

**WETLAND DETERMINATION DATA FORM - Alaska Region**

Project/Site: Susitna-Watana Hydroelectric Project Borough/City: Matanuska-Susitna Borough Sampling Date: 30-Aug-15  
 Applicant/Owner: Alaska Energy Authority Sampling Point: SW15\_T338\_01  
 Investigator(s): SLI, SCB Landform (hillside, terrace, hummocks etc.): Terrace  
 Local relief (concave, convex, none): hummocky Slope: 3.5 % / 2.0 ° Elevation: \_\_\_\_\_  
 Subregion: Interior Alaska Mountains Lat.: \_\_\_\_\_ Long.: \_\_\_\_\_ Datum: WGS84  
 Soil Map Unit Name: \_\_\_\_\_ **NWI classification: PSS1B**

Are climatic/hydrologic conditions on the site typical for this time of year? Yes  No  (If no, explain in Remarks.)  
 Are Vegetation , Soil , or Hydrology  significantly disturbed? Are "Normal Circumstances" present? Yes  No   
 Are Vegetation , Soil , or Hydrology  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="radio"/> No <input type="radio"/><br>Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/><br>Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | <b>Is the Sampled Area<br/>within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> |
| Remarks: terrace above Brushkana Creek.   |  |

**VEGETATION** -Use scientific names of plants. List all species in the plot.

| <u>Tree Stratum</u>  | Absolute % Cover                | Dominant Species?                   | Indicator Status | <b>Dominance Test worksheet:</b>   |
|--|---------------------------------|-------------------------------------|------------------|--|
| 1. _____   | _____                           | <input type="checkbox"/>            | _____            | Number of Dominant Species That are OBL, FACW, or FAC: <u>4</u> (A)  |
| 2. _____   | _____                           | <input type="checkbox"/>            | _____            | Total Number of Dominant Species Across All Strata: <u>4</u> (B)   |
| 3. _____   | _____                           | <input type="checkbox"/>            | _____            | Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)                                    |
| 4. _____   | _____                           | <input type="checkbox"/>            | _____            |  |
| 5. _____   | _____                           | <input type="checkbox"/>            | _____            |  |
| <b>Total Cover:</b> <u>0</u>   |                                 |                                     |                  |  |
| <b>Sapling/Shrub Stratum</b>   | 50% of Total Cover: <u>0</u>    | 20% of Total Cover: <u>0</u>        |                  | <b>Prevalence Index worksheet:</b>   |
| 1. <u>Betula nana</u>  | <u>60</u>                       | <input checked="" type="checkbox"/> | FAC              | Total % Cover of: Multiply by:   |
| 2. <u>Vaccinium uliginosum</u>                                       | <u>30</u>                       | <input checked="" type="checkbox"/> | FAC              | OBL Species <u>0</u> x 1 = <u>0</u>  |
| 3. <u>Rhododendron tomentosum</u>                                    | <u>20</u>                       | <input type="checkbox"/>            | FACW             | FACW Species <u>40</u> x 2 = <u>80</u>   |
| 4. <u>Empetrum nigrum</u>  | <u>20</u>                       | <input type="checkbox"/>            | FAC              | FAC Species <u>135</u> x 3 = <u>405</u>  |
| 5. <u>Picea mariana</u>  | <u>15</u>                       | <input type="checkbox"/>            | FACW             | FACU Species <u>0</u> x 4 = <u>0</u>   |
| 6. <u>Vaccinium vitis-idaea</u>                                      | <u>10</u>                       | <input type="checkbox"/>            | FAC              | UPL Species <u>0</u> x 5 = <u>0</u>  |
| 7. _____   | <u>0</u>                        | <input type="checkbox"/>            | _____            | Column Totals: <u>175</u> (A) <u>485</u> (B)   |
| 8. _____   | <u>0</u>                        | <input type="checkbox"/>            | _____            | Prevalence Index = B/A = <u>2.771</u>  |
| 9. _____   | <u>0</u>                        | <input type="checkbox"/>            | _____            |  |
| 10. _____  | <u>0</u>                        | <input type="checkbox"/>            | _____            |  |
| <b>Total Cover:</b> <u>155</u>                                       |                                 |                                     |                  |  |
| <b>Herb Stratum</b>  | 50% of Total Cover: <u>77.5</u> | 20% of Total Cover: <u>31</u>       |                  | <b>Hydrophytic Vegetation Indicators:</b>  |
| 1. <u>Carex bigelowii</u>  | <u>15</u>                       | <input checked="" type="checkbox"/> | FAC              | <input checked="" type="checkbox"/> Dominance Test is > 50%  |
| 2. <u>Rubus chamaemorus</u>  | <u>5</u>                        | <input checked="" type="checkbox"/> | FACW             | <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0  |
| 3. _____   | <u>0</u>                        | <input type="checkbox"/>            | _____            | <input type="checkbox"/> Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) |
| 4. _____   | <u>0</u>                        | <input type="checkbox"/>            | _____            | <input type="checkbox"/> Problematic Hydrophytic Vegetation (Explain)  |
| 5. _____   | <u>0</u>                        | <input type="checkbox"/>            | _____            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 6. _____   | <u>0</u>                        | <input type="checkbox"/>            | _____            | Plot size (radius, or length x width) <u>10m</u>   |
| 7. _____   | <u>0</u>                        | <input type="checkbox"/>            | _____            | % Cover of Wetland Bryophytes (Where applicable) _____   |
| 8. _____   | <u>0</u>                        | <input type="checkbox"/>            | _____            | % Bare Ground <u>0</u>   |
| 9. _____   | <u>0</u>                        | <input type="checkbox"/>            | _____            | Total Cover of Bryophytes <u>40</u>  |
| 10. _____  | <u>0</u>                        | <input type="checkbox"/>            | _____            |  |
| <b>Total Cover:</b> <u>20</u>  |                                 |                                     |                  | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>           |
| 50% of Total Cover: <u>10</u>  | 20% of Total Cover: <u>4</u>    |                                     |                  |  |
| Remarks: low open birch-ericaceous shrub with scattered dwarf picmar |                                 |                                     |                  |  |

**SOIL**

Sampling Point: **SW15\_T338\_01**

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

| Depth (inches) | Matrix        |       | Redox Features |      |                   |                  | Texture   | Remarks |                 |
|----------------|---------------|-------|----------------|------|-------------------|------------------|-----------|---------|-----------------|
|                | Color (moist) | %     | Color (moist)  | %    | Type <sup>1</sup> | Loc <sup>2</sup> |           |         |                 |
| 7,             |               |       |                |      |                   |                  | Muck      |         |                 |
| 5-7            | 7.5YR         | 4/3   | 100            |      |                   |                  | Silt Loam |         |                 |
| 7-13.5         | 10Y           | 4/1   | 97             | 10YR | 4/4               | 3                | C         | PL      | Silty Clay Loam |
| 13.5-17        | 10YR          | 4/2   |                |      |                   |                  |           |         | Silt Loam       |
| 17-20          | 5Y            | 2.5/2 |                |      |                   |                  |           |         | Silt Loam       |
|                |               |       |                |      |                   |                  |           |         |                 |
|                |               |       |                |      |                   |                  |           |         |                 |
|                |               |       |                |      |                   |                  |           |         |                 |

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix <sup>2</sup> Location: PL=Pore Lining. RC=Root Channel. M=Matrix

|  |   |
|--|---|
| <p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol or Histel (A1)<br><input type="checkbox"/> Histic Epipedon (A2)<br><input type="checkbox"/> Hydrogen Sulfide (A4)<br><input type="checkbox"/> Thick Dark Surface (A12)<br><input checked="" type="checkbox"/> Alaska Gleyed (A13)<br><input type="checkbox"/> Alaska Redox (A14)<br><input type="checkbox"/> Alaska Gleyed Pores (A15) | <p><b>Indicators for Problematic Hydric Soils:<sup>3</sup></b></p> <input type="checkbox"/> Alaska Color Change (TA4) <sup>4</sup><br><input type="checkbox"/> Alaska Alpine swales (TA5)<br><input type="checkbox"/> Alaska Redox With 2.5Y Hue<br><input type="checkbox"/> Alaska Gleyed Without Hue 5Y or Redder Underlying Layer<br><input type="checkbox"/> Other (Explain in Remarks) |
|--|---|

<sup>3</sup> One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present  
<sup>4</sup> Give details of color change in Remarks

|  |  |
|--|--|
| <p>Restrictive Layer (if present):<br/>                 Type: silty clay loam, seasonal frost<br/>                 Depth (inches): 7, 20</p> | <p><b>Hydric Soil Present?</b>    Yes <input checked="" type="radio"/>    No <input type="radio"/></p> |
|--|--|

Remarks:  
 buried organics at 13.5 in  
 seasonal frost at 20 in

**HYDROLOGY**

|  |  |  |
|--|--|--|
| <p><b>Wetland Hydrology Indicators:</b></p> <p>Primary Indicators (any one is sufficient)</p> <input type="checkbox"/> Surface Water (A1)<br><input type="checkbox"/> High Water Table (A2)<br><input checked="" type="checkbox"/> Saturation (A3)<br><input type="checkbox"/> Water Marks (B1)<br><input type="checkbox"/> Sediment Deposits (B2)<br><input type="checkbox"/> Drift Deposits (B3)<br><input type="checkbox"/> Algal Mat or Crust (B4)<br><input type="checkbox"/> Iron Deposits (B5)<br><input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)<br><input type="checkbox"/> Marl Deposits (B15)<br><input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Other (Explain in Remarks) | <p>Secondary Indicators (two or more are required)</p> <input type="checkbox"/> Water Stained Leaves (B9)<br><input type="checkbox"/> Drainage Patterns (B10)<br><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)<br><input type="checkbox"/> Presence of Reduced Iron (C4)<br><input type="checkbox"/> Salt Deposits (C5)<br><input type="checkbox"/> Stunted or Stressed Plants (D1)<br><input type="checkbox"/> Geomorphic Position (D2)<br><input checked="" type="checkbox"/> Shallow Aquitard (D3)<br><input type="checkbox"/> Microtopographic Relief (D4)<br><input checked="" type="checkbox"/> FAC-neutral Test (D5) |
|--|--|--|

|   |  |
|---|--|
| <p><b>Field Observations:</b></p> <p>Surface Water Present?    Yes <input type="radio"/>    No <input checked="" type="radio"/>    Depth (inches):</p> <p>Water Table Present?    Yes <input type="radio"/>    No <input checked="" type="radio"/>    Depth (inches):</p> <p>Saturation Present? (includes capillary fringe)    Yes <input checked="" type="radio"/>    No <input type="radio"/>    Depth (inches): 0</p> | <p><b>Wetland Hydrology Present?</b>    Yes <input checked="" type="radio"/>    No <input type="radio"/></p> |
|---|--|

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:

Remarks:  
 water appears perched above silty clay loam at 7 in. this layer apparently contains enough clay or fine silt to function as a restrictive layer limiting downward movement of water. the saturated layer is approx 4 in deep (7-11in below ground surface), bulging from pit wall and appears somewhat thixotropic.