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_03**

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

Local relief (concave, convex, none): convex | Slope: 64.9 % / 33.0 ° | 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:

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

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

50% of Total Cover: 1 | 20% of Total Cover: 0.4

	Sapling/Shrub Stratum			
1.	Alnus viridis ssp. crispa	78	☑	FAC
2.	Rhododendron groenlandicum	3	☐	FAC
3.	Rosa acicularis	3	☐	FACU
4.	Vaccinium vitis-idaea	2	☐	FAC
5.	Betula glandulosa	2	☐	FAC
6.	Ribes triste	1	☐	FAC
7.	Picea glauca	1	☐	FACU
8.	Vaccinium uliginosum	1	☐	FAC
9.	Rhododendron tomentosum	1	☐	FACW
10.		0	☐	
	Total Cover:	92		

50% of Total Cover: 46 | 20% of Total Cover: 18.4

	Herb Stratum			
1.	Spinulum annotinum	6	☑	FACU
2.	Petasites frigidus	3	☑	FACW
3.	Rubus arcticus(IAM)	2	☐	FACU
4.	Calamagrostis canadensis	2	☐	FAC
5.	Equisetum sylvaticum	1	☐	FAC
6.	Boschniakia rossica	0.1	☐	FACU
7.		0	☐	
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	14.1		

50% of Total Cover: 7.05 | 20% of Total Cover: 2.82

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	4	x 2 =	8
FAC Species	90	x 3 =	270
FACU Species	14.1	x 4 =	56.40
UPL Species	0	x 5 =	0
Column Totals:	108.1 (A)		334.4 (B)

Prevalence Index = B/A = 3.093

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) 0

% Bare Ground 0

Total Cover of Bryophytes 65

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: Abundant leaf litter. 2% unid grass. Senesced boschniakia rossica. total tree cover <5% thus no dominant tree species.

SOIL

Sampling Point: SW15_T350_03

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
4-8	10YR	3/3							Silt Loam	A
8-13	10YR	5/4							Sandy Clay Loam	Bw
13-20	10YR	4/3	100						Loamy Coarse Sand	C

[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:

no hydric soil indicators. steep grade, do not believe sandy clay loam would restrict water. A very old paleoterrace of the Suisitna River appears to be about this same elevation on the other side of the river. The original parent material is either river alluvium or glacial outwash that is now transported colluvium.

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:

steep grade, do not believe sandy clay loam would act as aquitard