WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Denali Borough | Sampling Date: 06-Aug-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T160_01**

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

Local relief (concave, convex, none): flat | Slope: 3.0 % / 1.7 ° | Elevation: 677

Subregion : Interior Alaska Mountains | Lat.: 63.371756196 | Long.: -148.819091082 | 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.	Betula neoalaskana	5	☐	FACU
2.	Picea glauca	15	☑	FACU
3.	Populus tremuloides	8	☑	FACU
4.		0	☐	
5.		0	☐	
	Total Cover:	28		

50% of Total Cover: 14 | 20% of Total Cover: 5.6

	Sapling/Shrub Stratum			
1.	Picea glauca	2	☐	FACU
2.	Betula nana	65	☑	FAC
3.	Vaccinium vitis-idaea	25	☐	FAC
4.	Empetrum nigrum	20	☐	FAC
5.	Salix bebbiana	2	☐	FAC
6.	Salix glauca	3	☐	FAC
7.	Salix pulchra	4	☐	FACW
8.	Vaccinium uliginosum	35	☑	FAC
9.	Ledum decumbens	30	☐	FACW
10.	Ledum groenlandicum	10	☐	FAC
	Total Cover:	196		

50% of Total Cover: 98 | 20% of Total Cover: 39.2

	Herb Stratum			
1.	Petasites frigidus	10	☑	FACW
2.	Cornus canadensis	20	☑	FACU
3.	Festuca altaica	3	☐	FAC
4.	Equisetum arvense	1	☐	FAC
5.	Chamerion angustifolium	0.1	☐	FACU
6.		0	☐	
7.		0	☐	
8.		0	☐	
9.		0	☐	
10.		0	☐	
	Total Cover:	34.1		

50% of Total Cover: 17.05 | 20% of Total Cover: 6.82

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	164	x 3 =	492
FACU Species	50.1	x 4 =	200.4
UPL Species	0	x 5 =	0
Column Totals:	258.1 (A)		780.4 (B)

Prevalence Index = B/A = 3.024

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 0

Total Cover of Bryophytes 60

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: Lichen =30, Salix arbusculoides = 1, Salix barclayi = 1

SOIL

Sampling Point: SW13_T160_01

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
0-2			100						Organic hemic	
2-10	2.5Y	3/3	100						Loam	
10-11	2.5Y	5/2	100						Sandy Loam	
11-13	2.5Y	4/3	100						Sandy Loam	
13-15	5Y	4/1	100						Sandy Loam	
15-20	2.5Y	4/3	100						Silt 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:
no hydic soil indicators

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