WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 20-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T305_08**

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

Local relief (concave, convex, none): tussocks | Slope: 5.2 % / 3.0 ° | Elevation:

Subregion : Interior Alaska 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 ○	**Is the Sampled Area within a Wetland?** **Yes ◉ No ○**
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks: apparent groundwater discharge area. bioindicators = salret, tomnit

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

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

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

	Sapling/Shrub Stratum			
1.	Betula nana	10	☑	FAC
2.	Vaccinium uliginosum	10	☑	FAC
3.	Rhododendron groenlandicum	8	☑	FAC
4.	Picea glauca	6	☑	FACU
5.	Rhododendron tomentosum	5	☐	FACW
6.	Salix reticulata	5	☐	FAC
7.	Salix myrtillifolia	5	☐	FACW
8.	Salix richardsonii	5	☐	FACW
9.	Picea mariana	4	☐	FACW
10.	Vaccinium vitis-idaea	3	☐	FAC
	Total Cover:	61		

50% of Total Cover: 30.5 | 20% of Total Cover: 12.2

	Herb Stratum			
1.	Carex bigelowii	10	☑	FAC
2.	Equisetum arvense	3	☐	FAC
3.	Eriophorum angustifolium	3	☐	OBL
4.	Rubus chamaemorus	3	☐	FACW
5.	Cornus canadensis	0.1	☐	FACU
6.		0	☐	
7.		0	☐	
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	19.1		

50% of Total Cover: 9.55 | 20% of Total Cover: 3.82

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	3	x 1 =	3
FACW Species	22	x 2 =	44
FAC Species	49	x 3 =	147
FACU Species	6.1	x 4 =	24.4
UPL Species	0	x 5 =	0
Column Totals:	80.1 (A)		218.4 (B)

Prevalence Index = B/A = 2.727

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 35

Total Cover of Bryophytes 60

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

Remarks: <5% tree size picmar, picgla--recorded in sapling/shrub stratum. tussocks formed by carbig. hummocks also present. bare ground is tussock litter and water

SOIL

Sampling Point: SW15_T305_08

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
0-4									Peat	
4-10									Mucky Peat	
10-14	10YR	2/2	100						Sandy Loam	few thin layers coarse sand
14-16	10YR	2/2	100						Loam	underlain by large rocks

[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:

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): 5
Water Table Present?	Yes ◉	No ○	Depth (inches): 3
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:

strong microtopography, open running channels among tussocks. D4--hummocks and tussocks.