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_T160_06**

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

Local relief (concave, convex, none): flat | Slope: % / 1.0 ° | Elevation: 714

Subregion : Interior Alaska Mountains | Lat.: 63.3663544647 | Long.: -148.82036233 | Datum: NAD83

Soil Map Unit Name: | **NWI classification: PSS1/4B**

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	4	☑	FACU
2.	Picea mariana	6	☑	FACW
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	10		

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

	Sapling/Shrub Stratum			
1.	Picea mariana	4	☐	FACW
2.	Picea glauca	2	☐	FACU
3.	Salix pulchra	10	☐	FACW
4.	Salix richardsonii	3	☐	FACW
5.	Betula nana	2	☐	FAC
6.	Vaccinium uliginosum	30	☑	FAC
7.	Empetrum nigrum	25	☑	FAC
8.	Arctous ruber	5	☐	FAC
9.	Rhododendron tomentosum	5	☐	FACW
10.	Salix reticulata	5	☐	FAC
	Total Cover:	91		

50% of Total Cover: 45.5 | 20% of Total Cover: 18.2

	Herb Stratum			
1.	Rubus chamaemorus	15	☑	FACW
2.	Eriophorum angustifolium	5	☐	OBL
3.	Carex rotundata	10	☑	OBL
4.	Tofieldia pusilla	0.1	☐	FAC
5.	Arctagrostis latifolia	2	☐	FACW
6.	Carex bigelowii	4	☐	FAC
7.	Carex aquatilis	4	☐	OBL
8.	Eriophorum russeolum	2	☐	FACW
9.	Trichophorum caespitosum	6	☐	OBL
10.		0	☐	
	Total Cover:	48.1		

50% of Total Cover: 24.05 | 20% of Total Cover: 9.62

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	25	x 1 =	25
FACW Species	47	x 2 =	94
FAC Species	71.1	x 3 =	213.3
FACU Species	6	x 4 =	24
UPL Species	0	x 5 =	0
Column Totals:	149.1 (A)		356.3 (B)

Prevalence Index = B/A = 2.390

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 65

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

Remarks: Lichen = 20, Dasfru = 1, Vacvit = 2

SOIL

Sampling Point: SW13_T160_06

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
0-13			100					Fibric Organics	
13-20	5GY	4/1	100					Sandy Loam	Lots of gravel

[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:

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): 15
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 4

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: