WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 03-Jul-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T125_03**

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

Local relief (concave, convex, none): concave | Slope: 22.0 % / 12.4 ° | Elevation: 540

Subregion : Southcentral Alaska | Lat.: 62.938548207 | Long.: -149.623906612 | Datum: WGS84

Soil Map Unit Name: | **NWI classification: PSS1E**

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: photo time 14:50, #1147, 1148. alder discharge slope. seeps/springs w running water interspersed w dry, tree-supporting hummocks. soils/hydro characterize low points, veg data characterizing slope as a whole.

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

	Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Betula neoalaskana	1	☑	FACU
2.	Picea glauca	1	☑	FACU
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	2		

Sapling/Shrub Stratum — 50% of Total Cover: 1 — 20% of Total Cover: 0.4

1.	Alnus viridis	80	☑	FAC
2.	Spiraea stevenii	7	☐	FACU
3.	Sorbus scopulina	0.1	☐	FACU
4.	Ribes glandulosum	0.1	☐	FACU
5.	Rubus pedatus	0.1	☐	FAC
6.		0	☐	
7.		0	☐	
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	87.3		

Herb Stratum — 50% of Total Cover: 43.65 — 20% of Total Cover: 17.46

1.	Dryopteris expansa	15	☑	FACU
2.	Streptopus amplexifolius	2	☐	FACU
3.	Viola epipsila	2	☐	FACW
4.	Equisetum arvense	2	☐	FAC
5.	Gymnocarpium dryopteris	1	☐	FACU
6.	Spinulum annotinum	1	☐	FACU
7.	Calamagrostis canadensis	1	☐	FAC
8.	Equisetum sylvaticum	0.1	☐	FAC
9.	Thalictrum sparsiflorum	0.1	☐	FACU
10.	Rumex arcticus	0.1	☐	FAC
	Total Cover:	24.3		

50% of Total Cover: 12.15 — 20% of Total Cover: 4.86

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	2	x 2 =	4
FAC Species	83.1	x 3 =	249.3
FACU Species	28.2	x 4 =	112.8
UPL Species	0	x 5 =	0
Column Totals:	113.3 (A)		366.1 (B)

Prevalence Index = B/A = 3.231

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: 30

Total Cover of Bryophytes: 20

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

Remarks: drier species growing on hummock. low areas partially veged (<15% total cover) w viola, streptopus, and ribes, w bare ground and leaf litter. 1% willow w/o catkins. Trace of Polemonium acutiflorum.

SOIL

Sampling Point: SW13_T125_03

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 %	Type [1]	Loc [2]	Texture	Remarks
0-12	10YR 2/2	100					Sapric Organic	w some mineral content, many ang-subang

[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: none
Depth (inches): n/a

Hydric Soil Present? Yes ◉ No ○

Remarks:
wood debris throught profile. fairly unconsolidated soils (sink to ankles).

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):	1
Water Table Present?	Yes ◉ No ○	Depth (inches):	2
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:
seeps\springs in alder discharge slope. many small drainages running downslope through community.