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_T350_04**

Investigator(s): ERT, TXC | Landform (hillside, terrace, hummocks etc.): MID BACKSLOPE

Local relief (concave, convex, none): undulating | Slope: 44.5 % / 24.0 ° | Elevation:

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

Soil Map Unit Name: | **NWI classification:** **PSS1/4B**

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: relief is not from frost hummocks. Rather very dissected organics (troughs) caused by game trails or moss growing on tree boles. Possible permafrost?

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

	Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Picea mariana	30	☑	FACW
2.	Picea glauca	1	☐	FACU
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	31		

50% of Total Cover: 15.5 | 20% of Total Cover: 6.2

	Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Picea mariana	12	☑	FACW
2.	Salix pulchra	10	☑	FACW
3.	Vaccinium uliginosum	10	☑	FAC
4.	Rhododendron groenlandicum	6	☐	FAC
5.	Arctous alpinus	4	☐	FACU
6.	Rhododendron tomentosum	4	☐	FACW
7.	Vaccinium vitis-idaea	4	☐	FAC
8.	Betula nana	4	☐	FAC
9.	Alnus viridis ssp. crispa	2	☐	FAC
10.		0	☐	
	Total Cover:	56		

50% of Total Cover: 28 | 20% of Total Cover: 11.2

	Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Carex bigelowii	5	☑	FAC
2.	Calamagrostis canadensis	1	☐	FAC
3.	Equisetum arvense	1	☐	FAC
4.	Petasites frigidus	1	☐	FACW
5.		0	☐	
6.		0	☐	
7.		0	☐	
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	8		

50% of Total Cover: 4 | 20% of Total Cover: 1.6

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	57	x 2 =	114
FAC Species	33	x 3 =	99
FACU Species	5	x 4 =	20
UPL Species	0	x 5 =	0
Column Totals:	95 (A)		233 (B)

Prevalence Index = B/A = 2.453

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) 5

% Bare Ground 0

Total Cover of Bryophytes 98

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

Remarks: wet game trails through plot.

SOIL

Sampling Point: SW15_T350_04

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
0-5									Peat	Oi
5-8									Mucky Peat	Oe
8-9.5									Muck	Oa
9.5-16	5Y	4/1	85	10YR	4/6	15	C	PL	Sandy Clay Loam	Bg, very gravelly. Iron redox in root channels

[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: sandy clay loam
Depth (inches): 9.5

Hydric Soil Present? Yes ◉ No ○

Remarks:
Soil temp is very cold. no reaction to alpha, alpha-dipyridol.

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): 7
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 4

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:
midrorelief is from game trails and tree boles, does not meet D4.