WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 02-Jul-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T138_02**

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

Local relief (concave, convex, none): concave | Slope: 15.8 % / 9.0 ° | Elevation: 961

Subregion : Southcentral Alaska | Lat.: 62.893655181 | Long.: -149.119625092 | 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: lumpy slope break. castet snowbed above, wet meadow shrub fringe below. clumps of willow in forb-rich meadow.

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. Salix barclayi	30	☑	FAC
2. Salix pulchra	20	☑	FACW
3. Vaccinium uliginosum	15	☐	FAC
4. Salix pseudomonticola	10	☐	FAC
5. Empetrum nigrum	5	☐	FAC
6. Spiraea stevenii	5	☐	FACU
7. Betula nana	3	☐	FAC
8. Luetkea pectinata	1	☐	UPL
9. Luetkea pectinata	1	☐	UPL
10. Luetkea pectinata	1	☐	UPL
Total Cover:	91		
Herb Stratum	50% of Total Cover: 45.5	20% of Total Cover: 18.2	
1. Sedum rosea	8	☑	FAC
2. Chamerion angustifolium	5	☑	FACU
3. Calamagrostis canadensis	5	☑	FAC
4. Anemone narcissiflora	5	☑	FACU
5. Geranium erianthum	5	☑	FACU
6. Valeriana capitata	5	☑	FAC
7. Aconitum delphinifolium	3	☐	FAC
8. Spinulum annotinum	3	☐	FACU
9. Festuca altaica	3	☐	FAC
10. Sanguisorba canadensis	2	☐	FACW
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: 8 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 62.5% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	22	x 2 =	44
FAC Species	87	x 3 =	261
FACU Species	23	x 4 =	92
UPL Species	3	x 5 =	15
Column Totals:	135 (A)		412 (B)

Prevalence Index = B/A = 3.052

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 0

Total Cover of Bryophytes

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

Remarks: equarv 2, stramp 2, vervir2, col salbar, sancan, dodfri 2 vioepi 1, artnor 3--ok all

SOIL

Sampling Point: SW13_T138_02

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
0-5			100						Fibric Organics	
5-7			100						Hemric Organics	
7-9	10YR	3/2	100						Fine Loamy Silt	
9-12	5Y	3/2	70	10YR	4/4	10	C	M	Silt Loam	cryoturbated isolated sand
12-22	2.5Y	3/3	70	10YR	4/4	10	C	M	Silt Loam	cryoturbated isolated 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: frost
Depth (inches): 37

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): 0
Water Table Present?	Yes ◉	No ○	Depth (inches): 11
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 10

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: