**WETLAND DETERMINATION DATA FORM - North Central and Northeast Region**

Project/Site: SPP City/County: Carlton Sampling Date: 2015-06-27

Applicant/Owner: Enbridge State: Minnesota Sampling Point: CR162h1W

Investigator(s): ACM/LEB Section, Township, Range:

Landform (hillslope, terrace, etc.): depression Local Relief (concave, convex, none): Conca... Slope (%): 0-2

Subregion (LRR or MLRA): Latitude: 46.357851 Longitude: 92.178549 Datum: Minnesota State ...

Soil Map Unit Name: 303 NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? (if no, explain in Remarks): Yes

Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS** - **Attach site map showing sampling point locations, transects, important features, etc.**

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes | **Is the Sampled Area** | |
| Hydric Soil Present? | Yes | **within a Wetland?** | Yes |
| Wetland Hydrology Present? | Yes | If yes, optional Wetland Site ID: | |

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

The wetland is a hardwood swamp located in a depression within an aspen-dominated forest.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ____ Surface Water (A1)
- yes High Water Table (A2)
- yes Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted/Stressed Plants (D1)
- yes Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? No Depth (inches) ____

Water Table Present? Yes Depth (inches) 12

Saturation Present? Yes Depth (inches) 6

(includes capillary fringe)

**Wetland Hydrology Present?** Yes

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

Remarks:

The wetland is located in a depression and has saturated soil at 6 inches.

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

Sampling Point: CR162h1W

| Tree Stratum (Plot Size: 30 ft) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Populus tremuloides | 40.00 | Yes | FACU |
| 2. Fraxinus nigra | 10.00 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 50 | = Total Cover | |
| **Sapling/Shrub Stratum** (Plot Size: 15 ft) | | | |
| 1. Alnus incana | 40.00 | Yes | FACW |
| 2. Fraxinus nigra | 15.00 | Yes | FACW |
| 3. Betula papyrifera | 5.00 | No | FACU |
| 4. Populus tremuloides | 5.00 | No | FACU |
| 5. Acer rubrum | 2.00 | No | FAC |
| 6. | | | |
| 7. | | | |
| | 67 | = Total Cover | |
| **Herb Stratum** (Plot Size: 5 ft) | | | |
| 1. Calamagrostis canadensis | 40.00 | Yes | OBL |
| 2. Carex intumescens | 25.00 | Yes | FACW |
| 3. Poa palustris | 10.00 | No | FACW |
| 4. Carex gracillima | 10.00 | No | FACU |
| 5. Rosa acicularis | 5.00 | No | FACU |
| 6. Carex tenera | 5.00 | No | FAC |
| 7. Equisetum pratense | 5.00 | No | FACW |
| 8. Valeriana officinalis | 5.00 | No | |
| 9. Rubus pubescens | 2.00 | No | FACW |
| 10. Petasites frigidus | 2.00 | No | FACW |
| 11. Cicuta maculata | 2.00 | No | OBL |
| 12. | | | |
| | 111 | = Total Cover | |
| **Woody Vine Stratum** (Plot Size: ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 0 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 42.00 | x 1 | 42 |
| FACW species | 109.00 | x 2 | 218 |
| FACU species | 52.00 | x 3 | 80 |
| UPL species | 0 | x 4 | 0 |
| Column Totals | 223 (A) | | 496 (B) |

Prevalence Index = B/A = 2.22421

**Hydrophytic Vegetation Indicators:**

____ 1 - Rapid Test for Hydrophytic Vegetation

yes 2 - Dominance Test is > 50%

yes 3 - Prevalence Index is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree -** Woody plants 3 in. (.76 cm) 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 (1 m) 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 Vegetation Present?** ____

**Remarks:** (include photo numbers here or on a separate sheet.)

The vegetation is dominated by quaking aspen and black ash in the canopy, speckled alder and black ash saplings in the shrub layer, and Canada bluejoint and greater bladder sedge i...

**SOIL**

Sampling Point: CR162h1W

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

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-2 | 5YR 3 2 | 100 | | | | | sic | |
| 2-10 | 5YR 3 2 | 85 | 7.5YR 5 8 | 15 | C | M | sic | |
| 10-24 | 5YR 4 4 | 30 | 5YR 5 6 | 20 | C | M | c | Mixed matrix |
| 10-24 | 5YR 4 2 | 45 | 7.5YR 5 6 | 5 | C | M | c | Mixed matrix |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ☐ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ☐ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ☐ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

**Indicators for Problematic Hydric Soil[3]:**

- ☐ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ☐ Coast Prairie Redox (A16)(**LRR K, L, R**)
- ☐ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ☐ Dark Surface (S7) (**LRR K, M**)
- ☐ Polyvalue Below Surface (S8) **(LRR K, L)**
- ☐ Thin Dark Surface (S9) (**LRR K, L**)
- ☐ Iron-Maganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ☐ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (explain in remarks)

Restrictive Layer (if observed): ☐

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes

Remarks:

Redox features were observed in a dark silty clay layer.