WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 20-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T305_11**

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

Local relief (concave, convex, none): hummocky | Slope: 67.4 % / 34.0 ° | Elevation:

Subregion : Interior Alaska Mountains | Lat.: | Long.: | Datum: WGS84

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

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: plot on bluff above the Susitna River. hummocks are rootwad mounds, rotting logs etc.

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

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Betula neoalaskana	35	☑	FACU
2. Picea glauca	15	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	50		

50% of Total Cover: 25 | 20% of Total Cover: 10

Sapling/Shrub Stratum			
1. Alnus viridis ssp. crispa	25	☑	FAC
2. Rosa acicularis	15	☑	FACU
3. Viburnum edule	5	☐	FACU
4. Ribes triste	5	☐	FAC
5. Vaccinium uliginosum	5	☐	FAC
6. Betula neoalaskana	3	☐	FACU
7. Picea glauca	3	☐	FACU
8. Vaccinium vitis-idaea	0.1	☐	FAC
9. Rhododendron groenlandicum	0.1	☐	FAC
10.	0	☐	FAC
Total Cover:	61.2		

50% of Total Cover: 30.6 | 20% of Total Cover: 12.24

Herb Stratum			
1. Mertensia paniculata	5	☑	FACU
2. Cornus canadensis	5	☑	FACU
3. Chamaenerion angustifolium	3	☐	FACU
4. Calamagrostis canadensis	3	☐	FAC
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	16		

50% of Total Cover: 8 | 20% of Total Cover: 3.2

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 16.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	38.2	x 3 =	114.6
FACU Species	89	x 4 =	356
UPL Species	0	x 5 =	0
Column Totals:	127.2 (A)		470.6 (B)

Prevalence Index = B/A = 3.700

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 85

Total Cover of Bryophytes 5

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

Remarks: bare ground is litter, woody debris

SOIL

Sampling Point: SW15_T305_11

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-19							Hemic Organics	w/ woody debris and mineral content

[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: bedrock

Depth (inches): 19

Hydric Soil Present? Yes ○ No ◉

Remarks:

Unsaturated organics, cannot infer saturation from secondary indicators. Thus does not meet requirements of A1 or A2.

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:

hummocks are rootwad mounds, rotting logs etc. and do not meet D4, microtopographic relief.