

**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\_T212\_06  
 Investigator(s): SLI, EAC Landform (hillside, terrace, hummocks etc.): Kettle  
 Local relief (concave, convex, none): flat Slope: 26.7 % / 15.0 ° Elevation: 677  
 Subregion: Interior Alaska Mountains Lat.: 63.377061725 Long.: -148.902734876 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 <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: <u>dry hillside, high reflectance in imagery likely due to lichen cover. atv trail at base of hill.</u>	

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

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b>				<b>Dominance Test worksheet:</b> Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)
1. <u>Picea glauca</u>	<u>7</u>	<input checked="" type="checkbox"/>	FACU	
2. _____	<u>0</u>	<input type="checkbox"/>	_____	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Total Cover:</b> <u>7</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: Multiply by: OBL Species <u>0</u> x 1 = <u>0</u> FACW Species <u>0</u> x 2 = <u>0</u> FAC Species <u>43</u> x 3 = <u>129</u> FACU Species <u>10.1</u> x 4 = <u>40.40</u> UPL Species <u>0</u> x 5 = <u>0</u> Column Totals: <u>53.1</u> (A) <u>169.4</u> (B) Prevalence Index = B/A = <u>3.190</u>
<b>Sapling/Shrub Stratum</b> 50% of Total Cover: <u>3.5</u> 20% of Total Cover: <u>1.4</u>				
1. <u>Picea glauca</u>	<u>3</u>	<input type="checkbox"/>	FACU	
2. <u>Betula glandulosa</u>	<u>10</u>	<input checked="" type="checkbox"/>	FAC	
3. <u>Vaccinium uliginosum</u>	<u>30</u>	<input checked="" type="checkbox"/>	FAC	
4. <u>Empetrum nigrum</u>	<u>1</u>	<input type="checkbox"/>	FAC	
5. <u>Vaccinium vitis-idaea</u>	<u>1</u>	<input type="checkbox"/>	FAC	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	
9. _____	<u>0</u>	<input type="checkbox"/>	_____	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Total Cover:</b> <u>45</u>				
<b>Herb Stratum</b> 50% of Total Cover: <u>22.5</u> 20% of Total Cover: <u>9</u>				
1. <u>Cornus canadensis</u>	<u>0.1</u>	<input type="checkbox"/>	FACU	
2. <u>Festuca altaica</u>	<u>1</u>	<input checked="" type="checkbox"/>	FAC	
3. _____	<u>0</u>	<input type="checkbox"/>	_____	
4. _____	<u>0</u>	<input type="checkbox"/>	_____	
5. _____	<u>0</u>	<input type="checkbox"/>	_____	
6. _____	<u>0</u>	<input type="checkbox"/>	_____	
7. _____	<u>0</u>	<input type="checkbox"/>	_____	
8. _____	<u>0</u>	<input type="checkbox"/>	_____	
9. _____	<u>0</u>	<input type="checkbox"/>	_____	
10. _____	<u>0</u>	<input type="checkbox"/>	_____	
<b>Total Cover:</b> <u>1.1</u>				
50% of Total Cover: <u>0.55</u> 20% of Total Cover: <u>0.22</u>				
<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Plot size (radius, or length x width) <u>5m</u> % Cover of Wetland Bryophytes (Where applicable) _____ % Bare Ground <u>10</u> Total Cover of Bryophytes <u>5</u>				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>				
Remarks: <u>80% lichen cover including stereocaulon, cladina.</u>				

**SOIL**

Sampling Point: **SW13\_T212\_06**

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>		
0-2	7.5YR	2.5/2	100				Fibric Organics	
2-4	10YR	3/2	100				Silt Loam	irregular, broken horizon
4-9	7.5YR	4/4	100				Silt Loam	
9-20	2.5YR	2.5/3	100				Sandy Loam	20% gravels, 30% cobbles. subrounded.
20-22	10YR	4/2	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 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 type="radio"/> No <input checked="" type="radio"/>
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Remarks:  
 no hydric soil indicators. possibly a developing spodosol? 9-20 layer w nodules and concretions, iron deposition on subrnd gravels and cobbles.

**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 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 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): Water Table Present?        Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): Saturation Present?            Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:

Remarks:  
 no wetland hydrology indicators