WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 25-Aug-15

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW15_T325_03**

Investigator(s): JGK | Landform (hillside, terrace, hummocks etc.): Bench

Local relief (concave, convex, none): hummocky | Slope: 17.6 % / 10.0 ° | Elevation:

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

Soil Map Unit Name: | **NWI classification:** PFO4B

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:

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

	Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Picea mariana	40	☑	FACW
2.		0	☐	
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	40		

Sapling/Shrub Stratum — 50% of Total Cover: 20 — 20% of Total Cover: 8

1.	Vaccinium uliginosum	12	☑	FAC
2.	Dasiphora fruticosa	10	☑	FAC
3.	Empetrum nigrum	10	☑	FAC
4.	Vaccinium vitis-idaea	5	☐	FAC
5.	Salix reticulata	5	☐	FAC
6.	Picea mariana	5	☐	FACW
7.	Betula glandulosa	2	☐	FAC
8.	Rhododendron groenlandicum	1	☐	FAC
9.	Salix barclayi	1	☐	FAC
10.		0	☐	FAC
	Total Cover:	51		

Herb Stratum — 50% of Total Cover: 25.5 — 20% of Total Cover: 10.2

1.	Equisetum arvense	45	☑	FAC
2.	Rumex arcticus	2	☐	FAC
3.	Parnassia palustris	2	☐	FACW
4.	Petasites frigidus	2	☐	FACW
5.	Calamagrostis canadensis	1	☐	FAC
6.	Carex bigelowii	1	☐	FAC
7.	Sanguisorba officinalis	1	☐	FACW
8.	Mertensia paniculata	1	☐	FACU
9.	Rubus chamaemorus	1	☐	FACW
10.	Cornus suecica	0.1	☐	FAC
	Total Cover:	56.1		

50% of Total Cover: 28.05 — 20% of Total Cover: 11.22

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (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	51	x 2 =	102
FAC Species	95.1	x 3 =	285.3
FACU Species	1	x 4 =	4
UPL Species	0	x 5 =	0
Column Totals:	147.1 (A)		391.3 (B)

Prevalence Index = B/A = 2.660

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) 25

% Bare Ground 10

Total Cover of Bryophytes 90

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

Remarks: Bare ground is mostly game trails--they are ubiquitous in the area.

SOIL

Sampling Point: SW15_T325_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
0-4									Peat	
4-12									Mucky Peat	
12-18									Muck	
18-20	5Y	4/2	90	10YR	5/6	10	C	PL	Loam	subangular cobbles

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix [2] Location: PL=Pore Lining. RC=Root Channel. M=Matrix

Hydric Soil Indicators:

- [x] Histosol or Histel (A1)
- [ ] Histic Epipedon (A2)
- [ ] Hydrogen Sulfide (A4)
- [ ] Thick Dark Surface (A12)
- [ ] Alaska Gleyed (A13)
- [x] 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:
Evidence of cryoturbation at 16-20 in.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one is sufficient)

- [ ] Surface Water (A1)
- [x] High Water Table (A2)
- [x] 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)
- [x] FAC-neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 7
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks: