

**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\_06**  
 Investigator(s): CTS, AMD Landform (hillside, terrace, hummocks etc.): Toeslope  
 Local relief (concave, convex, none): flat Slope: % / 3.2 ° Elevation: 674  
 Subregion: Interior Alaska Mountains Lat.: 63.3948413133 Long.: -148.538549661 Datum: NAD83  
 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:                                                                                                                                                                                                                                                                        |                                                                                                                |

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

|                                      | Absolute % Cover                 | Dominant Species?                   | Indicator Status |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------|----------------------------------|-------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tree Stratum</b>                  |                                  |                                     |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 1. <u>Picea glauca</u>               | <u>35</u>                        | <input checked="" type="checkbox"/> | FACU             | <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>4</u> (B)<br>Percent of dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)                                                                                                                                                                                                                                             |
| 2. _____                             | <u>0</u>                         | <input type="checkbox"/>            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. _____                             | <u>0</u>                         | <input type="checkbox"/>            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. _____                             | <u>0</u>                         | <input type="checkbox"/>            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. _____                             | <u>0</u>                         | <input type="checkbox"/>            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Total Cover:</b>                  |                                  | <u>35</u>                           |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Sapling/Shrub Stratum</b>         | 50% of Total Cover: <u>17.5</u>  | 20% of Total Cover: <u>7</u>        |                  | <b>Prevalence Index worksheet:</b><br>Total % Cover of: Multiply by:<br>OBL Species <u>1.1</u> x 1 = <u>1.1</u><br>FACW Species <u>31</u> x 2 = <u>62</u><br>FAC Species <u>137.3</u> x 3 = <u>411.9</u><br>FACU Species <u>55.1</u> x 4 = <u>220.4</u><br>UPL Species <u>0</u> x 5 = <u>0</u><br>Column Totals: <u>224.5</u> (A) <u>695.4</u> (B)<br>Prevalence Index = B/A = <u>3.098</u>                                                                                                           |
| 1. <u>Salix reticulata</u>           | <u>65</u>                        | <input checked="" type="checkbox"/> | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. <u>Salix richardsonii</u>         | <u>25</u>                        | <input checked="" type="checkbox"/> | FACW             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Shepherdia canadensis</u>      | <u>20</u>                        | <input type="checkbox"/>            | FACU             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. <u>Salix glauca</u>               | <u>3</u>                         | <input type="checkbox"/>            | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. <u>Salix pseudomonticola</u>      | <u>1</u>                         | <input type="checkbox"/>            | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. <u>Dasiphora fruticosa</u>        | <u>1</u>                         | <input type="checkbox"/>            | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. <u>Rhododendron groenlandicum</u> | <u>1</u>                         | <input type="checkbox"/>            | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. <u>Salix pulchra</u>              | <u>1</u>                         | <input type="checkbox"/>            | FACW             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 9. <u>Vaccinium oxycoccos</u>        | <u>0.1</u>                       | <input type="checkbox"/>            | OBL              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 10. _____                            | <u>0</u>                         | <input type="checkbox"/>            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Total Cover:</b>                  |                                  | <u>117</u>                          |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Herb Stratum</b>                  | 50% of Total Cover: <u>58.55</u> | 20% of Total Cover: <u>23.42</u>    |                  | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Dominance Test is > 50%<br><input 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>Equisetum arvense</u>          | <u>65</u>                        | <input checked="" type="checkbox"/> | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. <u>Parnassia palustris</u>        | <u>3</u>                         | <input type="checkbox"/>            | FACW             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 3. <u>Carex membranacea</u>          | <u>2</u>                         | <input type="checkbox"/>            | FACW             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. <u>Carex aquatilis</u>            | <u>1</u>                         | <input type="checkbox"/>            | OBL              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5. <u>Calamagrostis canadensis</u>   | <u>1</u>                         | <input type="checkbox"/>            | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 6. <u>Polemonium acutiflorum</u>     | <u>0.1</u>                       | <input type="checkbox"/>            | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 7. <u>Anemone richardsonii</u>       | <u>0.1</u>                       | <input type="checkbox"/>            | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 8. <u>Carex canescens (IAM)</u>      | <u>0.1</u>                       | <input type="checkbox"/>            | FAC              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 9. <u>Rubus arcticus (IAM)</u>       | <u>0.1</u>                       | <input type="checkbox"/>            | FACU             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 10. _____                            | <u>0</u>                         | <input type="checkbox"/>            | _____            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Total Cover:</b>                  |                                  | <u>72.4</u>                         |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                      | 50% of Total Cover: <u>36.2</u>  | 20% of Total Cover: <u>14.48</u>    |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Remarks: <u>Lichen = 0</u>           |                                  |                                     |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

**SOIL**

Sampling Point: SW13\_T202\_06

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 |           |
| 4-7            | 5GY           | 4/1 | 95  | 10YR           | 4/6 | 5                 | C                | PL             | Clay Loam |
|                |               |     |     |                |     |                   |                  |                |           |
|                |               |     |     |                |     |                   |                  |                |           |
|                |               |     |     |                |     |                   |                  |                |           |
|                |               |     |     |                |     |                   |                  |                |           |
|                |               |     |     |                |     |                   |                  |                |           |
|                |               |     |     |                |     |                   |                  |                |           |

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

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

Remarks:  
 Pit quickly filled with water, lots of woody debris

**HYDROLOGY**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Wetland Hydrology Indicators:</b></p> <p>Primary Indicators (any one is sufficient)</p> <input type="checkbox"/> Surface Water (A1)<br><input checked="" 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) | <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 checked="" 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) |
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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <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 checked="" type="radio"/> No <input type="radio"/> Depth (inches): 2<br>Saturation Present? (includes capillary fringe)    Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): 1 | <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: