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WETLAND AND WATERBODY DELINEATION REPORT

Water Distribution System Extension to the Town of Peshtigo

Marinette County, Wisconsin

October 2019

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Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

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Project Ecologist

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Ecologist 1

Prepared for:

Tyco Fire Products L.P.

Prepared by:

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Our Ref.:
30015299

Date:

October 9, 2019

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1 INTRODUCTION

This Wetland and Waterbody Delineation Report summarizes the results of a wetland and waterbody delineation survey conducted on September 9 through September 11, 2019 by Arcadis U.S., Inc. (Arcadis) on behalf of Tyco Fire Products L.P. (Tyco) for the proposed Water Distribution System Extension to the Town of Peshtigo Project (Project). The proposed project will provide municipal water to select residences in the town of Peshtigo. The Project is located at approximately 45.070705° Latitude and -87.630635° Longitude in Sections 18 and 19 of Township 30 North and Range 24 East and Section 24 of Township 30 North and Range 23 East. The purpose of the wetland and waterbody delineation survey is to assess the presence or absence of wetlands and other waters that may be affected by the proposed project, and to assess general ecological conditions within the environmental survey area (ESA). Seven wetlands and four streams were identified within the ESA.

2 STATEMENT OF QUALIFICATION

The wetland and waterbody delineation and report were performed and authored by Ryan Bombeck, Professional Wetland Scientist (PWS), Certified Wildlife Biologist (CWB), and Project Ecologist at Arcadis. Mr. Bombeck was the Lead Wetland Delineator for this project with assistance from Michael Meisenger, Ecologist 1 at Arcadis.

Ryan Bombeck holds a Bachelor of Science degree in Zoology - Fisheries and Wildlife Management (2007) from North Dakota State University in Fargo, North Dakota. Mr. Bombeck has over 11 years of experience as an environmental consultant. He is currently a Project Ecologist and Associate Project Manager with Arcadis based in Milwaukee, Wisconsin. Mr. Bombeck has extensive experience with field work and permitting throughout the Midwest.

Michael Meisenger holds a Bachelor of Arts degree in Environmental Science with a focus in Conservation and Ecology from Carthage College. He is currently an Ecologist with Arcadis based in Milwaukee, Wisconsin. Mr. Meisenger has 1 year of experience as an environmental consultant and has successfully completed the advanced wetland delineation training through the University of Wisconsin Lacrosse. Mr. Meisenger has experience with field work throughout the Midwest.

3 BACKGROUND INFORMATION

Prior to conducting the wetland and waterbody delineation survey, Arcadis reviewed the following resources to identify the potential location and extent of wetlands and waterbodies within the ESA:

- U.S. Geological Survey (USGS) topographic maps (Marinette West and Marinette East Quadrangles) (USGS, 2018).
- Marinette County contour data (Marinette County Land Records, 2018).
- Current aerial imagery (Environmental Systems Research Institute [ESRI], 2017) and historic aerial imagery (Google Earth, 2019).
- Wisconsin Department of Natural Resources (WDNR) Hydrography mapped rivers and streams and mapped lakes and open water (WDNR, 2019a).
- WDNR Wisconsin Wetlands Inventory (WWI) dataset (WDNR, 2019b).
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panels 5502590885B (FEMA, 1991a), 5502590895B (FEMA, 1991b), and 5502610001B (FEMA, 1978).
- U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey (WSS) of Marinette County, Wisconsin (NRCS, 2018) and WDNR Wetland Indicators (WDNR, 2018).

3.1 USGS Topographic Maps

According to topographic mapping (**Figure 1**), there is a total of four blueline streams mapped in various locations within the ESA.

3.2 Contour Maps

Two-foot contour data was acquired from the Marinette County Land Records department to evaluate drainage patterns within the ESA.

The maximum and minimum recorded elevations within the ESA (**Figure 2**) are approximately 620 and 594 feet above mean sea level, respectively. In general, the ESA drains from north to south along unnamed tributaries to the Little River.

3.3 Aerial Imagery

The ESA consists of portions of the existing road right-of-way along University Drive, County Road B, Rader Road, and Stanley Lane. A review of current aerial imagery for the ESA shows that the ESA is generally surrounded by private land parcels in a low-density populated area. Aerial photography for the ESA and its vicinity is depicted in **Figure 2**.

A review of historic aerial imagery demonstrates that the ESA has been largely unchanged during the time periods available (1999 to 2013). Between 2010 and 2013, there were improvements made to a

private residence north of Rader Road, east of County Road B. Historic aerial imagery was reviewed for the years of 1999, 2005, 2006, 2008, 2010, and 2013 (**Figure 3**).

3.4 WDNR Hydrography

The WDNR hydrography data represent the WDNR's register of waterbodies, including linear features such as streams and rivers and polygons such as lakes and other open water features. According to WDNR hydrography data, there are four surface water features within the ESA (**Figure 4**). Three unnamed intermittent streams (WBIC 5008898, 583300, and 5009250) intersect the ESA on County Road B and one unnamed perennial stream (WBIC 583300) intersects the ESA on Rader Road.

The ESA lies within the Little River-Frontal Lake Michigan (USGS Hydrologic Unit Code [HUC] 040301050605) subwatershed of the Peshtigo River subbasin (HUC 04030105). The closest designated traditionally navigable waterway (TNW) to the ESA is Lake Michigan, approximately 3,500 feet to the east of the eastern extent of the ESA.

3.5 WDNR WWI

WWI maps are used as a guide, along with other data, to indicate the potential presence of wetlands. The information is not necessarily field-verified. The presence of a WWI feature is not a definitive indicator that a wetland is present. Conversely, the absence of a WWI feature is not a definitive indicator that a wetland is not present.

The WWI data indicate that there are multiple wetlands adjacent to the ESA and forested, broad-leaved deciduous, wet soil, palustrine (T3K) and forested, broad-leaved deciduous, standing water, palustrine (T3H) wetlands within the ESA along County Road B and T3H wetlands within the ESA along Rader Road (**Figure 4**).

3.6 FEMA Floodplain Maps

The identification and location of mapped FEMA flood zones within the ESA were determined by reviewing FEMA FIRM Panels 5502590885B and 5502590895B. No digital floodplain data is available for Marinette County. Therefore, FIRM panel data were digitized in the vicinity of the ESA. The extent of digitized floodplain data is depicted in **Figures 4.**

The ESA is located predominantly within the area of minimal flood hazard (Zone X) and partially within the 100-year flood zone (Zone A) along the perennial stream that intersects Rader Road.

3.7 USDA NRCS WSS of Marinette County, Wisconsin and WDNR Wetland Indicators

According to the USDA NRCS WSS for Marinette County, the five soil map units listed in **Table 1** are mapped within the ESA. The WDNR Wetland Indicators data show the intersect of hydric soils mapped by the USDA NRCS and topography indicative of a wetland landscape position based on 10 meter USGS topographic data. Hydric soils are typically found within areas designated as wetlands.

Generally, soil units identified as hydric contain soils that indicate through their color and structure that they have experienced dominantly reducing (i.e.; oxygen poor) conditions, which are a result of inundation and/or saturation by water. The location and extent of the soil units and wetland indicators identified within the ESA are depicted in **Figure 5**.

Table 1. Soil Map Units within the Environmental Survey Area

Soil Unit Symbol	Soil Unit Name	WDNR Wetland Indicator?
DeCo	Deford and Cormant Soils, 0 to 2 percent slopes	Yes
RsB	Rousseau loamy fine sand, 1 to 6 percent slopes	No
SfB	Shawano loamy fine sand, 2 to 6 percent slopes	No
SfC	Shawano loamy fine sand, 6 to 12 percent slopes	No
WaA	Wainola loamy fine sand, 0 to 3 percent slopes	Yes

4 METHODOLOGY

A pedestrian survey was conducted within the ESA to identify wetlands and waterbodies on September 9 through September 11, 2019. Wetland boundaries were field-delineated according to Section 404 of the Clean Water Act routine onsite methodology described in the Technical Report Y-87-1 *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and subsequent guidance documents and the U.S. Army Corps of Engineers (USACE) 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2.0). The ESA is within the Northcentral Forests Land Resource Region (USACE, 2012). National wetland indicator status and taxonomic nomenclature is referenced from The National Wetland Plant List (Lichvar, 2016). Indicators of hydric soil are based on the Field Indicators of Hydric Soils in the United States guide Version 8.2 (Vasilas et al., 2018).

Wetland delineation data were recorded on the USACE Northcentral and Northeast Regional Supplement wetland determination data forms. In general, representative data points were recorded for each wetland. Corresponding representative upland data points were recorded to document upland boundaries and conditions surrounding the wetlands within the ESA. Additional data points were recorded within different vegetation types, WWI features, and WDNR Wetland Indicators, as necessary.

Streams were identified as those waters that possessed a defined “bed and bank” or ordinary high water mark (OHWM) indicators and lacked a dominance of upland vegetation in the channel. Channels that parallel roadways were identified as upland drainage features and were not considered to be jurisdictional unless they had an identifiable OHWM, were identified on the USGS topographic map, or represented a presumed relocation of a natural channel.

The outer boundaries of each wetland and waterbody (determined by the OHWM) were delineated and recorded using a handheld Trimble R1 global positioning system receiver paired with ESRI software on a hand-held tablet. As features were collected, they were given a unique feature identification (ID).

Precipitation data from approximately 90 days prior to the wetland and waterbody delineation surveys were obtained from a weather station near the ESA and compared with 30-year average precipitation data obtained from a NRCS WETS Table for Marinette County to determine if antecedent hydrologic conditions at the time of the survey were normal, wetter, or drier than the normal range (Midwestern Regional Climate Center, 2019).

5 SURVEY RESULTS

5.1 Antecedent Precipitation

Prior to conducting the field visit, antecedent precipitation data were analyzed. Data were obtained from a nearby weather station (Marinette: USC00475091) and compared to data from a nearby WETS station (Marinette: USC00475091).

The most recent rainfall event prior to the site visit was 0.02 inches, which occurred on September 7, 2019. Precipitation for the 14 days prior to the site visit was 2.23 inches. There was 0.52 inches of precipitation during the overnight hours of September 10, 2019. The precipitation data for the 90-day period prior to the field visit (**Appendix A, Table 4**) was entered into a WETS analysis worksheet (**Appendix A, Table 5**) to weight the information from each preceding month to analyze hydrologic conditions. Based on this analysis, the antecedent hydrologic conditions were within the normal range, suggesting that climatic/hydrologic conditions were normal for this time of year.

Using this same methodology, antecedent hydrologic conditions were analyzed for the historic aerial imagery depicted in **Figure 3**. Based on the analyses, climatic/hydrologic conditions were determined to be drier than normal for the years of 1999, 2005, and 2008; within the normal range for the years of 2010 and 2013; and wetter than normal for the year of 2006. Antecedent precipitation data and WETS analysis worksheets for the historic aerial imagery are provided in **Appendix A, Table 6 – Table 17**.

5.2 Vegetative Communities

Vegetative communities observed within the ESA consisted of emergent upland, emergent wetland (PEM), scrub/shrub upland, scrub/shrub wetland (PSS), and forested upland habitat types typical of roadside ditches of northern Wisconsin. Photographs of the ESA are provided in **Appendix B** and photograph locations are depicted in **Figure 7.**

Dominant plant species in upland areas included annual ragweed (*Ambrosia artemisiifolia*), ash-leaf maple (*Acer negundo*), black locust (*Robinia pseudoacacia*), black oak (*Quercus velutina*), eastern white pine (*Pinus strobus*), European buckthorn (*Rhamnus cathartica*), glossy false buckthorn (*Frangula alnus*), interrupted fern (*Osmunda claytoniana*), Kentucky blue grass (*Poa pratensis*), paper birch (*Betula papyrifera*), quaking aspen (*Populus tremuloides*), red pine (*Pinus resinosa*), reed canary grass (*Phalaris arundinacea*), Scotch pine (*Pinus sylvestris*), sensitive fern (*Onoclea sensibilis*), smooth brome (*Bromus inermis*), sugar maple (*Acer saccharum*), and Virginia-creeper (*Parthenocissus quinquefolia*).

Dominant plant species in wetland areas included American elm (*Ulmus americana*), ash-leaf maple, balsam fir (*Abies balsamea*), common duckweed (*Lemna minor*), cottongrass bulrush (*Scirpus cyperinus*), European buckthorn, glossy false buckthorn, green ash (*Fraxinus pennsylvanica*), Kentucky blue grass, narrow-leaf cat-tail (*Typha angustifolia*), needle spike-rush (*Eleocharis acicularis*), reed canary grass, sensitive fern, speckled alder (*Alnus incana*), spotted touch-me-not (*Impatiens capensis*), stalk-grain sedge (*Carex stipata*), sugar maple, and uptight sedge (*Carex stricta*).

5.3 Wetlands

As shown in **Figure 6**, a total of 7 wetlands (W01 through W07) were identified as part of the delineation for a total of 2.22 acres. All wetlands appear to be hydrologically connected to surface water systems in the vicinity of the ESA and may be considered jurisdictional by the USACE and WDNR. It should be noted that the USACE and WDNR make the final determination of wetland hydrologic connectivity and jurisdiction. USACE Wetland Determination Data Forms are provided in **Appendix C** and wetland characteristics are summarized in **Table 2**.

Table 2. Wetlands within the Environmental Survey Area

Feature ID	Cowardin Classification	Total Approximate Area Delineated within ESA (acres) [1]	Acres PEM	Acres PSS	Hydrologic Connection[2]
W01	PEM/PSS	0.02	0.01	0.01	Connected
W02	PSS	0.05	0.00	0.05	Connected
W03	PEM/PSS	0.91	0.42	0.49	Connected
W04	PEM	0.09	0.09	0.00	Connected
W05	PEM	0.68	0.68	0.00	Connected
W06	PEM	0.40	0.40	0.00	Connected
W07	PEM	0.07	0.07	0.00	Connected
	Total	**2.22**	**1.67**	**0.55**	

Notes:
[1]The wetland may extend outside of the ESA; this acreage corresponds to the size of the feature located within the ESA.
[2]The determinations of hydrologic connection is based on the boundary delineations and have not been formally approved by the USACE and/or WDNR.

W01 is a PEM/PSS wetland that measures approximately 0.02 acres within the ESA and is located within the roadside ditch of County Road B. Two wetland data points (DP03 and DP05) were recorded within W01 and one upland data point (DP04) was recorded in an adjacent upland area to aid in the wetland boundary determination. W01 is comprised of emergent and scrub/shrub plant communities. Dominant plant species observed at the wetland data points included European buckthorn, glossy false buckthorn, reed canary grass, cottongrass bulrush, and sensitive fern. This wetland was located at the toe slope of the road ditch. Wetland hydrology indicators observed at the wetland data points included high water table (A2), saturation (A3), geomorphic position (D2), and FAC-neutral test (D5). Soil textures were generally silt loam over loamy sand. Hydric soil indicators observed at the wetland data points included sandy redox (S5). The wetland boundary was determined by subtle to moderate topographical changes in elevation, in addition to the boundary between the presence or absence of hydrophytic vegetation, wetland hydrology, and hydric soils.

W02 is a PSS wetland that measures approximately 0.05 acres within the ESA and is located within the roadside ditch of County Road B. Two wetland data points (DP06 and DP07) were recorded within W02 and one upland data point (DP08) was recorded in an adjacent upland area to aid in the wetland boundary determination. W02 is comprised of a scrub/shrub plant community. Dominant plant species observed at the wetland data points included balsam fir, European buckthorn, American elm, glossy false buckthorn, reed canary grass, and sensitive fern. This wetland was located at the toe slope of the road ditch. Wetland hydrology indicators observed at the wetland data points included geomorphic position (D2) and FAC-neutral test (D5). Soil textures were generally silt loam over loamy sand and sandy loam. Hydric soil indicators observed at the wetland data points included depleted below dark surface (A11) and sandy redox (S5). The wetland boundary was determined by subtle to moderate topographical changes in elevation, in addition to the boundary between the presence or absence of hydrophytic vegetation, wetland hydrology, and hydric soils.

W03 is a PEM/PSS wetland that measures approximately 0.91 acres within the ESA and is located within the roadside ditch of County Road B. This wetland is hydrologically connected by culverts under private driveways and streams that flow through culverts under County Road B. Nine wetland data points (DP09, DP11, DP13, DP14, DP15, DP16, DP19, DP20, and DP22) were recorded within W03 and five upland data points (DP10, DP12, DP17, DP18, and DP21) were recorded in adjacent upland areas to aid in the wetland boundary determination. W03 is comprised of emergent and scrub/shrub plant communities. Dominant plant species observed at the wetland data points included glossy false buckthorn, ash-leaf maple, speckled alder, sensitive fern, reed canary grass, needle spike-rush, spotted touch-me-not, and stalk-grain sedge. This wetland was located at the toe slope of the road ditch. Wetland hydrology indicators observed at the wetland data points included high water table (A2), saturation (A3), water stained leaves (B9), drainage patterns (B10), geomorphic position (D2), and FAC-neutral test (D5). Soil textures were generally silt loam over loamy sand. Hydric soil indicators observed at the wetland data points included thick dark surface (A12), sandy redox (S5), and redox dark surface (F6). The wetland boundary was determined by subtle to moderate topographical changes in elevation, in addition to the boundary between the presence or absence of hydrophytic vegetation, wetland hydrology, and hydric soils.

W04 is a PEM wetland that measures approximately 0.09 acres within the ESA and is located within the roadside ditch of Rader Road. One wetland data point (DP23) was recorded within W04 and one upland data point (DP24) was recorded in an adjacent upland area to aid in the wetland boundary determination. W04 is comprised of an emergent plant community. Dominant plant species observed at the wetland data point included glossy false buckthorn and sensitive fern. This wetland was located at the toe slope of the road ditch. Wetland hydrology indicators observed at the wetland data point included saturation (A3), geomorphic position (D2), and FAC-neutral test (D5). Soil textures were generally loamy sand. Hydric soil indicators observed at the wetland data point included sandy redox (S5). The wetland boundary was determined by subtle to moderate topographical changes in elevation, in addition to the boundary between the presence or absence of hydrophytic vegetation, wetland hydrology, and hydric soils.

W05 is a PEM wetland that measures approximately 0.68 acres within the ESA and is located within the roadside ditch of Rader Road. This wetland is hydrologically connected by culverts under private driveways and a stream that flows through a culvert under Rader Road. Three wetland data points (DP26, DP27, and DP29) were recorded within W05 and two upland data point (DP25 and DP28) were recorded in adjacent upland areas to aid in the wetland boundary determination. W05 is comprised of an emergent

plant community that partially occurred at the fringe of PSS and forested wetlands (PFO). PSS and PFO plant communities occurred outside of the ESA. Dominant plant species observed at the wetland data point included Kentucky blue grass, sensitive fern, glossy false buckthorn, speckled alder, stalk-grain sedge, uptight sedge, green ash, and European buckthorn. This wetland was located at the toe slope of the road ditch. Wetland hydrology indicators observed at the wetland data point included high water table (A2), saturation (A3), water marks (B1), drainage patterns (B10), geomorphic position (D2), and FAC-neutral test (D5). Soil textures were generally silt loam over loamy sand. Hydric soil indicators observed at the wetland data points included depleted below dark surface (A11) and thick dark surface (A12). The wetland boundary was determined by subtle to moderate topographical changes in elevation, in addition to the boundary between the presence or absence of hydrophytic vegetation, wetland hydrology, and hydric soils.

W06 is a PEM wetland that measures approximately 0.40 acres within the ESA and is located within the roadside ditch of Rader Road and Stanley Lane. One wetland data point (DP31) was recorded within W06 and one upland data point (DP30) was recorded in an adjacent upland area to aid in the wetland boundary determination. W06 is comprised of an emergent plant community that occurred at the fringe of a PSS wetland. PSS plant communities occurred outside of the ESA. Dominant plant species observed at the wetland data point included sugar maple, European buckthorn, and common duckweed. This wetland was located at the toe slope of the road ditch. Wetland hydrology indicators observed at the wetland data point included surface water (A1), high water table (A2), saturation (A3), water marks (B1), water stained leaves (B9), and geomorphic position (D2). Soil textures were generally mucky silt loam over loamy sand. Hydric soil indicators observed at the wetland data point included depleted below dark surface (A11) and sandy redox (S5). The wetland boundary was determined by subtle to moderate topographical changes in elevation, in addition to the boundary between the presence or absence of hydrophytic vegetation, wetland hydrology, and hydric soils.

W07 is a PEM wetland that measures approximately 0.07 acres within the ESA and is located within the roadside ditch of University Drive. One wetland data point (DP32) was recorded within W07 and one upland data point (DP33) was recorded in an adjacent upland area to aid in the wetland boundary determination. Dominant plant species observed at the wetland data point included narrow-leaf cat-tail. This wetland was located at the toe slope of the road ditch. Wetland hydrology indicators observed at the wetland data point included surface water (A1), high water table (A2), saturation (A3), geomorphic position (D2), and FAC-neutral test (D5). Soil textures were generally mucky silt loam over loamy sand. Hydric soil indicators observed at the wetland data point included redox dark surface (F6). The wetland boundary was determined by subtle to moderate topographical changes in elevation, in addition to the boundary between the presence or absence of hydrophytic vegetation, wetland hydrology, and hydric soils.

5.4 Waterbodies

As shown in **Figure 6**, three intermittent unnamed tributaries and one perennial unnamed tributary to the Little River were identified within the ESA for a total of approximately 115 linear feet. Stream 1 (S01) intersects County Road B and measures approximately 45 linear feet within the ESA. Stream 2 (S02) intersects County Road B and measures approximately 22 linear feet within the ESA. Stream 3 (S03) intersects County Road B and measures approximately 24 linear feet within the ESA. Stream 4 (S04)

intersects Rader Road and measures approximately 24 linear feet within the ESA. S01, S02, and S03 drain to S04, which appears to be an unnamed tributary to the Little River. Due to the hydrologic connection between these streams and Lake Michigan, a TNW, they may be considered jurisdictional by the USACE and WDNR. It should be noted that the USACE and WDNR make the final determination of significant nexus with a TNW. Stream characteristics are summarized in **Table 3**.

Table 3. Waterbodies within the Environmental Survey Area

Feature ID	Waterbody Name	WDNR WBIC	Flow Regime[1]	Depth (inches)	Substrate	Approximate Length (linear feet)	Approximate OHWM Width (feet)	Approximate Bank Width (feet)	TNW Connection
S01	Unnamed Tributary to Little River	5008898	Intermittent	4	Sandy	45	5	10	Connected
S02	Unnamed Tributary to Little River	583300	Intermittent	4	Sandy	22	7	7	Connected
S03	Unnamed Tributary to Little River	5009250	Intermittent	4	Sandy	24	2	3	Connected
S04	Unnamed Tributary to Little River	583300	Perennial	6	Sandy	24	5	8	Connected
					Total	**115**			

Notes:
[1]Flow regime is defined as perennial, intermittent, or ephemeral. This determination was interpreted using field observations, WDNR hydrography, and USGS topographic maps, as appropriate.

6 CONCLUSIONS

A wetland and waterbody delineation survey was conducted by Arcadis for the proposed project on September 9 through September 11, 2019. Arcadis identified 7 wetlands (totaling 2.22 acres) and 4 streams (totaling 115 linear feet) within the ESA.

All wetland and waterbody features appeared to be hydrologically connected to surface water systems within the vicinity of the ESA and may be considered jurisdictional by the USACE and WDNR. However, the USACE and WDNR make the final determinations regarding jurisdiction of the delineated features.

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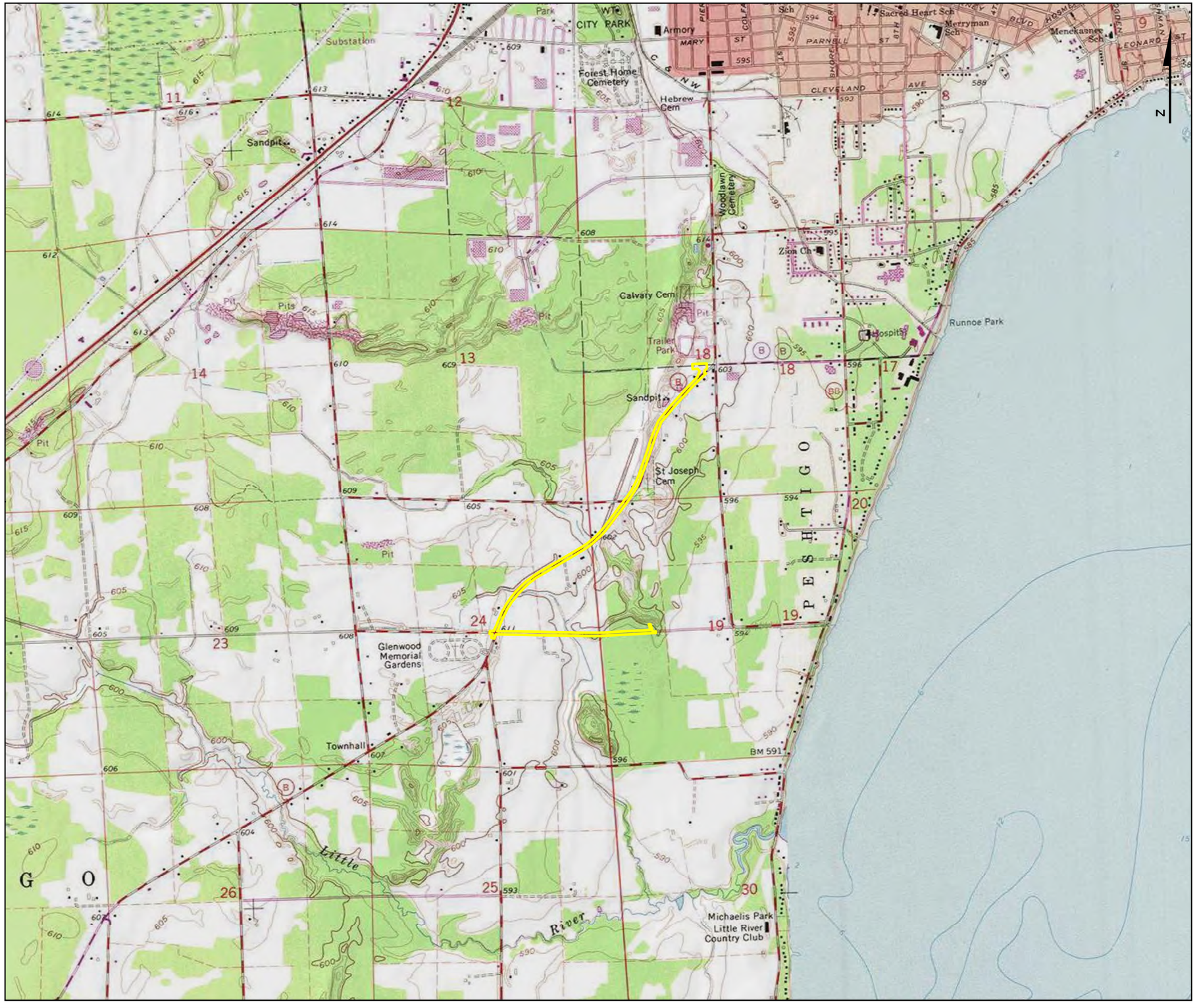
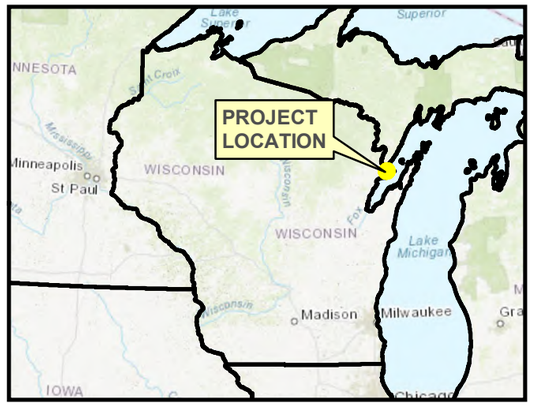
FIGURES





Legend

ESA

0 750 1,500 3,000

Feet

Note:
USGS 7.5' Topographic Quadrangle
Marinette West, Wisconsin

	Water Distribution System Extension to the Town of Peshtigo Marinette County, Wisconsin
FIGURE 1 PROJECT LOCATION	
PN:30015299	ARCADIS
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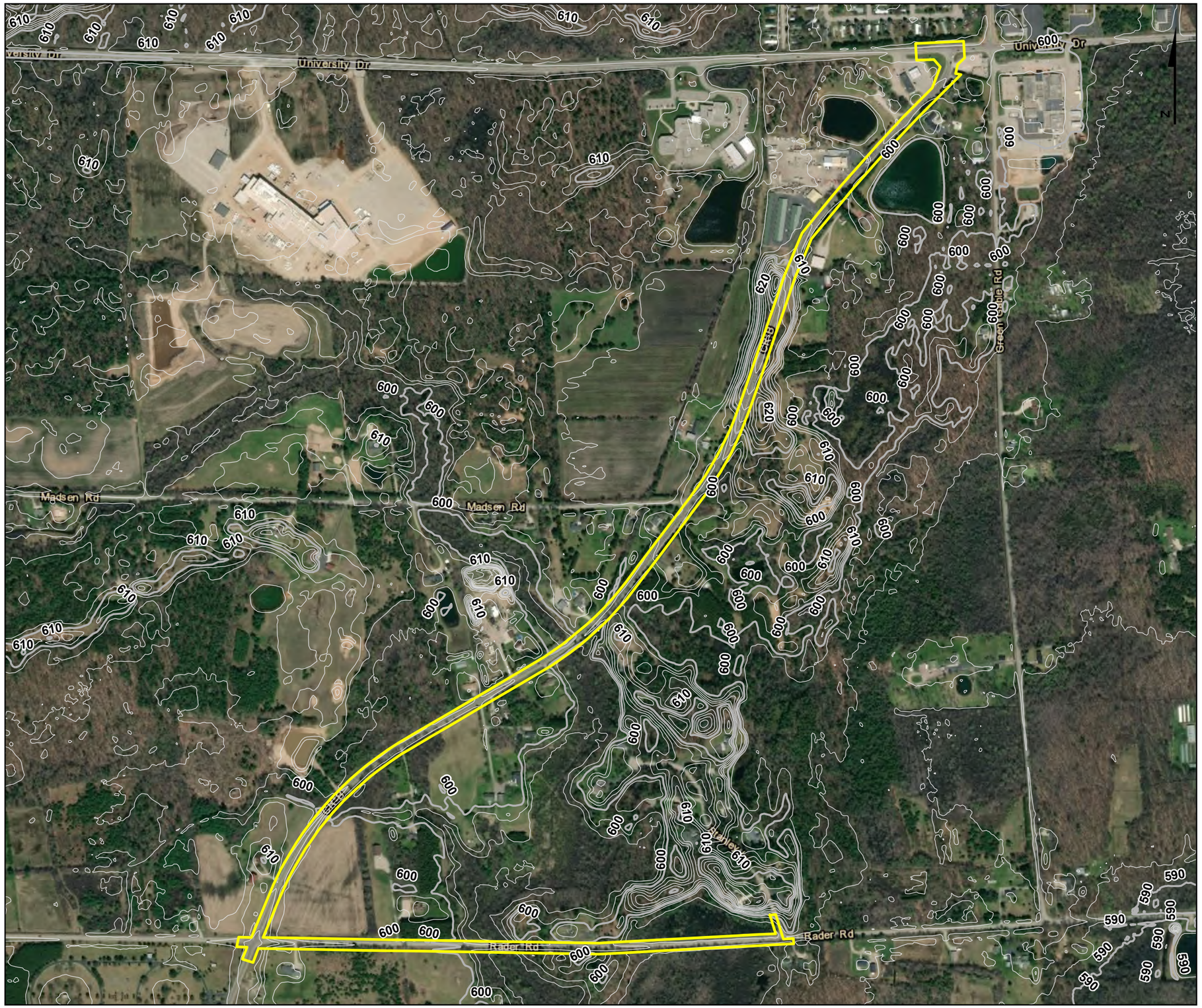

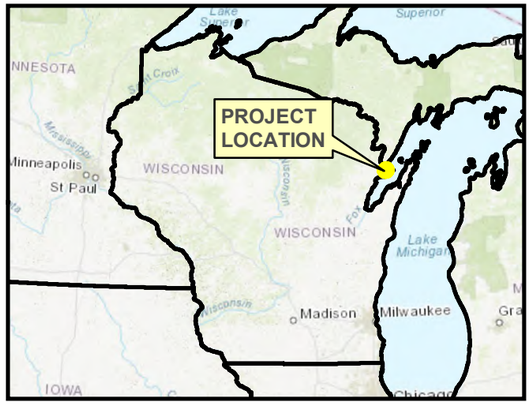

Legend

- ESA
- 2 ft Contour
- 10 ft Reference Contour

0 250 500 1,000 Feet

Note:
Aerial Imagery from ESRI Streaming Imagery Server

	Water Distribution System Extension to the Town of Peshtigo Marinette County, Wisconsin
FIGURE 2 CONTOURS	
PN:30015299	ARCADIS
Date: 10/4/2019	

Date: 10/4/2019 User Name: thahn
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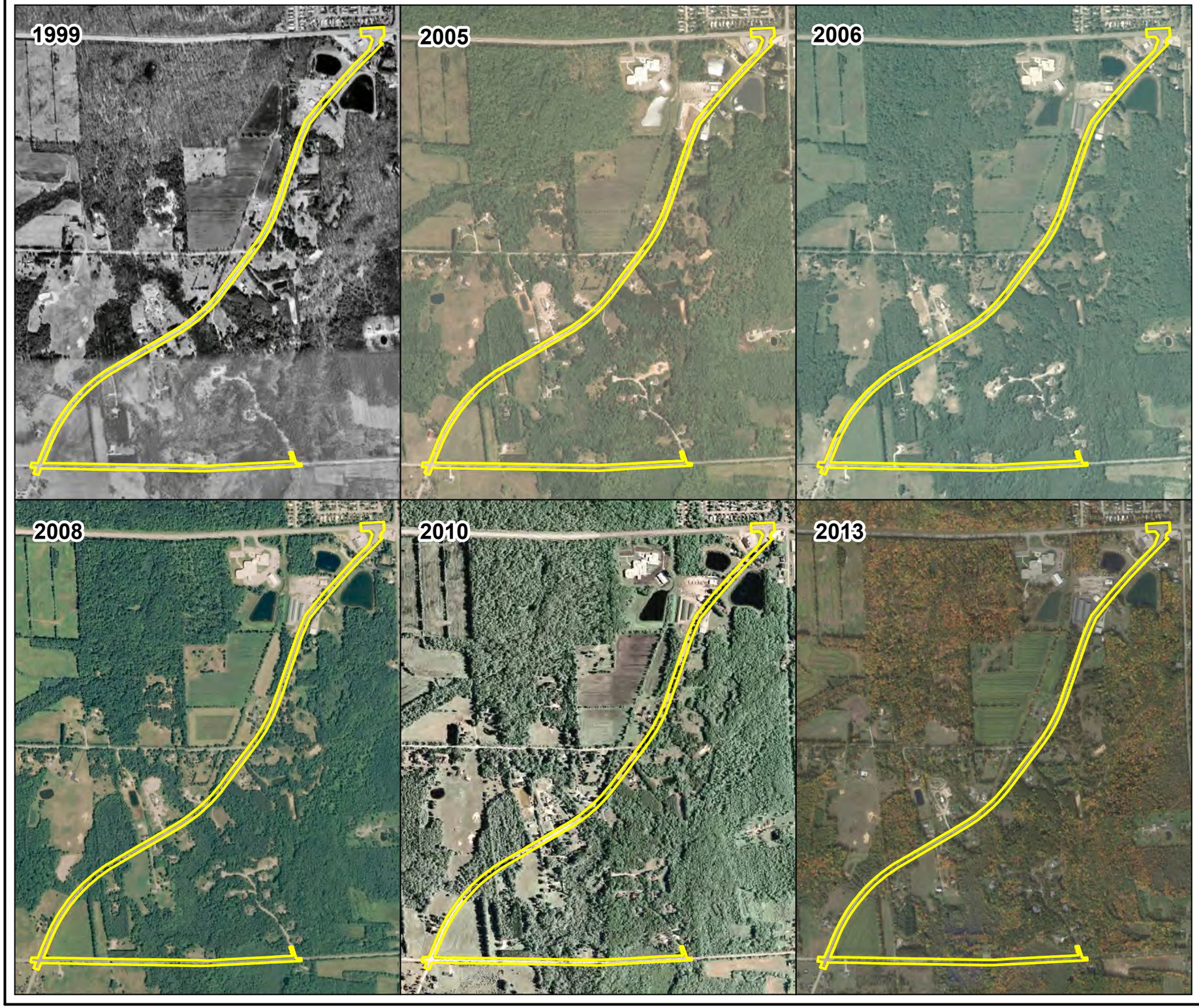
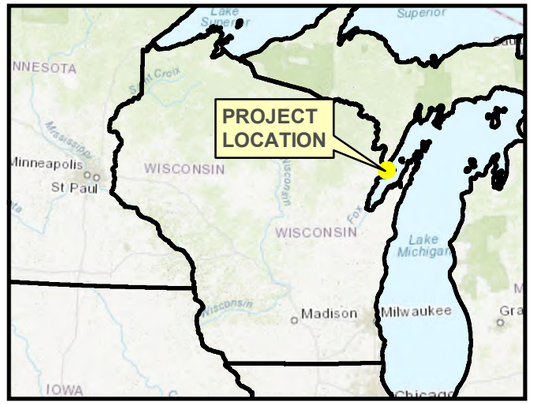




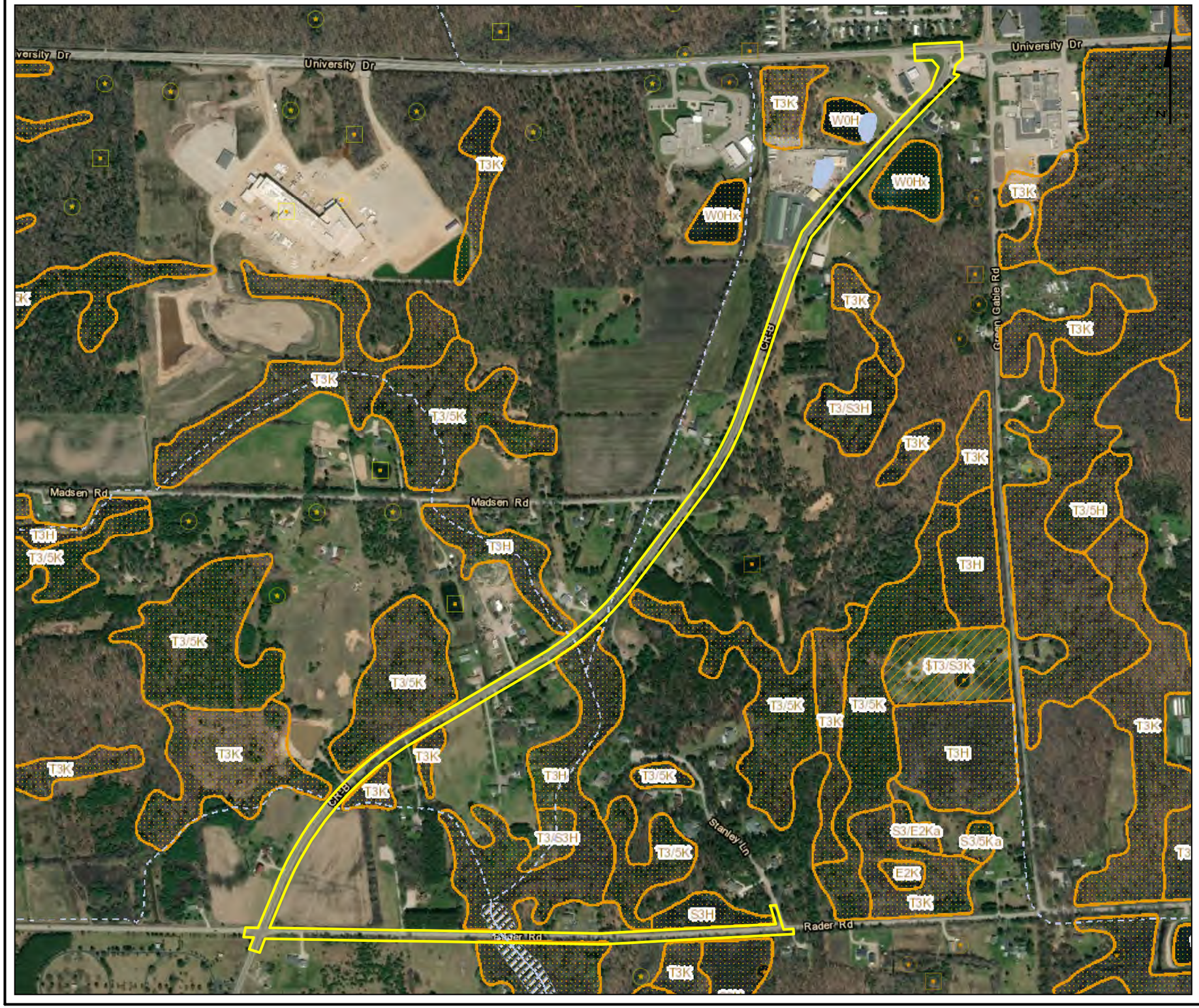
Legend

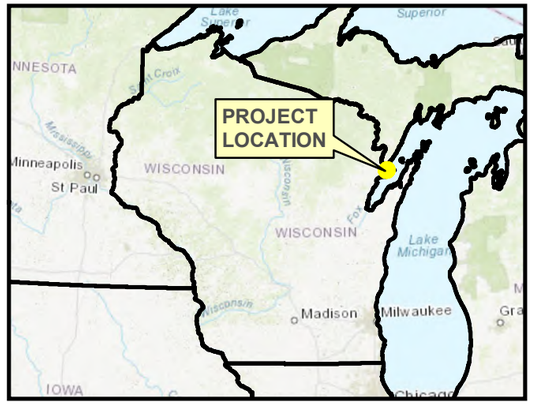
ESA

0 250 500 1,000
Feet

	Water Distribution System Extension to the Town of Peshtigo Marinette County, Wisconsin
FIGURE 3 **HISTOICAL AERIAL IMAGERY** **(1999, 2005, 2006, 2008, 2010, 2013)**	
PN:30015299	ARCADIS
Date: 10/7/2019	

Date: 10/7/2019 User Name: thahn
Document Path: Z:\GISProjects_ENV\TYCO_Marinette_WI\MXD\WDRIFigure_3.mxd





Legend

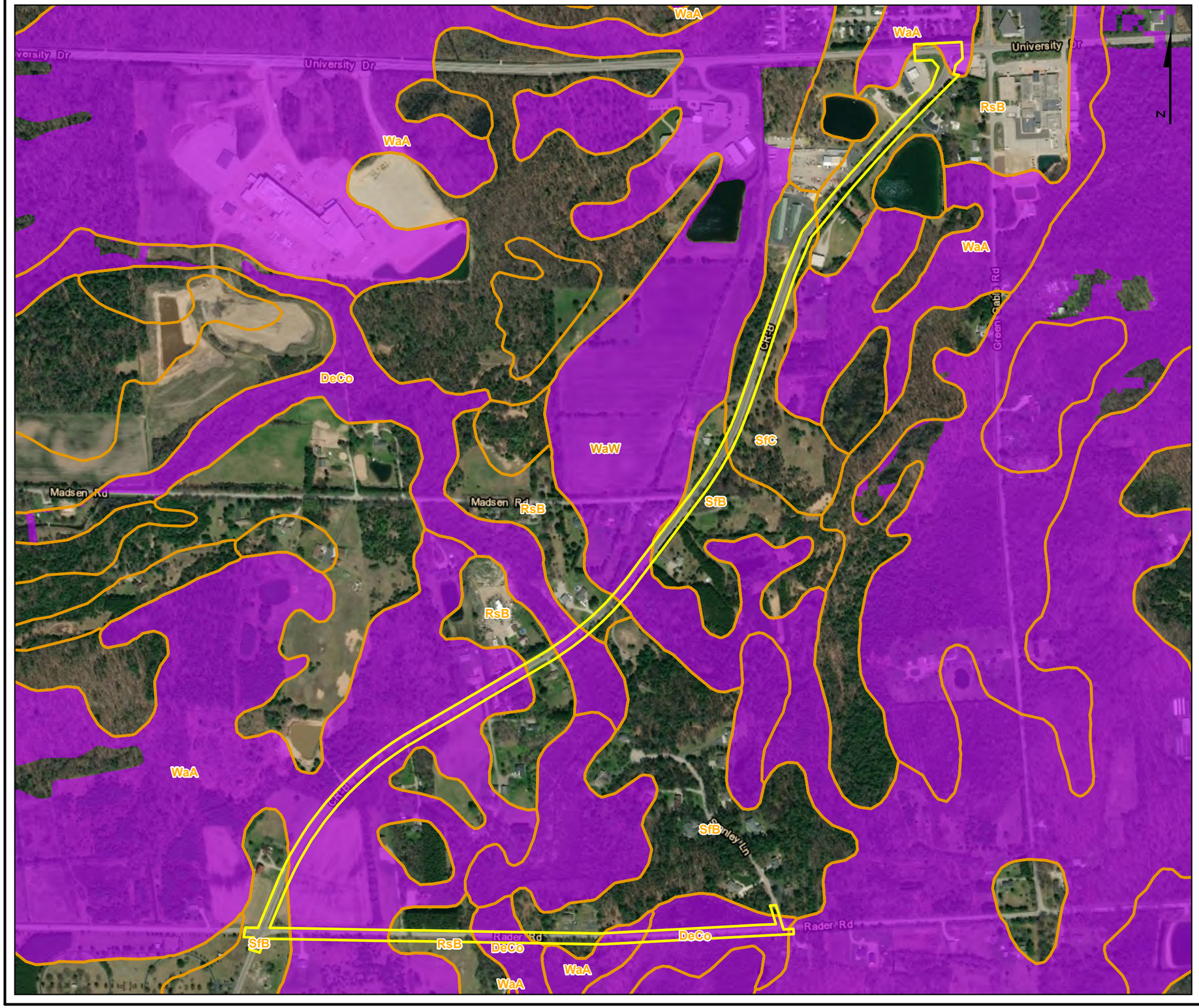
- WDNR Hydrography – Perennial Streams
- WDNR Hydrography – Intermittent Streams
- ESA
- FEMA Flood Zone A
- FEMA Flood Zone X
- WDNR Hydrography – Open Water
- WWI Wetland

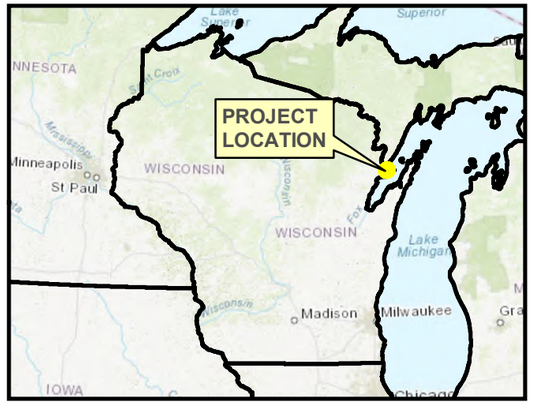
0 250 500 1,000 Feet

Note:
1. Wetland and Stream data sourced from WI DNR https://dnr.wi.gov/topic/wetlands/inventory.html Accessed 9/23/2019
2. FEMA NFHL data digitized from FRIM panel 5502590895B
3. Aerial Imagery provided by ESRI Streaming Imagery Server

	Water Distribution System Extension to the Town of Peshtigo Marinette County, Wisconsin
FIGURE 4 WDNR HYDROGRAPHY, WWI, AND FEMA FLOODPLAIN	
PN:30015299	ARCADIS
Date: 10/7/2019	

Date: 10/7/2019 User Name: thahn
Document Path: Z:\GISProjects_ENV\TYCO_Marinette_WI\MXD\WDR\Figure_4.mxd





Legend

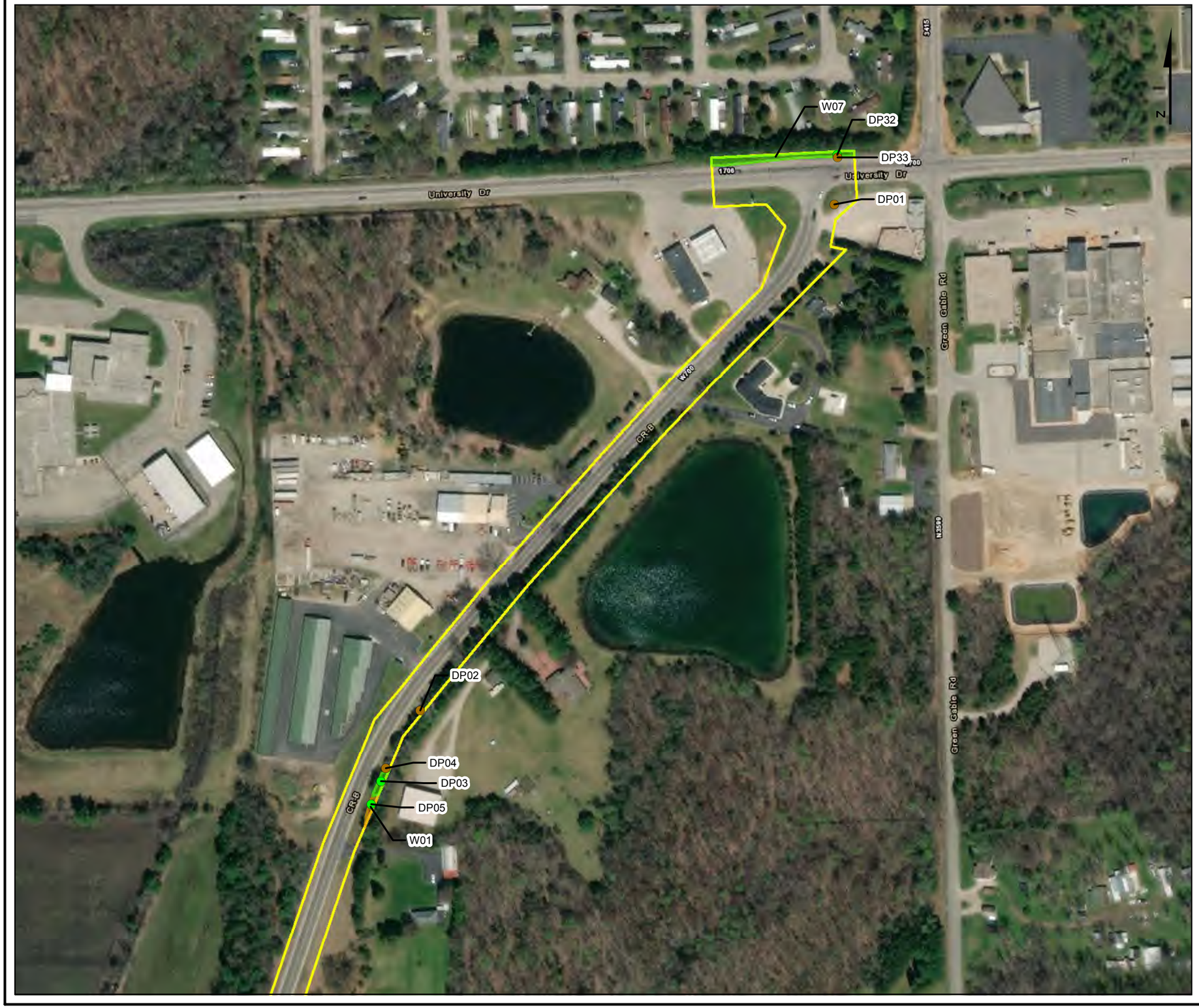
- ESA
- NRCS Soil Map Unit
- WDNR Wetland Indicators

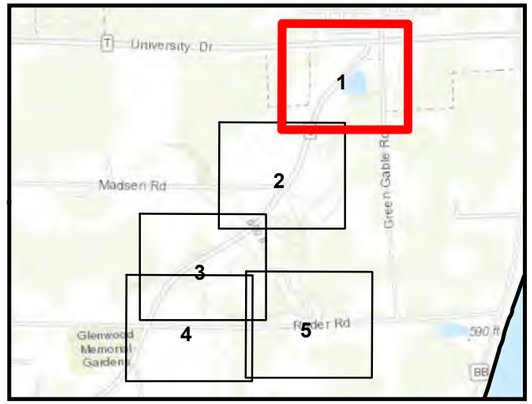
0 250 500 1,000 Feet

Note:
1. SSURGO soils from USDA Web Soil Survey Accessed 9/23/2019
2. WI Wetland indicators accessed from https://dnrmaps.wi.gov/H5/?Viewer=SWDV
3. Aerial Imagery provided by ESRI Streaming Imagery Server

	Water Distribution System Extension to the Town of Peshtigo Marinette County, Wisconsin
FIGURE 5 **NRCS SOILS AND WDNR WETLAND INDICATORS**	
PN:30015299	ARCADIS
Date: 10/7/2019	

Date: 10/7/2019 User Name: thahn
Document Path: Z:\GISProjects_ENV\TYCO_Marinette_WI\MXD\WDR\Figure_5.mxd





Legend

- Upland Data Point
- Wetland Data Point
- Existing Culverts
- Delineated Streams
- Delineated PEM Wetland
- Delineated PSS Wetland
- ESA

0 125 250 500 Feet

Note:
1. Aerial Imagery provided by ESRI Streaming Imagery Server

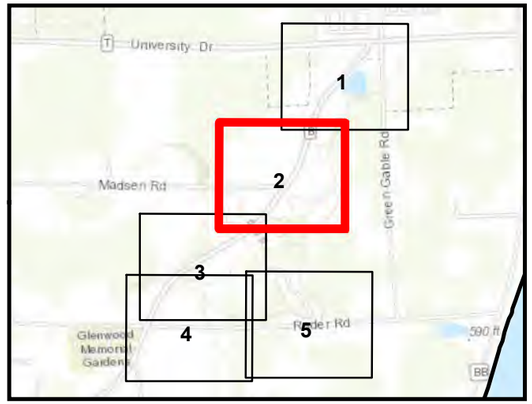
Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

FIGURE 6-1
DELINEATED WETLANDS AND WATERBODIES

PN:30015299
Date: 10/7/2019

ARCADIS

Date: 10/7/2019 User Name: thahn
Document Path: Z:\GISProjects_ENVIRYCO_Marinette_WIMXD\WDR\Figure_6.mxd



Legend

- Upland Data Point
- Wetland Data Point
- Existing Culverts
- Delineated Streams
- Delineated PEM Wetland
- Delineated PSS Wetland
- ESA

0 125 250 500 Feet

Note:
1. Aerial Imagery provided by ESRI Streaming Imagery Server

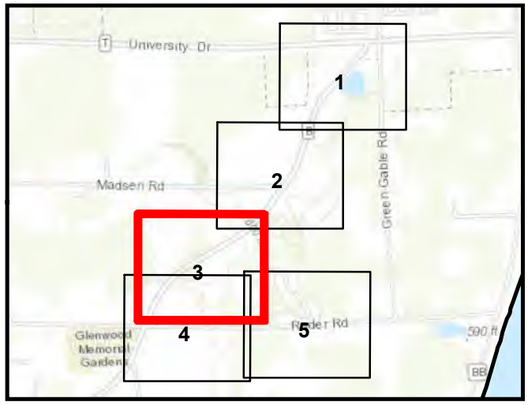
Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

FIGURE 6-2
DELINEATED WETLANDS AND WATERBODIES

PN:30015299
Date: 10/7/2019

ARCADIS

Date: 10/7/2019 User Name: thahn
Document Path: Z:\GISProjects_ENVIITYCO_Marinette_WIMXD\WDR\Figure_6.mxd



Legend

- Upland Data Point
- Wetland Data Point
- Existing Culverts
- Delineated Streams
- Delineated PEM Wetland
- Delineated PSS Wetland
- ESA

0 125 250 500 Feet

Note:
1. Aerial Imagery provided by ESRI Streaming Imagery Server

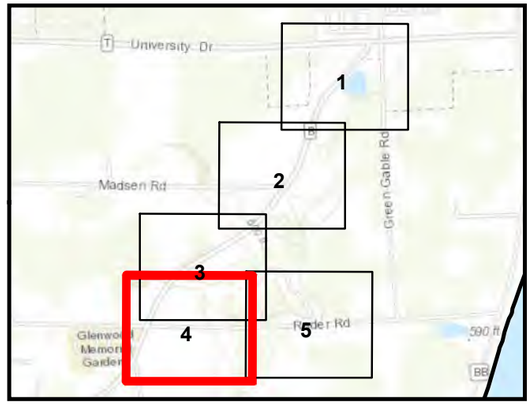
Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

FIGURE 6-3
DELINEATED WETLANDS AND WATERBODIES

PN:30015299
Date: 10/7/2019

ARCADIS

Date: 10/7/2019 User Name: thahn
Document Path: Z:\GISProjects_ENVITYCO_Marinette_WI\MXD\WDR\Figure_6.mxd



Legend

- Upland Data Point
- Wetland Data Point
- Existing Culverts
- Delineated Streams
- Delineated PEM Wetland
- Delineated PSS Wetland
- ESA

0 125 250 500 Feet

Note:
1. Aerial Imagery provided by ESRI Streaming Imagery Server

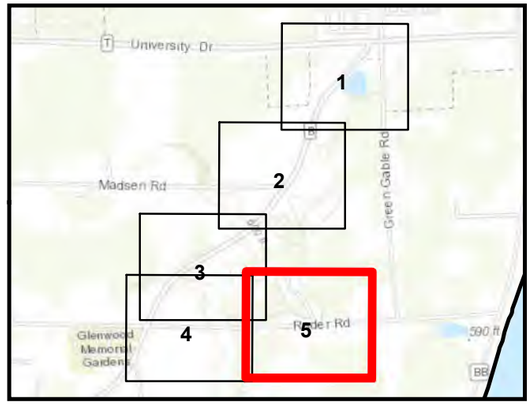
Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

FIGURE 6-4
DELINEATED WETLANDS AND WATERBODIES

PN:30015299
Date: 10/7/2019

ARCADIS

Date: 10/7/2019 User Name: thahn
Document Path: Z:\GISProjects_ENV\TYCO_Marinette_WI\MXD\WDR\Figure_6.mxd



Legend

- Upland Data Point
- Wetland Data Point
- Existing Culverts
- Delineated Streams
- Delineated PEM Wetland
- Delineated PSS Wetland
- ESA

0 125 250 500 Feet

Note:
1. Aerial Imagery provided by ESRI Streaming Imagery Server

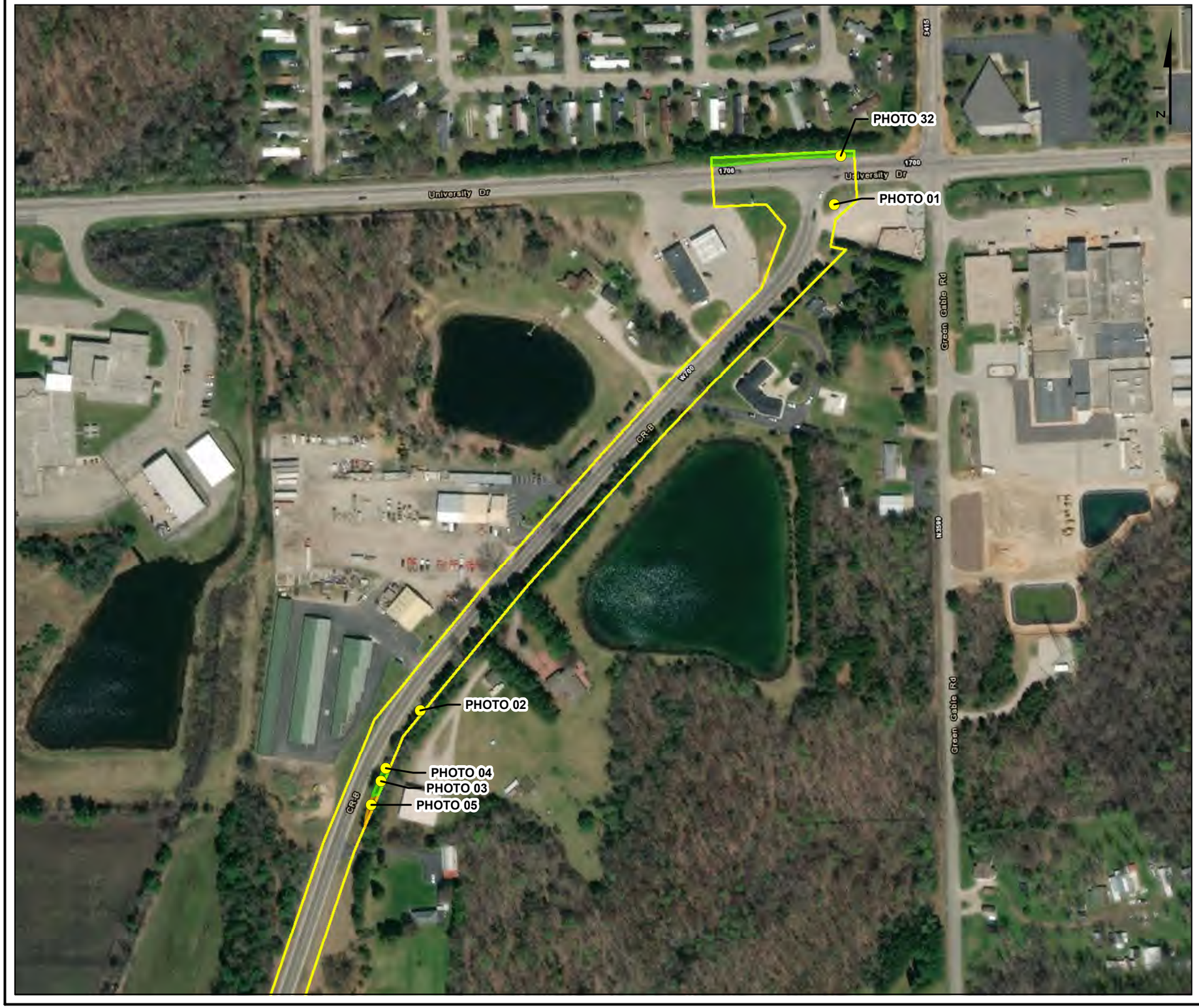
Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

FIGURE 6-5
DELINEATED WETLANDS AND WATERBODIES

PN:30015299
Date: 10/7/2019

ARCADIS

Date: 10/7/2019 User Name: thahn
Document Path: Z:\GISProjects_ENV\TYCO_Marinette_WI\MXD\WDRI\Figure_6.mxd



Legend

- Photograph Locations
- Delineated PEM Wetland
- Delineated PSS Wetland
- ESA

Note:
1. Aerial Imagery provided by ESRI Streaming Imagery Server

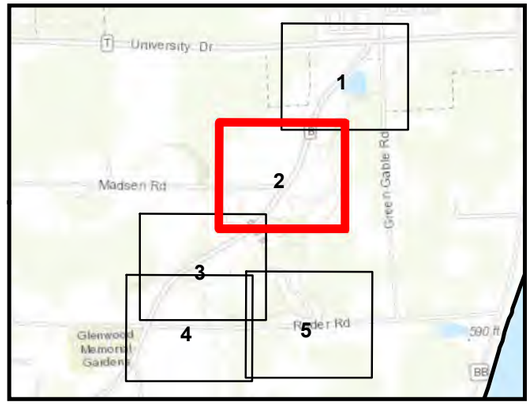
Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

FIGURE 7-1
PHOTO LOCATIONS

PN:30015299
Date: 10/7/2019

ARCADIS

Date: 10/7/2019 User Name: thahn
Document Path: Z:\GISProjects_ENV\TYCO_Marinette_WI\MXD\WDR\Figure_7.mxd



Legend

- Photograph Locations
- Delineated PEM Wetland
- Delineated PSS Wetland
- ESA

0 125 250 500 Feet

Note:
1. Aerial Imagery provided by ESRI Streaming Imagery Server

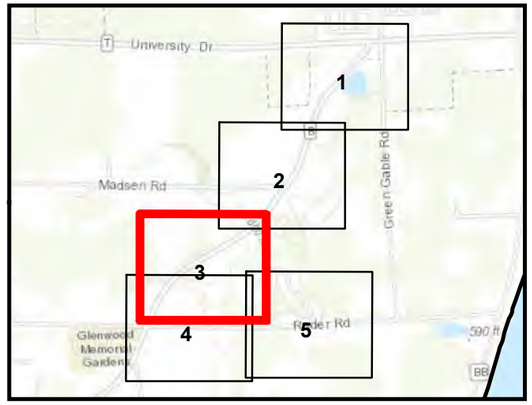
Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

FIGURE 7-2
PHOTO LOCATIONS

PN:30015299
Date: 10/7/2019

ARCADIS

Date: 10/7/2019 User Name: thahn
Document Path: Z:\GISProjects_ENVIRO\CO_Marinette_WI\MXD\WDR\Figure_7.mxd



Legend

- Photograph Locations
- Delineated PEM Wetland
- Delineated PSS Wetland
- ESA

0 125 250 500 Feet

Note:
1. Aerial Imagery provided by ESRI Streaming Imagery Server

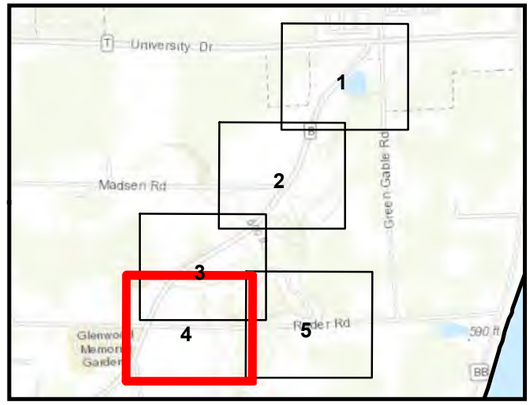
Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

FIGURE 7-3
PHOTO LOCATIONS

PN:30015299
Date: 10/7/2019

ARCADIS

Date: 10/7/2019 User Name: thahn
Document Path: Z:\GISProjects_ENV\TYCO_Marinette_WI\MXD\WDR\Figure_7.mxd



Legend

- Photograph Locations
- Delineated PEM Wetland
- Delineated PSS Wetland
- ESA

0 125 250 500 Feet

Note:
1. Aerial Imagery provided by ESRI Streaming Imagery Server

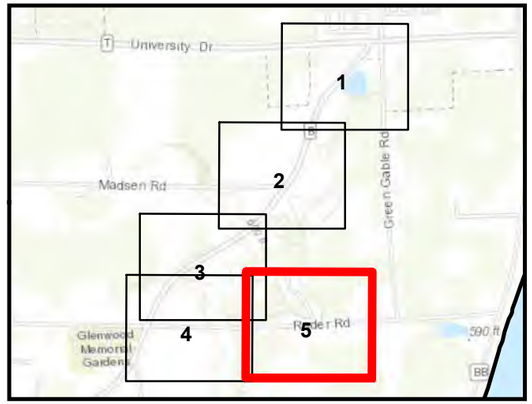
Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

FIGURE 7-4
PHOTO LOCATIONS

PN:30015299
Date: 10/7/2019

ARCADIS

Date: 10/7/2019 User Name: thahn
Document Path: Z:\GISProjects_ENV\TYCO_Marinette_WI\MXD\WDR\Figure_7.mxd



Legend

- Photograph Locations
- Delineated PEM Wetland
- Delineated PSS Wetland
- ESA

0 125 250 500 Feet

Note:
1. Aerial Imagery provided by ESRI Streaming Imagery Server

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

FIGURE 7-5
PHOTO LOCATIONS

PN:30015299
Date: 10/7/2019

ARCADIS

Date: 10/7/2019 User Name: thahn
Document Path: Z:\GISProjects_ENV\TYCO_Marinette_WI\MXD\WDRIFigure_7.mxd

APPENDIX A

Antecedent Precipitation

Table 4. Antecedent Precipitation Data

3rd Month Prior		2nd Month Prior		1st Month Prior	
Date	Precipitation (in.)	Date	Precipitation (in.)	Date	Precipitation (in.)
6/1/2019	0.00	7/1/2019	0.00	8/1/2019	0.00
6/2/2019	0.04	7/2/2019	0.38	8/2/2019	0.07
6/3/2019	0.00	7/3/2019	0.18	8/3/2019	T
6/4/2019	0.00	7/4/2019	0.00	8/4/2019	0.00
6/5/2019	0.01	7/5/2019	0.02	8/5/2019	0.02
6/6/2019	0.00	7/6/2019	0.03	8/6/2019	0.01
6/7/2019	0.00	7/7/2019	0.03	8/7/2019	0.02
6/8/2019	0.00	7/8/2019	0.00	8/8/2019	0.22
6/9/2019	0.00	7/9/2019	0.00	8/9/2019	0.15
6/10/2019	0.05	7/10/2019	0.05	8/10/2019	0.00
6/11/2019	0.00	7/11/2019	0.00	8/11/2019	0.48
6/12/2019	0.27	7/12/2019	0.00	8/12/2019	0.42
6/13/2019	0.82	7/13/2019	0.20	8/13/2019	T
6/14/2019	0.00	7/14/2019	0.00	8/14/2019	0.00
6/15/2019	0.95	7/15/2019	1.96	8/15/2019	0.00
6/16/2019	0.00	7/16/2019	0.46	8/16/2019	0.11
6/17/2019	0.00	7/17/2019	0.00	8/17/2019	T
6/18/2019	0.09	7/18/2019	0.04	8/18/2019	0.62
6/19/2019	0.00	7/19/2019	0.07	8/19/2019	0.03
6/20/2019	0.00	7/20/2019	1.67	8/20/2019	0.00
6/21/2019	0.00	7/21/2019	0.17	8/21/2019	0.00
6/22/2019	0.00	7/22/2019	0.00	8/22/2019	0.00
6/23/2019	0.00	7/23/2019	0.00	8/23/2019	0.00
6/24/2019	0.03	7/24/2019	0.00	8/24/2019	0.00
6/25/2019	0.00	7/25/2019	0.56	8/25/2019	0.00
6/26/2019	0.00	7/26/2019	0.00	8/26/2019	0.00
6/27/2019	0.00	7/27/2019	0.06	8/27/2019	1.00
6/28/2019	0.39	7/28/2019	0.00	8/28/2019	0.10
6/29/2019	T	7/29/2019	0.41	8/29/2019	0.00
6/30/2019	0.00	7/30/2019	0.00	8/30/2019	0.00
		7/31/2019	0.00	8/31/2019	0.00
Total =	**2.65**	**Total =**	**6.29**	**Total =**	**3.25**

Notes:
Station Name: Marinette, Wisconsin (USC00475091)
Date Range = June 1, 2019 - August 31, 2019
M = Missing
T = Trace

Table 5. WETS Analysis

Month	Long-Term Rainfall Records (from WETS Table)				Site Determination			
	Normal	3 Years in 10 Less Than	3 Years in 10 Greater Than	Site Rainfall (in.)	Condition (Dry, Normal*, or Wet)	Condition Value**	Month Weight	Product
June	3.65	2.28	4.41	2.65	Normal	2	1	2
July	3.39	2.37	4.03	6.29	Wet	3	2	6
August	3.41	2.57	3.98	3.25	Normal	2	3	6
Sum =	**10.45**		**Sum =**	**12.19**			**Sum*** =**	**14**

Determination:		
	Dry	
	Normal	X
	Wet	

Notes:
*Normal precipitation with 30% to 70% probability of occurrence.
**Condition value: Dry = 1, Normal = 2, Wet = 3.
***If sum is: 6 to 9 = Dry, 10 to 14 = Normal, 15 to 18 = Wet.
Reference: Donald E. Woodward, ed. 1997. Hydrology Tools for Wetland Determination, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

Table 6. Antecedent Precipitation Data

3rd Month Prior		2nd Month Prior		1st Month Prior	
Date	Precipitation (in.)	Date	Precipitation (in.)	Date	Precipitation (in.)
2/1/1999	T	3/1/1999	0.00	4/1/1999	0.00
2/2/1999	0.13	3/2/1999	0.00	4/2/1999	0.07
2/3/1999	0.00	3/3/1999	0.00	4/3/1999	T
2/4/1999	0.22	3/4/1999	0.00	4/4/1999	0.69
2/5/1999	0.00	3/5/1999	0.03	4/5/1999	T
2/6/1999	0.02	3/6/1999	0.00	4/6/1999	0.35
2/7/1999	0.00	3/7/1999	0.00	4/7/1999	0.30
2/8/1999	0.00	3/8/1999	0.00	4/8/1999	0.00
2/9/1999	0.00	3/9/1999	1.60	4/9/1999	0.20
2/10/1999	0.00	3/10/1999	0.04	4/10/1999	0.00
2/11/1999	T	3/11/1999	0.00	4/11/1999	0.12
2/12/1999	0.57	3/12/1999	0.00	4/12/1999	T
2/13/1999	0.00	3/13/1999	0.00	4/13/1999	0.00
2/14/1999	0.00	3/14/1999	0.00	4/14/1999	0.00
2/15/1999	0.00	3/15/1999	0.00	4/15/1999	0.00
2/16/1999	0.00	3/16/1999	0.00	4/16/1999	0.00
2/17/1999	0.17	3/17/1999	0.00	4/17/1999	0.00
2/18/1999	0.00	3/18/1999	0.00	4/18/1999	0.00
2/19/1999	0.00	3/19/1999	0.00	4/19/1999	0.00
2/20/1999	0.00	3/20/1999	0.00	4/20/1999	0.00
2/21/1999	0.00	3/21/1999	0.00	4/21/1999	0.00
2/22/1999	0.00	3/22/1999	0.00	4/22/1999	0.10
2/23/1999	0.00	3/23/1999	0.00	4/23/1999	T
2/24/1999	M	3/24/1999	0.00	4/24/1999	0.00
2/25/1999	0.13	3/25/1999	0.00	4/25/1999	0.00
2/26/1999	0.00	3/26/1999	0.00	4/26/1999	0.00
2/27/1999	T	3/27/1999	0.00	4/27/1999	0.00
2/28/1999	0.26	3/28/1999	0.00	4/28/1999	0.00
		3/29/1999	T	4/29/1999	0.00
		3/30/1999	0.00	4/30/1999	0.00
		3/31/1999	0.00		
Total =	**1.50**	**Total =**	**1.67**	**Total =**	**1.83**

Notes:
Station Name: Marinette, Wisconsin (USC00475091)
Date Range = February 1, 1999 - April 30, 1999
M = Missing
T = Trace

Table 7. WETS Analysis

Month	Long-Term Rainfall Records (from WETS Table)				Site Determination			
	Normal	3 Years in 10 Less Than	3 Years in 10 Greater Than	Site Rainfall (in.)	Condition (Dry, Normal*, or Wet)	Condition Value**	Month Weight	Product
February	1.30	0.73	1.58	1.50	Normal	2	1	2
March	2.22	1.37	2.68	1.67	Normal	2	2	4
April	2.83	2.04	3.35	1.83	Dry	1	3	3
Sum =	**6.35**		**Sum =**	**5.00**			**Sum*** =**	**9**

Determination:		
	Dry	X
	Normal	
	Wet	

Notes:
*Normal precipitation with 30% to 70% probability of occurrence.
**Condition value: Dry = 1, Normal = 2, Wet = 3.
***If sum is: 6 to 9 = Dry, 10 to 14 = Normal, 15 to 18 = Wet.
Reference: Donald E. Woodward, ed. 1997. Hydrology Tools for Wetland Determination, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

Table 8. Antecedent Precipitation Data

3rd Month Prior		2nd Month Prior		1st Month Prior	
Date	Precipitation (in.)	Date	Precipitation (in.)	Date	Precipitation (in.)
6/1/2005	M	7/1/2005	T	8/1/2005	0.00
6/2/2005	M	7/2/2005	0.00	8/2/2005	0.00
6/3/2005	M	7/3/2005	0.00	8/3/2005	T
6/4/2005	M	7/4/2005	0.03	8/4/2005	T
6/5/2005	M	7/5/2005	0.30	8/5/2005	0.00
6/6/2005	0.38	7/6/2005	0.00	8/6/2005	0.00
6/7/2005	0.00	7/7/2005	0.00	8/7/2005	0.00
6/8/2005	0.43	7/8/2005	0.00	8/8/2005	0.00
6/9/2005	0.00	7/9/2005	0.00	8/9/2005	0.00
6/10/2005	0.00	7/10/2005	0.00	8/10/2005	0.56
6/11/2005	0.39	7/11/2005	0.00	8/11/2005	0.00
6/12/2005	T	7/12/2005	0.00	8/12/2005	0.37
6/13/2005	0.00	7/13/2005	0.00	8/13/2005	0.00
6/14/2005	0.51	7/14/2005	0.00	8/14/2005	0.00
6/15/2005	0.11	7/15/2005	0.00	8/15/2005	0.00
6/16/2005	0.00	7/16/2005	0.00	8/16/2005	0.00
6/17/2005	0.00	7/17/2005	0.00	8/17/2005	0.00
6/18/2005	0.00	7/18/2005	0.00	8/18/2005	0.00
6/19/2005	0.00	7/19/2005	0.00	8/19/2005	0.87
6/20/2005	0.00	7/20/2005	0.00	8/20/2005	0.60
6/21/2005	T	7/21/2005	0.22	8/21/2005	0.00
6/22/2005	0.00	7/22/2005	0.00	8/22/2005	0.00
6/23/2005	0.00	7/23/2005	0.00	8/23/2005	0.00
6/24/2005	0.00	7/24/2005	0.60	8/24/2005	0.00
6/25/2005	0.00	7/25/2005	0.00	8/25/2005	0.00
6/26/2005	0.00	7/26/2005	0.58	8/26/2005	0.01
6/27/2005	T	7/27/2005	0.00	8/27/2005	0.48
6/28/2005	0.00	7/28/2005	0.00	8/28/2005	0.00
6/29/2005	0.08	7/29/2005	0.40	8/29/2005	0.12
6/30/2005	0.06	7/30/2005	0.00	8/30/2005	0.00
		7/31/2005	0.00	8/31/2005	0.00
Total =	**1.96**	**Total =**	**2.13**	**Total =**	**3.01**

Notes:
Station Name: Marinette, Wisconsin (USC00475091)
Date Range = June 1, 2005 - August 31, 2005
M = Missing
T = Trace

Table 9. WETS Analysis

Month	Long-Term Rainfall Records (from WETS Table)				Site Determination			
	Normal	3 Years in 10 Less Than	3 Years in 10 Greater Than	Site Rainfall (in.)	Condition (Dry, Normal*, or Wet)	Condition Value**	Month Weight	Product
June	3.65	2.28	4.41	1.96	Dry	1	1	1
July	3.39	2.37	4.03	2.13	Dry	1	2	2
August	3.41	2.57	3.98	3.01	Normal	2	3	6
Sum =	**10.45**		**Sum =**	**7.10**			**Sum*** =**	**9**

Determination:		
	Dry	X
	Normal	
	Wet	

Notes:
*Normal precipitation with 30% to 70% probability of occurrence.
**Condition value: Dry = 1, Normal = 2, Wet = 3.
***If sum is: 6 to 9 = Dry, 10 to 14 = Normal, 15 to 18 = Wet.
Reference: Donald E. Woodward, ed. 1997. Hydrology Tools for Wetland Determination, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

Table 10. Antecedent Precipitation Data

3rd Month Prior		2nd Month Prior		1st Month Prior	
Date	Precipitation (in.)	Date	Precipitation (in.)	Date	Precipitation (in.)
6/1/2006	0.00	7/1/2006	0.00	8/1/2006	0.00
6/2/2006	0.11	7/2/2006	0.01	8/2/2006	2.22
6/3/2006	T	7/3/2006	0.00	8/3/2006	0.27
6/4/2006	0.00	7/4/2006	0.33	8/4/2006	0.00
6/5/2006	0.00	7/5/2006	M	8/5/2006	0.00
6/6/2006	0.00	7/6/2006	M	8/6/2006	0.00
6/7/2006	0.17	7/7/2006	M	8/7/2006	0.00
6/8/2006	0.00	7/8/2006	M	8/8/2006	0.00
6/9/2006	0.00	7/9/2006	M	8/9/2006	0.00
6/10/2006	0.00	7/10/2006	T	8/10/2006	0.02
6/11/2006	0.00	7/11/2006	0.00	8/11/2006	0.00
6/12/2006	0.00	7/12/2006	0.00	8/12/2006	0.00
6/13/2006	0.00	7/13/2006	0.00	8/13/2006	0.00
6/14/2006	0.18	7/14/2006	0.00	8/14/2006	0.54
6/15/2006	0.00	7/15/2006	0.16	8/15/2006	0.00
6/16/2006	T	7/16/2006	0.00	8/16/2006	0.00
6/17/2006	0.00	7/17/2006	0.04	8/17/2006	0.00
6/18/2006	0.05	7/18/2006	T	8/18/2006	0.00
6/19/2006	T	7/19/2006	0.00	8/19/2006	0.00
6/20/2006	0.00	7/20/2006	0.00	8/20/2006	0.01
6/21/2006	0.05	7/21/2006	0.00	8/21/2006	0.00
6/22/2006	0.00	7/22/2006	0.00	8/22/2006	T
6/23/2006	0.00	7/23/2006	0.41	8/23/2006	T
6/24/2006	0.00	7/24/2006	0.31	8/24/2006	0.27
6/25/2006	0.20	7/25/2006	1.20	8/25/2006	0.90
6/26/2006	0.15	7/26/2006	1.92	8/26/2006	T
6/27/2006	T	7/27/2006	T	8/27/2006	T
6/28/2006	0.40	7/28/2006	0.00	8/28/2006	0.00
6/29/2006	0.28	7/29/2006	0.02	8/29/2006	T
6/30/2006	0.00	7/30/2006	0.05	8/30/2006	0.00
		7/31/2006	T	8/31/2006	0.00
Total =	**1.59**	**Total =**	**4.45**	**Total =**	**4.23**

Notes:
Station Name: Marinette, Wisconsin (USC00475091)
Date Range = June 1, 2005 - August 31, 2005
M = Missing
T = Trace

Table 11. WETS Analysis

Month	Long-Term Rainfall Records (from WETS Table)				Site Determination			
	Normal	3 Years in 10 Less Than	3 Years in 10 Greater Than	Site Rainfall (in.)	Condition (Dry, Normal*, or Wet)	Condition Value**	Month Weight	Product
June	3.65	2.28	4.41	1.59	Dry	1	1	1
July	3.39	2.37	4.03	4.45	Wet	3	2	6
August	3.41	2.57	3.98	4.23	Wet	3	3	9
Sum =	**10.45**		**Sum =**	**10.27**			**Sum*** =**	**16**

Determination:		
	Dry	
	Normal	
	Wet	X

Notes:
*Normal precipitation with 30% to 70% probability of occurrence.
**Condition value: Dry = 1, Normal = 2, Wet = 3.
***If sum is: 6 to 9 = Dry, 10 to 14 = Normal, 15 to 18 = Wet.
Reference: Donald E. Woodward, ed. 1997. Hydrology Tools for Wetland Determination, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

Table 12. Antecedent Precipitation Data

3rd Month Prior		2nd Month Prior		1st Month Prior	
Date	Precipitation (in.)	Date	Precipitation (in.)	Date	Precipitation (in.)
7/1/2008	0.00	8/1/2008	0.00	9/1/2008	0.00
7/2/2008	0.45	8/2/2008	0.00	9/2/2008	0.00
7/3/2008	0.27	8/3/2008	0.00	9/3/2008	0.03
7/4/2008	0.00	8/4/2008	0.02	9/4/2008	0.00
7/5/2008	0.00	8/5/2008	T	9/5/2008	0.34
7/6/2008	0.00	8/6/2008	0.00	9/6/2008	0.03
7/7/2008	0.00	8/7/2008	0.00	9/7/2008	0.00
7/8/2008	0.54	8/8/2008	0.12	9/8/2008	0.03
7/9/2008	0.00	8/9/2008	T	9/9/2008	T
7/10/2008	0.00	8/10/2008	0.02	9/10/2008	0.00
7/11/2008	0.00	8/11/2008	0.00	9/11/2008	0.00
7/12/2008	0.38	8/12/2008	0.00	9/12/2008	0.36
7/13/2008	0.00	8/13/2008	0.00	9/13/2008	T
7/14/2008	0.00	8/14/2008	0.00	9/14/2008	0.18
7/15/2008	0.13	8/15/2008	0.00	9/15/2008	T
7/16/2008	0.05	8/16/2008	0.00	9/16/2008	0.00
7/17/2008	0.12	8/17/2008	0.07	9/17/2008	0.00
7/18/2008	2.95	8/18/2008	0.00	9/18/2008	0.00
7/19/2008	0.01	8/19/2008	0.18	9/19/2008	0.00
7/20/2008	T	8/20/2008	T	9/20/2008	0.00
7/21/2008	0.26	8/21/2008	0.00	9/21/2008	0.00
7/22/2008	T	8/22/2008	0.05	9/22/2008	0.00
7/23/2008	0.00	8/23/2008	0.02	9/23/2008	0.00
7/24/2008	0.00	8/24/2008	0.00	9/24/2008	0.00
7/25/2008	0.00	8/25/2008	0.00	9/25/2008	0.00
7/26/2008	0.01	8/26/2008	0.00	9/26/2008	T
7/27/2008	0.00	8/27/2008	0.00	9/27/2008	0.00
7/28/2008	0.00	8/28/2008	0.00	9/28/2008	0.00
7/29/2008	0.00	8/29/2008	0.01	9/29/2008	T
7/30/2008	1.18	8/30/2008	0.00	9/30/2008	0.31
7/31/2008	0.00	8/31/2008	0.00		
Total =	**6.35**	**Total =**	**0.49**	**Total =**	**1.28**

Notes:
Station Name: Marinette, Wisconsin (USC00475091)
Date Range = July 1, 2008 - September 30, 2008
M = Missing
T = Trace

Table 13. WETS Analysis

Month	Long-Term Rainfall Records (from WETS Table)				Site Determination			
	Normal	3 Years in 10 Less Than	3 Years in 10 Greater Than	Site Rainfall (in.)	Condition (Dry, Normal*, or Wet)	Condition Value**	Month Weight	Product
July	3.39	2.37	4.03	6.35	Wet	3	1	3
August	3.41	2.57	3.98	0.49	Dry	1	2	2
September	3.28	2.37	3.87	1.28	Dry	1	3	3
Sum =	**10.08**		**Sum =**	**8.12**			**Sum*** =**	**8**

Determination:		
	Dry	X
	Normal	
	Wet	

Notes:
*Normal precipitation with 30% to 70% probability of occurrence.
**Condition value: Dry = 1, Normal = 2, Wet = 3.
***If sum is: 6 to 9 = Dry, 10 to 14 = Normal, 15 to 18 = Wet.
Reference: Donald E. Woodward, ed. 1997. Hydrology Tools for Wetland Determination, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

Table 14. Antecedent Precipitation Data

3rd Month Prior		2nd Month Prior		1st Month Prior	
Date	Precipitation (in.)	Date	Precipitation (in.)	Date	Precipitation (in.)
8/1/2010	0.08	9/1/2010	0.38	10/1/2010	0.00
8/2/2010	0.44	9/2/2010	0.00	10/2/2010	0.33
8/3/2010	0.06	9/3/2010	0.61	10/3/2010	0.01
8/4/2010	0.00	9/4/2010	0.03	10/4/2010	0.00
8/5/2010	0.00	9/5/2010	0.00	10/5/2010	0.00
8/6/2010	0.00	9/6/2010	0.00	10/6/2010	0.00
8/7/2010	0.00	9/7/2010	0.18	10/7/2010	0.00
8/8/2010	1.43	9/8/2010	0.01	10/8/2010	0.00
8/9/2010	0.00	9/9/2010	0.00	10/9/2010	0.00
8/10/2010	0.02	9/10/2010	0.00	10/10/2010	0.00
8/11/2010	0.00	9/11/2010	0.04	10/11/2010	0.00
8/12/2010	0.08	9/12/2010	0.40	10/12/2010	0.00
8/13/2010	0.00	9/13/2010	T	10/13/2010	0.00
8/14/2010	0.00	9/14/2010	0.00	10/14/2010	0.00
8/15/2010	0.01	9/15/2010	T	10/15/2010	0.04
8/16/2010	0.00	9/16/2010	0.81	10/16/2010	0.00
8/17/2010	0.00	9/17/2010	0.07	10/17/2010	0.00
8/18/2010	0.00	9/18/2010	0.00	10/18/2010	T
8/19/2010	0.02	9/19/2010	0.00	10/19/2010	0.00
8/20/2010	0.04	9/20/2010	0.00	10/20/2010	0.00
8/21/2010	0.08	9/21/2010	T	10/21/2010	0.00
8/22/2010	0.00	9/22/2010	0.02	10/22/2010	0.00
8/23/2010	0.00	9/23/2010	1.57	10/23/2010	0.00
8/24/2010	0.00	9/24/2010	1.15	10/24/2010	0.48
8/25/2010	0.05	9/25/2010	0.01	10/25/2010	0.65
8/26/2010	0.00	9/26/2010	0.00	10/26/2010	0.23
8/27/2010	0.00	9/27/2010	0.00	10/27/2010	0.15
8/28/2010	0.00	9/28/2010	0.00	10/28/2010	T
8/29/2010	0.00	9/29/2010	0.00	10/29/2010	0.00
8/30/2010	0.00	9/30/2010	0.00	10/30/2010	0.00
8/31/2010	0.00		0.00	10/31/2010	0.00
Total =	**2.31**	**Total =**	**5.28**	**Total =**	**1.89**

Notes:
Station Name: Marinette, Wisconsin (USC00475091)
Date Range = August 1, 2010 - October 31, 2010
M = Missing
T = Trace

Table 15. WETS Analysis

Month	Long-Term Rainfall Records (from WETS Table)				Site Determination			
	Normal	3 Years in 10 Less Than	3 Years in 10 Greater Than	Site Rainfall (in.)	Condition (Dry, Normal*, or Wet)	Condition Value**	Month Weight	Product
August	3.41	2.57	3.98	2.31	Dry	1	1	1
September	3.28	2.37	3.87	5.28	Wet	3	2	6
October	2.81	1.83	3.38	1.89	Normal	2	3	6
Sum =	**9.50**		**Sum =**	**9.48**			**Sum*** =**	**13**

Determination:		
	Dry	
	Normal	X
	Wet	

Notes:
*Normal precipitation with 30% to 70% probability of occurrence.
**Condition value: Dry = 1, Normal = 2, Wet = 3.
***If sum is: 6 to 9 = Dry, 10 to 14 = Normal, 15 to 18 = Wet.
Reference: Donald E. Woodward, ed. 1997. Hydrology Tools for Wetland Determination, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

Table 16. Antecedent Precipitation Data

3rd Month Prior		2nd Month Prior		1st Month Prior	
Date	Precipitation (in.)	Date	Precipitation (in.)	Date	Precipitation (in.)
3/1/2013	0.00	4/1/2013	T	5/1/2013	T
3/2/2013	0.00	4/2/2013	0.00	5/2/2013	0.00
3/3/2013	0.00	4/3/2013	0.00	5/3/2013	0.18
3/4/2013	0.00	4/4/2013	0.00	5/4/2013	0.06
3/5/2013	0.00	4/5/2013	0.01	5/5/2013	0.00
3/6/2013	0.00	4/6/2013	0.04	5/6/2013	0.00
3/7/2013	T	4/7/2013	0.30	5/7/2013	0.00
3/8/2013	0.00	4/8/2013	0.00	5/8/2013	0.00
3/9/2013	0.00	4/9/2013	0.07	5/9/2013	0.00
3/10/2013	0.52	4/10/2013	0.71	5/10/2013	0.33
3/11/2013	0.71	4/11/2013	0.00	5/11/2013	T
3/12/2013	0.00	4/12/2013	0.36	5/12/2013	0.20
3/13/2013	T	4/13/2013	0.05	5/13/2013	0.00
3/14/2013	0.00	4/14/2013	0.02	5/14/2013	0.02
3/15/2013	0.00	4/15/2013	0.37	5/15/2013	T
3/16/2013	0.08	4/16/2013	0.00	5/16/2013	0.00
3/17/2013	0.00	4/17/2013	0.00	5/17/2013	0.00
3/18/2013	0.00	4/18/2013	0.11	5/18/2013	T
3/19/2013	0.30	4/19/2013	0.20	5/19/2013	0.00
3/20/2013	0.00	4/20/2013	0.00	5/20/2013	0.05
3/21/2013	0.00	4/21/2013	0.00	5/21/2013	0.46
3/22/2013	0.00	4/22/2013	T	5/22/2013	0.33
3/23/2013	0.00	4/23/2013	0.17	5/23/2013	0.26
3/24/2013	0.00	4/24/2013	T	5/24/2013	0.00
3/25/2013	0.00	4/25/2013	0.00	5/25/2013	0.00
3/26/2013	0.00	4/26/2013	T	5/26/2013	0.00
3/27/2013	T	4/27/2013	0.07	5/27/2013	0.00
3/28/2013	0.00	4/28/2013	0.00	5/28/2013	0.03
3/29/2013	0.00	4/29/2013	0.07	5/29/2013	0.05
3/30/2013	0.00	4/30/2013	0.44	5/30/2013	T
3/31/2013	0.22			5/31/2013	0.60
Total =	**1.83**	**Total =**	**2.99**	**Total =**	**2.57**

Notes:
Station Name: Marinette, Wisconsin (USC00475091)
Date Range = March 1, 2013 - May 31, 2013
M = Missing
T = Trace

Table 17. WETS Analysis

Month	Long-Term Rainfall Records (from WETS Table)				Site Determination			
	Normal	3 Years in 10 Less Than	3 Years in 10 Greater Than	Site Rainfall (in.)	Condition (Dry, Normal*, or Wet)	Condition Value**	Month Weight	Product
March	2.22	1.37	2.68	1.83	Normal	2	1	2
April	2.83	2.04	3.35	2.99	Normal	2	2	4
May	3.20	2.31	3.78	2.57	Normal	2	3	6
Sum =	**8.25**		**Sum =**	**7.39**			**Sum*** =**	**12**

Determination:		
	Dry	
	Normal	X
	Wet	

Notes:
*Normal precipitation with 30% to 70% probability of occurrence.
**Condition value: Dry = 1, Normal = 2, Wet = 3.
***If sum is: 6 to 9 = Dry, 10 to 14 = Normal, 15 to 18 = Wet.
Reference: Donald E. Woodward, ed. 1997. Hydrology Tools for Wetland Determination, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

APPENDIX B

Photographic Log

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 01

Date:
9/9/2019

Description:
Upland data point DP01 in WDNR wetland indicators layer.

Direction:
South

Photo: 02

Date:
9/9/2019

Description:
Upland data point DP02 in road ditch depression.

Direction:
Southwest

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 03

Date:
9/9/2019

Description:
PEM wetland data point DP03 in W01.

Direction:
Southwest

Photo: 04

Date:
9/9/2019

Description:
Upland data point DP04 at the boundary of W01.

Direction:
Southwest

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 05

Date:
9/9/2019

Description:
PSS wetland data point DP05 in W01.

Direction:
Northeast

Photo: 06

Date:
9/9/2019

Description:
PSS wetland data point DP06 in W02.

Direction:
Southwest

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 07

Date:
9/9/2019

Description:
PSS wetland data point DP07 in W02.

Direction:
Northeast

Photo: 08

Date:
9/9/2019

Description:
Upland data point DP08 at the boundary of W02.

Direction:
Southwest

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 09

Date:
9/9/2019

Description:
PEM wetland data point DP09 in W03.

Direction:
Southwest

Photo: 10

Date:
9/9/2019

Description:
Upland data point DP10 at the boundary of W03.

Direction:
Northeast

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 11

Date:
9/9/2019

Description:
PEM wetland data point DP11 in W03.

Direction:
Southwest

Photo: 12

Date:
9/9/2019

Description:
Upland data point DP12 at the boundary of W03.

Direction:
Northeast

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 13

Date:
9/10/2019

Description:
PSS wetland data point DP13 in W03.

Direction:
Northeast

Photo: 14

Date:
9/10/2019

Description:
PEM wetland data point DP14 in W03.

Direction:
Southwest

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 15

Date:
9/10/2019

Description:
PEM wetland data point DP15 in W03.

Direction:
Southwest

Photo: 16

Date:
9/10/2019

Description:
PSS wetland data point DP16 in W03.

Direction:
Northeast

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 17

Date:
9/10/2019

Description:
Upland data point DP17 at the boundary of W03.

Direction:
Southwest

Photo: 18

Date:
9/10/2019

Description:
Upland data point DP18 at the boundary of W03.

Direction:
Northeast

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 19

Date:
9/10/2019

Description:
PEM wetland data point DP19 in W03.

Direction:
Southwest

Photo: 20

Date:
9/10/2019

Description:
PSS wetland data point DP20 in W03.

Direction:
Southwest

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 21

Date:
9/10/2019

Description:
Upland data point DP21 at the boundary of W03.

Direction:
Southwest

Photo: 22

Date:
9/10/2019

Description:
PSS wetland data point DP22 in W03.

Direction:
Northeast

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 23

Date:
9/10/2019

Description:
PEM wetland data point DP23 in W04.

Direction:
East

Photo: 24

Date:
9/10/2019

Description:
Upland data point DP24 at the boundary of W04.

Direction:
West

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 25

Date:
9/10/2019

Description:
Upland data point DP25 at the boundary of W05.

Direction:
West

Photo: 26

Date:
9/10/2019

Description:
PEM wetland data point DP26 in W05.

Direction:
East

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 27

Date:
9/10/2019

Description:
PEM wetland data point DP27 in W05. W05 is a PEM fringe of a PSS wetland.

Direction:
West

Photo: 28

Date:
9/10/2019

Description:
Upland data point DP28 at the boundary of W05.

Direction:
Northwest

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 29

Date:
9/10/2019

Description:
PEM wetland data point DP29 in W05. W05 is a PEM fringe of a PFO wetland.

Direction:
East

Photo: 30

Date:
9/10/2019

Description:
Upland data point DP30 at the boundary of W06.

Direction:
North

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 31

Date:
9/10/2019

Description:
PSS wetland data point DP31 in W06. W06 is a PEM fringe of a PSS wetland.

Direction:
South

Photo: 32

Date:
9/11/2019

Description:
PEM wetland data point DP32 in W07 and upland data point DP33 at the boundary of DP07.

Direction:
West

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 33

Date:
9/10/2019

Description:
View upstream at S01.

Direction:
Northeast

Photo: 34

Date:
9/10/2019

Description:
View downstream at S02.

Direction:
South

Photographic Log

Water Distribution System Extension to the Town of Peshtigo
Marinette County, Wisconsin

Photo: 35

Date:
9/10/2019

Description:
View upstream at S03.

Direction:
Northwest

Photo: 36

Date:
9/10/2019

Description:
View upstream at S04.

Direction:
Northwest

APPENDIX C

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP01

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 18, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Plain Local relief (concave, convex, none): Flat Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.070586° N Long. 87.630442° W Datum: WGS 84

Soil Map Unit Name: Wainola loamy fine sand, 0 to 3 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation X Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes ____ No X **Is the Sampled Area within a Wetland?**

Hydric Soil Present? Yes ____ No X **Yes** ____ **No** X

Wetland Hydrology Present? Yes ____ No X If yes, optional Wetland Site ID: ____

Remarks:
Photo 01 in Appendix B. Data point recorded in WDNR wetland indicators layer in roadside. Vegetation is recently mowed. Based on the absence of all three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)		Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)		FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____

Wetland Hydrology Present?

Yes ____ **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP01

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Poa pratensis*	60	Y	FACU
2.	*Bromus inermis*	25	Y	UPL
3.	*Digitaria sanguinalis*	5	N	FACU
4.	*Trifolium pratense*	5	N	FACU
5.	*Ambrosia artemisiifolia*	5	N	FACU
6.	*Achillea millefolium*	2	N	FACU
7.	*Taraxacum officinale*	1	N	FACU
8.				
9.				
10.				
11.				
12.				
50%= 51.5%	20%= 20.6%	103	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 0 (A)

Total number of dominant species across all strata: 2 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	0	x	2	0
FAC species	0	x	3	0
FACU species	78	x	4	312
UPL species	25	x	5	125
Column Totals:	103 (A)			437 (B)
			Prevalence Index:	4.2 (B/A)

Hydrophytic Vegetation Indicators:

_____ Rapid Test for Hydrophytic Vegetation

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0*

_____ Morphological Adaptations*

_____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met. Vegetation significantly disturbed as a result of routine mowing.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP01

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-7	10YR 3/4	100					Loamy Sand	
7-20	10YR 4/4	98	10YR 4/6	2	C	M	Loamy Sand	Distinct redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:				**Indicators for Problematic Soils**	
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes _____ **No** X

Remarks:
The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP02

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 18, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.067848° N Long. 87.633796° W Datum: WGS 84

Soil Map Unit Name: Shawano loamy fine sand, 6 to 12 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation Soil or Hydrology significantly disturbed?

Are Vegetation Soil or Hydrology naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes No X **Is the Sampled Area within a Wetland?**

Hydric Soil Present? Yes No X **Yes** **No** X

Wetland Hydrology Present? Yes No X If yes, optional Wetland Site ID:

Remarks:
Photo 02 in Appendix B. Data point recorded in depression in roadside ditch. Based on the absence of all three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)		Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)		FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes X No Depth (inches) 21

Saturation Present? Yes X No Depth (inches) 18

Wetland Hydrology Present?

Yes **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range. Based on generally wet summer and water balance tables for the region, this survey was not considered to be conducted during the dry season.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP02

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1. *Pinus resinosa*	25	Y	FACU
2. *Pinus sylvestris*	25	Y	UPL
3.			
4.			
5.			
6.			
7.			
50%= 25.0% 20%= 10.0%	50	Total Cover	
Shrub Stratum (Plot size: 15')			
1. *Rhamnus cathartica*	5	Y	FAC
2. *Pinus sylvestris*	2	Y	UPL
3.			
4.			
5.			
6.			
7.			
50%= 3.5% 20%= 1.4%	7	Total Cover	
Herb Stratum (Plot size: 5')			
1. *Bromus inermis*	60	Y	UPL
2. *Parthenocissus quinquefolia*	30	Y	FACU
3. *Onoclea sensibilis*	5	N	FACW
4. *Solidago gigantea*	5	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
50%= 50.0% 20%= 20.0%	100	Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
50%= 0.0% 20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)

Total number of dominant species across all strata: 6 (B)

Percent of dominant species that are OBL, FACW, or FAC: 17% (A/B)

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	10	x	2	20
FAC species	5	x	3	15
FACU species	55	x	4	220
UPL species	87	x	5	435
Column Totals:	157 (A)			690 (B)
			Prevalence Index:	4.4 (B/A)

Hydrophytic Vegetation Indicators:

_____ Rapid Test for Hydrophytic Vegetation

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0*

_____ Morphological Adaptations*

_____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP02

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-3	10YR 3/3	100					Sandy Loam	
3-10	10YR 4/6	100					Loamy Sand	
10-21	10YR 4/6	85	2.5YR 4/8	15	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes _____ **No** X

Remarks:
The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP03

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 18, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.067463° N Long. 87.63412° W Datum: WGS 84

Soil Map Unit Name: Shawano loamy fine sand, 6 to 12 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation Soil or Hydrology significantly disturbed?

Are Vegetation Soil or Hydrology naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No **Is the Sampled Area within a Wetland?**

Hydric Soil Present? Yes X No **Yes** X **No**

Wetland Hydrology Present? Yes X No If yes, optional Wetland Site ID: W01

Remarks:
Photo 03 in Appendix B. PEM wetland data point recorded at the boundary of W01. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
X	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
X	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes X No Depth (inches) 12

Saturation Present? Yes X No Depth (inches) 8

Wetland Hydrology Present?

Yes X **No**

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP03

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.	*Rhamnus cathartica*	25	Y	FAC
2.	*Frangula alnus*	5	N	FAC
3.				
4.				
5.				
6.				
7.				
50%= 15.0%	20%= 6.0%	30	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Phalaris arundinacea*	40	Y	FACW
2.	*Scirpus cyperinus*	20	Y	OBL
3.	*Onoclea sensibilis*	20	Y	FACW
4.	*Eleocharis acicularis*	5	N	OBL
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 42.5%	20%= 17.0%	85	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 4 (A)

Total number of dominant species across all strata: 4 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	25	x	1	25
FACW species	60	x	2	120
FAC species	30	x	3	90
FACU species	0	x	4	0
UPL species	0	x	5	0
Column Totals:	115 (A)			235 (B)
			Prevalence Index:	2.0 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP03

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-4.5	10YR 2/1	100					Silt Loam	
4.5-9	10YR 4/1	98	2.5YR 4/8	2	C	M	Loamy Sand	Prominent redox concentrations.
9-18	10YR 4/4	98	10YR 4/6	2	C	M	Loamy Sand	Distinct redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
X	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP04

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 18, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Shoulder Slope Local relief (concave, convex, none): Convex Slope (%): 1%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.067534° N Long. 87.634079° W Datum: WGS 84

Soil Map Unit Name: Shawano loamy fine sand, 6 to 12 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation Soil or Hydrology significantly disturbed?

Are Vegetation Soil or Hydrology naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No

Hydric Soil Present? Yes No X

Wetland Hydrology Present? Yes No X

Is the Sampled Area within a Wetland?

Yes **No** X

If yes, optional Wetland Site ID:

Remarks:
Photo 04 in Appendix B. Upland data point recorded at the boundary of W01. Based on the absence of two out of three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)		Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)		FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes X No Depth (inches) 24

Saturation Present? Yes X No Depth (inches) 21

Wetland Hydrology Present?

Yes **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range. Based on generally wet summer and water balance tables for the region, this survey was not considered to be conducted during the dry season.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP04

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1. *Pinus sylvestris*	20	Y	UPL
2. *Populus tremuloides*	15	Y	FACU
3.			
4.			
5.			
6.			
7.			
50%= 17.5% 20%= 7.0%	35	Total Cover	
Shrub Stratum (Plot size: 15')			
1. *Rhamnus cathartica*	80	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
50%= 40.0% 20%= 16.0%	80	Total Cover	
Herb Stratum (Plot size: 5')			
1. *Phalaris arundinacea*	30	Y	FACW
2. *Rhamnus cathartica*	30	Y	FAC
3. *Onoclea sensibilis*	30	Y	FACW
4. *Scirpus cyperinus*	2	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
50%= 46.0% 20%= 18.4%	92	Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
50%= 0.0% 20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 4 (A)

Total number of dominant species across all strata: 6 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	2	x	1	2
FACW species	60	x	2	120
FAC species	110	x	3	330
FACU species	15	x	4	60
UPL species	20	x	5	100
Column Totals:	207 (A)			612 (B)
Prevalence Index:				3.0 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP04

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-5	10YR 2/1	100					Silt Loam	
5-9	10YR 4/4	100					Loamy Sand	
9-18	10YR 4/4	85	2.5YR 4/8	5	C	M	Loamy Sand	Prominent redox concentrations.
	10YR 2/2	10					Loamy Sand	

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes **No** X

Remarks:
The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP05

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 18, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): ToeSlope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.067336° N Long. 87.634201° W Datum: WGS 84

Soil Map Unit Name: Shawano loamy fine sand, 6 to 12 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland?

Yes X **No** ____

If yes, optional Wetland Site ID: W01

Remarks:
Photo 05 in Appendix B. This data point was recorded to document representative PSS vegetative conditions within W01. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
X	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
X	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes X No ____ Depth (inches) 12

Saturation Present? Yes X No ____ Depth (inches) 8

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP05

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.	*Rhamnus cathartica*	100	Y	FAC
2.				
3.				
4.				
5.				
6.				
7.				
50%= 50.0%	20%= 20.0%	100	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Onoclea sensibilis*	60	Y	FACW
2.	*Rhamnus cathartica*	20	Y	FAC
3.	*Phalaris arundinacea*	20	Y	FACW
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 50.0%	20%= 20.0%	100	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 4 (A)

Total number of dominant species across all strata: 4 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	80	x	2	160
FAC species	120	x	3	360
FACU species	0	x	4	0
UPL species	0	x	5	0
Column Totals:	200 (A)			520 (B)
			Prevalence Index:	2.6 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP05

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-4.5	10YR 2/1	100					Silt Loam	
4.5-9	10YR 4/1	98	2.5YR 4/8	2	C	M	Loamy Sand	Prominent redox concentrations.
9-18	10YR 4/4	98	10YR 4/6	2	C	M	Loamy Sand	Distinct redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
X	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP06

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 19, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.067336° N Long. 87.634201° W Datum: WGS 84

Soil Map Unit Name: Wainola loamy fine sand, 0 to 3 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation Soil or Hydrology significantly disturbed?

Are Vegetation Soil or Hydrology naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No

Hydric Soil Present? Yes X No

Wetland Hydrology Present? Yes X No

Is the Sampled Area within a Wetland?

Yes X **No**

If yes, optional Wetland Site ID: W02

Remarks:
Photo 06 in Appendix B. This data point was recorded to document conditions within WDNR wetland indicators layer near WWI feature. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes No X Depth (inches)

Saturation Present? Yes No X Depth (inches)

Wetland Hydrology Present?

Yes X **No**

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP06

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.	*Rhamnus cathartica*	10	Y	FAC
2.				
3.				
4.				
5.				
6.				
7.				
50%= 5.0%	20%= 2.0%	10	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Phalaris arundinacea*	50	Y	FACW
2.	*Onoclea sensibilis*	10	N	FACW
3.	*Rhamnus cathartica*	10	N	FAC
4.	*Solidago canadensis*	10	N	FACU
5.	*Solidago gigantea*	10	N	FACW
6.	*Bromus inermis*	10	N	UPL
7.				
8.				
9.				
10.				
11.				
12.				
50%= 50.0%	20%= 20.0%	100	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 2 (A)

Total number of dominant species across all strata: 2 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	70	x	2	140
FAC species	20	x	3	60
FACU species	10	x	4	40
UPL species	10	x	5	50
Column Totals:	110 (A)			290 (B)
			Prevalence Index:	2.6 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP06

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-4	10YR 2/1	100					Silt Loam	
4-12	10YR 5/2	98	10YR 3/6	2	C	M	Loamy Sand	Prominent redox concentrations.
12-24	10YR 3/3	80	10YR 3/6	20	C	M	Sandy Loam	Distinct redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
X	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
X	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP07

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 19, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.062328° N Long. 87.637983° W Datum: WGS 84

Soil Map Unit Name: Wainola loamy fine sand, 0 to 3 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation Soil or Hydrology significantly disturbed?

Are Vegetation Soil or Hydrology naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No

Hydric Soil Present? Yes X No

Wetland Hydrology Present? Yes X No

Is the Sampled Area within a Wetland?

Yes X **No**

If yes, optional Wetland Site ID: W02

Remarks:
Photo 07 in Appendix B. PSS wetland data point recorded at the boundary of W02. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes No X Depth (inches)

Saturation Present? Yes No X Depth (inches)

Wetland Hydrology Present?

Yes X **No**

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP07

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1. *Abies balsamea*	20	Y	FAC
2. *Rhamnus cathartica*	20	Y	FAC
3. *Ulmus americana*	10	Y	FACW
4.			
5.			
6.			
7.			
50%= 25.0% 20%= 10.0%	50	Total Cover	
Shrub Stratum (Plot size: 15')			
1. *Frangula alnus*	50	Y	FAC
2. *Rhamnus cathartica*	30	Y	FAC
3.			
4.			
5.			
6.			
7.			
50%= 40.0% 20%= 16.0%	80	Total Cover	
Herb Stratum (Plot size: 5')			
1. *Phalaris arundinacea*	20	Y	FACW
2. *Onoclea sensibilis*	20	Y	FACW
3. *Rhamnus cathartica*	20	Y	FAC
4. *Solidago canadensis*	10	N	FACU
5. *Equisetum arvense*	10	N	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
50%= 40.0% 20%= 16.0%	80	Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
50%= 0.0% 20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 8 (A)

Total number of dominant species across all strata: 8 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	50	x	2	100
FAC species	150	x	3	450
FACU species	10	x	4	40
UPL species	0	x	5	0
Column Totals:	210 (A)			590 (B)
			Prevalence Index:	2.8 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP07

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-9	10YR 2/1	100					Silt Loam	
9-24	10YR 6/2	95	10YR 5/8	5	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:				**Indicators for Problematic Soils**	
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
X	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP08

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 19, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Back Slope Local relief (concave, convex, none): Convex Slope (%): 2%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.062339° N Long. 87.637979° W Datum: WGS 84

Soil Map Unit Name: Wainola loamy fine sand, 0 to 3 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation Soil or Hydrology significantly disturbed?

Are Vegetation Soil or Hydrology naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes No X **Is the Sampled Area within a Wetland?**

Hydric Soil Present? Yes No X **Yes** **No** X

Wetland Hydrology Present? Yes No X If yes, optional Wetland Site ID:

Remarks:
Photo 08 in Appendix B. Upland data point recorded at the boundary of W02. Based on the absence of all three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)		Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)		FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes No X Depth (inches)

Saturation Present? Yes No X Depth (inches)

Wetland Hydrology Present?

Yes **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP08

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Phalaris arundinacea*	40	Y	FACW
2.	*Bromus inermis*	40	Y	UPL
3.	*Solidago canadensis*	20	N	FACU
4.	*Melilotus officinalis*	1	N	FACU
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 50.5%	20%= 20.2%	101	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)

Total number of dominant species across all strata: 2 (B)

Percent of dominant species that are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	40	x	2	80
FAC species	0	x	3	0
FACU species	21	x	4	84
UPL species	40	x	5	200
Column Totals:	101 (A)			364 (B)
Prevalence Index:				3.6 (B/A)

Hydrophytic Vegetation Indicators:

_____ Rapid Test for Hydrophytic Vegetation

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0*

_____ Morphological Adaptations*

_____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP08

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-4	10YR 2/2	100					Silt Loam	
4-20	10YR 4/6	98	10YR 5/8	2	C	M	Loamy Sand	Distinct redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:				**Indicators for Problematic Soils**	
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes _____ **No** X

Remarks:
The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP09

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 19, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 1%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.061829° N Long. 87.638841° W Datum: WGS 84

Soil Map Unit Name: Rousseau loamy fine sand, 1 to 6 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland?

Yes X **No** ____

If yes, optional Wetland Site ID: W03

Remarks:
Photo 09 in Appendix B. PEM wetland data point recorded on a floodplain terrace of S01 at the boundary of W03. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
	Surface Water (A1)	X	Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)	X	Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP09

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Impatiens capensis*	80	Y	FACW
2.	*Phalaris arundinacea*	20	N	FACW
3.	*Urtica dioica*	5	N	FAC
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 52.5%	20%= 21.0%	105	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)

Total number of dominant species across all strata: 1 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	100	x	2	200
FAC species	5	x	3	15
FACU species	0	x	4	0
UPL species	0	x	5	0
Column Totals:	105 (A)			215 (B)
			Prevalence Index:	2.0 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP09

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-3	10YR 2/2	100					Silt Loam	
3-18	10YR 3/2	80	10YR 5/8	20	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
X	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP10

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 19, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Shoulder Slope Local relief (concave, convex, none): Convex Slope (%): 2%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.061828° N Long. 87.638825° W Datum: WGS 84

Soil Map Unit Name: Rousseau loamy fine sand, 1 to 6 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes No X **Is the Sampled Area within a Wetland?**

Hydric Soil Present? Yes No X **Yes** **No** X

Wetland Hydrology Present? Yes No X If yes, optional Wetland Site ID:

Remarks:
Photo 10 in Appendix B. Upland data point recorded at the boundary of W03. Based on the absence of all three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)		Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)		FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes No X Depth (inches)

Saturation Present? Yes No X Depth (inches)

Wetland Hydrology Present?

Yes **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP10

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.	*Robinia pseudoacacia*	50	Y	FACU
2.				
3.				
4.				
5.				
6.				
7.				
50%= 25.0%	20%= 10.0%	50	Total Cover	
Shrub Stratum	**Plot size: 15'**			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Herb Stratum	**Plot size: 5'**			
1.	*Bromus inermis*	80	Y	UPL
2.	*Solidago canadensis*	20	N	FACU
3.	*Ambrosia artemisiifolia*	2	N	FACU
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 51.0%	20%= 20.4%	102	Total Cover	
Woody Vine Stratum	**Plot size: 30'**			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 0 (A)

Total number of dominant species across all strata: 2 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	0	x	2	0
FAC species	0	x	3	0
FACU species	72	x	4	288
UPL species	80	x	5	400
Column Totals:	152 (A)			688 (B)
			Prevalence Index:	4.5 (B/A)

Hydrophytic Vegetation Indicators:

_____ Rapid Test for Hydrophytic Vegetation

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0*

_____ Morphological Adaptations*

_____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP10

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-5	10YR 2/2	100					Silt Loam	
5-10	10YR 3/3	98	10YR 4/6	2	C	M	Loamy Sand	Distinct redox concentrations.
10-18	10YR 3/3	90	10YR 4/6	8	C	M	Loamy Sand	Distinct redox concentrations.
			10YR 4/2	2	D	M		

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes **No** X

Remarks:
The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP11

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 19, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.061456° N Long. 87.639099° W Datum: WGS 84

Soil Map Unit Name: Rousseau loamy fine sand, 1 to 6 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No

Hydric Soil Present? Yes X No

Wetland Hydrology Present? Yes X No

Is the Sampled Area within a Wetland?

Yes X **No**

If yes, optional Wetland Site ID: W03

Remarks:
Photo 11 in Appendix B. PEM wetland data point recorded on a floodplain terrace of S01 in W03. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP11

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Impatiens capensis*	70	Y	FACW
2.	*Phalaris arundinacea*	30	Y	FACW
3.	*Carex stipata*	2	N	OBL
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 51.0%	20%= 20.4%	102	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 2 (A)

Total number of dominant species across all strata: 2 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	2	x	1	2
FACW species	100	x	2	200
FAC species	0	x	3	0
FACU species	0	x	4	0
UPL species	0	x	5	0
Column Totals:	102 (A)			202 (B)
			Prevalence Index:	2.0 (B/A)

Hydrophytic Vegetation Indicators:

- x Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ___ Morphological Adaptations*
- ___ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP11

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/2	100					Silt Loam	
6-18	10YR 3/2	75	10YR 4/6	10	C	M	Loamy Sand	Prominent redox concentrations.
			10YR 5/2	10	D	M		

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
X	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP12

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 19, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Shoulder Slope Local relief (concave, convex, none): Convex Slope (%): 15%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.061472° N Long. 87.639105° W Datum: WGS 84

Soil Map Unit Name: Rousseau loamy fine sand, 1 to 6 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes No X **Is the Sampled Area within a Wetland?**

Hydric Soil Present? Yes No X **Yes** **No** X

Wetland Hydrology Present? Yes No X If yes, optional Wetland Site ID:

Remarks:
Photo 12 in Appendix B. Upland data point recorded at the boundary of W03. Based on the absence of all three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)	Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)	Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)	Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)	Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)	Crayfish Burrows (C8)
	Drift Deposits (B3)			Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)			Shallow Aquitard (D3)
			Thin Muck Surface (C7)	Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes No X Depth (inches)

Saturation Present? Yes No X Depth (inches)

Wetland Hydrology Present?

Yes **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP12

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Bromus inermis*	60	Y	UPL
2.	*Ambrosia artemisiifolia*	40	Y	FACU
3.	*Cirsium vulgare*	2	N	FACU
4.	*Urtica dioica*	1	N	FAC
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 51.5%	20%= 20.6%	103	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 0 (A)

Total number of dominant species across all strata: 2 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	0	x	2	0
FAC species	1	x	3	3
FACU species	42	x	4	168
UPL species	60	x	5	300
Column Totals:	103 (A)			471 (B)
			Prevalence Index:	4.6 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- ____ Dominance Test is >50%
- ____ Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes ____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP12

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/2	100					Sandy Loam	
6-18	10YR 3/3	80	10YR 4/6	10	C	M	Loamy Sand	Distinct redox concentrations.
			10YR 5/2	10	D	M		

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes _____ **No** X

Remarks:
The criterion for hydric soil is not met. No stripping observed.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP13

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 19, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.061186° N Long. 87.639562° W Datum: WGS 84

Soil Map Unit Name: Deford and Cormant soils, 0 to 2 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland?

Yes X **No** ____

If yes, optional Wetland Site ID: W03

Remarks:
Photo 13 in Appendix B. This data point was recorded to document representative PSS vegetative conditions within W03. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP13

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.	*Frangula alnus*	90	Y	FAC
2.				
3.				
4.				
5.				
6.				
7.				
50%= 45.0%	20%= 18.0%	90	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Onoclea sensibilis*	80	Y	FACW
2.	*Frangula alnus*	10	N	FAC
3.	*Phalaris arundinacea*	5	N	FACW
4.	*Equisetum arvense*	5	N	FAC
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 50.0%	20%= 20.0%	100	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 2 (A)

Total number of dominant species across all strata: 2 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	85	x	2	170
FAC species	105	x	3	315
FACU species	0	x	4	0
UPL species	0	x	5	0
Column Totals:	190 (A)			485 (B)
			Prevalence Index:	2.6 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP13

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/2	100					Silt Loam	
6-18	10YR 3/2	75	10YR 4/6	10	C	M	Loamy Sand	Prominent redox concentrations.
			10YR 5/2	10	D	M		

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
X	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/9/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP14

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 24, Township 30N, Range 23E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.060608° N Long. 87.640853° W Datum: WGS 84

Soil Map Unit Name: Rousseau loamy fine sand, 1 to 6 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland?

Yes X **No** ____

If yes, optional Wetland Site ID: W03

Remarks:
Photo 14 in Appendix B. This data point was recorded at the edge of a mowed lawn to document undisturbed vegetative conditions and provide justification for classifying the mowed lawn as wetland. Soil and hydrology were the same in the mowed lawn. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
X	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes X No ____ Depth (inches) 14

Saturation Present? Yes X No ____ Depth (inches) 10

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP14

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
50%= 0.0% 20%= 0.0%	0	Total Cover	
Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
50%= 0.0% 20%= 0.0%	0	Total Cover	
Herb Stratum (Plot size: 5')			
1. *Eleocharis acicularis*	70	Y	OBL
2. *Schoenoplectus pungens*	15	N	OBL
3. *Phalaris arundinacea*	15	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
50%= 50.0% 20%= 20.0%	100	Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
50%= 0.0% 20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)

Total number of dominant species across all strata: 1 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	85	x	1	85
FACW species	15	x	2	30
FAC species	0	x	3	0
FACU species	0	x	4	0
UPL species	0	x	5	0
Column Totals:	100 (A)			115 (B)
Prevalence Index:				1.2 (B/A)

Hydrophytic Vegetation Indicators:

- x Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- Morphological Adaptations*
- Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No**

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP14

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-5	10YR 2/2	90	10YR 4/6	10	C	M	Silt Loam	Prominent redox concentrations.
5-18	10YR 4/6	90	2.5YR 5/8	10	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)	X	Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP15

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 24, Township 30N, Range 23E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.060257° N Long. 87.641786° W Datum: WGS 84

Soil Map Unit Name: Wainola loamy fine sand, 0 to 3 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation X Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland?

Yes X **No** ____

If yes, optional Wetland Site ID: W03

Remarks:
Photo 15 in Appendix B. This data point was recorded in a mowed section of road ditch to document wetland conditions in disturbed vegetation. Vegetation was considered significantly disturbed due to recent mowing. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP15

Tree Stratum (Plot size: 30')		Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum (Plot size: 15')				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Herb Stratum (Plot size: 5')				
1.	*Eleocharis acicularis*	80	Y	OBL
2.	*Carex stipata*	20	N	OBL
3.	*Schoenoplectus pungens*	1	N	OBL
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 50.5%	20%= 20.2%	101	Total Cover	
Woody Vine Stratum (Plot size: 30')				
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)

Total number of dominant species across all strata: 1 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	101	x	1	101
FACW species	0	x	2	0
FAC species	0	x	3	0
FACU species	0	x	4	0
UPL species	0	x	5	0
Column Totals:	101 (A)			101 (B)
			Prevalence Index:	1.0 (B/A)

Hydrophytic Vegetation Indicators:

- x Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- Morphological Adaptations*
- Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No**

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met. Vegetation was considered significantly disturbed due to routine mowing. Remaining vegetation and volunteer species were hydrophytic.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP15

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/2	100					Silt Loam	
6-18	10YR 3/2	95	2.5YR 4/8	5	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
X	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP16

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 24, Township 30N, Range 23E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.057531° N Long. 87.646446° W Datum: WGS 84

Soil Map Unit Name: Wainola loamy fine sand, 0 to 3 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland?

Yes X **No** ____

If yes, optional Wetland Site ID: W03

Remarks:
Photo 16 in Appendix B. PSS data point recorded at the boundary of W03. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)	X	Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP16

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
50%= 0.0% 20%= 0.0%	0	Total Cover	
Shrub Stratum (Plot size: 15')			
1. *Acer negundo*	15	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
50%= 7.5% 20%= 3.0%	15	Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex stipata*	90	Y	OBL
2. *Onoclea sensibilis*	5	N	FACW
3. *Parthenocissus quinquefolia*	5	N	FACU
4. *Verbena hastata*	2	N	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
50%= 51.0% 20%= 20.4%	102	Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
50%= 0.0% 20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 2 (A)

Total number of dominant species across all strata: 2 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	90	x	1	90
FACW species	7	x	2	14
FAC species	15	x	3	45
FACU species	5	x	4	20
UPL species	0	x	5	0
Column Totals:	117 (A)			169 (B)
			Prevalence Index:	1.4 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP16

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-4	10YR 2/2	100					Silt Loam	
4-8	10YR 4/6	98	2.5YR 5/8	2	C	M	Loamy Sand	Prominent redox concentrations.
8-14	10YR 2/1	96	10YR 4/6	2	C	M	Sandy Loam	Prominent redox concentrations.
			10YR 4/2	2	D	M		
14-20	10YR 5/2	90	10YR 4/6	10	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:				**Indicators for Problematic Soils**	
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)	X	Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP17

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 24, Township 30N, Range 23E

Landform (hillslope,terrace,etc.): Back Slope Local relief (concave, convex, none): Concave Slope (%): 2%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.057465° N Long. 87.646502° W Datum: WGS 84

Soil Map Unit Name: Wainola loamy fine sand, 0 to 3 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation Soil or Hydrology significantly disturbed?

Are Vegetation Soil or Hydrology naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes No X

Hydric Soil Present? Yes No X

Wetland Hydrology Present? Yes No X

Is the Sampled Area within a Wetland?

Yes **No** X

If yes, optional Wetland Site ID:

Remarks:
Photo 17 in Appendix B. Upland data point recorded at the boundary of W03. Based on the absence of all three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)		Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)		FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes No X Depth (inches)

Saturation Present? Yes No X Depth (inches)

Wetland Hydrology Present?

Yes **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP17

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.	*Acer negundo*	15	Y	FAC
2.				
3.				
4.				
5.				
6.				
7.				
50%= 7.5%	20%= 3.0%	15	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Bromus inermis*	55	Y	UPL
2.	*Phalaris arundinacea*	20	N	FACW
3.	*Solidago canadensis*	20	N	FACU
4.	*Achillea millefolium*	5	N	FACU
5.	*Parthenocissus quinquefolia*	2	N	FACU
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 51.0%	20%= 20.4%	102	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)

Total number of dominant species across all strata: 2 (B)

Percent of dominant species that are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	20	x	2	40
FAC species	15	x	3	45
FACU species	27	x	4	108
UPL species	55	x	5	275
Column Totals:	117 (A)			468 (B)
			Prevalence Index:	4.0 (B/A)

Hydrophytic Vegetation Indicators:

_ Rapid Test for Hydrophytic Vegetation

_ Dominance Test is >50%

_ Prevalence Index is ≤3.0*

_ Morphological Adaptations*

_ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes _ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP17

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/1	100					Silt Loam	
6-12	10YR 2/2	98	10YR 4/6	2	C	M	Loam	Prominent redox concentrations.
12-20	10YR 2/2	80	10YR 4/6	10	C	M	Sandy Loam	Prominent redox concentrations.
			10YR 5/2	10	D	M		

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes **No** X

Remarks:
The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP18

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 19, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Shoulder Slope Local relief (concave, convex, none): Convex Slope (%): 2%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.061261° N Long. 87.639725° W Datum: WGS 84

Soil Map Unit Name: Deford and Cormant soils, 0 to 2 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes ____ No X **Is the Sampled Area within a Wetland?**

Hydric Soil Present? Yes X No ____ **Yes** ____ **No** X

Wetland Hydrology Present? Yes ____ No X If yes, optional Wetland Site ID: ____

Remarks:
Photo 18 in Appendix B. Upland data point recorded at the boundary of W03. Based on the absence of two out of three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)		Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)		FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____

Wetland Hydrology Present?

Yes ____ **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP18

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Bromus inermis*	90	Y	UPL
2.	*Daucus carota*	5	N	UPL
3.	*Solidago canadensis*	5	N	FACU
4.	*Achillea millefolium*	1	N	FACU
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 50.5%	20%= 20.2%	101	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 0 (A)

Total number of dominant species across all strata: 1 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	0	x	2	0
FAC species	0	x	3	0
FACU species	6	x	4	24
UPL species	95	x	5	475
Column Totals:	101 (A)			499 (B)
			Prevalence Index:	4.9 (B/A)

Hydrophytic Vegetation Indicators:

_____ Rapid Test for Hydrophytic Vegetation

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0*

_____ Morphological Adaptations*

_____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP18

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/2	98	10YR 4/6	2	C	M	Silt Loam	Prominent redox concentrations.
6-18	10YR 5/2	85	10YR 4/6	15	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
X	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
X	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP19

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 19, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.061229° N Long. 87.639823° W Datum: WGS 84

Soil Map Unit Name: Deford and Cormant soils, 0 to 2 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland?

Yes X **No** ____

If yes, optional Wetland Site ID: W03

Remarks:
Photo 19 in Appendix B. PEM data point recorded at the boundary of W03. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
X	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
X	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes X No ____ Depth (inches) 12

Saturation Present? Yes X No ____ Depth (inches) 4

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP19

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.	*Alnus incana*	20	Y	FACW
2.				
3.				
4.				
5.				
6.				
7.				
50%= 10.0%	20%= 4.0%	20	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Phalaris arundinacea*	80	Y	FACW
2.	*Typha latifolia*	10	N	OBL
3.	*Eutrochium maculatum*	10	N	OBL
4.	*Impatiens capensis*	2	N	FACW
5.	*Solidago gigantea*	2	N	FACW
6.	*Solidago canadensis*	2	N	FACU
7.	*Onoclea sensibilis*	2	N	FACW
8.				
9.				
10.				
11.				
12.				
50%= 54.0%	20%= 21.6%	108	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 2 (A)

Total number of dominant species across all strata: 2 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	20	x	1	20
FACW species	106	x	2	212
FAC species	0	x	3	0
FACU species	2	x	4	8
UPL species	0	x	5	0
Column Totals:	128 (A)			240 (B)
			Prevalence Index:	1.9 (B/A)

Hydrophytic Vegetation Indicators:

- x Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- Morphological Adaptations*
- Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No**

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP19

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-3	10YR 2/1	100					Silt Loam	Mucky.
3-6	10YR 2/1	100					Silt Loam	
6-20	10YR 2/1	90	10YR 4/6	5	C	M	Silt Loam	Prominent redox concentrations.
			10YR 4/2	5	D	M		
20-26	10YR 4/2	95	10YR 4/6	5	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
X	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)	X	Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP20

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 19, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.060126° N Long. 87.642521° W Datum: WGS 84

Soil Map Unit Name: Wainola loamy fine sand, 0 to 3 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation Soil or Hydrology significantly disturbed?

Are Vegetation Soil or Hydrology naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No

Hydric Soil Present? Yes X No

Wetland Hydrology Present? Yes X No

Is the Sampled Area within a Wetland?

Yes X **No**

If yes, optional Wetland Site ID: W03

Remarks:
Photo 20 in Appendix B. This data point was recorded to document representative PSS vegetative conditions within W03. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes No X Depth (inches)

Saturation Present? Yes No X Depth (inches)

Wetland Hydrology Present?

Yes X **No**

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP20

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.	*Frangula alnus*	95	Y	FAC
2.				
3.				
4.				
5.				
6.				
7.				
50%= 47.5%	20%= 19.0%	95	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Onoclea sensibilis*	20	Y	FACW
2.	*Frangula alnus*	20	Y	FAC
3.	*Equisetum arvense*	5	N	FAC
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 22.5%	20%= 9.0%	45	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 3 (A)

Total number of dominant species across all strata: 3 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	20	x	2	40
FAC species	120	x	3	360
FACU species	0	x	4	0
UPL species	0	x	5	0
Column Totals:	140 (A)			400 (B)
			Prevalence Index:	2.9 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP20

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-6	10YR 2/1	98	10YR 4/6	2	C	M	Silt Loam	Prominent redox concentrations.
6-18	10YR 4/6	95	2.5YR 5/8	5	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)	X	Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP21

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 24, Township 30N, Range 23E

Landform (hillslope,terrace,etc.): Back Slope Local relief (concave, convex, none): Concave Slope (%): 2%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.058294° N Long. 87.646031° W Datum: WGS 84

Soil Map Unit Name: Wainola loamy fine sand, 0 to 3 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation Soil or Hydrology significantly disturbed?

Are Vegetation Soil or Hydrology naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes No X **Is the Sampled Area within a Wetland?**

Hydric Soil Present? Yes No X **Yes** **No** X

Wetland Hydrology Present? Yes No X If yes, optional Wetland Site ID:

Remarks:
Photo 21 in Appendix B. Upland data point recorded at the boundary of W03. Based on the absence of two out of three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
Surface Water (A1)	Water Stained Leaves (B9)	Surface Soil Cracks (B6)	
High Water Table (A2)	Aquatic Fauna (B13)	Drainage Patterns (B10)	
Saturation (A3)	Marl Deposits (B15)	Moss Tim Lines (B6)	
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Dry-Season Water Table (C2)	
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Crayfish Burrows (C8)	
Drift Deposits (B3)		Saturation Visible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)	
Iron Deposits (B5)	Recent Iron Reduction in Tilled Soil (C6)	Geomorphic Position (D2)	
Inundation Visible on Aerial Imagery (B7)		Shallow Aquitard (D3)	
	Thin Muck Surface (C7)	Microtopographic Relief (D4)	
Sparsely Vegetated Concave Surface (B8)	Other (Explain in Remarks)	FAC-Neutral Test (D5)	

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes No X Depth (inches)

Saturation Present? Yes No X Depth (inches)

Wetland Hydrology Present?

Yes **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP21

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.	*Rhamnus cathartica*	5	Y	FAC
2.				
3.				
4.				
5.				
6.				
7.				
50%= 2.5%	20%= 1.0%	5	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Bromus inermis*	90	Y	UPL
2.	*Solidago canadensis*	5	N	FACU
3.	*Symphyotrichum novae-angliae*	2	N	FACW
4.	*Parthenocissus quinquefolia*	2	N	FACU
5.	*Daucus carota*	2	N	UPL
6.	*Equisetum arvense*	2	N	FAC
7.	*Equisetum hyemale*	2	N	FAC
8.				
9.				
10.				
11.				
12.				
50%= 52.5%	20%= 21.0%	105	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)

Total number of dominant species across all strata: 2 (B)

Percent of dominant species that are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	2	x	2	4
FAC species	9	x	3	27
FACU species	7	x	4	28
UPL species	92	x	5	460
Column Totals:	110 (A)			519 (B)
Prevalence Index:				4.7 (B/A)

Hydrophytic Vegetation Indicators:

_____ Rapid Test for Hydrophytic Vegetation

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0*

_____ Morphological Adaptations*

_____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP21

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-4	10YR 2/2	100					Silt Loam	
4-18	10YR 4/6	98	2.5YR 5/8	2	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:				**Indicators for Problematic Soils**	
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes _____ **No** X

Remarks:
The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP22

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 24, Township 30N, Range 23E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.058356° N Long. 87.645943° W Datum: WGS 84

Soil Map Unit Name: Wainola loamy fine sand, 0 to 3 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation Soil or Hydrology significantly disturbed?

Are Vegetation Soil or Hydrology naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No

Hydric Soil Present? Yes X No

Wetland Hydrology Present? Yes X No

Is the Sampled Area within a Wetland?

Yes X **No**

If yes, optional Wetland Site ID: W03

Remarks:
Photo 22 in Appendix B. PSS data point recorded at the boundary of W03. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes No X Depth (inches)

Saturation Present? Yes No X Depth (inches)

Wetland Hydrology Present?

Yes X **No**

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP22

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.	*Frangula alnus*	50	Y	FAC
2.	*Alnus incana*	10	N	FACW
3.				
4.				
5.				
6.				
7.				
50%= 30.0%	20%= 12.0%	60	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Frangula alnus*	20	Y	FAC
2.	*Alnus incana*	20	Y	FACW
3.	*Equisetum arvense*	5	N	FAC
4.	*Carex stipata*	5	N	OBL
5.	*Equisetum hyemale*	5	N	FAC
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 27.5%	20%= 11.0%	55	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 3 (A)

Total number of dominant species across all strata: 3 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	5	x	1	5
FACW species	30	x	2	60
FAC species	80	x	3	240
FACU species	0	x	4	0
UPL species	0	x	5	0
Column Totals:	115 (A)			305 (B)
			Prevalence Index:	2.7 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP22

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-4	10YR 2/2	100					Silt Loam	
4-18	10YR 3/2	98	2.5YR 5/8	2	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
X	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP23

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 24, Township 30N, Range 23E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.056457° N Long. 87.646775° W Datum: WGS 84

Soil Map Unit Name: Shawano loamy fine sand, 2 to 6 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation X Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland?

Yes X **No** ____

If yes, optional Wetland Site ID: W04

Remarks:
Photo 23 in Appendix B. PEM data point recorded at the boundary of W04. Vegetation was considered significantly disturbed due to recent mowing. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
X	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes X No ____ Depth (inches) 18

Saturation Present? Yes X No ____ Depth (inches) 6

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP23

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.	*Frangula alnus*	10	Y	FAC
2.				
3.				
4.				
5.				
6.				
7.				
50%= 5.0%	20%= 2.0%	10	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Onoclea sensibilis*	20	Y	FACWV
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 10.0%	20%= 4.0%	20	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 2 (A)

Total number of dominant species across all strata: 2 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	20	x	2	40
FAC species	10	x	3	30
FACU species	0	x	4	0
UPL species	0	x	5	0
Column Totals:	30 (A)			70 (B)
			Prevalence Index:	2.3 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met. Vegetation was considered significantly disturbed due to recent mowing. There was a lot of woody debris from mowing. Remaining vegetation and volunteer species were hydrophytic.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP23

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-12	10YR 2/2	80	10YR 4/6	10	C	M	Loamy Sand	Prominent redox concentrations.
			10YR 4/2	10	D	M		
12-18	10YR 4/2	90	10YR 4/6	10	C	M	Loamy Sand	Prominent redox concentrations.
18-24	10YR 4/6	90	2.5YR 5/8	10	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
X	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP24

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 24, Township 30N, Range 23E

Landform (hillslope,terrace,etc.): Shoulder Slope Local relief (concave, convex, none): Convex Slope (%): 2%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.056488° N Long. 87.647009° W Datum: WGS 84

Soil Map Unit Name: Shawano loamy fine sand, 2 to 6 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes ____ No X **Is the Sampled Area within a Wetland?**

Hydric Soil Present? Yes ____ No X **Yes** ____ **No** X

Wetland Hydrology Present? Yes ____ No X If yes, optional Wetland Site ID: ____

Remarks:
Photo 24 in Appendix B. Upland data point recorded at the boundary of W04. Based on the absence of all three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)		Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)		FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____

Wetland Hydrology Present?

Yes ____ **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP24

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1. *Pinus resinosa*	20	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
50%= 10.0% 20%= 4.0%	20	Total Cover	
Shrub Stratum (Plot size: 15')			
1. *Frangula alnus*	5	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
50%= 2.5% 20%= 1.0%	5	Total Cover	
Herb Stratum (Plot size: 5')			
1. *Bromus inermis*	90	Y	UPL
2. *Solidago canadensis*	10	N	FACU
3. *Asparagus officinalis*	1	N	FACU
4. *Verbascum thapsus*	1	N	UPL
5. *Centaurea stoebe*	1	N	UPL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
50%= 51.5% 20%= 20.6%	103	Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
50%= 0.0% 20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)

Total number of dominant species across all strata: 3 (B)

Percent of dominant species that are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	0	x	2	0
FAC species	5	x	3	15
FACU species	31	x	4	124
UPL species	92	x	5	460
Column Totals:	128 (A)			599 (B)
Prevalence Index:				4.7 (B/A)

Hydrophytic Vegetation Indicators:

_____ Rapid Test for Hydrophytic Vegetation

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0*

_____ Morphological Adaptations*

_____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP24

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-3	10YR 2/2	100					Silt Loam	
3-12	10YR 4/6	100					Loamy Sand	
12-18	10YR 3/3	90	10YR 4/6	10	C	M	Loamy Sand	Distinct redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes _____ **No** X

Remarks:
The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP25

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 24, Township 30N, Range 23E

Landform (hillslope,terrace,etc.): Back Slope Local relief (concave, convex, none): Concave Slope (%): 5%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.056313° N Long. 87.64675° W Datum: WGS 84

Soil Map Unit Name: Shawano loamy fine sand, 2 to 6 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation X Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes ____ No X **Is the Sampled Area within a Wetland?**

Hydric Soil Present? Yes X No ____ **Yes** ____ **No** X

Wetland Hydrology Present? Yes ____ No X If yes, optional Wetland Site ID: ____

Remarks:
Photo 25 in Appendix B. Upland data point recorded at the boundary of W05. Vegetation was considered significantly disturbed due to mowing, but did not contain hydrophytic volunteer species as observed at DP26. Based on the absence of two out of three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)		Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)		FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____

Wetland Hydrology Present?

Yes ____ **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP25

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1. *Quercus velutina*	30	Y	UPL
2. *Betula papyrifera*	15	Y	FACU
3. *Populus tremuloides*	10	N	FACU
4.			
5.			
6.			
7.			
50%= 27.5% 20%= 11.0%	55	Total Cover	
Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
50%= 0.0% 20%= 0.0%	0	Total Cover	
Herb Stratum (Plot size: 5')			
1. *Poa pratensis*	95	Y	FACU
2. *Ambrosia artemisiifolia*	2	N	FACU
3. *Taraxacum officinale*	2	N	FACU
4. *Verbascum thapsus*	2	N	UPL
5. *Onoclea sensibilis*	2	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
50%= 51.5% 20%= 20.6%	103	Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
50%= 0.0% 20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 0 (A)

Total number of dominant species across all strata: 3 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	2	x	2	4
FAC species	0	x	3	0
FACU species	124	x	4	496
UPL species	32	x	5	160
Column Totals:	158 (A)			660 (B)
Prevalence Index:				4.2 (B/A)

Hydrophytic Vegetation Indicators:

_ Rapid Test for Hydrophytic Vegetation

_ Dominance Test is >50%

_ Prevalence Index is ≤3.0*

_ Morphological Adaptations*

_ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes _ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP25

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-9	10YR 2/1	100					Silt Loam	
9-18	10YR 4/2	98	10YR 4/6	2	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
X	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP26

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 24, Township 30N, Range 23E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 1%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.056312° N Long. 87.646627° W Datum: WGS 84

Soil Map Unit Name: Shawano loamy fine sand, 2 to 6 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation X Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland?

Yes X **No** ____

If yes, optional Wetland Site ID: W05

Remarks:
Photo 26 in Appendix B. PEM data point recorded at the boundary of W05. Vegetation was considered significantly disturbed due to recent mowing. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)	X	Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)		FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes ____ No X Depth (inches) ____

Saturation Present? Yes ____ No X Depth (inches) ____

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP26

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Poa pratensis*	60	Y	FACU
2.	*Onoclea sensibilis*	40	Y	FACW
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 50.0%	20%= 20.0%	100	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)

Total number of dominant species across all strata: 2 (B)

Percent of dominant species that are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	40	x	2	80
FAC species	0	x	3	0
FACU species	60	x	4	240
UPL species	0	x	5	0
Column Totals:	100 (A)			320 (B)
			Prevalence Index:	3.2 (B/A)

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0*
- ___ Morphological Adaptations*
- X Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for problematic hydrophytic vegetation is met by utilizing the Problematic Hydrophytic Vegetation Section 4d(4) of the Regional Supplement, which covers managed plant communities (mowed lawn) with no unmanaged vegetative condition available for comparison. Vegetation was considered significantly disturbed due to recent mowing. The recently mowed turf grass consisted of Kentucky blue grass, which is a managed lawn species. Between mowing events, sensitive fern (FACW) can be observed. Based on the presence of hydric soils, wetland hydrology, and the presence of hydrophytic volunteer species between mowings, it is anticipated that the sample point would support a hydrophytic plant community under normal circumstances.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP26

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-7	10YR 2/1	100					Silt Loam	
7-18	10YR 4/2	98	10YR 4/6	2	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:				**Indicators for Problematic Soils**	
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
X	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP27

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 24, Township 30N, Range 23E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.056457° N Long. 87.642457° W Datum: WGS 84

Soil Map Unit Name: Rousseau loamy fine sand, 1 to 6 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland?

Yes X **No** ____

If yes, optional Wetland Site ID: W05

Remarks:
Photo 27 in Appendix B. PEM data point recorded at the boundary of W05, which is the PEM fringe of a PSS wetland. The PSS habitat type is located otuside of the ESA. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
X	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
X	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes X No ____ Depth (inches) 10

Saturation Present? Yes X No ____ Depth (inches) 0

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP27

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1. *Frangula alnus*	20	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
50%= 10.0% 20%= 4.0%	20	Total Cover	
Shrub Stratum (Plot size: 15')			
1. *Alnus incana*	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
50%= 50.0% 20%= 20.0%	100	Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex stipata*	50	Y	OBL
2. *Onoclea sensibilis*	50	Y	FACW
3. *Phalaris arundinacea*	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
50%= 52.5% 20%= 21.0%	105	Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
50%= 0.0% 20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 4 (A)

Total number of dominant species across all strata: 4 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	50	x	1	50
FACW species	155	x	2	310
FAC species	20	x	3	60
FACU species	0	x	4	0
UPL species	0	x	5	0
Column Totals:	225 (A)			420 (B)
Prevalence Index:				1.9 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP27

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-18	10YR 2/1	100					Silt Loam	
18-24	10YR 4/2	95	10YR 4/6	5	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
X	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP28

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 24, Township 30N, Range 23E

Landform (hillslope,terrace,etc.): Back Slope Local relief (concave, convex, none): Concave Slope (%): 5%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.056333° N Long. 87.642602° W Datum: WGS 84

Soil Map Unit Name: Rousseau loamy fine sand, 1 to 6 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation X Soil or Hydrology significantly disturbed?

Are Vegetation Soil or Hydrology naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes No X **Is the Sampled Area within a Wetland?**

Hydric Soil Present? Yes No X **Yes** **No** X

Wetland Hydrology Present? Yes No X If yes, optional Wetland Site ID:

Remarks:
Photo 28 in Appendix B. Upland data point recorded at the boundary of W05. Vegetation was considered significantly disturbed due to mowing, but did not contain hydrophytic pioneeer species. Based on the absence of all three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)		Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)		FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes No X Depth (inches)

Saturation Present? Yes No X Depth (inches)

Wetland Hydrology Present?

Yes **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP28

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Poa pratensis*	80	Y	FACU
2.	*Bromus inermis*	15	N	UPL
3.	*Ambrosia artemisiifolia*	5	N	FACU
4.	*Taraxacum officinale*	2	N	FACU
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 51.0%	20%= 20.4%	102	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 0 (A)

Total number of dominant species across all strata: 1 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	0	x	2	0
FAC species	0	x	3	0
FACU species	87	x	4	348
UPL species	15	x	5	75
Column Totals:	102 (A)			423 (B)
			Prevalence Index:	4.1 (B/A)

Hydrophytic Vegetation Indicators:

_____ Rapid Test for Hydrophytic Vegetation

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0*

_____ Morphological Adaptations*

_____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP28

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-9	10YR 2/2	100					Silt Loam	
9-18	10YR 3/2	98	10YR 4/6	2	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:				**Indicators for Problematic Soils**	
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes _____ **No** X

Remarks:
The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP29

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 24, Township 30N, Range 23E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.056156° N Long. 87.641423° W Datum: WGS 84

Soil Map Unit Name: Deford and Cormant soils, 0 to 2 percent slopes WWI Classification: Forested

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland?

Yes X **No** ____

If yes, optional Wetland Site ID: W05

Remarks:
Photo 29 in Appendix B. PEM data point recorded in W05, which is the PEM fringe of a PFO wetland. The PFO habitat type is located otuside of the ESA. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
X	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
X	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
X	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches) ____

Water Table Present? Yes X No ____ Depth (inches) 10

Saturation Present? Yes X No ____ Depth (inches) 0

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP29

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1. *Frangula alnus*	25	Y	FAC
2. *Fraxinus pennsylvanica*	25	Y	FACW
3.			
4.			
5.			
6.			
7.			
50%= 25.0% 20%= 10.0%	50	Total Cover	
Shrub Stratum (Plot size: 15')			
1. *Rhamnus cathartica*	50	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
50%= 25.0% 20%= 10.0%	50	Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex stricta*	90	Y	OBL
2. *Onoclea sensibilis*	5	N	FACW
3. *Impatiens capensis*	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
50%= 50.0% 20%= 20.0%	100	Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
50%= 0.0% 20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 4 (A)

Total number of dominant species across all strata: 4 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	90	x	1	90
FACW species	35	x	2	70
FAC species	75	x	3	225
FACU species	0	x	4	0
UPL species	0	x	5	0
Column Totals:	200 (A)			385 (B)
Prevalence Index:				1.9 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP29

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-18	10YR 2/1	100					Silt Loam	
18-24	10YR 4/2	95	10YR 4/6	5	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:				**Indicators for Problematic Soils**	
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
X	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP30

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 19, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Back Slope Local relief (concave, convex, none): Convex Slope (%): 2%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.056522° N Long. 87.635325° W Datum: WGS 84

Soil Map Unit Name: Shawano loamy fine sand, 2 to 6 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation Soil or Hydrology significantly disturbed?

Are Vegetation Soil or Hydrology naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes No X **Is the Sampled Area within a Wetland?**

Hydric Soil Present? Yes No X **Yes** **No** X

Wetland Hydrology Present? Yes No X If yes, optional Wetland Site ID:

Remarks:
Photo 30 in Appendix B. Upland data point recorded at the boundary of W06. Based on the absence of all three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)		Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)		FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes No X Depth (inches)

Saturation Present? Yes No X Depth (inches)

Wetland Hydrology Present?

Yes **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP30

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1. *Pinus strobus*	60	Y	FACU
2. *Acer saccharum*	20	Y	FACU
3.			
4.			
5.			
6.			
7.			
50%= 40.0% 20%= 16.0%	80	Total Cover	
Shrub Stratum (Plot size: 15')			
1. *Pinus strobus*	10	Y	FACU
2. *Rhamnus cathartica*	2	N	FAC
3.			
4.			
5.			
6.			
7.			
50%= 6.0% 20%= 2.4%	12	Total Cover	
Herb Stratum (Plot size: 5')			
1. *Osmunda claytoniana*	40	Y	FAC
2. *Carex blanda*	2	N	FAC
3. *Rhamnus cathartica*	2	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
50%= 22.0% 20%= 8.8%	44	Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
50%= 0.0% 20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)

Total number of dominant species across all strata: 4 (B)

Percent of dominant species that are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	0	x	2	0
FAC species	46	x	3	138
FACU species	90	x	4	360
UPL species	0	x	5	0
Column Totals:	136 (A)			498 (B)
Prevalence Index:				3.7 (B/A)

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0*
- ___ Morphological Adaptations*
- ___ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP30

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-14	10YR 2/1	100					Silt Loam	
14-20	10YR 4/6	100					Loamy Sand	

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:				**Indicators for Problematic Soils**	
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes _____ **No** X

Remarks:
The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/10/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP31

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 19, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.056423° N Long. 87.635286° W Datum: WGS 84

Soil Map Unit Name: Deford and Cormant soils, 0 to 2 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland?

Yes X **No** ____

If yes, optional Wetland Site ID: W06

Remarks:
Photo 31 in Appendix B. Representative PSS data point for W06. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
X	Surface Water (A1)	X	Water Stained Leaves (B9)		Surface Soil Cracks (B6)
X	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
X	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
X	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)		FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches) 1

Water Table Present? Yes X No ____ Depth (inches) 0

Saturation Present? Yes X No ____ Depth (inches) 0

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP31

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1. *Acer saccharum*	40	Y	FACU
2. *Quercus bicolor*	5	N	FACW
3.			
4.			
5.			
6.			
7.			
50%= 22.5% 20%= 9.0%	45	Total Cover	
Shrub Stratum (Plot size: 15')			
1. *Rhamnus cathartica*	50	Y	FAC
2. *Salix nigra*	1	N	OBL
3.			
4.			
5.			
6.			
7.			
50%= 25.5% 20%= 10.2%	51	Total Cover	
Herb Stratum (Plot size: 5')			
1. *Lemna minor*	80	Y	OBL
2. *Rhamnus cathartica*	10	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
50%= 45.0% 20%= 18.0%	90	Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
50%= 0.0% 20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 2 (A)

Total number of dominant species across all strata: 3 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	81	x	1	81
FACW species	5	x	2	10
FAC species	60	x	3	180
FACU species	40	x	4	160
UPL species	0	x	5	0
Column Totals:	186 (A)			431 (B)
			Prevalence Index:	2.3 (B/A)

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- ____ Morphological Adaptations*
- ____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP31

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-2	10YR 2/1	100					Silt Loam	Mucky.
2-20	10YR 6/1	95	10YR 4/6	5	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:				**Indicators for Problematic Soils**	
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
X	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
X	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/11/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP32

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 18, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Toe Slope Local relief (concave, convex, none): Concave Slope (%): 0%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.07086° N Long. 87.630406° W Datum: WGS 84

Soil Map Unit Name: Wainola loamy fine sand, 0 to 3 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No ____ (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No ____ (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes X No ____

Hydric Soil Present? Yes X No ____

Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland?

Yes X **No** ____

If yes, optional Wetland Site ID: W07

Remarks:
Photo 32 in Appendix B. PEM data point recorded in W07. Based on the presence of all three parameters, this area is a wetland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)	
X	Surface Water (A1)		Water Stained Leaves (B9)		Surface Soil Cracks (B6)
X	High Water Table (A2)		Aquatic Fauna (B13)		Drainage Patterns (B10)
X	Saturation (A3)		Marl Deposits (B15)		Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)		Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)		Crayfish Burrows (C8)
	Drift Deposits (B3)				Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)		Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	X	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)				Shallow Aquitard (D3)
			Thin Muck Surface (C7)		Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	X	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches) 1

Water Table Present? Yes X No ____ Depth (inches) 0

Saturation Present? Yes X No ____ Depth (inches) 0

Wetland Hydrology Present?

Yes X **No** ____

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP32

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Typha angustifolia*	90	Y	OBL
2.	*Scirpus atrovirens*	10	N	OBL
3.	*Impatiens capensis*	2	N	FACW
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 51.0%	20%= 20.4%	102	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 1 (A)

Total number of dominant species across all strata: 1 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	100	x	1	100
FACW species	2	x	2	4
FAC species	0	x	3	0
FACU species	0	x	4	0
UPL species	0	x	5	0
Column Totals:	102 (A)			104 (B)
Prevalence Index:				1.0 (B/A)

Hydrophytic Vegetation Indicators:

- x Rapid Test for Hydrophytic Vegetation
- x Dominance Test is >50%
- x Prevalence Index is ≤3.0*
- Morphological Adaptations*
- Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1M) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes X **No**

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP32

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-2	10YR 2/1	100					Silt Loam	
2-10	10YR 2/1	98	10YR 4/6	2	C	M	Silt Loam	Prominent redox concentrations.
10-20	10YR 4/6	98	2.5YR 4/8	2	C	M	Loamy Sand	Prominent redox concentrations.

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)	X	Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes X **No**

Remarks:
The criterion for hydric soil is met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

Site: Water Distribution System Extension to the Town of Peshtigo City/County: Marinette County Sampling Date: 9/11/2019

Applicant/Owner: Tyco Fire Products L.P. State: WI Sampling Point: DP33

Investigator(s): Ryan Bombeck, Michael Meisenger Section, Township, Range: Section 18, Township 30N, Range 24E

Landform (hillslope,terrace,etc.): Shoulder Slope Local relief (concave, convex, none): Convex Slope (%): 5%

Subregion(LRR or MLRA): LRR K - Northcentral Forests Lat. 45.070847° N Long. 87.630405° W Datum: WGS 84

Soil Map Unit Name: Wainola loamy fine sand, 0 to 3 percent slopes WWI Classification: None

Are climatic/hydrologic conditions on the site typical for time of year? Yes X No (If no, explain in the Remarks)

Are Vegetation ____ Soil ____ or Hydrology ____ significantly disturbed?

Are Vegetation ____ Soil ____ or Hydrology ____ naturally problematic?

Are Normal Circumstances Present? Yes X No (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes No X **Is the Sampled Area within a Wetland?**

Hydric Soil Present? Yes No X **Yes** **No** X

Wetland Hydrology Present? Yes No X If yes, optional Wetland Site ID:

Remarks:
Photo 32 in Appendix B. Upland data point recorded at the boundary of W07. Based on the absence of all three parameters, this area is an upland. All data points were recorded along existing roadsides.

HYDROLOGY

Wetland Hydrology Indicators:

	Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (minimum of two required)
	Surface Water (A1)		Water Stained Leaves (B9)	Surface Soil Cracks (B6)
	High Water Table (A2)		Aquatic Fauna (B13)	Drainage Patterns (B10)
	Saturation (A3)		Marl Deposits (B15)	Moss Tim Lines (B6)
	Water Marks (B1)		Hydrogen Sulfide Odor (C1)	Dry-Season Water Table (C2)
	Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots (C3)	Crayfish Burrows (C8)
	Drift Deposits (B3)			Saturation Visible on Aerial Imagery (C9)
	Algal Mat or Crust (B4)		Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
	Iron Deposits (B5)		Recent Iron Reduction in Tilled Soil (C6)	Geomorphic Position (D2)
	Inundation Visible on Aerial Imagery (B7)			Shallow Aquitard (D3)
			Thin Muck Surface (C7)	Microtopographic Relief (D4)
	Sparsely Vegetated Concave Surface (B8)		Other (Explain in Remarks)	FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (inches)

Water Table Present? Yes No X Depth (inches)

Saturation Present? Yes No X Depth (inches)

Wetland Hydrology Present?

Yes **No** X

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

Topographic maps, aerial imagery, WWI data, WDNR Wetland Indicators data.

Remarks:
The criterion for wetland hydrology is not met. Based on WETS analysis, antecedent hydrologic conditions are within a normal range.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

VEGETATION

Sampling Point: DP33

Tree Stratum	Plot size: 30'	Absolute % Cover	Dominant Species	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Shrub Stratum	Plot size: 15'			
1.				
2.				
3.				
4.				
5.				
6.				
7.				
50%= 0.0%	20%= 0.0%	0	Total Cover	
Herb Stratum	Plot size: 5'			
1.	*Poa pratensis*	50	Y	FACU
2.	*Ambrosia artemisiifolia*	30	Y	FACU
3.	*Festuca rubra*	20	N	FACU
4.	*Taraxacum officinale*	2	N	FACU
5.	*Trifolium pratense*	1	N	FACU
6.				
7.				
8.				
9.				
10.				
11.				
12.				
50%= 51.5%	20%= 20.6%	103	Total Cover	
Woody Vine Stratum	Plot size: 30'			
1.				
2.				
3.				
4.				
50%= 0.0%	20%= 0.0%	0	Total Cover	

Dominance Test Worksheet

Number of dominant species that are OBL, FACW, or FAC: 0 (A)

Total number of dominant species across all strata: 2 (B)

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

Prevalence Index Worksheet:

Total % cover of:				
OBL species	0	x	1	0
FACW species	0	x	2	0
FAC species	0	x	3	0
FACU species	103	x	4	412
UPL species	0	x	5	0
Column Totals:	103 (A)			412 (B)
			Prevalence Index:	4.0 (B/A)

Hydrophytic Vegetation Indicators:

_____ Rapid Test for Hydrophytic Vegetation

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0*

_____ Morphological Adaptations*

_____ Problematic Hydrophytic Vegetation*

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height

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Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vines - All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetaion Present?

Yes _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
The criterion for hydrophytic vegetation is not met.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region v2.0

SOIL

Sampling Point: DP33

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

Depth	Matrix		Redox Features					
(inches)	Color	%	Color	%	Type*	Loc**	Texture	Remarks
0-4	10YR 2/2	100					Silt Loam	
4-18	10YR 4/6	100					Loamy Sand	

* Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Coated Sand grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:					**Indicators for Problematic Soils**
	Histosol (A1)		Stripped Matrix (S6)		2 cm Muck (A10) (LRR K, L, MLRA 149B)
	Histic Epipedon (A2)		Dark Surface (S7)(LRR R,MLRA 149B)		Coast Prairie Redox (A16)
	Black Histic (A3)		Polyvalve Below Surface (S8) (LRR R, MLRA 149B)		5 cm Mucky Peat (S3) (LRR K, L, R)
	Hydrogen Sulfide (A4)				Dark Surface (S7) (LRR K, L, M)
	Stratified Layers (A5)		Thin Dark Surface (S9)		Polyvalve Below Surface (S8) (LRR K, L)
	Depleted Below Dark Surface (A11)		Loamy Mucky Mineral (F1)		Thin Dark Surface (S9) (LRR K, L)
	Thick Dark Surface (A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Red Parent Material (F21)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Very Shallow Dark Surface (TF12)
			Redox Depressions (F8)		Other (Explain in Remarks)

Restrictive Layer (if observed)

Type: None

Depth (inches):

Hydric Soil Present? Yes _____ **No** X

Remarks:
The criterion for hydric soil is not met.

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