

**WETLAND DETERMINATION DATA FORM - Alaska Region**

Project/Site: Susitna-Watana Hydroelectric Project Borough/City: Denali Borough Sampling Date: 01-Aug-13  
 Applicant/Owner: Alaska Energy Authority Sampling Point: SW13\_T202\_02  
 Investigator(s): CTS, AMD Landform (hillside, terrace, hummocks etc.): Hillside  
 Local relief (concave, convex, none): flat Slope: 10.0 % / 5.7 ° Elevation: 682  
 Subregion: Interior Alaska Mountains Lat.: 63.394496083 Long.: -148.535275459 Datum: WGS84  
 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 type="radio"/> No <input checked="" type="radio"/> | <b>Is the Sampled Area within a Wetland?</b><br>Yes <input type="radio"/> No <input checked="" type="radio"/> |
| Remarks:  |   |

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

| Tree Stratum                        | Absolute % Cover                 | Dominant Species?                   | Indicator Status                 | <b>Dominance Test worksheet:</b>  |                    |
|-------------------------------------|----------------------------------|-------------------------------------|----------------------------------|---|--------------------|
| 1. <u>Picea glauca</u>              | 15                               | <input checked="" type="checkbox"/> | FACU                             | Number of Dominant Species That are OBL, FACW, or FAC:  | <u>5</u> (A)       |
| 2. _____                            | 0                                | <input type="checkbox"/>            | _____                            | Total Number of Dominant Species Across All Strata:   | <u>7</u> (B)       |
| 3. _____                            | 0                                | <input type="checkbox"/>            | _____                            | Percent of dominant Species That Are OBL, FACW, or FAC:   | <u>71.4%</u> (A/B) |
| 4. _____                            | 0                                | <input type="checkbox"/>            | _____                            |   |                    |
| 5. _____                            | 0                                | <input type="checkbox"/>            | _____                            |   |                    |
| <b>Total Cover:</b>                 |                                  |                                     | <u>15</u>                        |   |                    |
| <b>Sapling/Shrub Stratum</b>        | 50% of Total Cover: <u>7.5</u>   | 20% of Total Cover: <u>3</u>        |                                  |   |                    |
| 1. <u>Salix glauca</u>              | 10                               | <input type="checkbox"/>            | FAC                              | <b>Prevalence Index worksheet:</b>  |                    |
| 2. <u>Salix richardsonii</u>        | 30                               | <input checked="" type="checkbox"/> | FACW                             | Total % Cover of:   | Multiply by:       |
| 3. <u>Alnus viridis ssp. crispa</u> | 15                               | <input checked="" type="checkbox"/> | FAC                              | OBL Species <u>0</u>  | x 1 = <u>0</u>     |
| 4. <u>Vaccinium uliginosum</u>      | 10                               | <input type="checkbox"/>            | FAC                              | FACW Species <u>53</u>  | x 2 = <u>106</u>   |
| 5. <u>Ledum groenlandicum</u>       | 2                                | <input type="checkbox"/>            | FAC                              | FAC Species <u>97.3</u>   | x 3 = <u>291.9</u> |
| 6. <u>Vaccinium vitis-idaea</u>     | 0.1                              | <input type="checkbox"/>            | FAC                              | FACU Species <u>27</u>  | x 4 = <u>108</u>   |
| 7. <u>Cassiope tetragona</u>        | 10                               | <input type="checkbox"/>            | FACU                             | UPL Species <u>20</u>   | x 5 = <u>100</u>   |
| 8. <u>Empetrum nigrum</u>           | 25                               | <input checked="" type="checkbox"/> | FAC                              | Column Totals: <u>197.3</u> (A)   | <u>605.9</u> (B)   |
| 9. <u>Salix pulchra</u>             | 3                                | <input type="checkbox"/>            | FACW                             | Prevalence Index = B/A = <u>3.071</u>   |                    |
| 10. <u>Betula nana</u>              | 8                                | <input type="checkbox"/>            | FAC                              |   |                    |
| <b>Total Cover:</b>                 |                                  |                                     | <u>113</u>                       |   |                    |
| <b>Herb Stratum</b>                 | 50% of Total Cover: <u>56.55</u> | 20% of Total Cover: <u>22.62</u>    |                                  |   |                    |
| 1. <u>Petasites frigidus</u>        | 20                               | <input checked="" type="checkbox"/> | FACW                             | <b>Hydrophytic Vegetation Indicators:</b>   |                    |
| 2. <u>Bistorta plumosa</u>          | 2                                | <input type="checkbox"/>            | FACU                             | <input checked="" type="checkbox"/> Dominance Test is > 50%   |                    |
| 3. <u>Calamagrostis canadensis</u>  | 1                                | <input type="checkbox"/>            | FAC                              | <input type="checkbox"/> Prevalence Index is ≤3.0   |                    |
| 4. <u>Equisetum arvense</u>         | 25                               | <input checked="" type="checkbox"/> | FAC                              | <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |                    |
| 5. <u>Saussurea angustifolia</u>    | 1                                | <input type="checkbox"/>            | FAC                              | <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |                    |
| 6. <u>Tephrosia atropurpurea</u>    | 0.1                              | <input type="checkbox"/>            | FAC                              | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.              |                    |
| 7. <u>Tofieldia pusilla</u>         | 0.1                              | <input type="checkbox"/>            | FAC                              | Plot size (radius, or length x width) <u>10m</u>  |                    |
| 8. <u>Boykinia richardsonii</u>     | 20                               | <input checked="" type="checkbox"/> | UPL                              | % Cover of Wetland Bryophytes (Where applicable) _____  |                    |
| 9. _____                            | 0                                | <input type="checkbox"/>            | _____                            | % Bare Ground <u>0</u>  |                    |
| 10. _____                           | 0                                | <input type="checkbox"/>            | _____                            | Total Cover of Bryophytes <u>75</u>   |                    |
| <b>Total Cover:</b>                 |                                  |                                     | <u>69.2</u>                      | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>                        |                    |
|                                     |                                  |                                     | 50% of Total Cover: <u>34.6</u>  |   |                    |
|                                     |                                  |                                     | 20% of Total Cover: <u>13.84</u> |   |                    |

Remarks: Lichen = 8

**SOIL**

Sampling Point: SW13\_T202\_02

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> |                |         |
| 0-4            |               | 100 |                |   |                   |                  | Hemic Organics |         |
| 4-13           | 10YR          | 2/1 | 100            |   |                   |                  | 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 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:  
 Rock slab at 13. no hydric soil indicators.

**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 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 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 type="radio"/> No <input checked="" type="radio"/> |
|---|---|

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

Remarks:  
 no wetland hydrology indicators