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_07**

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

Local relief (concave, convex, none): flat | Slope: 0.0 % / 0.0 ° | Elevation: 660

Subregion : Interior Alaska Mountains | Lat.: 63.39746833 | Long.: -148.543 | 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	40	☑	FACU
2. Populus balsamifera	15	☑	FACU
3.	0	☐	
4.	0	☐	
5.	0	☐	
Total Cover:	55		

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
50% of Total Cover: 27.5	20% of Total Cover: 11		
1. Salix pseudomonticola	8	☑	FAC
2. Salix richardsonii	7	☑	FACW
3. Dasiphora fruticosa	5	☑	FAC
4. Salix reticulata	5	☑	FAC
5. Rosa acicularis	5	☑	FACU
6. Populus balsamifera	4	☐	FACU
7. Vaccinium uliginosum	2	☐	FAC
8. Shepherdia canadensis	2	☐	FACU
9. Vaccinium vitis-idaea	1	☐	FAC
10. Salix pulchra	1	☐	FACW
Total Cover:	40		

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
50% of Total Cover: 20	20% of Total Cover: 8		
1. Equisetum arvense	70	☑	FAC
2. Cornus canadensis	25	☑	FACU
3. Mertensia paniculata	10	☐	FACU
4. Chamerion angustifolium	2	☐	FACU
5. Calamagrostis canadensis	2	☐	FAC
6. Anemone richardsonii	1	☐	FAC
7. Rubus arcticus (IAM)	1	☐	FACU
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	111		
50% of Total Cover: 55.5	20% of Total Cover: 22.2		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 55.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	8	x 2 =	16
FAC Species	94	x 3 =	282
FACU Species	104	x 4 =	416
UPL Species	0	x 5 =	0
Column Totals:	206 (A)		714 (B)

Prevalence Index = B/A = 3.466

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 40

Total Cover of Bryophytes 5

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: Lichen = 0. Betnan = 0.1. Linbor 2.

SOIL

Sampling Point: SW13_T202_07

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
0-3			100						Hemic Organics	
3-5			100						Fibric Organics	
5-9	2.5Y	3/2	100						Sandy Loam	
9-11			100						Sapric Organics	
11-20	2.5Y	4/1	100						Loamy Sand	

[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