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_T145_05**

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

Local relief (concave, convex, none): hummocky | Slope: 5.2 % / 3.0 ° | Elevation: 733

Subregion : Interior Alaska Mountains | Lat.: 63.399567842 | Long.: -148.658466935 | 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: area appears to have burned in the past - charcoal in soil profile.

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1. Picea glauca	1	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	1		
Sapling/Shrub Stratum	50% of Total Cover: 0.5	20% of Total Cover: 0.2	
1. Picea glauca	3	☐	FACU
2. Betula nana	1	☐	FAC
3. Dasiphora fruticosa	5	☑	FAC
4. Vaccinium uliginosum	5	☑	FAC
5. Empetrum nigrum	5	☑	FAC
6. Ledum decumbens	5	☑	FACW
7. Arctostaphylos rubra	7	☑	FAC
8. Salix reticulata	3	☐	FAC
9. Andromeda polifolia (IAM)	1	☐	OBL
10.	0	☐	
Total Cover:	35		
Herb Stratum	50% of Total Cover: 17.5	20% of Total Cover: 7	
1. Equisetum arvense	2	☐	FAC
2. Carex rariflora	5	☑	OBL
3. Tofieldia pusilla	2	☐	FAC
4. Carex chordorrhiza	1	☐	OBL
5. Juncus biglumis	1	☐	OBL
6. Carex bigelowii	3	☐	FAC
7. Carex membranacea	2	☐	FACW
8. Carex aquatilis	5	☑	OBL
9. Parnassia palustris	1	☐	FACW
10. Trichophorum caespitosum	5	☑	OBL
Total Cover:	27		
50% of Total Cover: 13.5	20% of Total Cover: 5.4		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 88.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	18	x 1 =	18
FACW Species	8	x 2 =	16
FAC Species	33	x 3 =	99
FACU Species	4	x 4 =	16
UPL Species	0	x 5 =	0
Column Totals:	63 (A)		149 (B)

Prevalence Index = B/A = 2.365

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 5

Total Cover of Bryophytes 80

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

Remarks: 10% lichen cover. trace erigeron sp (humilis?), anemone sp, spiranthes romanzoffiana, swertia perennis, parnassia palustris, bistorta vivipara, pedicularis sp., dodecatheon sp., eriophorum angustifolium (no infl, fused leaf tips), carex vaginatum.

SOIL

Sampling Point: SW13_T145_05

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
0-3	7.5YR	2.5/2	100					Fibric Organics	
3-6	2.5YR	2.5/1	100					Hemic Organics	Looks like burn layer from old fire.
6-12	10R	2.5/2	100					Hemic Organics	
12-15	N	4/1	100					Coarse Sandy Loam	Gravel 30%

[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:
Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:
2nd horizon looks like burn layer from old fire. Remnants of very small pieces of charcoal and burned roots and/or herbaceous stems.

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): 12
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 9

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: