WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 24-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T328_09**

Investigator(s): SLI, TXC | Landform (hillside, terrace, hummocks etc.): Esker

Local relief (concave, convex, none): concave | Slope: 3.5 % / 2.0 ° | Elevation:

Subregion : Cook Inlet 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 located on large esker. top of esker about 20ft above surrounding beaver pond and wetland. gentle 2deg slope along crest, steep 30deg slopes down sides.

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

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

50% of Total Cover: 2.5 | 20% of Total Cover: 1

Sapling/Shrub Stratum			
1. Betula glandulosa	60	☑	FAC
2. Vaccinium vitis-idaea	50	☑	FAC
3. Rhododendron tomentosum	40	☑	FACW
4. Vaccinium uliginosum	15	☐	FAC
5. Empetrum nigrum	15	☐	FAC
6. Arctous ruber	5	☐	FAC
7. Picea glauca	1	☐	FACU
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	186		

50% of Total Cover: 93 | 20% of Total Cover: 37.2

Herb Stratum			
1. Calamagrostis canadensis	1	☐	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	1		

50% of Total Cover: 0.5 | 20% of Total Cover: 0.2

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	40	x 2 =	80
FAC Species	146	x 3 =	438
FACU Species	6	x 4 =	24
UPL Species	0	x 5 =	0
Column Totals:	192 (A)		542 (B)

Prevalence Index = B/A = 2.823

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 3

Total Cover of Bryophytes 70

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

Remarks: 25% lichen. less birch, more lichen in vicinity of picgla cluster. otherwise consistent slobe along top and sides of esker. tall betgla on southern aspect near picmar, but leaves indicate betgla not hybrid betgla x betneo. <5% herb cover, thus no herb species dominant.

SOIL

Sampling Point: SW15_T328_09

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
0-4							Fibric Organics	Oi
4-5							Hemic Organics	Oe
5-5.5							Silt Loam	A
5.5-6.5	7.5YR	2.5/3					Sandy Loam	Bs
6.5-16	10YR	3/4					Loamy Coarse Sand	Bw
16-26							Coarse Sand	C1 very gravelly, variagated color
26-31							Coarse Sand	C2 extremely gravelly, variagated soil color

[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:
soil pit excavated into western end of esker w exposed soils. no hydric soil indicators. Spodic intrgrade of inceptisol! Spodic Haplocryept?

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:
no wetland hydrology indicators