WETLAND DETERMINATION DATA FORM - Alaska Region

Project	/Site: Susitna-Watana Hydroele	ectric Project		Borough	/City:	Matanusk	a-Susitna Borough Sampling Date: 05-Jul-13
Applica	ant/Owner: Alaska Energy Autho	ritv					Sampling Point: SW13_T136_02
	gator(s): SLI, SCB	,		Landfo	rm (hill	side, terrac	e, hummocks etc.): Hillside
Local r		convex		Slope:		% / 21.7	7 ° Elevation: 615
	ion: Southcentral Alaska		l at	— · ∴ 62.937	782169		Long.: -149.161734463 Datum: NAD83
_			Lut	02.337	702100) I	
	p Unit Name:					No ○	NWI classification: Upland
Are V	egetation , Soil , o	Hydrology :	significa	antly disturl y problema	bed? atic?	Are "N (If nee	(If no, explain in Remarks.) ormal Circumstances" present? Yes ● No ○ ded, explain any answers in Remarks.) s, transects, important features, etc.
				amping	point	locations	, transcots, important reatures, etc.
	Hydrophytic Vegetation Present?				ls	the Sam	pled Area
	Hydric Soil Present?	Yes O No 🖲				thin a W	-
Rema	Wetland Hydrology Present?	Yes O No 🖲)				
WEGE	ETATION - Use scientific nar	nes of plants. Li	st all s			plot. Indicator	Dominance Test worksheet:
	e Stratum		% Cov		cies?	Status	Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
	Betula neoalaskana		_	2		FACU	Total Number of Dominant
	Picea glauca		_	1		FACU	Species Across All Strata:5(B)
3.			_	0			Percent of dominant Species
4.			_	0			That Are OBL, FACW, or FAC: 40.0% (A/B)
5.			_	0			Prevalence Index worksheet:
		Total Covers					Total % Cover of: Multiply by:
Sap	ling/Shrub Stratum 50%	6 of Total Cover:	1.5 2	20% of Tota	l Cover:	0.6	OBL Species <u>0</u> x 1 = <u>0</u>
1.	Sorbus scopulina			2		FACU	FACW Species <u>0</u> x 2 = <u>0</u>
2.	Spiraea stevenii		0	0.1		FACU	FAC Species <u>35</u> x 3 = <u>105</u>
3.				0			FACU Species <u>52.2</u> x 4 = <u>208.8</u>
4.				0			UPL Species 0 x 5 = 0
5.				0			Column Totals: <u>87.2</u> (A) <u>313.8</u> (B)
6.				0			
7.			_	0			Prevalence Index = B/A = 3.599
8.			_	0			Hydrophytic Vegetation Indicators:
9.			_	0			Dominance Test is > 50%
10.			_	0			Prevalence Index is ≤3.0
Her	b Stratum 50°	Total Cover: % of Total Cover:		20% of Tota		: 0.42	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
1.	Veratrum viride		_2		✓	FAC	Problematic Hydrophytic Vegetation (Explain)
2.	Chamaenerion angustifolium		_1		✓	FACU	¹ Indicators of hydric soil and wetland hydrology must
3.	Dryopteris expansa		_1		✓	FACU	be present, unless disturbed or problematic.
4.	Calamagrostis canadensis		_1		✓	FAC	Plot size (radius, or length x width)
5.			_		✓	FACU	% Cover of Wetland Bryophytes
6.	Geranium erianthum		_	5		FACU	(Where applicable)
7.			_	1		FACU	% Bare Ground
8.	Mertensia paniculata		_	1		FACU	Total Cover of Bryophytes5
9.	Gymnocarpium dryopteris		_	5		FACU	
10.	Trientalis europaea	Total Course	_	.1	Ш	FACU	Hydrophytic
	50%	Total Cover:4			l Cover:	16.42	Vegetation Present? Yes ○ No ●
Rem	arks: trace aconitum delphinifolio	um, streptopus amp	lexifoliu	ıs. no tree	or shru	ıb dominant	ts, as total cover or each layer <5%.

US Army Corps of Engineers Alaska Version 2.0

SOIL Sampling Point: SW13_T136_02

					Red		1	2	. <u>.</u> .	
(inches) 0-1	Color (m	oist)	<u> </u>	Color (m	ioist)	<u>%</u>	Type ¹	<u>Loc</u> ²	Texture rooted organics	Remarks
1-4	2.5Y	4/1	80	10YR	2/1	20			Silt Loam	old burn or developing spodosol? broker
				IUIK					-	
4-9	10YR	2/2							Loam	-
9-16	10YR	3/2							Silt Loam	w common subrounded cobbles
16-20	5Y	4/2	100						Loam	_
									-	_
									-	_
										_
Type: C=Cor	centration. D	=Depletior	ı. RM=Reduc	ced Matrix	² Location	: PL=Pore	e Lining. RC	=Root Cha	nnel. M=Matrix	
lydric Soil I	ndicators:			Indicat	ors for Pro	blematic	Hydric So	oils:		
Histosol or	Histel (A1)				ka Color Ch		4		Alaska Gleyed Without I	Hue 5Y or Redder
Histic Epip	edon (A2)			Alasl	ka Alpine sv	wales (TA5	5)		Underlying Layer	
_	Sulfide (A4)			Alasl	ka Redox W	/ith 2.5Y H	lue		Other (Explain in Rema	rks)
Thick Dark	Surface (A12	2)		30						L. L.L.
Alaska Gle	yed (A13)						ic vegetatio e position r		nary indicator of wetland	nydrology,
Alaska Red	` '						in Remark	-		
Alaska Gle	yed Pores (A1	5)		GIVE C	icturis or co	ior change	Z III Kemark			
estrictive Laye	er (if present)									
Type:									Hydric Soil Presen	t? Yes O No 💿
Depth (inchemarks: o hydric soil ir										
emarks:										
emarks:	dicators									
emarks: b hydric soil ir	dicators GY	ators:							_Secondary Inc	dicators (two or more are required)
emarks: b hydric soil ir	GY rology Indic		ıt)							licators (two or more are required) nined Leaves (B9)
YDROLO //etland Hydromary Indica Surface W	GY rology Indicators (any one later (A1)		nt)				erial Imagei		Water Sta	ained Leaves (B9) Patterns (B10)
YDROLO //etland Hydorimary Indica Surface W High Wate	GY rology Indicators (any one /ater (A1) er Table (A2)		nt)	☐ Sp	arsely Vege	etated Con	erial Imagei cave Surfac		Water Sta	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3)
YDROLO /etland Hydri Surface W High Wate	GY rology Indicators (any one (ater (A1)) er Table (A2)		nt)	☐ Sp ☐ Ma	arsely Vege arl Deposits	etated Con (B15)	cave Surfac		Water Sta	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4)
YDROLO Yetland Hydric Surface W High Water Water Ma	GY rology Indictors (any one later (A1) er Table (A2) n (A3) rks (B1)	is sufficier	nt)	☐ Sp ☐ Ma ☐ Hy	arsely Vege arl Deposits drogen Sul	etated Con (B15) fide Odor	cave Surfac		Water Sta	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4) sits (C5)
YDROLO YDROLO Yetland Hydi Surface W High Wate Saturatior Water Ma Sediment	GY rology Indicators (any one /ater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2)	is sufficier	ıt)	☐ Sp ☐ Ma ☐ Hy ☐ Dr	arsely Vege arl Deposits drogen Sul y-Season V	etated Con (B15) fide Odor (Vater Table	cave Surfac (C1) e (C2)		Water Sta Drainage Oxidized Presence Salt Depo	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4) sits (C5) or Stressed Plants (D1)
YDROLO YDROLO YEtland Hydric Surface W High Water Saturation Water Ma Sediment Drift Depo	GY rology Indictors (any one later (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) ssits (B3)	is sufficier	ıt)	☐ Sp ☐ Ma ☐ Hy ☐ Dr	arsely Vege arl Deposits drogen Sul	etated Con (B15) fide Odor (Vater Table	cave Surfac (C1) e (C2)		Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2)
YDROLO /etland Hydric Soil in Surface W High Water Ma Saturation Water Ma Sediment Drift Depo	GY rology Indicators atter (A1) er Table (A2) atter (A3) rks (B1) Deposits (B2) osits (B3) or Crust (B4)	is sufficier	ıt)	☐ Sp ☐ Ma ☐ Hy ☐ Dr	arsely Vege arl Deposits drogen Sul y-Season V	etated Con (B15) fide Odor (Vater Table	cave Surfac (C1) e (C2)		Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2) equitard (D3)
YDROLO Yetland Hydro Primary Indica Surface W High Water Saturation Water Ma Sediment Drift Depo	GY rology Indicators (any one /ater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) soits (B3) or Crust (B4) sits (B5)	is sufficier	nt)	☐ Sp ☐ Ma ☐ Hy ☐ Dr	arsely Vege arl Deposits drogen Sul y-Season V	etated Con (B15) fide Odor (Vater Table	cave Surfac (C1) e (C2)		Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2) equitard (D3) ographic Relief (D4)
YDROLO Yetland Hydro Primary Indica Surface W High Water Saturation Water Ma Sediment Drift Depo	GY rology Indicators (any one vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) soits (B3) or Crust (B4) soits (B5) oil Cracks (B6	is sufficier	nt)	☐ Sp ☐ Ma ☐ Hy ☐ Dr	arsely Vege arl Deposits drogen Sul y-Season V	etated Con (B15) fide Odor (Vater Table	cave Surfac (C1) e (C2)		Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2) equitard (D3)
YDROLO /etland Hydi /primary Indica Surface W High Water Saturatior Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface Se	GY rology Indicators (any one (ater (A1)) er Table (A2) n (A3) rks (B1) Deposits (B2) osits (B3) or Crust (B4) sists (B5) bil Cracks (B6 ntions:	is sufficier	nt)	Sp Ma	arsely Vege arl Deposits drogen Sul y-Season V	etated Con (B15) fide Odor Vater Table n in Reman	cave Surfac (C1) e (C2)		Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4) sits (C5) or Stressed Plants (D1) hic Position (D2) equitard (D3) ographic Relief (D4)
YDROLO /etland Hydric Soil in Primary Indica Surface W. High Water Ma. Sediment Drift Depot Algal Mat. Iron Depot Surface Soileld Observation in Primary Indicators of the Pri	GY rology Indicators (any one later (A1) er Table (A2) er (A3) erks (B1) Deposits (B3) or Crust (B4) esits (B5) oil Cracks (B6 entions: Present?	is sufficier		Sp Ma	arsely Vega arl Deposits drogen Sul y-Season W her (Explain	etated Con (B15) fide Odor (Jater Table n in Reman	cave Surfac (C1) e (C2)	ce (B8)	Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A Microtopo	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4) sists (C5) or Stressed Plants (D1) hic Position (D2) equitard (D3) orgraphic Relief (D4) ral Test (D5)
YDROLO Yetland Hydric Surface W. High Water Saturatior Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface Surface Surface Water	GY rology Indicators archaer (A1) er Table (A2) archaer (A3) archaer (B1) Deposits (B2) bosits (B3) or Crust (B4) sits (B5) boil Cracks (B6 attions: archaer (B6) archaer (B6	Yes (○ No ● No ●	Sp Ma Hy Dr Ot	arsely Vege arl Deposits drogen Sul y-Season W her (Explain epth (inchese epth (inchese	etated Con (B15) fide Odor of Jater Table on in Reman	cave Surfac (C1) e (C2)	ce (B8)	Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4) sists (C5) or Stressed Plants (D1) hic Position (D2) equitard (D3) orgraphic Relief (D4) ral Test (D5)
YDROLO Yetland Hydro Yetland Hydro Yetland Hydro Yetland Hydro Surface W High Water Sediment Drift Depo Algal Mat Iron Depo Surface So ield Observa Surface Water Water Table P	GY rology Indicators arter (A1) er Table (A2) arts (B1) Deposits (B2) soits (B3) or Crust (B4) soits (B5) oil Cracks (B6 attions: Present? esent?	Yes () No	Sp Ma Hy Dr Ot	arsely Vega arl Deposits drogen Sul y-Season W her (Explain	etated Con (B15) fide Odor of Jater Table on in Reman	cave Surfac (C1) e (C2)	ce (B8)	Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A Microtopo	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4) sists (C5) or Stressed Plants (D1) hic Position (D2) equitard (D3) orgraphic Relief (D4) ral Test (D5)
YDROLO Yetland Hydric Soil in Surface W. High Water Ma Sediment Drift Depo Surface Surface Surface Water Table P Saturation Pressaturation P	GY rology Indicators article (A1) er Table (A2) article (A3) article (B3) article (B3) article (B4) article (B5) bil Cracks (B6) article (B6) artic	Yes Yes Yes	No ●No ●No ●No ●	Sp Ma Hy Dr Ot	arsely Vegarl Deposits drogen Sul y-Season W her (Explain epth (inchese epth (inchese	etated Con (B15) fide Odor (/ater Table n in Reman (s):	cave Surfac (C1) e (C2) rks)	Wetlar	Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A Microtopo	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4) sists (C5) or Stressed Plants (D1) hic Position (D2) equitard (D3) orgraphic Relief (D4) ral Test (D5)
YDROLO Yetland Hydi Yimary Indica Surface W High Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface So ield Observa Surface Water Table P Saturation Pre Cincludes capil	GY rology Indicators article (A1) er Table (A2) article (A3) article (B3) article (B3) article (B4) article (B5) bil Cracks (B6) article (B6) artic	Yes Yes Yes	No ●No ●No ●No ●	Sp Ma Hy Dr Ot	arsely Vegarl Deposits drogen Sul y-Season W her (Explain epth (inchese epth (inchese	etated Con (B15) fide Odor (/ater Table n in Reman (s):	cave Surfac (C1) e (C2) rks)	Wetlar	Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A Microtopo	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4) sists (C5) or Stressed Plants (D1) hic Position (D2) equitard (D3) orgraphic Relief (D4) ral Test (D5)
YDROLO Yetland Hydi Primary Indica Surface W High Water Saturatior Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface So ield Observa Surface Water Water Table P Saturation Pre (includes capil escribe Recon	GY rology Indicators dater (A1) er Table (A2) n (A3) rks (B1) Deposits (B3) or Crust (B4) sits (B5) bil Cracks (B6 attions: Present? ersent? ersent? elsent? elsent? elsent (Street)	Yes Yes Yes Caam gauge	No ●No ●No ●No ●	Sp Ma Hy Dr Ot	arsely Vegarl Deposits drogen Sul y-Season W her (Explain epth (inchese epth (inchese	etated Con (B15) fide Odor (/ater Table n in Reman (s):	cave Surfac (C1) e (C2) rks)	Wetlan	Water Sta Drainage Oxidized Presence Salt Depo Stunted of Geomorp Shallow A Microtopo	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) of Reduced Iron (C4) sists (C5) or Stressed Plants (D1) hic Position (D2) equitard (D3) orgraphic Relief (D4) ral Test (D5)

U.S. Army Corps of Engineers Alaska Version 2.0