WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Susitna-Watana Hydroelectric Project | Borough/City: Denali Borough | Sampling Date: 30-Jul-13

Applicant/Owner: Alaska Energy Authority | Sampling Point: **SW13_T147_02**

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

Local relief (concave, convex, none): concave | Slope: % / 3.8 ° | Elevation: 664

Subregion : Interior Alaska Mountains | Lat.: 63.3765659904 | Long.: -148.945732766 | Datum: NAD83

Soil Map Unit Name: | **NWI classification: PSS1/EM1B**

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: Roadside swale at Parks Hwy, gravelly disturbed soils and colonizing veg

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		

Sapling/Shrub Stratum — 50% of Total Cover: 0 — 20% of Total Cover: 0

1. Salix barclayi	15	☑	FAC
2. Salix reticulata	8	☑	FAC
3. Populus balsamifera	6	☐	FACU
4. Salix glauca	4	☐	FAC
5. Salix pulchra	2	☐	FACW
6. Picea glauca	2	☐	FACU
7. Betula neoalaskana	1	☐	FACU
8. Salix alaxensis	1	☐	FAC
9. Betula nana	1	☐	FAC
10. Salix arbusculoides	0.1	☐	FACW
Total Cover:	40.1		

Herb Stratum — 50% of Total Cover: 20.05 — 20% of Total Cover: 8.02

1. Hedysarum alpinum	20	☑	FACU
2. Carex saxatilis	4	☐	FACW
3. Equisetum variegatum	3	☐	FACW
4. Oxytropis campestris	1	☐	UPL
5. Chamaenerion angustifolium	1	☐	FACU
6. Parnassia palustris	1	☐	FACW
7. Achillea millefolium	0.1	☐	FACU
8. Astragalus alpinus	0.1	☐	FAC
9. Senecio lugens	0.1	☐	FAC
10. Equisetum arvense	0.1	☐	FAC
Total Cover:	30.4		

50% of Total Cover: 15.2 — 20% of Total Cover: 6.08

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	x 1 =	0
FACW Species	10.1	x 2 =	20.20
FAC Species	29.3	x 3 =	87.90
FACU Species	30.1	x 4 =	120.4
UPL Species	1	x 5 =	5
Column Totals:	70.5	(A)	233.5 (B)

Prevalence Index = B/A = 3.312

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 30

Total Cover of Bryophytes 30

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

Remarks: Carsax in swale bottom, drainage ditch. Several grass spp and Carex collected. Empnig, Vacvit, Tofpus, Rhimin, Pyrmin, Juncas, Calcan, Fesrub, Agrsca, Trispi = 0.1. Lichen = 0.1.

SOIL

Sampling Point: SW13_T147_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
0-16	5Y	4/1	90	10YR	5/6	10	C	PL	Sandy Loam	Large gravel content
16-20	5Y	4/1	100						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:

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): 0
Water Table Present?	Yes ○	No ◉	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches): 0

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:

Remarks:
Swale bottom pit appears well-drained