WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Denali Borough | Sampling Date: 01-Aug-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T202_04**

Investigator(s): CTS, AMD | Landform (hillside, terrace, hummocks etc.): Floodplain

Local relief (concave, convex, none): flat | Slope: 0.0 % / 0.0 ° | Elevation: 668

Subregion : Interior Alaska Mountains | Lat.: 63.396128893 | Long.: -148.535089493 | 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 ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	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	30	☑	FACU
2.	Populus balsamifera	8	☑	FACU
3.		0	☐	
4.		0	☐	
5.		0	☐	
	Total Cover:	38		
	Sapling/Shrub Stratum (50% of Total Cover: 19 / 20% of Total Cover: 7.6)			
1.	Salix richardsonii	40	☑	FACW
2.	Dasiphora fruticosa	15	☐	FAC
3.	Vaccinium uliginosum	10	☐	FAC
4.	Shepherdia canadensis	3	☐	FACU
5.	Populus balsamifera	3	☐	FACU
6.	Salix alaxensis	2	☐	FAC
7.	Rosa acicularis	2	☐	FACU
8.	Salix pseudomonticola	2	☐	FAC
9.	Vaccinium vitis-idaea	0.1	☐	FAC
10.		0	☐	
	Total Cover:	77.1		
	Herb Stratum (50% of Total Cover: 38.55 / 20% of Total Cover: 15.42)			
1.	Equisetum arvense	25	☑	FAC
2.	Calamagrostis canadensis	10	☑	FAC
3.	Cornus canadensis	10	☑	FACU
4.	Sanguisorba officinalis	4	☐	FACW
5.	Chamerion angustifolium	3	☐	FACU
6.	Artemisia tilesii	2	☐	FACU
7.	Rubus arcticus (IAM)	2	☐	FACU
8.	Mertensia paniculata	1	☐	FACU
9.	Polemonium acutiflorum	0.1	☐	FAC
10.	Solidago lepida	0.1	☐	FACU
	Total Cover:	57.2		
	50% of Total Cover: 28.6 / 20% of Total Cover: 11.44			

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	44	x 2 =	88
FAC Species	64.1	x 3 =	192.3
FACU Species	64	x 4 =	256
UPL Species	0	x 5 =	0
Column Totals:	172.1 (A)		536.3 (B)

Prevalence Index = B/A = 3.116

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 55

Total Cover of Bryophytes 10

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: Lichen = 0. Astalp, Aneric, Vioepi = 0.1. Stellaria sp, Poa sp (collected) = 0.1

SOIL

Sampling Point: SW13_T202_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
0-3	2.5Y	3/1	100						Loamy Sand	
3-16	5Y	4/1	70	10YR	3/6	30	C	M	Loamy Sand	
16-20	2.5Y	3/1	65	7.5YR	4/6	35	C	M	Sandy Loam	

[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:
floodplain position, indications of flooding (see hydrology below). believe insufficient soil carbon for development of redox features.

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:
floodplain