WETLAND DETERMINATION DATA FORM - Alaska Region

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

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T114_03**

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

Local relief (concave, convex, none): flat | Slope: 8.7 % / 5.0 ° | Elevation: 510

Subregion : Interior Alaska Mountains | Lat.: 62.781399488 | Long.: -148.015982032 | Datum: WGS84

Soil Map Unit Name: | **NWI classification: PSS4B**

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: black spruce woodland
photo time 1134
photo num 1020, 1021

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1. Picea mariana	20	☑	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	20		
Sapling/Shrub Stratum	50% of Total Cover: 10		20% of Total Cover: 4
1. Picea mariana	20	☑	FACW
2. Salix pulchra	3	☐	FACW
3. Vaccinium uliginosum	25	☑	FAC
4. Vaccinium vitis-idaea	15	☐	FAC
5. Ledum groenlandicum	10	☐	FAC
6. Empetrum nigrum	5	☐	FAC
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	78		
Herb Stratum	50% of Total Cover: 39		20% of Total Cover: 15.6
1. Equisetum sylvaticum	20	☑	FAC
2. Arctagrostis latifolia	1	☐	FACW
3. Saussurea angustifolia	2	☐	FAC
4. Petasites frigidus	4	☐	FACW
5. Pedicularis labradorica	1	☐	FACW
6. Equisetum arvense	4	☐	FAC
7. Carex vaginata	1	☐	OBL
8. Rubus chamaemorus	10	☑	FACW
9. Rubus arcticus (IAM)	1	☐	FACU
10.	0	☐	
Total Cover:	44		
	50% of Total Cover: 22		20% of Total Cover: 8.8

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	1	x 1 =	1
FACW Species	59	x 2 =	118
FAC Species	81	x 3 =	243
FACU Species	1	x 4 =	4
UPL Species	0	x 5 =	0
Column Totals:	142 (A)		366 (B)

Prevalence Index = B/A = 2.577

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

Total Cover of Bryophytes 45

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

Remarks:

SOIL

Sampling Point: SW13_T114_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
0-3			100						Fibric Organics	
3-4			100						Hemic Organics	
4-5			100						Sapric Organics	
5-6	2.5Y	3/2	85	7.5YR	2.5/2	15	RM	PL	Silty Clay Loam	
6-8	10YR	2/2	100						Sapric Organics	
8-12	5Y	4/1	55	7.5YR	3/3	45	RM	PL	Silty 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: seasonal frost

Depth (inches): 15

Hydric Soil Present? Yes ◉ No ○

Remarks:

Given the concave toeslope geomorphic position and strength of the the hydrophic vegetation and hydrology indicators have chosen to overide the 4/4 color requirement for Alaska Redox and assume hydric soils.

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): 1
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:

microrelief pronounced