WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project   Borough/City: Matanuska-Susitna Borough   Sampling Date: 07-Aug-13

Applicant/Owner: Alaska Energy Authority   Sampling Point: **SW13_T196_02**

Investigator(s): SLI, EAC   Landform (hillside, terrace, hummocks etc.): Hillside

Local relief (concave, convex, none): hummocky   Slope: 5.2 % / 3.0 °   Elevation: 793

Subregion: Interior Alaska Mountains   Lat.: 63.308202624   Long.: -148.203419447   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: fnwws w slob understory. understory shifts to slow to the west.

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

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Picea glauca	10	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	10		

50% of Total Cover: 5   20% of Total Cover: 2

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Betula glandulosa	25	☑	FAC
2. Betula nana	10	☐	FAC
3. Salix pulchra	5	☐	FACW
4. Salix barclayi	5	☐	FAC
5. Vaccinium uliginosum	25	☑	FAC
6. Empetrum nigrum	20	☑	FAC
7. Ledum decumbens	10	☐	FACW
8. Vaccinium vitis-idaea	5	☐	FAC
9. Picea glauca	3	☐	FACU
10.	0	☐	
Total Cover:	108		

50% of Total Cover: 54   20% of Total Cover: 21.6

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Cornus suecica	0.1	☐	FAC
2. Carex bigelowii	30	☑	FAC
3. Rubus chamaemorus	0.1	☐	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	30.2		

50% of Total Cover: 15.1   20% of Total Cover: 6.04

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	15.1	x 2 =	30.20
FAC Species	120.1	x 3 =	360.3
FACU Species	13	x 4 =	52
UPL Species	0	x 5 =	0
Column Totals:	148.2 (A)		442.5 (B)

Prevalence Index = B/A = 2.986

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: 3

Total Cover of Bryophytes: 90

Hydrophytic Vegetation Present? Yes ⦿ No ○

Remarks: 3% lichen cover

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	5YR 2.5/2	100					Fibric Organics	
5-9	2.5Y 2.5/1	100					Hemic Organics	
9-16	10YR 3/2	100					Sapric Organics	5% subrounded cobbles, 15% subrounded
16-17	10YR 2/2	100					Clay Loam	

[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): 17

Hydric Soil Present?   Yes ⦿   No ○

Remarks:

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): 11	
Saturation Present? (includes capillary fringe)	Yes ⦿ No ○	Depth (inches): 8	

Wetland Hydrology Present?   Yes ⦿   No ○

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

Remarks: