WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Denali Borough | Sampling Date: 05-Aug-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T201_09**

Investigator(s): SLI, EAC | Landform (hillside, terrace, hummocks etc.): Footslope

Local relief (concave, convex, none): hummocky | Slope: 1.7 % / 1.0 ° | Elevation: 672

Subregion : Interior Alaska Mountains | Lat.: 63.359832644 | Long.: -148.952693224 | 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 ○ Hydric Soil Present? Yes ◉ No ○ Wetland Hydrology Present? Yes ◉ No ○	**Is the Sampled Area within a Wetland?** **Yes ◉ No ○**

Remarks: GVEA ROW

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

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	0		
Sapling/Shrub Stratum (50% of Total Cover: 0 / 20% of Total Cover: 0)			
1. Betula glandulosa	10	☐	FAC
2. Picea glauca	1	☐	FACU
3. Salix pulchra	10	☐	FACW
4. Salix barclayi	20	☑	FAC
5. Salix reticulata	30	☑	FAC
6. Vaccinium uliginosum	5	☐	FAC
7. Vaccinium vitis-idaea	3	☐	FAC
8. Empetrum nigrum	5	☐	FAC
9. Ledum decumbens	3	☐	FACW
10. Arctostaphylos rubra	2	☐	FAC
Total Cover:	89		
Herb Stratum (50% of Total Cover: 44.5 / 20% of Total Cover: 17.8)			
1. Carex aquatilis	20	☑	OBL
2. Petasites frigidus	5	☐	FACW
3. Carex membranacea	5	☐	FACW
4. Eriophorum angustifolium	5	☐	OBL
5. Calamagrostis canadensis	2	☐	FAC
6. Chamerion angustifolium	0.1	☐	FACU
7. Valeriana sitchensis	0.1	☐	FAC
8. Equisetum fluviatile	0.1	☐	OBL
9. Rubus chamaemorus	0.1	☐	FACW
10. Ranunculus lapponicus	0.2	☐	OBL
Total Cover:	37.6		
50% of Total Cover: 18.8 / 20% of Total Cover: 7.52			

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (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	25.3	x 1 =	25.3
FACW Species	23.1	x 2 =	46.20
FAC Species	77.1	x 3 =	231.3
FACU Species	1.1	x 4 =	4.400
UPL Species	0	x 5 =	0
Column Totals:	126.6 (A)		307.2 (B)

Prevalence Index = B/A = 2.427

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 15

Total Cover of Bryophytes 75

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

Remarks: 5% lichen cover. trace vacoxy

SOIL

Sampling Point: SW13_T201_09

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
0-6	5YR	2.5/2	100						Fibric Organics	
6-9	5YR	2.5/1	100						Hemic Organics	
9-12	10B	3/1	80	2.5YR	3/4	20	C	PL	Fine Loamy Sand	

[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: active layer

Depth (inches): 19

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): 8
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: