# Wetland Delineation Report City of Wasilla Parcel Lot 1B



Prepared for: City of Wasilla 290 E. Herning Avenue Wasilla, AK 99654

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# **Executive Summary**

In September 2014, Stantec Consulting, Inc. (formerly USKH) delineated wetlands and assessed habitat within a parcel purchased by the City of Wasilla west of the existing Wastewater Treatment Plant. Potential future improvements to the treatment plant may involve changes to the natural wetland complex, and would possibly construct additional wetlands on the property. This survey delineates and classifies wetland and upland habitats within the 77-acre study area to assess habitats potentially impacted by future improvements. The wetland delineation was completed in accordance with the United States Army Corps of Engineers Wetlands Delineation Manual (USACE, 1987) as well as the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0) (USACE, 2007). Stantec investigated vegetation, soils, hydrology, and habitat characteristics at all test plot and photo point locations. Stantec also looked for relatively permanent water bodies within the study area.

The City parcel includes several different habitat types (e.g., Open Canopy Forested Upland, Forested Wetland, Scrub-Shrub Wetland, Pond) within a relatively undeveloped area. Of the 77-acre study area, Stantec determined that 39 acres are wetlands. All wetlands documented during the field investigation do not have surface water connection to a traditional navigable water of the United States. The wetlands may be hydrologically connected through groundwater to Rabbit Slough, which ultimately flows into Knik Arm, a traditional navigable water of the United States, and therefore may be under the jurisdiction of United States Army Corps of Engineers per Section 404 of the Clean Water Act and Section III.D.2 of the Jurisdictional Determination Form.



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# **Abbreviations**

ADF&G Alaska Department of Fish and Game

CWA Clean Water Act

GPS Global Positioning System

NRCS Natural Resources Conservation Service

NWI National Wetlands Inventory

Stantec Consulting Inc. (formerly USKH)

U.S. United States

USACE United States Army Corps of Engineers

USGS United States Geological Survey



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Introduction December 22, 2015

# 1.0 INTRODUCTION

### 1.1 SITE LOCATION

The evaluated parcel is located at approximately 61.5634° North Latitude, -149.3745° West Longitude, Township 17 North, Range 1 West, Section 13, Seward Meridian. The parcel sub-region is south-central Alaska, which lies within the Cook Inlet Zone, a transition between maritime and continental climatic zones. The Cook Inlet Zone is characterized by maritime summer temperatures moderated by Cook Inlet, and continental winter temperatures moderated by sea ice presence during the coldest months. Figure 1 (Appendix A) displays the location and vicinity of the evaluated parcel.

#### 1.2 PROJECT DESCRIPTION

The City of Wasilla is considering development of an area west of an existing wastewater treatment plant in Wasilla, Alaska, located south of the Parks Highway and west of Jude Drive. The improvements would use the natural wetland complex, and possibly construct additional wetlands to accommodate future improvements to the treatment plant.

Wetlands and waters of the United States (U.S.) were delineated to assess habitat types within the 77-acre study area. The purpose of this report is to describe those habitats identified within the study area. Wetlands are defined by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers (USACE) as, "... those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 Code of Federal Regulations 328.3 [b]). Wetlands, by this definition, are vegetated. Waters of the U.S. include open water bodies (e.g., streams, lakes, and tidal waters). By federal law (Clean Water Act [CWA]), and associated policy, it is necessary to avoid discharge of fill associated with project impacts to wetlands and waters of the U.S. wherever practicable, minimize unavoidable impacts, and/or compensate for unavoidable impacts.



Background Information December 22, 2015

# 2.0 BACKGROUND INFORMATION

### 2.1 EXISTING WETLAND INFORMATION

Existing wetlands mapping conducted by the Kenai Watershed Forum Cook Inlet Wetlands (Gracz, 2007) and the U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) (2011) were reviewed. Gracz mapped Discharge Slope and Drainageway wetland complexes within the study area and the NWI mapped Palustrine Emergent and Palustrine Forested/Scrub-Shrub wetland complexes within the study area. Previous field wetland investigations or mapping efforts for the study area were not found.

## 2.2 EXISTING VEGETATION INFORMATION

Existing vegetation information from *The Alaska Vegetation Classification* (Viereck, et al., 1992) identifies the study area as interior forest or taiga. These vegetation classifications are dominated by closed, open, and woodland evergreen forests of black and white spruce; however, they are also known for having extents of open and closed deciduous forests of paper birch, aspen, and balsam poplar. In addition, mosaics of shrubs and herbs can be observed in lowland sedge, sedge-moss bogs, scrub-shrub bogs, and graminoid bogs. Following fires and alluvial deposition in these vegetation classifications, closed and open shrub communities propagate.

#### 2.3 EXISTING SOILS INFORMATION

The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Soil Survey provides detailed coverage of the study area. The NRCS Soil Survey (2007) map units within the study area consist of Kalmbach silt loam (loess over gravelly till), cryaquepts, depressional, 0-7 percent slopes (silty volcanic ash and/or silty loess over gravelly glacial drift and/or loamy outwash), histosols (organic material over organic material and/or gravelly alluvium and/or loamy glacial drift), Cryods and Cryochrepts (silty volcanic ash and/or silty loess over gravelly glacial drift and/or loamy outwash), and Knik silt loam (loess over sandy and gravelly outwash). Soils within the study area were formed following repeated glacial advances and retreats during the Pleistocene epoch (10,000-2 million years ago) (Jokels, et al., 1991). Topography relief of the study area and surrounding area consists of rolling hills with scattered ponds, lakes, and wetlands in the catchment basins.

#### 2.4 EXISTING HYDROLOGY INFORMATION

U.S. Geological Survey (USGS) topographic maps, Alaska Department of Fish and Game (ADF&G) Fish Resource Monitor, and aerial imagery show drainage within the study area flows into a small unnamed stream, unmapped on NHD hydrography, into a small pond



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approximately 1.5 miles to the south. From here, it may be connected through groundwater to Rabbit Slough. Rabbit Slough flows into Knik Arm, a traditional navigable water of the U.S.



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# 3.0 METHODOLOGY

Methodology for the wetland delineation followed guidance outlined in the Corps of Engineers Wetlands Delineation Manual (USACE, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0) (USACE, 2007). The wetland delineation was completed over two days starting 9/30/2014 by a team of two field investigators.

### 3.1 FIELD PREPARATION

Prior to the initial field visit, existing background information and mapping described in Section 2 was used to assess the study area and to identify areas requiring field verification. To determine potential wetland areas within the study area, target sampling locations were identified based on existing background information and mapping.

#### 3.2 WETLAND DELINEATION

The delineation was completed according to wetland sampling methodology for routine determinations combining levels one and two as outlined in the 1987 USACE Wetland Delineation Manual. This methodology combines use of available desktop data and field sampling to make wetland determinations for study areas larger than 5 acres. The three-tiered survey approach outlined in the 1987 USACE Wetland Delineation Manual was followed for each sampling location and included examination of vegetation, soil, and hydrology at all test plot locations. Standard USACE Wetland Determination Data Forms were completed at all test plot locations and are included in Appendix B. A test plot was completed at least once per community type.

Photo points were completed where habitat was observed similar to that of previously documented test plot locations, which allows best professional judgment to apply test plot findings between similar habitats. Each test plot and photo point location sampled during the field investigation was collected in a handheld *Global Positioning System (GPS)* unit. Test plot and photo point locations are shown on maps included in Appendix A. Characteristic photographs of test plot and photo point habitat type, soil pits, and other observations are included in Appendix C.

The field investigators walked transects across the study area to ensure accurate field observations of different habitat types. Delineation of wetland and upland boundaries in the field was completed by walking the transition area with a handheld GPS unit where vegetation and terrain permitted. If areas proved to be inaccessible, a combination of field data and aerial photograph signatures was used to complete the delineation.



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### 3.3 DATA DOWNLOAD AND MAPPING

After the field investigation, data sheets, site photographs, observations, and GPS locations were compiled to complete the delineation. Wetlands were assigned classifications using field data collected in addition to existing Kenai Watershed Forum Cook Inlet Wetlands (Gracz, 2007) mapping, NWI (2011) mapping, and habitat systems and classes described in Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al., 1979).



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# 4.0 RESULTS AND DISCUSSION

Table 1 below summarizes the different wetlands and upland habitat types found within the study area. A little more than half (39 acres) of habitat within the 77-acre study area is comprised of wetlands and 38 acres were identified as uplands. Each habitat type is described in further detail in the sections below.

Table 1: Summary of Wetlands and Uplands

Habitat Type	Acres	Percent of the Study Area
Wetlands		
Forested Wetlands	36	47 %
Scrub-Shrub Wetlands	3	4 %
Pond	< 0.01	< 0.01%
Total Wetlands	39	51 %
Uplands		
Open Canopy Forested Upland	38	49 %
Total Study Area	77	100 %

Weather during the field investigation 9/30/2014 was approximately 38 degrees Fahrenheit and overcast. The month of the field investigation, September 2014, observed 1.02 more inches of rain than normal (National Weather Service, 2014). Therefore, it was noted on the wetland data forms (Appendix B) that climatic conditions within the study area are not typical for this time of year.

#### 4.1 WETLANDS

Three different wetland habitat types, Forested Wetlands, Scrub-Shrub Wetlands, and Pond were documented within the study area. The majority of documented wetland habitats within the study area are Forested Wetlands (36 acres). Scrub-Shrub Wetlands are minimal (3 acres) and one small Pond (< 0.01 acre) is present within the study area. Connection of surface hydrology between the majorities of wetland complexes was readily observed by visible surface water in depressions between hummocks.

Wetlands were mapped only within the study area and are typically connected to larger extents of the same wetland type beyond the study area boundary to the southeast. The presence of wetlands within the study area appears to be driven by topography. Topography relief of the study area consists of a low-lying depression surrounded by rising topography. The documented



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wetland habitats contained all three wetland parameters; hydrophytic vegetation, hydric soil, and wetland hydrology. The following sections describe the specific characteristics of each wetland habitat type.

#### 4.1.1 Forested Wetlands

Within the study area Forested Wetlands comprise two Cowardin classifications, PFO1/4B, which is specifically characterized as palustrine, forested, broad-leaved deciduous/needle-leaved evergreen, saturated; and PFO1/4C, which is specifically characterized as palustrine, forested, broad-leaved deciduous/needle-leaved evergreen, seasonally flooded. These wetlands consist of a mix of deciduous and evergreen tree cover as well as smaller shrubs, and generally have a thick understory of bluejoint (Calamagrostis canadensis). Vegetation dominating these areas includes Alaska paper birch (Betula neoalaskana), speckled alder (Alnus incana), balsam poplar (Populus balsamifera), and a mix of other herbaceous species including purple marshlocks (Comarum palustre) and field horsetail (Equisetum arvense). Histosol soils and depressions of standing water between hummocks were observed within the Forested Wetlands in the study area. These wetlands have no slope and are comprised of one large contiguous complex, also connected to a Scrub-Shrub Wetland complex. Forested Wetlands documented in the study area generally match NWI mapping of Freshwater Forested/Shrub Wetland classifications, but were ground-truthed to be greater in extent. Forested Wetlands within the study area are documented by test plots 6, 12, 18, 19, 22 and 29 and photo points 7, 8, 9, 11, 13, and 20 on Figure 2 (Appendix A). Forested Wetlands comprise 36 acres, or 47%, of the total study area.

Forested Wetlands are moderate–functioning wetlands within the study area, as they have a presence of standing water between hummocks coupled with the high density of woody vegetation which provides a functional ability to moderate flood flow. Thick organic soils and frequent-to-constant inundation allow for moderate organic matter production. Forested Wetlands also provide habitat and food to a variety of wildlife.

#### 4.1.2 Scrub-Shrub Wetlands

Within the study area Scrub-Shrub Wetlands comprise one Cowardin classification, PSS1/4C, which is specifically characterized as palustrine, scrub-shrub, broad-leaved deciduous/needle-leaved evergreen, seasonally flooded. This wetland consists of small shrubs and trees and Calamagrostis canadensis dominating the herbaceous stratum. Vegetation dominating this habitat includes black spruce (Picea mariana), and dwarf birch (Betula nana), and bog Labrador tea (Rhododendron groenlandicum). Organic soils and surface water in the depressions between hummocks are characteristic of this habitat. This habitat has little to no slope and is connected to a larger contiguous Forested Wetland complex. The Scrub-Shrub Wetland documented in the study area generally matches NWI mapping of Freshwater Emergent Wetland classifications. Based on our site investigation we agree with the rest of the NWI mapped boundaries of the Scrub-Shrub Wetland complex.



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The Scrub-Shrub Wetland within the study area is documented by photo point 10 on Figure 2 (Appendix A). Three acres of the study area is comprised of Scrub-Shrub Wetlands, or 4% of the total study area.

Scrub-Shrub Wetlands provide high- to moderate-value functions within the study area for presence of moderate surface water and shrubby vegetation which provides a functional ability to moderate flood flow. Thick organic soils and frequent-to-constant inundation allow for moderate organic matter production. Shrubs also provide areas of cover and food to a variety of wildlife.

#### 4.1.3 **Pond**

Within the study area the Pond comprises one Cowardin classification, PEM1H, which is specifically characterized as palustrine, emergent, persistent, permanently flooded. The Pond observed in the study area lies within the Forested Wetland complex in a small depression. The Pond documented between photo points 7 and 8 on Figure 2 (Appendix A). Less than 0.01-acre of the study area is comprised of Pond or less than > 0.01% of the total study area.

Ponds are high-functioning and provide sediment, nutrient, and toxicant removal as well as nutrient export. Ponds also provide excellent habitat for waterfowl and overwintering juvenile fish.

#### 4.2 UPLANDS

#### 4.2.1 Open Canopy Forested Upland

Uplands are the dominant habitat type throughout the study area and are characteristic for their steep slopes. Upland habitat within the study area is characterized as Open Canopy Forest for its mixed tree canopy of broad-leaved deciduous and needle-leaved evergreen. The tree canopy is dominated by Betula neoalaskana, white spruce (Picea glauca), Picea mariana and Populus balsamifera. The shrub and herbaceous cover greatly varies in Open Canopy Forest across the study area, but is typically an open understory. Soil composition also varies in the Open Canopy Forest across the study area, but is generally well-drained and consists of organics sometimes underlain by silt. Open Canopy Forest within the study area is documented by test plots 5, 14, 27, 28, 30 and photo points 21, 25, and 26 on Figure 2 (Appendix A). Approximately 38 acres of the study area is comprised of Open Canopy Forest, or 49% of the total study area.

# 4.3 CONCLUSION

Development activities from construction of the parcel would likely impact wetlands and/or waters of the U.S. under USACE jurisdiction. Based on the review of existing hydrology information, drainage within the study area may flow into Rabbit Slough, which ultimately outlets



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into Knik Arm, a traditional navigable water of the U.S. For this reason, wetlands and waters of the U.S. in the study area will require jurisdictional determination by the USACE under Section 404 of the CWA and Section III.D.2 of the Jurisdictional Determination Form. Development will need to include coordination with USACE and compliance with Section 404 of the CWA.



References December 22, 2015

# 5.0 REFERENCES

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Site Maps December 22, 2015

# Appendix A Site Maps





# **Wasilla Wastewater Outfall Location & Vicinity Map**

DEC 2014 Date CDP Drawn KDH/SL Checked WO# 204700415 Project No.

Figure 1

Legend

**Photo and Test Plot Points** 

Forested Wetland

Open Canopy Forested Upland

Path: U:\204700415\GIS\Projects\Wetlands\204700415\_Fig-02-Wetland\_Delineation.mxd

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Date

DEC 2014

Wetland Delineation Data Sheets December 22, 2015

# Appendix B Wetland Delineation Data Sheets



# WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site:	Wasilla WWTP	E	Borough/0	City:	<u>Wasilla</u>	_ Sampling Date: 09	<u>}/30/14                                    </u>
Applicant/Owner:		City of \	Wasilla				5 TP
Investigator(s):	CDP, SL	1	andform	(hillside, terra	ace, hummocks, etc.):	Slope	
Local relief (concave, co	onvex, none): Sight Slop	oes	Slope (%)	): 2%	63		
Subregion: And	chorage/Matsu Lat: _		61.5670	79 Lon	g: <u>-149.382797</u>	Datum:	WGS84
Soil Map Unit Name:	Cryaquepts, depressio	nal, 0 to	7 perce	nt slopes	NWI classific	cation: Uplan	d
Are climatic / hydrologic	conditions on the site typical for this t	ime of yea	r? Yes_	No	x (If no, explain in F	Remarks.)	
Are Vegetation,	Soil, or Hydrology sig	nificantly o	disturbed	? Are "	Normal Circumstances	present? Yesx	No
	Soil, or Hydrology nat				eded, explain any answe		80
							12
SUMMART OF FIR	NDINGS – Attach site map sho	wing sa	mpling	point locati	ons, transects, impo	mani reatures, e	ilC.
Hydrophytic Vegetation	n Present? Yes No	x	le:	the Sampled	Area		
Hydric Soil Present?	Yes No			thin a Wetlan		No X	
Wetland Hydrology Pro	esent? Yes No	X		timi a tronan	103		75
Remarks: And	chorage received 1.02 in. of rain	above a	verage (	during the n	nonth of September.	Area: slight slope	at edge
of v	wetland.						
VEGETATION - U	se scientific names of plants.	List all s	pecies	in the plot.			
	2.553	Absolute	Domina	nt Indicator	Dominance Test work	ksheet:	
Tree Stratum				s? Status	Number of Dominant S		
1. Betneo	Betula neoalaskana	<u>60</u> 10	Yes No.	FACU	That Are OBL, FACW,	or FAC: 2	(A)
2. picgla	Picea glauca	10	<u>No</u>	FACU_	Total Number of Domin	T12270-0450	
3			-		Species Across All Stra	ata:	(B)
4	Total Cover:	70			Percent of Dominant S		0.000
	50% of total cover:35		f total cov	ver: 14	That Are OBL, FACW,	or FAC:	(A/B)
Sapling/Shrub Stratum		_ 20%0	i total cov	vei	Prevalence Index wor	ksheet:	
1vibedu	Viburnum edule	5	No_	FACU	Total % Cover of:	Multiply I	by:
2. rosaci		30_	Yes_	<u>FACU</u>	1000	x 1 =0	
3. ribtri	Ribes triste	5_	No_	FAC	FACW species 0	x 2 =0	
4	Salix sp.	T	No	FAC	FAC species 130	x 3 = 390	
5			-		FACU species 150	x 4 =0	(d)
6		10			UPL species 0 Column Totals: 280	x 5 = 0	
	Total Cover: 20	40		8		(A) 990 3.54	107
Herb Stratum	50% of total cover:20	_ 20% of	total cov	er:	Prevalence Index	( = B/A =	- 22
1. chaang	Chamerion angustifolium	5	No	FACU	Hydrophytic Vegetation	on Indicators:	
gymdry	Gymnocarpium dryopteris	40	Yes	FACU	No Dominance Test is	s >50%	
3. equarv	Equisetum arvense	70	Yes	FAC	No Prevalence Index i	is ≤3.0	
4. calcan	Calamagrostis canadensis	50	Yes	FAC	Morphological Ada	aptations¹ (Provide si	upporting
5. corcan	Cornus canadensis	T	No	FACU		s or on a separate s	
6. equsyl	Equisetum sylvaticum	5	No	FAC	20 - Constant Constan	phytic Vegetation <sup>1</sup> (I	
7			_		1 Indicators of hydric so be present unless distu	il and wetland hydro	ology must
8			-		be present unless dista	irbed of problematic	ė.
9							
10	* 0.000 to 1.000 to 1	470	-				
	Total Cover:	152 A 153 Y 154		2.4			
	50% of total cover: 85	77	total cov		Hydrophytic		
Plot size (radius, or ler		% Bare C		0	Vegetation Present? Ye	se No	v
% Cover of Wetland B (Where applicable)		er of Bryop	nytes	40	riesellt Ye	es No	
Remarks:					<del>L.</del>	6.11.1	
	land forest - most vegetation de	ad or dyi	ing. Som	ne cut, dowr	ned spruce at bottom	ı ot slight slope	
l fro	m road						

SOIL Sampling Point: 5 TP

Profile Desc	ription: (Describ	e to the depti	n needed to docu	ıment the i	ndicator	or confir	m the absence	of indicators.)
Depth	<u>Matrix</u>			lox Features		. ?	-	_
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	_ Loc²	Texture	Remarks
0-9	<u>g</u>	- (		_			organic/duf	Lots of roots
9-20	2.5Y 4/4	100 _			9O <del></del>	-	silt	light brown, no redox
1Typo: C=C	oncentration, D=De	plotion PM-I	Paduaad Matrix C	`S-Covered	d or Costs	d Sand (	Orains <sup>2</sup> Loo	etion: DI - Dere Lining M-Metrix
Hydric Soil I		pietion, Rivi=i	Indicators for				arains. Loc	ation: PL=Pore Lining, M=Matrix.
14000 10 VI	or Histel (A1)			lor Change			Alaska	Gleyed Without Hue 5Y or Redder
	ipedon (A2)			oine Swales				erlying Layer
A MANAGEMENT CONTRACTOR	n Sulfide (A4)			dox With 2.				Explain in Remarks)
	rk Surface (A12)							
55	sleyed (A13)		<sup>3</sup> One indicator	of hydrophy	ytic vegeta	ation, one	primary indicate	or of wetland hydrology,
Alaska R	edox (A14)		and an appr	opriate land	dscape po	sition mu	st be present un	less disturbed or problematic.
Alaska G	leyed Pores (A15)		<sup>4</sup> Give details o	f color chan	ge in Ren	narks.		
Restrictive L	.ayer (if present):							
Туре:			75					
Depth (inc	hes):						Hydric Soil	Present? Yes No X
Remarks:		_					-	
		_	g at bottom of growing season		ants sen	escing-g	flistening not t	typical during growing season.
HYDROLO(	gy							
	Irology Indicators	•					Secondary Inc	dicators (2 or more required)
	ators (any one ind		ient)				The state of the s	nined Leaves (B9)
5)	Water (A1)	iodioi io odino	Inundation Visi	hle on Aeria	al Imagery	(B7)	<del>10 -                                   </del>	Patterns (B10)
A THEORY OF SERVICE A	ter Table (A2)		_ Sparsely Veget				A Property of Chicago	Rhizospheres along Living Roots (C3)
Saturation		_	_ Marl Deposits (			(/		of Reduced Iron (C4)
Water M	arks (B1)	VA.	_ Hydrogen Sulfi	37 .01	1)		Salt Depo	
Sedimen	t Deposits (B2)	-	_ Dry-Season W	ater Table (	C2)		Stunted o	or Stressed Plants (D1)
Drift Dep	osits (B3)	72	_ Other (Explain	in Remarks	)		Geomorp	hic Position (D2)
	t or Crust (B4)						Ta	Aquitard (D3)
10 To	osits (B5)							ographic Relief (D4)
3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	Soil Cracks (B6)						FAC-Neur	tral Test (D5)
Field Observ		V N	- X D					
Surface Wate	er Present?	resN	o X Depth (i	ncnes):				
Water Table	Present?	resN	o X Depth (i	ncnes):		—     \\	flond Uvdralog	Present? Yes No _X
Saturation Pr (includes cap	esent? illary fringe)	1 es IV	o Deptii (i	nches)		_   vve	lianu nyurology	Present? res No
	orded Data (strea	m gauge, mor	itoring well, aeria	l photos, pr	evious ins	pections)	), if available:	
Remarks:	No field inc	lication of h	vdrology					
	NO HEIGHI	arcacion or II	yarology.					

# WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site:	Wasilla WWTP	E	Borough/C	ity:	Wasilla	Sampling Date	e: <u>09/30/14</u>	<u> </u>
Applicant/Owner:		City of \	Nasilla			Sampling Poir	nt: 6 TP	
Investigator(s):	CDP, SL		andform	(hillside, terra	ace, hummocks, etc.):	hummock	S	
Local relief (concave, conve	r, none):none		Slope (%):	0%				
	age/Matsu Lat:				g:149.38316	Datum	: WGS8	34
	Cryaquepts, depressio							
	ditions on the site typical for this t							
	, or Hydrology sig						x No	
	, or Hydrology nat				eded, explain any answer			
SUMMARY OF FINDIN	NGS – Attach site map sho	wing sai	mpling p	oint locati	ons, transects, impo	rtant feature	s, etc.	
Hydrophytic Vegetation Pre	esent? Yes X No		20050		MAC - CONTROL			
Hydric Soil Present?	Yes X No		100	he Sampled		x		
	t? Yes X No		witi	hin a Wetlar	id? Yes	No	<del></del> -	
	age received 1.02 in. of rain		verage d	uring the n	nonth of September. !	Stressed birc	h. water	
	t surface level. Alder in samp		_	_	от обрасилост	20.00000.0000	.,	
	cientific names of plants.							
VEGETATION - 000 0	235		<u> </u>	t Indicator	Dominance Test work	chaat:		
Tree Stratum				? Status	Number of Dominant Sp			
1. <u>betneo</u>	Betula neoalaskana	10	<u>Yes</u>	FACU	That Are OBL, FACW,		2 (A	4)
2. picgla	Picea glauca	T	No	FACU	Total Number of Domin	ant		
3					Species Across All Stra		3 (B	3)
4					Percent of Dominant Sp	necies		
	Total Cover:	Anna Carta Cart			That Are OBL, FACW, of		57% (A	A/B)
Sapling/Shrub Stratum	50% of total cover:5	_ 20% of	f total covi	er:2	Prevalence Index work	ksheet:	77.00	
1. alninc	Alnus incana	Τ	No	FAC	Total % Cover of:	Mari	tiply by:	
					OBL species 40	x 1 =		
					FACW species 70	x 2 = _	2.23	
100					FAC species 95	x3=_		
是 "					FACU species 15	x 4 = _		
6.					UPL species 0	x 5 =	0	
	Total Cover:	0		T-000	Column Totals: 220	(A)	525	(B)
	50% of total cover: 0	_ 20% of	total cove	er:0	Prevalence Index	= B/A =	2.39	A
Herb Stratum compal	Comarum palustre	40	No	OBL	Hydrophytic Vegetation			
calcan Ca	llamagrostis canadensis	90	Yes	FAC	V 5000 50 50 50 500			
carlae	Carex laeviculmis	70	Yes	FACW	V Dominance rest is			
a. epicil	Epilobium ciliatum		No	FAC	Prevalence index is			
rubarc	Rubus arcticus	5	No	FAC	Morphological Adag data in Remarks			g
nolacu De	olemonium acutiflorum	T	No	FAC	Problematic Hydrog			
corcan	Cornus canadensis	5	No	FACU	1 Indicators of hydric soi	Carrier Contraction Contraction		st
7 8.			-		be present unless distu			-
10.								
10	Total Cover:	210	-					
	50% of total cover: 105		total cove	42	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Plot size (radius, or length)	x width) 15 foot radius	% Bare C		5	Hydrophytic Vegetation			
	nytes Total Cove					sxNo		
Remarks:					-			
	Birch stressed, dying, sph	angnum	moss, se	edges, tufte	ed Jacobs ladder on h	ummock.		

SOIL Sampling Point: 6 TP

Profile Desc	ription: (Describ	e to the dep	th needed to docu	ment the i	ndicator	or confirm	n the absence of	indicators.)	
Depth	Matrix		Redo	x Features	6				
(inches)	Color (moist)	%	Color (moist)	%	_Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-7	organic	-				<u> </u>		living moss layer	
7-15	<u>organic</u>				·			saturated	
<u>15-20</u>	organic		<u> </u>	<u> </u>	K	<u>113</u>	20	muck	
	*				A	-			
	-					<u></u>			
· ·	<u>0</u>	-		-	-	<u> </u>			
1				= =	.—		2,		
Type: C=Co		epletion, RM=	Reduced Matrix, Co				rains. *Locati	on: PL=Pore Lining, M=Matrix.	
STATE STATE OF THE						Suits .	AlI O		
	or Histel (A1)		Alaska Col	14.0				eyed Without Hue 5Y or Redder	
A SERVICE CONTRACTOR	pipedon (A2)		Alaska Alpi					ring Layer	
	n Sulfide (A4)		Alaska Red	iox vvitn ∠.	or Hue		Other (Ex	plain in Remarks)	
5 - 2	ark Surface (A12)		30	e L. J L.				E Harris I berstelle me	
180 Table 180	Gleyed (A13)							of wetland hydrology,	
NAME OF TAXABLE PARTY.	Redox (A14) Gleyed Pores (A15		<sup>4</sup> Give details of				t be present unies	s disturbed or problematic.	
	Barriera MT → Barriera Mariera de Consecta de Consect	•	Give details of	COIOI CHAII	ge ili Keli	iaiks.	T		
	_ayer (if present):								
5.0								V	
Depth (inc	ches):						Hydric Soil Pr	esent? Yes X No	
Remarks:	-1								
	Thick layer	s of satura	ted organic mate	rial obsei	rved at s	ample p	oint		
HYDROLO	GY								
Wetland Hyd	drology Indicator	s:					Secondary Indic	ators (2 or more required)	
	ators (any one ind		cient)				And the second s	ed Leaves (B9)	
X Surface			Inundation Visib	le on Aeris	l Imagery	(B7)	<del>12</del>	atterns (B10)	
	ter Table (A2)	-	X Sparsely Vegeta				A Property of the State of the	iizospheres along Living Roots (C3	3)
X Saturation		_	Marl Deposits (		vo Sanas	,o (Bo)		Reduced Iron (C4)	0,
	arks (B1)	1 <del>.7.</del>	Hydrogen Sulfid	101	1)		Salt Deposit		
1	it Deposits (B2)	-	Dry-Season Wa		35			Stressed Plants (D1)	
A. DOS-ORGANIZATION OF THE POS-	osits (B3)	-	Other (Explain i					Position (D2)	
	t or Crust (B4)	_			<b>7</b> %		X Shallow Aqu	10 F - 10 C - 10	
	osits (B5)						22 margaret 1 margaret	aphic Relief (D4)	
10 Tyl	Soil Cracks (B6)						FAC-Neutra	50 54 53	
Field Observ	BOURDONGS NOTCHBUSINGSDOKEN / ABS ON WIRE								
Surface Wate		Yes X	No Depth (in	ches):	0				
Water Table	Dresent?	Yes X	No Depth (in No Depth (in	ches):	1 in.	0:			
Saturation Pr		Yes X	No Depth (in	ches). St	ırface	- Noti	and Hydrology B	resent? Yes X No	
(includes cap		163	ino Deptir (iii	Cites)		_   well	and nydrology F	resent: resNo	_
		m gauge, mo	onitoring well, aerial	photos, pr	evious ins	pections),	if available:		
Remarks:	Metland by	vdrology of	oserved at sampl	e noint					
	vvetianu II	yai ology Ol	oserveu at sampi	c point.					

# WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site:	Wasilla WWTP		Borough	n/City:	Wasilla	_ Sampling Date: 09/30	/14
Applicant/Owner:		City of \	Wasilla	3		Sampling Point: 12	TP
Investigator(s):			Landfor	m (hillside, terr	race, hummocks, etc.):		
Local relief (concave, co	onvex, none):none		Slope (9	%): <u>0%</u>			
	chorage/Matsu Lat:				ng: -149.386734	Datum: WC	GS84
Soil Map Unit Name:	Cryaquepts, depression	nal, 0 to	7 perc	ent slopes	NWI classifi	cation: PF01/4B	
	conditions on the site typical for this					UNION 40 M	
	Soil, or Hydrology sig					present? Yesx_ No	0
	Soil, or Hydrology na				eeded, explain any answe		83
	IDINGS - Attach site map sho						
Hydrophytic Vegetation	n Present? Yes X No	0			100 100 100 100 100 100 100 100 100 100		
Hydric Soil Present?	Yes X No			s the Sampled		X No	
Wetland Hydrology Pro			,	within a Wetla	na? Yes	, NO	
Remarks: And	chorage received 1.02 in. of rain	above a	verage	e during the r	month of September.	Trees on pedestals,	
	nificant forest duff, slight humm		•	•		,	
	se scientific names of plants.	ACCESS 48	623	NEC SERVE SAME			
VEGETATION - O	se soleritino riarries or piarto.		•	ant Indicator	Dominance Test work	vehaat:	
Tree Stratum				ies? Status	Number of Dominant S		
1. <u>betneo</u>	Betula neoalaskana	20_	Yes	FACU	That Are OBL, FACW,		(A)
2. picgla	Picea glauca	10	Yes	FACU_	Total Number of Domir	nant	
3					Species Across All Str	1777.7742	(B)
4			-		Percent of Dominant S	tnecies	
	Total Cover:				That Are OBL, FACW,		(A/B)
Carlla a Charle Charles	50% of total cover:15	20% o	f total c	over:6	Prevalence Index wor	rksheet:	
Sapling/Shrub Stratum alninc	1 Alnus incana	30	Yes	FAC	T-1-10/ C		
1					Total % Cover of: OBL species 5	Multiply by: x 1 =5	
					OBL species 5 FACW species 20	x 2 = 40	700
53317					FAC species 170		
23.					FACU species 35	x 4 = 140	_
6					UPL species 0	x 5 = 0	100
	Total Cover:	30			Column Totals: 230	(A) 695	(B)
	50% of total cover:15	20% of	total co	over:_6	Prevalence Index	3.02	(0)
Herb Stratum					Hydrophytic Vegetati		777
1. equsyl	Equisetum sylvaticum	20	No	FAC		on malcators.	
<sub>2.</sub> equarv	Equisetum arvense	60	Yes		Y Dominance Test is	s >50%	
3. calcan	Calamagrostis canadensis	60	Yes		No Prevalence Index	is ≤3.0	
4. rosaci	Rosa acicularis	5	No	FACU	Morphological Ada	aptations1 (Provide suppor	rting
5. carlae	Carex laeviculmis	20	No	FACW	네	s or on a separate sheet)	
6. compal	Comarum palustre	5	No	OBL	A SECTION OF STREET STREET	phytic Vegetation <sup>1</sup> (Expla	
550					Indicators of hydric so be present unless distu	oil and wetland hydrology urbed or problematic	must
(S)			-		So present diness dist		
9							
10	0.02440.02020-000	170					
	Total Cover:	0.00 / 0.000		2.4			
	50% of total cover: 85			over:_34	Hydrophytic		
Plot size (radius, or ler		% Bare 0		6 8	Vegetation	es. Owner	
(Where applicable)	ryophytes Total Cov	er of Bryop	hytes_	100	Present? Ye	esx No	
Remarks:	Mix of veg-upland more on hu	mmocks,	defini	tely lower ar	reas where marsh 5 fi	nger is growing,	
	-		aσetati	ion strassad		_	

SOIL Sampling Point: 12 TP

Depth Matri (inches) Color (moist		needed to docur	nent the i	ndicator	or confir	m the absence of	indicators.)
			x Feature:		1 = -2		Damadea
	)%	Color (moist)	%	Type'	Loc²	Texture	Remarks
0-20 organics				-	Si .	-	organics, saturated
			-	· · · · · · · · · · · · · · · · · · ·	-		
			7	00 <u>14 - 14 - 14 - 14 - 14 - 14 - 14 - 14 </u>	<u></u>	<u> </u>	
			. ——	v. <del></del>			
					<u>u</u>		
				-	1 ° 1 ° 1 ° 1 ° 1 ° 1 ° 1 ° 1 ° 1 ° 1 °		
				-			
Type: C=Ceneantration D=	Donlotion RM-F	Paduaad Matrix, CS	-Covere	d or Costs	d Sand (	Proinc 2Locati	on: DI =Doro Lining M=Metrix
Type: C=Concentration, D= lydric Soil Indicators:	⊿еріеноп, кім=к	Indicators for F				oranio. Locati	on: PL=Pore Lining, M=Matrix.
X Histosol or Histel (A1)		Alaska Colo	r Change	$(TA4)^4$		Alaska G	eyed Without Hue 5Y or Redder
Histic Epipedon (A2)		Alaska Alpir	ne Swales	(TA5)		Underly	ing Layer
Hydrogen Sulfide (A4)		Alaska Red	ox With 2.	5Y Hue		Other (Ex	plain in Remarks)
Thick Dark Surface (A12	)						
Alaska Gleyed (A13)		<sup>3</sup> One indicator o	f hydrophy	ytic vegeta	ation, one	primary indicator	of wetland hydrology,
Alaska Redox (A14)		and an appro	priate land	dscape po	sition mu	st be present unles	s disturbed or problematic.
Alaska Gleyed Pores (A1	5)	<sup>4</sup> Give details of	color chan	ige in Ren	narks.		
Restrictive Layer (if present	t):						
Type:		<u> </u>				U. data on U.D.	Y N
Depth (inches):		<del></del>				Hydric Soil Pr	esent? Yes X No
VDBOLOGV							
	ore:					Secondary Indic	ators (2 or more required)
Wetland Hydrology Indicato		ent)					ators (2 or more required)
Vetland Hydrology Indicato Primary Indicators (any one in			e on Aeris	al Imagen	(R7)	Water-stain	ed Leaves (B9)
Wetland Hydrology Indicato Primary Indicators (any one in X Surface Water (A1)		_ Inundation Visibl				Water-staine X Drainage Pa	ed Leaves (B9) atterns (B10)
Wetland Hydrology Indicator Primary Indicators (any one in X Surface Water (A1) X High Water Table (A2)		_ Inundation Visibl _ Sparsely Vegeta	ted Conca			Water-staine X Drainage Pa Oxidized Rh	ed Leaves (B9) atterns (B10) izospheres along Living Roots (C3
Wetland Hydrology Indicator Primary Indicators (any one in X Surface Water (A1) X High Water Table (A2) X Saturation (A3)		_ Inundation Visibl _ Sparsely Vegeta _ Marl Deposits (B	ted Conce (15)	ve Surfac		Water-staine X Drainage Pa Oxidized Rh Presence of	ed Leaves (B9) atterns (B10) izospheres along Living Roots (C3 Reduced Iron (C4)
Wetland Hydrology Indicator  Primary Indicators (any one in X Surface Water (A1)  X High Water Table (A2)  X Saturation (A3)  Water Marks (B1)		Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide	ted Conce (15) e Odor (C	ave Surfac		Water-staine X Drainage Pa Oxidized Rh Presence of Salt Deposit	ed Leaves (B9) atterns (B10) izospheres along Living Roots (C3 Reduced Iron (C4) s (C5)
Wetland Hydrology Indicato Primary Indicators (any one in X Surface Water (A1) X High Water Table (A2) X Saturation (A3)		Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat	ted Conca 15) e Odor (C er Table (	ave Surfac 1) C2)		Water-staine X Drainage Pa Oxidized Rh Presence of Salt Deposit X Stunted or S	ed Leaves (B9) atterns (B10) izospheres along Living Roots (C3 Reduced Iron (C4) s (C5) Stressed Plants (D1)
<ul> <li>X High Water Table (A2)</li> <li>X Saturation (A3)</li> <li>Water Marks (B1)</li> <li>Sediment Deposits (B2)</li> </ul>		Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide	ted Conca 15) e Odor (C er Table (	ave Surfac 1) C2)		Water-staine X Drainage Pa Oxidized Rh Presence of Salt Deposit X Stunted or S Geomorphic	ed Leaves (B9) atterns (B10) izospheres along Living Roots (C3 Reduced Iron (C4) s (C5) ctressed Plants (D1) Position (D2)
Wetland Hydrology Indicate  Primary Indicators (any one in X Surface Water (A1)  X High Water Table (A2)  X Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)		Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat	ted Conca 15) e Odor (C er Table (	ave Surfac 1) C2)		Water-staine X Drainage Pa Oxidized Rh Presence of Salt Deposit X Stunted or S Geomorphic	ed Leaves (B9) atterns (B10) izospheres along Living Roots (C3 Reduced Iron (C4) s (C5) ctressed Plants (D1) Position (D2)
Wetland Hydrology Indicator Primary Indicators (any one in X Surface Water (A1)  X High Water Table (A2)  X Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)	ndicator is suffici — — — — —	Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat	ted Conca 15) e Odor (C er Table (	ave Surfac 1) C2)		Water-staine X Drainage Pa Oxidized Rh Presence of Salt Deposit X Stunted or S Geomorphic	ed Leaves (B9) atterns (B10) aizospheres along Living Roots (C3 Reduced Iron (C4) s (C5) atressed Plants (D1) Position (D2) atred (D3) aphic Relief (D4)
Wetland Hydrology Indicate  Primary Indicators (any one in X Surface Water (A1)  X High Water Table (A2)  X Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Surface Soil Cracks (B6)	ndicator is suffici	Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat Other (Explain in	ted Conce (15) e Odor (C er Table ( i Remarks	ave Surfac 1) C2)		Water-staine X Drainage Pa Oxidized Rh Presence of Salt Deposit X Stunted or S Geomorphic Shallow Aqu X Microtopogr	ed Leaves (B9) atterns (B10) aizospheres along Living Roots (C3 Reduced Iron (C4) s (C5) atressed Plants (D1) Position (D2) atred (D3) aphic Relief (D4)
Wetland Hydrology Indicator Primary Indicators (any one in X Surface Water (A1) X High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations:	ndicator is sufficient of the	Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat Other (Explain in	ted Conce (15) e Odor (C er Table ( n Remarks	ave Surface  1) C2)  ) urface		Water-staine X Drainage Pa Oxidized Rh Presence of Salt Deposit X Stunted or S Geomorphic Shallow Aqu X Microtopogr	ed Leaves (B9) atterns (B10) aizospheres along Living Roots (C3 Reduced Iron (C4) s (C5) atressed Plants (D1) Position (D2) atred (D3) aphic Relief (D4)
Primary Indicators (any one in X Surface Water (A1)  X High Water Table (A2)  X Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Surface Soil Cracks (B6)  Field Observations:  Surface Water Present?	Yes X No	Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat Other (Explain in	ted Conca t15) e Odor (C er Table ( i Remarks ches):	urface 3 in.		Water-staine X Drainage Pa Oxidized Rh Presence of Salt Deposit X Stunted or S Geomorphic Shallow Aqu X Microtopogr	ed Leaves (B9) atterns (B10) aizospheres along Living Roots (C3 Reduced Iron (C4) s (C5) atressed Plants (D1) Position (D2) atred (D3) aphic Relief (D4)
Wetland Hydrology Indicator Primary Indicators (any one in X Surface Water (A1)  X High Water Table (A2)  X Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Surface Soil Cracks (B6)  Field Observations: Surface Water Present? Water Table Present?	Yes X No	Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat Other (Explain in	ted Conca t15) e Odor (C er Table ( i Remarks ches):	urface 3 in.	ee (B8)	Water-staine X Drainage Pa Oxidized Rh Presence of Salt Deposit X Stunted or S Geomorphic Shallow Aqu X Microtopogr FAC-Neutra	ed Leaves (B9) atterns (B10) aizospheres along Living Roots (C3 Reduced Iron (C4) s (C5) atressed Plants (D1) Position (D2) atred (D3) aphic Relief (D4)
Wetland Hydrology Indicator Primary Indicators (any one in X Surface Water (A1) X High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	Yes X No	Inundation Visibles Sparsely Vegeta Marl Deposits (B. Hydrogen Sulfide Dry-Season Wate Other (Explain in Depth (incomplete Depth (incomple	ted Conca t15) e Odor (C er Table ( i Remarks ches): ches): ches):	urface 3 in.	— We	Water-staine X Drainage Pa Oxidized Rh Presence of Salt Deposit X Stunted or S Geomorphic Shallow Aqu X Microtopogr FAC-Neutra	ed Leaves (B9) atterns (B10) aizospheres along Living Roots (C3 Reduced Iron (C4) s (C5) atressed Plants (D1) Position (D2) aitard (D3) aphic Relief (D4) I Test (D5)
Primary Indicators (any one in X Surface Water (A1)  X High Water Table (A2)  X Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Surface Soil Cracks (B6)  Field Observations:  Surface Water Present?  Water Table Present?  Saturation Present?  (includes capillary fringe)  Describe Recorded Data (street	Yes X No Yes X No Yes X No Yes More Manager, monitoring the monito	Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat Other (Explain in Depth (inc	ted Conca t15) e Odor (C er Table ( i Remarks ches): ches): ches): ches):	urface 3 in.	— We	Water-staine X Drainage Pa Oxidized Rh Presence of Salt Deposit X Stunted or S Geomorphic Shallow Aqu X Microtopogr FAC-Neutra	ed Leaves (B9) atterns (B10) aizospheres along Living Roots (C3 Reduced Iron (C4) s (C5) atressed Plants (D1) Position (D2) aitard (D3) aphic Relief (D4) I Test (D5)
Wetland Hydrology Indicator Primary Indicators (any one in X Surface Water (A1) X High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Saturation Present? Cincludes capillary fringe) Describe Recorded Data (street	Yes X No Yes X No Yes X No Yes More Manager, monitoring the monito	Inundation Visibles Sparsely Vegeta Marl Deposits (B. Hydrogen Sulfide Dry-Season Wate Other (Explain in Depth (incomplete Depth (incomple	ted Conca t15) e Odor (C er Table ( i Remarks ches): ches): ches): ches):	urface 3 in.	— We	Water-staine X Drainage Pa Oxidized Rh Presence of Salt Deposit X Stunted or S Geomorphic Shallow Aqu X Microtopogr FAC-Neutra	ed Leaves (B9) atterns (B10) aizospheres along Living Roots (C3 Reduced Iron (C4) s (C5) atressed Plants (D1) Position (D2) aitard (D3) aphic Relief (D4) I Test (D5)
Primary Indicators (any one in X Surface Water (A1)  X High Water Table (A2)  X Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Surface Soil Cracks (B6)  Field Observations:  Surface Water Present?  Water Table Present?  Saturation Present?  (includes capillary fringe)  Describe Recorded Data (street	Yes X No Yes X No Yes X No Yes More Manager, monitoring the monito	Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat Other (Explain in Depth (inc	ted Conca t15) e Odor (C er Table ( i Remarks ches): ches): ches): ches):	urface 3 in.	— We	Water-staine X Drainage Pa Oxidized Rh Presence of Salt Deposit X Stunted or S Geomorphic Shallow Aqu X Microtopogr FAC-Neutra	ed Leaves (B9) atterns (B10) aizospheres along Living Roots (C3 Reduced Iron (C4) s (C5) atressed Plants (D1) Position (D2) aitard (D3) aphic Relief (D4) I Test (D5)

# WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site:	Wasilla WWTP	E	Borough/City	y:	Wasilla	Sampling Date: 09	9/30/14
Applicant/Owner:							
	CDP, SL						
	x, none):none						
Subregion: Anchoi	rage/Matsu Lat:	(	51.568672	2 Lon	g: <u>-149.384951</u>	Datum:	WGS84
Soil Map Unit Name:	Cryaquepts, depression	nal, 0 to	7 percent	slopes	NWI classific	ation: Uplan	d
Are climatic / hydrologic con	ditions on the site typical for this ti	me of yea	r? Yes	No _	x (If no, explain in R	emarks.)	
Are Vegetation, Soil	, or Hydrology sign	ificantly o	disturbed?	Are "	'Normal Circumstances' p	resent? Yesx	No
Are Vegetation, Soil	, or Hydrology nate	urally prob	olematic?	(If ne	eded, explain any answer	rs in Remarks.)	
SUMMARY OF FINDI	NGS - Attach site map show	wing sar	mpling po	int locati	ons, transects, impo	rtant features, e	etc.
Liudenahudia Vanatatian De	esent? Yes No	v			And a second		
Hydrophytic Vegetation Pro Hydric Soil Present?	Yes No		1000000	e Sampled		· ·	
Wetland Hydrology Presen			withi	n a Wetlar	nd? Yes	No X	- 25
Remarks:	rage received 1.02 in. of rain	ahovo a	vorage du	ring the n	month of Contambor		
VII.	140410 301000 Verice 6	000000 000		2002 00-00	Tionth of September.		
VEGETATION – Use s	scientific names of plants. I		30				
Tree Stratum			Dominant Species?	111777	Dominance Test work		
1. betneo`	betula neoalskana	70	8 77	FACU	Number of Dominant Sp That Are OBL, FACW, of		(A)
(S).							
3.					Total Number of Domini Species Across All Strat	CCC-07-50	(B)
4	**				Percent of Dominant Sp	acies	
	Total Cover: _	70			That Are OBL, FACW, of		(A/B)
Capling/Chrub Stratum	50% of total cover:35_	_ 20% of	f total cover	:14	Prevalence Index work	ksheet:	
Sapling/Shrub Stratum 1 rosace	Rosa acicularis	20	Yes	FACU	Total % Cover of:	Multiply I	byc
2. riblax	Ribes Laxiflorum	т	Yes	FACU	OBL species 0	x 1 = 0	Jy
3. samrac	Sambucus racemosa	5	Yes	FACU	FACW species 0	x 2 = 0	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		-8			FAC species 80	x 3 = 240	
5					FACU species 115	x 4 = 460	
6					UPL species 0	x 5 =0	
	Total Cover:	25		_	Column Totals: 195	(A) 700	
Horb Otrotus	50% of total cover:12.5	20% of	total cover:	_5	Prevalence Index	= B/A =3.59	
Herb Stratum equarv	Equisetum arvense	70	Yes	FAC	Hydrophytic Vegetation	n Indicators:	
	mnocarpium dryopteris	20	Yes	FACU	No Dominance Test is	>50%	
3. alninc	Alnus incana	5	No	FAC	No Prevalence Index is	s ≤3 0	
athfil athfil	Athyrium filix-femina	5	No	FAC		ptations¹ (Provide s	upporting
<sub>5.</sub> hermax	Heracleum maximum	Т	No	FACU		s or on a separate s	
6.					Problematic Hydron	ohytic Vegetation¹ (F	Explain)
7					1 Indicators of hydric soi		
8					be present unless distur	bed or problematic	ė.
				<del></del>			
10		100					
	Total Cover: _	0.00 /		20			
Distriction residence			total cover:	T	Hydrophytic		
Plot size (radius, or length			Ground		Vegetation Present? Yes	s No	v
(Where applicable)	hytes Total Cove	or Bryop	mytes		riesent: 16:	, NO	<del>-</del>
Remarks:	Same mass hum	mocks o	wer dead	wood sn	nall pocket of upland.		
	Joine moss nun	iocks (	ver ueau	••••••, 311	ian pocket of apiana.		

SOIL Sampling Point: 14 TP

Depth <u>Matri</u>	be to the dep		x Features	S				
inches) Color (moist)		Color (moist)	%	_Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-9 organic	2872	<i>P</i>				<u> </u>		
9-20 organic		<u>다.</u>	:	<u>ं</u>	<u> </u>	£		
9-20 Organic	***	1-						
		# <u></u>		W <u>V</u>	<u></u>			
-3 5		£		v. <del></del>	=	<del></del>		
		7		-	<u>~</u>			
		ē-			<del></del>	<u> </u>		
a s		a <del>.</del>		· · · · · · · · · · · · · · · · · · ·	<u>,</u>			
		ž-			B			000 000000 000 000
ype: C=Concentration, D=[ ydric Soil Indicators:	epletion, RM	Reduced Matrix, CS= Indicators for F				rains. <sup>2</sup> Locati	on: PL=Pore Lining, N	/I=Matrix.
Histosol or Histel (A1)		Alaska Colo		Principles (SPS)20		Alaska Gl	eyed Without Hue 5Y	or Redder
Histic Epipedon (A2)		Alaska Alpir					ing Layer	
Hydrogen Sulfide (A4)		Alaska Red		220.719 2020.20		BOWNERS BOWN	plain in Remarks)	
_ Thick Dark Surface (A12)							,	
_ Alaska Gleyed (A13)		<sup>3</sup> One indicator o	f hydrophy	ytic vegeta	ation, one	primary indicator o	of wetland hydrology,	
_ Alaska Redox (A14)			5554 VIV 5	8: N.=		5 1531	s disturbed or problem	natic.
_ Alaska Gleyed Pores (A1	5)	<sup>4</sup> Give details of	color chan	ge in Ren	narks.	et kateljen († 🔸 kia – Primitiski Primitiska (kia katelja (kia katelj	and There is a state of the second of the s	
estrictive Layer (if present	):							
Type:								
1 3 0 0 .								
Depth (inches):emarks:		I due to being @ t	he end c	of the gro	owing sea	Name of the State	esent? Yes	or a Section of the
Depth (inches):		I due to being @ t	he end c	of the gro	owing sea	Name of the State	4.00 (2000) (2000) (2000) (2000)	or a Section of the
Depth (inches):emarks: Soil slight	ly saturated	I due to being @ t	he end o	of the gro	owing sea	ason and higher	r than normal rainf	all.
Depth (inches):emarks: Soil slight	ly saturated		he end c	of the gro	owing sea	ason and higher	r than normal rainf	all.
Depth (inches):emarks:  Soil slight  DROLOGY  /etland Hydrology Indicator rimary Indicators (any one in	ly saturated	icient)				Secondary Indication	r than normal rainf ators (2 or more required Leaves (B9)	all.
Depth (inches):emarks:  Soil slight  *DROLOGY  *Tetland Hydrology Indicator rimary Indicators (any one in _ Surface Water (A1)	ly saturated	icient) Inundation Visibl	e on Aeria	al Imagery	(B7)	Secondary Indication  Water-stains  Drainage Pa	r than normal rainf  ators (2 or more required Leaves (B9) atterns (B10)	all.
Depth (inches):emarks:  Soil slight  */DROLOGY  */etland Hydrology Indicator rimary Indicators (any one in Surface Water (A1) High Water Table (A2)	ly saturated	icient) Inundation Visibl Sparsely Vegeta	e on Aeria ted Conca	al Imagery	(B7)	Secondary Indication  Water-stained  Drainage Pa	ators (2 or more required Leaves (B9) atterns (B10) aizospheres along Livir	all.
Depth (inches):emarks:  Soil slight  /DROLOGY /etland Hydrology Indicator rimary Indicators (any one in _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3)	ly saturated	icient) Inundation Visibl Sparsely Vegeta Marl Deposits (B	e on Aeria ted Conca 15)	al Imagery ave Surfac	(B7)	Secondary Indic — Water-staine — Drainage Pa — Oxidized Rh — Presence of	ators (2 or more required Leaves (B9) atterns (B10) izospheres along Livir	all.
Depth (inches):emarks:  Soil slight  /DROLOGY /etland Hydrology Indicator rimary Indicators (any one in _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3) _ Water Marks (B1)	ly saturated	icient) Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide	e on Aeria ted Conca 15) e Odor (C	al Imagery ave Surfac	(B7)	Secondary Indication  Water-staine  Drainage Pate  Oxidized Rh  Presence of  Salt Deposit	ators (2 or more required Leaves (B9) atterns (B10) atzospheres along Livir Reduced Iron (C4)	all.
Depth (inches):emarks:  Soil slight  DROLOGY  Vetland Hydrology Indicator rimary Indicators (any one in _ Surface Water (A1) _ High Water Table (A2) _ Saturation (A3) _ Water Marks (B1) _ Sediment Deposits (B2)	ly saturated	icient) Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat	e on Aeria ted Conca :15) e Odor (C <sup>.</sup> er Table (	al Imagery ave Surfac 1) C2)	(B7)	Secondary Indication  Secondary Indication  Water-staine  Drainage Pate  Oxidized Rh  Presence of  Salt Deposit  Stunted or S	ators (2 or more required Leaves (B9) atterns (B10) alzospheres along Livir Reduced Iron (C4) as (C5)	all.
Depth (inches):emarks:  Soil slight  DROLOGY  Vetland Hydrology Indicatorimary Indicators (any one in Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)	ly saturated	icient) Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide	e on Aeria ted Conca :15) e Odor (C <sup>.</sup> er Table (	al Imagery ave Surfac 1) C2)	(B7)	Secondary Indication  Secondary Indication  Water-stains  Drainage Path  Oxidized Rh  Presence of  Salt Deposit  Stunted or S  Geomorphic	ators (2 or more required Leaves (B9) atterns (B10) alzospheres along Living Reduced Iron (C4) as (C5) atterns (D1) at Position (D2)	all.
Depth (inches):emarks:  Soil slight  FOROLOGY  Fetland Hydrology Indicator  imary Indicators (any one in  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)	ly saturated	icient) Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat	e on Aeria ted Conca :15) e Odor (C <sup>.</sup> er Table (	al Imagery ave Surfac 1) C2)	(B7)	Secondary Indicates Water-stained Drainage Paramond Oxidized Rhamber State Oxidized Rhamber Salt Deposites Stunted or Salt Deposites Geomorphican Shallow Aquaranteed	ators (2 or more required Leaves (B9) atterns (B10) aizospheres along Living Reduced Iron (C4) as (C5) atterns (B10) atterns (B1	all.
Depth (inches):emarks:  Soil slight  DROLOGY  Vetland Hydrology Indicator imary Indicators (any one in 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)	ly saturated	icient) Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat	e on Aeria ted Conca :15) e Odor (C <sup>.</sup> er Table (	al Imagery ave Surfac 1) C2)	(B7)	Secondary Indication  Secondary Indication  Water-staine  Drainage Path  Oxidized Rh  Presence of  Salt Deposit  Stunted or Stunted	ators (2 or more required Leaves (B9) atterns (B10) atterns (B10) atterns (C4) as (C5) atterns (D1) atterns (D1) atterns (D2) atterns (D3) aphic Relief (D4)	all.
Depth (inches):emarks:  Soil slight  FOROLOGY  Fetland Hydrology Indicator  Finary Indicators (any one in  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)	ly saturated	icient) Inundation Visibl Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat	e on Aeria ted Conca :15) e Odor (C <sup>.</sup> er Table (	al Imagery ave Surfac 1) C2)	(B7)	Secondary Indicates Water-stained Drainage Paramond Oxidized Rhamber State Oxidized Rhamber Salt Deposites Stunted or Salt Deposites Geomorphican Shallow Aquaranteed	ators (2 or more required Leaves (B9) atterns (B10) atterns (B10) atterns (C4) as (C5) atterns (D1) atterns (D1) atterns (D2) atterns (D3) aphic Relief (D4)	all.
Depth (inches):emarks:  Soil slight  FOROLOGY  Fetland Hydrology Indicator  imary Indicators (any one in  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)  ield Observations:	ly saturated rs: dicator is suff	icient)  Inundation Visible Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat Other (Explain in	e on Aeria ted Conca 15) e Odor (C' er Table ( i Remarks	al Imagery ave Surfac 1) C2)	(B7) se (B8)	Secondary Indication  Secondary Indication  Water-staine  Drainage Path  Oxidized Rh  Presence of  Salt Deposit  Stunted or Stunted	ators (2 or more required Leaves (B9) atterns (B10) atterns (B10) atterns (C4) as (C5) atterns (D1) atterns (D1) atterns (D2) atterns (D3) aphic Relief (D4)	all.
Depth (inches):  Soil slight  FOROLOGY  Vetland Hydrology Indicator  Imary Indicators (any one in  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)  ield Observations:  surface Water Present?	ly saturated rs: dicator is suff	icient)  Inundation Visible Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat Other (Explain in	e on Aeria ted Conca 15) e Odor (C' er Table ( i Remarks	al Imagery ave Surfac 1) C2)	(B7) se (B8)	Secondary Indication  Secondary Indication  Water-staine  Drainage Path  Oxidized Rh  Presence of  Salt Deposit  Stunted or Stunted	ators (2 or more required Leaves (B9) atterns (B10) atterns (B10) atterns (C4) as (C5) atterns (D1) atterns (D1) atterns (D2) atterns (D3) aphic Relief (D4)	all.
Depth (inches):	rs: dicator is suff  Yes Yes	icient)  Inundation Visible Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat Other (Explain in	e on Aeria ted Conca :15) e Odor (C' er Table ( n Remarks ches): ches):	al Imagery ave Surfac 1) C2)	(B7) se (B8)	Secondary Indication  Secondary Indication  Water-stains  Drainage Path  Oxidized Rh  Presence of  Salt Deposit  Stunted or Stunted	ators (2 or more required Leaves (B9) atterns (B10) atterns (B10) atterns (C5) atterns (C5) atterns (D1) atterns (D2) atterns (D3) aphic Relief (D4) I Test (D5)	all.
Depth (inches):emarks:  Soil slight  DROLOGY  Vetland Hydrology Indicatorimary Indicators (any one in 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)  ield Observations:  urface Water Present?  vater Table Present?  aturation Present?  includes capillary fringe)	y saturated  rs: dicator is suff  Yes Yes YesX	icient)  Inundation Visible Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat Other (Explain in	e on Aeria ted Conca 15) e Odor (C' er Table ( n Remarks	al Imagery ave Surfac 1) C2)	(B7) ee (B8)	Secondary Indicates Water-stains Drainage Parameter of Salt Deposites Stunted or Secondary Indicates Salt Deposites Shallow Aques Microtopogres FAC-Neutra	ators (2 or more required Leaves (B9) atterns (B10) atterns (B10) atterns (C4) as (C5) atterns (D1) atterns (D1) atterns (D2) atterns (D3) aphic Relief (D4)	all.
Depth (inches):  Soil slight  FOROLOGY  Vetland Hydrology Indicator  Imary Indicators (any one in  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)  ield Observations:  surface Water Present?	y saturated  rs: dicator is suff  Yes Yes YesX	icient)  Inundation Visible Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat Other (Explain in	e on Aeria ted Conca 15) e Odor (C' er Table ( n Remarks	al Imagery ave Surfac 1) C2)	(B7) ee (B8)	Secondary Indicates Water-stains Drainage Parameter of Salt Deposites Stunted or Secondary Indicates Salt Deposites Shallow Aques Microtopogres FAC-Neutra	ators (2 or more required Leaves (B9) atterns (B10) atterns (B10) atterns (C5) atterns (C5) atterns (D1) atterns (D2) atterns (D3) aphic Relief (D4) I Test (D5)	all.
Depth (inches):  Soil slight  FOROLOGY  Vetland Hydrology Indicator  Immary Indicators (any one in  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)  ield Observations:  Furface Water Present?  Vater Table Present?  Includes capillary fringe)  Describe Recorded Data (street	rs: dicator is suff Yes Yes YesX am gauge, m	icient)  Inundation Visible Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat Other (Explain in  No X Depth (incomplete in the control of the	e on Aeria ted Conca 15) e Odor (C' er Table ( n Remarks ches): ches): ches):	al Imagery ave Surfact 1) C2)	(B7) ee (B8)  Wetll pections),	Secondary Indication  Secondary Indication  Water-staine  Drainage Path  Oxidized Rh  Presence of  Salt Deposit  Stunted or Stunted	ators (2 or more required Leaves (B9) atterns (B10) atterns (B10) atterns (C4) as (C5) atterns (D1) atterns (D1) atterns (D3) aphic Relief (D4) I Test (D5)	all.  red)  ng Roots (C3
Depth (inches):  Soil slight  FOROLOGY  Vetland Hydrology Indicator  Immary Indicators (any one in  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)  ield Observations:  Furface Water Present?  Vater Table Present?  Includes capillary fringe)  Describe Recorded Data (street	Yes Yes Yes Yes YesX	icient)  Inundation Visible Sparsely Vegeta Marl Deposits (B Hydrogen Sulfide Dry-Season Wat Other (Explain in  No X Depth (incomplete in the control of the	e on Aeria ted Conca 15) e Odor (C' er Table ( n Remarks ches): ches): ches):	al Imagery ave Surfact 1) C2)	(B7) ee (B8)  Wetll pections),	Secondary Indication  Secondary Indication  Water-staine  Drainage Path  Oxidized Rh  Presence of  Salt Deposit  Stunted or Stunted	ators (2 or more required Leaves (B9) atterns (B10) atterns (B10) atterns (C5) atterns (C5) atterns (D1) atterns (D2) atterns (D3) aphic Relief (D4) I Test (D5)	all.  red)  ng Roots (C3

#### WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site:	Wasilla WWTP	E	Borough/Ci	ty:	Wasilla	Sampling Date: 09/30/14
Applicant/Owner:		City of \	Wasilla			Sampling Point: 18 TP
Investigator(s):	CDP, SL		Landform (	hillside, terr	ace, hummocks, etc.):	slight hummocks
Local relief (concave, o	convex, none):none		Slope (%):	0%		
Subregion: Ar	nchorage/Matsu Lat: _		61.56491	6 Lon	ig:149.388038	Datum: WGS84
	-	tosols			NWI classific	
	c conditions on the site typical for this t	ime of yea				
	, Soil, or Hydrology sig					present? Yesx No
	, Soil, or Hydrology nat				eeded, explain any answe	
SUMMARY OF FI	NDINGS - Attach site map sho	wing sa	mpling p	oint locati	ions, transects, impo	rtant reatures, etc.
Hydrophytic Vegetation	on Present? Yes X No		99044			
Hydric Soil Present?	Yes X No		1.000	e Sampled		X No
Wetland Hydrology P	resent? Yes X No		with	in a Wetlar	iur res	NO
Remarks: Ar	nchorage received 1.02 in. of rain	above a	verage dı	uring the r	month of September.	Very wet, hummocks,
bii	rch is stressed. edge of wetland a	t botton	n of slope	-	·	•
Narakina wasini wa 170	Jse scientific names of plants.	ACCOUNTS AND	455 556	SISSUE SWARE		
			Dominant		Dominance Test work	sheet:
Tree Stratum		% Cover	Species?	Status	Number of Dominant Sp	pecies
1. <u>betneo</u>	Betula neoalaskana	<u>10</u>	<u>Yes</u>	FACU_	That Are OBL, FACW,	or FAC: (A)
2. picgla	Picea glauca	T	No	FACU	Total Number of Domin	ant 4
3. picmar	Picea mariana		No	FACW	Species Across All Stra	ata: 4 (B)
4		10			Percent of Dominant Sp	pecies 50% (A/R)
	Total Cover:	A		2	That Are OBL, FACW,	or FAC: (A/B)
Sapling/Shrub Stratur	50% of total cover:5_ m	_ 20% o	f total cove	r:	Prevalence Index work	ksheet:
1. alninc	Alnus incana	T	No	FAC	Total % Cover of:	Multiply by:
2. rhogro	Rhinanthus groenlandicum	工	No	FAC	OBL species 65	x 1 = _65
3. corcan	Cornus canadensis	5	Yes	FACU	FACW species 0	x 2 =0
4					FAC species 100	x 3 = <u>300</u>
5					FACU species 15	x 4 =60
6					UPL species 0	x 5 = 0
	Total Cover:	5		1	Column Totals: 180	(A) 425 (B) 2.36
Herb Stratum	50% of total cover: 2.5	_ 20% of	total cover		Prevalence Index	= B/A =
1 compal	Comarum palustre	60	Yes	OBL	Hydrophytic Vegetation	on Indicators:
equflu	Equisetum fluviatile	5	No	OBL	No Dominance Test is	; >50%
3. calcan	Calamagrostis canadensis	90	Yes	FAC	Y Prevalence Index is	
4. rubarc	Rubus arcticus	10	No	FAC	4 July 10 13 17 18 18 18 18 18 18 18 18 18 18 18 18 18	ptations1 (Provide supporting
5					data in Remarks	s or on a separate sheet)
					Problematic Hydror	phytic Vegetation¹ (Explain)
					Indicators of hydric soil be present unless distu	il and wetland hydrology must
8					be present unless distu	ribed of problematic.
9						
10		4.65				
	Total Cover:			22		
	50% of total cover: 82.5	200		- T	Hydrophytic	
					Vegetation Present? Yes	iev No
(Where applicable	Bryophytes Total Cove e)	er of Bryon	onytes		riesent: 16:	No
Remarks:					1.11	
	Stressed an	d dead b	oirch, livin	ig birch or	n high hummocks.	

SOIL Sampling Point: 18 TP

Profile Desc	ription: (Describ	e to the dep	th needed to docu			or confin	m the absence of	indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Features %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-			Coloi (moist)		<u> Type</u>	LOC	rexture	
0-20	Organics		-		-			Saturated
s			3			-		
1 <u>0</u> 20	369		ń	<i>-</i>	· · · · · · · · · · · · · · · · · · ·	£2	. 20	
2	22		( <u>)</u>		-			
<del></del>						și.	-	
	<i>x-</i>		0.5			<del></del>		
Type: C=Cc		enletion RM:	=Reduced Matrix, C	S=Covered	d or Coate	d Sand G	Frains <sup>2</sup> Locatio	on: PL=Pore Lining, M=Matrix.
Hydric Soil I		pprodorr, rem	Indicators for				pramo. 200an	on. TE Toro Emmig, M. Macine.
_X Histosol	or Histel (A1)		Alaska Col	or Change	$(TA4)^4$		Alaska Gl	eyed Without Hue 5Y or Redder
Histic Ep	pipedon (A2)		Alaska Alpi	ine Swales	(TA5)		Underly	ing Layer
Hydroge	n Sulfide (A4)		Alaska Red	dox With 2.	5Y Hue		Other (Ex	plain in Remarks)
	ark Surface (A12)		2007 Pr 3225 Pr					
1944	Gleyed (A13)			558 VIV 5	E 1/2		145 9539	of wetland hydrology,
ACTOR STRUCTURES OF ACT	Redox (A14)		CONTRACTOR DESCRIPTION OF STREET		BOUNDAL CHARLES AND		st be present unles	s disturbed or problematic.
5/4/ (00000000000000000000000000000000000	Sleyed Pores (A15	~	<sup>4</sup> Give details of	color chan	ge in Rem	narks.		
Restrictive L	Layer (if present):							
Туре:			<del></del>					
Depth (inc	ches):						Hydric Soil Pre	esent? Yes X No
Remarks:								
	Very muck	y and wet	organics.					
HYDROLO	GY							
Wetland Hyd	drology Indicator	s:					Secondary Indica	ators (2 or more required)
Primary Indic	cators (any one ind	icator is suff	cient)				Water-staine	ed Leaves (B9)
_X Surface		3	Inundation Visib	le on Aeria	ıl Imagery	(B7)	X Drainage Pa	itterns (B10)
_X High Wa	iter Table (A2)	2	Sparsely Vegeta	ated Conca	ve Surfac	e (B8)	Oxidized Rh	izospheres along Living Roots (C3)
_X Saturation	on (A3)	·	Marl Deposits (	315)			Presence of	Reduced Iron (C4)
Water M	larks (B1)		Hydrogen Sulfic	le Odor (C	1)		Salt Deposit	s (C5)
Sedimen	nt Deposits (B2)		Dry-Season Wa				X Stunted or S	tressed Plants (D1)
	oosits (B3)	2	Other (Explain i	n Remarks	)			Position (D2)
	it or Crust (B4)						Shallow Aqu	
10 To	osits (B5)							aphic Relief (D4)
	Soil Cracks (B6)						FAC-Neutral	Test (D5)
Field Observ		v			0			
Surface Water	er Present?	Yes	No Depth (in No Depth (in	rches):		0:		
Water Table	Present?	Yes	No Depth (in	rches):	0-T			v
Saturation Pr		Yes X	No Depth (in	rches): _St	irrace	_ Wet	land Hydrology P	resent? Yes X No
(includes cap		m dalide mo	onitoring well, aerial	nhotos pr	evious ins	nections)	if available:	
Describe rec	soraca Bata (strea	m gaago, m	onitoring won, donar	priotos, pr	001003 1113	pootions)	, ii avallabio.	
Remarke:								
Remarks:	Very satura	ated area,	low areas betwee	en humm	ocks w/c	open wa	iter.	
Remarks:	Very satura	ated area,	low areas betwee	en humm	ocks w/c	open wa	iter.	
Remarks:	Very satura	ated area,	low areas betwee	en humm	ocks w/c	open wa	iter.	

#### WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site:	Wasilla WWTP	E	Borougl	h/City:	,	Wasilla	Sampling Date:	09/30/14	
Applicant/Owner:		City of \	Wasilla	a					
	CDP, SL		Landfor	m (hillsi	ide, terra				
	nvex, none):none								
	horage/Matsu Lat:					g: -149.386453	Datum:	WGS84	
		tosols				NWI classific			
	conditions on the site typical for this t	ime of yea	ar? Yes	s					
	Soil, or Hydrology sig					Normal Circumstances" p		x No	
	Soil, or Hydrology nat					eded, explain any answer	in the second second second second		
	DINGS - Attach site map sho				t locati	ons, transects, impo	rtant features	, etc.	
Hydrophytic Vegetation	Present? Yes X No					78 75 75 Arrichados		8	
Hydric Soil Present?	Yes X No				ampled		χ		
Wetland Hydrology Pre			,	within a	Wetlan	d? Yes	X No_	25	
Remarks:			- 155					<u> </u>	
Anc	horage received 1.02 in. of rain	above a	verage	e durin	g the n	nonth of September. I	Flooded area,	flat.	
<b>VEGETATION</b> – Us	e scientific names of plants.	List all s	pecie	s in the	e plot.				
Tree Stratum		Absolute % Cover				Dominance Test work			
1. betneo	Betula neoalaskana	20		100	ACU	Number of Dominant Sp That Are OBL, FACW, of		3 (A)	
2. picmar	Picea mariana	T	No		ACW				
3.						Total Number of Domini Species Across All Strat		5 (B)	
4.			Str.	#600	140		990 0 <del>7</del>		
2000	Total Cover:	20	1600	4500		Percent of Dominant Sp That Are OBL, FACW, of		)% (A/E	3)
	50% of total cover:10	_ 20% o	f total c	over:	4	Prevalence Index work			35
Sapling/Shrub Stratum	Potula nogalaskana		Voc		۸				
1. <u>betneo</u>	Betula neoalaskana	5	Yes		ACU_	Total % Cover of:		oly by:	
2. alninc	Alnus incana	<u>5</u>	Yes		ACLL	OBL species 25	x 1 =2		
3. corcan	Cornus canadensis		No		ACU_	FACW species 0	x 2 =( x 3 =22		
200			-			25	x 3 = 22 x 4 = 10		
(A)			1		-	FACU species 25 UPL species 0	x 5 =		
6	Total Cover:	10	7-	4138		Column Totals: 125		50 (B	V
		_ 20% of	total c	over 2			7	80	,
Herb Stratum						Prevalence Index  Hydrophytic Vegetation			
1. compal	Comarum palustre	20	Yes		BL	SANTON AND	in indicators:		
2. calcan	Calamagrostis canadensis	70	Yes		AC	Y Dominance Test is	>50%		
3. equflu	Equisetum fluviatile Polemonium acutiflorum	5	No		DBL	Prevalence Index is	70000000		
4. polacu			No		AC	Morphological Adap	ptations¹ (Provide s or on a separat	e supporting	
						Problematic Hydrop			
						St. Control Characteristics Village		C COM A CENTRAL CONTRACTOR	
230.00						<sup>1</sup> Indicators of hydric soi be present unless distu			
533						2	Personal Party Personal Party	3000000	_
0.00									
10	Total Cover:		-		_				
	50% of total cover: 47.5	1.55.1.5.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2		over 1	9	No. 100 September			
Plot size (radius, or leng	4 - 22	20% 01 % Bare (				Hydrophytic			
	yophytes Total Cov			0		Vegetation Present? Yes	sx No _		
Remarks:	-								_
Ar	eas of open water between hu	mmocks	where	e mars	h five f	inger (compal) domin	ates, lots of de	ead	
	d	owned b	irch. li	ving hi	rch is s	tressed			

SOIL Sampling Point: 19 TP

Profile Description: (Describe to the depth needed to document the indicator or o	confirm the absenc	e of indicators.)
Depth Matrix Redox Features (inches) Color (moist) % Color (moist) % Type L	oc <sup>2</sup> Texture	Remarks
0-2 organic	- E	saturated
	<u> </u>	
	<del></del>	
	<u> </u>	*
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated S	Sand Grains. <sup>2</sup> L	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: Indicators for Problematic Hydric So		
_X Histosol or Histel (A1) Alaska Color Change (TA4) <sup>4</sup>	Alasi	a Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2) Alaska Alpine Swales (TA5)	Un	derlying Layer
Hydrogen Sulfide (A4) Alaska Redox With 2.5Y Hue	Othe	r (Explain in Remarks)
Thick Dark Surface (A12)		
Alaska Gleyed (A13)  One indicator of hydrophytic vegetation	540 15 1ES	T. 107,750
Alaska Redox (A14) and an appropriate landscape position		inless disturbed or problematic.
Alaska Gleyed Pores (A15)	(S.	
Restrictive Layer (if present):		
Type:		11 December 20 Mars 2 Mars
Depth (inches):	Hydric So	il Present? Yes X No
Remarks:	nla naint	
Thick layers of saturated organic material observed at sam	וטופ טטווונ	
IIVPPOLOOV		
Benefit Anthreas Anthreas (1977 - 1974 - 197		
Wetland Hydrology Indicators:	Secondary	ndicators (2 or more required)
Wetland Hydrology Indicators: Primary Indicators (any one indicator is sufficient)	Secondary  Water-s	stained Leaves (B9)
Wetland Hydrology Indicators:  Primary Indicators (any one indicator is sufficient)  X Surface Water (A1) Inundation Visible on Aerial Imagery (B)	<u>Secondary</u> Water-s 7) Drainag	stained Leaves (B9) ge Patterns (B10)
Wetland Hydrology Indicators:  Primary Indicators (any one indicator is sufficient)  X Surface Water (A1) Inundation Visible on Aerial Imagery (B	Secondary Water-s 7) Drainag B8) Oxidize	stained Leaves (B9) ge Patterns (B10) d Rhizospheres along Living Roots (C3)
Wetland Hydrology Indicators:  Primary Indicators (any one indicator is sufficient) X Surface Water (A1) Inundation Visible on Aerial Imagery (B3X High Water Table (A2) Sparsely Vegetated Concave Surface (I3X Saturation (A3)X Marl Deposits (B15)	Secondary  Water-s  Drainag B8)  X Presen	stained Leaves (B9) ge Patterns (B10) d Rhizospheres along Living Roots (C3) de of Reduced Iron (C4)
Wetland Hydrology Indicators:  Primary Indicators (any one indicator is sufficient) X Surface Water (A1)	Secondary  Secondary  Water-s  Drainag  B8)  X Present Salt De	stained Leaves (B9) ple Patterns (B10) d Rhizospheres along Living Roots (C3) ple of Reduced Iron (C4) posits (C5)
Wetland Hydrology Indicators:  Primary Indicators (any one indicator is sufficient)  X Surface Water (A1) Inundation Visible on Aerial Imagery (B: X High Water Table (A2) Sparsely Vegetated Concave Surface (I: X Saturation (A3) X Marl Deposits (B15)  Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Dry-Season Water Table (C2)	Secondary  Water-s  Drainag  B8) Oxidize  X Presen  Salt De  Stunted	stained Leaves (B9) pe Patterns (B10) d Rhizospheres along Living Roots (C3) pe of Reduced Iron (C4) posits (C5) for Stressed Plants (D1)
Wetland Hydrology Indicators:  Primary Indicators (any one indicator is sufficient)  X Surface Water (A1)	Secondary Water-s Water-s Oxidize X Presen Salt De Stunted Geomo	stained Leaves (B9) ge Patterns (B10) d Rhizospheres along Living Roots (C3) de of Reduced Iron (C4) posits (C5) I or Stressed Plants (D1) rphic Position (D2)
Wetland Hydrology Indicators:  Primary Indicators (any one indicator is sufficient)  X Surface Water (A1)	Secondary Water-s Water-s Oxidize X Presen Salt De Stunted Geomo	stained Leaves (B9) ge Patterns (B10) d Rhizospheres along Living Roots (C3) de of Reduced Iron (C4) posits (C5) I or Stressed Plants (D1) rphic Position (D2) v Aquitard (D3)
Wetland Hydrology Indicators:  Primary Indicators (any one indicator is sufficient)  X Surface Water (A1)	Secondary Water-s T)	stained Leaves (B9) pe Patterns (B10) d Rhizospheres along Living Roots (C3) pe of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) rphic Position (D2) v Aquitard (D3) pographic Relief (D4)
Wetland Hydrology Indicators:  Primary Indicators (any one indicator is sufficient)  X Surface Water (A1)	Secondary Water-s T)	stained Leaves (B9) ge Patterns (B10) d Rhizospheres along Living Roots (C3) de of Reduced Iron (C4) posits (C5) I or Stressed Plants (D1) rphic Position (D2) v Aquitard (D3)
Wetland Hydrology Indicators:  Primary Indicators (any one indicator is sufficient)  X Surface Water (A1) Inundation Visible on Aerial Imagery (B: X High Water Table (A2) Sparsely Vegetated Concave Surface (IX Saturation (A3) X Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Dry-Season Water Table (C2) Drift Deposits (B3) Other (Explain in Remarks) Algal Mat or Crust (B4) X Iron Deposits (B5) X Surface Soil Cracks (B6)  Field Observations:	Secondary Water-s T)	stained Leaves (B9) pe Patterns (B10) d Rhizospheres along Living Roots (C3) pe of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) rphic Position (D2) v Aquitard (D3) pographic Relief (D4)
Wetland Hydrology Indicators:  Primary Indicators (any one indicator is sufficient)  X Surface Water (A1)	Secondary Water-s T)	stained Leaves (B9) pe Patterns (B10) d Rhizospheres along Living Roots (C3) pe of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) rphic Position (D2) v Aquitard (D3) pographic Relief (D4)
Primary Indicators (any one indicator is sufficient)  X Surface Water (A1) Inundation Visible on Aerial Imagery (B3	Secondary  Water-s  Water-s  Oxidize  X Present Salt De Stunted Geomo Shallow X Microto FAC-No	stained Leaves (B9) ge Patterns (B10) d Rhizospheres along Living Roots (C3) de of Reduced Iron (C4) posits (C5) I or Stressed Plants (D1) rphic Position (D2) v Aquitard (D3) pographic Relief (D4) eutral Test (D5)
Wetland Hydrology Indicators:  Primary Indicators (any one indicator is sufficient)  X Surface Water (A1) Inundation Visible on Aerial Imagery (B: X High Water Table (A2) Sparsely Vegetated Concave Surface (IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Secondary Water-s Water-s Solution Salt De Stunted Geomo Shallow X Microto FAC-No	stained Leaves (B9) pe Patterns (B10) d Rhizospheres along Living Roots (C3) pe of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) rphic Position (D2) v Aquitard (D3) pographic Relief (D4)
Wetland Hydrology Indicators:         Primary Indicators (any one indicator is sufficient)        X Surface Water (A1)       Inundation Visible on Aerial Imagery (B	Secondary Water-s Water-s Solution Salt De Stunted Geomo Shallow X Microto FAC-No	stained Leaves (B9) ge Patterns (B10) d Rhizospheres along Living Roots (C3) de of Reduced Iron (C4) posits (C5) I or Stressed Plants (D1) rphic Position (D2) v Aquitard (D3) pographic Relief (D4) eutral Test (D5)
Wetland Hydrology Indicators:         Primary Indicators (any one indicator is sufficient)         X       Surface Water (A1)       Inundation Visible on Aerial Imagery (B. 2)         X       High Water Table (A2)       Sparsely Vegetated Concave Surface (B. 2)         X       Saturation (A3)       Marl Deposits (B15)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)         Sediment Deposits (B2)       Other (Explain in Remarks)         Drift Deposits (B3)       Other (Explain in Remarks)         Algal Mat or Crust (B4)	Secondary Water-s Water-s Drainag SB8) Oxidize X Presen Salt De Stunted Geomo Shallow X Microto FAC-No	stained Leaves (B9) ge Patterns (B10) d Rhizospheres along Living Roots (C3) de of Reduced Iron (C4) posits (C5) I or Stressed Plants (D1) rphic Position (D2) v Aquitard (D3) pographic Relief (D4) eutral Test (D5)
Wetland Hydrology Indicators:  Primary Indicators (any one indicator is sufficient)  X Surface Water (A1) Inundation Visible on Aerial Imagery (B: X High Water Table (A2) Sparsely Vegetated Concave Surface (IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Secondary Water-s Water-s Drainag SB8) Oxidize X Presen Salt De Stunted Geomo Shallow X Microto FAC-No	stained Leaves (B9) ge Patterns (B10) d Rhizospheres along Living Roots (C3) de of Reduced Iron (C4) posits (C5) I or Stressed Plants (D1) rphic Position (D2) v Aquitard (D3) pographic Relief (D4) eutral Test (D5)
Wetland Hydrology Indicators:         Primary Indicators (any one indicator is sufficient)         X       Surface Water (A1)       Inundation Visible on Aerial Imagery (B)         X       High Water Table (A2)       Sparsely Vegetated Concave Surface (I)         X       Saturation (A3)       Marl Deposits (B15)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)         Sediment Deposits (B2)       Dry-Season Water Table (C2)         Drift Deposits (B3)       Other (Explain in Remarks)         Algal Mat or Crust (B4)	Secondary Water-s Water-s Drainag SB8) Oxidize X Presen Salt De Stunted Geomo Shallow X Microto FAC-No	stained Leaves (B9) ge Patterns (B10) d Rhizospheres along Living Roots (C3) de of Reduced Iron (C4) posits (C5) I or Stressed Plants (D1) rphic Position (D2) v Aquitard (D3) pographic Relief (D4) eutral Test (D5)
Wetland Hydrology Indicators:         Primary Indicators (any one indicator is sufficient)         X       Surface Water (A1)       Inundation Visible on Aerial Imagery (B)         X       High Water Table (A2)       Sparsely Vegetated Concave Surface (I)         X       Saturation (A3)       Marl Deposits (B15)         Water Marks (B1)       Hydrogen Sulfide Odor (C1)         Sediment Deposits (B2)       Dry-Season Water Table (C2)         Drift Deposits (B3)       Other (Explain in Remarks)         Algal Mat or Crust (B4)	Secondary Water-s Water-s Drainag SB8) Oxidize X Presen Salt De Stunted Geomo Shallow X Microto FAC-No	stained Leaves (B9) ge Patterns (B10) d Rhizospheres along Living Roots (C3) de of Reduced Iron (C4) posits (C5) I or Stressed Plants (D1) rphic Position (D2) v Aquitard (D3) pographic Relief (D4) eutral Test (D5)

#### WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site:	Wasilla WWTP	Bor	rough/City	vo c	Wasilla	Sampling Date	09/30/14
	CDP, SL						
	(, none):none					hummocks	
Subregion: Anchor	age/Matsu Lat: _	61	.564258	Lon	g: <u>-149.382864</u>	Datum:	WGS84
Soil Map Unit Name:	Cryaquepts, depressio	nal, 0 to 7	percent	slopes	NWI classifi	cation: PFO	1/4B
Are climatic / hydrologic cond	ditions on the site typical for this t	ime of year?	Yes	No	x (If no, explain in F	Remarks.)	
Are Vegetation, Soil _	, or Hydrology sig	nificantly dis	turbed?	Are "	Normal Circumstances	present? Yes _	x No
	, or Hydrology na						
SUMMARY OF FINDIN	IGS - Attach site map sho	wing sam	pling po	int locati	ons, transects, impo	ortant features	s, etc.
Hydrophytic Vegetation Pre	sent? Yes X No		la th	Sampled			
Hydric Soil Present?	Yes X No		- THE STATE OF THE PARTY OF THE	n a Wetlan		x No_	
Wetland Hydrology Present	? Yes X No		VIII	ii a vvenai	10.	·	25
	age received 1.02 in. of rain	above ave	rage du	ring the n	nonth of September.	Base of hill, fla	at and very
Potentino de la companya del companya del companya de la companya	mmocks.	List all sp	noine in	the plot			
VEGETATION - USE S	cientific names of plants.	Absolute D			Dominance Test week	kahaati	
Tree Stratum		% Cover 5			Dominance Test work  Number of Dominant S		
1. betneo	Betula neoalaskana	5	Yes	FACU	That Are OBL, FACW,		3 (A)
2. picgla	Picea glauca	T	No	FACU	Total Number of Domi	nant	
3. popbal	Populus balsamifera		Yes	FACU	Species Across All Str		7 (B)
4		25			Percent of Dominant S	Species	20/
	Total Cover:			_	That Are OBL, FACW,	or FAC:4	3% (A/B)
Sapling/Shrub Stratum	50% of total cover:12.	20% of to	otal cover		Prevalence Index wo	rksheet:	
1. alninc	Alnus incana	5	Yes	FAC	Total % Cover of:	Multi	ply by:
2. rosaci	Rosa acicularis	10	Yes	FACU	5565651 601	x 1 =	0
3. rubida	Rubus idaeus	5	Yes	FACU	FACW species _0	x 2 =	
4					FAC species 95	x 3 = <u>2</u>	
5					FACU species 40	x 4 = <u>1</u>	60
6		20	-		UPL species 0	x 5 =	4 -
	Total Cover:	20		1	Column Totals: 135	<del></del> , , , <del></del> 3	.30 (B)
Herb Stratum	50% of total cover:10	_ 20% of to	tal cover:		Prevalence Index	x = B/A =	.50
calcan Ca	lamagrostis canadensis	70	Yes	FAC	Hydrophytic Vegetati	on Indicators:	
equarv equarv	Equisetum arvense	20	Yes	FAC	No Dominance Test is	s >50%	
3					No Prevalence Index	is ≤3.0	
4				2	Morphological Ada	aptations1 (Provid	te supporting
5						s or on a separa	
6					Problematic Hydro		
7					<sup>1</sup> Indicators of hydric so be present unless disto		
					be present unless dist	arbed or problem	aus.
10		90		-			
	Total Cover: 50% of total cover: 45		4-1	18			
Plot size (radius, or length)				0	Hydrophytic		
% Cover of Wetland Bryoph	rytes Total Cov			<u> </u>	Vegetation Present? Yes	esxNo_	x
(Where applicable)	The state of the s					3031320	:-1
Remarks: Area v	was very saturated and muc	ky, all vege	etation g	rowing o	n hummocks, low sat	turated areas v	vere
	pare of vegetation or supers		_	_			

SOIL Sampling Point: 22 TP

Tronic Bescription. (Bescribe	to the depth ne	eded to docum	IGUE THE H	.a.oato.	or commit	n the absence	e of indicators.)
DepthMatrix		Redo:	x Features	8			
(inches) Color (moist)	% C	olor (moist)	%	_Type <sup>1</sup> _	_Loc <sup>2</sup>	Texture	Remarks
0-20 organics							Some sand mixed in @ bottom
3	31 <del>1                                   </del>			<del>i.</del> 5	10	-	
·	0)			<del></del>	-	+(	
	WAR 59 W		5	100	-	20	
	31 <del>.</del> 2		. ——.			<del></del>	
	III———————————————————————————————————				>-		
	£ <del></del>				-		
	20				<del></del>		
<sup>1</sup> Type: C=Concentration, D=Depl						rains. <sup>2</sup> Lo	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	li .	ndicators for P			Soils <sup>3</sup> :		
X Histosol or Histel (A1)	_	Alaska Colo	177.0			1000	a Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2)	_	Alaska Alpin		Market School			derlying Layer
Hydrogen Sulfide (A4)	_	Alaska Red	ox With 2.5	Y Hue		Other	(Explain in Remarks)
Thick Dark Surface (A12)	۰						
Alaska Gleyed (A13)	3(						tor of wetland hydrology,
Alaska Redox (A14)	4					t be present u	nless disturbed or problematic.
Alaska Gleyed Pores (A15)		Give details of o	color chang	ge in Rem	narks.		
Restrictive Layer (if present):							
Туре:		12					
Depth (inches):		<del></del>				Hydric So	I Present? Yes X No
Remarks:							
inick layers (	of saturated o	rganic mater	iai obser	ved at s	ampie po	oint	
HYDROLOGY							
Wetland Hydrology Indicators:							
1,55,50						Secondary I	ndicators (2 or more required)
Primary Indicators (any one indica	ator is sufficient)					National Action	ndicators (2 or more required) tained Leaves (B9)
Primary Indicators (any one indicators X Surface Water (A1)			e on Aeria	Limagery	(B7)	Water-s	tained Leaves (B9)
X Surface Water (A1)	In	undation Visibl				Water-s Drainag	tained Leaves (B9) e Patterns (B10)
X Surface Water (A1) High Water Table (A2)	In	nundation Visibl parsely Vegeta	ted Conca			Water-s Drainag Oxidize	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3)
X Surface Water (A1) High Water Table (A2) X Saturation (A3)	In S M	nundation Visibl parsely Vegeta larl Deposits (B	ted Conca 15)	ve Surfac		Water-s Drainag Oxidized Presence	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4)
X Surface Water (A1) High Water Table (A2)X Saturation (A3) Water Marks (B1)	In S M H	nundation Visibl parsely Vegeta larl Deposits (B lydrogen Sulfide	ted Conca 15) e Odor (C1	ve Surfac		Water-s Drainag Oxidized Presend Salt De	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) posits (C5)
X Surface Water (A1) High Water Table (A2) X Saturation (A3)	In S M H D	nundation Visibl parsely Vegeta larl Deposits (B	ted Conca 15) e Odor (C1 er Table (0	ve Surfac		Water-s Drainag Oxidize Presence Salt Dep X Stunted	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1)
_X Surface Water (A1) High Water Table (A2) _X Saturation (A3) Water Marks (B1) _ Sediment Deposits (B2)	In S M H D	nundation Visibl parsely Vegeta Iarl Deposits (B lydrogen Sulfide Iry-Season Wat	ted Conca 15) e Odor (C1 er Table (0	ve Surfac		Water-s Drainag Oxidizer Presence Salt Dep X Stunted Geomore	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) posits (C5)
X Surface Water (A1) High Water Table (A2)X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	In S M H D	nundation Visibl parsely Vegeta Iarl Deposits (B lydrogen Sulfide Iry-Season Wat	ted Conca 15) e Odor (C1 er Table (0	ve Surfac		Water-s Drainag Oxidizer Presence Salt Dep X Stunted Geomon Shallow	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) ephic Position (D2)
X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	In S M H D	nundation Visibl parsely Vegeta Iarl Deposits (B lydrogen Sulfide Iry-Season Wat	ted Conca 15) e Odor (C1 er Table (0	ve Surfac		Water-s Drainag Oxidized Presend Salt Del X Stunted Geomoi Shallow X Microtol	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) ephic Position (D2) Aquitard (D3)
X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	In S M H	nundation Visibl parsely Vegeta Iarl Deposits (B lydrogen Sulfide Iry-Season Wat	ted Conca 15) e Odor (C1 er Table (0	ve Surfac		Water-s Drainag Oxidized Presend Salt Del X Stunted Geomoi Shallow X Microtol	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) rphic Position (D2) Aquitard (D3) pographic Relief (D4)
X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations:	In S M H O	parsely Vegeta parsely Vegeta farl Deposits (B ydrogen Sulfide ry-Season Wat ther (Explain in	ted Conca 15) e Odor (C1 er Table (C Remarks)	ve Surfac		Water-s Drainag Oxidized Presend Salt Del X Stunted Geomoi Shallow X Microtol	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) rphic Position (D2) Aquitard (D3) pographic Relief (D4)
X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations:	In S M H O	parsely Vegeta parsely Vegeta farl Deposits (B ydrogen Sulfide ry-Season Wat ther (Explain in	ted Conca 15) e Odor (C1 er Table (C Remarks)	ve Surfac		Water-s Drainag Oxidized Presend Salt Del X Stunted Geomoi Shallow X Microtol	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) rphic Position (D2) Aquitard (D3) pographic Relief (D4)
X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations:	In S M H D O	nundation Visible parsely Vegeta farl Deposits (B lydrogen Sulfide lry-Season Wate lither (Explain in  Depth (inc	ted Conca 15) e Odor (C1 er Table (C Remarks) ches):	ve Surfac	e (B8)	Water-s Drainag Oxidizer Presence Salt Dep X Stunted Geomoi Shallow X Microtop FAC-Ne	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) ephic Position (D2) Aquitard (D3) pographic Relief (D4) eutral Test (D5)
X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	es X No es X No es X No	pundation Visible parsely Vegetar farl Deposits (B ydrogen Sulfide ry-Season Wate ther (Explain in  Depth (inc	ted Conca 15) e Odor (C1 er Table (C Remarks) ches): ches):	0 5 0		Water-s  Water-s  Drainag  Oxidizer  Presence  Salt Dep  X Stunted  Geomon  Shallow  X Microtop  FAC-Ne	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) ephic Position (D2) Aquitard (D3) pographic Relief (D4) eutral Test (D5)
X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present?	es X No es X No es X No	pundation Visible parsely Vegetar farl Deposits (B ydrogen Sulfide ry-Season Wate ther (Explain in  Depth (inc	ted Conca 15) e Odor (C1 er Table (C Remarks) ches): ches):	0 5 0		Water-s  Water-s  Drainag  Oxidizer  Presence  Salt Dep  X Stunted  Geomon  Shallow  X Microtop  FAC-Ne	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) ephic Position (D2) Aquitard (D3) pographic Relief (D4) eutral Test (D5)
X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Your Saturation Present? Vincludes capillary fringe) Describe Recorded Data (stream	es X No es X No es X No	pundation Visible parsely Vegetar farl Deposits (B ydrogen Sulfide ry-Season Wate ther (Explain in  Depth (inc	ted Conca 15) e Odor (C1 er Table (C Remarks) ches): ches):	0 5 0		Water-s  Water-s  Drainag  Oxidizer  Presence  Salt Dep  X Stunted  Geomon  Shallow  X Microtop  FAC-Ne	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) ephic Position (D2) Aquitard (D3) pographic Relief (D4) eutral Test (D5)
X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (stream	es X No es X No gauge, monitori	parsely Vegetai farl Deposits (B ydrogen Sulfide ry-Season Wat- other (Explain in  Depth (inc Depth (inc	ted Conca 15) e Odor (C1 er Table (C Remarks) ches): ches): ches):	O 5 O evious ins		Water-s Drainag Oxidizer Presence Salt Dep X Stunted Geomon Shallow FAC-Nee  and Hydrolog if available:	tained Leaves (B9) e Patterns (B10) d Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) ephic Position (D2) Aquitard (D3) pographic Relief (D4) eutral Test (D5)
X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? You Saturation Present? (includes capillary fringe) Describe Recorded Data (stream	esX No esX No gauge, monitori	parsely Vegetal farl Deposits (B ydrogen Sulfide ry-Season Wate ther (Explain in  Depth (inc Depth (inc Depth (inc	ted Conca 15) e Odor (C1 er Table (C Remarks) ches): ches): ches): chotos, pre	0 5 0 evious ins	Wetl pections),	Water-s  Water-s  Drainag  Oxidizer  Presence  Salt Dep  X Stunted  Geomon  Shallow  X Microtop  FAC-Nee  and Hydrolog  if available:	tained Leaves (B9)  e Patterns (B10)  d Rhizospheres along Living Roots (C3)  e of Reduced Iron (C4)  posits (C5)  or Stressed Plants (D1)  phic Position (D2)  Aquitard (D3)  pographic Relief (D4)  putral Test (D5)  gy Present? Yes X No
X Surface Water (A1) High Water Table (A2) X Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Field Observations: Surface Water Present? Water Table Present? You Saturation Present? (includes capillary fringe) Describe Recorded Data (stream	es X No es X No gauge, monitori	parsely Vegetal farl Deposits (B ydrogen Sulfide ry-Season Wate ther (Explain in  Depth (inc Depth (inc Depth (inc	ted Conca 15) e Odor (C1 er Table (C Remarks) ches): ches): ches): chotos, pre	0 5 0 evious ins	Wetl pections),	Water-s  Water-s  Drainag  Oxidizer  Presence  Salt Dep  X Stunted  Geomon  Shallow  X Microtop  FAC-Nee  and Hydrolog  if available:	tained Leaves (B9)  e Patterns (B10)  d Rhizospheres along Living Roots (C3)  e of Reduced Iron (C4)  posits (C5)  or Stressed Plants (D1)  phic Position (D2)  Aquitard (D3)  pographic Relief (D4)  putral Test (D5)  gy Present? Yes X No

#### WETLAND DETERMINATION DATA FORM – Alaska Region

Project/Site: Wasilla WWTP	E	Borough/Ci	ty:	Wasilla	Sampling Date: 0	)9/30/14
Applicant/Owner:	City of \	Wasilla			Sampling Point:	27 TP
Investigator(s): CDP, SL	1	Landform (	hillside, terri	ace, hummocks, etc.);	Slight slope	
Local relief (concave, convex, none):						
Subregion: Anchorage/Matsu Lat:				-149.385957	Datum:	WGS84
Soil Map Unit Name: Cryaquepts, depression						
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation, Soil, or Hydrology sig						( No
Are Vegetation, Soil, or Hydrology na				eeded, explain any answe		
						20203
SUMMARY OF FINDINGS – Attach site map sho	owing sa	mpling p	oint locati	ons, transects, impo	rtant features,	etc.
Hydrophytic Vegetation Present? Yes No	X_	2001		M2 (1989)		
Hydric Soil Present? Yes No		F-1000	e Sampled		X	
Wetland Hydrology Present? Yes No		with	in a Wetlar	id? Yes	No X	<del> </del>
Remarks: Anchorage received 1.02 in. of rair	above a	verage di	uring the r	nonth of September.	Upland area at	edge of
wetlands, slight slope @ base of RI		_	_			2.00
VEGETATION – Use scientific names of plants.	Entertwise 880	450 100	SERVICE SALESSE			
VECETATION — Ose scientific flames of plants.		Dominant		Dominance Test work	chast:	
Tree Stratum	% Cover			Number of Dominant Si		
1. <u>betneo</u> <u>Betula neoalaskana</u>	40_	Yes	<u>FACU</u>	That Are OBL, FACW,	or FAC:2	(A)
2. popbal Populus balsamifera	40	Yes	FACU	Total Number of Domin	ant	
3				Species Across All Stra	17073-17452	(B)
4		-		Percent of Dominant Sp	necies	
Total Cover:				That Are OBL, FACW,		(A/B)
50% of total cover: 40 Sapling/Shrub Stratum	20% o	f total cove	r:16	Prevalence Index wor	ksheet:	
1. rosaci Rosa acicularis	20	Yes	FACU	Total % Cover of:	Multiple	y by:
2. oplhor Oplopanax horridus	30	Yes	FACU	OBL species 0	x 1 =0	/ Dy.
3. hermax Heracleum maximum	40	Yes	FACU	FACW species 0	x 2 = _0	
4.		3		FAC species 95	x 3 = 285	7.77
5.				FACU species 170	x 4 = 680	
6.	- 3			UPL species 0	x 5 = 0	
Total Cover:	90		100 TA	Column Totals: 265	(A) 965	(0)
50% of total cover: 45	_ 20% of	total cover	18	Prevalence Index	3.64	4
Herb Stratum equary Equisetum arvense	70	Yes	FAC	Hydrophytic Vegetation		- 22
athfil Athyrium filix-femina		Yes	FAC			
pyrgra Pyrola grandiflora		No	FAC	No Dominance Test is	>50%	
calcan Calamagrostis canadensis	<del></del>	No	FAC	No Prevalence Index is		
			-	Morphological Ada data in Remarks	s or on a separate	supporting sheet)
5				Problematic Hydro		
6			1 <del>5</del> 61	1 Indicators of hydric so	il and wetland hyd	rology must
8.				be present unless distu		
9.						
10.			15			
Total Cover:						
50% of total cover:47.5		total cover	19			
Plot size (radius, or length x width) 15 foot radius	% Bare 0	Ground	0	Hydrophytic Vegetation		
% Cover of Wetland Bryophytes Total Cov	er of Bryop	hytes			s No	_X
(Where applicable)						
Remarks: Thick duff, upland plants, moss	growing	over dea	d stumps.	devils club towards so	outh end of plot	
	-		•	towards north end	, -	

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Profile Description: (Descr	ibe to the dep	th needed to docur	nent the i	ndicator	or confir	m the absence of	indicators.)	
Depth Matr		D	x Features		1 > 2	- 25 1 CHARLES	A DAMESTIC STATE S	
(inches) Color (moist	)	Color (moist)	%	_Type'	_Loc²	Texture	Remarks	
0-15Organic			-		9		Rocks at 14"	_
*				· · · · · · · · · · · · · · · · · · ·	<u></u>			
(N) (N)		hi-		N. N	<u>p3</u>			
	77.1	7:				<del></del>		
E	<del></del>			-	1	<u> </u>		
10 57								
Type: C=Concentration, D=	Depletion, RM:	Reduced Matrix, CS	S=Covered	or Coate	d Sand C	Frains. <sup>2</sup> Locati	on: PL=Pore Lining, M=Matr	ix.
Hydric Soil Indicators:		Indicators for F	Problemat	ic Hydric	Soils <sup>3</sup> :			
Histosol or Histel (A1)		Alaska Colo	r Change	(TA4) <sup>4</sup>		Alaska Gl	eyed Without Hue 5Y or Red	der
Histic Epipedon (A2)		Alaska Alpir					ing Layer	
Hydrogen Sulfide (A4)		Alaska Red	ox With 2.	5Y Hue		Other (Ex	plain in Remarks)	
Thick Dark Surface (A12	)	30			. #1			
Alaska Gleyed (A13)							of wetland hydrology,	
Alaska Redox (A14) Alaska Gleyed Pores (A	15)	4Give details of		BOOKERS WARRY AROUN		st be present unies	s disturbed or problematic.	
Restrictive Layer (if presen		Cive details of	color chan	ge iii iveii	idiks.			
Type:	105/10.							
Depth (inches):						Hydric Soil Pr	esent? Yes No _	X
Remarks:								
l .	very rooty ar	nd rocky, not satu	rated.					
HYDROLOGY								
Wetland Hydrology Indicate	ors:					Secondary Indic	ators (2 or more required)	
Primary Indicators (any one i		cient)				Water-staine		
Surface Water (A1)		Inundation Visibl	le on Aeria	al Imagery	(B7)	Drainage Pa	atterns (B10)	
High Water Table (A2)	-	Sparsely Vegeta	ted Conca	ve Surfac	e (B8)	Oxidized Rh	izospheres along Living Roof	ts (C3)
Saturation (A3)		Marl Deposits (B	315)			Presence of	Reduced Iron (C4)	
Water Marks (B1)	1=	Hydrogen Sulfide	e Odor (C	1)		Salt Deposit	s (C5)	
Sediment Deposits (B2)	-	Dry-Season Wat				A DESCRIPTION OF THE PROPERTY	tressed Plants (D1)	
Drift Deposits (B3)	1 <u>2</u>	Other (Explain in	Remarks	)			Position (D2)	
Algal Mat or Crust (B4)						Shallow Aqu	ar to the self or many more	
Iron Deposits (B5)							aphic Relief (D4)	
Surface Soil Cracks (B6) Field Observations:						FAC-Neutra	r rest (Do)	
Surface Water Present?	Vec	No X Depth (in	chec):					
ENGINEERS ST. SECTION STORY TECHNOLOGY AND SECTION SECTIONS SECTION SE	Yes	No X Depth (in	ches):		o:			
Water Table Present? Saturation Present?	Yes	No X Depth (in	ches):		—   Wa	tland ⊎udrologu B	resent? Yes No _	х
(includes capillary fringe)	103	140 Верит (шт	CI1C3)		_   ""	nana nyarology i	resent: res No_	¥-0
Describe Recorded Data (str	eam gauge, mo	onitoring well, aerial p	photos, pr	evious ins	pections)	, if available:		
Remarks: Area on s	slight slope. I	no drainage patte	rns or lo	w spots.				
	5 1 7	0 1		•				

#### WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site:	Wasilla WWTP	8	orough/City	y:	Wasilla	Sampling Date: 0	<u>9/30/14</u>
Applicant/Owner:		City of V					28 TP
Investigator(s):	CDP, SL	t	andform (h	illside, terri	ace, hummocks, etc.):	Flat	
Local relief (concave, con-	vex, none):none	8	Slope (%): <u>C</u>	)%	es:		
Subregion: Anch	orage/Matsu Lat: _		61.56993	3 Lon	g: <u>-149.38913</u>	Datum:	WGS84
Soil Map Unit Name:	Cryaquepts, depression	nal, 0 to	7 percent	slopes	NWI classific	ation: Uplar	nd
Are climatic / hydrologic co	onditions on the site typical for this ti	me of yea	r? Yes	No _	x (If no, explain in R	emarks.)	
Are Vegetation, So	oil, or Hydrology sign	nificantly d	listurbed?	Are "	Normal Circumstances" p	resent? Yesx	No
	oil, or Hydrology nat				eded, explain any answer		
							oto
SUMMART OF FINE	DINGS - Attach site map sho	wii ig sai	ripiirig po	ni it iocati	oris, transects, impo	rtarit reatures, t	SIG.
Hydrophytic Vegetation I	Present? Yes No	X_	ls the	e Sampled	Area		
Hydric Soil Present?	Yes No			n a Wetlar		No X	
Wetland Hydrology Pres	ent? Yes No_	X					<u> </u>
Remarks: Anch	orage received 1.02 in. of rain	above av	verage du	ring the r	nonth of September. A	Area flat, border	ring
wette	er area, distinct vegetation cha	nge. Plo	t at botto	m of slop	e		
VEGETATION - Use	scientific names of plants. I	ist all s	pecies in	the plot.			
			Dominant		Dominance Test work	sheet:	
Tree Stratum			Species?		Number of Dominant Sp		
1. <u>betneo</u>	Betula neoalaskana	<u>60</u> T	<u>Yes</u> No	FACU	That Are OBL, FACW, o	or FAC:	(A)
2. picgla	Picea glauca	-	INU	<u>FACU</u>	Total Number of Domin	2273-54-00	
3		-	5 %		Species Across All Stra	ta:	(B)
4	Total Cover:	60			Percent of Dominant Sp		6
	50% of total cover:30	Acceptant Section 1	total cover	12	That Are OBL, FACW, o	di FAC.	(A/B)
Sapling/Shrub Stratum	30% of total cover	_ 20% 0	total cover	·	Prevalence Index work	ksheet:	
1. rosaci	Rosa acicularis	70	Yes	FACU	Total % Cover of:	Multiply	by:
2. alninc	Alnus incana	T_	No	_FAC	OBL species 0	x 1 =0	
3. hermax	Heracleum maximum	5	No	FACU	FACW species0	x 2 =0	
4					FAC species 110	x 3 = _330	
5					FACU species 155	x 4 =620	<u> </u>
6					UPL species 0	x 5 = 0	
	Total Cover:	75		1.5	Column Totals: 265	(A) 950	(0)
Herb Stratum	50% of total cover:37.5	20% of	total cover:	15	Prevalence Index	= B/A =3.58	5
1. corcan	Cornus canadensis	20	No	FACU	Hydrophytic Vegetation	on Indicators:	
	Calamagrostis canadensis	10	No	FAC	No Dominance Test is	>5004	
equary	Equisetum arvense	60	Yes	FAC	No Prevalence Index is	>30% e <3 N	
equsyl	Equisetum sylvaticum	20	No	FAC	Morphological Adap		supporting
5 athfil	Athyrium filix-femina	20	No	FAC	data in Remarks	s or on a separate	sheet)
6.					Problematic Hydron	phytic Vegetation <sup>1</sup>	(Explain)
190000					1 Indicators of hydric soi		
142					be present unless distu	rbed or problemation	c.
1900							
10				21 - 22 2 - 23			
0.43740.00	Total Cover: _						
	50% of total cover: 65	20% of	total cover:	26	Hydrophytic		
Plot size (radius, or lengt			Ground		Vegetation		
% Cover of Wetland Bry (Where applicable)	ophytes Total Cove	r of Bryop	hytes		Present? Yes	s No	х
Remarks:	ate of oldowhours in adiasant a	roos b-	ا - ا ا ما ا ا	h +bi	sita annua andina- /-		
	Lots of elderberry in adjacent a	1645, 116	aitily DITCI	ii, tiiili Wf	nte spruce sapinigs (no	ot within plot).	

SOIL Sampling Point: 28 TP

epth <u>Mat</u> nches) Color (mois		Color (moist)	Feature:		Loc <sup>2</sup>	Texture	Remarks	
		Color (moist)		iype	LOC	i exture		
0-18 Organics	<b>3</b>	9 0====================================		•	<u> </u>	<u> </u>	Rooty/Rocks at	18"
		<del>*</del> :		00 <del></del>				
	-0.0	<del>1</del> (-	-		<del>a</del>			
		14 T	-	(C)	<u></u>	<u> </u>		
				. ——	<del></del>	_		
	2.0			· (1)	<del>,</del>			
pe: C=Concentration, D=	Depletion, R	M=Reduced Matrix, CS	=Covered	d or Coate	d Sand G	rains. <sup>2</sup> Locat	ion: PL=Pore Lining, I	M=Matrix.
dric Soil Indicators:		Indicators for Pi						
Histosol or Histel (A1)		Alaska Color	r Change	(TA4) <sup>4</sup>		Alaska G	Sleyed Without Hue 5Y	or Redder
Histic Epipedon (A2)		Alaska Alpin					ying Layer	
_ Hydrogen Sulfide (A4)		Alaska Redo	ox With 2.	.5Y Hue		Other (E	xplain in Remarks)	
Thick Dark Surface (A12	2)	1912 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	100 000 E	20 2	225	0 8 90 2	523 537 253 27 27	
Alaska Gleyed (A13)			550 VEV	\$1 1/1 <del>2</del>		153	of wetland hydrology,	
Alaska Redox (A14)	4.E.\	COST. CONTRACTOR INVESTOR ADMINISTRATION		ARBORATED GROWEN SERVICES		st be present unle	ss disturbed or probler	natic.
Alaska Gleyed Pores (A		<sup>4</sup> Give details of c	olor char	ige in Ren	narks.	T		
strictive Layer (if preser Type:	u).							
						Hydric Soil D	recent? Vec	No. X
Depth (inches):		dric soil observed a	t sample	e locatio	n - site w	200 C - 100 C	resent? Yes	No X
Depth (inches):emarks:  No indic		dric soil observed a	t sample	e locatio	n - site w	200 C - 100 C	resent? Yes	No X
Depth (inches): marks: No indic	ations of hy	dric soil observed a	t sample	e locatio	n - site w	vell drained.		-
Depth (inches): marks: No indic DROLOGY	ations of hy		t sample	e locatio	n - site w	vell drained.	cators (2 or more requi	-
Depth (inches): marks: No indic DROLOGY Itland Hydrology Indicat mary Indicators (any one	ations of hy	ifficient)				vell drained.  Secondary Indic	cators (2 or more requi ed Leaves (B9)	-
Depth (inches): marks: No indic  DROLOGY etland Hydrology Indicate mary Indicators (any one Surface Water (A1)	ations of hy	ifficient) Inundation Visible	e on Aeria	al Imagery	(B7)	vell drained.  Secondary Indic Water-stain Drainage P	cators (2 or more requi ed Leaves (B9) atterns (B10)	red)
Depth (inches): marks: No indic  DROLOGY  Itland Hydrology Indicat mary Indicators (any one Surface Water (A1) High Water Table (A2)	ations of hy	ifficient) Inundation Visible Sparsely Vegetat	e on Aeria	al Imagery	(B7)	vell drained.  Secondary Indic  Water-stain  Drainage P  Oxidized R	cators (2 or more requi ed Leaves (B9) atterns (B10) hizospheres along Livi	red)
Depth (inches):	ations of hy	ifficient) Inundation Visible Sparsely Vegetat Marl Deposits (B1	e on Aeria ed Conca 15)	al Imagery ave Surfac	(B7)	Secondary Indic  Water-stain  Drainage P  Oxidized Ri  Presence o	cators (2 or more requi ed Leaves (B9) atterns (B10) hizospheres along Livi f Reduced Iron (C4)	red)
Depth (inches):	ations of hy	ifficient) Inundation Visible Sparsely Vegetat Marl Deposits (B1 Hydrogen Sulfide	e on Aeria ed Conca 15) Odor (C	al Imagery ave Surfac 1)	(B7)	Secondary Indic  Water-stain  Drainage P  Oxidized R  Presence o  Salt Deposi	cators (2 or more requi ed Leaves (B9) atterns (B10) hizospheres along Livi f Reduced Iron (C4) its (C5)	red)
Depth (inches):	ations of hy	ifficient) Inundation Visible Sparsely Vegetat Marl Deposits (B1	e on Aeria ed Conca 15) Odor (C er Table (	al Imagery ave Surfac 1) (C2)	(B7)	Secondary Indic Water-stain Drainage P Oxidized R Presence o Salt Deposi	eators (2 or more requi ed Leaves (B9) atterns (B10) hizospheres along Livi of Reduced Iron (C4) its (C5) Stressed Plants (D1)	red)
Depth (inches):	ations of hy	ifficient) Inundation Visible Sparsely Vegetat Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate	e on Aeria ed Conca 15) Odor (C er Table (	al Imagery ave Surfac 1) (C2)	(B7)	Secondary Indic  Water-stain  Drainage P  Oxidized R  Presence o  Salt Deposi  Stunted or  Geomorphi	cators (2 or more requi ed Leaves (B9) atterns (B10) hizospheres along Livi of Reduced Iron (C4) tts (C5) Stressed Plants (D1) c Position (D2)	red)
Depth (inches):	ations of hy	ifficient) Inundation Visible Sparsely Vegetat Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate	e on Aeria ed Conca 15) Odor (C er Table (	al Imagery ave Surfac 1) (C2)	(B7)	Secondary Indic  Water-stain  Drainage P  Oxidized R  Presence o  Salt Deposi  Stunted or  Geomorphi Shallow Aq	cators (2 or more requi ed Leaves (B9) atterns (B10) hizospheres along Livi of Reduced Iron (C4) tts (C5) Stressed Plants (D1) c Position (D2)	red)
Depth (inches):	ations of hy	ifficient) Inundation Visible Sparsely Vegetat Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate	e on Aeria ed Conca 15) Odor (C er Table (	al Imagery ave Surfac 1) (C2)	(B7)	Secondary Indic  Water-stain  Drainage P  Oxidized R  Presence o  Salt Deposi  Stunted or  Geomorphi Shallow Aq	cators (2 or more required Leaves (B9) atterns (B10) hizospheres along Living Reduced Iron (C4) its (C5) Stressed Plants (D1) c Position (D2) uitard (D3) raphic Relief (D4)	red)
Depth (inches):	ations of hy	ifficient) Inundation Visible Sparsely Vegetat Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate	e on Aeria ed Conca 15) Odor (C er Table (	al Imagery ave Surfac 1) (C2)	(B7)	Secondary Indic  Water-stain  Drainage P  Oxidized R  Presence o  Salt Deposi  Stunted or  Geomorphi  Shallow Aq  Microtopog	cators (2 or more required Leaves (B9) atterns (B10) hizospheres along Living Reduced Iron (C4) its (C5) Stressed Plants (D1) c Position (D2) uitard (D3) raphic Relief (D4)	red)
Depth (inches):	ations of hy  ors: indicator is su	ifficient)  Inundation Visible Sparsely Vegetat Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate Other (Explain in	e on Aeria ed Conca 15) Odor (C er Table ( Remarks	al Imagery ave Surfac 1) (C2)	(B7) ce (B8)	Secondary Indic  Water-stain  Drainage P  Oxidized R  Presence o  Salt Deposi  Stunted or  Geomorphi  Shallow Aq  Microtopog	cators (2 or more required Leaves (B9) atterns (B10) hizospheres along Living Reduced Iron (C4) its (C5) Stressed Plants (D1) c Position (D2) uitard (D3) raphic Relief (D4)	red)
Depth (inches):	ations of hy  Fors: Indicator is su  Yes Yes	Ifficient)  Inundation Visible Sparsely Vegetate Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate Other (Explain in	e on Aeria ed Conca 15) Odor (C er Table ( Remarks	al Imagery ave Surfac 1) (C2)	(B7) ce (B8)	Secondary Indic  Water-stain  Drainage P  Oxidized R  Presence o  Salt Deposi  Stunted or  Geomorphi  Shallow Aq  Microtopog	cators (2 or more required Leaves (B9) atterns (B10) hizospheres along Living Reduced Iron (C4) its (C5) Stressed Plants (D1) c Position (D2) uitard (D3) raphic Relief (D4)	red)
Depth (inches):  PROLOGY  Etland Hydrology Indication in the imary Indicators (any one 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)  Eld Observations:  Irface Water Present?  Intertable Present?  Intertable Present?	ations of hy  Fors: Indicator is su  Yes Yes	ifficient)  Inundation Visible Sparsely Vegetat Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate Other (Explain in	e on Aeria ed Conca 15) Odor (C er Table ( Remarks	al Imagery ave Surfac 1) (C2)	(B7) ce (B8)	Secondary India  Water-stain  Drainage P  Oxidized R  Presence o  Salt Deposi  Stunted or  Geomorphi  Shallow Aq  Microtopog  FAC-Neutra	cators (2 or more required Leaves (B9) atterns (B10) hizospheres along Living Reduced Iron (C4) its (C5) Stressed Plants (D1) c Position (D2) uitard (D3) raphic Relief (D4)	red) ng Roots (C
Depth (inches):  marks:  No indic  DROLOGY  etland Hydrology Indicate imary Indicators (any one  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  eld Observations:  inface Water Present?  ater Table Present?  cturation Present?	ations of hy  ors: indicator is su  Yes Yes Yes	ifficient)  Inundation Visible Sparsely Vegetat Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate Other (Explain in  NoX Depth (inc NoX Depth (inc NoX Depth (inc	e on Aeria ed Conca 15) c Odor (C er Table ( Remarks ches): ches):	al Imagery ave Surfac 1) (C2)	(B7) se (B8)  Wetl	Secondary Indic  Water-stain  Drainage P  Oxidized R  Presence o  Salt Deposi  Stunted or  Geomorphi  Shallow Aq  Microtopog  FAC-Neutra	eators (2 or more requi ed Leaves (B9) atterns (B10) hizospheres along Livi of Reduced Iron (C4) its (C5) Stressed Plants (D1) c Position (D2) uitard (D3) raphic Relief (D4) al Test (D5)	red) ng Roots (C
Depth (inches):  marks:  No indic  DROLOGY  etland Hydrology Indicat mary Indicators (any one 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 eld Observations: rface Water Present? ater Table Present? turation Present?	ations of hy  ors: indicator is su  Yes Yes Yes	ifficient)  Inundation Visible Sparsely Vegetat Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate Other (Explain in  NoX Depth (inc NoX Depth (inc NoX Depth (inc	e on Aeria ed Conca 15) c Odor (C er Table ( Remarks ches): ches):	al Imagery ave Surfac 1) (C2)	(B7) se (B8)  Wetl	Secondary Indic  Water-stain  Drainage P  Oxidized R  Presence o  Salt Deposi  Stunted or  Geomorphi  Shallow Aq  Microtopog  FAC-Neutra	eators (2 or more requi ed Leaves (B9) atterns (B10) hizospheres along Livi of Reduced Iron (C4) its (C5) Stressed Plants (D1) c Position (D2) uitard (D3) raphic Relief (D4) al Test (D5)	red) ng Roots (C
Depth (inches):	YesYes	ifficient)  Inundation Visible Sparsely Vegetat Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate Other (Explain in  No X Depth (inc No X Depth (inc	e on Aeria ed Conca 15) c Odor (C er Table ( Remarks ches): ches): ches):	al Imagery ave Surfact 1) (C2) s)	Wetlpections)	Secondary Indic  Water-stain  Drainage P  Oxidized R  Presence o  Salt Deposi  Stunted or  Geomorphi  Shallow Aq  Microtopog  FAC-Neutra	eators (2 or more required Leaves (B9) atterns (B10) hizospheres along Living (C4) its (C5) Stressed Plants (D1) c Position (D2) uitard (D3) raphic Relief (D4) al Test (D5)  Present? Yes	red) ng Roots (C
Depth (inches):	YesYes	ifficient)  Inundation Visible Sparsely Vegetat Marl Deposits (B1 Hydrogen Sulfide Dry-Season Wate Other (Explain in  NoX Depth (inc NoX Depth (inc NoX Depth (inc	e on Aeria ed Conca 15) c Odor (C er Table ( Remarks ches): ches): ches):	al Imagery ave Surfact 1) (C2) s)	Wetlpections)	Secondary Indic  Water-stain  Drainage P  Oxidized R  Presence o  Salt Deposi  Stunted or  Geomorphi  Shallow Aq  Microtopog  FAC-Neutra	eators (2 or more required Leaves (B9) atterns (B10) hizospheres along Living (C4) its (C5) Stressed Plants (D1) c Position (D2) uitard (D3) raphic Relief (D4) al Test (D5)  Present? Yes	red) ng Roots (C

#### WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site: Was	<u>illa WWTP</u>	Boroug	gh/City: _	Wa	<u>ısilla</u>	Sam	pling Date: 0	<u>9/30/14                                    </u>
Applicant/Owner:		of Wasil				Sam	pling Point: _	29 TP
Investigator(s):	DP, SL	Landfo	orm (hillsid	de, terrace	hummocks,	etc.): hu	ımmocks	
Local relief (concave, convex, none):		Slope	(%): <u>0%</u>					
Subregion: Anchorage/Matsu	Lat:	61.56	9617	Long: _	-149.389	479	_ Datum:	WGS84
Soil Map Unit Name: Cryaqu	epts, depressional, (	0 to 7 pei	rcent slo	pes	NWI	classification:	PF01/	4B
Are climatic / hydrologic conditions on the s	ite typical for this time o	fyear? Ye	es	No_x	(If no, exp	lain in Remark	(s.)	
Are Vegetation, Soil, or Hyd								No
Are Vegetation, Soil, or Hyd						y answers in R		
								2100
SUMMARY OF FINDINGS – Attac	n site map snowing	sampiir	ig point	location	s, transects	, important	reatures, e	etc.
Hydrophytic Vegetation Present?	YesX No		1. 11. 0.		320			
	Yes X No			ampled Are Wetland?		Voc X	No_	
Wetland Hydrology Present?	YesX No		within a	wellandr		165	NO	- 12
Remarks: Anchorage received	1.02 in. of rain abov	ve averag	ge during	g the mor	nth of Septe	mber. Area	is flat with	more
grass and distinct ve	egetation changes fr	om samp	le point	: #28.	·			
VEGETATION - Use scientific nan	WOODS OF FORMS	333 63	S 616 96667	Street				
	2350	lute Dom			ominance Te	st worksheet	:	
Tree Stratum	<u>% Co</u>	over Spe		tatura		ninant Species		
1. Betnan Betula r		<u>5 Ye</u>		AC T		FACW, or FAC		(A)
2. picgla Picea gla	auca	T No	<u> F/</u>	ACU_ T	otal Number o	of Dominant	_	
3				10.75	pecies Across		5	(B)
4		- 2255		—   р	ercent of Dom	inant Species	000	,
57263 579	1000 00101.	5		T		FACW, or FAC		(A/B)
50% of to Sapling/Shrub Stratum	otal cover:2.520	0% of total	cover:	P	revalence inc	lex workshee	t:	
1 alninc Alnus inc	cana	T No	) FA	AC	Total % Co	over of:	Multiply	by:
2. picgla Picea gla	auca	T No		ACU o	BL species	0		
3. Salix S		T No			ACW species	14 <u>181</u>	x 2 = 0	
4. rosaci Rosa acic	ularis	T No	) F/	A C L L	AC species	150	x 3 = 450	
5. vacmac Vaccinium ma	crocarpon	T No	0	DI I	ACU species	5	x 4 = 20	
6	X	15/8	1856	600	PL species	0	x 5 =0	
	Total Cover:	0	47.608	C	olumn Totals:	155	(A) 470	(B)
	tal cover:020	% of total	cover:_0			e Index = B/A	3.03	}
Herb Stratum calcan Calamagrostis	canadensis	90 Ye	s FA	AC H	ydrophytic V	egetation Ind	lcators:	223
corcan Cornus can		5 No		ACU Y	_	T 5000		
rubaro Pubus are		5 No			Dominance	e Test is >50% e Index is ≤3.0		
gymdry Gymnocarpium		T Ye		ACU		e index is ≤3.0 ical Adaptation		oun nortin a
equary Equisetum	100	50 Ye	s FA	AC -	_ worpholog data in	Remarks or or	a separate s	supporting sheet)
epicil Epilobium o	ciliatum	T Ye	s FA	AC _	_ Problemati	c Hydrophytic	Vegetation <sup>1</sup> (	(Explain)
7		100000	318	1	ndicators of h	ydric soil and	wetland hydr	ology must
8.			17001	b	e present unle	ss disturbed o	or problemation	3.
9.								
10.		119	75.55					
1000	Total Cover:1	150	21.572					
50% of to	tal cover: 75 20	% of total	cover: 30	0				
		are Ground	d		ydrophytic egetation			
% Cover of Wetland Bryophytes	Total Cover of E	Bryophytes			resent?	Yes <u>x</u>	No	
(Where applicable) Remarks:								
Vegetation is str	essed, dead birch, lo	ts of dov	vned log	s, very th	ick moss gr	owing over I	nummocks,	,
	upland ve		_		_	-		

SOIL Sampling Point: 29 TP

rofile Description: (Descri Depth <u>Matri</u>		Redo	x Feature:				
ches) Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-23 Organics	_		-	-	<u> </u>		saturated/high water table
				80	pa.		
			3				
no: C-Consentration D-F	enlation DM	Dodused Metrix C		d or Costs	d Sand C	roino <sup>2</sup> Lo	ection: DI - Doro Liping M-Motriy
pe: C=Concentration, D=E dric Soil Indicators:	epietion, Kivi-	Indicators for I				iallis. Lo	cation: PL=Pore Lining, M=Matrix.
K Histosol or Histel (A1)		Alaska Col	or Change	$(TA4)^4$		Alaska	a Gleyed Without Hue 5Y or Redder
_ Histic Epipedon (A2)		Alaska Alpi		220.719 2020.20		Und	erlying Layer
_ Hydrogen Sulfide (A4)		Alaska Rec	lox With 2.	5Y Hue		Other	(Explain in Remarks)
Thick Dark Surface (A12)							
Alaska Gleyed (A13)			5594 050	Si Nise	260	4 153	tor of wetland hydrology,
Alaska Redox (A14)		CASE CANDESCARE INVESTOR INVESTOR CONTRACTOR		BOOKERS WARRY AND		t be present u	nless disturbed or problematic.
Alaska Gleyed Pores (A1	5)	<sup>4</sup> Give details of	color chan	ige in Ren	narks.		
strictive Layer (if present	(:						
interative transformations — experientially experiences — in a convenience of the conveni							
Туре:	5 8 6 	<del></del>					
Type: Depth (inches): emarks:		ed organic mate	rial obse	rved at s	ample p	**************************************	l Present? Yes <u>X</u> No <u> </u>
Type: Depth (inches): emarks: Thick laye		ed organic mate	rial obse	rved at s	ample p	**************************************	l Present? Yes X No
Type: Depth (inches): emarks: Thick laye	rs of saturat	ed organic mate	rial obse	rved at s	ample p	oint	
Type: Depth (inches): marks: Thick laye  DROLOGY etland Hydrology Indicato	rs of saturat		rial obse	rved at s	ample p	oint Secondary In	ndicators (2 or more required)
Type: Depth (inches): emarks: Thick laye  DROLOGY etland Hydrology Indicato imary Indicators (any one in	rs of saturat	cient)				oint  Secondary Ir  Water-st	ndicators (2 or more required) ained Leaves (B9)
Type: Depth (inches): emarks: Thick laye  DROLOGY etland Hydrology Indicato imary Indicators (any one in _ Surface Water (A1)	rs of saturat	cient) Inundation Visib	le on Aeria	al Imagery	(B7)	Secondary Ir  Water-st  Drainage	ndicators (2 or more required) ained Leaves (B9) e Patterns (B10)
Type: Depth (inches): emarks: Thick laye  DROLOGY  etland Hydrology Indicato imary Indicators (any one in _ Surface Water (A1)  K High Water Table (A2)	rs of saturat	cient) Inundation Visib X Sparsely Vegeta	le on Aeria	al Imagery	(B7)	Secondary Ir  Water-st Drainage Oxidized	ndicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots (
Depth (inches): emarks: Thick layer  DROLOGY  etland Hydrology Indicator imary Indicators (any one in _ Surface Water (A1)  High Water Table (A2)  Saturation (A3)	rs of saturat	cient) Inundation Visib X Sparsely Vegeta Marl Deposits (E	le on Aeria ited Conca 315)	al Imagery ave Surfac	(B7)	Secondary Ir  Water-st Drainage Oxidized Presence	ndicators (2 or more required) ained Leaves (B9) Patterns (B10) I Rhizospheres along Living Roots ( e of Reduced Iron (C4)
Depth (inches):emarks:  Thick layer  DROLOGY  etland Hydrology Indicator imary Indicators (any one in _ Surface Water (A1)  X High Water Table (A2) X Saturation (A3) _ Water Marks (B1)	rs of saturat	cient) Inundation Visib X Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid	le on Aeria ited Conca 315) e Odor (C	al Imagery ave Surfac	(B7)	Secondary Ir  Water-st Drainage Oxidized Presenc Salt Dep	ndicators (2 or more required) ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots ( of Reduced Iron (C4)
Type:	rs of saturat	cient) Inundation Visib X Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa	le on Aeria ited Conca 315) e Odor (C' ter Table (	al Imagery ave Surfac 1) C2)	(B7)	Secondary Ir  Water-st  Drainage  Oxidized  Presence  Salt Dep  X Stunted	ndicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots ( e of Reduced Iron (C4) nosits (C5) or Stressed Plants (D1)
Type:	rs of saturat	cient) Inundation Visib X Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid	le on Aeria ited Conca 315) e Odor (C' ter Table (	al Imagery ave Surfac 1) C2)	(B7)	Secondary In  Water-st  Drainage Oxidized Presenc Salt Dep X Stunted Geomory	ndicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots ( e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) phic Position (D2)
Depth (inches):emarks: Thick layer  DROLOGY  etland Hydrology Indicator imary Indicators (any one in _ Surface Water (A1) ( High Water Table (A2) ( Saturation (A3) _ Water Marks (B1) _ Sediment Deposits (B2) _ Drift Deposits (B3) _ Algal Mat or Crust (B4)	rs of saturat	cient) Inundation Visib X Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa	le on Aeria ited Conca 315) e Odor (C' ter Table (	al Imagery ave Surfac 1) C2)	(B7)	Secondary Ir  Water-st Drainage Oxidized Presenc Salt Dep X Stunted Geomory Shallow	ndicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots ( e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3)
Depth (inches):emarks: Thick layer  T	rs of saturat	cient) Inundation Visib X Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa	le on Aeria ited Conca 315) e Odor (C' ter Table (	al Imagery ave Surfac 1) C2)	(B7)	Secondary Ir  Water-st Drainage Oxidized Presenc Salt Dep X Stunted Geomory Shallow X Microtop	ndicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots ( e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) phic Position (D2)
Depth (inches):emarks: Thick layer  DROLOGY  etland Hydrology Indicator imary Indicators (any one in 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)	rs of saturat	cient) Inundation Visib X Sparsely Vegeta Marl Deposits (E Hydrogen Sulfid Dry-Season Wa	le on Aeria ited Conca 315) e Odor (C' ter Table (	al Imagery ave Surfac 1) C2)	(B7)	Secondary Ir  Water-st Drainage Oxidized Presenc Salt Dep X Stunted Geomory Shallow X Microtop	ndicators (2 or more required) lained Leaves (B9) le Patterns (B10) I Rhizospheres along Living Roots ( le of Reduced Iron (C4) losits (C5) or Stressed Plants (D1) lohic Position (D2) Aquitard (D3) lographic Relief (D4)
Depth (inches):  marks: Thick layer  Thick layer  Thick layer  DROLOGY  etland Hydrology Indicator imary Indicators (any one in	rs of saturat	cient)  Inundation Visib  X Sparsely Vegeta  Marl Deposits (E  Hydrogen Sulfid  Dry-Season Wa  Other (Explain in	le on Aeria ited Conca 315) e Odor (C' ter Table ( n Remarks	al Imagery ave Surfac 1) C2)	(B7)	Secondary Ir  Water-st Drainage Oxidized Presenc Salt Dep X Stunted Geomory Shallow X Microtop	ndicators (2 or more required) lained Leaves (B9) le Patterns (B10) I Rhizospheres along Living Roots ( le of Reduced Iron (C4) losits (C5) or Stressed Plants (D1) lohic Position (D2) Aquitard (D3) lographic Relief (D4)
Type:	rs of saturat	cient)  Inundation Visib  X Sparsely Vegeta  Marl Deposits (E  Hydrogen Sulfid  Dry-Season Wa  Other (Explain in	le on Aeria ated Conca 315) e Odor (C' ter Table ( n Remarks ches): ches):	al Imagery ave Surfact 1) C2)	(B7)	Secondary Ir  Water-st Drainage Oxidized Presenc Salt Dep X Stunted Geomory Shallow X Microtop	ndicators (2 or more required) lained Leaves (B9) le Patterns (B10) I Rhizospheres along Living Roots ( le of Reduced Iron (C4) losits (C5) or Stressed Plants (D1) lohic Position (D2) Aquitard (D3) lographic Relief (D4)
Type:	rs of saturat	cient)  Inundation Visib  X Sparsely Vegeta  Marl Deposits (E  Hydrogen Sulfid  Dry-Season Wa  Other (Explain in	le on Aeria ated Conca 315) e Odor (C' ter Table ( n Remarks ches): ches):	al Imagery ave Surfac 1) C2)	(B7) ce (B8)	Secondary In  Water-st  Drainage Oxidized Presenc Salt Dep X Stunted Geomory Shallow X Microtop FAC-Net	ndicators (2 or more required) lained Leaves (B9) le Patterns (B10) I Rhizospheres along Living Roots ( le of Reduced Iron (C4) losits (C5) or Stressed Plants (D1) lohic Position (D2) Aquitard (D3) lographic Relief (D4)
Depth (inches):	rs of saturat	Dient)  Inundation Visib  X Sparsely Vegeta  Marl Deposits (E  Hydrogen Sulfid  Dry-Season Wa  Other (Explain in	le on Aeria ited Conca 315) e Odor (Cr ter Table ( n Remarks ches): ches): ches):	al Imagery ave Surfact 1) C2)	(B7) se (B8)  Wetl	Secondary Ir  Water-st Drainage Oxidized Presenc Salt Dep X Stunted Geomory Shallow X Microtop FAC-Net	ndicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots ( e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) pographic Relief (D4) utral Test (D5)
Type:	rs of saturat	Dient)  Inundation Visib  X Sparsely Vegeta  Marl Deposits (E  Hydrogen Sulfid  Dry-Season Wa  Other (Explain in	le on Aeria ited Conca 315) e Odor (Cr ter Table ( n Remarks ches): ches): ches):	al Imagery ave Surfact 1) C2)	(B7) se (B8)  Wetl	Secondary Ir  Water-st Drainage Oxidized Presenc Salt Dep X Stunted Geomory Shallow X Microtop FAC-Net	ndicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots ( e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) pographic Relief (D4) utral Test (D5)
Type:	rs of saturat  rs: dicator is suffice  Yes X Yes X Yes X Man gauge, mo	Dient)  Inundation Visib  X Sparsely Vegeta  Marl Deposits (E  Hydrogen Sulfid  Dry-Season Wa  Other (Explain in	le on Aeria sted Conca 315) e Odor (C' ter Table ( n Remarks ches): ches): ches): photos, pr	al Imagery ave Surfact 1) C2)	(B7) se (B8)  Wetl	Secondary Ir  Water-st Drainage Oxidized Presenc Salt Dep X Stunted Geomory Shallow X Microtop FAC-Net	ndicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots ( e of Reduced Iron (C4) posits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) pographic Relief (D4) utral Test (D5)

#### WETLAND DETERMINATION DATA FORM - Alaska Region

Project/Site:	Wasilla WWTP	E	Borough/Cit	y:	Wasilla	Sampling Date:	09/30/14
Applicant/Owner:		City of \	Nasilla			Sampling Point:	30 TP
Investigator(s):	CDP, SL	t	andform (h	nillside, terri	ace, hummocks, etc.):	flat	
Local relief (concave, convex, r	none):none	8	Slope (%):	0%	es.		
Subregion: Anchorag	ge/Matsu Lat: _	(	61.57030	3 Lon	g:149.383607	Datum: _	WGS84
Soil Map Unit Name:	Kalambach silt loam, slo	ping and	moderat	ely steep	NWI classific	cation: Upla	and
Are climatic / hydrologic conditi	ons on the site typical for this t	ime of yea	r? Yes	No	x (If no, explain in R	temarks.)	
Are Vegetation, Soil	, or Hydrology sig	nificantly o	disturbed?	Are "	Normal Circumstances" p	oresent? Yes	x No
Are Vegetation, Soil	, or Hydrology nat	urally prob	olematic?	(If ne	eded, explain any answe	rs in Remarks.)	
SUMMARY OF FINDING	S - Attach site map sho	wing sai	mpling po	oint locati	ons, transects, impo	rtant features	etc.
Hindresh die Masstalies Deser					02 02 02		
Hydrophytic Vegetation Prese Hydric Soil Present?	ent? Yes No Yes No		- TOTAL TOTA	e Sampled		5538 V	
Wetland Hydrology Present?			with	in a Wetlar	id? Yes	No X	<del></del>
Remarks: Anchorag	ge received 1.02 in. of rain		verage du	iring the n	nonth of September.	Open, previous	sly
	l area with regrowth.						
VEGETATION – Use sci	233		3				
Tree Stratum			Dominant Species?		Dominance Test work		
	etula neoalaskana		Yes	FACU	Number of Dominant S That Are OBL, FACW,		(A)
2					Total Number of Domin	ant	P.O. Market
3					Species Across All Stra		(B)
4			-		Percent of Dominant St	pecies	
	Total Cover:			_	That Are OBL, FACW,		(A/B)
Sapling/Shrub Stratum	50% of total cover:12.	20% of	f total cover	r:5	Prevalence Index wor	ksheet:	
1. alninc	Alnus incana	T	No	FAC	Total % Cover of:	Multip	ly by:
2.					OBL species 0	x 1 =0	
3					FACW species 0	x 2 =0	)
100					FAC species 0	x 3 =0	
5					FACU species 225	x 4 =90	00
6					UPL species 0	x 5 = 0	10
	Total Cover:			Λ	Column Totals: 225	(A) 90 4.0	(0)
Herb Stratum	50% of total cover:	_ 20% of	total cover	:	Prevalence Index	( = B/A =	
chaang Cha	merion angustifolium	60	Yes	FACU	Hydrophytic Vegetation	on Indicators:	
Z-	chillea millefolium	70	Yes	FACU	No Dominance Test is	>50%	
0.	Phleum pratense	60	Yes	FACU	No Prevalence Index i	s ≤3.0	
4. broine	Bromus inermis	T	No	UPL	Morphological Ada		
5. taroff Ta	araxacum officinale	10	No	FACU	[전기: 10 M (10 M (10 M) ) [10 M (10 M) [10 M) [10 M) [10 M)	s or on a separate	
100000				-	Problematic Hydro		0001-000-0000
33.0					1 Indicators of hydric so be present unless distu		
					2	***************************************	
			-	-			
10	Total Cover:	200	OK OK				
	50% of total cover: 100			- 40	341 - 955 - 1941 1944		
Plot size (radius, or length x w	width) 60 foot diameter	7.5		- SO	Hydrophytic Vegetation		
	es Total Cove			- 198		s No_	_x
Remarks:	ry on fringe of lot, increas	ed plot s	ize to incl	ude both	disturbed forest and	field. Grass spe	cies

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planted, assume area seeded after previous development.

SOIL Sampling Point: 30 TP

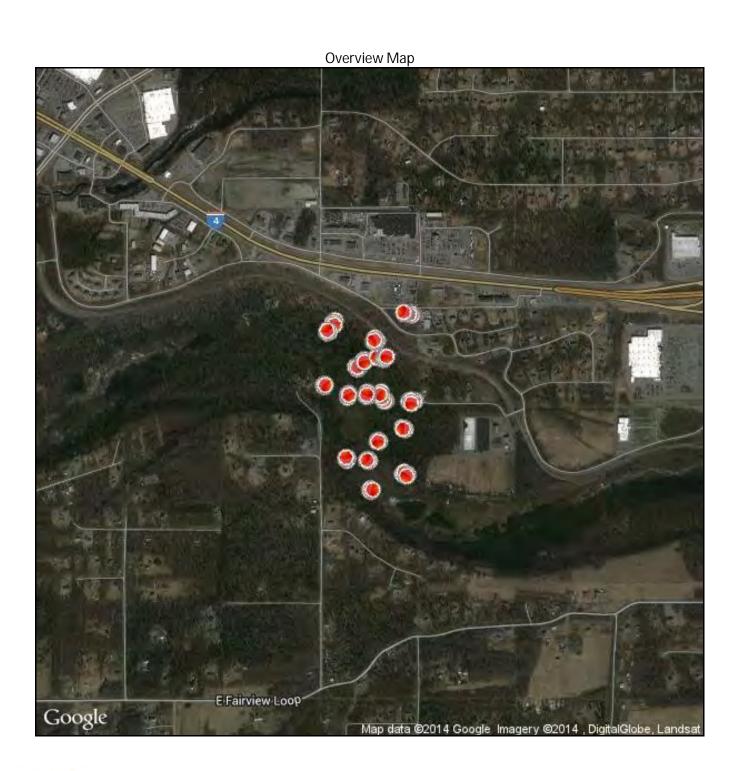
Depth Mat		epth needed to document t	he indicator	or comm	n the absence	of indicators.)
7.274.5.124.0.124.0.125	trix	Redox Feat			4—000.0 VOV.00.000	_
(inches) Color (mois		Color (moist) %	5 Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-20 Organic	s/Mineral	¥ ( <del></del>		S	= =====================================	Mixed organics and mineral
	- 10			<u></u>		
	-33	-:				
				15 25		
	=Depletion, R	M=Reduced Matrix, CS=Cov			rains. <sup>2</sup> Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:		Indicators for Proble	remove events	Solls":	A11	- Ol 1.W69 1.U 5V B- 1.1-
Histosol or Histel (A1)		Alaska Color Cha			1000	a Gleyed Without Hue 5Y or Redder
Histic Epipedon (A2)		Alaska Alpine Sw				erlying Layer
Hydrogen Sulfide (A4)	2)	Alaska Redox Wit	n 2.5 Y Hue		Other	(Explain in Remarks)
Thick Dark Surface (A1	2)	30ma indicator of budu			المالية	
Alaska Gleyed (A13)		15A	727 S		55 SES	tor of wetland hydrology,
Alaska Redox (A14) Alaska Gleyed Pores (A	<b>^15</b> \	<sup>4</sup> Give details of color of			st be present ui	nless disturbed or problematic.
VII. (80000740-0001) 1000000-0-000000 1000000 10000000000		Give details of color t	mange in Rei	narks.		
Restrictive Layer (if prese	nt):					
Type:					Unidate Call	December Van Na X
Depth (inches): Remarks:					Hydric Soil	Present? Yes No _X
	·		iipic iocatio	n. Grave	i (old fill) at i	pottom of test pit.
VDBOLOGV				n. Grave	I (OIG TIII) at I	outtom of test pit.
YDROLOGY	, toro:			n. Grave		
Wetland Hydrology Indica				n. Grave	Secondary In	dicators (2 or more required)
Wetland Hydrology Indica Primary Indicators (any one		ufficient)			Secondary In	idicators (2 or more required) ained Leaves (B9)
Wetland Hydrology Indica Primary Indicators (any one Surface Water (A1)		ifficient) Inundation Visible on A	Aerial Imagery	(B7)	Secondary In Water-st Drainage	ndicators (2 or more required) ained Leaves (B9) e Patterns (B10)
Wetland Hydrology Indica Primary Indicators (any one Surface Water (A1) High Water Table (A2)		ufficient) Inundation Visible on A Sparsely Vegetated Co	Aerial Imagery	(B7)	Secondary In  Water-st  Drainage Oxidized	ndicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots (C:
Wetland Hydrology Indica Primary Indicators (any one Surface Water (A1) High Water Table (A2) Saturation (A3)		ufficient) Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15)	Aerial Imagery oncave Surfac	(B7)	Secondary In  Water-st  Drainage  Oxidized  Presence	idicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots (C3 e of Reduced Iron (C4)
Wetland Hydrology Indica Primary Indicators (any one Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	indicator is su	ufficient) Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15) Hydrogen Sulfide Odo	Aerial Imagery oncave Surfac	(B7)	Secondary In  Water-st  Drainage  Oxidized  Presence  Salt Dep	idicators (2 or more required) ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) osits (C5)
Wetland Hydrology Indica Primary Indicators (any one Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2	indicator is su	ufficient) Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15) Hydrogen Sulfide Odo Dry-Season Water Tak	Aerial Imagery oncave Surfac r (C1) ole (C2)	(B7)	Secondary In  Water-st  Drainage Oxidized Presence Salt Dep Stunted	idicators (2 or more required) ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C: of Reduced Iron (C4) osits (C5) or Stressed Plants (D1)
Wetland Hydrology Indica Primary Indicators (any one Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	indicator is su	ufficient) Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15) Hydrogen Sulfide Odo	Aerial Imagery oncave Surfac r (C1) ole (C2)	(B7)	Secondary In  Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory	idicators (2 or more required) ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) ohic Position (D2)
Wetland Hydrology Indica Primary Indicators (any one Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	indicator is su	ufficient) Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15) Hydrogen Sulfide Odo Dry-Season Water Tak	Aerial Imagery oncave Surfac r (C1) ole (C2)	(B7)	Secondary In  Water-st  Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow	idicators (2 or more required) ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) ohic Position (D2) Aquitard (D3)
Wetland Hydrology Indica Primary Indicators (any one 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)	indicator is su	ufficient) Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15) Hydrogen Sulfide Odo Dry-Season Water Tak	Aerial Imagery oncave Surfac r (C1) ole (C2)	(B7)	Secondary In  Water-st  Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow Microtop	adicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots (C3 e of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) ographic Relief (D4)
Wetland Hydrology Indica  Primary Indicators (any one  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)	indicator is su	ufficient) Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15) Hydrogen Sulfide Odo Dry-Season Water Tak	Aerial Imagery oncave Surfac r (C1) ole (C2)	(B7)	Secondary In  Water-st  Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow Microtop	idicators (2 or more required) ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3 of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) ohic Position (D2) Aquitard (D3)
Wetland Hydrology Indica  Primary Indicators (any one  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)  Field Observations:	indicator is su	ufficient)  Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15) Hydrogen Sulfide Odo Dry-Season Water Tat Other (Explain in Rem	Aerial Imagery oncave Surfac r (C1) ole (C2) arks)	r (B7) ce (B8)	Secondary In  Water-st  Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow Microtop	adicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots (C3 e of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) ographic Relief (D4)
Wetland Hydrology Indica Primary Indicators (any one 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) Field Observations: Surface Water Present?	)  (6)  Yes	ufficient)  Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15) Hydrogen Sulfide Odo Dry-Season Water Tat Other (Explain in Rem	Aerial Imagery oncave Surfac r (C1) ole (C2) arks)	(B7) ce (B8)	Secondary In  Water-st  Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow Microtop	adicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots (C3 e of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) ographic Relief (D4)
Wetland Hydrology Indica Primary Indicators (any one 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) Field Observations: Surface Water Present?	)  Yes Yes	Ifficient)  Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15) Hydrogen Sulfide Odo Dry-Season Water Tat Other (Explain in Rem	Aerial Imagery oncave Surfac r (C1) ole (C2) arks)	r (B7) ce (B8)	Secondary In  Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow Microtop FAC-Net	ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) ohic Position (D2) Aquitard (D3) ographic Relief (D4) utral Test (D5)
Wetland Hydrology Indica Primary Indicators (any one 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) Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	)  Yes Yes Yes	ifficient)  Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15) Hydrogen Sulfide Odo Dry-Season Water Tat Other (Explain in Rem  No X Depth (inches): No X Depth (inches):	Aerial Imagery oncave Surfac r (C1) ble (C2) arks)	(B7) ce (B8)	Secondary In  Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow Microtop FAC-Net	adicators (2 or more required) ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots (C3 e of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) phic Position (D2) Aquitard (D3) ographic Relief (D4)
Wetland Hydrology Indica Primary Indicators (any one 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) Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	)  Yes Yes Yes	Ifficient)  Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15) Hydrogen Sulfide Odo Dry-Season Water Tat Other (Explain in Rem	Aerial Imagery oncave Surfac r (C1) ble (C2) arks)	(B7) ce (B8)	Secondary In  Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Shallow Microtop FAC-Net	ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) ohic Position (D2) Aquitard (D3) ographic Relief (D4) utral Test (D5)
Primary Indicators (any one 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) Field Observations: Surface Water Present? Water Table Present? (includes capillary fringe) Describe Recorded Data (st	Yes Yes Yes Yes	Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15) Hydrogen Sulfide Odo Dry-Season Water Tat Other (Explain in Rem No X Depth (inches):	Aerial Imagery oncave Surfact r (C1) ole (C2) arks)	(B7) ce (B8)  Wetl	Secondary In  Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Hicrotop FAC-Net	ained Leaves (B9) Patterns (B10) Rhizospheres along Living Roots (C3) Of Reduced Iron (C4) Osits (C5) Or Stressed Plants (D1) Ohic Position (D2) Aquitard (D3) Ographic Relief (D4) Utral Test (D5)  Ty Present? Yes No _X
Primary Indicators (any one 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) Field Observations: Surface Water Present? Water Table Present? (includes capillary fringe) Describe Recorded Data (st	yes Yes Yes Yes	Inundation Visible on A Sparsely Vegetated Co Marl Deposits (B15) Hydrogen Sulfide Odo Dry-Season Water Tat Other (Explain in Rem No X Depth (inches):	Aerial Imagery oncave Surfact r (C1) ole (C2) arks)	(B7) ce (B8)  Wetl	Secondary In  Water-st Drainage Oxidized Presence Salt Dep Stunted Geomory Hicrotop FAC-Net	ained Leaves (B9) e Patterns (B10) I Rhizospheres along Living Roots (C3) e of Reduced Iron (C4) osits (C5) or Stressed Plants (D1) ohic Position (D2) Aquitard (D3) ographic Relief (D4) utral Test (D5)

#### WETLAND DELINEATION REPORT CITY OF WASILLA PARCEL LOT 1B

Photo Log December 22, 2015

### Appendix C Photo Log







Attributes			
Title	5 TP		
Subject	Open Canopy		
Subject	Forested Upland		
Date Time Stamp	9/30/2014 1:45:37		
Date Time Stamp	PM		
Latitude	N 61° 34' 01.48"		
Longitude	W 149° 22' 58.07"		
Elevation			
Photo Direction	334° NNW		



Description: Bottom of embankment from end of Jude Drive, adjacent to wetland. Upland forest, most vegetation dead or dying.

Attributes			
Title	5 TP		
Subject	Open Canopy Forested Upland		
Date Time Stamp	9/30/2014 1:46:00 PM		
Latitude	N 61° 34' 01.48"		
Longitude	W 149° 22' 58.07"		
Elevation			
Photo Direction	50° NE		



Description: Bottom of embankment from end of Jude Drive, adjacent to wetland. Upland forest, most vegetation dead or dying.

Attributes				
Title	5 TP			
Subject	Open Canopy			
Subject	Forested Upland			
Data Timo Stamp	9/30/2014 1:46:09			
Date Time Stamp	PM			
Latitude	N 61° 34' 01.48"			
Longitude	W 149° 22' 58.07"			
Elevation				
Photo Direction	164° SSE			



Description: Bottom of embankment from end of Jude Drive, adjacent to wetland. Upland forest, most vegetation dead or dying.

Attributes			
Title	5 TP		
Subject	Open Canopy		
Subject	Forested Upland		
Date Time Stamp	9/30/2014 1:46:19		
Date Time Stamp	PM		
Latitude	N 61° 34' 01.48"		
Longitude	W 149° 22' 58.07"		
Elevation			
Photo Direction	277° W		



Description: Bottom of embankment from end of Jude Drive, edge of wetland. Upland forest, most vegetation dead or dying.

Attributes				
Title	5 TP			
Subject	Open Canopy			
Subject	Forested Upland			
Date Time Stamp	9/30/2014 1:46:31			
Date Time Stamp	PM			
Latitude	N 61° 34' 01.48"			
Longitude	W 149° 22' 58.07"			
Elevation				
Photo Direction	340° NNW			



Description: Bottom of embankment from end of Jude Drive, adjacent to wetland. Upland forest, most vegetation dead or dying.

Attributes			
Title	6 TP		
Subject	Forested Wetland		
Subject	(PF01/4B)		
Data Tima Stamp	9/30/2014 1:59:08		
Date Time Stamp	PM		
Latitude	N 61° 34' 01.41"		
Longitude	W 149° 22' 59.20"		
Elevation	247 ft		
Photo Direction	128° SE		



Description: Hummocky, water table at surface, stressed birch, spagnum moss, Carex laeviculmis, jacobs ladder, tuffed on drier portion of hummocks.

Attributes			
Title	6 TP		
Subject	Forested Wetland		
Jubject	(PF01/4B)		
Date Time Stamp	9/30/2014 1:59:15		
	PM		
Latitude	N 61° 34' 01.41"		
Longitude	W 149° 22' 59.20"		
Elevation	247 ft		
Photo Direction	114° ESE		



Description: Hummocky, water table at surface, stressed birch, spagnum moss, Carex laeviculmis, jacobs ladder, tuffed on drier portion of hummocks.

Attributes			
Title	6 TP		
Subject	Forested Wetland (PF01/4B)		
Date Time Stamp	9/30/2014 1:59:25 PM		
Latitude	N 61° 34' 01.41"		
Longitude	W 149° 22' 59.20"		
Elevation	247 ft		
Photo Direction	254° WSW		



Description: Hummocky, water table at surface, stressed birch, spagnum moss, Carex laeviculmis, jacobs ladder, tuffed on drier portion of hummocks.

Attributes			
Title	6 TP		
Subject	Forested Wetland		
Subject	(PF01/4B)		
Data Timo Stamp	9/30/2014 1:59:32		
Date Time Stamp	PM		
Latitude	N 61° 34' 01.41"		
Longitude	W 149° 22' 59.20"		
Elevation	247 ft		
Photo Direction	311° NW		



Description: Hummocky, water table at surface, stressed birch, spagnum moss, Carex laeviculmis, jacobs ladder, tuffed on drier portion of hummocks.

Attributes	
Title	6 TP
Subject	Forested Wetland
	(PF01/4B) 9/30/2014 2:00:06
Date Time Stamp	PM
Latitude	N 61° 34' 01.31"
Longitude	W 149° 22' 59.22"
Elevation	251 ft
Photo Direction	16° NNE



Description: Hummocky, water table at surface, stressed birch, spagnum moss, Carex laeviculmis, jacobs ladder, tuffed on drier portion of hummocks.

Attributes	
Title	7 PP
Subject	Forested Wetland (PF01/4C)
Date Time Stamp	9/30/2014 2:19:14 PM
Latitude	N 61° 34' 01.69"
Longitude	W 149° 23' 06.14"
Elevation	232 ft
Photo Direction	331° NNW



Description: Southeast end of pond, open water surrounded by very wet hummocks of sedge and dead alder.. Standing water between hummocks, hydro sulfide odor.

Attributes	
Title	7 PP
Subject	Forested Wetland (PF01/4C)
Date Time Stamp	9/30/2014 2:19:19 PM
Latitude	N 61° 34' 01.69"
Longitude	W 149° 23' 06.14"
Elevation	232 ft
Photo Direction	14° NNE



Attributes	
Title	7 PP
Subject	Forested Wetland (PF01/4C)
Date Time Stamp	9/30/2014 2:19:35 PM
Latitude	N 61° 34' 01.69"
Longitude	W 149° 23' 06.14"
Elevation	232 ft
Photo Direction	102° ESE



Description: Area adjacent to pond. Standing water between very wet hummocks of sedge and dead alder, Calamagrostis canadensis, trace of Equisetum fluviatile, birch sapling on hummocks, Carex aquatilis, Carex utriculata, Carex lasiocarpa, Salix sp, Epilobium ciliatum, hydro sulfide odor.

Attributes	
Title	7 PP
Subject	Forested Wetland (PF01/4C)
Date Time Stamp	9/30/2014 2:19:48 PM
Latitude	N 61° 34' 01.69"
Longitude	W 149° 23' 06.14"
Elevation	232 ft
Photo Direction	225° SW

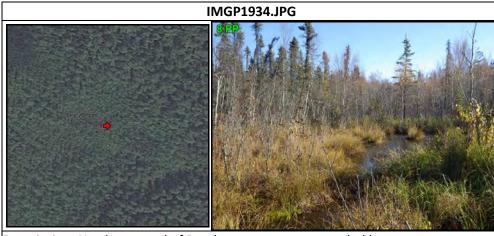


Description: Area adjacent to pond. Standing water between very wet hummocks of sedge and dead alder, Calamagrostis canadensis, trace of Equisetum fluviatile, birch sapling on hummocks, Carex aquatilis, Carex utriculata, Carex lasiocarpa, Salix sp, Epilobium ciliatum, hydro sulfide odor.

Attributes	
Title	7 PP
Subject	Forested Wetland (PF01/4C)
Date Time Stamp	9/30/2014 2:19:55 PM
Latitude	N 61° 34' 01.69"
Longitude	W 149° 23' 06.14"
Elevation	232 ft
Photo Direction	1° N



Attributes	
Title	8 PP
Subject	Forested Wetland (PF01/4C)
Date Time Stamp	9/30/2014 2:34:32 PM
Latitude	N 61° 34' 02.93"
Longitude	W 149° 23' 06.80"
Elevation	240 ft
Photo Direction	89° E



Description: Northwest end of Pond, open water surrounded by very wet hummocks of sedge and dead alder. Standing water between hummocks, hydro sulfide odor.

Attributes	
Title	8 PP
Cultinat	Forested Wetland
Subject	(PF01/4C)
Date Time Stamp	9/30/2014 2:34:37
	PM
Latitude	N 61° 34' 02.18"
Longitude	W 149° 23' 07.13"
Elevation	247 ft
Photo Direction	201° SSW

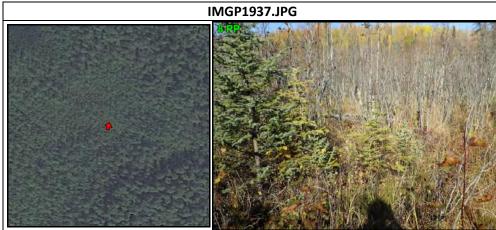


Description: Area adjacent to pond. Standing water between very wet hummocks of sedge and dead alder, Calamagrostis canadensis, trace of Equisetum fluviatile, birch sapling on hummocks, Carex aquatilis, Carex utriculata, Carex lasiocarpa, Salix sp, Epilobium ciliatum, hydro sulfide odor.

Attributes	
Title	8 PP
Subject	Forested Wetland (PF01/4C)
Date Time Stamp	9/30/2014 2:34:41 PM
Latitude	N 61° 34' 02.18"
Longitude	W 149° 23' 07.13"
Elevation	247 ft
Photo Direction	265° W



Attributes	
Title	8 PP
Subject	Forested Wetland (PF01/4C)
Date Time Stamp	9/30/2014 2:34:47 PM
Latitude	N 61° 34' 02.18"
Longitude	W 149° 23' 07.13"
Elevation	247 ft
Photo Direction	17° NNE



Description: Area adjacent to pond. Standing water between very wet hummocks of sedge and dead alder, Calamagrostis canadensis, trace of Equisetum fluviatile, birch sapling on hummocks, Carex aquatilis, Carex utriculata, Carex lasiocarpa, Salix sp, Epilobium ciliatum, hydro sulfide odor.

Attributes	
Title	8 PP
Subject	Forested Wetland (PF01/4C)
Date Time Stamp	9/30/2014 2:37:37 PM
Latitude	N 61° 34' 02.30"
Longitude	W 149° 23' 07.78"
Elevation	243 ft
Photo Direction	319° NW



Attributes	
Title	9 PP
Subject	Forested Wetland (PF01/4C)
Date Time Stamp	9/30/2014 2:51:28 PM
Latitude	N 61° 34' 02.68"
Longitude	W 149° 23' 11.65"
Elevation	282 ft
Photo Direction	329° NNW



Description: Open water, hummocky, floating mat with dead alder, lots of saturated moss.

Attributes		
Title	9 PP	
Subject	Forested Wetland (PF01/4C)	
Date Time Stamp	9/30/2014 2:51:45 PM	
Latitude	N 61° 34' 02.68"	
Longitude	W 149° 23' 11.65"	
Elevation	282 ft	
Photo Direction	305° NW	



Description: Open water, hummocky, floating mat with dead alder, lots of saturated moss.

Attributes		
Title	9 PP	
Subject	Forested Wetland (PF01/4C)	
Date Time Stamp	9/30/2014 2:51:52 PM	
Latitude	N 61° 34' 02.24"	
Longitude	W 149° 23' 11.54"	
Elevation	198 ft	
Photo Direction	12° NNE	



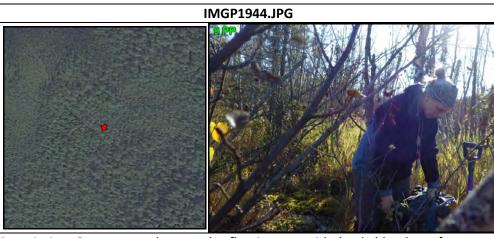
Description: Open water, hummocky, floating mat with dead alder, lots of saturated moss.

Attributes		
Title	9 PP	
Subject	Forested Wetland (PF01/4C)	
Date Time Stamp	9/30/2014 2:52:02 PM	
Latitude	N 61° 34' 02.24"	
Longitude	W 149° 23' 11.54"	
Elevation	198 ft	
Photo Direction	95° E	



Description: Open water, hummocky, floating mat with dead alder, lots of saturated moss.

Attributes		
Title	9 PP	
Subject	Forested Wetland (PF01/4C)	
Date Time Stamp	9/30/2014 2:52:17 PM	
Latitude	N 61° 34' 02.24"	
Longitude	W 149° 23' 11.54"	
Elevation	198 ft	
Photo Direction	212° SSW	



Description: Open water, hummocky, floating mat with dead alder, lots of saturated moss.

Attributes		
Title	10 PP	
Subject	Scrub-Shrub Wetland (PSS1/4C)	
Date Time Stamp	9/30/2014 3:11:30 PM	
Latitude	N 61° 34' 01.97"	
Longitude	W 149° 23' 17.03"	
Elevation	168 ft	
Photo Direction	338° NNW	



Description: Flat hummocky ground with standing water between hummocks.

Attributes			
Title	10 PP		
Subject	Scrub-Shrub Wetland (PSS1/4C)		
Date Time Stamp	9/30/2014 3:11:37 PM		
Latitude	N 61° 34' 02.40"		
Longitude	W 149° 23' 16.72"		
Elevation	186 ft		
Photo Direction	69° FNF		



Description: Flat hummocky ground with standing water between hummocks.

Attributes		
Title	10 PP	
Subject	Scrub-Shrub Wetland (PSS1/4C)	
Date Time Stamp	9/30/2014 3:11:48 PM	
Latitude	N 61° 34' 02.40"	
Longitude	W 149° 23' 16.72"	
Elevation	186 ft	
Photo Direction	253° WSW	



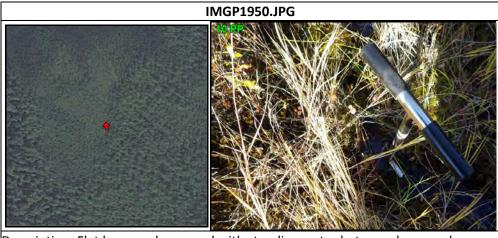
		la a a a a l			between hummocks.
	ieccrintion, Fiat	niimmacky	graiina with	ctanding water	netween niimmocks
$\boldsymbol{-}$	CSCHDUIOH, HAL	HUHHHOCKY	giouna with	Juliums Water	DCLWCCII HUIHHIOCKS.

Attributes		
Title	10 PP	
Subject	Scrub-Shrub Wetland (PSS1/4C)	
Date Time Stamp	9/30/2014 3:11:56 PM	
Latitude	N 61° 34' 02.40"	
Longitude	W 149° 23' 16.72"	
Elevation	186 ft	
Photo Direction	312° NW	



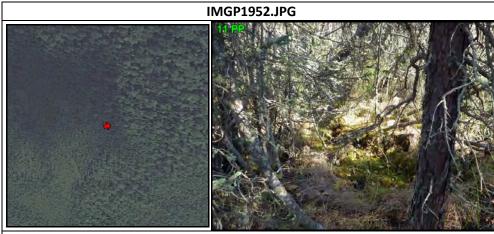
Description: Flat hummocky ground with standing water between hummocks.

Attributes		
Title	10 PP	
Subject	Scrub-Shrub Wetland (PSS1/4C)	
Date Time Stamp	9/30/2014 3:12:02 PM	
Latitude	N 61° 34' 02.40"	
Longitude	W 149° 23' 16.72"	
Elevation	186 ft	
Photo Direction	348° NNW	



Description: Flat hummocky ground with standing water between hummocks.

Attributes		
Title	11 PP	
Subject	Forested Wetland (PF01/4B)	
Date Time Stamp	9/30/2014 3:28:32 PM	
Latitude	N 61° 34' 05.96"	
Longitude	W 149° 23' 13.80"	
Elevation	121 ft	
Photo Direction	75° ENE	



Description: Edge of PSS and PFO, still wet with water table 1 inch below surface, thick saturated organics.

Attributes		
Title	11 PP	
Subject	Forested Wetland	
	(PF01/4B)	
Date Time Stamp	9/30/2014 3:28:38	
	PM	
Latitude	N 61° 34' 05.96"	
Longitude	W 149° 23' 13.80"	
Elevation	121 ft	
Photo Direction	339° NNW	



Description: Edge of PSS and PFO, still wet with water table 1 inch below surface, thick saturated organics.

Attributes			
Title	11 PP		
Subject	Forested Wetland (PF01/4B)		
Date Time Stamp	9/30/2014 3:28:42 PM		
Latitude	N 61° 34' 06.01"		
Longitude	W 149° 23' 14.29"		
Elevation	124 ft		
Photo Direction	275° W		



Description: Edge of PSS and PFO, still wet with water table 1 inch below surface, thick saturated organics.

Attributes		
Title	11 PP	
Subject	Forested Wetland (PF01/4B)	
Date Time Stamp	9/30/2014 3:28:53 PM	
Latitude	N 61° 34' 06.01"	
Longitude	W 149° 23' 14.29"	
Elevation	124 ft	
Photo Direction	190° S	



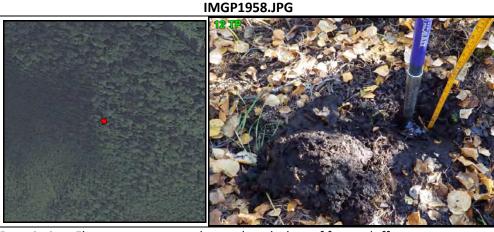
Description: Edge of PSS and PFO, still wet with water table 1 inch below surface, thick saturated organics.

Attributes		
Title	11 PP	
Subject	Forested Wetland	
	(PF01/4B)	
Date Time Stamp	9/30/2014 3:29:13	
	PM	
Latitude	N 61° 34' 06.01"	
Longitude	W 149° 23' 14.29"	
Elevation	124 ft	
Photo Direction	241° WSW	



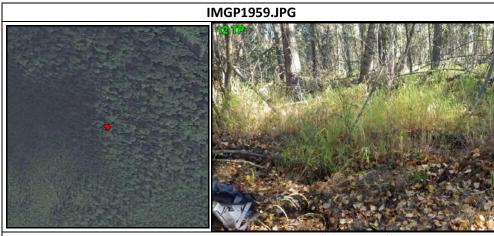
Description: Edge of PSS and PFO, still wet with water table 1 inch below surface, thick saturated organics.

Attributes				
Title	12 TP			
Subject	Forested Wetland (PF01/4B)			
Date Time Stamp	9/30/2014 3:46:02 PM			
Latitude	N 61° 34' 06.83"			
Longitude	W 149° 23' 12.16"			
Elevation	164 ft			
Photo Direction	119° ESE			



Description: Flat, trees on somewhat pedestals, lots of forest duff, some hummocks, high water table.

Attributes					
Title	12 TP				
Subject	Forested Wetland				
	(PF01/4B)				
Date Time Stamp	9/30/2014 3:46:07 PM				
Latitude	N 61° 34' 06.83"				
Longitude	W 149° 23' 12.16"				
Elevation	164 ft				
Photo Direction	115° ESE				



Description: Flat, trees on somewhat pedestals, lots of forest duff, some hummocks, high water table.

Attributes					
Title	12 TP				
Subject	Forested Wetland (PF01/4B)				
Date Time Stamp	9/30/2014 3:46:14 PM				
Latitude	N 61° 34' 06.83"				
Longitude	W 149° 23' 12.16"				
Elevation	164 ft				
Photo Direction	224° SW				



Description: Flat, trees on somewhat pedestals, lots of forest duff, some hummocks, high water table.

Attributes					
Title	12 TP				
Subject	Forested Wetland (PF01/4B)				
Date Time Stamp	9/30/2014 3:46:21 PM				
Latitude	N 61° 34' 06.83"				
Longitude	W 149° 23' 12.16"				
Elevation	164 ft				
Photo Direction	282° WNW				



Description: Flat, trees on somewhat pedestals, lots of forest duff, some hummocks, high water table.

Attributes					
Title	12 TP				
Subject	Forested Wetland (PF01/4B)				
Date Time Stamp	9/30/2014 3:46:30 PM				
Latitude	N 61° 34' 06.83"				
Longitude	W 149° 23' 12.16"				
Elevation	164 ft				
Photo Direction	2° N				



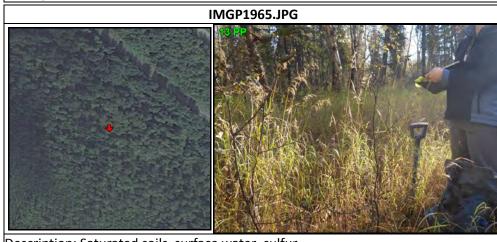
Description: Flat, trees on somewhat pedestals, lots of forest duff, some hummocks, high water table.

Attributes		
Title	13 PP	
Subject	Forested Wetland (PF01/4B)	
Date Time Stamp	9/30/2014 3:59:50 PM	
Latitude	N 61° 34' 07.49"	
Longitude	W 149° 23' 08.14"	
Elevation	108 ft	
Photo Direction	201° SSW	



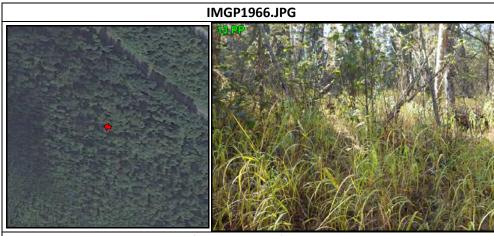
Description: Saturated soils, surface water, sulfur

Attributes		
Title	13 PP	
Subject	Forested Wetland (PF01/4B)	
Date Time Stamp	9/30/2014 3:59:59 PM	
Latitude	N 61° 34' 07.49"	
Longitude	W 149° 23' 08.14"	
Elevation	108 ft	
Photo Direction	173° S	



Description: Saturated soils, surface water, sulfur

Attributes					
Title	13 PP				
Subject	Forested Wetland (PF01/4B)				
Date Time Stamp	9/30/2014 4:00:04 PM				
Latitude	N 61° 34' 07.49"				
Longitude	W 149° 23' 08.14"				
Elevation	108 ft				
Photo Direction	286° WNW				



Descri	otion:	Saturated	soils,	surface	water,	sulfur

Attributes	
Title	13 PP
Cultinat	Forested Wetland
Subject	(PF01/4B)
Date Time Stamp	9/30/2014 4:00:13
	PM
Latitude	N 61° 34' 07.49"
Longitude	W 149° 23' 08.14"
Elevation	108 ft
Photo Direction	15° NNE



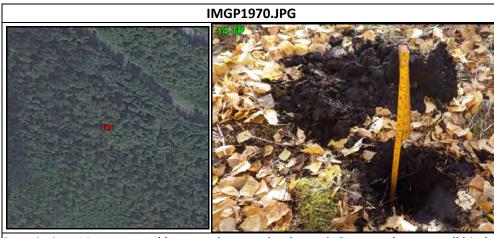
Description: Saturated soils, surface water, sulfur

Attributes	
Title	13 PP
Subject	Forested Wetland
	(PF01/4B)
Date Time Stamp	9/30/2014 4:00:20
	PM
Latitude	N 61° 34' 07.49"
Longitude	W 149° 23' 08.14"
Elevation	108 ft
Photo Direction	79° E



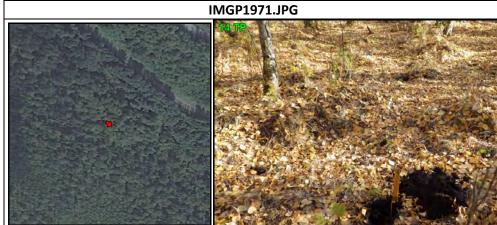
Description: Saturated soils, surface water, sulfur

Attributes	
Title	14 TP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	9/30/2014 4:15:53
	PM
Latitude	N 61° 34' 07.13"
Longitude	W 149° 23' 06.26"
Elevation	191 ft
Photo Direction	230° SW



Description: Moss covered hummocks over dead wood. Open understory, all birch canopy (no spruce).

Attributes	
Title	14 TP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	9/30/2014 4:16:02
	PM
Latitude	N 61° 34' 07.13"
Longitude	W 149° 23' 06.26"
Elevation	191 ft
Photo Direction	123° ESE



Description: Moss covered hummocks over dead wood. Open understory, all birch canopy (no spruce).

Attributes	
Title	14 TP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	9/30/2014 4:16:12
	PM
Latitude	N 61° 34' 07.13"
Longitude	W 149° 23' 06.26"
Elevation	191 ft
Photo Direction	239° WSW



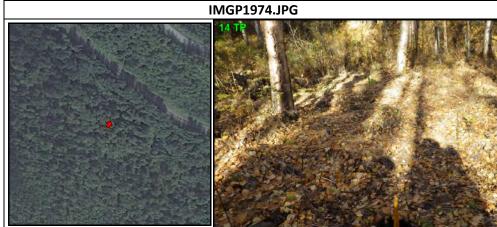
Description: Moss covered hummocks over dead wood. Open understory, all birch canopy (no spruce).

Attributes	
Title	14 TP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	9/30/2014 4:16:19
	PM
Latitude	N 61° 34' 07.13"
Longitude	W 149° 23' 06.26"
Elevation	191 ft
Photo Direction	309° NW



Description: Moss covered hummocks over dead wood. Open understory, all birch canopy (no spruce).

Attributes	
Title	14 TP
Cubiaat	Open Canopy
Subject	Forested Upland
Date Time Stamp	9/30/2014 4:16:32
	PM
Latitude	N 61° 34' 07.57"
Longitude	W 149° 23' 05.65"
Elevation	179 ft
Photo Direction	27° NNE



Description: Moss covered hummocks over dead wood. Open understory, all birch canopy (no spruce).

Attributes	
Title	18 TP
Subject	Forested Wetland
	(PFO1/4B)
Date Time Stamp	10/3/2014 10:30:16
	AM
Latitude	N 61° 33' 53.70"
Longitude	W 149° 23' 16.94"
Elevation	
Photo Direction	228° SW



Description: Edge of wetland at bottom of slope, very wet and hummocky, birch is stressed.

Attributes	
Title	18 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 10:30:27 AM
Latitude	N 61° 33' 53.70"
Longitude	W 149° 23' 16.94"
Elevation	
Photo Direction	337° NNW



Description: Edge of wetland at bottom of slope, very wet and hummocky, birch is stressed.

Attributes	
Title	18 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 10:30:41 AM
Latitude	N 61° 33' 53.70"
Longitude	W 149° 23' 16.94"
Elevation	
Photo Direction	32° NNE



Description: Edge of wetland at bottom of slope, very wet and hummocky, birch is stressed.

Attributes	
Title	18 TP
Subject	Forested Wetland
	(PFO1/4B)
Date Time Stamp	10/3/2014 10:30:52
	AM
Latitude	N 61° 33' 53.70"
Longitude	W 149° 23' 16.94"
Elevation	
Photo Direction	101° E



Description: Edge of wetland at bottom of slope, very wet and hummocky, birch is stressed.

Attributes	
Title	18 TP
Subject	Forested Wetland
	(PFO1/4B)
Date Time Stamp	10/3/2014 10:30:58
	AM
Latitude	N 61° 33' 53.70"
Longitude	W 149° 23' 16.94"
Elevation	
Photo Direction	193° SSW



Description: Edge of wetland at bottom of slope, very wet and hummocky, birch is stressed.

Attributes	
Title	19 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 10:52:56 AM
Latitude	N 61° 33' 53.69"
Longitude	W 149° 23' 11.23"
Elevation	290 ft
Photo Direction	125° SE



Description: Area in previously mapped upland, tall hummocks (3 ft), very wet in between hummocks (20%), downed birch, living birch is stressed.

Attributes	
Title	19 TP
Subject	Forested Wetland
	(PFO1/4B)
Date Time Stamp	10/3/2014 10:53:17
	AM
Latitude	N 61° 33' 53.69"
Longitude	W 149° 23' 11.23"
Elevation	290 ft
Photo Direction	42° NE



Description: Area in previously mapped upland, tall hummocks (3 ft), very wet in between hummocks (20%), downed birch, living birch is stressed.

Attributes	
Title	19 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 10:53:32 AM
Latitude	N 61° 33' 53.69"
Longitude	W 149° 23' 11.23"
Elevation	290 ft
Photo Direction	153° SSE



Description: Area in previously mapped upland, tall hummocks (3 ft), very wet in between hummocks (20%), downed birch, living birch is stressed.

Attributes	
Title	19 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 10:53:53 AM
Latitude	N 61° 33' 53.69"
Longitude	W 149° 23' 11.23"
Elevation	276 ft
Photo Direction	255° WSW



Description: Area in previously mapped upland, tall hummocks (3 ft), very wet in between hummocks (20%), downed birch, living birch is stressed.

Attributes	
Title	19 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 10:54:03 AM
Latitude	N 61° 33' 53.69"
Longitude	W 149° 23' 11.23"
Elevation	276 ft
Photo Direction	327° NNW



Description: Area in previously mapped upland, tall hummocks (3 ft), very wet in between hummocks (20%), downed birch, living birch is stressed.

Attributes	
Title	19 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 11:15:55 AM
Latitude	N 61° 33' 53.69"
Longitude	W 149° 23' 11.23"
Elevation	70 ft
Photo Direction	146° SE



Description: Area in previously mapped upland, tall hummocks (3 ft), very wet in between hummocks (20%), downed birch, living birch is stressed.

Attributes	
Title	20 PP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 11:16:30 AM
Latitude	N 61° 33' 56.15"
Longitude	W 149° 23' 07.93"
Elevation	70 ft
Photo Direction	125° SE



Description: At edge of wetland, land formation slopes up to the east, open water, hummocks, lots of dead birch, vegetation growing on hummocks

Attributes	
Title	20 PP
Subject	Forested Wetland
	(PFO1/4B)
Date Time Stamp	10/3/2014 11:16:59
	AM
Latitude	N 61° 33' 56.15"
Longitude	W 149° 23' 07.93"
Elevation	161 ft
Photo Direction	240° WSW



Description: At edge of wetland, land formation slopes up to the east, open water, hummocks, lots of dead birch, vegetation growing on hummocks

Attributes	
Title	20 PP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 11:17:06 AM
Latitude	N 61° 33' 56.15"
Longitude	W 149° 23' 07.93"
Elevation	161 ft
Photo Direction	305° NW



Description: At edge of wetland, land formation slopes up to the east, open water, hummocks, lots of dead birch, vegetation growing on hummocks

Attributes	
Title	20 PP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 11:17:21 AM
Latitude	N 61° 33' 56.15"
Longitude	W 149° 23' 07.93"
Elevation	161 ft
Photo Direction	9° N



Description: At edge of wetland, land formation slopes up to the east, open water, hummocks, lots of dead birch, vegetation growing on hummocks

Attributes	
Title	21 PP
Cultinat	Open Canopy
Subject	Forested Upland
Date Time Stamp	10/3/2014 11:31:48
	AM
Latitude	N 61° 33' 57.69"
Longitude	W 149° 23' 00.91"
Elevation	237 ft
Photo Direction	170° S



Description: Upland boundary, ground surface sloping towards wet area, large willow, possibly diamond leaf.

Attributes	
Title	21 PP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 11:31:55
	AM
Latitude	N 61° 33' 57.69"
Longitude	W 149° 23' 00.91"
Elevation	237 ft
Photo Direction	179° S



Description: Upland boundary, ground surface sloping towards wet area, large willow, possibly diamond leaf.

Attributes	
Title	21 PP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 11:32:04
	AM
Latitude	N 61° 33' 57.69"
Longitude	W 149° 23' 00.91"
Elevation	237 ft
Photo Direction	288° WNW



Description: Upland boundary, ground surface sloping towards wet area, large willow, possibly diamond leaf.

Attributes	
Title	21 PP
Cultinat	Open Canopy
Subject	Forested Upland
Date Time Stamp	10/3/2014 11:32:19
	AM
Latitude	N 61° 33' 57.69"
Longitude	W 149° 23' 00.91"
Elevation	237 ft
Photo Direction	343° NNW



Description: Upland boundary, ground surface sloping towards wet area, large willow, possibly diamond leaf.

Attributes	
Title	21 PP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 11:32:33
	AM
Latitude	N 61° 33' 57.69"
Longitude	W 149° 23' 00.91"
Elevation	237 ft
Photo Direction	105° ESE



Description: Upland boundary, ground surface sloping towards wet area, large willow, possibly diamond leaf.

Attributes	
Title	22 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 11:49:27 AM
Latitude	N 61° 33' 51.83"
Longitude	W 149° 23' 01.00"
Elevation	86 ft
Photo Direction	106° ESE



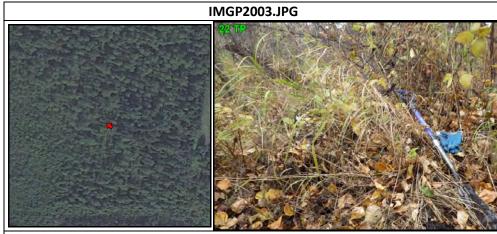
Description: Base of slope, flat, hummocks, very wet, downed birch, areas of open water in low spots.

Attributes	
Title	22 TP
Subject	Forested Wetland
	(PFO1/4B)
Date Time Stamp	10/3/2014 11:49:48
	AM
Latitude	N 61° 33' 51.83"
Longitude	W 149° 23' 01.00"
Elevation	86 ft
Photo Direction	144° SE



Description: Base of slope, flat, hummocks, very wet, downed birch, areas of open water in low spots.

Attributes	
Title	22 TP
Subject	Forested Wetland
	(PFO1/4B)
Date Time Stamp	10/3/2014 11:50:06
	AM
Latitude	N 61° 33' 51.83"
Longitude	W 149° 23' 01.00"
Elevation	86 ft
Photo Direction	307° NW



Description: Base of slope, flat, hummocks, very wet, downed birch, areas of open water in low spots.

Attributes	
Title	22 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 11:50:19 AM
Latitude	N 61° 33' 51.67"
Longitude	W 149° 22' 59.89"
Elevation	115 ft
Photo Direction	347° NNW



Description: Base of slope, flat, hummocks, very wet, downed birch, areas of open water in low spots.

Attributes	
Title	22 TP
Cultinat	Forested Wetland
Subject	(PFO1/4B)
Date Time Stamp	10/3/2014 11:50:29
	AM
Latitude	N 61° 33' 51.67"
Longitude	W 149° 22' 59.89"
Elevation	115 ft
Photo Direction	58° ENE



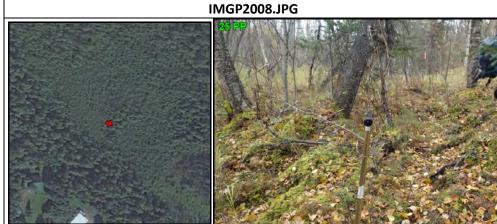
Description: Base of slope, flat, hummocks, very wet, downed birch, areas of open water in low spots.

Attributes	
Title	25 PP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 12:56:49
	PM
Latitude	N 61° 33' 49.64"
Longitude	W 149° 23' 10.04"
Elevation	421 ft
Photo Direction	28° NNE



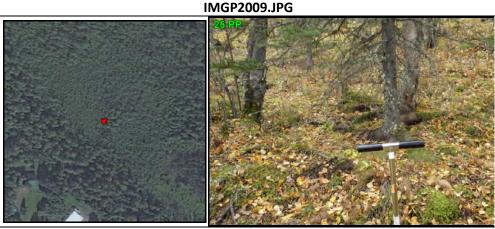
Description: Thick moss and hummocks. Upland boundary on slope leading to wetlands which are directly at the toe of slope. Steep slope west of point

Attributes	
Title	25 PP
Cultinat	Open Canopy
Subject	Forested Upland
Date Time Stamp	10/3/2014 12:56:57
	PM
Latitude	N 61° 33' 49.64"
Longitude	W 149° 23' 10.04"
Elevation	421 ft
Photo Direction	115° ESE



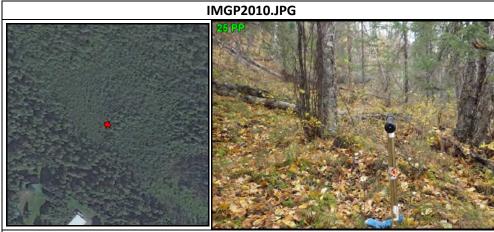
Description: Thick moss and hummocks. Upland boundary on slope leading to wetlands which are directly at the toe of slope. Steep slope west of point.

Attributes	
Title	25 PP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 12:57:10
	PM
Latitude	N 61° 33' 49.64"
Longitude	W 149° 23' 10.04"
Elevation	421 ft
Photo Direction	226° SW



Description: Thick moss and hummocks. Upland boundary on slope leading to wetlands which are directly at the toe of slope. Steep slope west of point.

Attributes	
Title	25 PP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 12:57:19
	PM
Latitude	N 61° 33' 49.64"
Longitude	W 149° 23' 10.04"
Elevation	421 ft
Photo Direction	297° WNW



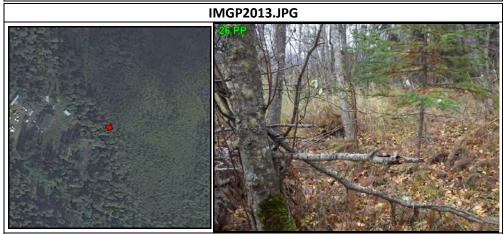
Description: Thick moss and hummocks. Upland boundary on slope leading to wetlands which are directly at the toe of slope. Steep slope west of point.

Attributes	
Title	26 PP
Subject	Open Canopy Forested Upland
Date Time Stamp	10/3/2014 1:56:14 PM
Latitude	N 61° 34' 03.64"
Longitude	W 149° 23' 23.30"
Elevation	
Photo Direction	27° NNE



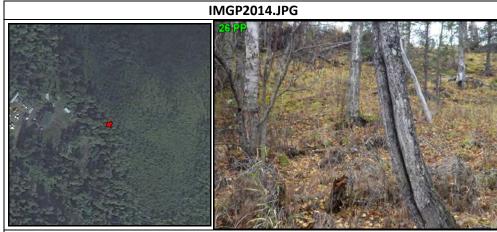
Description: Base of slope near northwest boundary of study area. Edge of upland/wetland boundary, dead and downed trees, distinct change in vegetation at base of slope.

Attributes	
Title	26 PP
Subject	Open Canopy Forested Upland
Date Time Stamp	10/3/2014 1:56:20 PM
Latitude	N 61° 34' 03.64"
Longitude	W 149° 23' 23.30"
Elevation	
Photo Direction	110° ESE



Description: Base of slope near northwest boundary of study area. Edge of upland/wetland boundary, dead and downed trees, distinct change in vegetation at base of slope.

Attributes	
Title	26 PP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 1:56:24
	PM
Latitude	N 61° 34' 03.64"
Longitude	W 149° 23' 23.30"
Elevation	
Photo Direction	231° SW



Description: Base of slope near northwest boundary of study area. Edge of upland/wetland boundary, dead and downed trees, distinct change in vegetation at base of slope.

Attributes	
Title	26 PP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 1:56:32
	PM
Latitude	N 61° 34' 03.64"
Longitude	W 149° 23' 23.30"
Elevation	
Photo Direction	321° NW



Description: Base of slope near northwest boundary of study area. Edge of upland/wetland boundary, dead and downed trees, distinct change in vegetation at base of slope.

Attributes	
Title	27 TP
Cultinat	Open Canopy
Subject	Forested Upland
Date Time Stamp	10/3/2014 2:41:07
	PM
Latitude	N 61° 34' 09.29"
Longitude	W 149° 23' 09.44"
Elevation	
Photo Direction	208° SSW



Description: Upland area at edge of wetlands, slight slope at base of RR track embankment, thick duff and upland vegetation, no drainage patterns.

Attributes	
Title	27 TP
Cubiaat	Open Canopy
Subject	Forested Upland
Date Time Stamp	10/3/2014 2:41:11
	PM
Latitude	N 61° 34' 09.76"
Longitude	W 149° 23' 08.68"
Elevation	225 ft
Photo Direction	219° SW



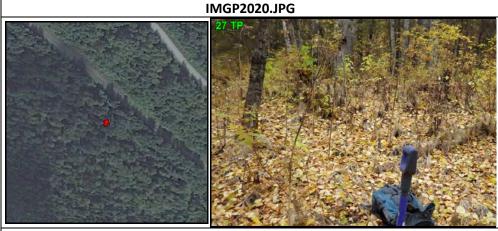
Description: Upland area at edge of wetlands, slight slope at base of RR track embankment, thick duff and upland vegetation, no drainage patterns.

Attributes	
Title	27 TP
Subject	Open Canopy
Jubject	Forested Upland
Date Time Stamp	10/3/2014 2:41:19
	PM
Latitude	N 61° 34' 09.70"
Longitude	W 149° 23' 08.74"
Elevation	219 ft
Photo Direction	328° NNW



Description: Upland area at edge of wetlands, slight slope at base of RR track embankment, thick duff and upland vegetation, no drainage patterns.

Attributes	
Title	27 TP
Cultinat	Open Canopy
Subject	Forested Upland
Date Time Stamp	10/3/2014 2:41:26
	PM
Latitude	N 61° 34' 09.70"
Longitude	W 149° 23' 08.74"
Elevation	219 ft
Photo Direction	23° NNE



Description: Upland area at edge of wetlands, slight slope at base of RR track embankment, thick duff and upland vegetation, no drainage patterns.

Attributes	
Title	27 TP
Subject	Open Canopy
Jubject	Forested Upland
Date Time Stamp	10/3/2014 2:41:33
	PM
Latitude	N 61° 34' 09.70"
Longitude	W 149° 23' 08.74"
Elevation	219 ft
Photo Direction	81° E



Description: Upland area at edge of wetlands, slight slope at base of RR track embankment, thick duff and upland vegetation, no drainage patterns.

Attributes	
Title	27 TP
Cubioot	Open Canopy
Subject	Forested Upland
Date Time Stamp	10/3/2014 2:59:11
	PM
Latitude	N 61° 34' 12.33"
Longitude	W 149° 23' 20.02"
Elevation	204 ft
Photo Direction	70° ENE



Description: Upland area at edge of wetlands, slight slope at base of RR track embankment, thick duff and upland vegetation, no drainage patterns.

Attributes	
Title	28 TP
Cubiaat	Open Canopy
Subject	Forested Upland
Date Time Stamp	10/3/2014 3:00:04
	PM
Latitude	N 61° 34' 11.75"
Longitude	W 149° 23' 20.87"
Elevation	204 ft
Photo Direction	76° ENE



Description: Area flat, bordering wetter area, distinct vegetation change.

Attributes	
Title	28 TP
Subject	Open Canopy
Jubject	Forested Upland
Date Time Stamp	10/3/2014 3:00:14
	PM
Latitude	N 61° 34' 11.75"
Longitude	W 149° 23' 20.87"
Elevation	204 ft
Photo Direction	177° S



Description: Area flat, bordering wetter area, distinct vegetation change.

Attributes	
Title	28 TP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 3:00:22
	PM
Latitude	N 61° 34' 11.75"
Longitude	W 149° 23' 20.87"
Elevation	204 ft
Photo Direction	258° WSW



Description: Base of slope near northwest boundary of study area. Edge of upland/wetland boundary, dead and downed trees, distinct change in vegetation at base of slope.

Attributes	
Title	28 TP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 3:00:32
	PM
Latitude	N 61° 34' 11.75"
Longitude	W 149° 23' 20.87"
Elevation	204 ft
Photo Direction	348° NNW



Description: Area flat, bordering wetter area, distinct vegetation change.

Attributes	
Title	29 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 3:09:13 PM
Latitude	N 61° 34' 10.62"
Longitude	W 149° 23' 22.12"
Elevation	191 ft
Photo Direction	279° W



Description: Area is flat with more grass and more distinct vegetation changes than previous sample point, saturated with high water table.

Attributes	
Title	29 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 3:09:34 PM
Latitude	N 61° 34' 10.62"
Longitude	W 149° 23' 22.12"
Elevation	191 ft
Photo Direction	289° WNW



Description: Area is flat with more grass and more distinct vegetation changes than previous sample point.

Attributes	
Title	29 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 3:09:49 PM
Latitude	N 61° 34' 10.62"
Longitude	W 149° 23' 22.12"
Elevation	191 ft
Photo Direction	46° NE



Description: Area is flat with more grass and more distinct vegetation changes than previous sample point, saturated with high water table.

Attributes	
Title	29 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 3:10:01 PM
Latitude	N 61° 34' 10.62"
Longitude	W 149° 23' 22.12"
Elevation	186 ft
Photo Direction	105° ESE



Description: Area is flat with more grass and more distinct vegetation changes than previous sample point, hummocky. Vegetation is stressed, dead birch, lots of downed logs, thick moss.

Attributes	
Title	29 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 3:10:10 PM
Latitude	N 61° 34' 10.62"
Longitude	W 149° 23' 22.12"
Elevation	186 ft
Photo Direction	187° S



Description: Area is flat with more grass and more distinct vegetation changes than previous sample point, hummocky. Vegetation is stressed, dead birch, lots of downed logs, thick moss.

Attributes	
Title	29 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 3:11:47 PM
Latitude	N 61° 34' 10.62"
Longitude	W 149° 23' 22.12"
Elevation	
Photo Direction	278° W



Description: Area is flat with more grass and more distinct vegetation changes than previous sample point, hummocky. Vegetation is stressed, dead birch, lots of downed logs, thick moss.

Attributes	
Title	29 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 3:12:05 PM
Latitude	N 61° 34' 10.62"
Longitude	W 149° 23' 22.12"
Elevation	
Photo Direction	128° SE



Description: Area is flat with more grass and more distinct vegetation changes than previous sample point, hummocky. Vegetation is stressed, dead birch, lots of downed logs, thick moss.

Attributes	
Title	29 TP
Subject	Forested Wetland (PFO1/4B)
Date Time Stamp	10/3/2014 3:12:14 PM
Latitude	N 61° 34' 10.62"
Longitude	W 149° 23' 22.12"
Elevation	
Photo Direction	171° S



Description: Area is flat with more grass and more distinct vegetation changes than previous sample point, hummocky. Vegetation is stressed, dead birch, lots of downed logs, thick moss.

Attributes	
Title	30 TP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 3:43:53
	PM
Latitude	N 61° 34' 13.08"
Longitude	W 149° 22' 59.04"
Elevation	247 ft
Photo Direction	266° W



Description: Upland site, disturbed field/forest, gravel at bottom of test plot from dated fill. Triangle parcel between E Broadview Ave. and Old Matanuska Rd. Vegetation appears to be rebounding from prior disturbance.

Attributes	
Title	30 TP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 3:44:16
	PM
Latitude	N 61° 34' 13.08"
Longitude	W 149° 22' 59.04"
Elevation	247 ft
Photo Direction	306° NW



Description: Upland site, disturbed field/forest. Triangle parcel between E Broadview Ave. and Old Matanuska Rd. Vegetation appears to be rebounding from prior disturbance.

Attributes	
Title	30 TP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 3:44:24
	PM
Latitude	N 61° 34' 13.08"
Longitude	W 149° 22' 59.04"
Elevation	247 ft
Photo Direction	250° WSW



Description: Upland site, disturbed field/forest, gravel at bottom of test plot from dated fill. Triangle parcel between E Broadview Ave. and Old Matanuska Rd. Vegetation appears to be rebounding from prior disturbance.

Attributes	
Title	30 TP
Subject	Open Canopy
	Forested Upland
Date Time Stamp	10/3/2014 3:44:35
	PM
Latitude	N 61° 34' 13.08"
Longitude	W 149° 22' 59.04"
Elevation	247 ft
Photo Direction	100° E





Description: Upland site, disturbed field/forest. Triangle parcel between E Broadview Ave. and Old Matanuska Rd. Vegetation appears to be rebounding from prior disturbance.

Attributes		
Title	30 TP	
Subject	Open Canopy	
	Forested Upland	
Date Time Stamp	10/3/2014 3:45:08	
	PM	
Latitude	N 61° 34' 13.33"	
Longitude	W 149° 23' 00.78"	
Elevation	302 ft	
Photo Direction	29° NNE	



Description: Upland site, disturbed field/forest.Triangle parcel between E Broadview Ave. and Old Matanuska Rd.Vegetation appears to be rebounding from prior disturbance.

Attributes		
Title	30 TP	
Subject	Open Canopy	
	Forested Upland	
Date Time Stamp	10/3/2014 3:45:12	
	PM	
Latitude	N 61° 34' 13.33"	
Longitude	W 149° 23' 00.78"	
Elevation	302 ft	
Photo Direction	84° E	





Description: Upland site, disturbed field/forest. Triangle parcel between E Broadview Ave. and Old Matanuska Rd. Vegetation appears to be rebounding from prior disturbance.

Attributes		
Title	30 TP	
Subject	Open Canopy	
	Forested Upland	
Date Time Stamp	10/3/2014 3:46:14	
	PM	
Latitude	N 61° 34' 13.09"	
Longitude	W 149° 23' 00.68"	
Elevation	301 ft	
Photo Direction	269° W	





Description: Upland site, disturbed field/forest.Triangle parcel between E Broadview Ave. and Old Matanuska Rd.Vegetation appears to be rebounding from prior disturbance.

Attributes		
Title	30 TP	
Subject	Open Canopy	
	Forested Upland	
Date Time Stamp	10/3/2014 3:46:22	
	PM	
Latitude	N 61° 34' 13.09"	
Longitude	W 149° 23' 00.68"	
Elevation	301 ft	
Photo Direction	131° SE	



Description: Upland site, disturbed field/forest. Triangle parcel between E Broadview Ave. and Old Matanuska Rd. Vegetation appears to be rebounding from prior disturbance.