WETLAND DETERMINATION DATA FORM
Great Plains Region

Project/Site:	L3R			Date:	09/15/14
Applicant:	Enbridge			County:	Pennington
Investigators:	RAJ/BEH/MRK		Subregion (MLRA or LRR): MLRA 56	State:	MN
Soil Unit:	IGp		NWI Classification:		
Landform:	Depression		Local Relief: CC	Sample Point:	**w-154n44w31-h1**
Slope (%):	3 - 7%	Latitude: 48.122581	Longitude: -96.357074	Datum:	
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)				☑ Yes ☐ No	Section:
Are Vegetation ☑ Soil ☑ or Hydrology ☑ significantly disturbed?			Are normal circumstances present?		Township:
Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic?			☑ Yes ☐ No		Range: Dir:

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? Yes
Wetland Hydrology Present? Yes
Hydric Soils Present? Yes
Is This Sampling Point Within A Wetland? **Yes**

Remarks: A recently-created shallow marsh in a gravel pit. The sample point was taken at the boundary between shallow marsh and wet meadow. The wetland soils and vegetation are disturbed. Hydrology is likely altered in the area due to gravel mining. Despite the disturbed nature of the area, all three parameters of wetland conditions are met.

HYDROLOGY

Wetland Hydrology Indicators (Check all that apply; Minimum of one primary or two secondary required)**:**

Primary:

- ☐ A1 - Surface Water
- ☑ A2 - High Water Table
- ☑ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B9 - Water-Stained Leaves
- ☐ B11 - Salt Crust
- ☐ B13 - Aquatic Fauna
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C2 - Dry Season Water Table
- ☑ C3 - Oxidized Rhizospheres on Living Roots (not tille
- ☐ C4 - Presence of Reduced Iron
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain)

Secondary:

- ☐ B6 - Surface Soil Cracks
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B10 - Drainage Patterns
- ☐ C3 - Oxidized Rhizospheres on Living Roots (tilled)
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☑ D2 - Geomorphic Position
- ☑ D5 - FAC-Neutral Test
- ☐ D7 - Frost-Heaved Hummocks (LRR F)

Field Observations:

Surface Water Present?	Yes	☐	Depth:	(in.)
Water Table Present?	Yes	☑	Depth: 8	(in.)
Saturation Present?	Yes	☑	Depth: 5	(in.)

Wetland Hydrology Present? Y

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

Remarks: The water table in the soil pit is at 8 inches and there is 6 inches of surface water 5 feet from the sample point. Indicators of wetland hydrology are present.

SOILS

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

(Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Depth (In.)	Matrix Color (Moist)		Matrix %	Mottles Color (Moist)		Mottles %	Mottles Type	Mottles Location	Texture	Remarks
0-3	Hue_10YR	4/2	98	Hue_10YR	3/4	2	C	M	S	
3-18	Hue_10YR	6/2	70	Hue_10YR	5/8	20	C	M	S	
				Hue_5YR	3/4	10	C	M	S	redox as vertical streaks

NRCS Hydric Soil Field Indicators (check here if indicators are not present)**:** ☐

- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers (LRR F)
- ☐ A9 - 1 cm Muck (LRR FGH)
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Mucky Mineral
- ☐ S2 - 2.5 cm Mucky Peat or Peat (LRR G, H)
- ☐ S3 - 5 cm Mucky Peat or Peat (LRR F)
- ☐ S4 - Sandy Gleyed Matrix
- ☑ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ F1 - Loamy Mucky Mineral
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions
- ☐ F16 - High Plains Depressions (MLRA 72, 73 of LRR H)

Indicators for Problematic Soils[1]

- ☐ A9 - 1 cm Muck (LRR I, J)
- ☐ A16 - Coast Prairie Redox (LRR F, G, H)
- ☐ S7 - Dark Surface (LRR G)
- ☐ F16 - High Plains Depressions (LRR H, outside MLRA 72, 73)
- ☐ F18 - Reduced Vertic
- ☐ TF2 - Red Parent Material
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

[1]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer Type: Depth:

Hydric Soil Present? Y

Remarks: The profile is of rather recent origin from gravel mining activities. The soil is sand with abundant redox concentrations from the surface to 18 inches. Indicator S5, Sandy Redox, is met.

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Project/Site: L3R | Sample Point: **w-154n44w31-h1**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft. radius)

	Species Name	% Cover	Dominant	Ind.Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

Total Cover = 0

Sapling/Shrub Stratum (Plot size: 15 ft. radius)

1.	*Salix eriocephala*	5	Y	FACW
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

Total Cover = 5

Herb Stratum (Plot size: 5 ft. radius)

1.	*Typha X glauca*	20	Y	OBL
2.	*Juncus alpinoarticulatus*	8	Y	OBL
3.	*Juncus torreyi*	8	Y	FACW
4.	*Agrostis gigantea*	3	N	FACW
5.	*Lycopus americanus*	1	N	OBL
6	*Veronica peregrina*	1	N	FACW
7.	*Epilobium coloratum*	1	N	OBL
8.	*Schoenoplectus tabernaemontani*	1	N	OBL
9.	*Dichanthelium acuminatum*	1	N	FAC
10.	*Ambrosia artemisiifolia*	1	N	FACU
11.				
12.				
13.				
14.				
15.				

Total Cover = 45

Woody Vine Stratum (Plot size: 30 ft. radius)

1.				
2.				
3.				
5.				
4.				

Total Cover = 0

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: ***100.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	31	x 1 =	31
FACW spp.	17	x 2 =	34
FAC spp.	1	x 3 =	3
FACU spp.	1	x 4 =	4
UPL spp.	0	x 5 =	0
Total	50 (A)		72 (B)

Prevalence Index = B/A = ***1.440***

Hydrophytic Vegetation Indicators:

	Rapid Test for Hydrophytic Vegetation
X	Dominance Test is > 50%
X	Prevalence Index is ≤ 3.0 *
	Morphological Adaptations (Explain) *
	Problem Hydrophytic Vegetation (Explain) *

* 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, regardless of height.

Herb - All herbaceous (non-woody) plants, regardless of size.

Woody Vines - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Y

Remarks: A hybrid cattail- and rush-dominated community at the boundary between a shallow marsh and a wet meadow. Hydrophytic vegetation is present. The plant community has recently developed; all plants present are this year's growth from seed, and there is no evidence of perennating vegetation. In addition to the listed species, there is a dense mat of Chara algae in the shallow marsh.

Additional Remarks: