WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 04-Jul-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T122_04**

Investigator(s): SLI, SCB | Landform (hillside, terrace, hummocks etc.): Terrace

Local relief (concave, convex, none): hummock | Slope: % / 2.3 ° | Elevation: 714

Subregion : Interior Alaska Mountains | Lat.: 62.8563109644 | Long.: -148.492137909 | Datum: NAD83

Soil Map Unit Name: | **NWI classification: PSS1E**

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: Odd site. Robust picgla on small, pronounced hummocks. Hummocks surrounded by salpul, calcan, and open water. Small r2ubh stream runs through communitiy. Few scattered dead spruce along lakeshore.

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1. Picea glauca	10	☑	FACU
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	10		
Sapling/Shrub Stratum	50% of Total Cover: 5	20% of Total Cover: 2	
1. Salix pulchra	40	☑	FACW
2. Dasiphora fruticosa	5	☐	FAC
3. Picea glauca	2	☐	FACU
4. Betula nana	2	☐	FAC
5. Rosa acicularis	1	☐	FACU
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	50		
Herb Stratum	50% of Total Cover: 25	20% of Total Cover: 10	
1. Calamagrostis canadensis	30	☑	FAC
2. Equisetum arvense	15	☑	FAC
3. Cornus suecica	5	☐	FAC
4. Comarum palustre	2	☐	OBL
5. Carex aquatilis	2	☐	OBL
6. Sanguisorba officinalis	1	☐	FACW
7. Petasites frigidus	1	☐	FACW
8. Valeriana capitata	0.1	☐	FAC
9. Chamaenerion angustifolium	0.1	☐	FACU
10. Rubus chamaemorus	0.1	☐	FACW
Total Cover:	56.3		
50% of Total Cover: 28.15	20% of Total Cover: 11.26		

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	4	x 1 =	4
FACW Species	42	x 2 =	84
FAC Species	57.1	x 3 =	171.3
FACU Species	13	x 4 =	52
UPL Species	0	x 5 =	0
Column Totals:	116.1 (A)		311.3 (B)

Prevalence Index = B/A = 2.681

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 10

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

Remarks: traces of carex loliacea, rubus arctica, acudel, caraqu, comarum around flooded depressions.

SOIL

Sampling Point: SW13_T122_04

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
0-5			100%						Hemic Organics	
5-9	2.5Y	3/2	85%	7.5YR	3/4	15%	C	PL	Silt Loam	w/5% ox rihiz
9-12	5Y	4/2	85%	10YR	4/4	15%	C	PL	Silt Loam	w/2% ox rhiz

[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: frozen

Depth (inches): 12

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): 6
Water Table Present?	Yes ○	No ◉	Depth (inches): 5
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches): 1

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Numerous pools of water throughout site, avg dpth 6in, appear permanently flooded (unvegetated) with fringe of compal and sedges. 5% ox rhiz in 3-5 in layer, positive rxn to alpha alpha-dipyridyl in top 12 inches.