WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 23-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T308_05**

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

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:** **PSS1/3B**

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:

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

	Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Picea mariana	10	☑	FACW
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.	Picea mariana	18	☑	FACW
2.	Rhododendron tomentosum	12	☑	FACW
3.	Vaccinium uliginosum	10	☑	FAC
4.	Betula nana	10	☑	FAC
5.	Salix pulchra	6	☐	FACW
6.	Vaccinium vitis-idaea	5	☐	FAC
7.	Empetrum nigrum	3	☐	FAC
8.	Rhododendron groenlandicum	1	☐	FAC
9.	Vaccinium oxycoccos	0.1	☐	OBL
10.		0	☐	
	Total Cover:	65.1		

Herb Stratum — 50% of Total Cover: 32.55 — 20% of Total Cover: 13.02

1.	Rubus chamaemorus	5	☑	FACW
2.	Carex bigelowii	5	☑	FAC
3.	Petasites frigidus	4	☑	FACW
4.	Calamagrostis canadensis	0.1	☐	FAC
5.	Orthilia secunda	0.1	☐	FACU
6.		0	☐	
7.		0	☐	
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	14.2		

50% of Total Cover: 7.1 — 20% of Total Cover: 2.84

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (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	0.1	x 1 =	0.1
FACW Species	55	x 2 =	110
FAC Species	34.1	x 3 =	102.3
FACU Species	0.1	x 4 =	0.400
UPL Species	0	x 5 =	0
Column Totals:	89.3 (A)		212.8 (B)

Prevalence Index = B/A = 2.383

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 3

Total Cover of Bryophytes 80

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

Remarks: bare ground litter and trace standing water. bryophytes are sphagnum and feathermosses.

SOIL

Sampling Point: SW15_T308_05

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
0-3									Peat	
3-6									Mucky Peat	
6-9									Muck	w/ mineral content
9-15	10GY	5/1	80	5YR	4/4	20	C	PL	Sandy Clay Loam	3+% oxidized rhizospheres along living roots
15-24	5GY	4/1	100						Clay Loam	few gravel

[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): 9

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): 6
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 4

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

C3--see soil profile. D1--stunted picmar. D3--sandy clay loam.