## WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Denali Borough | Sampling Date: 03-Aug-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T159_02**

Investigator(s): CTS, AMD | Landform (hillside, terrace, hummocks etc.): Hillside

Local relief (concave, convex, none): flat | Slope: 7.0 % / 4.0 ° | Elevation: 715

Subregion : Interior Alaska Mountains | Lat.: 63.376317978 | Long.: -148.775496125 | 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 ◉ No ○ | **Is the Sampled Area within a Wetland?** **Yes ◉ No ○** |
| Hydric Soil Present? | Yes ◉ No ○ | |
| Wetland Hydrology Present? | Yes ◉ No ○ | |

Remarks:

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

| | Tree Stratum | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|---|
| 1. | Picea glauca | 8 | ☑ | FACU |
| 2. | Picea mariana | 5 | ☑ | FACW |
| 3. | | 0 | ☐ | |
| 4. | | 0 | ☐ | |
| 5. | | 0 | ☐ | |
| | **Total Cover:** | 13 | | |

50% of Total Cover: 6.5 | 20% of Total Cover: 2.6

| | Sapling/Shrub Stratum | | | |
|---|---|---|---|---|
| 1. | Salix glauca | 15 | ☑ | FAC |
| 2. | Vaccinium uliginosum | 15 | ☑ | FAC |
| 3. | Salix richardsonii | 10 | ☑ | FACW |
| 4. | Betula nana | 8 | ☐ | FAC |
| 5. | Salix pulchra | 8 | ☐ | FACW |
| 6. | Ledum decumbens | 8 | ☐ | FACW |
| 7. | Picea glauca | 5 | ☐ | FACU |
| 8. | Picea mariana | 3 | ☐ | FACW |
| 9. | Salix reticulata | 2 | ☐ | FAC |
| 10. | Salix pseudomonticola | 2 | ☐ | FAC |
| | **Total Cover:** | 76 | | |

50% of Total Cover: 38 | 20% of Total Cover: 15.2

| | Herb Stratum | | | |
|---|---|---|---|---|
| 1. | Equisetum arvense | 40 | ☑ | FAC |
| 2. | Carex bigelowii | 8 | ☐ | FAC |
| 3. | Calamagrostis canadensis | 7 | ☐ | FAC |
| 4. | Petasites frigidus | 2 | ☐ | FACW |
| 5. | Bistorta plumosa | 1 | ☐ | FACU |
| 6. | Eriophorum russeolum | 0.1 | ☐ | FACW |
| 7. | Tofieldia pusilla | 0.1 | ☐ | FAC |
| 8. | Tephroseris atropurpurea | 0.1 | ☐ | FAC |
| 9. | Juncus triglumis | 0.1 | ☐ | FACW |
| 10. | Juncus castaneus | 0.1 | ☐ | FACW |
| | **Total Cover:** | 58.5 | | |

50% of Total Cover: 29.25 | 20% of Total Cover: 11.7

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL Species | 0 | x 1 = | 0 |
| FACW Species | 36.1 | x 2 = | 72.2 |
| FAC Species | 97.2 | x 3 = | 291.6 |
| FACU Species | 14 | x 4 = | 56 |
| UPL Species | 0 | x 5 = | 0 |
| Column Totals: | 147.3 (A) | | 419.8 (B) |

Prevalence Index = B/A = 2.850

**Hydrophytic Vegetation Indicators:**

☑ Dominance Test is > 50%

☑ Prevalence Index is ≤3.0

☐ 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.

Plot size (radius, or length x width) 10m

% Cover of Wetland Bryophytes (Where applicable)

% Bare Ground 0

Total Cover of Bryophytes 70

**Hydrophytic Vegetation Present?** **Yes ◉ No ○**

Remarks: Lichen = 1. Pyrgra, Ortsec = 0.1. Callap? = 0.1

## SOIL

**Sampling Point: SW13_T159_02**

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

| Depth (inches) | Matrix Color (moist) | | Matrix % | Redox Features Color (moist) | Redox Features % | Redox Features Type[1] | Redox Features Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 0-8 | | | 100 | | | | | Hemic Organics | |
| 8-11 | 5Y | 4/2 | 100 | | | | | Silt Loam | Ice in this layer |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix [2] Location: PL=Pore Lining. RC=Root Channel. M=Matrix

**Hydric Soil Indicators:**

- ☐ Histosol or Histel (A1)
- ☑ Histic Epipedon (A2)
- ☐ Hydrogen Sulfide (A4)
- ☐ Thick Dark Surface (A12)
- ☐ Alaska Gleyed (A13)
- ☐ Alaska Redox (A14)
- ☐ Alaska Gleyed Pores (A15)

**Indicators for Problematic Hydric Soils:[3]**

- ☐ Alaska Color Change (TA4)[4]
- ☐ Alaska Alpine swales (TA5)
- ☐ Alaska Redox With 2.5Y Hue
- ☐ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ☐ Other (Explain in Remarks)

[3] One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present

[4] Give details of color change in Remarks

Restrictive Layer (if present):

Type: Active layer

Depth (inches): 11

**Hydric Soil Present?** Yes ◉ No ○

Remarks:

Infer histic epipedon from >2 secondary indicators, frozen soils, and active layer at 11 in.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (any one is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Other (Explain in Remarks)

Secondary Indicators (two or more are required)

- ☐ Water Stained Leaves (B9)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Salt Deposits (C5)
- ☑ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☑ FAC-neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ○ | No ◉ | Depth (inches): |
| Water Table Present? | Yes ○ | No ◉ | Depth (inches): |
| Saturation Present? (includes capillary fringe) | Yes ○ | No ◉ | Depth (inches): |

**Wetland Hydrology Present?** Yes ◉ No ○

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

Remarks: