WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 07-Jul-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T102_02**

Investigator(s): SLI, SCB | Landform (hillside, terrace, hummocks etc.): Terrace

Local relief (concave, convex, none): hummocky | Slope: % / 1.7 ° | Elevation: 895

Subregion : Interior Alaska Mountains | Lat.: 62.7090538741 | Long.: -147.568796515 | Datum: NAD83

Soil Map Unit Name: | **NWI classification: PSS1B**

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: mesic betula community, transitional between wet willow-graminoid wetland and mesic upland

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

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

Sapling/Shrub Stratum — 50% of Total Cover: 0.5 — 20% of Total Cover: 0.2

1. Betula glandulosa	30	☑	FAC
2. Picea glauca	10	☐	FACU
3. Vaccinium uliginosum	10	☐	FAC
4. Salix pulchra	5	☐	FACW
5. Rhododendron tomentosum	1	☐	FACW
6. Vaccinium vitis-idaea	1	☐	FAC
7. Empetrum nigrum	0.1	☐	FAC
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	57.1		

Herb Stratum — 50% of Total Cover: 28.55 — 20% of Total Cover: 11.42

1. Calamagrostis canadensis	23	☑	FAC
2. Equisetum arvense	5	☐	FAC
3. Equisetum sylvaticum	2	☐	FAC
4. Cornus suecica	1	☐	FAC
5. Carex bigelowii	1	☐	FAC
6. Petasites frigidus	1	☐	FACW
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	33		

50% of Total Cover: 16.5 — 20% of Total Cover: 6.6

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	7	x 2 =	14
FAC Species	73.1	x 3 =	219.3
FACU Species	11	x 4 =	44
UPL Species	0	x 5 =	0
Column Totals:	91.1	(A)	277.3 (B)

Prevalence Index = B/A = 3.044

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 20

Hydrophytic Vegetation Present? **Yes ◉ No ○**

Remarks: total tree cover <5% thus no tree species dominant

SOIL

Sampling Point: SW13_T102_02

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
0-2									Fibric Organics	
2-5									Hemic Organics	
5-10	10YR	3/2	85	10YR	3/4	15	C	PL	Sandy Clay Loam	5% ox rhiz around living roots
10-18	5Y	4/2	80	7.5YR	4/4	20	C	PL	Clay	20% 2.5Y4/3C/PL, many subrnd fi gr-cobbl

[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: clay
Depth (inches): 10

Hydric Soil Present? Yes ◉ No ○

Remarks:
10-18in layer is compacted

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 primary wetland hydrology indicators