

**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: 5.0 % / 2.9 ° Elevation: 660  
 Subregion: Interior Alaska Mountains Lat.: 63.376 Long.: -148.946891 Datum: WGS84  
 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: <u>Roadside swale at Parks Hwy, gravelly disturbed soils and colonizing veg</u>	

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

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b>		
1. _____	0	<input type="checkbox"/>	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)		
2. _____	0	<input type="checkbox"/>	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)		
3. _____	0	<input type="checkbox"/>	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)		
4. _____	0	<input type="checkbox"/>	_____			
5. _____	0	<input type="checkbox"/>	_____			
<b>Total Cover:</b> <u>0</u>						
Sapling/Shrub Stratum	50% of Total Cover: <u>0</u>		20% of Total Cover: <u>0</u>		<b>Prevalence Index worksheet:</b>	
1. <u>Salix barclayi</u>	15	<input checked="" type="checkbox"/>	FAC	Total % Cover of: <u>0</u> Multiply by:		
2. <u>Salix reticulata</u>	8	<input checked="" type="checkbox"/>	FAC	OBL Species <u>0</u> x 1 = <u>0</u>		
3. <u>Populus balsamifera</u>	6	<input type="checkbox"/>	FACU	FACW Species <u>10</u> x 2 = <u>20</u>		
4. <u>Salix glauca</u>	4	<input type="checkbox"/>	FAC	FAC Species <u>29.2</u> x 3 = <u>87.60</u>		
5. <u>Salix pulchra</u>	2	<input type="checkbox"/>	FACW	FACU Species <u>30.1</u> x 4 = <u>120.4</u>		
6. <u>Picea glauca</u>	2	<input type="checkbox"/>	FACU	UPL Species <u>1</u> x 5 = <u>5</u>		
7. <u>Betula neoalaskana</u>	1	<input type="checkbox"/>	FACU	Column Totals: <u>70.3</u> (A) <u>233.0</u> (B)		
8. <u>Salix alaxensis</u>	1	<input type="checkbox"/>	FAC	Prevalence Index = B/A = <u>3.314</u>		
9. <u>Betula nana</u>	1	<input type="checkbox"/>	FAC			
10. <u>Salix arbusculoides</u>	0.1	<input type="checkbox"/>	FACW			
<b>Total Cover:</b> <u>40.1</u>						
Herb Stratum	50% of Total Cover: <u>20.05</u>		20% of Total Cover: <u>8.02</u>		<b>Hydrophytic Vegetation Indicators:</b>	
1. <u>Hedysarum alpinum</u>	20	<input checked="" type="checkbox"/>	FACU	<input checked="" type="checkbox"/> Dominance Test is > 50%		
2. <u>Carex saxatilis</u>	4	<input type="checkbox"/>	FACW	<input type="checkbox"/> Prevalence Index is ≤ 3.0		
3. <u>Equisetum variegatum</u>	3	<input type="checkbox"/>	FACW	<input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)		
4. <u>Oxytropis campestris var. cusickii</u>	1	<input type="checkbox"/>	UPL	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
5. <u>Chamerion angustifolium</u>	1	<input type="checkbox"/>	FACU	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
6. <u>Parnassia palustris</u>	1	<input type="checkbox"/>	FACW	Plot size (radius, or length x width) <u>10m</u>		
7. <u>Achillea millefolium</u>	0.1	<input type="checkbox"/>	FACU	% Cover of Wetland Bryophytes (Where applicable) _____		
8. <u>Astragalus alpinus</u>	0.1	<input type="checkbox"/>	FAC	% Bare Ground <u>30</u>		
9. <u>Senecio lugens</u>	0.1	<input type="checkbox"/>	FAC	Total Cover of Bryophytes <u>30</u>		
10. <u>Equisetum arvense</u>	0.1	<input type="checkbox"/>	FAC			
<b>Total Cover:</b> <u>30.4</u>						
50% of Total Cover: <u>15.2</u>		20% of Total Cover: <u>6.08</u>		<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>		

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			Redox Features				Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
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	

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix <sup>2</sup> Location: PL=Pore Lining. RC=Root Channel. M=Matrix

<p><b>Hydric Soil Indicators:</b></p> <input type="checkbox"/> Histosol or Histel (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Alaska Gleyed (A13) <input checked="" type="checkbox"/> Alaska Redox (A14) <input type="checkbox"/> Alaska Gleyed Pores (A15)	<p><b>Indicators for Problematic Hydric Soils:<sup>3</sup></b></p> <input type="checkbox"/> Alaska Color Change (TA4) <sup>4</sup> <input type="checkbox"/> Alaska Alpine swales (TA5) <input type="checkbox"/> Alaska Redox With 2.5Y Hue <input type="checkbox"/> Alaska Gleyed Without Hue 5Y or Redder Underlying Layer <input type="checkbox"/> Other (Explain in Remarks)
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<sup>3</sup> One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present  
<sup>4</sup> Give details of color change in Remarks

Restrictive Layer (if present): Type: Depth (inches):	<b>Hydric Soil Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
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Remarks:

**HYDROLOGY**

<p><b>Wetland Hydrology Indicators:</b></p> <p><u>Primary Indicators (any one is sufficient)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Surface Soil Cracks (B6)	<p><u>Secondary Indicators (two or more are required)</u></p> <input type="checkbox"/> Water Stained Leaves (B9) <input type="checkbox"/> Drainage Patterns (B10) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Salt Deposits (C5) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-neutral Test (D5)
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<p><b>Field Observations:</b></p> Surface Water Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0 Saturation Present? (includes capillary fringe)    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): 0	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:

Remarks:  
 Swale bottom pit appears well-drained