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_T148_02**

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

Local relief (concave, convex, none): hummocky | Slope: % / 1.6 ° | Elevation: 724

Subregion : Interior Alaska Mountains | Lat.: 63.3912146087 | Long.: -148.596992611 | 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 ◉ No ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? **Yes ◉ No ○**

Remarks: slight drop in elevation from SW13-T148-01. site more level w more microtopography. no water in microlows at this time, but several w aquatic moss scosco, indicating they hold water during wetter times of year. less lichen cover, willows replace betgla as low shrub dominant.

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

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

Sapling/Shrub Stratum 50% of Total Cover: 2.5 20% of Total Cover: 1

1. Salix barclayi	15	☑	FAC
2. Vaccinium uliginosum	15	☑	FAC
3. Rhododendron tomentosum	7	☑	FACW
4. Picea glauca	7	☑	FACU
5. Arctous ruber	7	☑	FAC
6. Vaccinium vitis-idaea	5	☐	FAC
7. Betula nana	5	☐	FAC
8. Empetrum nigrum	5	☐	FAC
9. Picea mariana	3	☐	FACW
10. Salix reticulata	3	☐	FAC
Total Cover:	72		

Herb Stratum 50% of Total Cover: 36 20% of Total Cover: 14.4

1. Carex aquatilis	7	☑	OBL
2. Carex bigelowii	5	☑	FAC
3. Equisetum arvense	5	☑	FAC
4. Petasites frigidus	2	☐	FACW
5. Calamagrostis canadensis	2	☐	FAC
6. Rubus chamaemorus	1	☐	FACW
7. Swertia perennis	0.1	☐	FACW
8. Eriophorum vaginatum	0.1	☐	FACW
9.	0	☐	
10.	0	☐	
Total Cover:	22.2		

50% of Total Cover: 11.1 20% of Total Cover: 4.44

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 10 (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	7	x 1 =	7
FACW Species	16.2	x 2 =	32.40
FAC Species	67	x 3 =	201
FACU Species	9	x 4 =	36
UPL Species	0	x 5 =	0
Column Totals:	99.2 (A)		276.4 (B)

Prevalence Index = B/A = 2.786

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 10

Total Cover of Bryophytes 50

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

Remarks: 1% salpul, dasfru. trace vacoxy, pedicularis. 35% lichen cover.

SOIL

Sampling Point: SW13_T148_02

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
0-4	7.5YR	2.5/1	100						Fibric Organics	
4-7	5YR	2.5/1	100						Hemic Organics	
7-11	5GY	4/1	60	7.5R	4/4	40	C	PL	Fine Sandy Clay Loam	Subrounded boulder here - 30% of hor
11-14	5GY	4/1	80	7.5YR	4/1	20	C	M	Fine Sandy 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): 27

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): 7
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: