WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 28-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T335_03**

Investigator(s): JGK | Landform (hillside, terrace, hummocks etc.): Shoulder slope

Local relief (concave, convex, none): hummocky | Slope: 8.7 % / 5.0 ° | 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:

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1.		☐	
2.		☐	
3.		☐	
4.		☐	
5.		☐	
Total Cover:	0		
Sapling/Shrub Stratum (50% of Total Cover: 0 / 20% of Total Cover: 0)			
1. Salix reticulata	35	☑	FAC
2. Vaccinium uliginosum	20	☑	FAC
3. Betula nana	15	☐	FAC
4. Salix pulchra	10	☐	FACW
5. Empetrum nigrum	10	☐	FAC
6. Rhododendron tomentosum	5	☐	FACW
7. Salix richardsonii	3	☐	FACW
8. Arctous alpinus	2	☐	FACU
9.	0	☐	
10.	0	☐	FACU
Total Cover:	100		
Herb Stratum (50% of Total Cover: 50 / 20% of Total Cover: 20)			
1. Carex bigelowii	10	☑	FAC
2. Festuca altaica	10	☑	FAC
3. Luzula parviflora	7	☑	FAC
4. Artemisia campestris	5	☐	UPL
5. Swertia perennis	5	☐	FACW
6. Poa arctica	3	☐	FAC
7. Saussurea angustifolia	2	☐	FAC
8. Astragalus umbellatus	1	☐	UPL
9.	0	☐	
10.	0	☐	
Total Cover:	43		
50% of Total Cover: 21.5 / 20% of Total Cover: 8.6			

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	0	x 1 =	0
FACW Species	23	x 2 =	46
FAC Species	112	x 3 =	336
FACU Species	2	x 4 =	8
UPL Species	6	x 5 =	30
Column Totals:	143 (A)		420 (B)

Prevalence Index = B/A = 2.937

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) 0

% Bare Ground 10

Total Cover of Bryophytes 30

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

Remarks: Bare ground is boulders--lichen cover is 15%--still some snow, making estimates of short herb, dwarf shrub, and mosses and lichens general.

SOIL

Sampling Point: SW15_T335_03

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
0-1									Fibric Organics	
1-3									Hemic Organics	
3-4									Sapric Organics	
4-10	5Y	3/2	75	7.5YR	4/6	25	C	PL	Coarse Sandy Loam	
10-17	10B	4/1	80	2.5Y	2/3	15	C	PL	Sandy Clay Loam	
+mottle				5YR	3/4	5	C	PL		
17-23	5Y	2.5/2	100						Sandy Clay Loam	

[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: sandy clay loam

Depth (inches): 10

Hydric Soil Present? Yes ◉ No ○

Remarks:

Subangular cobbles throughout.

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): 11

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: