WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Denali Borough | Sampling Date: 03-Aug-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T159_02**

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

Local relief (concave, convex, none): flat | Slope: % / 10.7 ° | Elevation: 705

Subregion : Interior Alaska Mountains | Lat.: 63.3763179778 | Long.: -148.775496126 | 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 ○	**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	8	☑	FACU
2.	Picea mariana	5	☑	FACW
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	13		

	Sapling/Shrub Stratum (50% of Total Cover: 6.5 / 20% of Total Cover: 2.6)			
1.	Salix glauca	15	☑	FAC
2.	Vaccinium uliginosum	15	☑	FAC
3.	Salix richardsonii	10	☑	FACW
4.	Betula nana	8	☐	FAC
5.	Salix pulchra	8	☐	FACW
6.	Rhododendron tomentosum	8	☐	FACW
7.	Picea glauca	5	☐	FACU
8.	Picea mariana	3	☐	FACW
9.	Salix reticulata	2	☐	FAC
10.	Salix pseudomonticola	2	☐	FAC
	Total Cover:	76		

	Herb Stratum (50% of Total Cover: 38 / 20% of Total Cover: 15.2)			
1.	Equisetum arvense	40	☑	FAC
2.	Carex bigelowii	8	☐	FAC
3.	Calamagrostis canadensis	7	☐	FAC
4.	Petasites frigidus	2	☐	FACW
5.	Bistorta plumosa	1	☐	FACU
6.	Eriophorum russeolum	0.1	☐	FACW
7.	Tofieldia pusilla	0.1	☐	FAC
8.	Tephroseris atropurpurea	0.1	☐	FAC
9.	Juncus triglumis	0.1	☐	FACW
10.	Juncus castaneus	0.1	☐	FACW
	Total Cover:	58.5		
	50% of Total Cover: 29.25 / 20% of Total Cover: 11.7			

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	0	x 1 =	0
FACW Species	36.3	x 2 =	72.6
FAC Species	97.2	x 3 =	291.6
FACU Species	14	x 4 =	56
UPL Species	0	x 5 =	0
Column Totals:	147.5 (A)		420.2 (B)

Prevalence Index = B/A = 2.849

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: 70

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

Remarks: Lichen = 1. Pyrgra, Ortsec = 0.1. Callap? = 0.1

SOIL

Sampling Point: SW13_T159_02

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 %	Type [1]	Loc [2]	Texture	Remarks
0-8		100					Hemic Organics	
8-11	5Y 4/2	100					Silt Loam	Ice in this layer

[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): 11

Hydric Soil Present? Yes ◉ No ○

Remarks:

Infer histic epipedon from >2 secondary indicators, frozen soils, and active layer at 11 in.

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):
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: