

WETLAND DETERMINATION DATA FORM – Great Plains Region

PEM

Project/Site: Keystone XL - Phase IV City/County: Harding Sampling Date: 8/5/10
 Applicant/Owner: Trans Canada - Trow State: SD Sampling Point: W109H40d1
 Investigator(s): B109 Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR): Western Great Plains Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation N, Soil N, or Hydrology N 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____	
Remarks: <u>Part of old stream channel, dammed downstream.</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>NA</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
1. _____				
2. _____				
3. _____				
4. _____				
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Seedling/Shrub Stratum (Plot size: <u>NA</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____				
_____ = Total Cover				
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Juncus balticus</u> <u>60%</u> <u>Y</u> <u>OBL</u> 2. <u>Hudonum jubatum</u> <u>15%</u> <u>N</u> <u>FACW</u> 3. <u>Distichlis spicata</u> <u>30%</u> <u>Y</u> <u>FACW</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____				
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>NA</u>) 1. _____ 2. _____ _____ = Total Cover				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% _____ 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.
% Bare Ground in Herb Stratum <u>10%</u> _____ = Total Cover				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				
Remarks: _____				

SOIL

Sampling Point: W109/1A #61

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

Depth (Inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-8"	10YR 4/2	90%	10YR 6/4	10%	C	M	S&I	
8-15"	10YR 4/1	90%	10YR 6/4	10%	C	M	S&I	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input checked="" type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) | ³ Indicators of hydrophytic vegetation and |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | <input type="checkbox"/> (MLRA 72 & 73 of LRR H) | wetland hydrology must be present, |
| | | unless disturbed or problematic. |

Restrictive Layer (if present):

Type: _____

Depth (Inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|--|---|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (minimum of two required)

- | |
|---|
| <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> (where tilled) |
| <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (Inches): 1"Water Table Present? Yes ☐ No ☒ Depth (Inches): _____Saturation Present? Yes ☒ No ☐ Depth (Inches): SurfaceWetland Hydrology Present? Yes ☒ No ☐

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

Remarks: