WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 18-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T326_03**

Investigator(s): GVF | Landform (hillside, terrace, hummocks etc.): Lowland

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

Subregion : Cook Inlet Mountains | Lat.: | Long.: | Datum: WGS84

Soil Map Unit Name: | **NWI classification:** **PEM1C**

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: Old drained beaver pond. small R2UBH on west side of plot connecting pond and larger R2UBH.

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

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

Sapling/Shrub Stratum — 50% of Total Cover: 0 — 20% of Total Cover: 0

1.		☐	
2.		☐	
3.		☐	
4.		☐	
5.		☐	
6.		☐	
7.		☐	
8.		☐	
9.		☐	
10.		☐	
Total Cover:	0		

Herb Stratum — 50% of Total Cover: 0 — 20% of Total Cover: 0

1.	Calamagrostis canadensis	15	☑	FAC
2.	Viola palustris	2	☐	FACW
3.	Polemonium acutiflorum	2	☐	FAC
4.	Agrostis scabra	0.1	☐	FAC
5.	Equisetum fluviatile	0.1	☐	OBL
6.	Juncus effusus	0.1	☐	OBL
7.	Comarum palustre	0.1	☐	OBL
8.	Equisetum sylvaticum	0.1	☐	FAC
9.	Carex aquatilis	0.1	☐	OBL
10.	Galium trifidum	0.1	☐	FACW
Total Cover:	19.7			

50% of Total Cover: 9.85 — 20% of Total Cover: 3.94

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (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	0.4	x 1 =	0.4
FACW Species	2.1	x 2 =	4.2
FAC Species	17.2	x 3 =	51.60
FACU Species	0	x 4 =	0
UPL Species	0	x 5 =	0
Column Totals:	19.7 (A)		56.20 (B)

Prevalence Index = B/A = 2.853

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) 5m

% Cover of Wetland Bryophytes (Where applicable)

% Bare Ground 60

Total Cover of Bryophytes 35

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

Remarks: Myrgal <5%. Bare ground is litter not soil. calcan tussocks.

SOIL

Sampling Point: SW15_T326_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
0-2			100						Mucky Peat	with mineral inclusions
2-8	10YR	3/2	100						Silt Loam	lots of thin buried org and sand layers.
8-14	2.5Y	3/2	95	5YR	4/4	10	C	PL	Sand	5% oxidized rhizospheres along living roots
14-18	10YR	3/2	100						Sandy Loam	thin buried organic layers
18-24	5Y	5/2	95	7.5YR	4/6	10	C	PL	Loam	5% oxidized rhizospheres along living roots

[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:
looks to be an old drained beaver pond.

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

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:
C3--see soil profile. D2--drained beaver pond. D4--tussocks.