location  M  M      matic Soils  Muck (LRR K, L Prairie Redox (I ucky Peat of Peaturface (LRR K, I lue Below Surface (LRR K, I lue Below Surface (LRR K)	Texture (e.g. clay, sand, loam Clay loam Clay , MLRA149B) LRR K, L, R) at (LRR K, L, R) ce (LRR K, L, R) R K, L)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip  Top Depth  0  7 NRCS Hydric	Bottom Depth 7 18 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A11 - Deplete A12 - Thick I	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface	color 10YR 10YR ere if indicators	confirm the abs Matrix (Moist) 3/1 5/3 cators ar	Semple ploses Secure of indicate	cries Draiservation  Colo 10YR 10YR 10YR sent	inage Class: s Confirm M Concentration, D=De or (Moist) 4/6 5/6 :w Surface B) ace B) lineral Matrix	somewhat postage apped Type? pletion, RM=Reduced M	Type C C C	Location  M  M      matic Soils  Muck (LRR K, L Prairie Redox (Iucky Peat of Peaturface (LRR K, I lue Below Surface (LRR K, I lue Below Surface (LRR K) Anganese Mass	Texture (e.g. clay, sand, loam Clay loam Clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 7 NRCS Hydric	Bottom Depth 7 18 Soil Field Ir A1- Histosol A2 - Histic E  A3 - Black Hi A4 - Hydroge A5 - Stratified A11 - Deplete A12 - Thick II S1 - Sandy N	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon  1 2 ndicators (check here) pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral	color 10YR 10YR ere if indicators	confirm the abs Matrix (Moist) 3/1 5/3 cators ar	Semple please Se	cries Draiservation cries	inage Class: Is Confirm M Concentration, D=De Or (Moist) 4/6 5/6 : w Surface B) ace B) lineral Matrix	somewhat por apped Type? pletion, RM=Reduced M  Mottles  % 2 5 Indicators	Type C C C for Probler A10 - 2 cm A16 - Coast S3 - 5cm Mi S7 - Dark S S8 - Polyval S9 - Thin Da F12 - Iron-M F19 - Piedm	Location  M  M      matic Soils  Muck (LRR K, L C Prairie Redox (I Cucky Peat of Peaturface (LRR K, I Cucky Peat of Peat of Peaturface (LRR K, I Cucky Peat of Peaturface (LRR K, I	Texture (e.g. clay, sand, loam Clay loam Clay , MLRA149B) LRR K, L, R) at (LRR K, L, R) be (LRR K, L, R) ce (LRR K, L) ses (LRR K, L, R) Soils (MLRA 149B)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip  Top Depth  0  7 NRCS Hydric	Bottom Depth 7 18 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A11 - Deplete A12 - Thick I S1 - Sandy I S4 - Sandy I	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix	color 10YR 10YR ere if indicators	confirm the abs Matrix (Moist) 3/1 5/3 cators ar	Semple ploses Secure of indicate   % 98 95	cries Draiservation  cries Dra	inage Class: s Confirm M Concentration, D=De or (Moist) 4/6 5/6 : w Surface B) ace B) lineral Matrix orface	somewhat postage apped Type? pletion, RM=Reduced M  Mottles  % 2 5 Indicators	Type C C C	Location  M  M       Muck (LRR K, L Prairie Redox (Iucky Peat of Peaturface (LRR K, Iucky Peat of Peaturface (LRR K, Iucky Peaturfa	Texture (e.g. clay, sand, loam Clay loam Clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip  Top Depth  0 7 NRCS Hydric	Bottom Depth 7 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black Hi A4 - Hydroge A5 - Stratified A1 - Deplete A12 - Thick I S1 - Sandy I S4 - Sandy I S5 - Sandy I	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon  1 2 ndicators (check here) pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox	color 10YR 10YR ere if indicators	confirm the abs  Matrix (Moist)  3/1  5/3     cators ar	Semple please Se	cries Draiservation cries	inage Class: Is Confirm M Concentration, D=De Or (Moist)  4/6  5/6      : w Surface B) ace B) lineral Matrix or face Surface Surface	somewhat polarized apped Type? pletion, RM=Reduced M  Mottles  % 2 5 Indicators	Type C C C	Location  M  M      matic Soils  Muck (LRR K, L Carrie Redox (Inches Pear of Surface (LRR K, Inches	Texture (e.g. clay, sand, loam Clay loam Clay , MLRA149B) LRR K, L, R) at (LRR K, L, R) be (LRR K, L, R) Ce (LRR K, L) Ses (LRR K, L, R) Soils (MLRA 149B) 144A, 145, 149B)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip  Top Depth  0  7 NRCS Hydric	Bottom Depth 7 18 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A11 - Deplete A12 - Thick I S1 - Sandy I S4 - Sandy I S5 - Sandy I S6 - Stripped	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon  1 2 hdicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox d Matrix	color 10YR 10YR ere if indicators	confirm the abs  Matrix (Moist)  3/1  5/3     cators ar	Semple please Se	cries Draiservation  cries Dra	inage Class: Is Confirm M Concentration, D=De Or (Moist)  4/6  5/6      : w Surface B) ace B) lineral Matrix or face Surface Surface	somewhat postage apped Type? apped Type? pletion, RM=Reduced M  Mottles  96 2 5 Indicators	Type C C C	Location  M  M       Muck (LRR K, L Prairie Redox (Iucky Peat of Peaturface (LRR K, Iucky Peat of Peaturface (LRR K, Iucky Peaturfa	Texture (e.g. clay, sand, loam Clay loam Clay , MLRA149B) LRR K, L, R) at (LRR K, L, R) be (LRR K, L, R) Ce (LRR K, L) Ses (LRR K, L, R) Soils (MLRA 149B) 144A, 145, 149B)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip  Top Depth  0 7 NRCS Hydric	Bottom Depth 7 18 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A11 - Deplete A12 - Thick I S1 - Sandy I S4 - Sandy I S5 - Sandy I S6 - Stripped	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon  1 2 ndicators (check here) pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox	color 10YR 10YR ere if indicators	confirm the abs  Matrix (Moist)  3/1  5/3     cators ar	Semple please Se	cries Draiservation cries	inage Class: Is Confirm M Concentration, D=De Or (Moist)  4/6  5/6      : w Surface B) ace B) lineral Matrix or face Surface Surface	somewhat polarization apped Type? pletion, RM=Reduced M  Mottles  % 2 5 Indicators	Type C C C	Location  M  M       Muck (LRR K, L  Prairie Redox (I  ucky Peat of Peaturface (LRR K, I  ucky Peat of Peat of Peaturface (LRR K, I  ucky Peat of Peaturface (LRR K, I  ucky Pea	Texture (e.g. clay, sand, loam Clay loam Clay , MLRA149B) LRR K, L, R) at (LRR K, L, R) be (LRR K, L, R) Ce (LRR K, L) Ses (LRR K, L, R) Soils (MLRA 149B) 144A, 145, 149B) urface
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip  Top Depth  0 7 NRCS Hydric	Bottom Depth 7 18 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A11 - Deplete A12 - Thick Ep S1 - Sandy Ep S5 - Sandy Ep S6 - Stripped S7 - Dark Su	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon  1 2 hdicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox d Matrix	color 10YR 10YR ere if indicators	confirm the abs  Matrix (Moist)  3/1  5/3     cators ar	Semple please Se	cries Draiservation cries	inage Class: Is Confirm M Concentration, D=De Or (Moist)  4/6  5/6      : w Surface B) ace B) lineral Matrix or face Surface Surface	somewhat postage apped Type? pletion, RM=Reduced M  Mottles  % 2 5 Indicators  Indicators  Indicators	Type C C C	Location  M  M       Muck (LRR K, L  Prairie Redox (I  ucky Peat of Peaturface (LRR K, I  ucky Peat of Peat of Peaturface (LRR K, I  ucky Peat of Peaturface (LRR K, I  ucky Pea	Texture (e.g. clay, sand, loam Clay loam Clay , MLRA149B) LRR K, L, R) at (LRR K, L, R) be (LRR K, L, R) Ce (LRR K, L) Ses (LRR K, L, R) Soils (MLRA 149B) 144A, 145, 149B)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 7 NRCS Hydric	Bottom Depth 7 18 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A11 - Deplete A12 - Thick Ep S1 - Sandy Ep S5 - Sandy Ep S6 - Stripped S7 - Dark Su	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox d Matrix Irface (LRR R, MLRA	color 10YR 10YR ere if indicators	matrix (Moist) 3/1 5/3 cators ar	Semple please Se	cries Draiservation cries	inage Class: Is Confirm M Concentration, D=De Or (Moist)  4/6  5/6      : w Surface B) ace B) lineral Matrix or face Surface Surface	somewhat postage apped Type? pletion, RM=Reduced M  Mottles  % 2 5 Indicators  Indicators  Indicators	Type C C C	Location  M  M      matic Soils  Muck (LRR K, L C Prairie Redox (I C Prairie Redox (I C LRR K, I C LUCKY Peat of Peaturface (LRR K, I C LUCKY Peat of Peat of Peaturface (LRR K, I C LUCKY Peat of Peat of Peaturface (LRR K, I C LUCKY Peat of Peat of Peaturface (LRR K, I C LUCKY Peat of Peat	Texture (e.g. clay, sand, loam Clay loam Clay , MLRA149B) LRR K, L, R) at (LRR K, L, R) be (LRR K, L, R) Ce (LRR K, L) Ses (LRR K, L, R) Soils (MLRA 149B) 144A, 145, 149B) urface
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip  Top Depth  0 7 NRCS Hydric	Bottom Depth 7 18 Soil Field Ir A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A11 - Deplete A12 - Thick E S1 - Sandy E S5 - Sandy E S6 - Stripped S7 - Dark Su	Neenah silty clay lo Aquollic Hapludalf the depth needed to document to Horizon  1 2 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox d Matrix Irface (LRR R, MLRA	color 10YR 10YR ere if indicators	confirm the abs  Matrix (Moist)  3/1  5/3     cators ar	Semple place  9%  98  95          Te not pre S8 - Polyw (LRR R, N) S9 - Thin (LRR R, N) F1 - Loam (LRR K, L) F2 - Loam F3 - Deplace F6 - Redo F7 - Deplace F8 - Redo  N/A	cries Draiservation Servation Ors.) (Type: C=  Colo 10YR 10YR	inage Class: Is Confirm M Concentration, D=De  or (Moist) 4/6 5/6 ): w Surface B) ace B) ineral Matrix x urface Surface sions	somewhat postapped Type? pletion, RM=Reduced M  Mottles  % 2 5 Indicators    Indicators of disturbed of the control	Type C C C	Location  M  M      matic Soils  Muck (LRR K, L C Prairie Redox (I C Prairie Redox (I C LRR K, I C LUCKY Peat of Peaturface (LRR K, I C LUCKY Peat of Peat of Peaturface (LRR K, I C LUCKY Peat of Peat of Peaturface (LRR K, I C LUCKY Peat of Peat of Peaturface (LRR K, I C LUCKY Peat of Peat	Texture (e.g. clay, sand, loam Clay loam Clay , MLRA149B) LRR K, L, R) at (LRR K, L, R) be (LRR K, L, R) ce (LRR K, L, R) Soils (MLRA 149B) 144A, 145, 149B) urface blogy must be present, unless



## **Northcentral and Northeast Region**

Ruppert Mitigation Bank Site Project/Site: Wetland ID: W1 Sample Point A-1w **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 10 meter radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1. --Number of Dominant Species that are OBL, FACW, or 2. 2 (A) 3. 4. Total Number of Dominant Species Across All Strata: 5. Percent of Dominant Species That Are OBL, FACW, or 6. FAC: **100.0%** (A/B) ----7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: 10. x 1 =OBL spp. 5 Total Cover = FACW spp. x 2 =172 x 3 =FAC spp. 10 FACU spp. x 4 =Sapling/Shrub Stratum (Plot size: 5 meter radius) x = 51. UPL spp. 2. 3. Total 207 (B) 4. 5. Prevalence Index = B/A = 2.050 6. ----7. 8. **Hydrophytic Vegetation Indicators:** 9. □Yes Rapid Test for Hydrophytic Vegetation ✓ No 10. ✓Yes □ No Dominance Test is > 50% Total Cover = ✓Yes □ No Prevalence Index is ≤ 3.0 \* □Yes ☑ No Morphological Adaptations (Explain) \* □Yes ☑ No Herb Stratum (Plot size: 2 meter radius) Problem Hydrophytic Vegetation (Explain) \* PHALARIS ARUNDINACEA Υ 30 **FACW** 1. \* Indicators of hydric soil and wetland hydrology must be 2. 55 Υ **FACW** Cyperus esculentus present, unless disturbed or problematic. 3. PENNISETUM GLAUCUM 5 Ν FAC 5 **Definitions of Vegetation Strata:** 4. Epilobium coloratum Ν **OBL** 5. 5 Ν FAC Panicum capillare Tree - Woody plants 3 in. (7.6cm) or more in 6 **FACW** Bidens frondosus 1 Ν diameter at breast height (DBH), regardless of 7. -haiaht 8. --Sapling/Shrub - Woody plants less than 3 in. DBH and greater 9. than 3.28 ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, 12. -----regardless of size, and woody plants less than 13. --2 20 ft tall 14. --Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 101 Woody Vine Stratum (Plot size: 10 meter radius) 1. 2. --3. 5. 4. Total Cover =

# **Additional Remarks:**

Vegetation at the sample plot is hydrophytic.

Remarks:



**Northcentral and Northeast Region** 

Stantec											
Project/Site:	Ruppert M	itigation Bank Site				Stante	c Project #:	193702031		Date:	09/07/12
Applicant:	Wisconsin	sin Department of Transportation								County:	Winnebago
Investigator #1:	Curran, M.	urran, M. Investigator #2: Bertagnoli, N.								State:	Wisconsin
Soil Unit:		leenah silty clay loam NWI/WWI Classification: N/A								Wetland ID:	W1
Landform:	Hillslope									Sample Point:	A-2u
Slope (%):	2-6%	•							N/A	-	Mesic Prairie
		ditions on the site typ					in in remarks)	☑ Yes □	No	Section:	17
•		or Hydrology □ sigi				i		ımstances pre		Township:	20 N
		or Hydrology □ nat	-				☑ Yes			Range:	16 Dir: E
SUMMARY OF		or riyarology - Hat	arany pro	bicinati	<i>.</i>					range.	IO DII. L
		cont?		□ Voc	□ No			Hydric Soils	Drocont?		□ Voc □ No
Hydrophytic Ve	~			<ul><li>✓ Yes</li><li>✓ Yes</li></ul>	_			Hydric Soils		Mithin A Matle	☐ Yes ☑ No and? ☐ Yes ☑ No
Wetland Hydrol Remarks:			ers NC/NF				re required to m			Within A Wetla	h hydrophytic vegetation is
Nemarks.	_	sample plot, the lack of h					•			omente. 7 maio agi	Triyaropriyao vogotatorrio
HYDROLOGY											
	a l a au . In al! a	otono (Obook bono il	مدوداا ومدد		-1	4 🗔\-					
_		ators (Check here if	indicato	rs are no	ot presen	t ☑):			Casandam		
<u>Primary:</u> □	<u>:</u>	Water			R0 - Wate	er-Stained	Leaves		Secondary:	B6 - Surface So	nil Cracks
	A2 - High Wa					iatic Fauna				B10 - Drainage	
<b>l</b>	A3 - Saturati				•	rl Deposits				B16 - Moss Trir	
	B1 - Water N	Marks				ogen Sulfi				C2 - Dry-Seaso	on Water Table
	B2 - Sedime	•					spheres on Liv	ving Roots		C8 - Crayfish B	
<u> </u> _	B3 - Drift De	-					educed Iron				Visible on Aerial Imagery
	B4 - Algal Ma			片			eduction in Tille	ed Soils			Stressed Plants
	B5 - Iron Dep	ออรแร ion Visible on Aerial Ima	agery		Other (Ex	Muck Surf	iace		_	D2 - Geomorph D3 - Shallow A	
l		y Vegetated Concave S	•	Ш	Other (Ex	piairi)				D4 - Microtopog	1
	•	, 0								D5 - FAC-Neut	
Field Observat	tions:										
Surface Water I	Present?	☐ Yes ☑ No	Depth:		(in.)						
Water Table Pro		☐ Yes ☑ No	Depth:		(in.)			Wetland Hy	drology Pr	esent?	] Yes ☑ No
Saturation Pres		☐ Yes ☑ No	Depth:		(in.)						
						<u> </u>			N/A		
Describe Record	ien Data (str	TARINA MANITARIN									
D 1								liable:	IN/A		
Remarks:		ce of wetland hydrologic						liable.	N/A		
								liable:	IN/A		
SOILS	No evidend	ce of wetland hydrolo	ogy was		d at the s	ample pl	ot.				
SOILS Map Unit Name	No evidend	ce of wetland hydrolo  Neenah silty clay lo	ogy was		d at the s	ample plo	ot. inage Class:	somewhat po	oorly		
SOILS  Map Unit Name Taxonomy (Sub	No evidende:	Neenah silty clay lo	am	observe	d at the s	ample plo eries Drai servation	ot. inage Class: is Confirm M	somewhat po	oorly Yes		
SOILS  Map Unit Name Taxonomy (Sub	No evidence:  ogroup):  otion (Describe to	Neenah silty clay lo	am	observe	d at the s	ample plo eries Drai servation	ot. inage Class: is Confirm M	somewhat po apped Type?	oorly Yes		Locaiton: PL=Pore Lining, M=Matrix)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top	No evidence:  ogroup):  otion (Describe to Bottom	Neenah silty clay lo Aquollic Hapludalfs of the depth needed to document the	am s e indicator or o	observe	Se Field Observe of indicate	eries Draiservation	inage Class: s Confirm M	somewhat po apped Type? pletion, RM=Reduced M Mottles	Oorly  Yes  Matrix, CS=Covered	/Coated Sand Grains; L	Texture
SOILS  Map Unit Name Taxonomy (Sub	No evidence:  ogroup):  otion (Describe to	Neenah silty clay lo	am s e indicator or o	observe	d at the s	eries Draiservation	ot. inage Class: is Confirm M	somewhat po apped Type?	oorly Yes		Texture
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth	No evidence:  ogroup):  otion (Describe to Depth	Neenah silty clay lo Aquollic Hapludalfs of the depth needed to document the	am s e indicator or o	observe	Se Field Observe of indicate	eries Draiservation	inage Class: s Confirm M	somewhat po apped Type? pletion, RM=Reduced M Mottles	Oorly  Yes  Matrix, CS=Covered	/Coated Sand Grains; L	Texture (e.g. clay, sand, loam)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top	No evidence:  ogroup):  otion (Describe to Bottom	Neenah silty clay lo Aquollic Hapludalfs of the depth needed to document the	am s e indicator or c	confirm the abs Matrix (Moist)	Se Field Obsence of indicate	eries Draiservation	inage Class: s Confirm M	somewhat po apped Type? pletion, RM=Reduced M Mottles %	Oorly  Yes Matrix, CS=Covered	/Coated Sand Grains; L	Texture
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth  0	No evidence:  ogroup):  otion (Describe to Bottom Depth  10	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon	am S e indicator or c Color 10YR	confirm the abs Matrix (Moist) 3/2	Se Field Obsence of indicate	eries Draiservation  ors.) (Type: C=	inage Class: as Confirm M Concentration, D=Depor (Moist)	somewhat postapped Type?  pletion, RM=Reduced M  Mottles  %	Oorly  Yes Matrix, CS=Covered  Type	Location	Texture (e.g. clay, sand, loam)  Clay loam
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth	No evidence:  ogroup):  otion (Describe to Depth	Neenah silty clay lo Aquollic Hapludalfs of the depth needed to document the	am S e indicator or c Color 10YR 10YR	confirm the abs Matrix (Moist) 3/2 4/3	Service of indicate % 90 10	eries Draiservation  ors.) (Type: C=	inage Class: s Confirm M	somewhat po apped Type? pletion, RM=Reduced M Mottles %	Oorly  Yes Matrix, CS=Covered  Type	/Coated Sand Grains; L	Texture (e.g. clay, sand, loam)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth  0	No evidence:  ogroup):  otion (Describe to Bottom Depth  10	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon	am Color 10YR 10YR	observe  confirm the abs  Matrix (Moist)  3/2  4/3  4/3	Service of indicate % 90 10 60	eries Draiservation  ors.) (Type: C=	inage Class: as Confirm M Concentration, D=Depor (Moist)	somewhat postapped Type?  pletion, RM=Reduced M  Mottles  %	Oorly  Yes Matrix, CS=Covered  Type	Location	Texture (e.g. clay, sand, loam)  Clay loam
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0	No evidence: Digroup): Display to the control of th	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1	am Color 10YR 10YR Gley 1	observe  confirm the abs  Matrix (Moist)  3/2  4/3  4/3  5/10Y	Serield Observe of indicate % 90 10 60 25	eries Draiservation  Colo   10YR	inage Class: as Confirm M Concentration, D=Depor or (Moist) 4/6	somewhat postapped Type?  pletion, RM=Reduced M  Mottles  %  15	Type C	Location M	Texture (e.g. clay, sand, loam)  Clay loam  Clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 10	No evidence: Digroup): Display (Describe to Depth 10 18	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1	color Color 10YR 10YR Gley 1	observe  confirm the absence Matrix (Moist) 3/2 4/3 4/3 5/10Y	Service of indicate % 90 10 60 25	eries Draiservation  ors.) (Type: C=  Colo   10YR	inage Class: as Confirm M Concentration, D=Depor (Moist) 4/6	somewhat postapped Type?  pletion, RM=Reduced M  Mottles  %  15	Type C	Location M	Texture (e.g. clay, sand, loam)  Clay loam  Clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth  0  10	No evidence: Digroup): Dition (Describe to Depth  10  18	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon 1 2	color	observe  confirm the absence Matrix (Moist) 3/2 4/3 4/3 5/10Y	Serield Observe of indicate % 90 10 60 25	eries Draiservation  Colc 10YR	inage Class: Is Confirm M Concentration, D=Depor (Moist) 4/6	somewhat postapped Type?  pletion, RM=Reduced M  Mottles  %  15	Type C	Coated Sand Grains; L  Location    M	Texture (e.g. clay, sand, loam)  Clay loam  Clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 10	No evidence: Digroup): Dition (Describe to Bottom Depth 10 18 Soil Field In 19 19 19 19 19 19 19 19 19 19 19 19 19	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1  2  ndicators (check he	color Color 10YR 10YR Gley 1	observe  confirm the absence Matrix (Moist) 3/2 4/3 4/3 5/10Y	Serield Observe of indicate with the series of indicate wi	eries Draiservation  Servation  Colc   10YR    sent	inage Class: Is Confirm M Concentration, D=Deport (Moist) 4/6 ):	somewhat posterior, RM=Reduced Mottles Mottles % 15 Indicators	Type C for Problem	Location M natic Soils 1	Texture (e.g. clay, sand, loam)  Clay loam  Clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 10	No evidence: Digroup): Dion (Describe to Depth  10  18  Soil Field In A1- Histosol	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1  2  ndicators (check he	color Color 10YR 10YR Gley 1	observe  confirm the absence Matrix (Moist) 3/2 4/3 4/3 5/10Y	Serield Observe of indicate % 90 10 60 25 re not pre \$8 - Poly	eries Draiservation  Colo10YR sent  value Belov	inage Class: Is Confirm M Concentration, D=Deport (Moist)   4/6     :w Surface	somewhat post apped Type?  pletion, RM=Reduced M  Mottles  %  15  Indicators	Type C for Problem A10 - 2 cm	Location	Texture (e.g. clay, sand, loam)  Clay loam  Clay    , MLRA149B)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 10	No evidence: Digroup): Dtion (Describe to Bottom Depth 10 18 Soil Field In A1- Histosol A2 - Histic E	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1  2  ndicators (check he	color Color 10YR 10YR Gley 1	observe  confirm the absence Matrix (Moist) 3/2 4/3 4/3 5/10Y cators ar	Serield Observe of indicate  % 90 10 60 25 re not pre \$8 - Poly (LRR R, I	eries Draiservation Servation Colc 10YR sent	inage Class: Is Confirm M Concentration, D=Deport  Or (Moist)   4/6     : w Surface  B)	somewhat post apped Type?  pletion, RM=Reduced M  Mottles  %  15  Indicators	Type C	Location	Texture (e.g. clay, sand, loam)  Clay loam  Clay  , MLRA149B) LRR K, L, R)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 10	No evidence: Digroup): Dtion (Describe to Depth  10  18  Soil Field In A1- Histosol A2 - Histic E A3 - Black H	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1  2  ndicators (check he	color Color 10YR 10YR Gley 1	observe  confirm the absence Matrix (Moist) 3/2 4/3 4/3 5/10Y	Serield Observe of indicate  % 90 10 60 25 re not pre \$8 - Poly (LRR R, I	eries Draiservation  Colo 10YR sent	inage Class: Is Confirm M Concentration, D=Deport (Moist)   4/6     : w Surface B) ace	somewhat postage apped Type?  pletion, RM=Reduced M  Mottles  %  15  Indicators	Type	Location M	Texture (e.g. clay, sand, loam)  Clay loam  Clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 10	No evidence: Digroup): Dtion (Describe to Bottom Depth 10 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1  2  ndicators (check he pipedon istic en Sulfide	color Color 10YR 10YR Gley 1	observe  confirm the absence  Matrix (Moist)  3/2  4/3  4/3  5/10Y    cators ar	Serield Observe of indicate  % 90 10 60 25 re not pre S8 - Polyy (LRR R, I S9 - Thin (LRR R, I	eries Draiservation Servation Ors.) (Type: C=  Colo 10YR sent	inage Class: Is Confirm M Concentration, D=Deport (Moist) 4/6 :w Surface B) ace B)	somewhat por apped Type? pletion, RM=Reduced Mottles	Type  Type   C    for Problen  A16 - Coast S3 - 5cm Mu S7 - Dark Si	Location M	Texture (e.g. clay, sand, loam)  Clay loam  Clay       MLRA149B)  LRR K, L, R)  at (LRR K, L, R)  L)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 10	No evidence: Digroup): Dtion (Describe to Bottom Depth 10 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1  2  ndicators (check he pipedon istic en Sulfide d Layers	am S e indicator or of 10YR 10YR 10YR Gley 1 re if indic	observe  confirm the absence Matrix (Moist) 3/2 4/3 4/3 5/10Y cators ar	Serield Observe of indicate  % 90 10 60 25 re not pre \$8 - Poly (LRR R, I \$9 - Thin (LRR R, I F1 - Loan	eries Draiservation crs.) (Type: C= Colo 10YR sent	inage Class: Is Confirm M Concentration, D=Deport (Moist) 4/6 :w Surface B) ace B)	somewhat por apped Type? pletion, RM=Reduced Mottles	Type  Type  C  C  A10 - 2 cm N A16 - Coast S3 - 5cm Mu S7 - Dark Su S8 - Polyval	Location  Location  M      Matic Soils   Muck (LRR K, L  Prairie Redox (lucky Peat of Peaurface (LRR K, I  ue Below Surface	Texture (e.g. clay, sand, loam)  Clay loam  Clay         MLRA149B)  LRR K, L, R)  at (LRR K, L, R)  Clay  Clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 10	No evidence  Example 10  Bottom Depth  10  18  Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1  2  ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface	am S e indicator or of 10YR 10YR 10YR Gley 1 re if indic	observe  confirm the absence  Matrix (Moist)  3/2  4/3  4/3  5/10Y    cators ar	Serield Observe of indicate  % 90 10 60 25 re not pre S8 - Polyy (LRR R, I S9 - Thin (LRR R, I F1 - Loan (LRR K, I	eries Draiservation Servation Ors.) (Type: C=  Colc   10YR    Sent	inage Class: Is Confirm M Concentration, D=Deport (Moist)   4/6     : w Surface B) ace B) lineral	somewhat por apped Type? pletion, RM=Reduced Mottles	Type  Type   C    for Problen  A10 - 2 cm N  A16 - Coast S3 - 5cm Mu S7 - Dark Su S8 - Polyval S9 - Thin Da	Location    M        Muck (LRR K, L Prairie Redox (lucky Peat of Peaturface (LRR K, I ue Below Surface (LR K) ark Surface (LRI	Texture (e.g. clay, sand, loam)  Clay loam  Clay       MLRA149B)  LRR K, L, R)  at (LRR K, L, R)  Clay  C
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 10	No evidence: Digroup): Dtion (Describe to Bottom Depth 10 18	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1  2  ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface	am S e indicator or of 10YR 10YR 10YR Gley 1 re if indic	observe  confirm the absence  Matrix (Moist)  3/2  4/3  4/3  5/10Y    cators ar	Serield Observe of indicate  % 90 10 60 25 re not pre \$8 - Polyy (LRR R, I \$9 - Thin (LRR R, I \$1 - Loan (LRR K, I \$1 - Loan (LRR K, I \$1 - Loan (LRR K, I \$1 - Loan	eries Draiservation crs.) (Type: C= Colo 10YR sent	inage Class: s Confirm M Concentration, D=Deport (Moist)   4/6        W Surface B) ace B) lineral Matrix	somewhat por apped Type? pletion, RM=Reduced M Mottles % 15 Indicators	Type  Type   C  for Problem  A10 - 2 cm N  A16 - Coast S3 - 5cm Mu S7 - Dark Su S8 - Polyval S9 - Thin Da F12 - Iron-M	Location  Location  M       Muck (LRR K, L  Prairie Redox (lucky Peat of Peaturface (LRR K, lucky Peat of Peaturface (LRR K, lucky Peaturface (LRR K, lucky Surface (LRR K) lucky Surface (LRR K) surface (	Texture (e.g. clay, sand, loam)  Clay loam  Clay       MLRA149B)  LRR K, L, R)  at (LRR K, L, R)  L)  ce (LRR K, L)  R K, L)  ses (LRR K, L, R)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 10	No evidence  Egroup): Dtion (Describe to Bottom Depth 10 18 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet A12 - Thick I S1 - Sandy In	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1  2  ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface	am S e indicator or of 10YR 10YR 10YR Gley 1 re if indic	observe  confirm the absence  Matrix (Moist)  3/2  4/3  4/3  5/10Y    cators ar	Serield Observe of indicate  % 90 10 60 25 re not pre S8 - Polyy (LRR R, I S9 - Thin (LRR R, I F1 - Loan (LRR K, I F2 - Loan F3 - Deple	eries Draiservation crs.) (Type: C= Colo 10YR	inage Class: Is Confirm M Concentration, D=Deport  Or (Moist)   4/6     : w Surface  B) ace B) lineral  Matrix	somewhat por apped Type? pletion, RM=Reduced M Mottles % 15 Indicators	Type  Type   C    for Problen  A10 - 2 cm N  A16 - Coast  S3 - 5cm Mu  S7 - Dark Su  S8 - Polyval  S9 - Thin Da  F12 - Iron-M  F19 - Piedm	Location   M     Muck (LRR K, L Prairie Redox (lucky Peat of Peaturface (LRR K, I ue Below Surface (LRI ark Surface (LRI langanese Massiont Floodplain S	Texture (e.g. clay, sand, loam)  Clay loam  Clay       MLRA149B)  LRR K, L, R)  at (LRR K, L, R)  Clay  C
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 10	No evidence  Egroup): Dtion (Describe to Bottom Depth 10 18 Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet A12 - Thick I S1 - Sandy In	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1  2  ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix	am S e indicator or of 10YR 10YR 10YR Gley 1 re if indic	observe  confirm the absence  Matrix (Moist)  3/2  4/3  4/3  5/10Y    cators ar	Serield Observe of indicate  % 90 10 60 25 re not pre \$8 - Polyy (LRR R, I \$9 - Thin (LRR K, I \$1 - Loan (LRR K, I \$7 - Loan (LRR K, I \$1 - Loan (LRR K, I \$1 - Loan (LRR K, I \$2 - Loan \$3 - Deple	eries Draiservation Servation Ors.) (Type: C=  Colc   10YR    Sent	inage Class: s Confirm M Concentration, D=Deport (Moist)   4/6        W Surface B) ace B) lineral Matrix x urface	somewhat por apped Type? pletion, RM=Reduced M Mottles % 15 Indicators	Type  Type  Type  C  C  For Problem  A10 - 2 cm N  A16 - Coast  S3 - 5 cm Mu  S7 - Dark Su  S8 - Polyval  S9 - Thin Da  F12 - Iron-M  F19 - Piedm  TA6 - Mesic	Location   M     Muck (LRR K, L Prairie Redox (lucky Peat of Peaturface (LRR K, I ue Below Surface (LRI ark Surface (LRI langanese Massiont Floodplain S	Texture (e.g. clay, sand, loam)  Clay loam  Clay
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SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 10	No evidence: Digroup): Dion (Describe to Depth 10 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1  2  ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox	am S e indicator or of Color 10YR 10YR 10YR Gley 1 re if indic	observe  confirm the absence  Matrix (Moist)  3/2  4/3  4/3  5/10Y    cators ar	Serield Observe of indicate  % 90 10 60 25 e not pre S8 - Poly (LRR R, I S9 - Thin (LRR K, I F1 - Loan (LRR K, I F2 - Loan F3 - Deple F6 - Redo F7 - Deple	eries Draiservation ors.) (Type: C=  Colo 10YR	inage Class: s Confirm M Concentration, D=Deport  or (Moist)   4/6    : w Surface B) ace B) lineral  Matrix orface Surface Surface	somewhat por apped Type?  pletion, RM=Reduced Mottles  Mottles  %  15  Indicators	Type  Type  Type  C  C  Tope  C  Tope  C  Tope  C  Tope  C  Tope  C  Tope  Top	Location    M        Muck (LRR K, L Prairie Redox (lucky Peat of Peaturface (LRR K, I ue Below Surface (L	Texture (e.g. clay, sand, loam)  Clay loam  Clay     , MLRA149B) LRR K, L, R) at (LRR K, L, R) be (LRR K, L, R) Ce (LRR K, L) R K, L) Ses (LRR K, L, R) Soils (MLRA 149B) 144A, 145, 149B)  Surface
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 10	No evidence: Digroup): Dion (Describe to Depth 10 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1  2  ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox d Matrix	am S e indicator or of Color 10YR 10YR 10YR Gley 1 re if indic	observe  confirm the absence Matrix (Moist) 3/2 4/3 4/3 5/10Y cators ar	Serield Observe of indicate  % 90 10 60 25 e not pre S8 - Poly (LRR R, I S9 - Thin (LRR K, I F1 - Loan (LRR K, I F2 - Loan F3 - Deple F6 - Redo F7 - Deple	eries Draiservation ors.) (Type: C=  Colo 10YR	inage Class: s Confirm M Concentration, D=Deport  or (Moist)   4/6    : w Surface B) ace B) lineral  Matrix orface Surface Surface	somewhat por apped Type?  pletion, RM=Reduced Mottles  Mottles  %  15  Indicators  Indicators  Indicators	Type  Type  Type  C  C  Tope  C  Tope  C  Tope  C  Tope  C  Tope  C  Tope  Top	Location    M        Muck (LRR K, L Prairie Redox (lucky Peat of Peaturface (LRR K, I ue Below Surface (L	Texture (e.g. clay, sand, loam)  Clay loam  Clay  , MLRA149B) LRR K, L, R) at (LRR K, L, R) be (LRR K, L, R) Ce (LRR K, L) R K, L) Ses (LRR K, L, R) Soils (MLRA 149B) 144A, 145, 149B)
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SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth  0  10  NRCS Hydric	No evidence:  Digroup): Dion (Describe to Bottom Depth  10  18  Soil Field In A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet A12 - Thick I S1 - Sandy I S4 - Sandy I S5 - Sandy I S6 - Stripped S7 - Dark Su	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1  2  ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox d Matrix urface (LRR R, MLRA 1	am Se indicator or of the color	observe  confirm the absence Matrix (Moist)  3/2  4/3  4/3  5/10Y    cators ar   Depth:	Serield Observe of indicate  % 90 10 60 25 re not pre S8 - Polyw (LRR R, I S9 - Thin (LRR R, I F1 - Loan (LRR K, I F2 - Loan F3 - Deple F6 - Redo F7 - Deple F8 - Redo N/A	eries Draiservation Servation Colc	inage Class: Is Confirm M Concentration, D=Deport (Moist)   4/6        Natrix  X  Inface Surface Surface Sions	somewhat postage apped Type?  pletion, RM=Reduced M  Mottles  %  15 Indicators	Type	Location  Location  M  M     Muck (LRR K, L  Prairie Redox (lucky Peat of Peaturface (LRR K, I  ue Below Surface (LRI  langanese Massiont Floodplain State (MLRA  Parent Material Shallow Dark Stain in Remarks)  tation and wetland hydro	Texture (e.g. clay, sand, loam)  Clay loam  Clay     , MLRA149B)  LRR K, L, R)  at (LRR K, L, R)  be (LRR K, L, R)  Ce (LRR K, L)  R K, L)  Ses (LRR K, L, R)  Soils (MLRA 149B)  144A, 145, 149B)  Surface  clogy must be present, unless



## **Northcentral and Northeast Region**

Ruppert Mitigation Bank Site Project/Site: Wetland ID: W1 Sample Point A-2u VEGETATION (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 10 meter radius) Species Name **Dominance Test Worksheet** % Cover Dominant Ind.Status 1. Number of Dominant Species that are OBL, FACW, or 2. FAC: 1 (A) 3. 4. Total Number of Dominant Species Across All Strata: 5. Percent of Dominant Species That Are OBL, FACW, or 6. FAC: **100.0%** (A/B) ----7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: 10. x 1 =OBL spp. Total Cover = x 2 =FACW spp. x 3 =FAC spp. 75 225 Sapling/Shrub Stratum (Plot size: 5 meter radius) FACU spp. x 4 =x = 5 =1. UPL spp. 10 2. 3. Total 325 (B) 4. 5. Prevalence Index = B/A = 3.316 6. --7. 8. **Hydrophytic Vegetation Indicators:** 9. Rapid Test for Hydrophytic Vegetation □Yes ✓ No 10. ☑Yes □ No Dominance Test is > 50% Total Cover = □Yes ✓ No Prevalence Index is ≤ 3.0 \* □Yes ☑ No Morphological Adaptations (Explain) \* □Yes ☑ No Herb Stratum (Plot size: 2 meter radius) Problem Hydrophytic Vegetation (Explain) \* POA PRATENSIS Υ 60 **FAC** 1. \* Indicators of hydric soil and wetland hydrology must be 2. 10 Heliopsis helianthoides Ν NI present, unless disturbed or problematic. 3. **FACU** Monarda fistulosa 10 Ν FAC 10 4. Ν **Definitions of Vegetation Strata:** Panicum virgatum 5. 5 Ν FAC Andropogon gerardii Tree - Woody plants 3 in. (7.6cm) or more in 6 **FACW** Elymus virginicus 1 Ν diameter at breast height (DBH), regardless of 7. Solidago rigida **FACU** 1 Ν haiaht 8. Solidago canadensis **FACU** 1 Ν Sapling/Shrub - Woody plants less than 3 in. DBH and greater 9. than 3.28 ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, 12. -----regardless of size, and woody plants less than 13. --2 20 ft tall 14. --**Woody Vines -** All woody vines greater than 3.28 ft. in height. 15. Total Cover = 98 Woody Vine Stratum (Plot size: 10 meter radius) 1. 2. --3. 5. 4. Total Cover =

# Additional Remarks:

Vegetation at the sample plot is hydrophytic.

Remarks:



**Northcentral and Northeast Region** 

Ruppert Mitigation Bank Site 09/07/12 Project/Site: Stantec Project #: 193702031 Date: Applicant: Wisconsin Department of Transportation County: Winnebago Investigator #1: Curran, M. State: Wisconsin Investigator #2: Bertagnoli, N. Neenah silty clay loam Soil Unit: NWI/WWI Classification: N/A Wetland ID: W1 Landform: Depression Local Relief: Concave Sample Point: A-2w Slope (%): 0-2% Latitude: N/A Longitude: N/A Datum: N/A Community ID: Wet Meadow Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) Section: 17 Are Vegetation  $\square$ , Soil  $\square$ , or Hydrology  $\square$  significantly disturbed? Are normal circumstances present? 20 N Township: Are Vegetation  $\square$ , Soil  $\square$ , or Hydrology  $\square$  naturally problematic? 16 Ε Range: Dir: **SUMMARY OF FINDINGS** Hydrophytic Vegetation Present? ✓ Yes 

☐ No Hydric Soils Present? ☑ Yes □ No Is This Sampling Point Within A Wetland? Wetland Hydrology Present? ✓ Yes ■ No The sample plot is located in a wet meadow. Remarks: **HYDROLOGY Wetland Hydrology Indicators** (Check here if indicators are not present  $\square$ ): Secondary: Primary: ☐ B6 - Surface Soil Cracks ☐ A1 - Surface Water ☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ A2 - High Water Table ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ A3 - Saturation □ B15 - Marl Deposits ☐ B1 - Water Marks ☐ C1 - Hydrogen Sulfide Odor ☐ C2 - Dry-Season Water Table B2 - Sediment Deposits ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C8 - Crayfish Burrows ☐ C4 - Presence of Reduced Iron **B3** - Drift Deposits ☐ C9 - Saturation Visible on Aerial Imagery ☐ B4 - Algal Mat or Crust ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ D1 - Stunted or Stressed Plants ☑ D2 - Geomorphic Position ☐ B5 - Iron Deposits ☐ C7 - Thin Muck Surface B7 - Inundation Visible on Aerial Imagery ☐ Other (Explain) ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☐ B8 - Sparsely Vegetated Concave Surface ☑ D5 - FAC-Neutral Test **Field Observations: Surface Water Present?** Depth: (in.) ☐ Yes ☑ No **Wetland Hydrology Present?** ☑ Yes □ No Water Table Present? (in.) ☐ Yes ☑ No Depth: **Saturation Present?** ☐ Yes ☑ No (in.) Depth: Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: The presence of 2 secondary indicators at the sample plot provides evidence of wetland hydrology. Remarks: SOILS Series Drainage Class: somewhat poorly Map Unit Name: Neenah silty clay loam Aquollic Hapludalfs Field Observations Confirm Mapped Type? Taxonomy (Subgroup): ☐ Yes ☑ No Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Locaiton: PL=Pore Lining, M=Matrix) **Texture** Top Bottom Matrix Mottles (e.g. clay, sand, loam) Color (Moist) Type Depth Color (Moist) % % Location Depth Horizon 10YR 3/2 70 0 **10YR** C Clay loam 6 4/6 10 M 10YR 4/3 20 4/3 55 10YR Clay 10YR 4/6 C 18 M 6/5G Gley 1 ------NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑): Indicators for Problematic Soils 1 A10 - 2 cm Muck (LRR K, L, MLRA149B) A1- Histosol ☐ S8 - Polyvalue Below Surface A2 - Histic Epipedon ☐ A16 - Coast Prairie Redox (LRR K, L, R) (LRR R, MLRA 149B) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) A3 - Black Histic ☐ S9 - Thin Dark Surface ☐ S7 - Dark Surface (LRR K, L) (LRR R, MLRA 149B) ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ F1 - Loamy Muck Mineral ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) A11 - Depleted Below Dark Surface (LRR K, L) A12 - Thick Dark Surface ☐ F2 - Loamy Gleyed Matrix ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ S1 - Sandy Muck Mineral ☐ F3 - Depleted Matrix S4 - Sandy Gleyed Matrix ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**) F6 - Redox Dark Surface S5 - Sandy Redox F7 - Depleted Dark Surface TF2 - Red Parent Material S6 - Stripped Matrix ☐ F8 - Redox Depressions ☐ TF12 - Very Shallow Dark Surface S7 - Dark Surface (LRR R, MLRA 149B) ☐ Other (Explain in Remarks) <sup>1</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. **Restrictive Layer Hydric Soil Present?** Type: N/A Depth: N/A ☑ Yes □ No (If Observed) The soil at the sample plot meets the NRCS F6 - Redox Dark Surface indicator. Remarks:



# **Northcentral and Northeast Region**

Ruppert Mitigation Bank Site Project/Site: Wetland ID: W1 Sample Point A-2w **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 10 meter radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1. --Number of Dominant Species that are OBL, FACW, or 2. FAC: 2 (A) 3. 4. Total Number of Dominant Species Across All Strata: 5. Percent of Dominant Species That Are OBL, FACW, or 6. FAC: **100.0%** (A/B) ----7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: 10. x 1 =OBL spp. 70 Total Cover = FACW spp. x 2 =15 \_\_\_ x 3 =FAC spp. FACU spp. x 4 =Sapling/Shrub Stratum (Plot size: 5 meter radius) UPL spp. \_\_\_\_ x = 5 =1. 2. 3. Total 137 4. 5. Prevalence Index = B/A = 1.4276. ----7. 8. **Hydrophytic Vegetation Indicators:** 9. ☑Yes Rapid Test for Hydrophytic Vegetation ☐ No 10. ☑Yes □ No Dominance Test is > 50% Total Cover = ✓Yes □ No Prevalence Index is ≤ 3.0 \* □Yes ☑ No Morphological Adaptations (Explain) \* □Yes ☑ No Herb Stratum (Plot size: 2 meter radius) Problem Hydrophytic Vegetation (Explain) \* Υ Calamagrostis canadensis 40 **OBL** 1. \* Indicators of hydric soil and wetland hydrology must be 2. 10 FAC Euthamia graminifolia Ν present, unless disturbed or problematic. 3. **FACW** Helenium autumnale 10 Ν Υ 4. 30 **OBL Definitions of Vegetation Strata:** Aster puniceus 5. 5 Panicum virgatum Ν FAC Tree - Woody plants 3 in. (7.6cm) or more in 6 **FACW** Aster novae-angliae 1 Ν diameter at breast height (DBH), regardless of 7. -haiaht 8. --9. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, 12. -----regardless of size, and woody plants less than 13. --2 20 ft tall 14. --Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 96 Woody Vine Stratum (Plot size: 10 meter radius) 1. 2. --3. 5. 4. Total Cover = Remarks: Vegetation at the sample plot is hydrophytic.

# **Additional Remarks:**

**Northcentral and Northeast Region** 

Stantec											
Project/Site:	Ruppert Mi	itigation Bank Site				Stanted	c Project #:	193702031		Date:	09/07/12
Applicant:	Wisconsin	consin Department of Transportation								County:	Winnebago
Investigator #1:										State:	Wisconsin
Soil Unit:		Neenah silty clay loam  NWI/WWI Classification: N/A									W1
Landform:		ty clay loairi		Loo				14/73		Wetland ID:	
	Hillslope Local Relief: Convex							Datum	NI/A	Sample Point:	
Slope (%):	2-6%	Latitude:			ongitude:			Datum:		1	Mesic Prairie
Are climatic/hyd	trologic cond	ditions on the site typ	oical for t	this time	of year?			☑ Yes □	No	Section:	17
Are Vegetation	□ , Soil ☑,	or Hydrology   sign	nificantly	disturbe	ed?	Are	normal circu	ımstances pro	esent?	Township:	20 N
Are Vegetation	□ , Soil □,	or Hydrology □ nat	urally pro	blemation	?		✓ Yes	s □ No		Range:	16 Dir: <b>E</b>
SUMMARY OF		) 5)	7							J	
		scont?		□ Voc	□ No			Hydria Saila	Drocont?		☐ Yes ☑ No
Hydrophytic Ve	~			☐ Yes	<del></del>			Hydric Soils		A/:( -:	
Wetland Hydrol			<del> </del>	☐ Yes	☑ No			is this Sam	oling Point	Within A Wetla	and? ■ Yes ☑ No
Remarks:	The sample	e plot is located in a	mesic p	rairie.							
HYDROLOGY											
	ala la dia	ot ana (Oh a alah ana H	Charlina (a		-1						
_		ators (Check here if	indicato	rs are no	ot presen	t ☑):					
Primary:				_					Secondary:		
	A1 - Surface					er-Stained				B6 - Surface Sc	
	A2 - High Wa					iatic Fauna				B10 - Drainage	
	A3 - Saturati			님		Deposits			닏	B16 - Moss Trin	
	B1 - Water N				-	ogen Sulfi		ing Doots		C2 - Dry-Seaso	
	B2 - Sedime	•		님			spheres on Liv	ing Roots		C8 - Crayfish B	
	B3 - Drift De	-					educed Iron eduction in Tille	d Caila			Visible on Aerial Imagery Stressed Plants
	B4 - Algal Ma B5 - Iron Der			片		Muck Surf		:u 30115		D2 - Geomorph	
l H		ion Visible on Aerial Ima	anerv.		Other (Ex		lace			D3 - Shallow Ac	
		y Vegetated Concave S	•		Other (LX	piairij				D4 - Microtopog	
	Do Oparooi,	y vogotatou comouvo c	Janaoo							D5 - FAC-Neutr	•
											<u></u>
Field Observat	ions:										
Surface Water I	Present?	☐ Yes  ☑ No	Depth:		(in.)			Watland Lly	drology Dr	ocont?	Voc 🗔 No
Water Table Pro	esent?	☐ Yes ☑ No	Depth:		(in.)			Wetland Hy	urology Pi	esent:	Yes ☑ No
Saturation Pres	ent?	☐ Yes ☑ No	Depth:		(in.)						
							\		N1/A		
Describe Record	led Data (str	eam gauge, monitorir	nd well. a	arial nha	tae aravu	2110 10000	<b>ATIANAL IT ALIA</b>	ימוחבוו.	N/A		
	•	<del> </del>	.g o, a	enai pino	ios, previo	ous msper	Clioris), ii ava	iiabie.	14// (		
Remarks:	No evidend	ce of wetland hydrolo					•	ilabie.	14/74		
Remarks:	No evidend						•	ilable.	14/1		
	No evidend						•	liable.	1977		
SOILS		ce of wetland hydrolo	ogy was		d at the s	ample plo	ot.				
SOILS Map Unit Name	:	ce of wetland hydrolo  Neenah silty clay lo	ogy was	observe	d at the s	ample plo	ot. inage Class:	somewhat po	oorly	Tī No	
SOILS  Map Unit Name Taxonomy (Sub	: ogroup):	Neenah silty clay lo Aquollic Hapludalfs	ogy was	observe	d at the s Se	ample plo eries Drai servation	ot. inage Class: s Confirm M	somewhat po apped Type?	oorly □ Yes		
SOILS  Map Unit Name Taxonomy (Sub	e: ogroup): otion (Describe to	Neenah silty clay lo Aquollic Hapludalfs	ogy was	observed	d at the s Se	ample plo eries Drai servation	ot. inage Class: s Confirm M	somewhat po apped Type?	oorly □ Yes		ocaiton: PL=Pore Lining, M=Matrix)
SOILS  Map Unit Name Taxonomy (Sub	: ogroup):	Neenah silty clay lo Aquollic Hapludalfs	ogy was	observe	d at the s Se	ample plo eries Drai servation	ot. inage Class: s Confirm M	somewhat po apped Type?	oorly □ Yes		Texture
SOILS  Map Unit Name Taxonomy (Sub	e: ogroup): otion (Describe to	Neenah silty clay lo Aquollic Hapludalfs	ogy was	observed	d at the s Se	eries Drai servation	ot. inage Class: s Confirm M	somewhat po apped Type?	oorly □ Yes		
SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top Depth	ogroup):  otion (Describe to Bottom Depth	Neenah silty clay lo Aquollic Hapludalfs o the depth needed to document the	ogy was  am  e indicator or o	confirm the abs  Matrix (Moist)	Se Field Obsence of indicate	eries Drai servation	inage Class: S Confirm M Concentration, D=Dep	somewhat po apped Type? Deletion, RM=Reduced N Mottles	Oorly  Yes  Matrix, CS=Covered	/Coated Sand Grains; L	Texture (e.g. clay, sand, loam)
SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0	egroup):  otion (Describe to Bottom Depth 6	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon	e indicator or color 10YR	confirm the abs  Matrix (Moist)  3/1	Se Field Observe of indicate	eries Draiservation  Ors.) (Type: C=0	inage Class: s Confirm M Concentration, D=Dep	somewhat po apped Type? Deletion, RM=Reduced M Mottles %	Oorly  Yes Matrix, CS=Covered  Type	/Coated Sand Grains; L	Texture (e.g. clay, sand, loam) Clay loam
SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top Depth	ogroup):  otion (Describe to Bottom Depth	Neenah silty clay lo Aquollic Hapludalfs o the depth needed to document the	color 10YR 10YR	confirm the absorbatrix (Moist) 3/1 4/3	Service of indicate whence of indicate whence of service whence of the service whence where whence where whence whence whence whence whence whe	eries Drai servation	inage Class: S Confirm M Concentration, D=Dep	somewhat posterion, RM=Reduced Mottles	oorly ☐ Yes Matrix, CS=Covered	/Coated Sand Grains; L	Texture (e.g. clay, sand, loam)
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SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0	e: ogroup): otion (Describe to Bottom Depth 6 8	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon	color 10YR 10YR	confirm the absorbatrix (Moist) 3/1 4/3	Service of indicate whence of indicate whence of service whence of the service whence where whence where whence whence whence whence whence whe	eries Draiservation  Ors.) (Type: C=0	inage Class: s Confirm M Concentration, D=Dep	somewhat po apped Type? Deletion, RM=Reduced M Mottles %	Oorly  Yes Matrix, CS=Covered  Type	/Coated Sand Grains; L	Texture (e.g. clay, sand, loam) Clay loam
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6	e: ogroup): otion (Describe to Bottom Depth 6 8	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon 1	cam color color 10YR 10YR 10YR	observed confirm the absenue.  Matrix (Moist) 3/1 4/3 4/3	Serield Observe of indicate % 100 85 40	eries Draiservation  ors.) (Type: C=0  Colo   10YR	inage Class: s Confirm M Concentration, D=Dep	somewhat posterion, RM=Reduced Mottles  % 15	Oorly  Yes  Matrix, CS=Covered  Type C	Location M	Texture (e.g. clay, sand, loam) Clay loam Clay
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SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12	pgroup): Dtion (Describe to Bottom Depth 6 8 12 18	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon 1 2 3	cam color co	observed confirm the abs Matrix (Moist) 3/1 4/3 4/3 5/2 4/3	Serield Observe of indicate with the series of indicate wi	eries Draiservation  Colo 10YR 10YR 10YR	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20	Type  C  C  C	Location M M M	Texture (e.g. clay, sand, loam) Clay loam Clay Clay Silt loam
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8	Bottom Depth 6 8 12	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon 1 2 3	color	observed confirm the abs Matrix (Moist) 3/1 4/3 4/3 5/2 4/3	Serield Observe of indicate with the series of indicate wi	eries Draiservation  Colo  10YR  10YR	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6	somewhat posterior, RM=Reduced Mottles  Mottles  %   15  15  20	Oorly  Yes  Matrix, CS=Covered  Type C C	Location M M M	Texture (e.g. clay, sand, loam)  Clay loam  Clay  Clay
SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12	pgroup): Dtion (Describe to Bottom Depth 6 8 12 18	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon 1 2 3	cam color co	observed confirm the abs Matrix (Moist) 3/1 4/3 4/3 5/2 4/3	Serield Observe of indicate with the series of indicate wi	eries Draiservation  Colo 10YR 10YR 10YR	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20	Type  C  C  C	Location M M M	Texture (e.g. clay, sand, loam) Clay loam Clay Clay Silt loam
SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12	Bottom Depth 6 8 12 18	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon 1 2 3 4	color	observed  confirm the absenue Matrix (Moist)  3/1  4/3  4/3  5/2  4/3	Serield Observe of indicate with the series of indicate wi	eries Draiservation ors.) (Type: C=0 Colo 10YR 10YR	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6	somewhat posterior, RM=Reduced Mottles  Mottles  %   15  20	Type  C  C  C	Location   M  M	Texture (e.g. clay, sand, loam) Clay loam Clay Clay Silt loam
SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric S	pgroup): Dtion (Describe to Bottom Depth 6 8 12 18 Soil Field Ir	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon 1 2 3 4 ndicators (check he	color	observed  confirm the absenue Matrix (Moist)  3/1  4/3  4/3  5/2  4/3	Se Field Observe of indicate % 100 85 40 35 80 re not pre	eries Draiservation ors.) (Type: C=0 Colo 10YR 10YR	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 ):	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20 Indicators	Type  Type  C  C  C  c  for Problem	Location   M  M	Texture (e.g. clay, sand, loam) Clay loam Clay Clay Silt loam
SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric S	pgroup): Dtion (Describe to Bottom Depth 6 8 12 18 Soil Field Ir	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon 1 2 3 4 ndicators (check he	color	observed  confirm the absenue Matrix (Moist)  3/1  4/3  4/3  5/2  4/3	Serield Observe of indicate with the series of indicate wi	eries Draiservation Colo 10YR 10YR sent	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6 :w Surface	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20 Indicators	Type  Type  C  C  C  C  A10 - 2 cm	Location M M M natic Soils 1	Texture (e.g. clay, sand, loam)  Clay loam  Clay  Clay  Silt loam     MLRA149B)
SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric S	bigroup): Deption (Describe to Depth)  6  8  12  18    Soil Field In A1- Histosol	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon 1 2 3 4 ndicators (check he	color	observed  confirm the absenue Matrix (Moist)  3/1  4/3  4/3  5/2  4/3	Serield Observe of indicate  % 100 85 40 35 80 e not pre S8 - Polyw (LRR R, I	ample ploseries Draiservation  Colo 10YR 10YR sent  \[ \textstyle{\textstyle	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6 ): w Surface B)	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20 Indicators	Type  Type  C  C  C  C  A10 - 2 cm   A16 - Coast	Location   M  M  M     natic Soils <sup>1</sup> Muck (LRR K, L,	Texture (e.g. clay, sand, loam) Clay loam Clay Clay Silt loam MLRA149B) LRR K, L, R)
SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric S	bigroup): Deption (Describe to Bottom Depth 6 8 12 18 Soil Field In A1- Histosol A2 - Histic E	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he	color	observed  confirm the absenved  Matrix (Moist)  3/1  4/3  4/3  5/2  4/3    cators ar	Serield Observe of indicate  % 100 85 40 35 80 re not pre \$8 - Polyw (LRR R, I) \$9 - Thin	ample ploseries Draiservation  Colo 10YR 10YR 10YR sent  \[ \textstyle{\text	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6 :w Surface B) ace	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20 Indicators	Type  Type  C  C  C  C  A10 - 2 cm   A16 - Coast S3 - 5cm Mi	Location M M M natic Soils  Prairie Redox (L	Texture (e.g. clay, sand, loam) Clay loam Clay Clay Silt loam MLRA149B) LRR K, L, R) at (LRR K, L, R)
SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric S	Bottom Depth 6 8 12 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he pipedon istic en Sulfide	color	observed  confirm the absenved  Matrix (Moist)  3/1  4/3  4/3  5/2  4/3    cators ar	Se Field Observe of indicate where of indicate where of indicate where the serve of indicate where serve indicate where	ample ploseries Draines ervation  cries Draines ervation  cries Draines ervation  Color  10YR  10YR  10YR    sent	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6 ): w Surface B) ace B)	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20 Indicators	Type  Type  C  C  C  C  C  A10 - 2 cm I  A16 - Coast S3 - 5 cm Mi S7 - Dark Si	Location   M  M  M      natic Soils <sup>1</sup> Muck (LRR K, L, Prairie Redox (Lucky Peat of Pea	Texture (e.g. clay, sand, loam) Clay loam Clay Clay Silt loam MLRA149B) LRR K, L, R) at (LRR K, L, R)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric	Bottom Depth 6 8 12 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he pipedon istic en Sulfide	color Color 10YR 10YR 10YR 10YR	observed confirm the abs Matrix (Moist) 3/1 4/3 4/3 5/2 4/3 cators ar	Se Field Observe of indicate where of indicate where of indicate where the serve of indicate where serve indicate where	ample plo eries Drai servation ors.) (Type: C=0 Colo 10YR 10YR 10YR sent	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6 ): w Surface B) ace B)	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20 Indicators	Type  Type  C  C  C  C  C  A10 - 2 cm I  A16 - Coast S3 - 5 cm Mi S7 - Dark Si S8 - Polyval	Location  M M M natic Soils  Prairie Redox (Lucky Peat of Peaurface (LRR K, L, L)	Texture (e.g. clay, sand, loam)  Clay loam  Clay  Clay  Silt loam     MLRA149B)  RR K, L, R)  at (LRR K, L, R)  ce (LRR K, L)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric	Bottom Depth 6 8 12 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface	color Color 10YR 10YR 10YR 10YR	observed confirm the abs Matrix (Moist) 3/1 4/3 4/3 5/2 4/3 cators ar	Se Field Obsence of indicate  % 100 85 40 35 80 e not pre S8 - Polyw (LRR R, I S9 - Thin (LRR R, I F1 - Loan (LRR K, I	ample ploseries Draineservation  Colors.) (Type: C=0  10YR  10YR  10YR  10YR  sent	inage Class: s Confirm M Concentration, D=Deport (Moist)  4/6 4/6 5/6 ): w Surface B) ace B) ineral	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20 Indicators	Type  Type  C  C  C  C  C  A10 - 2 cm I  A16 - Coast S3 - 5cm Me S7 - Dark Se S8 - Polyval S9 - Thin Da	Location  M  M  M  Muck (LRR K, L, Prairie Redox (Lucky Peat of Peaturface (LRR K, L) ue Below Surface (LRR K, L) ark Surface (LRR K)	Texture (e.g. clay, sand, loam)  Clay loam  Clay  Clay  Silt loam     MLRA149B)  RR K, L, R)  at (LRR K, L, R)  ce (LRR K, L)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric	Bottom Depth 6 8 12 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet A12 - Thick I	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface	color Color 10YR 10YR 10YR 10YR	observed  confirm the absenved  Matrix (Moist)  3/1  4/3  4/3  5/2  4/3    cators ar	Serield Observe of indicate  % 100 85 40 35 80 e not pre \$8 - Polyy (LRR R, I) \$9 - Thin (LRR R, I) F1 - Loan (LRR K, I) F2 - Loan	ample plo eries Drai servation ors.) (Type: C=0 Colo 10YR 10YR 10YR sent	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6 : w Surface B) ace B) ineral Matrix	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20 Indicators	Type  Type  C  C  C  C  C  A10 - 2 cm I  A16 - Coast S3 - 5 cm Mi S7 - Dark Si S8 - Polyval S9 - Thin Da F12 - Iron-M	Location   M  M  M       Muck (LRR K, L, Prairie Redox (Lucky Peat of Peaturface (LRR K, L) ue Below Surface (LRF K) ark Surface (LRF K) langanese Mass	Texture (e.g. clay, sand, loam) Clay loam Clay Clay Silt loam MLRA149B) LRR K, L, R) at (LRR K, L, R) ce (LRR K, L) R K, L)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric	Bottom Depth 6 8 12 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet A12 - Thick I S1 - Sandy I	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral	color Color 10YR 10YR 10YR 10YR	observed  confirm the absenved  Matrix (Moist)  3/1  4/3  4/3  5/2  4/3    cators ar	Serield Observe of indicate  % 100 85 40 35 80 re not pre S8 - Polyw (LRR R, I S9 - Thin (LRR R, I F1 - Loan (LRR K, I F2 - Loan F3 - Deple	ample ploseries Drainservation  Colors.) (Type: C=0  10YR  1	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6 ): w Surface B) ace B) ineral Matrix	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20 Indicators	Type  Type  C  C  C  C  C  A10 - 2 cm I  A16 - Coast S3 - 5cm Me S7 - Dark Se S8 - Polyval S9 - Thin Da F12 - Iron-Me F19 - Piedm	Location  M  M  M  Muck (LRR K, L, Prairie Redox (Lucky Peat of Peaturface (LRR K, L) ue Below Surface (LRR K, L) ark Surface (LRR K) langanese Massiont Floodplain S	Texture (e.g. clay, sand, loam) Clay loam Clay Clay Silt loam MLRA149B) LRR K, L, R) at (LRR K, L, R) ce (LRR K, L) R K, L) ses (LRR K, L, R) Soils (MLRA 149B)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric	Bottom Depth 6 8 12 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet A12 - Thick I S1 - Sandy I S4 - Sandy I	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix	color Color 10YR 10YR 10YR 10YR	observed  confirm the absenved  Matrix (Moist)  3/1  4/3  4/3  5/2  4/3    cators ar	Serield Observe of indicate  % 100 85 40 35 80 e not pre \$8 - Polyy (LRR R, I) \$9 - Thin (LRR R, I) F1 - Loan (LRR K, I) F2 - Loan F3 - Deple F6 - Redo	ample plane ample	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6 : w Surface B) ace B) ineral Matrix curface	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20 Indicators	Type  Type  C  C  C  C  C  A16 - Coast S3 - 5cm Mt S7 - Dark St S8 - Polyval S9 - Thin Da F12 - Iron-M F19 - Piedm TA6 - Mesic	Location  M  M  M  Muck (LRR K, L, Prairie Redox (Lucky Peat of Peaturface (LRR K, L) ue Below Surface (LRR K, L) ark Surface (LRR K) langanese Massiont Floodplain S	Texture (e.g. clay, sand, loam)  Clay loam  Clay  Clay  Silt loam    MLRA149B)  ARR K, L, R)  at (LRR K, L, R)  be (LRR K, L)  R K, L)  ee (LRR K, L)  ee (LRR K, L, R)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric	Bottom Depth 6 8 12 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet A12 - Thick I S1 - Sandy I	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox	cogy was  cam cam cam color co	observed  confirm the absenved  Matrix (Moist)  3/1  4/3  4/3  5/2  4/3    cators ar	Serield Observe of indicate  % 100 85 40 35 80 e not pre S8 - Polyv (LRR R, I S9 - Thin (LRR R, I F1 - Loan (LRR K, I F2 - Loan F3 - Deple F6 - Redo	ample plane ample	inage Class: s Confirm M Concentration, D=Deport or (Moist) 4/6 4/6 5/6 ): w Surface B) ace B) ineral Matrix orface Surface Surface	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20 Indicators	Type  Type  C  C  C  C  C  C  A10 - 2 cm I  A16 - Coast S3 - 5cm Me S7 - Dark Se S8 - Polyval S9 - Thin Da F12 - Iron-Me TA6 - Mesic TF2 - Red F	Location  Location  M  M  M  M    natic Soils   Nuck (LRR K, L, Prairie Redox (Lucky Peat of Peaturface (LRR K, L) ue Below Surface (LRR K, L) ark Surface (LRR K) langanese Massiont Floodplain State (MLRA) arent Material	Texture (e.g. clay, sand, loam) Clay loam Clay Clay Silt loam , MLRA149B) LRR K, L, R) at (LRR K, L, R) ce (LRR K, L) R K, L) ses (LRR K, L, R) Soils (MLRA 149B) 144A, 145, 149B)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric	Bottom Depth 6 8 12 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet A12 - Thick I S1 - Sandy I S4 - Sandy I S5 - Sandy I S6 - Stripped	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox	color	observed  confirm the absenved  Matrix (Moist)  3/1  4/3  4/3  5/2  4/3    cators ar	Serield Observe of indicate  % 100 85 40 35 80 e not pre S8 - Polyv (LRR R, I S9 - Thin (LRR R, I F1 - Loan (LRR K, I F2 - Loan F3 - Deple F6 - Redo	ample plane eries Drain servation ors.) (Type: C=0 Color 10YR 10YR 10YR sent  \bigsize value Below MLRA 149 or MLR	inage Class: s Confirm M Concentration, D=Deport or (Moist) 4/6 4/6 5/6 ): w Surface B) ace B) ineral Matrix orface Surface Surface	somewhat posterion, RM=Reduced Mottles  Mottles  % 15 15 20 Indicators	Type  Type  C  C  C  C  C  A16 - Coast S3 - 5cm Mt S7 - Dark St S8 - Polyval S9 - Thin Da F12 - Iron-M F19 - Piedm TA6 - Mesic TF2 - Red F TF12 - Very	Location   M  M  M      Muck (LRR K, L, Prairie Redox (Lucky Peat of Peaturface (LRR K, L) ue Below Surface (LRF K) ark Surface (LR	Texture (e.g. clay, sand, loam) Clay loam Clay Clay Silt loam , MLRA149B) LRR K, L, R) at (LRR K, L, R) ce (LRR K, L) R K, L) ses (LRR K, L, R) Soils (MLRA 149B) 144A, 145, 149B)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric	Bottom Depth 6 8 12 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet A12 - Thick I S1 - Sandy I S4 - Sandy I S5 - Sandy I S6 - Stripped	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox d Matrix	color	observed  confirm the absenved  Matrix (Moist)  3/1  4/3  4/3  5/2  4/3    cators ar	Serield Observe of indicate  % 100 85 40 35 80 e not pre S8 - Polyv (LRR R, I S9 - Thin (LRR R, I F1 - Loan (LRR K, I F2 - Loan F3 - Deple F6 - Redo	ample plane eries Drain servation ors.) (Type: C=0 Color 10YR 10YR 10YR sent  \bigsize value Below MLRA 149 or MLR	inage Class: s Confirm M Concentration, D=Deport or (Moist) 4/6 4/6 5/6 ): w Surface B) ace B) ineral Matrix orface Surface Surface	somewhat post apped Type?  Detion, RM=Reduced Mottles  Mottles  %   15  20    Indicators  Indicators  Indicators	Type  Type  C  C  C  C  C  C  A10 - 2 cm I  A16 - Coast S3 - 5cm Me S7 - Dark Si S8 - Polyval S9 - Thin Da F12 - Iron-M F19 - Piedm TA6 - Mesic TF2 - Red F TF12 - Very Other (Expla of hydrophytic vege	Location  M M M Muck (LRR K, L, Prairie Redox (Lucky Peat of Peaturface (LRR K, L) ue Below Surface (LRR K, L) ue Below Surface (LRR K, L) ark Surface (LRR K, L) are Below Surface (LRR K, L)	Texture (e.g. clay, sand, loam) Clay loam Clay Clay Silt loam , MLRA149B) LRR K, L, R) at (LRR K, L, R) ce (LRR K, L) R K, L) ses (LRR K, L, R) Soils (MLRA 149B) 144A, 145, 149B)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric	Bottom Depth 6 8 12 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet A12 - Thick I S1 - Sandy I S4 - Sandy I S5 - Sandy I S6 - Stripped	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox d Matrix	color	observed  confirm the absenved  Matrix (Moist)  3/1  4/3  4/3  5/2  4/3    cators ar	Serield Observe of indicate  % 100 85 40 35 80 e not pre S8 - Polyv (LRR R, I S9 - Thin (LRR R, I F1 - Loan (LRR K, I F2 - Loan F3 - Deple F6 - Redo	ample plane eries Drain servation ors.) (Type: C=0 Color 10YR 10YR 10YR sent  \bigsize value Below MLRA 149 or MLR	inage Class: s Confirm M Concentration, D=Deport or (Moist) 4/6 4/6 5/6 ): w Surface B) ace B) ineral Matrix orface Surface Surface	somewhat post apped Type?  Detion, RM=Reduced Mottles  Mottles  %   15  20    Indicators  Indicators  Indicators	Type  Type  C  C  C  C  C  C  C  A10 - 2 cm I  A16 - Coast S3 - 5cm Me S7 - Dark S S8 - Polyval S9 - Thin Da F12 - Iron-M F19 - Piedm TA6 - Mesic TF2 - Red F TF12 - Very Other (Expla	Location  M M M Muck (LRR K, L, Prairie Redox (Lucky Peat of Peaturface (LRR K, L) ue Below Surface (LRR K, L) ue Below Surface (LRR K, L) ark Surface (LRR K, L) are Below Surface (LRR K, L)	Texture (e.g. clay, sand, loam)  Clay loam  Clay  Clay  Silt loam    MLRA149B)  ARR K, L, R)  At (LRR K, L, R)  See (LRR K, L)  R K, L)  See (LRR K, L, R)  Soils (MLRA 149B)  144A, 145, 149B)  urface
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric	Bottom Depth 6 8 12 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet A12 - Thick I S1 - Sandy I S4 - Sandy I S5 - Sandy I S6 - Stripped	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox d Matrix Irface (LRR R, MLRA 1	color	observed  confirm the absenved  Matrix (Moist)  3/1  4/3  4/3  5/2  4/3    cators ar	Serield Observe of indicate  % 100 85 40 35 80 e not pre S8 - Polyv (LRR R, I S9 - Thin (LRR R, I F1 - Loan (LRR K, I F2 - Loan F3 - Deple F6 - Redo	ample plane eries Drain servation ors.) (Type: C=0 Color 10YR 10YR 10YR sent  \bigsize value Below MLRA 149 or MLR	inage Class: s Confirm M Concentration, D=Deport or (Moist) 4/6 4/6 5/6 ): w Surface B) ace B) ineral Matrix orface Surface Surface	somewhat post apped Type?  Detion, RM=Reduced Mottles  Mottles  %   15  20    Indicators  Indicators  Indicators	Type  Type  Type  C  C  C  C  C  Tope	Location  M M M Muck (LRR K, L, Prairie Redox (Lucky Peat of Peaturface (LRR K, L) ue Below Surface (LRR K, L) ark Su	Texture (e.g. clay, sand, loam)  Clay loam  Clay  Clay  Silt loam    MLRA149B)  ARR K, L, R)  At (LRR K, L, R)  See (LRR K, L)  R K, L)  See (LRR K, L, R)  Soils (MLRA 149B)  144A, 145, 149B)  urface
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric  NRCS Hydric  Restrictive Layer (If Observed)	Bottom Depth 6 8 12 18 Soil Field Ir A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet A12 - Thick I S1 - Sandy I S4 - Sandy I S4 - Sandy I S5 - Sandy F S6 - Stripped S7 - Dark Su	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox d Matrix urface (LRR R, MLRA 1	color Color 10YR 10YR 10YR 10YR ere if indicator of the color	observed  confirm the absenved  Matrix (Moist)  3/1  4/3  4/3  5/2  4/3    cators ar	Se Field Observe of indicate %  100 85 40 35 80 re not pre S8 - Polyw (LRR R, I S9 - Thin (LRR R, I F1 - Loan (LRR K, I F2 - Loan F3 - Deple F6 - Redo F7 - Deple F8 - Redo N/A	ample plane ample	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6 ): w Surface B) ace B) ineral Matrix curface Surface Surface Sions	somewhat postage apped Type?  apped Type?  Mottles  % 15 15 20 Indicators  Indicators disturbed of	Type  Type  Type  C  C  C  C  C  Tope    for Problen  A10 - 2 cm I  A16 - Coast  S3 - 5 cm Me  S7 - Dark Se  S8 - Polyval  S9 - Thin Da  F12 - Iron-Me  F19 - Piedm  TA6 - Mesic  TF2 - Red F  TF12 - Very  Other (Explain  of hydrophytic veget  or problematic.  Present?	Location  M M M Muck (LRR K, L, Prairie Redox (Lucky Peat of Peaurface (LRR K, Lucky Peat of Peat	Texture (e.g. clay, sand, loam)  Clay loam  Clay  Clay  Silt loam    MLRA149B)  LRR K, L, R)  at (LRR K, L, R)  be (LRR K, L)  R K, L)  ses (LRR K, L, R)  Soils (MLRA 149B)  144A, 145, 149B)  urface  blogy must be present, unless  Yes ☑ No
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 6 8 12 NRCS Hydric	Depth  Bottom Depth  6  8  12  18  Soil Field Ir  A1- Histosol A2 - Histic E A3 - Black H A4 - Hydroge A5 - Stratifie A11 - Deplet A12 - Thick I S1 - Sandy I S4 - Sandy I S5 - Sandy I S6 - Stripped S7 - Dark Su  Type: The soil at	Neenah silty clay lo Aquollic Hapludalfs the depth needed to document the Horizon  1 2 3 4 ndicators (check he pipedon istic en Sulfide d Layers ed Below Dark Surface Dark Surface Muck Mineral Gleyed Matrix Redox d Matrix urface (LRR R, MLRA 1	cogy was  am  color  Color  10YR  10YR  10YR  10YR    are if indic  49B)	observed  confirm the absenved  Matrix (Moist)  3/1  4/3  4/3  5/2  4/3    cators ar  Depth:  ve any fields	Serield Observe of indicate  % 100 85 40 35 80 e not pre S8 - Polyv (LRR R, I S9 - Thin (LRR R, I F1 - Loan (LRR K, I F2 - Loan F3 - Deple F6 - Redo F7 - Deple F8 - Redo N/A eld indicate	ample plane ample	inage Class: s Confirm M Concentration, D=Dep or (Moist) 4/6 4/6 5/6 ): w Surface B) ace B) ineral Matrix curface Surface Surface Sions	somewhat postage apped Type?  apped Type?  Mottles  % 15 15 20 Indicators  Indicators disturbed of	Type  Type  Type  C  C  C  C  C  Tope    for Problen  A10 - 2 cm I  A16 - Coast  S3 - 5 cm Me  S7 - Dark Se  S8 - Polyval  S9 - Thin Da  F12 - Iron-Me  F19 - Piedm  TA6 - Mesic  TF2 - Red F  TF12 - Very  Other (Explain  of hydrophytic veget  or problematic.  Present?	Location  M M M Muck (LRR K, L, Prairie Redox (Lucky Peat of Peaurface (LRR K, Lucky Peat of Peat	Texture (e.g. clay, sand, loam)  Clay loam  Clay  Clay  Silt loam    MLRA149B)  RR K, L, R)  at (LRR K, L, R)  be (LRR K, L, R)  ce (LRR K, L)  R K, L)  ses (LRR K, L, R)  soils (MLRA 149B)  144A, 145, 149B)  urface  slogy must be present, unless



## **Northcentral and Northeast Region**

Ruppert Mitigation Bank Site Project/Site: Wetland ID: W1 Sample Point A-3u **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 10 meter radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1. --Number of Dominant Species that are OBL, FACW, or 2. FAC: 1 (A) 3. --4. Total Number of Dominant Species Across All Strata: 5. Percent of Dominant Species That Are OBL, FACW, or 6. FAC: **50.0%** (A/B) ----7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: 10. x 1 =OBL spp. 0 Total Cover = x 2 =FACW spp. x 3 =FAC spp. 50 150 x 4 =Sapling/Shrub Stratum (Plot size: 5 meter radius) FACU spp. 30 120 UPL spp. x = 51. 20 100 2. 3. Total 100 370 (B) 4. 5. Prevalence Index = B/A = 3.700 6. ----7. 8. **Hydrophytic Vegetation Indicators:** 9. □Yes Rapid Test for Hydrophytic Vegetation ✓ No 10. ✓ No □Yes Dominance Test is > 50% Total Cover = ✓ No □Yes Prevalence Index is ≤ 3.0 \* □Yes ☑ No Morphological Adaptations (Explain) \* □Yes ☑ No Herb Stratum (Plot size: 2 meter radius) Problem Hydrophytic Vegetation (Explain) \* DAUCUS CAROTA Υ 20 **UPL** 1. \* Indicators of hydric soil and wetland hydrology must be 2. TARAXACUM OFFICINALE 10 **FACU** Ν present, unless disturbed or problematic. 3. **FACU** Monarda fistulosa 10 Ν FAC Υ **Definitions of Vegetation Strata:** 4. TRIFOLIUM HYBRIDUM 40 5. 10 Ν FAC Andropogon gerardii Tree - Woody plants 3 in. (7.6cm) or more in 6 Solidago canadensis **FACU** 10 Ν diameter at breast height (DBH), regardless of 7. -haiaht 8. --9. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, 12. -----regardless of size, and woody plants less than 13. --2 20 ft tall 14. --Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 100 Woody Vine Stratum (Plot size: 10 meter radius) 1. 2. --3. **Hydrophytic Vegetation Present** ☐ Yes ☑ No 5. 4. Total Cover = 0

# **Additional Remarks:**

Vegetation at the sample plot is not hydrophytic.

Remarks:



**Northcentral and Northeast Region** 

Ruppert Mitigation Bank Site 09/07/12 Project/Site: Stantec Project #: 193702031 Date: Applicant: Wisconsin Department of Transportation County: Winnebago Investigator #1: Curran, M. State: Wisconsin Investigator #2: Bertagnoli, N. Soil Unit: Neenah silty clay loam NWI/WWI Classification: N/A Wetland ID: W1 Landform: Depression Local Relief: Concave Sample Point: A-3w Slope (%): 0-2% Latitude: N/A Longitude: N/A Datum: N/A Community ID: Wet Meadow Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☑ Yes □ No Section: 17 Are Vegetation  $\square$ , Soil  $\square$ , or Hydrology  $\square$  significantly disturbed? Are normal circumstances present? 20 N Township: Are Vegetation  $\square$ , Soil  $\square$ , or Hydrology  $\square$  naturally problematic? 16 Ε Range: Dir: SUMMARY OF FINDINGS Hydrophytic Vegetation Present? ✓ Yes 

☐ No Hydric Soils Present? ☑ Yes □ No Is This Sampling Point Within A Wetland? Wetland Hydrology Present? ✓ Yes 

✓ No The sample plot is located in a wet meadow. Remarks: **HYDROLOGY Wetland Hydrology Indicators** (Check here if indicators are not present  $\square$ ): Primary: Secondary: ☐ A1 - Surface Water ☐ B9 - Water-Stained Leaves ☐ B6 - Surface Soil Cracks ☐ A2 - High Water Table ☐ B13 - Aquatic Fauna ☐ B10 - Drainage Patterns ☐ A3 - Saturation ☐ B15 - Marl Deposits ☐ B16 - Moss Trim Lines ☐ B1 - Water Marks ☐ C1 - Hydrogen Sulfide Odor ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows **B2 - Sediment Deposits** ☑ C3 - Oxidized Rhizospheres on Living Roots **B3** - Drift Deposits ☐ C4 - Presence of Reduced Iron ☐ C9 - Saturation Visible on Aerial Imagery ☐ B4 - Algal Mat or Crust ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ D1 - Stunted or Stressed Plants ☐ B5 - Iron Deposits ☐ D2 - Geomorphic Position ☐ C7 - Thin Muck Surface B7 - Inundation Visible on Aerial Imagery D3 - Shallow Aquitard ☐ Other (Explain) ☐ B8 - Sparsely Vegetated Concave Surface ☐ D4 - Microtopographic Relief ☑ D5 - FAC-Neutral Test **Field Observations: Surface Water Present?** Depth: (in.) ☐ Yes ☑ No **Wetland Hydrology Present?** ☑ Yes □ No Water Table Present? (in.) ☐ Yes ☑ No Depth: **Saturation Present?** ☐ Yes ☑ No (in.) Depth: Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A The presence of 1 primary and 1 secondary indicator at the sample plot provides evidence of wetland hydrology. Remarks: SOILS Series Drainage Class: somewhat poorly Map Unit Name: Neenah silty clay loam Taxonomy (Subgroup): Aquollic Hapludalfs Field Observations Confirm Mapped Type? ☐ Yes ☑ No Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Locaiton: PL=Pore Lining, M=Matrix) **Texture** Top Bottom Mottles Matrix (e.g. clay, sand, loam) Color (Moist) Color (Moist) Depth Horizon % % Type Depth Location 0 8 10YR 3/1 95 4/6 5 C PL 1 **10YR** Clay loam C 8 16 2 10YR 4/2 85 10YR 4/6 15 M Clay ------NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑): Indicators for Problematic Soils 1 ☐ S8 - Polyvalue Below Surface A1- Histosol ☐ A16 - Coast Prairie Redox (LRR K, L, R) A2 - Histic Epipedon (LRR R, MLRA 149B) A3 - Black Histic ☐ S9 - Thin Dark Surface ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ A4 - Hydrogen Sulfide ☐ S7 - Dark Surface (LRR K, L) (LRR R, MLRA 149B) ☐ A5 - Stratified Layers ☐ F1 - Loamy Muck Mineral ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) A11 - Depleted Below Dark Surface (LRR K, L) A12 - Thick Dark Surface ☐ F2 - Loamy Gleyed Matrix ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ S1 - Sandy Muck Mineral ☐ F3 - Depleted Matrix ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) S4 - Sandy Gleyed Matrix F6 - Redox Dark Surface ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**) ☐ TF2 - Red Parent Material S5 - Sandy Redox F7 - Depleted Dark Surface S6 - Stripped Matrix ☐ TF12 - Very Shallow Dark Surface ☐ F8 - Redox Depressions S7 - Dark Surface (LRR R, MLRA 149B) ☐ Other (Explain in Remarks) <sup>1</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. **Restrictive Layer Hydric Soil Present?** Type: N/A Depth: N/A ☑ Yes □ No (If Observed) The soil at the sample plot meets the NRCS F6 - Redox Dark Surface indicator. Remarks:



## **Northcentral and Northeast Region**

Ruppert Mitigation Bank Site Project/Site: Wetland ID: W1 Sample Point A-3w **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 10 meter radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1. Number of Dominant Species that are OBL, FACW, or 2. FAC: 1 (A) 3. 4. Total Number of Dominant Species Across All Strata: 1 (B) 5. Percent of Dominant Species That Are OBL, FACW, or 6. FAC: **100.0%** (A/B) ----7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: 10. x 1 =OBL spp. Total Cover = x 2 =FACW spp. FAC spp. \_\_\_1\_\_\_\_ x 3 =FACU spp. x 4 =Sapling/Shrub Stratum (Plot size: 5 meter radius) UPL spp. \_\_\_\_ x = 5 =1. 2. 3. Total 125 4. 5. Prevalence Index = B/A = 1.289 6. 7. 8. **Hydrophytic Vegetation Indicators:** 9. ☑Yes Rapid Test for Hydrophytic Vegetation ☐ No 10. ✓Yes □ No Dominance Test is > 50% Total Cover = ✓Yes □ No Prevalence Index is ≤ 3.0 \* □Yes ☑ No Morphological Adaptations (Explain) \* Herb Stratum (Plot size: 2 meter radius) □Yes ☑ No Problem Hydrophytic Vegetation (Explain) \* 5 Juncus dudleyi Ν NI 1. \* Indicators of hydric soil and wetland hydrology must be 2. 80 Υ **OBL** Scirpus atrovirens present, unless disturbed or problematic. 3. 5 **FACW** Helenium autumnale Ν 5 4. Ν **OBL Definitions of Vegetation Strata:** Aster puniceus 5. Populus deltoides 1 Ν FAC Tree - Woody plants 3 in. (7.6cm) or more in 6 Vernonia fasciculata **FACW** 1 Ν diameter at breast height (DBH), regardless of 7. -haiaht 8. Sapling/Shrub - Woody plants less than 3 in. DBH and greater 9. than 3.28 ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, 12. -----regardless of size, and woody plants less than 13. --2 20 ft tall 14. Woody Vines - All woody vines greater than 3.28 ft. in height. 15. Total Cover = 97 Woody Vine Stratum (Plot size: 10 meter radius) 1. 2. --3. 5.

# **Additional Remarks:**

Total Cover =

Vegetation at the sample plot is hydrophytic.

4.

Remarks:



**Northcentral and Northeast Region** 

Ruppert Mitigation Bank Site 09/07/12 Project/Site: Stantec Project #: 193702031 Date: Applicant: Wisconsin Department of Transportation County: Winnebago State: Wisconsin Investigator #1: Curran, M. Investigator #2: Bertagnoli, N. Soil Unit: Neenah silty clay loam NWI/WWI Classification: N/A Wetland ID: W1 Landform: Hillslope Local Relief: Convex Sample Point: A-4u Slope (%): 2-6% Latitude: N/A Longitude: N/A Datum: N/A Community ID: Mesic Prairie Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) Section: 17 Are Vegetation  $\square$ , Soil  $\square$ , or Hydrology  $\square$  significantly disturbed? Are normal circumstances present? 20 N Township: Are Vegetation  $\square$ , Soil  $\square$ , or Hydrology  $\square$  naturally problematic? Range: 16 Ε Dir: SUMMARY OF FINDINGS ☐ Yes ☑ No Hydrophytic Vegetation Present? Hydric Soils Present? ☐ Yes ☑ No Wetland Hydrology Present? ☐ Yes ☑ No Is This Sampling Point Within A Wetland? ■ Yes 
✓ No According to the Army Corps of Engineers NC/NE Supplement, three parameters are required to meet jurisdictional wetland requirements. Although hydrophytic vegetation is Remarks: present at the sample plot, the lack of hydric soilsand wetland hydrology indicate the sample plot is located in a mesic prairie. **HYDROLOGY** Wetland Hydrology Indicators (Check here if indicators are not present ☑): Primary: Secondary: ☐ B6 - Surface Soil Cracks ☐ A1 - Surface Water ☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ A2 - High Water Table ☐ B10 - Drainage Patterns ☐ A3 - Saturation ☐ B15 - Marl Deposits ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table B1 - Water Marks ☐ C1 - Hydrogen Sulfide Odor B2 - Sediment Deposits ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery **B3** - Drift Deposits ☐ C4 - Presence of Reduced Iron B4 - Algal Mat or Crust ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ D1 - Stunted or Stressed Plants ☐ B5 - Iron Deposits ☐ D2 - Geomorphic Position ☐ C7 - Thin Muck Surface D3 - Shallow Aquitard B7 - Inundation Visible on Aerial Imagery ☐ Other (Explain) ☐ B8 - Sparsely Vegetated Concave Surface ☐ D4 - Microtopographic Relief □ D5 - FAC-Neutral Test **Field Observations: Surface Water Present?** Depth: (in.) ☐ Yes ☑ No **Wetland Hydrology Present?** ☐ Yes ☑ No Water Table Present? (in.) ☐ Yes ☑ No Depth: **Saturation Present?** (in.) ☐ Yes ☑ No Depth: Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A No evidence of wetland hydrology was observed at the sample plot. Remarks: SOILS Series Drainage Class: somewhat poorly Map Unit Name: Neenah silty clay loam Taxonomy (Subgroup): Aquollic Hapludalfs Field Observations Confirm Mapped Type? ☐ Yes ☑ No Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Locaiton: PL=Pore Lining, M=Matrix) **Texture** Top Bottom Mottles Matrix (e.g. clay, sand, loam) Depth Color (Moist) Color (Moist) % % Depth Horizon Type Location 0 7 10YR 3/1 100 ----Clay loam 1 --7 C 12 2 10YR 5/3 80 10YR 4/6 20 M Clay 12 6/1 5/6 16 3 5Y 90 10YR 10 M Silty clay loam ------NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑): Indicators for Problematic Soils 1 ☐ S8 - Polyvalue Below Surface A1- Histosol A2 - Histic Epipedon ☐ A16 - Coast Prairie Redox (LRR K, L, R) (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface A3 - Black Histic ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ A4 - Hydrogen Sulfide ☐ S7 - Dark Surface (LRR K, L) (LRR R, MLRA 149B) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ A5 - Stratified Layers ☐ F1 - Loamy Muck Mineral A11 - Depleted Below Dark Surface ☐ S9 - Thin Dark Surface (LRR K, L) (LRR K, L) A12 - Thick Dark Surface ☐ F2 - Loamy Gleyed Matrix ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ S1 - Sandy Muck Mineral ☐ F3 - Depleted Matrix ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**) S4 - Sandy Gleyed Matrix F6 - Redox Dark Surface S5 - Sandy Redox F7 - Depleted Dark Surface ☐ TF2 - Red Parent Material S6 - Stripped Matrix ☐ TF12 - Very Shallow Dark Surface ☐ F8 - Redox Depressions S7 - Dark Surface (LRR R, MLRA 149B) ☐ Other (Explain in Remarks) <sup>1</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic **Restrictive Layer Hydric Soil Present?** Type: N/A Depth: N/A ☐ Yes ☑ No (If Observed) The soil at the sample plot does not have any field indicators of hydric soil, nor does it appear to be inundated or saturated to the surface Remarks: for long periods of time during the growing season in most years.



# **Northcentral and Northeast Region**

Drojoot/Sito:	Dupport Mitigation Bank Cita				Watland ID: W1 Cample Daint A 411
Project/Site:	Ruppert Mitigation Bank Site				Wetland ID: W1 Sample Point A-4u
VEGETATION	(Species identified in all uppercase are non-na	ative spec	cies.)		
	ot size: 10 meter radius)	•	,		
	<u>Species Name</u>	% Cover	<u>Dominant</u>	Ind.Status	Dominance Test Worksheet
1.	<del></del>				Number of Dominant Species that are OBL, FACW, or
2.	<del></del>				FAC: 2 (A)
3. 4.	<del></del>				Total Number of Deminent Species Agrees All Strate: 2 (P)
4. 5.	<del></del>				Total Number of Dominant Species Across All Strata: 2 (B)
6.					Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
7.					(, (B)
8.					Prevalence Index Worksheet
9.					Total % Cover of: Multiply by:
10.					OBL spp. $0   x   1 = 0$
	Total Cover =	0			FACW spp. $0   x 2 = 0$
					FAC spp. $95$ $X 3 = 285$
Sapling/Shrub St	ratum (Plot size: 5 meter radius)				FACU spp. $7   x   4 =                              $
1.	<del></del>				UPL spp. $0   x   5 = 0$
2.	<del></del>				T. (1) (10) (1) (1)
3. 4.	<del></del>				Total 102 (A) 313 (B)
4. 5.	<del></del>				Prevalence Index = $B/A = 3.069$
6.	<del></del>				Frevalence index = B/A =
7.					
8.	<del></del>				Hydrophytic Vegetation Indicators:
9.					☐Yes ☑ No Rapid Test for Hydrophytic Vegetation
10.					☑Yes ☐ No Dominance Test is > 50%
	Total Cover =	0			
					☐Yes ☑ No Morphological Adaptations (Explain) *
Herb Stratum (Pl	ot size: 2 meter radius)				☐Yes ☑ No Problem Hydrophytic Vegetation (Explain) *
1.	Panicum virgatum	30	Y	FAC	* Indicators of hydric soil and wetland hydrology must be
2.	Andropogon gerardii	40	Y	FAC	present, unless disturbed or problematic.
3.	Erigeron annuus	15	N	FAC	Definitions of Veretation Strate.
<u>4.</u> 5.	TRIFOLIUM HYBRIDUM Aster ericoides	10 5	N N	FACU	Definitions of Vegetation Strata:
6	Monarda fistulosa	1	N	FACU	Tree - Woody plants 3 in. (7.6cm) or more in
	Solidago canadensis	1	N	FACU	diameter at breast height (DBH), regardless of
8.		<u> </u>			hoight
9.					Sapling/Shrub - Woody plants less than 3 in. DBH and greater
10.					than 3.28 ft. tall.
11.					
12.					Herb - All herbaceous (non-woody) plants,
13.					regardless of size, and woody plants less than
14.	<del></del>				
15.					Woody Vines - All woody vines greater than 3.28 ft. in height.
	Total Cover =	102			
Woody Vina Stra	tum (Plot size: 10 meter radius)				
1.					
2.					
3.	<b></b>				Hydrophytic Vegetation Present ☐ Yes ☑ No
5.					
4.					
_	Total Cover =	0			
Remarks:	Vegetation at the sample plot is hydroph	ovtic			

# **Additional Remarks:**



**Northcentral and Northeast Region** 

Ruppert Mitigation Bank Site 09/07/12 Project/Site: Stantec Project #: 193702031 Date: Applicant: Wisconsin Department of Transportation County: Winnebago Investigator #1: Curran, M. State: Wisconsin Investigator #2: Bertagnoli, N. Neenah silty clay loam Soil Unit: NWI/WWI Classification: N/A Wetland ID: W1 Landform: Depression Local Relief: Concave Sample Point: A-4w Slope (%): 0-2% Latitude: N/A Longitude: N/A Datum: N/A Community ID: Shallow Marsh Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) Section: 17 Are Vegetation  $\square$ , Soil  $\square$ , or Hydrology  $\square$  significantly disturbed? Are normal circumstances present? 20 N Township: Are Vegetation  $\square$ , Soil  $\square$ , or Hydrology  $\square$  naturally problematic? Range: 16 Ε Dir: **SUMMARY OF FINDINGS** Hydrophytic Vegetation Present? ✓ Yes 

☐ No Hydric Soils Present? ☑ Yes □ No Is This Sampling Point Within A Wetland? Wetland Hydrology Present? ✓ Yes ■ No The sample plot is located in a shallow marsh. Remarks: **HYDROLOGY Wetland Hydrology Indicators** (Check here if indicators are not present  $\square$ ): Primary: Secondary: ☐ B6 - Surface Soil Cracks ☐ A1 - Surface Water ☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ A2 - High Water Table ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ A3 - Saturation □ B15 - Marl Deposits B1 - Water Marks ☐ C1 - Hydrogen Sulfide Odor ☐ C2 - Dry-Season Water Table B2 - Sediment Deposits ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C8 - Crayfish Burrows **B3** - Drift Deposits ☐ C4 - Presence of Reduced Iron ☐ C9 - Saturation Visible on Aerial Imagery ☐ B4 - Algal Mat or Crust ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ D1 - Stunted or Stressed Plants ☐ B5 - Iron Deposits ☑ D2 - Geomorphic Position ☐ C7 - Thin Muck Surface B7 - Inundation Visible on Aerial Imagery ☐ Other (Explain) ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☐ B8 - Sparsely Vegetated Concave Surface ☑ D5 - FAC-Neutral Test **Field Observations: Surface Water Present?** Depth: (in.) ☐ Yes ☑ No **Wetland Hydrology Present?** ☑ Yes □ No Water Table Present? (in.) ☐ Yes ☑ No Depth: **Saturation Present?** ☐ Yes ☑ No (in.) Depth: Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: The presence of 2 secondary indicators at the sample plot provides evidence of wetland hydrology. Remarks: SOILS Series Drainage Class: somewhat poorly Map Unit Name: Neenah silty clay loam Field Observations Confirm Mapped Type? Taxonomy (Subgroup): Aquollic Hapludalfs ☐ Yes ☑ No Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Locaiton: PL=Pore Lining, M=Matrix) **Texture** Top Matrix Bottom Mottles (e.g. clay, sand, loam) Color (Moist) Depth Color (Moist) % % Type Location Depth Horizon 0 9 10YR 3/2 70 10YR 5/6 30 C M Clay loam 9 12 2 5 C Gley 1 6/5GY 95 10YR 4/6 M Clay Glev 1 45 6/5GY 15 **10YR** 4/6 10 C Clay M 10YR 45 10YR 5/4 50 **10YR** C 15 18 4 4/6 30 M Clay Gley 1 6/5GY 20 NRCS Hydric Soil Field Indicators (check here if indicators are not present ☑): Indicators for Problematic Soils 1 □ A10 - 2 cm Muck (LRR K, L, MLRA149B)
 A1- Histosol ☐ S8 - Polyvalue Below Surface A2 - Histic Epipedon ☐ A16 - Coast Prairie Redox (LRR K, L, R) (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) A3 - Black Histic ☐ S7 - Dark Surface (LRR K, L) ☐ A4 - Hydrogen Sulfide (LRR R, MLRA 149B) ☐ A5 - Stratified Layers ☐ F1 - Loamy Muck Mineral ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) A11 - Depleted Below Dark Surface (LRR K, L) A12 - Thick Dark Surface ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ S1 - Sandy Muck Mineral ☐ F3 - Depleted Matrix ☐ TA6 - Mesic Spodic (**MLRA 144A, 145, 149B**) S4 - Sandy Gleyed Matrix F6 - Redox Dark Surface TF2 - Red Parent Material S5 - Sandy Redox F7 - Depleted Dark Surface S6 - Stripped Matrix ☐ F8 - Redox Depressions ☐ TF12 - Very Shallow Dark Surface S7 - Dark Surface (LRR R, MLRA 149B) ☐ Other (Explain in Remarks) <sup>1</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic **Restrictive Layer** Type: N/A **Hydric Soil Present?** ☑ Yes □ No Depth: N/A (If Observed) The soil at the sample plot meets the NRCS F6 - Redox Dark Surface and F2 - Loamy Gleyed Matrix indicators. Remarks:



## **Northcentral and Northeast Region**

Ruppert Mitigation Bank Site Project/Site: Wetland ID: W1 Sample Point A-4w **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 10 meter radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1. Number of Dominant Species that are OBL, FACW, or 2. FAC: 1 (A) 3. 4. Total Number of Dominant Species Across All Strata: 1 (B) 5. Percent of Dominant Species That Are OBL, FACW, or 6. FAC: **100.0%** (A/B) ----7. 8. **Prevalence Index Worksheet** 9. Total % Cover of: Multiply by: 10. x 1 =OBL spp. x 2 =Total Cover = FACW spp. FAC spp. x 3 =FACU spp. x 4 =Sapling/Shrub Stratum (Plot size: 5 meter radius) UPL spp. 1 x = 5 =1. 2. 3. Total 117 4. 5. Prevalence Index = B/A = 1.1826. 7. 8. **Hydrophytic Vegetation Indicators:** 9. ☑Yes Rapid Test for Hydrophytic Vegetation □ No 10. ✓Yes □ No Dominance Test is > 50% Total Cover = ✓Yes □ No Prevalence Index is ≤ 3.0 \* □Yes ☑ No Morphological Adaptations (Explain) \* □Yes ☑ No Herb Stratum (Plot size: 2 meter radius) Problem Hydrophytic Vegetation (Explain) \* TYPHA ANGUSTIFOLIA Υ 80 **OBL** 1. \* Indicators of hydric soil and wetland hydrology must be 2. 10 **OBL** Mimulus ringens Ν present, unless disturbed or problematic. 3. **FACW** 1 Ν Helenium autumnale PHALARIS ARUNDINACEA **FACW** 4. 1 Ν **Definitions of Vegetation Strata:** 5. SETARIA VIRIDIS Ν NI 1 Tree - Woody plants 3 in. (7.6cm) or more in 6 Panicum capillare 1 Ν FAC diameter at breast height (DBH), regardless of 7. PLANTAGO MAJOR 5 **FAC** Ν haiaht 8. 9. Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall. 10. 11. Herb - All herbaceous (non-woody) plants, 12. -----regardless of size, and woody plants less than 13. --2 20 ft tall 14. --**Woody Vines -** All woody vines greater than 3.28 ft. in height. 15. Total Cover = 99 Woody Vine Stratum (Plot size: 10 meter radius) 1. 2. --3. 5. 4.

# **Additional Remarks:**

Remarks:

Total Cover =

Vegetation at the sample plot is hydrophytic.

Rubbert Mitigation Bank Site WisDOT December 21, 2012 Wetland Delineation Report Town of Clayton, Winnebago County, Wisconsin Stantec Project #: 193702031

# APPENDIX B SITE PHOTOGRAPHS



Photo 01. A-1w, View N



Photo 2. A-1w, View S



Photo 3. A-1u, View N



Photo 4. A-1u, View S



Photo 5. A-2w, View N



Photo 6. A-2w, View S



Photo 7. A-2u, View N



Photo 8. A-2u, View S





Photo 10. A-3w, View E



Photo 11. A-3u, View N



Photo 12. A-3u, View S



Photo 13. A-4w, View N



Photo 14. A-4w, View E



Photo 15. A-4u, View N



Photo 16. A-4u, View S

Rubbert Mitigation Bank Site WisDOT December 21, 2012 Wetland Delineation Report Town of Clayton, Winnebago County, Wisconsin Stantec Project #: 193702031

# ${\bf APPENDIX~C} \\ {\bf 2011~WETLAND~DELINEATION~FIGURE}$

