WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Denali Borough | Sampling Date: 30-Jul-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T212_04**

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

Local relief (concave, convex, none): flat | Slope: % / 1.9 ° | Elevation: 670

Subregion : Interior Alaska Mountains | Lat.: 63.3754618172 | Long.: -148.912566782 | 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 ○

Hydric Soil Present? Yes ◉ No ○

Wetland Hydrology Present? Yes ◉ No ○

Is the Sampled Area within a Wetland? **Yes** ◉ **No** ○

Remarks: anthropogenic disturbance - many trees cleanly cut by chainsaw, ATV tracks. hiking to plot, thin band of high reflectance is calcan (suspect too small to map). hiked through wetter sections of fnwws, plot in relatively dry area.

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1. Picea glauca	15	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	15		
Sapling/Shrub Stratum	50% of Total Cover: 7.5	20% of Total Cover: 3	
1. Picea glauca	1	☐	FACU
2. Vaccinium vitis-idaea	20	☐	FAC
3. Vaccinium uliginosum	55	☑	FAC
4. Empetrum nigrum	25	☑	FAC
5. Salix pulchra	5	☐	FACW
6. Arctous ruber	5	☐	FAC
7. Ribes hudsonianum	0.1	☐	FAC
8. Ribes triste	0.1	☐	FAC
9. Alnus viridis	0.1	☐	FAC
10. Betula glandulosa	15	☐	FAC
Total Cover:	126		
Herb Stratum	50% of Total Cover: 63.15	20% of Total Cover: 25.26	
1. Carex bigelowii	20	☑	FAC
2. Calamagrostis canadensis	5	☐	FAC
3. Petasites frigidus	3	☐	FACW
4. Rubus arcticus (IAM)	5	☐	FACU
5. Chamaenerion angustifolium	0.1	☐	FACU
6. Polemonium acutiflorum	0.1	☐	FAC
7. Equisetum arvense	0.1	☐	FAC
8. Aconitum delphiniifolium	0.1	☐	FAC
9.	0	☐	
10.	0	☐	
Total Cover:	33.4		
50% of Total Cover:	16.7	20% of Total Cover:	6.68

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	8	x 2 =	16
FAC Species	145.6	x 3 =	436.8
FACU Species	21.1	x 4 =	84.40
UPL Species	0	x 5 =	0
Column Totals:	174.7 (A)		537.2 (B)

Prevalence Index = B/A = 3.075

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 90

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

Remarks: 1% rumex sp. hiking through forest to this plot - understory varies between betgla and vaculi dominant.

SOIL

Sampling Point: SW13_T212_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
0-3	5YR	3/2	100						Fibric Organics	
3-7	5YR	2.5/1	100						Hemic Organics	
7-9	7.5YR	3/1	100						Sapric Organics	w some mineral content
9-17	5Y	5/2	50	5YR	5/6	48	C	PL	Silty Clay	
+mottle				5B	4/1	2	D	PL		

[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 (frozen), silty clay

Depth (inches): 17, 9

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):
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:

water perched atop silt clay layer, pore water at top pf silt clay layer visible, soils glisteningg, appear sweaty. saturation difficult to discern in clay soils, but believe this is previous night rain perched atop clay layer, saturating soils, not associated w a water table.