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_T202_01**

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

Local relief (concave, convex, none): flat | Slope: 7.0 % / 4.0 ° | Elevation: 694

Subregion : Interior Alaska Mountains | Lat.: 63.39341414 | Long.: -148.537798166 | 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 ○ Hydric Soil Present? Yes ◉ No ○ Wetland Hydrology Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** **Yes** ◉ **No** ○

Remarks:

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1. Picea glauca	25	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	25		
Sapling/Shrub Stratum (50% of Total Cover: 12.5 20% of Total Cover: 5)			
1. Salix richardsonii	40	☑	FACW
2. Alnus viridis ssp. crispa	30	☐	FAC
3. Salix glauca	1	☐	FAC
4. Salix pseudomonticola	1	☐	FAC
5. Vaccinium uliginosum	30	☐	FAC
6. Salix reticulata	70	☑	FAC
7. Salix alaxensis	1	☐	FAC
8. Vaccinium vitis-idaea	0.1	☐	FAC
9. Ledum groenlandicum	2	☐	FAC
10. Shepherdia canadensis	0.1	☐	FACU
Total Cover:	175		
Herb Stratum (50% of Total Cover: 87.6 20% of Total Cover: 35.04)			
1. Anemone richardsonii	25	☑	FAC
2. Parnassia palustris	1	☐	FACW
3. Equisetum arvense	20	☑	FAC
4. Rubus arcticus (IAM)	1	☐	FACU
5. Vaccinium oxycoccos	0.1	☐	OBL
6. Polemonium acutiflorum	1	☐	FAC
7.	0	☐	
8.	0	☐	
9.	0	☐	
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: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (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	0.1	x 1 =	0.1
FACW Species	41	x 2 =	82
FAC Species	181.1	x 3 =	543.3
FACU Species	26.1	x 4 =	104.4
UPL Species	0	x 5 =	0
Column Totals:	248.3 (A)		729.8 (B)

Prevalence Index = B/A = 2.939

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. Carex sp. not flowering = Carbig maybe... Empnig = 0.1

SOIL

Sampling Point: SW13_T202_01

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
0-4		100					Hemic Organics	
4-9	2.5Y 3/1	100					Loam	Lots of gravel/small pebbles
9-11	5Y 2.5/1	100					Silt 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:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

Restricted by boulders at 11. Seeps present but water moving down hillside mostly subsurface. Assume problematic hydric soils (soils lacking sufficient organic carbon) based on coarse material in soil profile. Surface material may be very young with retransported material from the road or water is perched on a bedrock restrictive layer.

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): 9
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: