

**WETLAND DETERMINATION DATA FORM - Alaska Region**

Project/Site: Susitna-Watana Hydroelectric Project Borough/City: Denali Borough Sampling Date: 06-Aug-13  
 Applicant/Owner: Alaska Energy Authority Sampling Point: SW13\_T174\_04  
 Investigator(s): WAD, RWM Landform (hillside, terrace, hummocks etc.): lower hillside  
 Local relief (concave, convex, none): concave Slope: % / 8.2 ° Elevation: 103  
 Subregion: Interior Alaska Mountains Lat.: 63.3664495941 Long.: -148.551730871 Datum: NAD83  
 Soil Map Unit Name: \_\_\_\_\_ **NWI classification: Upland**

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 type="radio"/> No <input checked="" type="radio"/><br>Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Remarks: willow drainage feature.   |   |

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

|                                    | Absolute % Cover | Dominant Species?                   | Indicator Status              |  |
|------------------------------------|------------------|-------------------------------------|-------------------------------|--|
| <b>Tree Stratum</b>                |                  |                                     |                               |  |
| 1. _____                           | 0                | <input type="checkbox"/>            | _____                         | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)<br>Total Number of Dominant Species Across All Strata: <u>3</u> (B)<br>Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)   |
| 2. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| 3. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| 4. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| 5. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| <b>Total Cover:</b>                |                  | 0                                   |                               | <b>Prevalence Index worksheet:</b><br>Total % Cover of: Multiply by:<br>OBL Species <u>0</u> x 1 = <u>0</u><br>FACW Species <u>85</u> x 2 = <u>170</u><br>FAC Species <u>20.1</u> x 3 = <u>60.30</u><br>FACU Species <u>5</u> x 4 = <u>20</u><br>UPL Species <u>0</u> x 5 = <u>0</u><br>Column Totals: <u>110.1</u> (A) <u>250.3</u> (B)<br>Prevalence Index = B/A = <u>2.273</u>  |
| <b>Sapling/Shrub Stratum</b>       |                  | 50% of Total Cover: <u>0</u>        | 20% of Total Cover: <u>0</u>  |  |
| 1. <u>Salix pulchra</u>            | 85               | <input checked="" type="checkbox"/> | FACW                          |  |
| 2. <u>Vaccinium uliginosum</u>     | 10               | <input type="checkbox"/>            | FAC                           |  |
| 3. <u>Vaccinium vitis-idaea</u>    | 5                | <input type="checkbox"/>            | FAC                           |  |
| 4. <u>Spiraea stevenii</u>         | 5                | <input type="checkbox"/>            | FACU                          |  |
| 5. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| 6. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| 7. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| 8. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| 9. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| 10. _____                          | 0                | <input type="checkbox"/>            | _____                         |  |
| <b>Total Cover:</b>                |                  | 105                                 |                               |  |
| <b>Herb Stratum</b>                |                  | 50% of Total Cover: <u>52.5</u>     | 20% of Total Cover: <u>21</u> | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is > 50%<br><input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0<br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1. <u>Festuca altaica</u>          | 3                | <input checked="" type="checkbox"/> | FAC                           |  |
| 2. <u>Calamagrostis canadensis</u> | 2                | <input checked="" type="checkbox"/> | FAC                           |  |
| 3. <u>Polemonium acutiflorum</u>   | 0.1              | <input type="checkbox"/>            | FAC                           |  |
| 4. <u>Poa arctica</u>              | 0.1              | <input type="checkbox"/>            | FAC                           |  |
| 5. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| 6. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| 7. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| 8. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| 9. _____                           | 0                | <input type="checkbox"/>            | _____                         |  |
| 10. _____                          | 0                | <input type="checkbox"/>            | _____                         |  |
| <b>Total Cover:</b>                |                  | 5.2                                 |                               |  |
| 50% of Total Cover: <u>2.6</u>     |                  | 20% of Total Cover: <u>1.04</u>     |                               |  |
| Remarks:                           |                  |                                     |                               | Plot size (radius, or length x width) <u>10m</u><br>% Cover of Wetland Bryophytes (Where applicable) _____<br>% Bare Ground _____<br>Total Cover of Bryophytes _____<br><br><b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>   |

**SOIL**

Sampling Point: **SW13\_T174\_04**

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> |                 |                                     |
| 0-1            |               | 100 |                |   |                   |                  | Fibric Organics |                                     |
| 1-3            |               | 100 |                |   |                   |                  | Hemic Organics  |                                     |
| 3-4            |               | 100 |                |   |                   |                  | Sapric Organics |                                     |
| 4-9            | 10YR          | 3/3 | 100            |   |                   |                  | Loamy Sand      |                                     |
| 9-16           | 10YR          | 4/2 | 100            |   |                   |                  | Silt Loam       | with a buried sapric organic layer. |
|                |               |     |                |   |                   |                  |                 |                                     |
|                |               |     |                |   |                   |                  |                 |                                     |
|                |               |     |                |   |                   |                  |                 |                                     |

<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 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

|   |   |
|---|---|
| Restrictive Layer (if present):<br>Type:<br>Depth (inches): | <b>Hydric Soil Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/> |
|---|---|

Remarks:  
no hydric soil indicators observed

**HYDROLOGY**

|  |   |
|--|---|
| <p><b>Wetland Hydrology Indicators:</b></p> <p><u>Primary Indicators (any one is sufficient)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)<br><input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)<br><input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15)<br><input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1)<br><input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Dry-Season Water Table (C2)<br><input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Other (Explain in Remarks)<br><input type="checkbox"/> Algal Mat or Crust (B4)<br><input type="checkbox"/> Iron Deposits (B5)<br><input type="checkbox"/> Surface Soil Cracks (B6) | <p><u>Secondary Indicators (two or more are required)</u></p> <input type="checkbox"/> Water Stained Leaves (B9)<br><input checked="" 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 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> Surface Water Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches):<br>Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches):<br>Saturation Present?        Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches):<br>(includes capillary fringe) | <b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/> |
|---|---|

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

Remarks:  
willow drainage feature typical of many within study area but no primary hydro present. some evidence of previously inundated depressions but dry at the time of sampling.