WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 24-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T328_02**

Investigator(s): SLI, TXC | Landform (hillside, terrace, hummocks etc.): Hillside

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

Subregion : Cook Inlet Mountains | Lat.: | Long.: | 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: discharge slope between two alpine lakes. numerous seeps/springs throughout open willow community. frost hummocks throughout, with standing water in low areas.

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

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

50% of Total Cover: 0 | 20% of Total Cover: 0

Sapling/Shrub Stratum			
1. Salix pulchra	40	☑	FACW
2. Salix barclayi	20	☑	FAC
3. Vaccinium uliginosum	5	☐	FAC
4. Betula glandulosa	2	☐	FAC
5. Salix reticulata	2	☐	FAC
6. Spiraea stevenii	1	☐	FACU
7. Dasiphora fruticosa	1	☐	FAC
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	71		

50% of Total Cover: 35.5 | 20% of Total Cover: 14.2

Herb Stratum			
1. Cornus suecica	5	☑	FAC
2. Equisetum arvense	5	☑	FAC
3. Petasites frigidus	5	☑	FACW
4. Carex bigelowii	5	☑	FAC
5. Sanguisorba canadensis	3	☐	FACW
6. Rubus arcticus	2	☐	FAC
7. Calamagrostis canadensis	1	☐	FAC
8. Rhodiola integrifolia	0.1	☐	FAC
9. Achillea millefolium	0.1	☐	FACU
10. Mertensia paniculata	0.1	☐	FACU
Total Cover:	26.3		

50% of Total Cover: 13.15 | 20% of Total Cover: 5.26

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (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	0	x 1 =	0
FACW Species	48	x 2 =	96
FAC Species	48.1	x 3 =	144.3
FACU Species	1.2	x 4 =	4.800
UPL Species	0	x 5 =	0
Column Totals:	97.3 (A)		245.1 (B)

Prevalence Index = B/A = 2.519

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 7

Total Cover of Bryophytes 90

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

Remarks: 1% viola. trace artemisia, polemonium, dodecatheon, luzula, sau ang, poa.

SOIL

Sampling Point: SW15_T328_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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2							Peat	Oi
2-4							Mucky Peat	Oe
4-5.5							Muck	Oa
5.5-11	10YR	3/2					Silt Loam	A
11-14	10YR	3/3					Silt Loam	BA

[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:
Discharge slope btwn two alpine lakes. saturated soils to surface, water table at 5 in. Oxyaquic soil moisture conditions.

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): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:
small scattered pools of open water. D2--discharge slope between two alpine lakes.