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_T324_05**

Investigator(s): ERT, TXC | Landform (hillside, terrace, hummocks etc.): Mid-Backslope

Local relief (concave, convex, none): undulating | Slope: 34.4 % / 19.0 ° | 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:

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

	Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Picea glauca	32	☑	FACU
2.	Betula papyrifera	7	☐	FACU
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	39		

Sapling/Shrub Stratum — 50% of Total Cover: 19.5 — 20% of Total Cover: 7.8

1.	Alnus viridis	70	☑	FAC
2.	Viburnum edule	15	☐	FACU
3.	Ribes triste	5	☐	FAC
4.	Rosa acicularis	2	☐	FACU
5.	Spiraea stevenii	1	☐	FACU
6.	Linnaea borealis	1	☐	FACU
7.	Oplopanax horridus	0.1	☐	FACU
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	94.1		

Herb Stratum — 50% of Total Cover: 47.05 — 20% of Total Cover: 18.82

1.	Phegopteris connectilis	15	☑	FACU
2.	Cornus canadensis	4	☑	FACU
3.	Calamagrostis canadensis	3	☐	FAC
4.	Dryopteris expansa	2	☐	FACU
5.	Spinulum annotinum	2	☐	FACU
6.	Gymnocarpium dryopteris	1	☐	FACU
7.	Equisetum arvense	1	☐	FAC
8.	Chamaenerion angustifolium	1	☐	FACU
9.	Pyrola grandiflora	1	☐	FAC
10.	Mertensia paniculata	0.1	☐	FACU
	Total Cover:	30.1		

50% of Total Cover: 15.05 — 20% of Total Cover: 6.02

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	0	x 2 =	0
FAC Species	80	x 3 =	240
FACU Species	83.2	x 4 =	332.8
UPL Species	0	x 5 =	0
Column Totals:	163.2 (A)		572.8 (B)

Prevalence Index = B/A = 3.510

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 30

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks:

SOIL

Sampling Point: SW15_T324_05

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
0-3									Fibric Organics	Oi
3-4.5									Hemic Organics	Oa
4.5-5									Sapric Organics	Oa
5-5.5	10YR	5/2							Silt Loam	AE
5.5-13	10YR	2/1		10YR	3/4		C	M	Silt Loam	B/Oa
13-15	10YR	2/2							Silt Loam	OaAb
15-20										2C.little mineral soil - lg cobbles and

[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. remnant redox features from 5.5-13 from frost.

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