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_04**

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

Local relief (concave, convex, none): hummocky | Slope: 0.0 % / 0.0 ° | Elevation: 736

Subregion : Interior Alaska Mountains | Lat.: 63.388997555 | Long.: -148.59410274 | 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: substantial microtopography. low areas w scosco (aquatic moss), caltha, and eriang. high areas w picea trees and ericaceous shrubs. overall a saturated community.

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

	Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Picea mariana	8	☑	FACW
2.	Picea glauca	7	☑	FACU
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	15		

	Sapling/Shrub Stratum (50% of Total Cover: 7.5 / 20% of Total Cover: 3)			
1.	Salix reticulata	15	☑	FAC
2.	Salix barclayi	10	☑	FAC
3.	Picea mariana	10	☑	FACW
4.	Vaccinium uliginosum	10	☑	FAC
5.	Arctostaphylos rubra	5	☐	FAC
6.	Empetrum nigrum	3	☐	FAC
7.	Ledum groenlandicum	3	☐	FAC
8.	Picea glauca	3	☐	FACU
9.	Ledum decumbens	2	☐	FACW
10.	Shepherdia canadensis	1	☐	FACU
	Total Cover:	62		

	Herb Stratum (50% of Total Cover: 31 / 20% of Total Cover: 12.4)			
1.	Carex bigelowii	15	☑	FAC
2.	Carex aquatilis	10	☑	OBL
3.	Equisetum palustre	5	☐	FACW
4.	Equisetum arvense	2	☐	FAC
5.	Arctagrostis latifolia	2	☐	FACW
6.	Rubus chamaemorus	1	☐	FACW
7.	Carex saxatilis	1	☐	FACW
8.	Caltha leptosepala	0.1	☐	OBL
9.	Tofieldia pusilla	0.1	☐	FAC
10.	Carex gynocrates	0.1	☐	OBL
	Total Cover:	36.3		
	50% of Total Cover: 18.15 / 20% of Total Cover: 7.26			

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 87.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	10	x 1 =	10
FACW Species	29	x 2 =	58
FAC Species	63	x 3 =	189
FACU Species	11	x 4 =	44
UPL Species	0	x 5 =	0
Column Totals:	113 (A)		301 (B)

Prevalence Index = B/A = 2.664

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 80

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

Remarks: 1% salpul, eriang. trace parnassia palustris, polemonium, carex capillaris, carex chordorrhiza, bistorta vivipara

SOIL

Sampling Point: SW13_T148_04

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
0-6	7.5YR	2.5/2	100						Fibric Organics	
6-9	5YR	2.5/1	100						Hemic Organics	
9-16	10B	5/1	70	5YR	5/6	30	C	PL	Fine Sandy Clay Loam	Subrounded cobbles 15%

[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): 20

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): 8
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: