WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Matanuska-Susitna Borough | Sampling Date: 03-Aug-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T179_01**

Investigator(s): WAD, RWM | Landform (hillside, terrace, hummocks etc.): top of knoll

Local relief (concave, convex, none): convex | Slope: 14.0 % / 8.0 ° | Elevation: 1230

Subregion : Interior Alaska Mountains | Lat.: 63.151773453 | Long.: -148.33873415 | 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: cassiope heath knoll above Brushkana Creek.

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

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

50% of Total Cover: 0 | 20% of Total Cover: 0

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Cassiope tetragona	25	☑	FACU
2. Loiseleuria procumbens	5	☐	FACU
3. Salix polaris	5	☐	FACW
4. Salix arctica	1	☐	FACU
5. Vaccinium uliginosum	10	☑	FAC
6. Empetrum nigrum	5	☐	FAC
7. Dryas octopetala	5	☐	UPL
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	56		

50% of Total Cover: 28 | 20% of Total Cover: 11.2

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Festuca altaica	2	☑	FAC
2. Anthoxanthum monticola ssp. alpinum	1	☑	FACU
3. Pinguicula vulgaris	0.1	☐	OBL
4. Antennaria monocephala	0.1	☐	UPL
5. Pedicularis labradorica	0.1	☐	FACW
6. Artemisia tilesii	1	☑	FACU
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
Total Cover:	4.3		

50% of Total Cover: 2.15 | 20% of Total Cover: 0.86

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0.1	x 1 =	0.1
FACW Species	5.1	x 2 =	10.2
FAC Species	17	x 3 =	51
FACU Species	33	x 4 =	132
UPL Species	5.1	x 5 =	25.5
Column Totals:	60.3 (A)		218.8 (B)

Prevalence Index = B/A = 3.629

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

Total Cover of Bryophytes

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: unk forb anem?

SOIL

Sampling Point: SW13_T179_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
0-1			100						Fibric Organics	
1-2			100						Hemic Organics	
2-7	7.5YR	4/4	70	5YR	3/4	30		M	Loamy Sand	
7-11			100						Coarse Sand	large coarse fragments mixed in

[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: none observed

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

no hydric soil indicators observed

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 hydrology indicators observed