WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 05-Aug-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T100_06**

Investigator(s): BAB | Landform (hillside, terrace, hummocks etc.): Lowland

Local relief (concave, convex, none): hummocky | Slope: % / 1.7 ° | Elevation: 781

Subregion : Copper River Basin | Lat.: 62.6210383329 | Long.: -147.413063329 | 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: Substantial microtopographic relief, very hummocky. Interhummock areas ca 30% of site and very wet.

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

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Picea mariana	5	☑	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	5		

50% of Total Cover: 2.5 | 20% of Total Cover: 1

Sapling/Shrub Stratum			
1. Betula nana	15	☑	FAC
2. Vaccinium uliginosum	15	☑	FAC
3. Rhododendron tomentosum	5	☐	FACW
4. Picea mariana	3	☐	FACW
5. Empetrum nigrum	3	☐	FAC
6. Vaccinium vitis-idaea	4	☐	FAC
7. Salix pulchra	8	☐	FACW
8. Salix reticulata	2	☐	FAC
9. Populus balsamifera	2	☐	FACU
10. Arctous ruber	1	☐	FAC
Total Cover:	58		

50% of Total Cover: 29 | 20% of Total Cover: 11.6

Herb Stratum			
1. Juncus arcticus	1	☐	OBL
2. Juncus castaneus	1	☐	FACW
3. Carex bigelowii	15	☑	FAC
4. Carex lapponica	3	☐	OBL
5. Epilobium palustre	0.1	☐	OBL
6. Chamaenerion angustifolium	2	☐	FACU
7. Carex utriculata	2	☐	OBL
8. Carex tenuiflora	3	☐	OBL
9. Erigeron acris	5	☑	FAC
10. Petasites frigidus	4	☐	FACW
Total Cover:	36.1		

50% of Total Cover: 18.05 | 20% of Total Cover: 7.22

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	9.1	x 1 =	9.1
FACW Species	26	x 2 =	52
FAC Species	60	x 3 =	180
FACU Species	4	x 4 =	16
UPL Species	0	x 5 =	0
Column Totals:	99.1 (A)		257.1 (B)

Prevalence Index = B/A = 2.594

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 15

Total Cover of Bryophytes 45

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

Remarks: eriacr, caraur, calcan carmis trace

SOIL

Sampling Point: SW13_T100_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
0-3			100%						Fibric Organics	
3-5			100%						Hemic Organics	
5-8	10YR	3/2	100%						Silty Clay	w rounded gravel
8-20	2.5Y	4/2	85%	7.5YR	4/4	15%	C	PL	Silty Clay	w few rounded gravels and organic inclusio

[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: clay
Depth (inches): 5

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): 5

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:
Ca 30% of plot very wet with gleyed soils.