WETLAND DETERMINATION DATA FORM - Alaska Region

Projec	/Site: Susitna-Watana Hydroelectric Project		Borough/City:	Matanusk	a-Susitna Borough Sampling Date: 21-Aug-15		
Applica	ant/Owner: Alaska Energy Authority				Sampling Point: SW15_T303_03		
	gator(s): WAD, SCB		Landform (hill	side, terrac	e, hummocks etc.): Hillside		
ocal	relief (concave, convex, none): convex		Slope: 26.7	% / 15.0	0 ° Elevation:		
Subred	gion : Interior Alaska Mountains	Lat.:			Long.: Datum: WGS84		
	p Unit Name:	Lu					
			or2 Voc	No ○	NWI classification: Upland		
	matic/hydrologic conditions on the site typical for this ting (egetation \square , Soil \square , or Hydrology \square s	•	ar? res		(If no, explain in Remarks.) Iormal Circumstances" present? Yes ● No ○		
		-	problematic?		oma on ounce process.		
Are v	egetation . , Soil . , or Hydrology . r	laturally	problematic?	(IT nee	eded, explain any answers in Remarks.)		
MU	MARY OF FINDINGS - Attach site map show	ving sa	ampling point	locations	s, transects, important features, etc.		
	Hydrophytic Vegetation Present? Yes ● No ○						
	Hydric Soil Present? Yes ○ No ●		Is	Is the Sampled Area			
	Wetland Hydrology Present? Yes ○ No ●		wi	thin a W	/etland? Yes ○ No •		
Rem	,. ,		· ·				
/EGI	ETATION -Use scientific names of plants. Lis	st all si	pecies in the	plot.			
				·	Dominance Test worksheet:		
Tre	e Stratum	Absolut % Cove		Indicator Status	Number of Dominant Species		
	Picea glauca	20		FACU	That are OBL, FACW, or FAC:3(A)		
2.		0		-	Total Number of Dominant Species Across All Strata: 4 (B)		
3.		0			Percent of dominant Species		
4.		0			That Are OBL, FACW, or FAC: 75.0% (A/B)		
5.		0			Prevalence Index worksheet:		
	Total Cover:	20			Total % Cover of: Multiply by:		
Sap	ling/Shrub Stratum 50% of Total Cover:	10 20	% of Total Cover:	4	OBL Species 0 x 1 = 0		
1	Betula glandulosa	20	✓	FAC	FACW Species 5 x 2 = 10		
2.	Dhadadaa daa aa aa aa aa aa daa daa aa	10	_	FAC	FAC Species 50.1 x 3 = 150.3		
3.	Vaccinium vitis-idaea	10	_	FAC	FACU Species 23.1 x 4 = 92.40		
4.	Rhododendron tomentosum	5		FACW	UPL Species 0 x 5 = 0		
5.	Vaccinium uliginosum	5		FAC	Column Totals:78.2 (A)252.7 (B)		
6.	Empetrum nigrum	5		FAC			
7.	Picea glauca	1		FACU	Prevalence Index = B/A = 3.231		
8.	Rosa acicularis	0.1		FACU	Hydrophytic Vegetation Indicators:		
9.		0			✓ Dominance Test is > 50%		
10.		0		FACU	Prevalence Index is ≤3.0		
	Total Cover:				Morphological Adaptations (Provide supporting data in		
Hei	b Stratum 50% of Total Cover: 2	8.05 2	0% of Total Cover	11.22	Remarks or on a separate sheet)		
1.	Geocaulon lividum	2	_	FACU	Problematic Hydrophytic Vegetation (Explain)		
2.	Cornus suecica	0.1		FAC	¹ Indicators of hydric soil and wetland hydrology must		
3.			-		be present, unless disturbed or problematic.		
			- =		Plot size (radius, or length x width) 10m		
5.					% Cover of Wetland Bryophytes		
			_		(Where applicable)		
			-		% Bare Ground		
			-		Total Cover of Bryophytes		
		0	-				
10.	Tetal Covers	_			Hydrophytic		
Ĺ	Total Cover:				Vegetation Present? Yes ● No ○		
	50% of Total Cover: 1	05 20)% of Total Cover:	0.42	Present? Yes • No ·		

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SOIL Sampling Point: SW15_T303_03

Color (moist) % Color (moist) % Type Loc Texture Hemic Organics	Profile Description Depth	ion: (Describe to the depth needed to do Matrix			cument the indicator or confirm the absence of indicators) Redox Features				cators)		
2.4 7.5YR 3/3 4-7 10YR 3/6 95 7.5YR 4/6 5 C PL Loamy Sand o 7-13 2.5Y 4/3 90 10YR 4/4 10 C PL Sandy Loam **Type: C=Concentration. D=Depletion. RM=Reduced Matrix 2 Location: PL=Pore Lining. RC=Root Channel. M=Matrix **Hydric Soil Indicators: Indicators for Problematic Hydric Soils.** Histoso II Adicators: Indicators for Problematic Hydric Soils.** Histoso II Adicators: Indicators for Problematic Hydric Soils.** Histoso II Adicators: Indicators for Problematic Hydric Soils.** Histoso II Adicators: Indicators for Problematic Hydric Soils.** Histoso II Adicators: Indicators for Problematic Hydric Soils.** Histoso II Adicators: Indicators for Problematic Hydric Soils.** Histoso II Adicators: Indicator of Problematic Hydric Soils.** Alaska Gleyed (A13)		Color (moist)		%			%		Loc ²	Texture	Remarks
4-7 10YR 3/6 95 7.5YR 4/6 5 C PL Loamy-Sand	0-2									Hemic Organics	
7-13 2.5Y 4/3 90 10YR 4/4 10 C PL Sandy Losam c 1 Type: C=Concentration. D=Depletion. RM=Reduced Matrix 2 Location: PL=Pore Lining. RC=Root Channel. M=Matrix Hydric Soil Indicators:	2-4	7.5YR	3/3			-				Silt Loam	eluviated, rounded pebbles, organic inclusions
1 Type: C=Concentration. D=Depletion. RM=Reduced Matrix 2 Location: PL=Pore Lining, RC=Root Channel. M=Matrix Hydric Soil Indicators: Histosol or Hister (A1)	4-7	10YR	3/6	95	7.5YR	4/6	5	С	PL	Loamy Sand	contains rounded pebbles
Hydric Soil Indicators: Histosol or Histel (A1)	7-13	2.5Y	4/3	90	10YR	4/4	10		PL	Sandy Loam	contains rounded pebbles
Hydric Soil Indicators: Histosol or Histel (A1)											
Hydric Soil Indicators: Histosol or Histel (A1)											
Hydric Soil Indicators: Histosol or Histel (A1)											
Hydric Soil Indicators: Histosol or Histel (A1)						- ——					
Histosol or Histel (A1)	Type: C=Con	centration. D	=Depletion. R	RM=Reduce	d Matrix	² Location	: PL=Pore	Lining. R	C=Root Cha	nnel. M=Matrix	-
Histosol or Histel (A1)	Hydric Soil In	ndicators:			Indicat	ors for Pro	oblematic	Hydric S	oils:		
Histic Epipedon (A2) Hydrogen Sulfide (A4) Hydrogen Sulfide (A4) Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Bestrictive Layer (if present): Type: Depth (inches): Bemarks: Alaska Gleyed Pores (A15) Alaska Gleyed Remarks Brimarka Gleyed Pores (A15) Alaska Gleyed Remarks Brimarka Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Remarks Brimarka Gleyed Pores (A15) Brimarka Gleyed Pores (A15) Alaska Gleyed Remarks Brimarka Gleyed Pores (A15) Alaska Gleyed Remarks Brimarka Gleyed Pores (A15) Alaska Gleyed Pores (A15) Brimarks (B1) Alaska Gleyed Pores (A15) Brimarks (B1) Alaska Gleyed Pores (A15) Brimarks (B1) Alaska Redox (Mith 2.5Y Hue as there are no primary hydrology indicators. Brimarks (B1) Brydric Soil Present? Brimarks (B1) Alaska Redox (A14) Brimarks (B1) Brydric Soil Present? Brimarks (B1) Brydric Soil Present? Brydric Soil Pores (B15) Brydric Soil Present? Bry										Alaska Gleyed Without H	ue 5Y or Redder
Thick Dark Surface (A12) Alaska Gleyed (A13) Alaska Gleyed (A13) Alaska Gleyed Pores (A15) Alaska Gleyed (A19) Alaska Gleyed (A19) Alaska Gleyed Pores (A15) Alaska Gleyed (A19) Alaska Redox (A14) Alaska Redox (A14) Alaska Redox (A14) Alaska Redox (A19) Alaska Redox (A		. ,									
Alaska Gleyed (A13) Alaska Redox (A14) Alaska Redox (A14) Alaska Redox (A15) Alaska Redox (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Alaska Gleyed Pores (A15) Restrictive Layer (if present): Type: Depth (inches): Remarks: Algorithm on the present of the pres	Hydrogen S	Sulfide (A4)			Alas	ka Redox W	/ith 2.5Y H	lue		Other (Explain in Remarl	ks)
Alaska Redox (A14) Alaska Gleyed (A15) Alaska Redox (A14) Alaska Gleyed Pores (A15) Retrictive Layer (if present): Type: Depth (inches): Remarks: O hydric soil indicators. Cannot apply Alaska Redox with 2.5Y Hue as there are no primary hydrology indicators. Water Staine	Thick Dark	Surface (A12)		30						
Alaska Gleyed Pores (A15) Restrictive Layer (if present): Type: Depth (inches): Remarks: On hydric soil indicators. Cannot apply Alaska Redox with 2.5Y Hue as there are no primary hydrology indicators. Hydric Soil Present?		, , ,									iyarology,
Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present?	_				4 Civo	details of so	lor change	in Domar	kc		
Type: Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:	Alaska Gley	yed Pores (A1	5)		Give	Jetalis of Co	nor change	ili Kelliali	N5		
Depth (Inches): Commarks:	estrictive Laye	r (if present):									
Presence of Factoriate (BB)	Type:									Hydric Soil Present	? Yes O No 💿
MOROLOGY Wetland Hydrology Indicators: Secondary Indicators Primary Indicators (any one is sufficient) Surface Water (A1) High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Saturation (A3) Marl Deposits (B15) Sediment Deposits (B2) Drift Deposits (B3) Alagla Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Surface Soil Cracks (B6) Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Yeb No Depth (inches):	Depth (inch	es):									
Wetland Hydrology Indicators: Primary Indicators (any one is sufficient)											
Primary Indicators (any one is sufficient) Surface Water (A1) High Water Table (A2) Saturation (A3) Marl Deposits (B15) Water Marks (B1) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Yes No Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Water Staine Water Staine Water Staine Water Staine Water Staine Inundation Visible on Aerial Imagery (B7) Drainage Pat Water Staine Water Staine The Marks (B1) Drainage Pat No Oparsely Vegetated Concave Surface (B8) Dry-Season Water C1) Sall Deposits Sall Deposits Sall Deposits Geomorphic (C2) Stunted or St Shallow Aqui Shallow Aqui FAC-neutral Times or St Wetland Hydrology Present? Wetland Hydrology Present? Deposits Remarks:	IYDROLO(GY									
Surface Water (A1)	•	• •									cators (two or more are required)
High Water Table (A2) Sparsely Vegetated Concave Surface (B8) Oxidized Rhiz Saturation (A3) Marl Deposits (B15) Presence of F Water Marks (B1) Hydrogen Sulfide Odor (C1) Salt Deposits Sediment Deposits (B2) Drift Deposits (B3) Other (Explain in Remarks) Shallow Aqui Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:			is sufficient)								ned Leaves (B9)
Saturation (A3)		. ,						_		_	` ,
Water Marks (B1)									ice (B8)	_	thizospheres along Living Roots (C3)
□ Sediment Deposits (B2) □ Dry-Season Water Table (C2) □ Stunted or St □ Drift Deposits (B3) □ Other (Explain in Remarks) □ Geomorphic □ Algal Mat or Crust (B4) □ Shallow Aqui □ Iron Deposits (B5) □ Microtopogra □ Surface Soil Cracks (B6) □ FAC-neutral Total Companies Field Observations: Surface Water Present? Yes □ No □ Depth (inches): Water Table Present? Yes □ No □ Depth (inches): Saturation Present? Yes □ No □ Depth (inches): Security Observations □ Depth (inches): Security Observations □ Depth (inches): Wetland Hydrology Present? Security Observations □ Depth (inches): Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available:	_	. ,					. ,	(C1)		_	` '
□ Drift Deposits (B3) □ Other (Explain in Remarks) □ Geomorphic □ Shallow Aqui □ Iron Deposits (B5) □ Microtopogra □ Surface Soil Cracks (B6) □ FAC-neutral										Stressed Plants (D1)	
Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Surface Soil Cracks (B6) ☐ FAC-neutral Total Present? Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Depth (inches): Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:											` '
☐ Iron Deposits (B5) ☐ Microtopogra ☐ Surface Soil Cracks (B6) ☐ FAC-neutral To Field Observations: Surface Water Present? Yes ○ No ② Depth (inches): Water Table Present? Yes ○ No ③ Depth (inches): Saturation Present? Yes ○ No ③ Depth (inches): Cleascribe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:										_	
Surface Soil Cracks (B6)									· · · ·		
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:	Surface So	oil Cracks (B6))								
Water Table Present? Yes No Depth (inches): Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:	ield Observa	tions:									
Saturation Present? (includes capillary fringe) Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:	Surface Water	Present?	Yes 🔾	No 🖲	De	epth (inches	s):				
(includes capillary fringe) Yes No Depth (inches): Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:	Water Table Pi	resent?	Yes \bigcirc	No 💿	De	epth (inches	s):		Wetla	nd Hydrology Presen	nt? Yes O No 💿
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspection) if available: Remarks:			Yes \bigcirc	No •	De	epth (inches	5):				
			eam gauge, m	nonitor well,	, aerial p	hotos, previ	ious inspe	ction) if av	railable:		
no wetland hydrology indicators											
	no wetland hyd	rology indicat	ors								

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