WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 09-Jul-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T110_01**

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

Local relief (concave, convex, none): hummocky | Slope: 12.2 % / 7.0 ° | Elevation: 1108

Subregion : Interior Alaska Mountains | Lat.: 62.766536236 | Long.: -148.096964002 | Datum: WGS84

Soil Map Unit Name: | **NWI classification:** PSS3/1B

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: landform is shallow-sloped plateau bordered by rocky knobs. hgmss

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

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	0		

50% of Total Cover: 0 | 20% of Total Cover: 0

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix pulchra	5	☐	FACW
2. Empetrum nigrum	25	☑	FAC
3. Arctostaphylos alpina	15	☐	FACU
4. Salix arctica	5	☐	FACU
5. Ledum decumbens	30	☑	FACW
6. Vaccinium uliginosum	20	☑	FAC
7. Vaccinium vitis-idaea	20	☑	FAC
8. Dryas octopetala	5	☐	UPL
9. Salix glauca	2	☐	FAC
10. Betula nana	5	☐	FAC
Total Cover:	132		

50% of Total Cover: 66 | 20% of Total Cover: 26.4

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Petasites frigidus	8	☑	FACW
2. Carex bigelowii	10	☑	FAC
3. Poa arctica	5	☐	FAC
4. Bistorta plumosa	5	☐	FACU
5. Rubus chamaemorus	3	☐	FACW
6. Tephroseris atropurpurea	1	☐	FAC
7. Tofieldia coccinea	1	☐	FAC
8. Bistorta vivipara	1	☐	FAC
9. Pedicularis langsdorfii	1	☐	FACW
10. Pedicularis capitata	0.1	☐	FACU
Total Cover:	35.1		

50% of Total Cover: 17.55 | 20% of Total Cover: 7.02

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (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	x 1 =	0
FACW Species	47	x 2 =	94
FAC Species	90	x 3 =	270
FACU Species	25.1	x 4 =	100.4
UPL Species	5	x 5 =	25
Column Totals:	167.1 (A)		489.4 (B)

Prevalence Index = B/A = 2.929

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 1

Total Cover of Bryophytes 40

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

Remarks: dialap 1, loipro 1,castet 3, pedlab 0.1, sphag, aultur, lichf 10, active frost boils 2, salret 2, hiealp 2

SOIL

Sampling Point: SW13_T110_01

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	
3-5	2.5Y	4/3	100						Loam	
5-12	5GY	4/1	70	10YR	4/4	30	C	PL	Loam	few org inclsn and gravel
12-23	5Y	5/2	100						Loam	gravel throughout matrix

[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:
Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:
probably a restrictive bedrock layer close to surface.

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): 16
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 5

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: