WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: <u>https://apps.oregon.gov/DSL/EPS/program?key=4</u>.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279. A single PDF of the completed cover from and report may be e-mailed to: Wetland_Delineation@dsl.state.or.us. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

tile from your ftp or other file sharing website.							
Contact and Authorization Information							
X Applicant D Owner Name, Firm and Address:	Business phone # (541) 929-6148						
Chris Workman, Philomath City Manager	Mobile phone # (optional)						
PO Box 400	E-mail: Chris.Workman@philomathoregon.gov						
Philomath OR 97370							
Authorized Logal Agent Name and Address (if different	Ducieses share #						
Authorized Legal Agent, Name and Address (it different). Business phone # Mobile phone # (optional)						
	F-mail						
	E mai.						
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I either own the property described below or I have legal authorit property for the purpose of confirming the information in the repo	y to allow access to the property. I authorize the Department to access the ort, after prior notification to the primary contact						
Typed/Printed Name Chris Workman	Signature: 1 that to the						
Date: Special instructions regarding	site access: Contact consultant.						
Project and Site Information							
Project Name: Philomath Water Treatment Plant	Latitude: 44.536786° N Longitude: -123.374411° W						
Troject Hame, Thilomati Water Heatment Han	decimal degree - centroid of site or start & end points of linear project						
Proposed Use:	Tax Map # 12S 6W 11D						
New Water Treatment Plant Reservoir and new outfall to Marys	Tax Lot(s) Portions of 400, 700, 1100, and 1200						
River.	Tax Map # 12S 6W 12C						
Project Street Address (or other descriptive location):	Tax Lot(s) Portions of 400 and and 9th Street ROW						
400 N 9th St. west of Marys River Park	Township 12S Range 6W Section 11D 12C OO 11SE 12S						
	Lise separate sheet for additional tax and location information						
City: Philomath County: Benton	Waterway: Marys River River Mile: ~12 75						
Wetland Delineation Information							
Wetland Consultant Name Firm and Address:	Phone # (503) 914-6055						
C. Mirth Walker, SPWS	Mobile phone # (if applicable) (503) 860-1708						
SWCA Environmental Consultants	E-mail: cmwalker@swca.com						
1220 SW Morrison St., Suite 700							
Portland, OR 97205	the second second second second second						
The information and conclusions on this form and in the attached	report are true and correct to the best of my knowledge.						
Consultant Signature: C.MuH Walker	Date: 02/26/2021						
Primary Contact for report review and site access is 🗵	Consultant Applicant/Owner Authorized Agent						
Wetland/Waters Present? X Yes No Study A	rea size: 6.85 Total Wetland Acreage: 0.6100						
Check Applicable Boxes Below							
R-F permit application submitted	X Fee payment submitted \$ 475 Check to be mailed with WD#						
Mitigation bank site	Resubmittal of rejected report (\$100)						
EFSC/ODOE Proj. Mgr:	Request for Reissuance. See eligibility criteria. (no fee)						
Wetland restoration/enhancement project	DSL # Expiration date						
(not mitigation)							
Previous delineation/application on parcel	I LWI shows wetlands or waters on parcel						
If known, previous DSL # WD1995-0326	Wetland ID code MR 8						
For C	Office Use Only						
DSL Reviewer: <u>MU</u> Fee Paid Date: _	/ DSL WD # <u>2021-0101</u>						
Date Delineation Received: <u>3 / 3 / 21</u> Scann	ed: Electronic: DSL App.#						

NOTICE: REPORTS ARE CONSIDERED DRAFT DOCUMENTS UNTIL REVIEW IS COMPLETED BY DSL. WETLAND MAPS MAY CHANGE AS A RESULT OF DSL REVIEW.



City of Philomath Water Treatment Plant Wetland Delineation Report

FEBRUARY 2021

PREPARED FOR
Westech Engineering, Inc.

PREPARED BY

SWCA Environmental Consultants

CITY OF PHILOMATH WATER TREATMENT PLANT WETLAND DELINEATION REPORT

TOWNSHIP 12 SOUTH, RANGE 6 WEST, SECTION 11D, PORTIONS OF TAX LOTS 400, 700, 1100, AND 1200 ON TAX MAP 12 6 11D, AND SECTION 12C, PORTIONS OF TAX LOT 400 AND 9TH STREET RIGHT-OF-WAY, BENTON COUNTY, PHILOMATH, OREGON

Prepared for

Westech Engineering, Inc.

3841 Fairview Industrial Drive SE, Suite 100 Salem, Oregon 97302

Prepared by

SWCA Environmental Consultants

1220 SW Morrison Street, Suite 700 Portland, Oregon 97205 503-224-0333 www.swca.com

February 2021

SWCA Project No. 30470.05

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) conducted a wetland delineation on portions of the City of Philomath Water Treatment Plant property located at 400 S 9th Street in Philomath, Oregon (Figure 1; all figures are in Appendix A). The approximately 6.85-acre study area includes portions of Tax Lots 400, 700, 1100, and 1200 on Tax Map 12 6 11D, and portions of Tax Lot 400 and the 9th Street right-of-way (ROW) on Tax Map 12 6 12C, Benton County (Figures 2 and 3). The study area includes a portion the City-owned Marys River Park. The center of the study area is located at 44.536786° N and –123.374411° W. This report presents the results of the delineation of two wetlands, one ditch, a small portion of the Marys River, a portion of two natural ponds, and two artificial backwash ponds.

Part of the current study area boundary was previously delineated in 1995 under Oregon Department of State Lands (DSL) File No. WD1995-0326 (Appendix B). The WD found that the upper segment of the ditch appeared to be artificial and not jurisdictional, but a lower undefined segment of the ditch was jurisdictional where it intersected an old river channel.

2 LANDSCAPE SETTING AND LAND USE

The study area is within the Middle Marys River (Hydrologic Unit Code 170900030205) watershed (Oregon State University [OSU] 2020a), and within the Willamette Valley Prairie Terraces ecoregion (Thorson et al. 2003). The existing water treatment plant within the study area is west of 9th Street. Marys River flows east-southeast along the southernmost portion of the study area. The water treatment plant is surrounded by paved and gravel parking lots, driveways, and planter strips. Two small, approximately 2,000 square-foot, artificial ponds south of the water treatment plant are backwash ponds.

The study area is bounded on the west by an open grass field and riparian forest; on the north by a vacant field, a large gravel lot associated with an excavation company, the Philomath Food Bank building, and a commercial sawyer operation; on the east by Marys River Park; and on the south by Marys River Park and riparian areas. Surrounding land uses include commercial, recreational, and agricultural.

The study area is on a terrace that slopes gently south toward Marys River. Vegetation communities include wetland meadow, upland meadow, riparian forest, and landscaped areas. Wetland meadow was dominated by field meadow-foxtail (*Alopecurus pratensis*) and small or common camas (*Camassia quamash*). Upland meadow was dominated by field meadow-foxtail and large sweet vernal grass (*Anthoxanthum odoratum*). Riparian forest was dominated by black cottonwood (*Populus balsamifera ssp. trichocarpa*), Oregon white oak (*Quercus garryana*), Oregon ash (*Fraxinus latifolia*), and willows (*Salix spp.*). An old oxbow pond and a small forested pond are present along the eastern boundary of the study area.

3 SITE ALTERATIONS

The study area has been significantly altered from its natural condition. The Oregon Rapid Wetland Protocol Explorer interactive mapper (OSU 2020a) describes the pre-settlement vegetation class as being dominated by Roemer's fescue (*Festuca roemeri*). The study area is currently dominated by non-native lawn and pasture grasses, with narrow bands of intact riparian vegetation present.

Much of the study area west of 9th Street has been graded, paved, or graveled with grass field portions regularly mowed. The study area east of 9th Street is in a somewhat natural state in Marys River Park. A

roadside ditch runs parallel to the east side of the street and flows off-site to the south. Aerial photographs indicate that the park is typically mowed in the summer months (Appendix C).

4 PRECIPITATION DATA AND ANALYSIS

The WETS (short for wetlands climate analysis) station used to obtain historical precipitation data for the project site was the Corvallis State University, OR station (National Oceanic and Atmospheric Administration [NOAA] 2020). The WETS table shows that Corvallis receives an average of 42.71 inches of rainfall per year and lists the growing season start and end dates as February 27 to November 20.

Precipitation data and daily normals were obtained from the Corvallis State University weather station via the NOAA Regional Climate Centers Applied Climate Information System AgACIS website (NOAA 2020) and the Hyslop weather station located northeast of Corvallis (OSU 2020b). Precipitation prior to SWCA's April 9 and April 25, 2018, site visits is shown in Table 1 (monthly precipitation averages for the 3 months prior) and Table 2 (precipitation summary for the 2 weeks prior).

Table 1. 2016 Frecipitation Data – Monthly Averages Dased on the Chinate Fe	

		30% Chanc	More Than Precipitation Within Normal			
Month	Average (inches)	Less Than			Within Normal Range?	
	((inc	hes)	(inches)		
March	4.44	3.46	5.35	4.55	Normal (102%)	
February	5.11	3.91	6.80	2.09	Below Normal (41%)	
January	6.40	3.95	7.82	6.41	Normal (100%)	

Source: NOAA (2020).

Table 2. 2018 Precipitation Summary

Day of Site		Observed Precipit	ation (inches	WYTD CYTD Normal Value		
Visit	Day of	2 Weeks Prior	WYTD	CYTD	(Percent of Normal)	(Percent of Normal)
April 9	0.00	2.62	33.56	15.44	34.61 (97%)	16.86 (92%)
April 25	0.00	2.34	36.08	17.96	36.14 (100%)	18.39 (98%)

Note: CYTD = calendar year to date; WYTD = water year to date. Source: NOAA (2020).

Overall, the precipitation was within the normal range during 2018, though February was drier than normal (3.02 inches below the normal range). Rainfall for both the April 9 and April 25 site visits was normal for the water year to date. The day before the April 9 fieldwork received 1.81 inches of rainfall. No rain was observed during either site visit.

Precipitation prior to SWCA's December 10, 2020, site visit is shown in Table 3 (monthly precipitation averages for the 3 months prior) and Table 4 (precipitation summary for the 2 weeks prior).

		30% Chane	ce Will Have	Observed		
Month	Average (inches)	Less Than	Than More Than Precipit		Within Normal Range?	
	(inches)	(inc	:hes)	(inches)		
November	6.94	4.55	8.34	7.11	Normal (102%)	
October	3.10	1.70	3.68	2.26	Normal (73%)	
September	1.25	0.55	1.73	1.96	Above Normal (157%)	

Table 3. 2020 Precipitation Data – Monthly Averages Based on the Climate Period 1971–2000

Source: NOAA (2020).

Table 4. 2020 Precipitation Summary

Day of Site		Observed Precipit	ation (inches	5)	WYTD	CYTD Normal Value
Visit	Day of	2 Weeks Prior	WYTD	CYTD	Normal Value (Percent of N (Percent of Normal)	(Percent of Normal)
December 10	0.02	0.86	9.74	34.35	12.49 (78%)	37.45 (92%)

Note: CYTD = calendar year to date; WYTD = water year to date. Source: NOAA (2020).

Precipitation was within the normal range; however, September (7.11 inches, 0.17 inch above average) and November (1.96 inches, 0.71 inch above normal) both received above average rainfall. Rainfall for the 2020 water year to date was 9.74 inches at the time of the December 10 site visit, which is 2.74 inches below normal. At the time of the survey, a total of 0.86 inch of rain was received in the 2 weeks prior,

which is 2.95 inches below normal for the water year. Overall precipitation was normal at the time of the site visit. Precipitation data are included in Appendix D.

5 METHODS

The methodology used for determining the presence of wetlands followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (*Version 2.0*) (U.S. Army Corps of Engineers [USACE] 2010), used by both USACE and DSL. Two days of fieldwork (April 9 and 25) were conducted in 2018 to document site conditions and delineate the wetland and waters boundaries of the new treatment plant site and proposed outfall to the Marys River location. Site visits were conducted by C. Mirth Walker, then Professional Wetland Scientist (PWS), and former SWCA employees Tom Dee (PWS) and Evan Dulin, Wetland Scientist. An additional site visit was conducted on December 10, 2020, by C. Mirth Walker, now Senior PWS, and Rachel Locke, Wetland Scientist, due to changes to the proposed site plan (a new outfall alignment and a more stable river bank section of the Marys River were delineated). Soils, vegetation, and hydrology were documented at 10 sample plot locations on standardized wetland determination data forms (Appendix E). Wetland boundaries and sample point locations were marked in the field with pin flags and streamers, which were removed after being professionally land surveyed.

Non-wetland waters were delineated according to *Regulatory Guidance Letter 05-05* (USACE 2005) and Oregon Administrative Rules (OARs) (DSL 2013). Ordinary High Water Line (OHWL) determinations were based on observations of scour, sediment deposition, debris wracks, and other readily observable indicators. The portions of the OHWL of the river, the old oxbow pond, and the forested pond which were located within the project area were marked in the field with red pin flags and streamers. The right bank

of the roadside ditch's OHWL was flagged in the field with red pin flags and streamers. The ditch was too steep to safely access the left bank.

Representative ground-level site photographs are included in Appendix F. A list of plants observed onsite along with their wetland indicator status is included in Appendix G.

The Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2021a) depicts three soil units (and water) within the study area (Figure 4). Conser silty clay loam is listed as hydric, and Coburg silty clay loam and Malabon silty clay loam are listed as non-hydric but may contain inclusions of Waldo and Riverwash hydric soils (NRCS 2021b) (Table 5).

Table 5. Soil Mapping

Map Unit Symbol	Map Unit Name	Hydric	Hydric Inclusion
50	Coburg silty clay loam, rarely flooded, 0%–3% slopes	No	Waldo, Riverwash
111	Malabon silty clay loam, rarely flooded, 0%–3% slopes	No	Waldo, Riverwash
159	Water	Yes	-
2205A	Conser silty clay loam, 0%–3% slopes	Yes	Awbrig, Courtney

Source: NRCS (2021a,b).

The Local Wetlands Inventory (LWI) map is shown in Figure 5.

6 DESCRIPTION OF ALL WETLANDS AND OTHER NON-WETLAND WATERS

6.1 Wetlands

Two wetlands were identified within the study area, totaling 0.61 acre (Figure 6). The wetlands are described below.

Wetland A (0.06 acre) Wetland A is classified as a palustrine forested (PFO) wetland using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) and classified as a Valley Slope (SV) wetland using the *Guidebook for Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and Riparian Sites: Statewide Classification and Profiles* (Adamus 2001). Hydrology was identified by Surface Water (A1), High Water Table (A2), and Saturation (A3). Soils displayed the Redox Dark Surface (F6) hydric soil indicator. The vegetation was predominantly Sitka willow (Salix sitchensis) with lemon balm (*Melissa officinalis*) and willow dock (*Rumex salicifolius*) in the understory layer. Wetland A is in the approximate location of the non-jurisdictional wetland shown in the WD (Appendix B); it presents a different shape now. Wetland A is contained within the study area.

Wetland B (B1 0.409 acre and B2 0.144 acre; 0.55 acre total)

Wetland B is classified as a palustrine emergent (PEM) and PFO wetland (Cowardin et al. 1979) and classified as a SV wetland under HGM classificiation (Adamus 2001). The wetland is in the northeast corner of the study area within Marys River Park. Hydrology was identified by High Water Table (A2) and Saturation (A3). Soils displayed the Redox Dark Surface (F6) hydric soil indicator. Hydrophytic vegetation was dominated by field meadow-foxtail, red fescue (*Festuca rubra*), and small or common camas. Wetland B is dissected by a graveled walkway path, separating Wetlands B1 and B2. Wetland B

extends outside the study area to the north and east. The western wetland boundary is partially formed by the sidecast material from roadside ditch excavation. The southern wetland boundary was delineated by an increase in topography. Wetland B extends off-site to the north and east.

6.2 Non-wetland Waters

One river, one roadside ditch, one old oxbow pond, one small forested pond, and two backwash basins were identified within the study area. The features are described below and presented in Figure 6.

Marys River (0.03 acre)

Marys River is a riverine lower perennial (R3) river that crosses through the southwest corner of the project area. The stream bank is steep and approximately 5 feet tall. Vegetation was dominated by black cottonwood, Oregon ash, willow, red osier dogwood (*Cornus alba*), and Himalayan blackberry (*Rubus armeniacus*). The substrate could not be observed due to high, fast-flowing water but is assumed to consist of boulders, rock, gravel, sand, and fine sediment. Only a small portion of the river's OHWL was delineated within the study area.

Ditch 1 (0.11 acre)

Ditch 1 is a human-made roadside ditch that is about 6 feet wide. Ditch 1 is dominated by reed canary grass (*Phalaris arundinacea*) and broad-leaf cat-tail (*Typha latifolia*). The ditch enters the northern study area boundary, flows south along the east side of 9th Street for about 642 feet, exits the southern study area boundary, and reportedly flows into Marys River about 900 feet to the south of the study area.

Oxbow Pond (0.14 acre)

The Oxbow Pond is located in the southeast portion of the study area within Marys River Park. Only a small amount of its OHWL is within the study area. The pond appears to be an old river meander that was naturally cut off from the main stem of the Marys River. Riparian vegetation was dominated by Oregon ash, Oregon white oak, common snowberry (*Symphoricarpos albus*), and Nootka rose (*Rosa nutkana*). A footbridge crosses the pond. A culvert discharges into Oxbow Pond from the backwash ponds described below.

Ponds A and B (0.04 acre each; 0.08 acre total)

Ponds A and B are human-made backwash basin ponds that appear to have been created from upland. The backwash basins are associated with water treatment plant operations to allow sediments to settle. The backwash ponds are contained within the study area.

Pond C (0.01 acre)

Pond C is a small forested pond to the southwest of the Oxbow Pond. The forested pond is isolated from the Oxbow Pond and the roadside ditch by upland embankments around its perimeter. The eastern embankment includes a walking trail as part of Marys River Park. Hydrology is provided by surface runoff and direct precipitation. Riparian vegetation was dominated by an overstory of Oregon ash, Oregon white oak, Himalayan blackberry, and common snowberry. Pond C extends outside the study area to the south, but it is not connected to the roadside ditch or to Marys River.

6.3 Uplands

Uplands within the study area are weedy grassland and riparian forest. Developed areas have been graded, graveled, or paved, and are associated with the water treatment plant. Vegetation in uplands varied throughout the project area. Weedy grasslands included reed canary grass, common velvet grass (*Holcus lanatus*), tall fescue (*Schedonorus arundinaceus*), Queen Anne's-lace (*Daucus carota*), large sweet vernal grass, and hairy cat's-ear (*Hypochaeris radicata*). Upland forest included Oregon ash and big-leaf maple

(Acer macrophyllum) in the overstory; Himalayan blackberry, common snowberry, black hawthorn (*Crataegus douglasii*), and red osier dogwood in the understory; and fragrant fringecup (*Tellima grandiflora*), tall horsetail (*Equisetum telmateia*), English ivy (*Hedera helix*), California dewberry (*Rubus ursinus*), and reed canary grass in the herbaceous layer.

6.4 Deviation from LWI or NWI

The Philomath LWI (SRI/Shapiro/AGCO, Inc. 1996; Figure 5) depicts wetlands within the study area similar to the results of the current delineation. The LWI shows wetlands within the riparian corridor along Marys River; additional soil pits were used to investigate these areas in the delineation, but no wetlands were identified near the river. Additionally, the LWI identifies one contiguous wetland throughout the site. The results of the current delineation found Wetlands A and B, Ditch 1, Oxbow Pond, and Pond C to be adjacent but non-contiguous. They were identified as distinct features. LWI data forms are included in Appendix H.

The National Wetlands Inventory (NWI) identified a contiguous PFO through Ditch 1, Oxbow Pond, and Pond C; it maps a different alignment for Ditch 1. Wetlands A and B were not identified on the NWI.

7 MAPPING METHOD

The wetland and water boundaries and sample plot locations were professionally land surveyed by Westech Engineering. The 2020 delineation line work was also surveyed by SWCA with a Juniper Geode Global Navigation Satellite System (GNSS) receiver paired with a Samsung computer tablet using Collector for ArcGIS software. Horizontal map accuracy is within 1 foot.

8 ADDITIONAL INFORMATION

The project area is within the 100-year floodplain (Federal Emergency Management Agency 2020; Figure 7 and Appendix I). The FEMA National Flood Hazard Layer Firmette Map panel illustrates the base flood elevations within the study area between 269 feet above mean sea level (amsl) and 272 feet amsl. The new Water Treatment Plant reservoir is located within the north section of the project area, and is located within the 100-year floodplain but is located outside of the floodway.

Marys River is mapped as Essential Salmon Habitat according to DSL.

The determination of where Ditch 1 is jurisdictional and non-jurisdictional is important for this site because of the Oregon Department of Transportation (ODOT) Philomath Downtown Safety and Streetscape (US20 Philomath Couplet) Offsite Stormwater Project, which will treat stormwater generated primarily from ODOT ROWs with a small allowance for runoff generated on City ROW. ODOT and the design firm Murray Smith are working with the City as part of a separate design project with the intent of using a segment of Ditch 1 as a 200-foot long bioswale for water quality treatment.

9 RESULTS AND CONCLUSION

Two wetlands, one river, one ditch, two natural ponds, and two artificial ponds were delineated within the study area. Each feature is summarized in Table 6.

Feature ID	Size (acreage)	Cowardin	HGM	Centroid Latitude	Centroid Longitude
Wetland A	0.06	PEM	Slope	44.337002	-123.374356
Wetland B	0.55	PEM/PSS	Slope	44.537919	-123.373527
Wetland Total	0.61				
Pond C	0.01	PFO	Depressional	44.536974	-123.373804
Oxbow Pond	0.14	PFO	N/A	44.537211	-123.373518
Ditch 1	0.11	N/A	N/A	44.537685	-123.373939
Marys River	0.03	R3	N/A	44.535492	-123.375648
Waters Total	0.29				

Table 6. Wetland and Waters Delineation Summary

Wetland B, Oxbow Pond, Pond C, Marys River, and a segment of Ditch 1 are likely to be determined to be jurisdictional by the DSL. The backwash ponds are likely not jurisdictional. The jurisdictional concurrence for the DSL File No. WD1995-0326 found that Wetland A was not jurisdictional, and that only a segment of Ditch 1 was jurisdictional.

The USACE will make their own determination of jurisdiction when a Joint Permit Application or a request for an Approved Jurisdictional Determination is submitted.

10 REQUIRED DISCLAIMER

This report documents the investigation, best professional judgment, and conclusions of the investigators. It is correct and complete to the best of our knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon DSL in accordance with Oregon Administrative Rules 141-090-0005 through 141-090-0055.

11 LIST OF PREPARERS

Rachel Locke Wetland Scientist



C. Mirth Walker, SPWS Senior Wetland Scientist

12 LITERATURE CITED AND REVIEWED

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APPENDIX A

Figures



Figure 1. Site location map.



Figure 2. Tax lot map with aerial photograph.



Figure 3. Tax lot map from ORmap with paper base.



Figure 4. Soils map.



Figure 5. Local Wetlands Inventory map.



PHILOMATH WATER TREATMENT PLANT EXISTING CONDITIONS NOTICE: REPORTS ARE CO

NOTICE: REPORTS ARE CONSIDERED DRAFT DOCUMENTS UNTIL REVIEW IS COMPLETED BY DSL. WETLAND MAPS MAY CHANGE AS A RESULT OF DSL REVIEW.

FIGURE 6



Figure 7. FEMA National Flood Hazard Layer map.

APPENDIX B

Oregon Department of State Lands WD1995-0326 Concurrence Letter

August 29, 1995

Phil Scoles Scoles Associates P.O. Box 3558 Portland, OR 97208

Re: Wetland Delineation for Philomath Water Plant

Dear Phil:

I have reviewed your wetland delineation report for the above site at the end of South Ninth Street (adjacent to Mary's River) and concur with your conclusions and the wetland boundaries mapped in Figure 5 of your report. As you indicate in your report and on the map, the southern portion of the site adjacent to the Mary's River was not evaluated; therefore, there may be unmapped wetlands in that area.

The artificially created 0.07 acre shrub depression near the existing plant is exempt from jurisdiction under the state Removal-Fill Law. The smaller forested depression to the south is subject to jurisdiction. The jurisdictional status of the "drainage ditch" is uncertain because the upper portion appears to be artificial but the lower portion appears to intersect an old river channel that abuts the east edge of the parcel.

Because no alteration is planned that would affect any of the mapped wetlands, no state Removal-Fill Permit is required for the proposed expansion. If, in the future, alteration is planned within the forested riparian area adjacent to the Mary's River or the lower portion of the ditch, those areas should be specifically investigated and delineated.

Thank you for your report; please phone if you have any questions.

Sincerely,

Janet C. Morlan Wetlands Program

JCM/jcm jan:1154

c: Rich Gebhart, Corps of Engineers Patricia Farrel, SRI/SHAPIRO Nancy Leibowitz, DSL



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APPENDIX C

Aerial Photographs
Philomath Water Treatment Plant

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Aerial Photograph Dated August 12, 2020

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Philomath Water Treatment Plant

Aerial Photograph Dated July 3, 2017

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Aerial Photograph Dated July 23, 2016

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Aerial Photograph Dated July 23, 2016





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Philomath Water Treatment Plant

Aerial Photograph Dated July 14, 2014



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Philomath Water Treatment Plant

Aerial Photograph Dated July 9, 2012 and - well can sold the

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Philomath Water Treatment Plant

Aerial Photograph Dated July 8, 2010



APPENDIX D

Precipitation Data

Asses	sing Rainfal	I for the Pre	ceding 3-Mor	th Period (An	tecedent Ra	ainfall)			Climate	e Period
WEIS	Station : CO	DRVALLIS S	IAIE UNIV, C	DR1862					1981	-2010
Meas	ured Rainfall	: Corvallis S	State Universi	ty, OR, 2019-2	020 Water	rear			Oct. 1	Jan. 1
		WETS Rain	fall Percentile	Measured	Condition	Condition Value	Month	Multiply	Departure	Departure
	Prior Month	30th	70th	Rainfall	Dry, Wet,	(1=dry, 2=normal,	Weight	previous	from Normal*	from Normal*
Most	Recent First	incl	nes	inches	Normal	3=wet)		2 columns	-2.75	-3.10
1st	November	4.55	8.34	7.11	Normal	2	3	6	WYTD*	CYTD*
2nd	October	1.70	3.68	2.26	Normal	2	2	4	9.74	34.35
3rd	September	0.55	1.73	1.96	Wet	3	1	3	Normal	Normal
				11.33					12.49	37.45
					Normals				*As of Date:	12/10/2020
	Jan-20	3.95	7.82	9.39	6.40					
	Feb-20	3.91	6.80	1.77	5.11					
	Mar-20	3.46	5.35	3.34	4.44					
	Apr-20	2.09	3.53	2.12	2.91					
	May-20	1.56	2.75	3.16	2.31					
	Jun-20	0.93	1.76	1.92	1.52					
	Jul-20	0.17	0.68	0.82	0.49					
	Aug-20	0.19	0.70	0.13	0.53					
	Sep-20	0.55	1.73	1.96	1.25					
	Oct-20	1.70	3.68	2.26	3.10					
	Nov-20	4.55	8.34	7.11	6.94					
	Dec-19	5.03	8.88		7.71					
	Totals:	28.09	52.02	33.98	42.71		Sum	13		
Rainfa (sum i	all of prior peri is 15-18)	iod was: drie	r than normal	(sum is 6-9), n	ormal (sum	is 10-14), wetter tha	an normal	Normal		

WETS Table and Measured Rainfall source: <u>http://agacis.rcc-acis.org/</u>

Benton County FIPS: 41003

Normals are calculated based on climate period 1981-2010.

November 2020 observed rainfa https://agsci.oregonstate.edu/hyslop-weather-station

Asses: WETS	sing Rainfal Station : CO	I for the Pre DRVALLIS S	ceding 3-Mon TATE UNIV, C	th Period (An 0R1862	tecedent Ra	iinfall)			Climate 1981	Period -2010
Measu	red Rainfall	: Corvallis S	tate Universit	ty, OR, 2017-2	018 Water Y	'ear			Oct. 1	Jan. 1
Most	Prior Month Recent First	WETS Rain 30th incl	fall Percentile 70th nes	Measured Rainfall inches	Condition Dry, Wet, Normal	Condition Value (1=dry, 2=normal, 3=wet)	Month Weight	Multiply previous 2 columns	Departure from Normal* -0.06	Departure from Normal* -0.43
1st 2nd	March February	3.46 3.91	5.35 6.80	4.55 2.09	Normal Dry	2 1	3 2	6 2	WYTD* 36.08	CYTD* 17.96
3rd	January	3.95	7.82	6.41 13.05	Normal	2	1	2	Normal 36.14	Normal 18.39
	Jan-18 Feb-18 Mar-18 Apr-18 May-17 Jun-17 Jul-17 Aug-17 Sep-17 Oct-17 Nov-17 Dec-17	3.95 3.91 3.46 2.09 1.56 0.93 0.17 0.19 0.55 1.70 4.55 5.03	7.82 6.80 5.35 3.53 2.75 1.76 0.68 0.70 1.73 3.68 8.34 8.88	6.41 2.09 4.55 5.66 8.91 3.55	Normals 6.40 5.11 4.44 2.91 2.31 1.52 0.49 0.53 1.25 3.10 6.94 7.71				*As of Date:	4/25/2018
Rainfal (sum is	Totals: l of prior per s 15-18)	28.09 iod was: drie	52.02 r than normal	31.17 (sum is 6-9), n	42.71 ormal (sum	is 10-14), wetter tha	Sum an normal	10 Normal		

WETS Table and Measured Rainfall source: <u>http://agacis.rcc-acis.org/</u> Benton County FIPS: 41003 Normals are calculated based on climate period 1981-2010.

April 2018 observed rainfall: https://agsci.oregonstate.edu/hyslop-weather-station

Asses	sing Rainfal	I for the Pre	ceding 3-Mon	th Period (Ant	tecedent Ra	iinfall)			Climate	Period
Measi	red Rainfall	· Corvallis S	tate Universi	IN 1002	018 Water V	(oar			Oct 1	-2010 Ian 1
Mcast		WETS Rain	fall Percentile	Measured		Condition Value	Month	Multiply	Departure	Departure
	Prior Month	30th	70th	Rainfall	Dry Wet	(1=dry 2=normal	Weight	previous	from Normal*	from Normal*
Most	Recent First	incl	nes	inches	Normal	(1 dry, 2 normal, 3=wet)	Wolght	2 columns	-1 05	-1 42
1st	March	3 46	5 35	4 55	Normal	2	3	6	WYTD*	CYTD*
2nd	February	3.91	6.80	2 09	Dry	1	2	2	33 56	15 44
3rd	January	3.95	7.82	6 4 1	Normal	2	1	2	Normal	Normal
	• •	0.00		13.05		_	-		34.61	16.86
					Normals				*As of Date:	4/9/2018
	Jan-18	3.95	7.82	6.41	6.40					
	Feb-18	3.91	6.80	2.09	5.11					
	Mar-18	3.46	5.35	4.55	4.44					
	Apr-18	2.09	3.53		2.91					
	May-17	1.56	2.75		2.31					
	Jun-17	0.93	1.76		1.52					
	Jul-17	0.17	0.68		0.49					
	Aug-17	0.19	0.70		0.53					
	Sep-17	0.55	1.73		1.25					
	Oct-17	1.70	3.68	5.66	3.10					
	Nov-17	4.55	8.34	8.91	6.94					
	Dec-17	5.03	8.88	3.55	7.71					
	Totals:	28.09	52.02	31.17	42.71		Sum	10		
Rainfa (sum i	ll of prior per s 15-18)	iod was: drie	r than normal	(sum is 6-9), n	ormal (sum	is 10-14), wetter tha	an normal	Normal		

WETS Table and Measured Rainfall source: <u>http://agacis.rcc-acis.org/</u> Benton County FIPS: 41003 Normals are calculated based on climate period 1981-2010.

April 2018 observed rainfall: https://agsci.oregonstate.edu/hyslop-weather-station

WETS Station: CORVALLIS STATE UNIVERSITY, OR

Requested years: 1971 -2000

Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days precip 0.10 or more	Avg Snowfall	
Jan	46.2	33.6	39.9	6.46	3.95	7.82	13	1.1	
Feb	50.3	35.3	42.8	5.71	3.91	6.80	12	2.1	
Mar	55.6	37.6	46.6	4.59	3.46	5.35	12	0.1	
Apr	60.2	39.9	50.0	2.98	2.09	3.53	9	0.0	
May	66.6	44.0	55.3	2.30	1.56	2.75	6	0.0	
Jun	72.9	48.5	60.7	1.46	0.93	1.76	4	0.0	
Jul	80.6	51.8	66.2	0.57	0.17	0.68	2	0.0	
Aug	81.7	51.5	66.6	0.73	0.19	0.70	2	0.0	
Sep	76.4	48.2	62.3	1.47	0.55	1.73	4	0.0	
Oct	64.8	41.8	53.3	3.02	1.70	3.68	7	0.0	
Nov	52.3	38.0	45.2	6.94	4.55	8.34	14	0.2	
Dec	45.7	33.8	39.8	7.43	5.03	8.88	13	1.3	
Annual:					38.08	48.18			
Average	62.8	42.0	52.4	-	-	-	-	-	
Total	-	-	-	43.65			97	4.8	

GROWING SEASON DATES

Years with missing data:	24 deg = 0	28 deg = 0	32 deg = 0
Years with no occurrence:	24 deg = 10	28 deg = 0	32 deg = 0
Data years used:	24 deg = 30	28 deg = 30	32 deg = 30
Probability	24 F or higher	28 F or higher	32 F or higher
50 percent *	1/17 to 1/2: 350 days	2/27 to 11/22: 268 days	4/20 to 10/27: 190 days
70 percent *	No occurrence	2/16 to 12/3: 290 days	4/13 to 11/3: 204 days

* Percent chance of the growing season occurring between the Beginning and Ending dates.

STATS TABLE - total precipitation (inches)													
Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
1893	M2.37	5.40	M4.55	M4.48	M3.41	M0.60	Т	0.09	M3. 24	M5. 67	M8. 28	M3. 92	42. 01
1894	M12.38	M5.29	M8.62	2.81	1.90	2.94	0.10	0.05	1. 20	4. 45	2.10	5.26	47. 10
1895	11.65	1.55	4.45	3.06	4.36	0.28		Т	M2. 15	Т	4.64	11. 21	43. 35
1896	8.35	M3.34	3.13	6.98	5.71	0.98	0.00	1.16	0. 41	3. 30	M16. 69	M7. 81	57. 86
1897	M2.84	6.98		1.73	1.09	2.09	0.09	0.38	1. 57	2. 38	11. 66	7.09	37. 90
1898	3.82	5.48	2.34	2.44	2.26		0.23	0.12	3. 15	1. 59	8.63	M3. 62	33. 68
1899	6.26	5.61	5.16	3.64	2.26	0.42	0.07	2.76	1. 04	3. 97	10. 93	7.57	49. 69
1900	4.74	4.01	4.66	1.72	3.16	2.03	0.26	0.20	2. 51	5. 88	3.46	5.99	38. 62

APPENDIX E

Wetland Determination Data Forms

WETLAND DETERMIN	NATION DATA	FORM – West	ern Mounta	ins, Valleys and	Coast Region	
Project/Site: Philomath Water Treatment Pl	lant	City/County:	Philomath / B	enton	Sampling Date: 4/9/20	018
Applicant/Owner: Westech Engineering / City	of Philomath Pub	lic Works Departme	ent	State: OR	Sampling Point:	SP1
Investigator(s): Tom Dee, Evan Dulin		Section, To	ownship, Range	e: 12C, 12S, 6W		
Landform (hillslope, terrace, etc.): terrace			Local relief ((concave, convex, none):	concave Slope (%): 1
Subregion (LRR): A, Northwest Forests and C	Coast	Lat:	- Long	q:	Datum:	,
Soil Map Unit Name: 50 Coburg silty c	lav loam, rarely flo	ooded, 0-3% slopes	_	NWI 0	classification: Partly PF	0
Are climatic / hydrologic conditions on the site	typical for this time	e of year?	Ye	s X No	(If no, explain in I	Remarks)
Are Vegetation,Soil	, or Hydrology	significantly o	listurbed? A	re "Normal Circumsta	nces" present? Yes	X_No
Are Vegetation ,Soil	, or Hydrology	naturally prob	olematic? (I	f needed, explain any	answers in Remarks.)	
SUMMARY OF FINDINGS – Attach	site map show	wing sampling	point locat	ions, transects, i	mportant features	s, etc.
Hydrophytic Vegetation Present?	Yes X	No	T			
Hydric Soil Present?	Yes X	No	Is the Samp	led Area		
Wetland Hydrology Present?	Yes	No X	within a We	tland? Yes	No X	
Precipitation prior to fieldwork: 2.63 inches Remarks:	s 2 weeks prior in	Corvallis (0.93 inche	es above norm	al). (day prior received	1.81 inches!!)	
						1
	Absolute	Dominant	Indicator	Dominance Test w	orksheet:	
(Plot size: <u>30 r</u>)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominar	nt Species	
1. 				That Are OBL, FAC	W, or FAC: 2	(A)
2.						
3.				Total Number of Do	minant	
4.				Species Across All	Strata: 2	(B)
	0%	= Total Cover				
Sapling/Shrub Stratum (Piot size: 10 r)			Percent of Dominan	nt Species	
^{1.} Salix sitchensis	65%	Yes	FACW	That Are OBL, FAC	W, or FAC: <u>100%</u>	(A/B)
2.				Prevalence Index v	worksheet:	
3.				Total % Cover	of: Multiply by:	
4				OBL species	<u>0</u> x 1 =	0
5				FACW species 1	165 x 2 = 3	330
	65%	= Total Cover		FAC species	10 x 3 =	30
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)				FACU species	0 x 4 =	0
1. Phalaris arundinacea	100%	Yes	FACW	UPL species	0 x 5 =	0
2. Dipsacus fullonum	10%	No	FAC	Column Totals: 1	175 (A) 3	360 (B)
3.				Prevalence Inde	x = B/A = <u>2.0</u>	<u>)6</u>
4				Hydrophytic Veget	ation Indicators:	
5.				1 - Rapid Test f	or Hydrophytic Vegetat	ion
6.				X 2 - Dominance	Test is >50%	
7.				3 - Prevalence I	Index is ≤3.0 ¹	
8.				4 - Morphologic	al Adaptations ¹ (Provid	e supporting
9.				data in Rema	arks or on a separate s	heet)
10.				5 - Wetland Nor	n-Vascular Plants ¹	
11.				Problematic Hyd	drophytic Vegetation ¹ (I	Explain)
Woody Vine Stratum (Plot size: 10' r	110%	= Total Cover		¹ Indicators of hydric	soil and wetland hydro	logy must
1.						
2.				Hydrophytic		
	0%	= Total Cover		Vegetation	Yes X No	
% Bare Ground in Herb Stratum 0%				Present?		
Remarks:				Entere	ed by: <u>KL</u> QC by: <u>Q</u> C by: <u>Q</u>	cmw

Depth	Ma	trix		Redox Fe	eatures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-5	10YR 3/2	99	7.5YR 4/6	1	С	М	SiC	
5-8	10YR 3/2	98	7.5YR 4/6	2	С	М	С	
8-17	10YR 3/2	95	10yr 4/4	5	С	М	SiC	
			<u>.</u>					
Type: C=Conc	entration, D=Depl	etion, RM=Red	duced Matrix CS=Cove	ered or Coated	d Sand Grains.	² Location:	PL=Pore Lining, M=M	atrix.
lydric Soil Indi	cators: (Applica	ble to all LRR	s, unless otherwise	noted.)		Indicators	or Problematic Hydr	ic Soils ³ :
Histosol (A1)		Sandy Redox (St	5)		2 cm M	uck (A10)	
Histic Epipe	don (A2)		Stripped Matrix (S6)		Red Pa	ent Material (TF2)	
Black Histic	(A3)		Loamy Mucky Mi	neral (F1) (ex	cept MLRA 1)	Very Sh	allow Dark Surface (T	F12)
Hydrogen S	ulfide (A4)		Loamy Gleyed M	atrix (F2)		Other (E	xplain in Remarks)	
Depleted Be	elow Dark Surface	e (A11)	Depleted Matrix ((F3)				
Thick Dark	Surface (A12)		X Redox Dark Surf	ace (F6)		³ Indicators of	of hydrophytic vegetati	on and
Sandy Mucl	(S1) vy Mineral (S1)		Depleted Dark S	urface (F7)		wetland h	/drology must be pres	ent,
Sandy Glev	ed Matrix (S4)		Redox Depressio	ons (F8)		unless dis	turbed or problematic.	
Restrictive Lav	er (if present):							
Depth (inches)): S = sand; Si = sil	; C = clay; L =	loam or loamy; co = e	coarse; f = fine	H; vf = very fine;	ydric Soil Pre + = heavy (m	sent? Yes X ore clay); - = light (less	No s clay)
Type: Depth (inches) Remarks: TYDROLOG): S = sand; Si = sil Y logy Indicators:	; C = clay; L =	loam or loamy; co = o	coarse; f = fine	H; e; vf = very fine;	ydric Soil Pre + = heavy (m	sent? Yes X ore clay); - = light (less	No s clay)
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydrol Primary Indicato): S = sand; Si = sil Y logy Indicators: rs (minimum of o	; C = clay; L =	loam or loamy; co = o	coarse; f = fine	e; vf = very fine;	ydric Soil Pre + = heavy (m _ Secondary	sent? Yes X ore clay); - = light (less ndicators (2 or more r	No s clay) equired)
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydro Primary Indicato Surface Wa): S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1)	t; C = clay; L =	loam or loamy; co = o neck all that apply) Water-Stained Le	coarse; f = fine	e; vf = very fine;	ydric Soil Pre + = heavy (m <u>Secondary </u> 	sent? Yes X ore clay); - = light (less ndicators (2 or more r stained Leaves (B9) (N	<u>No</u> s clay) <u>equired)</u> /ILRA 1, 2,
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydrol Primary Indicato Surface Wa High Water): S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2)	_ t; C = clay; L = ne required; cf	e loam or loamy; co = o heck all that apply) Water-Stained Lo 1. 2. 4A. and 4	coarse; f = fine eaves (B9) (ex	e; vf = very fine;	ydric Soil Pre + = heavy (m <u>Secondary I</u> Water-S 4A, a	sent? Yes X ore clay); - = light (less ndicators (2 or more r stained Leaves (B9) (N nd 4B)	No s clay) equired) ILRA 1, 2,
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydro Primary Indicato Surface Wa High Water Saturation (): S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2) A3)	; C = clay; L =	loam or loamy; co = o neck all that apply) Water-Stained Lo 1, 2, 4A, and 4 Salt Crust (B11)	coarse; f = fine eaves (B9) (ex 4B)	e; vf = very fine;	ydric Soil Pre + = heavy (m <u>Secondary I</u> Water-S 4A, a Drainag	sent? Yes X ore clay); - = light (less ndicators (2 or more r stained Leaves (B9) (N nd 4B) e Patterns (B10)	No s clay) equired) ILRA 1, 2,
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydro Primary Indicato Surface Wa High Water Saturation (Water Mark): S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2) A3) s (B1)	 t; C = clay; L = ne required; cf	e loam or loamy; co = o neck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr	coarse; f = fine eaves (B9) (ex 4B) rates (B13)	e; vf = very fine;	ydric Soil Pre + = heavy (m <u>Secondary </u> Water-S Drainag Dry-Sea	sent? Yes X ore clay); - = light (less ndicators (2 or more r stained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2)	No s clay) equired) /ILRA 1, 2,
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydrol Primary Indicato Contract Water High Water Saturation (Water Mark Sediment D): S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2) A3) s (B1) eposits (B2)	 t; C = clay; L = ne required; cł	<pre>beck all that apply) Mater-Stained Le Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide</pre>	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1)	e; vf = very fine;	ydric Soil Pre + = heavy (m <u>Secondary </u> Water-S Water-S Drainag Dry-Sea Saturati	sent? Yes X ore clay); - = light (less ndicators (2 or more r itained Leaves (B9) (N nd 4B) e Patterns (B10) ison Water Table (C2) on Visible on Aerial Im	No s clay) equired) ILRA 1, 2,
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydro Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi): S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3)	 t; C = clay; L = ne required; ch	loam or loamy; co = o heck all that apply) Water-Stained Lo 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizoso	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oberes along L	e; vf = very fine; ccept MLRA	ydric Soil Pre + = heavy (m 	sent? Yes X ore clay); - = light (less ndicators (2 or more r stained Leaves (B9) (N nd 4B) e Patterns (B10) ison Water Table (C2) on Visible on Aerial Im phic Position (D2)	No s clay) equired) MLRA 1, 2, hagery (C9)
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydro Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or): S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) · Crust (B4)	 t; C = clay; L = <u>ne required; cl</u>	eloam or loamy; co = o neck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along L uced Iron (C4)	e; vf = very fine; ccept MLRA	ydric Soil Pre + = heavy (m 	sent? Yes X ore clay); - = light (less ndicators (2 or more r stained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3)	No s clay) equired) ILRA 1, 2, hagery (C9)
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydro Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi): S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) · Crust (B4) ts (B5)	t; C = clay; L =	 loam or loamy; co = 0 heck all that apply) Water-Stained Leg 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu 	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along L uced Iron (C4) uction in Tilled	e; vf = very fine; ccept MLRA	ydric Soil Pre + = heavy (m <u>Secondary I</u> Water-S Water-S Urainag Dry-Sea Saturati)Geomoi Shallow FAC-Ne	sent? Yes X ore clay); - = light (less ndicators (2 or more r itained Leaves (B9) (N nd 4B) e Patterns (B10) ison Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5)	No s clay) equired) ILRA 1, 2, hagery (C9)
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Type: Depth (inches) Remarks: TYDROLOG Vetland Hydrol Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation V): S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) · Crust (B4) ts (B5) I Cracks (B6) /isible on Aerial In epotated Concave	 t; C = clay; L = ne required; cf ne required; cf Surface (B7)	e loam or loamy; co = o heck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along L uced Iron (C4) uction in Tilled sed Plants (D1 Remarks)	e; vf = very fine; cept MLRA viving Roots (C3) Soils (C6) () (LRR A)	ydric Soil Pre + = heavy (m <u>Secondary I</u> Water-S Water-S Water-S Nater-S Nater-S Saturati Saturati Saturati Shallow FAC-Ne Raised J Frost-He	sent? Yes X ore clay); - = light (less ndicators (2 or more r itained Leaves (B9) (N nd 4B) e Patterns (B10) ison Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF eave Hummocks (D7)	No s clay) equired) fILRA 1, 2, hagery (C9)
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydrol Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation V Sparsely Ve	S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) ts (B5) I Cracks (B6) /isible on Aerial In- getated Concave	t; C = clay; L = <u>ne required; cf</u> nagery (B7) Surface (B8)	eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) beheres along L uced Iron (C4) uced Iron (C4) uction in Tilled sed Plants (D1 Remarks)	e; vf = very fine; ccept MLRA	ydric Soil Pre + = heavy (m 	sent? Yes X ore clay); - = light (less ndicators (2 or more r stained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF eave Hummocks (D7)	No s clay) equired) MLRA 1, 2, hagery (C9)
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydro Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation V Sparsely Ve	S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) · Crust (B4) ts (B5) I Cracks (B6) /isible on Aerial In- getated Concave ons:	 t; C = clay; L = <u>ne required; cf</u> nagery (B7) Surface (B8)	eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along L uced Iron (C4) uction in Tilled sed Plants (D1 Remarks)	e; vf = very fine; accept MLRA	ydric Soil Pre + = heavy (m 	sent? Yes X ore clay); - = light (less ndicators (2 or more r itained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF eave Hummocks (D7)	No s clay) equired) fILRA 1, 2, hagery (C9)
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Type: Depth (inches) Remarks: TYDROLOG Vetland Hydro Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation V Sparsely Ve Surface Water I Surface Water I Surface Water I	S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) ts (B5) I Cracks (B6) /isible on Aerial In egetated Concave ons: Present? Ye esent? Ye		Ioam or loamy; co = 0 neck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Red Stunted or Stress Other (Explain in No X No X	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) beres along L uced Iron (C4) uced Iron (C4) uction in Tilled sed Plants (D1 Remarks) epth (inches): epth (inches):	(Capt MLRA	ydric Soil Pre + = heavy (m 	sent? Yes X ore clay); - = light (less ndicators (2 or more r itained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF eave Hummocks (D7)	No s clay) equired) MLRA 1, 2, hagery (C9) R A)
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydrol Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation V Sparsely Vet Surface Water I Surface Water I Nater Table Pro- Saturation Pressincludes capille	S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) · Crust (B4) ts (B5) I Cracks (B6) /isible on Aerial In regetated Concave ons: Present? Ye ent? Ye ent? Ye		Preck all that apply) Water-Stained Leg 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in No X No X No X No X No X No X	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along L uced Iron (C4) uction in Tilled sed Plants (D1 Remarks) epth (inches): epth (inches): epth (inches):	H e; vf = very fine; accept MLRA 	ydric Soil Pre + = heavy (m <u>Secondary </u> Water-S Water-S B Dry-Sea Dry-Sea Dry-Sea Saturati)Geomor Shallow Shallow Shallow Shallow Shallow Shallow Shallow Shallow Shallow Shallow Shallow Shallow Shallow	sent? Yes X ore clay); - = light (less ndicators (2 or more r itained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF eave Hummocks (D7)	No s clay) equired) /ILRA 1, 2, hagery (C9) R A) ? No X
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydrol Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation V Sparsely Ve Surface Water I Surface Saturation Pres includes capilla	S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) · Crust (B4) ts (B5) I Cracks (B6) /isible on Aerial In egetated Concave ons: Present? Ye esent? Ye ent? Ye ary fringe) ded Data (stream		Ioam or loamy; co = 0 heck all that apply) Water-Stained Leg 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in No X No X No X No X No X No X Deping well, aerial photo	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along L uced Iron (C4) uction in Tilled sed Plants (D1 Remarks) epth (inches): epth (inches):	H e; vf = very fine; ccept MLRA 	ydric Soil Pre + = heavy (m <u>Secondary I</u> Water-S Water-S Water-S Uranag Dry-Sea Saturati)Geomor Shallow Shallow FAC-Ne Raised J Frost-He Wetland	sent? Yes X ore clay); - = light (less ndicators (2 or more r itained Leaves (B9) (N nd 4B) e Patterns (B10) ison Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF eave Hummocks (D7) d Hydrology Present Yes	No s clay) equired) fILRA 1, 2, hagery (C9) R A) ? No X
Type: Depth (inches) Remarks: TYDROLOG Vetland Hydrol Primary Indicato Surface Wa High Water Saturation (Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi Surface Soi Inundation V Sparsely Ve Surface Water I Surface Capilla Describe Recor	S = sand; Si = sil Y logy Indicators: rs (minimum of o ter (A1) Table (A2) A3) s (B1) eposits (B2) ts (B3) Crust (B4) ts (B5) I Cracks (B6) /isible on Aerial In egetated Concave ons: Present? Ye esent? Ye ent? Ye ent? Ye ary fringe) ded Data (stream	 t; C = clay; L = <u>ne required; cf</u> <u>ne required; cf</u> s s s gauge, monit	Ioam or loamy; co = o neck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Reduct Stunted or Stress Other (Explain in No X No X No X D No X D No X D No X D D No X D No X D No X D D No X D D D No X D D No X D	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along L uced Iron (C4) uction in Tilled sed Plants (D1 Remarks) epth (inches): epth (inches): epth (inches): os, previous ins	H e; vf = very fine; ccept MLRA (viving Roots (C3)) Soils (C6) (LRR A) (LRR A)	ydric Soil Pre + = heavy (m 	sent? Yes X ore clay); - = light (less ndicators (2 or more r itained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF eave Hummocks (D7) d Hydrology Present Yes	No equired) MLRA 1, 2, hagery (C9) R A) ? No X

WETLAND DETERMI	NATION DATA	FORM – West	ern Mounta	ins, Valleys and	Coast Region	
Project/Site: Philomath Water Treatment P	lant	City/County:	Philomath / B	enton	Sampling Date: 4/9	9/2018
Applicant/Owner: Westech Engineering / City	of Philomath Pub	lic Works Departm	ent	State: OR	Sampling Poin	t: SP2
Investigator(s): Tom Dee, Evan Dulin		Section, T	ownship, Rang	e: 12C, 12S, 6W		
Landform (hillslope, terrace, etc.): ditch			Local relief	(concave, convex, none):	concave Slop	e (%): 0
Subregion (LRR): A, Northwest Forests and C	Coast	Lat:	Lon	g:	Datum:	
Soil Map Unit Name: 50 Coburg silty of	clay loam, rarely fl	ooded, 0-3% slopes	5	NWI	classification: Partly	PFO
Are climatic / hydrologic conditions on the site	typical for this tim	e of year?	Ye	s X No	(If no, explain	in Remarks)
Are Vegetation,Soil	, or Hydrology	significantly o	disturbed? A	re "Normal Circumstar	nces" present? Ye	s X No
Are Vegetation,Soil	, or Hydrology	naturally prol	blematic? (f needed, explain any	answers in Remarks	s.)
SUMMARY OF FINDINGS – Attach	site map sho	wing sampling	point locat	ions, transects, i	mportant featur	res, etc.
Hydrophytic Vegetation Present?	Yes X	No	la tha Cama			
Hydric Soil Present?	Yes X	No	is the Samp	lea Area		
Wetland Hydrology Present?	Yes X	No	within a we	tiand? Yes	<u>X No</u>	
Precipitation prior to fieldwork: 2.63 inche Remarks:	s 2 weeks prior in	Corvallis (0.93 inch	es above norm	al). (day prior received	1.81 inches!!)	
Tree Stratum (Plot size: 30' r)	Absolute	Dominant	Indicator	Dominance Test w	orksheet:	
1	<u>% Cover</u>	<u>Species /</u>	<u>Status</u>	Number of Dominar	nt Species	(1)
2				That Are OBL, FAC	W, or FAC: 2	2(A)
3						
4				Total Number of Do	minant	
		T (10		Species Across All	Strata:	<u>з</u> (В)
Sanling/Shruh Stratum (Plot size: 10')	<u> </u>	= Total Cover		Dense to CD and a	+ O	
1)			Percent of Dominan	it Species	20/ (
Salix sitchensis	90%	Yes	FACW	That Are OBL, FAC	W, or FAC: <u>67</u>	<u>%</u> (A/B)
2. Rubus armeniacus	5%	No	FAC	Total % Cover	of: Multiply by:	
					0 v1-	
4. 					<u> </u>	0
5. 		Tatal Osum		FACW species	<u>95 </u>	190
Horp Stratum (Plot size: 5'r)	95%	= Total Cover			<u>5</u> x 3 -	15
	50/	N ₂ -	FAOL		<u> </u>	20
Melissa officinalis	5%	Yes	FACU		<u>0</u> x 3 =	0(B)
2. Rumex salicifolius	5%	res	FACW	Brovalanco Indo	$\frac{100}{100}$ (A)	225 (B) 2.14
					ation Indicators:	2.14
4. 				1 Papid Tast f	ation mulcators.	tation
5. 				X 2 Dominance	Tost is >50%	lation
7					rest is > 50%	
·				3 - Prevalence i	$\frac{1}{10000000000000000000000000000000000$	ida avena antina
o				4 - Morphologica	al Adaptations (Prov	vide supporting
9					aiks of off a separate	e sheet)
11				Droblemetic Live		¹ (Evalaia)
		- Tatal Carrier			anophytic vegetation	(⊏xpiain) drology roust
Woody Vine Stratum (Plot size: <u>10' i</u> 1	<u></u>)	= Total Cover		be present.	soli and wetland hyd	arology must
2.				Hydrophytic		
	0%	= Total Cover		Vegetation	Yes X No	
% Bare Ground in Herb Stratum 90%				Present?		
Remarks:				Entere	d by: <u>KL</u> QC by	y: cmw

(inches) Color (moist) % Color (moist) % Type ¹ Loc ² Texture Rema 0-5 10VR 2/2 100	(nohes) Color (moist) % Type ¹ Loc ² Texture Remain 0-5 10YR 2/2 100 10YR 3/4 5 C M SiG	(inches) Color (moist) % 0-5 10YR 2/2 100 5-9 2.5Y 3/2 95 9-14 10YR 3/3 95 9 9 10YR 3/3 95 9 14 10YR 3/3 95 10 Histosol (A1) 1 Histosol (A1) Algo and Katris (A2) 1 Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4)	<u>Color (moist)</u> 0 10YR 3/4 5 5YR 4/6 5 5YR 4/6 6 SYR 4/6 6 Synthetic Syn	% 5 5 5 6 noted.) 5) S6) neral (F1) (excellatrix (F2) (F3) ace (F6) urface (F7) ons (F8)	Type ¹ C C Sand Grains.	Loc ² M PL PL ² Location: Pl Indicators for 2 cm Mucl Red Parer Very Shall Other (Exp ³ Indicators of H wetland hydr unless distur ydric Soil Prese	Texture F mucky SiL SiC SiC C C C	Remark
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Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) 3 ¹ Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Retrictive Layer (if present): Type: Hydric Soil Present? Yes X No Depth (inches): S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay) Hydric Soil Present? Yes X No Vestiand Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) X Surface Water (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) X Salt Crust (B11) Drainage Patterns (B10) Dry-Season Water Table (C2) Y Saturation (A3) Salt Crust (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Image	Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, wetland hydrology must be present, wetland hydrology must be present, metland hydrology must be present, wetland hydrology must be present, metland hydrology must be present, wetland hydrology must be present, metland hydrology must be present, wetland hydrology indicators: YUDROLOGY Yetland Hydrology Indicators: Ymary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) X Sufface Water (A1) Water-Stained Leaves (B9) (except MLRA X High Water Table (A2) 1, 2, 4A, and 4B) X Saturation (A3) Salt Crust (B1) Water Marks (B1) Aquatic Invertebrates (B13) May are Marks (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3)	Hydrogen Sulfide (A4) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Restrictive Layer (if present): Type: Depth (inches): Remarks: S = sand; Si = silt; C = clay; HYDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one required X Surface Water (A1) X High Water Table (A2) X Saturation (A2)	Loamy Gleyed M Depleted Matrix (X Redox Dark Surfa Depleted Dark Surfa Redox Depressio	latrix (F2) (F3) ace (F6) urface (F7) ons (F8) coarse; f = fine;	Hy	Other (Exp ³ Indicators of I wetland hydr unless distur ydric Soil Prese	ent? Yes X No	
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Type: Depth (inches): Hydric Soil Present? Yes X No Remarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay) HYDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) X Surface Water (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) X High Water Table (A2) 1, 2, 4A, and 4B) 4A, and 4B) X Saturation (A3) Sati Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3)	Type:	Type: Depth (inches): Remarks: S = sand; Si = silt; C = clay; HYDROLOGY Vetland Hydrology Indicators: Primary Indicators (minimum of one required X Surface Water (A1) X High Water Table (A2) X Surface (A2)	y; L = loam or loamy; co = o	coarse; f = fine;	Hy	ydric Soil Prese	ent? Yes X No	
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X Surface Water (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLRA 1, 2, X High Water Table (A2) 1, 2, 4A, and 4B) 4A, and 4B) X Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3)	X Surface Water (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) X High Water Table (A2) 1, 2, 4A, and 4B) 4A, and 4B) X Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Depth (inches): 1 Water Table Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): Surface Saturation Present? Yes X <th>X Surface Water (A1) X High Water Table (A2)</th> <th>ed; check all that apply)</th> <th></th> <th></th> <th>_Secondarv Ind</th> <th>icators (2 or more required)</th> <th></th>	X Surface Water (A1) X High Water Table (A2)	ed; check all that apply)			_Secondarv Ind	icators (2 or more required)	
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X Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3)	X Saturation (A3)	$\mathbf{X}_{\mathbf{x}}$ Seturation (A2)	1. 2. 4A. and 4	4B)		4A. and	4B)	_,
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Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3)	Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Sturface Water Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): surface Wetland Hydrology Present? Saturation Present? Yes X No Depth (inches): surface Yes X No	Drift Deposits (B3)	Oxidized Rhizosr	oheres along Liv	ving Roots (C3	Geomorph	ic Position (D2)	,
	Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Tield Observations: Inundation Visible Present? Yes Surface Water Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): Surface Saturation Present? Yes X No Depth (inches): Surface	Algal Mat or Crust (B4)	Presence of Red	uced Iron (C4)		Shallow A	quitard (D3)	
Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5)	Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Sturface Water Present? Yes X Surface Water Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): surface Saturation Present? Yes X No Depth (inches): surface	Iron Deposits (B5)	Recent Iron Redu	uction in Tilled S	Soils (C6)	FAC-Neut	ral Test (D5)	
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A)	Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): surface Saturation Present? Yes X No Depth (inches): surface Yes X No	Surface Soil Cracks (B6)	Stunted or Stress	sed Plants (D1)	(LRR A)	Raised An	t Mounds (D6) (LRR A)	
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7)	Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): saturation Present? Yes X No Depth (inches): saturation Present? Yes X No	Inundation Visible on Aerial Imagery (B7	B7) Other (Explain in	Remarks)	()	Frost-Hea	ve Hummocks (D7)	
Sparsely Vegetated Concave Surface (B8)	Field Observations: Surface Water Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): surface Wetland Hydrology Present? Saturation Present? Yes X No Depth (inches): surface Yes X No	Sparsely Vegetated Concave Surface (P	(B8)	,				
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Field Observations:	Surface Water Table Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): surface Saturation Present? Yes X No Depth (inches): surface	Surface Water Drocent?		··· • • • • • • • • • • • • • • • • • •	4			
Field Observations:	voler Table Present? Yes X No Depth (inches): surface Wetland Hydrology Present? Saturation Present? Yes X No Depth (inches): surface Yes X No	Surface water Present? Yes X	NoD	enth (inches)	1			
Field Observations: Surface Water Present? Yes X No Depth (inches): 1	Saturation Present / Yes X No Denth (inches) surface I Yes X No	vvaler Table Present? Yes X			,	Wetland H	iyarology Present?	
Field Observations: Surface Water Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): surface Water Table Present? Yes X No Depth (inches): surface Octuation Dependently Yes X No Depth (inches): surface	(includes capillary fringe)	Saturation Present? Yes X	NoD	epth (inches):	surface			
Field Observations: Depth (inches): 1 Surface Water Present? Yes X No Depth (inches): surface Water Table Present? Yes X No Depth (inches): surface Wetland Hydrology Present? Saturation Present? Yes X No Depth (inches): surface Yes Yes X No (includes capillary fringe) Ves X No No Ves X No	Describe Recorded Data (stream dauge, monitoring well, serial photos, providus inspections), if availables		No D	epth (inches): epth (inches):	surface surface		Yes X No	
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7)	Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): surface Saturation Present? Yes X No Depth (inches): surface Yes X No	Inundation Visible on Aerial Imagery (B7	B7)Other (Explain in	Remarks)		Frost-Hea	ve Hummocks (D7)	
Sparsely Vegetated Concave Surface (B8)	Field Observations: Depth (inches): 1 Surface Water Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): surface Wetland Hydrology Present? Saturation Present? Yes X No Depth (inches): surface Yes X No	Sparsely Vegetated Concave Surface (B	(B8)					
oparoby regelated contaite canade (Bo)	Surface Water Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): surface Wetland Hydrology Present? Saturation Present? Yes X No Depth (inches): surface Yes X No	ield Observations:	. ,					
	Surface Water Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): surface Wetland Hydrology Present? Saturation Present? Yes X No Depth (inches): surface Yes X No	ieid Observations:						
Field Observations:	Water Table Present? Yes X No Depth (inches): surface Wetland Hydrology Present? Saturation Present? Yes X No Depth (inches): surface Yes X No	Surface Water Present? Yes X	No D	enth (inches).	1			
Field Observations: Surface Water Present? Yes X No Depth (inches): 1	Saturation Present? Yes X No Depth (inches) surface Yes X No	Water Table Present? Yes X		opun (mones).		Wetland H	lydrology Present?	
Field Observations: Surface Water Present? Yes X No Depth (inches): 1 Water Table Present? Yes X No Depth (inches): surface Wetland Hydrology Present?		Saturation Present? Yes X	No D	epth (inches):	surface			

WETLAND DETERMI	NATION DATA	FORM – West	ern Mounta	ains, Valleys and	Coast Region	
Project/Site: Philomath Water Treatment F	Plant	City/County:	Philomath / B	Benton	Sampling Date: 4	/9/2018
Applicant/Owner: Westech Engineering / City	/ of Philomath Pub	lic Works Departm	ent	State: OR	Sampling Po	int: SP3
Investigator(s): Tom Dee, Evan Dulin		Section, T	ownship, Rang	e: 12C, 12S, 6W		
Landform (hillslope, terrace, etc.): terrace			Local relief	(concave, convex, none):	concave Slo	ope (%): 1
Subregion (LRR): A, Northwest Forests and (Coast	Lat:	 Lon	g:	Datum:	
Soil Map Unit Name: 50 Coburg silty	clay loam, rarely flo	ooded, 0-3% slopes	3	NWI	classification: Part	ly PFO
Are climatic / hydrologic conditions on the site	typical for this tim	e of year?	Ye	s X No	(If no, explai	n in Remarks)
Are Vegetation,Soil	, or Hydrology	significantly of	disturbed? A	Are "Normal Circumstar	nces" present?	res X No
Are Vegetation,Soil	, or Hydrology	naturally prol	blematic? (If needed, explain any	answers in Remar	ks.)
SUMMARY OF FINDINGS – Attach	site map show	wing sampling	point locat	ions, transects, i	mportant featu	ures, etc.
Hydrophytic Vegetation Present?	Yes X	No				
Hydric Soil Present?	Yes X	No	Is the Samp	led Area		
Wetland Hydrology Present?	Yes X	No	within a We	tland? Yes	X No	
Precipitation prior to fieldwork: 2.63 inche Remarks:	s 2 weeks prior in	Corvallis (0.93 inch	es above norm	al). (day prior received	1.81 inches!!)	
Tree Stratum (Plot size: 30' r)	Absolute	Dominant	Indicator	Dominance Test w	orksheet:	
(Flot size. <u>50 1</u>)	<u>% Cover</u>	Species?	Status	Number of Dominar	nt Species	
2				That Are OBL, FAC	W, or FAC:	<u>2</u> (A)
2						
3				Total Number of Do	minant	
4. 				Species Across All	Strata:	2 (B)
	0%	= Total Cover				
Sapling/Shrub Stratum (Plot size: 10'	<u>r</u>)			Percent of Dominan	nt Species	
1.				That Are OBL, FAC	W, or FAC: <u>1</u>	<u>00%</u> (A/B)
2.				Prevalence Index v	worksheet:	
3.				Total % Cover	of: <u>Multiply by:</u>	
4				OBL species	0 x 1 =	0
5				FACW species	20 x 2 =	40
	0%	= Total Cover		FAC species	65 x 3 =	195
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)				FACU species	10 x 4 =	40
1. Festuca rubra	50%	Yes	FAC	UPL species	5 x 5 =	25
2. Camassia quamash	20%	Yes	FACW	Column Totals: 1	100 (A)	300 (B)
3. Poa species	15%	No	FAC ?	Prevalence Inde	x = B/A =	<u>3.00</u>
4. Hypochaeris radicata	5%	No	FACU	Hydrophytic Veget	ation Indicators:	
5. Geranium dissectum	5%	No	NOL	1 - Rapid Test f	or Hydrophytic Veg	jetation
6. Taraxacum officinale	5%	No	FACU	2 - Dominance	Test is >50%	
7.				X 3 - Prevalence I	Index is ≤3.0 ¹	
8.				4 - Morphologic	al Adaptations ¹ (Pr	ovide supporting
9.				data in Rema	arks or on a separa	ate sheet)
10.				5 - Wetland Nor	n-Vascular Plants ¹	
11.				Problematic Hyd	drophytic Vegetatio	on ¹ (Explain)
Woody Vine Stratum (Plot size: 10'	<u>100%</u>	= Total Cover		¹ Indicators of hydric be present.	soil and wetland h	ydrology must
2				Hydrophytic		
<u> </u>		= Total Cover		Vegetation	Yes X No	
% Bare Ground in Herb Stratum	0 /0			Present?	<u> </u>	
Pomorke:						
Nomana.				Entere		by. on w

Depth	Matrix			Redox Fe	eatures			
(inches) Color	(moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-7 10YF	R 3/2	100					SiCL	
7-16 10YF	R 3/2	95	7.5YR 3/4	5	С	М	SiCL	
Type: C=Concentration	D=Depletio	n RM=Re	 duced Matrix CS=Cov	ered or Coated	Sand Grains	² Location:	PI = Pore Lining M=M	atrix
lydric Soil Indicators: (to all LRF	Rs. unless otherwise	noted.)		Indicators f	or Problematic Hydr	ic Soils ³
Histosol (A1)	, abbuon		Sandy Podoy (S)	5)		2 cm Mi		
Histosof (AT)			Sanuy Redux (S	5)		Z CITI WIL	ont Matarial (TE2)	
_				50)				
				ineral (F1) (exc	ept NILRA 1)	very Sn		F12)
Hydrogen Sulfide (A4	H)		Loamy Gleyed M	atrix (F2)		Other (E	xpiain in Remarks)	
Depleted Below Dark	Surface (A	11)	Depleted Matrix	(F3)		3	£	
Thick Dark Surface (/	A12)		X Redox Dark Surf	ace (F6)		Indicators d	i nyoropnylic vegetali	on and
Sandy Mucky Minera	l (S1)		Depleted Dark S	urface (F7)		wetland hy	/drology must be pres	ent,
Sandy Gleyed Matrix	(S4)		Redox Depression	ons (F8)		unless dis	turbed or problematic.	
Type: Depth (inches): Remarks: S = sand	; Si = silt; C	= clay; L =	= loam or loamy; co =	coarse; f = fine;	; vf = very fine;	ydric Soil Pre + = heavy (mo	sent? Yes X pre clay); - = light (less	No s clay)
Type: Depth (inches): Remarks: S = sand HYDROLOGY Vetland Hydrology India	; Si = silt; C cators:	= clay; L =	= loam or loamy; co =	coarse; f = fine;	; vf = very fine;	ydric Soil Pre + = heavy (mo	sent? Yes X pre clay); - = light (less	No s clay)
Type: Depth (inches): Remarks: S = sand HYDROLOGY Vetland Hydrology Indie Primary Indicators (minim	; Si = silt; C cators: uum of one r	= clay; L = equired; c	= loam or loamy; co = ·	coarse; f = fine;	; vf = very fine;	ydric Soil Pre + = heavy (mo _ <u>Secondary I</u>	sent? Yes X ore clay); - = light (les: ndicators (2 or more r	No s clay) equired)
Type: Depth (inches): Remarks: S = sand HYDROLOGY Vetland Hydrology India Primary Indicators (minim Surface Water (A1)	; Si = silt; C cators: num of one r	= clay; L = equired; c	= loam or loamy; co = heck all that apply) Water-Stained Lu	coarse; f = fine; eaves (B9) (exc	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (mo <u>Secondary I</u> Water-S	sent? Yes X ore clay); - = light (less ndicators (2 or more r tained Leaves (B9) (N	<u>No</u> s clay) equired) ILRA 1, 2,
Type: Depth (inches): Remarks: S = sand HYDROLOGY Vetland Hydrology India Primary Indicators (minim Surface Water (A1) X High Water Table (A2)	; Si = silt; C cators: num of one r 2)	= clay; L =	= loam or loamy; co = heck all that apply) Water-Stained Lo 1, 2, 4A, and 4	coarse; f = fine; eaves (B9) (exc 4B)	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (mo <u>Secondary I</u> Water-S 4A, a	sent? Yes X pre clay); - = light (les: ndicators (2 or more r tained Leaves (B9) (N nd 4B)	No s clay) equired) ILRA 1, 2,
Type: Depth (inches): Remarks: S = sand HYDROLOGY Vetland Hydrology India Primary Indicators (minim Surface Water (A1) X High Water Table (A2 X Saturation (A3)	; Si = silt; C cators: uum of one r 2)	= clay; L = equired; c	= loam or loamy; co = <u>heck all that apply)</u> Water-Stained Lo 1, 2, 4A, and Salt Crust (B11)	coarse; f = fine; eaves (B9) (exc 4 B)	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (mo <u>Secondary I</u> Water-S 4A, a Drainago	sent? Yes X pre clay); - = light (less <u>ndicators (2 or more r</u> tained Leaves (B9) (N nd 4B) e Patterns (B10)	No s clay) equired) ILRA 1, 2,
Type: Depth (inches): Remarks: S = sand TYDROLOGY Vetland Hydrology India Primary Indicators (minim Surface Water (A1) X High Water Table (A2 X Saturation (A3) Water Marks (B1)	; Si = silt; C cators: num of one r 2)	= clay; L =	= loam or loamy; co = <u>heck all that apply)</u> <u>Water-Stained Lo</u> 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebi	coarse; f = fine; eaves (B9) (exc 4B) rates (B13)	H; ; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (mo <u>Secondary I</u> Water-S Drainago Dry-Sea	sent? Yes X pre clay); - = light (less ndicators (2 or more r tained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2)	No s clay) equired) ILRA 1, 2,
Type: Depth (inches): Remarks: S = sand HYDROLOGY Vetland Hydrology India Primary Indicators (minim Surface Water (A1) X High Water Table (A2 X Saturation (A3) Water Marks (B1) Sediment Deposits (B	; Si = silt; C cators: num of one r 2) 32)	= clay; L =	= loam or loamy; co = heck all that apply) Water-Stained Lo 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide	coarse; f = fine; eaves (B9) (exc 4B) rates (B13) e Odor (C1)	; vf = very fine;	ydric Soil Pre + = heavy (mo 	sent? Yes X pre clay); - = light (less ndicators (2 or more r tained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im	No s clay) equired) ILRA 1, 2,
Type: Depth (inches): Remarks: S = sand HYDROLOGY Vetland Hydrology India Primary Indicators (minim Surface Water (A1) X High Water Table (A2 X Saturation (A3) Water Marks (B1) Sediment Deposits (B3)	; Si = silt; C cators: uum of one r 2) 32)	= clay; L =	= loam or loamy; co = heck all that apply) Water-Stained Lo 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp	coarse; f = fine; eaves (B9) (exc 4B) rates (B13) ∋ Odor (C1) oheres along Lir	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (mo 	sent? Yes X pre clay); - = light (less ndicators (2 or more r tained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2)	No s clay) equired) MLRA 1, 2, hagery (C9)
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WETLAND DETERMI	NATION DATA	FORM – West	tern Mounta	ains, Valleys and	Coast Region	
Project/Site: Philomath Water Treatment P	Plant	City/County:	Philomath / E	Benton	Sampling Date: 4/9	9/2018
Applicant/Owner: Westech Engineering / City	/ of Philomath Pub	lic Works Departm	ent	State: OR	Sampling Poir	nt: SP4
Investigator(s): Tom Dee, Evan Dulin		Section, T	ownship, Rang	e: 12C, 12S, 6W		
Landform (hillslope, terrace, etc.): terrace			Local relief	(concave, convex, none):	concave Slop	be (%): 0
Subregion (LRR): A, Northwest Forests and C	Coast	Lat:	 Lon	g:	Datum:	· · ·
Soil Map Unit Name: 50 Coburg silty	clay loam, rarely flo	ooded, 0-3% slopes	3	NWI	classification: Partly	PFO
Are climatic / hydrologic conditions on the site	typical for this tim	e of year?	Ye	s X No	(If no, explain	in Remarks)
Are Vegetation,Soil	, or Hydrology	significantly	disturbed? A	Are "Normal Circumsta	nces" present? Ye	es X No
Are Vegetation,Soil	, or Hydrology	naturally prol	blematic? (If needed, explain any	answers in Remarks	s.)
SUMMARY OF FINDINGS – Attach	site map show	wing sampling	point locat	ions, transects, i	mportant featur	res, etc.
Hydrophytic Vegetation Present?	Yes X	No				
Hydric Soil Present?	Yes X	No	Is the Samp	oled Area		
Wetland Hydrology Present?	Yes X	No	within a We	tland? Yes	X No	
Precipitation prior to fieldwork: 2.63 inche Remarks:	s 2 weeks prior in	Corvallis (0.93 inch	es above norm	al). (day prior received	1.81 inches!!)	
Trop Stratum (Plat aize: 20'r)	Absolute	Dominant	Indicator	Dominance Test w	orksheet:	
(Plot size. <u>50 1</u>)	<u>% Cover</u>	Species?	Status	Number of Dominar	it Species	
2				That Are OBL, FAC	W, or FAC:	<u>3</u> (A)
2						
3				Total Number of Do	minant	
4. 				Species Across All	Strata:	5 (B)
	0%	= Total Cover				
Sapling/Shrub Stratum (Plot size: 10'	<u>r</u>)			Percent of Dominar	it Species	
1.				That Are OBL, FAC	W, or FAC: <u>60</u>	<u>)%</u> (A/B)
2.				Prevalence Index	worksheet:	
3.				Total % Cover	of: Multiply by:	
4				OBL species	0 x 1 =	0
5				FACW species	<u>25 x 2 =</u>	50
	0%	= Total Cover		FAC species	<u>35 x 3 =</u>	105
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)				FACU species	40 x 4 =	160
1. Camassia quamash	25%	Yes	FACW	UPL species	0 x 5 =	0
2. Festuca rubra	20%	Yes	FAC	Column Totals: 1	00 (A)	315 (B)
3. Alopecurus pratensis	15%	Yes	FAC	Prevalence Inde	x = B/A =	<u>3.15</u>
4. Anthoxanthum odoratum	15%	Yes	FACU	Hydrophytic Veget	ation Indicators:	
5. <u>Hypochaeris radicata</u>	15%	Yes	FACU	1 - Rapid Test f	or Hydrophytic Vege	etation
6. Daucus carota	10%	No	FACU	X 2 - Dominance	Test is >50%	
7.				3 - Prevalence I	index is ≤3.0 ¹	
8.				4 - Morphologic	al Adaptations ¹ (Pro	vide supporting
9.				data in Rem	arks or on a separat	te sheet)
10.				5 - Wetland Nor	n-Vascular Plants ¹	
11.				Problematic Hy	drophytic Vegetatior	า ¹ (Explain)
Woody Vine Stratum (Plot size: 10'	<u>100%</u>	= Total Cover		¹ Indicators of hydric be present.	soil and wetland hy	drology must
2				Hydrophytic		
<u> </u>		= Total Covor		Vegetation	Yes X No	
% Bare Ground in Herb Stratum	0 /0			Present?	<u> </u>	<u> </u>
Pomorke:						
Nomana.				Entere		y. 011100

Depth	Matri	x		Redox Fe	eatures		-	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	10YR 3/2	100					SiCL	
8-16	2.5Y 3/1	88	10YR 3/3	10	С	М	SiCL	
			5YR 3/4	2	С	М		
	·							
			<u> </u>				<u> </u>	
	·		·					
	·		<u> </u>					
Type: C=Concen	ntration, D=Deplet	ion, RM=Re	duced Matrix CS=Cove	ered or Coated	Sand Grains.	² Location:	PL=Pore Lining, M=N	latrix.
Hydric Soil Indica	ators: (Applicabl	e to all LRF	s, unless otherwise i	noted.)		Indicators	for Problematic Hydr	ric Soils ³ :
Histosol (A1)			Sandy Redox (S5	5)		2 cm M	uck (A10)	
Histic Epipedo	on (A2)		Stripped Matrix (S	56)		Red Pa	rent Material (TF2)	
Black Histic (A	A3)		Loamy Mucky Mi	neral (F1) (exc	ept MLRA 1)	Very Sh	allow Dark Surface (T	F12)
Hydrogen Sul	fide (A4)		Loamy Gleyed M	atrix (F2)		Other (E	Explain in Remarks)	
Depleted Belo	ow Dark Surface (A11)	Depleted Matrix (F3)			,	
Thick Dark Su	urface (A12)		X Redox Dark Surfa	ace (F6)		³ Indicators of	of hydrophytic vegetat	ion and
Sandy Muckv	Mineral (S1)		Depleted Dark Su	urface (F7)		wetland h	ydrology must be pres	sent,
Sandy Glever	d Matrix (S4)		Redox Depressio	ns (F8)		unless dis	sturbed or problematic	
	(if present).							
Depth (inches): Remarks: S	= sand; Si = silt;	C = clay; L =	= loam or loamy; co = c	coarse; f = fine	; vf = very fine;	ydric Soil Pre + = heavy (m	esent? Yes X ore clay); - = light (les	No s clay)
Depth (inches): Remarks: S HYDROLOGY Wetland Hydrolog	= sand; Si = silt; , gy Indicators:	C = clay; L =	= loam or loamy; co = c	coarse; f = fine	H; vf = very fine;	ydric Soil Pre + = heavy (m	esent? Yes X ore clay); - = light (les	No s clay)
Depth (inches): Remarks: S HYDROLOGY Netland Hydrolo Primary Indicators	= sand; Si = silt; gy Indicators:	C = clay; L =	= loam or loamy; co = o	coarse; f = fine	H; vf = very fine;	ydric Soil Pre + = heavy (m Secondary	esent? Yes X ore clay); - = light (les	No s clay) required)
Depth (inches): Remarks: S HYDROLOGY Netland Hydrolog Primary Indicators Surface Wate	= sand; Si = silt; gy Indicators: a (minimum of one er (A1)	C = clay; L =	= loam or loamy; co = c neck all that apply) Water-Stained Le	coarse; f = fine	; vf = very fine;	ydric Soil Pre + = heavy (m <u>Secondary</u> Water-S	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (<u>No</u> s clay) <u>required)</u> MLRA 1, 2.
Depth (inches): Remarks: S HYDROLOGY Netland Hydrolog Primary Indicators Surface Wate High Water Ta	= sand; Si = silt; gy Indicators: s (minimum of one er (A1) able (A2)	C = clay; L =	e loam or loamy; co = c neck all that apply) Water-Stained Le 1, 2, 4A, and 4	coarse; f = fine	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (m <u>Secondary</u> Water-S 4A, a	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (f nd 4 B)	Nos clay) required) MLRA 1, 2,
Depth (inches): Remarks: S HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A2	= sand; Si = silt; gy Indicators: e (minimum of one er (A1) able (A2)	C = clay; L =	e loam or loamy; co = o neck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11)	coarse; f = fine eaves (B9) (ex l B)	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (m <u>Secondary</u> Water-S 4A, a Drainag	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (I nd 4B) e Patterns (B10)	No s clay) required) MLRA 1, 2,
Depth (inches): Remarks: S HYDROLOGY Netland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks	= sand; Si = silt; gy Indicators: (minimum of one r (A1) able (A2) 3) (B1)	C = clay; L =	e loam or loamy; co = o neck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11)	coarse; f = fine eaves (B9) (ex l B) ates (B13)	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (m <u>Secondary</u> Water-S Drainag Drainag	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (I nd 4B) e Patterns (B10) ason Water Table (C2)	No s clay) required) MLRA 1, 2,
Depth (inches): Remarks: S HYDROLOGY Netland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks Sediment Der	= sand; Si = silt; gy Indicators: (minimum of one er (A1) able (A2) 3) (B1) posits (B2)	C = clay; L =	e loam or loamy; co = o heck all that apply) Water-Stained Lec 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide	coarse; f = fine eaves (B9) (ex B) ates (B13)	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (m <u>Secondary</u> Water-S Drainag Dry-Sea Saturati	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (1 nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In	No s clay) required) MLRA 1, 2,
Depth (inches): Remarks: S HYDROLOGY Netland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks Sediment Dep Drift Deposite	= sand; Si = silt; gy Indicators: e (minimum of one er (A1) able (A2) 3) (B1) posits (B2) (B3)	C = clay; L =	 loam or loamy; co = o neck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Phizoco 	coarse; f = fine eaves (B9) (ex I B) ates (B13) Odor (C1)	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (m <u>Secondary</u> Water-S Drainag Dry-Sea Saturati	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (I nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In replic Position (D2)	<u>No</u> s clay) <u>required)</u> MLRA 1, 2,) nagery (C9)
Depth (inches): Remarks: S HYDROLOGY Netland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks Sediment Dep Drift Deposits Algal Mat or C	= sand; Si = silt; gy Indicators: (minimum of one or (A1) able (A2) 3) (B1) posits (B2) (B3) Crust (B4)	C = clay; L =	 loam or loamy; co = o neck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp 	coarse; f = fine eaves (B9) (ex (B) ates (B13) Odor (C1) wheres along Li	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (m 	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (f nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In rphic Position (D2)	No s clay) required) MLRA 1, 2,) nagery (C9)
Depth (inches): Remarks: S HYDROLOGY Netland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits	= sand; Si = silt; gy Indicators: (minimum of one or (A1) able (A2) 3) (B1) posits (B2) (B3) Crust (B4) (B5)	C = clay; L =	 loam or loamy; co = o heck all that apply) Water-Stained Lee 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu 	coarse; f = fine eaves (B9) (ex B) ates (B13) Odor (C1) oheres along Li uced Iron (C4)	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (m <u>Secondary</u> Water-S Water-S A, a Drainag Dry-Sea Saturati 3)Geomol Shallow	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (f nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In rphic Position (D2) r Aquitard (D3) asutral Test (D5)	No s clay) required) MLRA 1, 2,) nagery (C9)
Depth (inches): Remarks: S HYDROLOGY Netland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits	= sand; Si = silt; gy Indicators: (minimum of one er (A1) able (A2) 3) (B1) boosits (B2) (B3) Crust (B4) (B5) Cruste (P5)	C = clay; L =	 loam or loamy; co = o meck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu 	coarse; f = fine eaves (B9) (ex B) ates (B13) Odor (C1) wheres along Li uced Iron (C4) uction in Tilled	cept MLRA	ydric Soil Pre + = heavy (m - <u>Secondary</u> Water-S 4A, a Drainag Dry-Sea Saturati 3) Geomol Shallow FAC-Ne	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (I nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In rphic Position (D2) r Aquitard (D3) eutral Test (D5) Ant Mounds (D5) (L D)	<u>No</u> s clay) <u>required)</u> MLRA 1, 2,) nagery (C9)
Depth (inches): Remarks: S HYDROLOGY Netland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C	= sand; Si = silt; gy Indicators: (minimum of one r (A1) able (A2) 3) (B1) posits (B2) (B3) Crust (B4) (B5) Cracks (B6) able on Assist law	C = clay; L =	 loam or loamy; co = o heck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress 	coarse; f = fine eaves (B9) (ex B) ates (B13) Odor (C1) oheres along Li uced Iron (C4) uction in Tilled sed Plants (D1)	; vf = very fine; cept MLRA iving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (m 	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (I nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In rphic Position (D2) r Aquitard (D3) eutral Test (D5) Ant Mounds (D6) (LR	<u>No</u> s clay) required) MLRA 1, 2,) nagery (C9) R A)
Depth (inches): Remarks: S HYDROLOGY Netland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis	= sand; Si = silt; gy Indicators: (minimum of one or (A1) able (A2) 3) (B1) posits (B2) (B3) Crust (B4) (B5) Cracks (B6) sible on Aerial Image	C = clay; L =	e loam or loamy; co = o heck all that apply) Water-Stained Lec 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress Other (Explain in	coarse; f = fine eaves (B9) (ex B) ates (B13) Odor (C1) oheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks)	; vf = very fine; cept MLRA iving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (m 	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (f nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In rphic Position (D2) r Aquitard (D3) eutral Test (D5) Ant Mounds (D6) (LRI eave Hummocks (D7)	No s clay) required) MLRA 1, 2, MLRA 1, 2, nagery (C9)
Depth (inches): Remarks: S HYDROLOGY Netland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Veg	= sand; Si = silt; gy Indicators: (minimum of one (minimum of one (min	C = clay; L =	e loam or loamy; co = o heck all that apply) Water-Stained Lec 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress Other (Explain in	coarse; f = fine eaves (B9) (ex B) ates (B13) Odor (C1) wheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks)	; vf = very fine; cept MLRA iving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (m 	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (I nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In rphic Position (D2) r Aquitard (D3) eutral Test (D5) Ant Mounds (D6) (LRI eave Hummocks (D7)	<u>No</u> s clay) <u>required)</u> MLRA 1, 2,) nagery (C9) R A)
Depth (inches): Remarks: S HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (AC Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vegu	= sand; Si = silt; gy Indicators: (minimum of one or (A1) able (A2) 3) (B1) boosits (B2) (B3) Crust (B4) (B5) Crusts (B6) sible on Aerial Image etated Concave Sins:	C = clay; L = required; c agery (B7) urface (B8)	 loam or loamy; co = o meck all that apply) Water-Stained Lee 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress Other (Explain in 	coarse; f = fine eaves (B9) (ex B) ates (B13) Odor (C1) wheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks)	; vf = very fine; cept MLRA iving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (m 	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (I nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In rphic Position (D2) Aquitard (D3) eutral Test (D5) Ant Mounds (D6) (LR eave Hummocks (D7)	No s clay) required) MLRA 1, 2,) nagery (C9) R A)
Depth (inches): Remarks: S HYDROLOGY Wetland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vege Field Observation Surface Water Pr	= sand; Si = silt; gy Indicators: (minimum of one or (A1) able (A2) 3) (B1) posits (B2) (B3) Crust (B4) (B5) Crust (B4) (B5) Cracks (B6) sible on Aerial Imagentiated Concave Sins: resent? Yes	C = clay; L =	 loam or loamy; co = o heck all that apply) Water-Stained Lec 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebric Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress Other (Explain in 	coarse; f = fine eaves (B9) (ex B) ates (B13) Odor (C1) oheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks) epth (inches):	; vf = very fine; cept MLRA iving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (m 	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (f nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In rphic Position (D2) Aquitard (D3) sutral Test (D5) Ant Mounds (D6) (LRI eave Hummocks (D7)	No s clay) required) MLRA 1, 2,) nagery (C9) R A)
Depth (inches): Remarks: S HYDROLOGY Netland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vegu Surface Water Pr Water Table Pres	= sand; Si = silt; gy Indicators: (minimum of one of (A1) able (A2) 3) (B1) cosits (B2) (B3) Crust (B4) (B5) Cracks (B6) sible on Aerial Ima etated Concave S ns: resent? Yes sent? Yes	C = clay; L = required; c agery (B7) urface (B8)	 loam or loamy; co = o meck all that apply) Water-Stained Lea 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress Other (Explain in No X Data 	coarse; f = fine eaves (B9) (ex B) ates (B13) Odor (C1) wheres along Li uced Iron (C4) uction in Tilled aed Plants (D1 Remarks) epth (inches): epth (inches):	; vf = very fine; cept MLRA iving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (m - <u>Secondary</u> Water-S 4A, a Drainag Dry-Sea Saturati B) Geomol Shallow FAC-Ne Raised Frost-He Wetlan	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (I nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In rphic Position (D2) r Aquitard (D3) sutral Test (D5) Ant Mounds (D6) (LRI eave Hummocks (D7)	<u>No</u> s clay) <u>required)</u> MLRA 1, 2,) nagery (C9) R A) ?
Depth (inches): Remarks: S HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (AC Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vege Field Observation Surface Water Press Saturation Preser	= sand; Si = silt; gy Indicators: (minimum of one er (A1) able (A2) 3) (B1) boosits (B2) (B3) Crust (B4) (B5) Cracks (B6) sible on Aerial Ima etated Concave S ns: resent? Yes sent? Yes	C = clay; L = required; cl agery (B7) urface (B8) X X	 loam or loamy; co = o meck all that apply) Water-Stained Lee 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebre Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress Other (Explain in No X X 	coarse; f = fine eaves (B9) (ex B) ates (B13) Odor (C1) wheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks) epth (inches): epth (inches):	; vf = very fine; ; vf = very fine; cept MLRA iving Roots (C3 Soils (C6)) (LRR A) 15 11	ydric Soil Pre + = heavy (m 	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (I nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In rphic Position (D2) Aquitard (D3) eutral Test (D5) Ant Mounds (D6) (LRI eave Hummocks (D7) d Hydrology Present Yes X	<u>No</u> s clay) required) MLRA 1, 2,) nagery (C9) R A) ? No
Depth (inches): Remarks: S HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vege Field Observation Surface Water Press Saturation Preser (includes capillary)	= sand; Si = silt; gy Indicators: (minimum of one or (A1) able (A2) 3) (B1) boosits (B2) (B3) Crust (B4) (B5) Crust (B4) (B5) Cracks (B6) sible on Aerial Ima etated Concave S ns: resent? Yes ont? Yes of the sector of the	C = clay; L = required; c agery (B7) urface (B8) X X	 loam or loamy; co = o meck all that apply) Water-Stained Lee 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress Other (Explain in No X Do No No Do 	coarse; f = fine eaves (B9) (ex B) ates (B13) Odor (C1) wheres along Li uced Iron (C4) uction in Tilled and Plants (D1) Remarks) epth (inches): epth (inches):	; vf = very fine; ; vf = very fine; cept MLRA iving Roots (C3 Soils (C6)) (LRR A) 15 11	ydric Soil Pre + = heavy (m 	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (I nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In rphic Position (D2) r Aquitard (D3) eutral Test (D5) Ant Mounds (D6) (LR eave Hummocks (D7) d Hydrology Present Yes X	<u>required)</u> MLRA 1, 2, MLRA 1, 2,) nagery (C9) R A) ? No
Depth (inches): Remarks: S HYDROLOGY Wetland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vege Field Observation Surface Water Pr Water Table Press Saturation Preser (includes capillary Describe Recorded	= sand; Si = silt; gy Indicators: (minimum of one r (A1) able (A2) 3) (B1) posits (B2) (B3) Crust (B4) (B5) Crust (B4) (B5) Cracks (B6) sible on Aerial Ima etated Concave S ns: resent? Yes sent? Yes nt? Yes y fringe) ed Data (stream g	C = clay; L =	e loam or loamy; co = o heck all that apply) Water-Stained Lec 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Oxidized Rhizosp Presence of Redu Recent Iron Redu Stunted or Stress Other (Explain in No X Du No Du No Du No Du oring well, aerial photo	coarse; f = fine eaves (B9) (exc B) ates (B13) Odor (C1) oheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks) epth (inches): epth (inches): epth (inches): s, previous ins	; vf = very fine; ; vf = very fine; cept MLRA iving Roots (C3 Soils (C6)) (LRR A) 15 11 spections), if av	ydric Soil Pre + = heavy (m - <u>Secondary</u> Water-S 4A, a Drainag Dry-Sea Saturati) Geomol Shallow FAC-Ne Raised Frost-He Wetland	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (f nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In rphic Position (D2) Aquitard (D3) eutral Test (D5) Ant Mounds (D6) (LRI eave Hummocks (D7) d Hydrology Present Yes X	No s clay) mequired) MLRA 1, 2, MLRA 1, 2, (C9) R A) R A)
Depth (inches): Remarks: S HYDROLOGY Vetland Hydrolog Primary Indicators Surface Wate High Water Ta X Saturation (A3 Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Surface Soil C Inundation Vis Sparsely Vege Field Observation Surface Water Press Saturation Preser (includes capillary Describe Recorded	= sand; Si = silt; gy Indicators: (minimum of one or (A1) able (A2) 3) (B1) bosits (B2) (B3) Crust (B4) (B5) Cracks (B6) sible on Aerial Ima etated Concave S ns: resent? Yes sent? Yes or (Yes) or (Stream generic)	C = clay; L = required; cl agery (B7) urface (B8) X X auge, monit	Filoam or loamy; co = of the complexity of th	coarse; f = fine eaves (B9) (ex (B) ates (B13) Odor (C1) wheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks) epth (inches): epth (inches): s, previous ins	H ; vf = very fine; cept MLRA iving Roots (C3 Soils (C6)) (LRR A) 	ydric Soil Pre + = heavy (m - <u>Secondary</u> Water-S 4A, a Drainag Dry-Sea Saturati So Geomor Shallow FAC-Ne Raised Frost-He Wetland	esent? Yes X ore clay); - = light (les Indicators (2 or more r Stained Leaves (B9) (I nd 4B) e Patterns (B10) ason Water Table (C2) on Visible on Aerial In rphic Position (D2) r Aquitard (D3) eutral Test (D5) Ant Mounds (D6) (LRI eave Hummocks (D7) d Hydrology Present Yes X	No s clay) required) MLRA 1, 2,) nagery (C9) R A) ? No

WETLAND DETERMI	NATION DATA	FORM – West	ern Mounta	ins, Valleys and	Coast Region	
Project/Site: Philomath Water Treatment P	lant	City/County:	Philomath / B	enton	Sampling Date: 4/9	9/2018
Applicant/Owner: Westech Engineering / City	of Philomath Pub	lic Works Departme	ent	State: OR	Sampling Poin	t: SP5
Investigator(s): Tom Dee, Evan Dulin		Section, T	ownship, Rang	e: 12C, 12S, 6W		
Landform (hillslope, terrace, etc.): terrace			Local relief	(concave, convex, none):	convex Slop	e (%): 1
Subregion (LRR): A, Northwest Forests and C	Coast	Lat:	_ Lon	q:	Datum:	
Soil Map Unit Name: 50 Coburg silty of	lav loam, rarely flo	ooded. 0-3% slopes	`	NWI (classification: Partly	PFO
Are climatic / hydrologic conditions on the site	typical for this time	e of year?	Ye	s X No	(If no, explain	in Remarks)
Are Vegetation ,Soil	, or Hydrology	significantly of	disturbed? A	re "Normal Circumsta	nces" present? Ye	s X No
Are Vegetation ,Soil	, or Hydrology	naturally prot	plematic? (I	lf needed, explain any	answers in Remarks	i.)
SUMMARY OF FINDINGS - Attach	site map show	wing sampling	point locat	ions, transects, i	mportant featur	es, etc.
Hydrophytic Vegetation Present?	Yes X	No				
Hydric Soil Present?	Yes	No X	Is the Samp	led Area		
Wetland Hydrology Present?	Yes	No X	within a We	tland? Yes	No X	
Precipitation prior to fieldwork: 2.63 inches Remarks:	s 2 weeks prior in	Corvallis (0.93 inch	es above norm	al). (day prior received	1.81 inches!!)	_
VEGETATION						
	Absolute	Dominant	Indicator	Dominance Test w	orksheet:	
(Plot size: <u>30' r</u>)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominar	nt Species	
1.				That Are OBL, FAC	W, or FAC:	2(A)
2.						
3.				Total Number of Do	minant	
4.				Species Across All	Strata:	3 (B)
	0%	= Total Cover				
Sapling/Shrub Stratum (Plot size: 10')	<u>()</u>			Percent of Dominar	nt Species	
1.				That Are OBL, FAC	W, or FAC: <u>67</u>	<u>'%</u> (A/B)
2.				Prevalence Index v	worksheet:	
3.				Total % Cover	of: Multiply by:	
4.				OBL species	0 x 1 =	0
5.				FACW species	20 x 2 =	40
	0%	= Total Cover		FAC species	20 x 3 =	60
Herb Stratum (Plot size: <u>5' r</u>)				FACU species	60 x 4 =	240
1. Anthoxanthum odoratum	40%	Yes	FACU	UPL species	0 x 5 =	0
2. Camassia quamash	20%	Yes	FACW	Column Totals: 1	<u> </u>	340 (B)
3 Poa species	20%	Ves	EAC 2	Prevalence Inde	x = B/A =	3.40
4 Hypochaeris radicata	10%	<u> </u>	FACU	Hydrophytic Veget	ation Indicators:	
	10%	No	EACU	1 - Rapid Test f	or Hydrophytic Vege	tation
6	10 /8	110	TACO	X 2 - Dominance	Test is >50%	lation
7				2 Drovelence	$\frac{1}{2} = \frac{1}{2} = \frac{1}{2}$	
/				3 - Flevalence i	all A demteties 1 (Dec)	ide europentiner
o				4 - Morphologic	al Adaptations (Pro	vide supporting
9.					arks or on a separate	e sneet)
10.				5 - Wetland Nor	n-Vascular Plants	1
11				Problematic Hy	drophytic Vegetation	' (Explain)
Woody Vine Stratum (Plot size: 10' i)	= Total Cover		Indicators of hydric be present.	soil and wetland hy	drology must
2				Hydrophytic		
[= Total Cover		Vegetation	Yes X No	
% Bare Ground in Horb Stratum	0 /0			Present?	<u> </u>	
Demorke:						". CMW
Remarks:				Entere	a by: <u>KL</u> QC b	y: criiw

				Redektie	atures			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-11	10YR 3/2	100					SiCL	
11-16	10YR 3/1	100					SiCL	
				·				
vpe: C=Conce	entration D=Deple	tion RM=Rec	luced Matrix CS=Cove	ered or Coated	Sand Grains	² Location:	PI =Pore Lining M=M	latrix
dric Soil Indic	cators: (Applicab	le to all LRR	s, unless otherwise	noted.)		Indicators fo	or Problematic Hvdr	ric Soils ³ :
Histosol (A1))		Sandy Redox (SF	5)		2 cm Mu	ck (A10)	
Histic Eniner	$\frac{1}{2}$		Stripped Matrix (St	5) S6)		2 on Ma	ant Material (TE2)	
Black Histic	(A 2)		Loamy Mucky Mi	neral (E1) (exc	ont MI PA 1)	Vory Sho	llow Dark Surface (T	E12)
	(AS)			(ΓI) (EAC		Very Sile		F12)
Derived P		(11)	Loamy Gleyed M	auix (FZ)		Other (E)	kpiain in remarks)	
Uepieted Bel		(АТТ)	Depleted Matrix (F3)		³ Indicators of	hudrophytic vocatet	ion and
I NICK Dark S	Surrace (A12)		Redox Dark Surfa	ace (⊦6)				
Sandy Muck	y Mineral (S1)		Depleted Dark St	urface (F7)		wetland hy	drology must be pres	sent,
Sandy Gleye	ed Matrix (S4)		Redox Depressio	ons (F8)		unless dist	urbed or problematic	
Type: Depth (inches): emarks:	: S = sand; Si = silt;	- C = clay; L =	loam or loamy; co = o	coarse; f = fine;	; vf = very fine;	ydric Soil Pres	re clay); - = light (les	No X s clay)
Type: Depth (inches): emarks: S IYDROLOG /etland Hydrolo	: S = sand; Si = silt; Y ogy Indicators:	- C = clay; L =	loam or loamy; co = o	coarse; f = fine;	; vf = very fine	ydric Soil Pres	sent? Yes re clay); - = light (les	No X s clay)
Type: Depth (inches): emarks: S IYDROLOG /etland Hydrold	: S = sand; Si = silt; Y ogy Indicators: rs (minimum of on	- C = clay; L = e required; ch	loam or loamy; co = o loam all that apply)	coarse; f = fine;	; vf = very fine.	ydric Soil Pres + = heavy (mo <u>Secondary Ir</u>	re clay); - = light (les	No X s clay) required)
Type: Depth (inches): emarks: \$ IYDROLOG /etland Hydrold rimary Indicator Surface Wat	: S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1)	C = clay; L =	loam or loamy; co = o leck all that apply) Water-Stained Le	coarse; f = fine; eaves (B9) (exc	; vf = very fine cept MLRA	ydric Soil Pres + = heavy (mo <u>Secondary Ir</u> Water-St	re clay); - = light (les dicators (2 or more r ained Leaves (B9) (I	<u>No X</u> s clay) <u>required)</u> MLRA 1, 2,
Type: Depth (inches): emarks: S VDROLOG Vetland Hydrold rimary Indicator Surface Wate High Water	: S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2)	C = clay; L =	loam or loamy; co = o leck all that apply) Water-Stained Lo 1, 2, 4A, and 4	coarse; f = fine; eaves (B9) (exc 1B)	; vf = very fine cept MLRA	ydric Soil Pres + = heavy (mo <u>Secondary Ir</u> Water-St 4A, an	re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N	No X s clay) required) MLRA 1, 2,
Type: Depth (inches): emarks: S YDROLOG /etland Hydrold /etland Hydrold /imary Indicator Surface Wat High Water T Saturation (A	S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3)	C = clay; L =	loam or loamy; co = o leck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11)	coarse; f = fine; eaves (B9) (exc 4B)	; vf = very fine; cept MLRA	ydric Soil Pres + = heavy (mo <u>Secondary Ir</u> Water-St 4A, an Drainage	sent? Yes re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N d 4B) Patterns (B10)	No X s clay) required) MLRA 1, 2,
Type: Depth (inches): emarks: \$ YDROLOG Vetland Hydrold rimary Indicator Surface Wat High Water T Saturation (A Water Marks	: S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3) s (B1)	C = clay; L =	loam or loamy; co = o leck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr	coarse; f = fine; eaves (B9) (exc IB) rates (B13)	; vf = very fine; cept MLRA	ydric Soil Pres + = heavy (mo <u>Secondary Ir</u> Water-St Urainage Drainage Dry-Seas	re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N d 4B) Patterns (B10) son Water Table (C2)	<u>No X</u> s clay) required) MLRA 1, 2,
Type: Depth (inches): emarks: S YDROLOG Yetland Hydrold rimary Indicator Surface Wat High Water T Saturation (A Water Marks Sediment De	: S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3) s (B1) eposits (B2)	C = clay; L =	loam or loamy; co = o neck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide	coarse; f = fine; eaves (B9) (exc IB) rates (B13) e Odor (C1)	; vf = very fine; cept MLRA	ydric Soil Pres + = heavy (mo <u>Secondary Ir</u> Water-St Urainage Drainage Dry-Seas Saturatio	eent? Yes re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial In	<u>No X</u> s clay) required) MLRA 1, 2,
Type: Depth (inches): emarks: S YDROLOG /etland Hydrold rimary Indicator Surface Wat Surface Wat	S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3) s (B1) eposits (B2) rs (B3)	C = clay; L =	loam or loamy; co = o leck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp	coarse; f = fine; eaves (B9) (exc 4B) rates (B13) e Odor (C1) oheres along Liv	; vf = very fine.	ydric Soil Pres + = heavy (mo <u>Secondary Ir</u> Water-St 4A, an Drainage Dry-Seas Saturatio 3) Geomorp	eent? Yes re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial In obic Position (D2)	<u>No X</u> s clay) required) MLRA 1, 2,) nagery (C9)
Type: Depth (inches): emarks: \$ YDROLOG Yetland Hydrold rimary Indicator Surface Wat High Water T Saturation (A Water Marks Sediment De Drift Deposit: Algal Mat or	S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3) s (B1) eposits (B2) ss (B3) Crust (B4)	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Lo 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red	coarse; f = fine; eaves (B9) (exc IB) ates (B13) e Odor (C1) oheres along Liv uced Iron (C4)	; vf = very fine; cept MLRA	ydric Soil Pres + = heavy (mo 	re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial In bhic Position (D2) Aquitard (D3)	<u>No X</u> s clay) required) MLRA 1, 2,) nagery (C9)
Type: Depth (inches): emarks: S IYDROLOG /etland Hydrold rimary Indicator Surface Wate High Water T Saturation (A Water Marks Sediment De Drift Deposit: Algal Mat or Iron Deposits	: S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3) s (B1) eposits (B2) rs (B3) Crust (B4) s (B5)	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu	coarse; f = fine; eaves (B9) (exc IB) eates (B13) e Odor (C1) oheres along Liv uced Iron (C4) uction in Tilled 3	; vf = very fine; cept MLRA ving Roots (C3 Soils (C6)	ydric Soil Pres + = heavy (mo 	re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial In whic Position (D2) Aquitard (D3) ttral Test (D5)	<u>No X</u> s clay) required) MLRA 1, 2,
Type: Depth (inches): emarks: S IYDROLOG /etland Hydrold /etland Hydrold	: S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3) s (B1) eposits (B2) s (B3) Crust (B4) s (B5) Cracks (B6)	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress	coarse; f = fine; eaves (B9) (exc B ates (B13) codor (C1) oheres along Liv uced Iron (C4) uction in Tilled S sed Plants (D1)	ving Roots (C3 Soils (C6)	ydric Soil Pres + = heavy (mo <u>Secondary Ir</u> Water-St 4A, an Drainage Dry-Seas Saturatio 3) Geomorp Shallow / FAC-Neu Raised A	eent? Yes re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial In ohic Position (D2) Aquitard (D3) ttral Test (D5) .nt Mounds (D6) (LR)	<u>No X</u> s clay) <u>required)</u> MLRA 1, 2,) nagery (C9)
Type: Depth (inches): emarks: S IYDROLOG /etland Hydrold rimary Indicator Surface Wate High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V	S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3) s (B1) eposits (B2) ss (B3) Crust (B4) ss (B5) Cracks (B6) /isible on Aerial Im	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in	coarse; f = fine; eaves (B9) (exc 1B) ates (B13) e Odor (C1) oheres along Liv uced Iron (C4) uction in Tilled S sed Plants (D1) Remarks)	; vf = very fine; cept MLRA ving Roots (C3 Soils (C6) (LRR A)	ydric Soil Pres + = heavy (mo 	sent? Yes re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial In bhic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LRI ave Hummocks (D7)	<u>No X</u> s clay) required) MLRA 1, 2,) nagery (C9) R A)
Type: Depth (inches): emarks: S IYDROLOG /etland Hydrold rimary Indicator Surface Wate High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Vee	S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3) s (B1) eposits (B2) as (B3) Crust (B4) s (B5) Cracks (B6) /isible on Aerial Im getated Concave	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in	coarse; f = fine; eaves (B9) (exc IB) eates (B13) e Odor (C1) oheres along Liv uced Iron (C4) uction in Tilled S sed Plants (D1) Remarks)	ving Roots (C3 Soils (C6) (LRR A)	ydric Soil Pres + = heavy (mo 	re clay); - = light (les dicators (2 or more r ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial In whic Position (D2) Aquitard (D3) tral Test (D5) int Mounds (D6) (LRI ave Hummocks (D7)	<u>No X</u> s clay) required) MLRA 1, 2,) nagery (C9) R A)
Type: Depth (inches): emarks: S IYDROLOG /etland Hydrolo /etland Hydrolo	S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3) s (B1) eposits (B2) s (B3) Crust (B4) s (B5) Cracks (B6) //isible on Aerial Im getated Concave a	C = clay; L = e required; ch eagery (B7) Surface (B8)	loam or loamy; co = o eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in	coarse; f = fine; eaves (B9) (exc B) ates (B13) codor (C1) oheres along Liv uced Iron (C4) uction in Tilled S sed Plants (D1) Remarks)	ying Roots (C3 Soils (C6) (LRR A)	ydric Soil Pres + = heavy (mo 	eent? Yes re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial In ohic Position (D2) Aquitard (D3) attral Test (D5) ant Mounds (D6) (LRI ave Hummocks (D7)	No X s clay) required) MLRA 1, 2,) nagery (C9) R A)
Type: Depth (inches): emarks: \$ YDROLOG /etland Hydrold rimary Indicator Surface Wate High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Veg	S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3) s (B1) eposits (B2) s (B3) Crust (B4) s (B5) Cracks (B6) /isible on Aerial Im getated Concave : ons: Prosent?	C = clay; L = <u>e required; ch</u> eagery (B7) Surface (B8)	loam or loamy; co = o	coarse; f = fine; eaves (B9) (exc 1B) ates (B13) e Odor (C1) oheres along Liv uced Iron (C4) uction in Tilled S sed Plants (D1) Remarks)	ying Roots (C3 Soils (C6) (LRR A)	ydric Soil Pres + = heavy (mo 	re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial In bhic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LRI ave Hummocks (D7)	No X s clay) required) MLRA 1, 2,) nagery (C9) R A)
Type: Depth (inches): Remarks: S ITDROLOG Vetland Hydrold rimary Indicator Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Veg Surface Water P	S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3) s (B1) eposits (B2) rs (B3) Crust (B4) s (B5) Cracks (B6) /isible on Aerial Im getated Concave 3 ons: Present? Yes	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in No X D	coarse; f = fine; eaves (B9) (exc #B) eaves (B13) e Odor (C1) oheres along Liv uced Iron (C4) uction in Tilled S sed Plants (D1) Remarks) epth (inches):	ving Roots (C3 Soils (C6) (LRR A)	ydric Soil Pres + = heavy (mo 	re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial In whic Position (D2) Aquitard (D3) ttral Test (D5) int Mounds (D6) (LRI ave Hummocks (D7)	<u>No X</u> s clay) required) MLRA 1, 2,) nagery (C9) R A)
Type: Depth (inches): Remarks: S TYDROLOG Vetland Hydrold Vetland Hydrold Vetland Hydrold Surface Water Gurface Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Veg ield Observatio Surface Water P Nater Table Pre	S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3) s (B1) eposits (B2) rs (B3) Crust (B4) s (B5) Cracks (B6) /isible on Aerial Im getated Concave = ons: Present? Yes	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in No X D No X D	coarse; f = fine; eaves (B9) (exc #B) ates (B13) odor (C1) oheres along Liv uced Iron (C4) uction in Tilled S sed Plants (D1) Remarks) epth (inches): epth (inches):	ving Roots (C3 Soils (C6) (LRR A)	ydric Soil Pres + = heavy (mo <u>Secondary Ir</u> Water-St 4A, an Drainage Dry-Seas Saturatio Ory-Seas Saturatio Shallow / FAC-Neu Raised A Frost-He Wetland	sent? Yes re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial In bhic Position (D2) Aquitard (D3) atral Test (D5) int Mounds (D6) (LRI ave Hummocks (D7) Hydrology Present	<u>No X</u> s clay) required) MLRA 1, 2,) nagery (C9) R A)
Type: Depth (inches): Remarks: S TYDROLOG Tymary Indicator Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposite Algal Mat or Iron Deposite Surface Soil Inundation V Sparsely Veg ield Observatio Surface Water P Vater Table Pre Saturation Prese includes capilla	S = sand; Si = silt; Y ogy Indicators: rs (minimum of on ter (A1) Table (A2) A3) s (B1) eposits (B2) s (B3) Crust (B4) s (B5) Cracks (B6) /isible on Aerial Im getated Concave : present? Yes esent? Yes	C = clay; L = e required; ch eagery (B7) Surface (B8)	loam or loamy; co = o eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in No <u>X</u> D No <u>X</u> D No <u>X</u> D	coarse; f = fine; eaves (B9) (exc BB) ates (B13) codor (C1) oheres along Liv uced Iron (C4) uction in Tilled S aed Plants (D1) Remarks) epth (inches): epth (inches):	ying Roots (C3 Soils (C6) (LRR A)	ydric Soil Pres	eent? Yes re clay); - = light (les dicators (2 or more r ained Leaves (B9) (N d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial In bhic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LRI ave Hummocks (D7) Hydrology Present Yes	<u>No X</u> s clay) <u>required)</u> MLRA 1, 2,) nagery (C9) R A) ? No X

WETLAND DETERMIN	NATION DATA	FORM – West	ern Mounta	ins, Valleys and	Coast Region	
Project/Site: Philomath Water Treatment P	lant	City/County:	Philomath / B	enton	Sampling Date: 4/9/	2018
Applicant/Owner: Westech Engineering / City	of Philomath Pub	lic Works Departme	ent	State: OR	Sampling Point:	SP6
Investigator(s): Tom Dee, Evan Dulin		Section, To	ownship, Rang	e: 12C, 12S, 6W		
Landform (hillslope, terrace, etc.): terrace			Local relief	(concave, convex, none):	concave Slope	(%): 0
Subregion (LRR): A, Northwest Forests and C	Coast	Lat:	– Lon	d:	Datum:	
Soil Map Unit Name: 50 Coburg silty of	lav loam, rarely flo	oded. 0-3% slopes	`	NWI (classification: Partly F	PFO
Are climatic / hydrologic conditions on the site	typical for this time	e of year?	Ye	s X No	(If no, explain ir	n Remarks)
Are Vegetation ,Soil	, or Hydrology	significantly of	disturbed? A	re "Normal Circumsta	nces" present? Yes	X No
Are Vegetation ,Soil	, or Hydrology	naturally prot	plematic? (I	lf needed, explain any	answers in Remarks.))
SUMMARY OF FINDINGS – Attach	site map show	wing sampling	point locat	ions, transects, i	mportant feature	es, etc.
Hydrophytic Vegetation Present?	Yes	No X				
Hydric Soil Present?	Yes	No X	Is the Samp	led Area		
Wetland Hydrology Present?	Yes	No X	within a We	tland? Yes	No X	
Precipitation prior to fieldwork: 2.63 inches Remarks:	s 2 weeks prior in	Corvallis (0.93 inch	es above norm	al). (day prior received	1.81 inches!!)	-
	Abcoluto	Dominant	Indicator	Dominanco Toot w	orkshoot:	
Tree Stratum (Plot size: 30' r)	% Cover	Species?	Status	Number of Dominar	nt Species	
<u> </u>	<u>/// 00/01</u>		Olalus			(4)
2				That Ale OBL, FAC	W, 01 FAC. 1	(A)
3				T () N () ()	· ·	
۵. ۲						
T				Species Across All	Strata: 2	(B)
Copling/Shrub Stratum (Dist size: 10'r	0%	= Total Cover				
Saping/Shrub Stratum (Plot size. 10 1)			Percent of Dominar	nt Species	
1				That Are OBL, FAC	W, or FAC: <u>50%</u>	<u>∕∘</u> (A/B)
2. 				Prevalence Index v	worksheet:	
3. 				Total % Cover		
4				OBL species	0 x 1 =	0
5				FACW species	<u>15</u> x 2 =	30
	0%	= Total Cover		FAC species	40 x 3 =	120
<u>Herb Stratum</u> (Plot size: <u>5' r</u>)				FACU species	45 x 4 =	180
1. Poa species	40%	Yes	FAC ?	UPL species	0 x 5 =	0
2. Anthoxanthum odoratum	20%	Yes	FACU	Column Totals: 1	100 (A)	330 (B)
3. Camassia quamash	15%	No	FACW	Prevalence Inde	ex = B/A = <u>3</u>	.30
4. Hypochaeris radicata	15%	No	FACU	Hydrophytic Veget	tation Indicators:	
5. Fragaria chiloensis	10%	No	FACU	1 - Rapid Test f	or Hydrophytic Vegeta	ation
6.				2 - Dominance	Test is >50%	
7.				3 - Prevalence I	Index is ≤3.0 ¹	
8.				4 - Morphologic	al Adaptations ¹ (Provi	de supporting
9.				data in Rem	arks or on a separate	sheet)
10.				5 - Wetland Nor	n-Vascular Plants ¹	
11.				Problematic Hy	drophytic Vegetation ¹	(Explain)
Woody Vine Stratum (Plot size: 10' r		= Total Cover		¹ Indicators of hydric be present.	soil and wetland hydr	rology must
1						
2.				Hydrophytic		
	0%	= Total Cover		Vegetation	Yes No	X
% Bare Ground in Herb Stratum 0%				Present?		
Remarks:				Entere	ed by: <u>KL</u> QC by:	cmw

Depth	Matrix	<		Redox Fe	atures			
(inches) Co	olor (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-7	10YR 3/2	100					SiCL	
7-16	10YR 3/1	99	5YR 3/4	1	С	М	SiCL	
Type: C=Concentrat	tion, D=Depleti	on, RM=Red	luced Matrix CS=Cove	ered or Coated	Sand Grains.	² Location:	PL=Pore Lining, M=M	atrix.
Hydric Soil Indicator	rs: (Applicable	e to all LRR	s, unless otherwise	noted.)		Indicators f	or Problematic Hydr	ic Soils ³ :
Histosol (A1)			Sandy Redox (S	5)		2 cm Mu	ıck (A10)	
Histic Epipedon ((A2)	-	Stripped Matrix (S6)		Red Par	ent Material (TF2)	
Black Histic (A3)			Loamy Mucky Mi	neral (F1) (exc	ept MLRA 1)	Very Sh	allow Dark Surface (T	F12)
Hydrogen Sulfide	e (A4)		Loamy Gleyed M	atrix (F2)		Other (E	xplain in Remarks)	
Depleted Below [Dark Surface (A	A11)	Depleted Matrix ((F3)				
Thick Dark Surfa	ce (A12)	-	Redox Dark Surfa	ace (F6)		³ Indicators c	f hydrophytic vegetati	on and
Sandy Mucky Mir	neral (S1)		Depleted Dark S	urface (F7)		wetland hy	drology must be pres	ent,
Sandy Gleyed Ma	atrix (S4)	-	Redox Depressio	ons (F8)		unless dis	turbed or problematic.	
Depth (inches): Remarks: S = s	and; Si = silt; (C = clay; L =	loam or loamy; co = o	coarse; f = fine	; vf = very fine;	ydric Soil Pre + = heavy (mo	sent? Yes ore clay); - = light (les	No X
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I	and; Si = silt; (C = clay; L =	loam or loamy; co = o	coarse; f = fine	H; vf = very fine;	ydric Soil Pre + = heavy (me	sent? Yes pre clay); - = light (less	No X
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m	and; Si = silt; (Indicators:	C = clay; L = required; ch	loam or loamy; co = o	coarse; f = fine	H ; vf = very fine;	ydric Soil Pre + = heavy (mo _ <u>Secondary I</u>	sent? Yes ore clay); - = light (les ndicators (2 or more r	No X s clay) equired)
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A	and; Si = silt; (Indicators: inimum of one	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Le	coarse; f = fine	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (me _ <u>Secondary I</u> Water-S	sent? Yes ore clay); - = light (less ndicators (2 or more r tained Leaves (B9) (N	<u>No X</u> s clay) <u>equired)</u> ILRA 1, 2,
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A High Water Table	sand; Si = silt; (Indicators: inimum of one \1) e (A2)	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Lo 1, 2, 4A, and 4	coarse; f = fine eaves (B9) (ex o 1B)	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (mo <u>Secondary I</u> Water-S 4A, a	sent? Yes pre clay); - = light (less ndicators (2 or more r tained Leaves (B9) (N nd 4B)	No X s clay) equired) ILRA 1, 2,
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3)	and; Si = silt; (Indicators: inimum of one	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Lo 1, 2, 4A, and 4 Salt Crust (B11)	coarse; f = fine eaves (B9) (ex o 4B)	; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (me <u>Secondary I</u> Water-S A, a Drainage	sent? Yes pre clay); - = light (less <u>ndicators (2 or more r</u> tained Leaves (B9) (N nd 4B) e Patterns (B10)	No X s clay) equired) ILRA 1, 2,
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1	and; Si = silt; (Indicators: inimum of one (1) e (A2)	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Lo 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr	coarse; f = fine eaves (B9) (ex 4B) rates (B13)	H ; vf = very fine; cept MLRA	ydric Soil Pre + = heavy (me 	sent? Yes pre clay); - = light (less indicators (2 or more r tained Leaves (B9) (N ind 4B) e Patterns (B10) son Water Table (C2)	No X s clay) equired) ILRA 1, 2,
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1 Sediment Deposition	sand; Si = silt; (Indicators: inimum of one \1) (A2)) its (B2)	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1)	; vf = very fine;	ydric Soil Pre + = heavy (ma 	sent? Yes pre clay); - = light (less indicators (2 or more r tained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im	No X s clay) equired) MLRA 1, 2,
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1 Sediment Deposit Drift Deposits (B3	and; Si = silt; (Indicators: inimum of one (A1) e (A2)) its (B2) 3)	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp	coarse; f = fine eaves (B9) (ex 1B) rates (B13) e Odor (C1) oheres along Li	H ; vf = very fine; cept MLRA ving Roots (C3	ydric Soil Pre + = heavy (me 	sent? Yes pre clay); - = light (less <u>ndicators (2 or more r</u> tained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2)	No X s clay) equired) ILRA 1, 2,
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1 Sediment Deposit Drift Deposits (B3 Algal Mat or Crus	and; Si = silt; (Indicators: inimum of one \1) ∋ (A2)) its (B2) 3) st (B4)	C = clay; L = required; ch	loam or loamy; co = o eck all that apply) Water-Stained Lo 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along Li uced Iron (C4)	H ; vf = very fine; cept MLRA ving Roots (C3	ydric Soil Pre + = heavy (ma 	sent? Yes pre clay); - = light (less indicators (2 or more r tained Leaves (B9) (N ind 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3)	No X s clay) equired) ILRA 1, 2, hagery (C9)
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1 Sediment Deposit Drift Deposits (B3 Algal Mat or Crus Iron Deposits (B3	sand; Si = silt; (Indicators: inimum of one (1) (1) (A2) (A2) (3) (5)	C = clay; L = required; ch	loam or loamy; co = o eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along Li uced Iron (C4) uction in Tilled	H ; vf = very fine; cept MLRA ving Roots (C3 Soils (C6)	ydric Soil Pre + = heavy (ma 	sent? Yes pre clay); - = light (less indicators (2 or more r tained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5)	No X s clay) equired) MLRA 1, 2,
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1 Sediment Deposit Drift Deposits (B2 Algal Mat or Crus Iron Deposits (B2 Surface Soil Crac	and; Si = silt; (Indicators: inimum of one (A1) e (A2)) its (B2) 3) st (B4) 5) cks (B6)	C = clay; L = required; ch	loam or loamy; co = o eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along Li uced Iron (C4) uction in Tilled sed Plants (D1)	H ; vf = very fine; cept MLRA ving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (mo - <u>Secondary I</u> - Water-S 4A, a Drainage Dry-Sea - Saturatio () Geomor - Shallow - FAC-Ne Raised J	sent? Yes pre clay); - = light (less ndicators (2 or more r tained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF	No X s clay) equired) MLRA 1, 2, hagery (C9)
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1 Sediment Deposit Drift Deposits (B3 Algal Mat or Crus Iron Deposits (B3 Surface Soil Crac Inundation Visible	sand; Si = silt; (Indicators: inimum of one (1) e (A2)) its (B2) 3) st (B4) 5) cks (B6) e on Aerial Ima	C = clay; L =	loam or loamy; co = o eck all that apply) Water-Stained Lo 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks)	H ; vf = very fine; cept MLRA ving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (ma - Secondary I - Water-S 4A, a Drainag Dry-Sea - Saturatio () Geomor - Shallow - FAC-Ne - Raised / - Frost-He	sent? Yes pre clay); - = light (less indicators (2 or more r tained Leaves (B9) (N and 4B) be Patterns (B10) son Water Table (C2) phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF pave Hummocks (D7)	No X s clay) equired) ILRA 1, 2, hagery (C9)
Depth (inches): Remarks: S = s HYDROLOGY Vetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1 Sediment Deposit Drift Deposits (B2 Algal Mat or Crus Iron Deposits (B2 Surface Soil Crac Inundation Visible Sparsely Vegetat	sand; Si = silt; (Indicators: inimum of one (A1) (A2) (A2) (A2) (A2) (A3) (B4) (A4) (A4) (A4) (A4) (A4) (A4) (A4) (A	C = clay; L = required; ch	loam or loamy; co = o	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks)	H ; vf = very fine; cept MLRA ving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (ma - <u>Secondary I</u> Water-S 4A, a Drainag Dry-Sea Saturatio) Geomor Shallow FAC-Ne Raised / Frost-He	sent? Yes pre clay); - = light (less indicators (2 or more r tained Leaves (B9) (N ind 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF eave Hummocks (D7)	No X s clay) equired) MLRA 1, 2, hagery (C9)
Depth (inches): Remarks: S = s HYDROLOGY Vetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1 Sediment Deposit Drift Deposits (B3 Algal Mat or Crus Iron Deposits (B3 Surface Soil Crac Inundation Visible Sparsely Vegetat Field Observations:	and; Si = silt; (Indicators: inimum of one (A1) e (A2)) its (B2) (A2) (A2) (A2) (A3) (A3) (A4) (A4) (A4) (A4) (A4) (A4) (A4) (A4	C = clay; L = required; ch	loam or loamy; co = o eck all that apply) Water-Stained Lo 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks)	H ; vf = very fine; cept MLRA ving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (ma - <u>Secondary I</u> - Water-S 4A, an Drainage Dry-Sea - Saturatio Saturatio - Geomor - Shallow - FAC-Ne - Raised / - Frost-He	sent? Yes pre clay); - = light (less indicators (2 or more r tained Leaves (B9) (N ind 4B) e Patterns (B10) son Water Table (C2) phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF eave Hummocks (D7)	No X s clay) equired) /ILRA 1, 2, hagery (C9)
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Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1 Sediment Deposit Drift Deposits (B3 Algal Mat or Crus Iron Deposits (B5 Surface Soil Crac Inundation Visible Sparsely Vegetat Field Observations: Surface Water Present	sand; Si = silt; (Indicators: inimum of one (1) (A2) (A2) (B2) (B2) (B2) (B4) (B4) (B4) (B5) (B6) e on Aerial Ima ted Concave Si ent? Yes (2) (2) (2) (2) (2) (2) (3) (3) (4) (4) (5) (5) (5) (5) (5) (5) (5) (5	C = clay; L = required; ch	loam or loamy; co = o	coarse; f = fine eaves (B9) (exc 4B) rates (B13) e Odor (C1) oheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks) epth (inches): epth (inches):	H ; vf = very fine; cept MLRA ving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (ma - <u>Secondary I</u> Water-S 4A, a Drainag Dry-Sea Saturatia) Geomor Shallow FAC-Ne Raised / Frost-He	sent? Yes pre clay); - = light (less indicators (2 or more r tained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF eave Hummocks (D7) d Hydrology Present"	No X s clay) equired) MLRA 1, 2, hagery (C9) R A)
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1 Sediment Deposit Drift Deposits (B3 Algal Mat or Crus Iron Deposits (B3 Algal Mat or Crus Iron Deposits (B3 Surface Soil Crac Inundation Visible Sparsely Vegetat Field Observations: Surface Water Present Saturation Present?	and; Si = silt; (Indicators: inimum of one (1) e (A2)) its (B2) 3) st (B4) 5) cks (B6) e on Aerial Ima ted Concave S ent? Yes ? Yes	C = clay; L = required; ch	loam or loamy; co = 0 eck all that apply) Water-Stained Le 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in No X No X No X	coarse; f = fine eaves (B9) (ex 4B) rates (B13) e Odor (C1) oheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks) epth (inches): epth (inches):	H ; vf = very fine; cept MLRA ving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (ma - <u>Secondary I</u> Water-S 4A, a Drainag Dry-Sea Saturatio Saturatio FAC-Ne Raised / Frost-He Wetland	sent? Yes pre clay); - = light (less ndicators (2 or more r tained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF eave Hummocks (D7) Hydrology Present Yes	No X s clay) equired) ALRA 1, 2, hagery (C9) R A) ? No X
Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1 Sediment Deposit Drift Deposits (B2 Algal Mat or Crus Iron Deposits (B2 Surface Soil Crac Inundation Visible Sparsely Vegetat Field Observations: Surface Water Present Saturation Present? (includes capillary frii	sand; Si = silt; (Indicators: inimum of one (1) (A2)) its (B2) (B2) (B2) (B2) (B2) (B3) st (B4) (B4) (B4) (B4) (B5) cks (B6) e on Aerial Ima ted Concave Si ent? Yes (Yes	C = clay; L = required; ch	loam or loamy; co = d eck all that apply) Water-Stained Letter 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Red Recent Iron Redu Stunted or Stress Other (Explain in No X No X D No X D No X D	coarse; f = fine eaves (B9) (exc 4B) rates (B13) e Odor (C1) oheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks) epth (inches): epth (inches):	H ; vf = very fine; cept MLRA ving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (ma 	sent? Yes pre clay); - = light (less indicators (2 or more r tained Leaves (B9) (N ind 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF eave Hummocks (D7) Hydrology Present Yes	No X s clay) equired) MLRA 1, 2, hagery (C9) R A) ? No X
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Depth (inches): Remarks: S = s HYDROLOGY Wetland Hydrology I Primary Indicators (m Surface Water (A High Water Table Saturation (A3) Water Marks (B1 Sediment Deposit Drift Deposits (B3 Algal Mat or Crus Iron Deposits (B3 Algal Mat or Crus Iron Deposits (B3 Surface Soil Crac Inundation Visible Sparsely Vegetat Field Observations: Surface Water Present Saturation Present? (includes capillary frii Describe Recorded D	and; Si = silt; (Indicators: inimum of one (1) (A2)) its (B2) (B2) (B2) (B2) (B2) (B2) (B3) (B4) (B4) (Concave Single) (Concave Single) (C = clay; L = required; ch	loam or loamy; co = 0 eck all that apply) Water-Stained Letter 1, 2, 4A, and 4 Salt Crust (B11) Aquatic Invertebr Hydrogen Sulfide Oxidized Rhizosp Presence of Redter Recent Iron Reduct Stunted or Stress Other (Explain in No X No X No X No X D oring well, aerial photode	coarse; f = fine eaves (B9) (exc 4B) rates (B13) e Odor (C1) oheres along Li uced Iron (C4) uction in Tilled sed Plants (D1) Remarks) epth (inches): epth (inches): epth (inches): os, previous ins	H ; vf = very fine; cept MLRA ving Roots (C3 Soils (C6)) (LRR A)	ydric Soil Pre + = heavy (ma - <u>Secondary I</u> - Water-S 4A, a Drainag Dry-Sea - Saturatio - Shallow - FAC-Ne Raised / - Frost-He Wetland	sent? Yes pre clay); - = light (less indicators (2 or more r tained Leaves (B9) (N nd 4B) e Patterns (B10) son Water Table (C2) on Visible on Aerial Im phic Position (D2) Aquitard (D3) utral Test (D5) Ant Mounds (D6) (LRF eave Hummocks (D7) Hydrology Present Yes	No X s clay)

Projectistic Projectistic City/County: Projectistic Sampling Dont: Sampling Dont:<	WETLAND DETERMI	NATION DATA	FORM – West	ern Mounta	ins, Valleys and	Coast Region	
Applicative Vestech Engineering / Cly of Philomath Public Works Degattment State: OR. Sampling Point SPT Investigator(s) Tom Dae, C. Mirth Walker Section, Township, Range: 11D, 12S, 6W Local relief (sorearse; corres, corres) Corres over Signer (%): 1 Subregion (LRR): A Nothwell Forests and Coast Local relief (sorearse; corres, corres) Corres over Signer (%): 1 And Lindom Sold or Hydroopy significantly distubed? No Corres over Normal Circumstance? No Are Vogetation Sold or Hydroopy significantly distubed? No X No X Hydrin Sol Present? Yes No X Is the Sampled Area within at Wetland? Yes No X Procipitation prior to fieldwork: 2.63 inches 2 weeks prior in Corvalis (0.93 inches above normal): (disy prior received 1.81 inchest!) No X Procipitation prior to fieldwork: 2.63 inches 2 weeks prior in Corvalis (0.93 inches above normal): (disy prior received 1.81 inchest!) No X Vestiant (Piot size: _0'r) 0% Socian2 Status No X 1	Project/Site: Philomath Water Treatment P	Plant	City/County:	Philomath / Be	enton	Sampling Date: 4	/25/2018
Investigation(s): Ten Dec. 2. Mith Walker Section, Township, Range: 110, 125, 8W Justergion (LRR): A Northwest Foreast and Coast Long: Duture: Sibregion (LRR): Northwest Foreast and Coast Northwest Foreast And Coas	Applicant/Owner: Westech Engineering / City	∕ of Philomath Pub	lic Works Departm	ent	State: OR	Sampling Po	int: SP7
LandGum (hildings, sames, exc): terrace Local relief (consex, convex, con	Investigator(s): Tom Dee, C. Mirth Walker		Section, T	ownship, Range	e: 11D, 12S, 6W		
Subregion (LRR): A_Nothwest Formets and Coast Lat: Long Datum: Soli Map Unit Name: SO Colourg silly clay loam, ranky flooded, 0-3% slopes NW1 classification: None Are Vagetation	Landform (hillslope, terrace, etc.): terrace			Local relief (concave, convex, none):	concave Slo	ope (%): 1
Soli Map SQL Coburg silly day loam, rankly fooded. 0-35% slopes NVM classification: None Are climite: hydrologic conditions on the site bydraid for this time of year? Yes Xon	Subregion (LRR): A, Northwest Forests and (Coast	Lat:	 Long	g:	Datum:	
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X No X <t< td=""><td>Soil Map Unit Name: 50 Coburg silty of</td><td>clay loam, rarely flo</td><td>ooded, 0-3% slopes</td><td>;</td><td>NWI</td><td>classification: Non</td><td>e</td></t<>	Soil Map Unit Name: 50 Coburg silty of	clay loam, rarely flo	ooded, 0-3% slopes	;	NWI	classification: Non	e
Are Vegetation Soil OF Hydrology significantly disturbed? Are Normal Circumstances? present? Yes X No	Are climatic / hydrologic conditions on the site	typical for this time	e of year?	Yes	s X No	(If no, explai	n in Remarks)
Are Vogetation	Are Vegetation,Soil	, or Hydrology	significantly o	disturbed? A	re "Normal Circumsta	nces" present?	res X No
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc. Hydrophylic Vegetation Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Wetland Hydrokogy Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Remarks: 2.83 Inches 2 weeks prior in Corvallis (0.93 Inches above normal), (day prior received 1.81 Inches!!) No X VECETATION Absolute Dominant Indicator Number of Dominant Species 1.	Are Vegetation,Soil	, or Hydrology	naturally prol	olematic? (If	f needed, explain any	answers in Remar	ks.)
Hydrobylic Vegetation Present? Yes No Is the Sampled Area Hydric Soil Present? Yes No X Welland Hydrology Present? Yes No X Precipitation prior to fieldwork: 2.65 inches 2 weeks prior in Corvalits (0.93 inches above normal). (day prior received 1.81 inches!!) Remarks: 2.65 inches 2 weeks prior in Corvalits (0.93 inches above normal). (day prior received 1.81 inches!!) VEGETATION Teal Stratum (Plot size: 30 r) 2.60 cover 1. Species Status Number of Dominant Species 1. Off, Total Number of Dominant Species Across All Strate: 2 (A) 2. Off, = Total Cover Precent of Dominant Species Total Number of Dominant Species 3. Off, = Total Cover FAC Wy species 0 x 2 = 0 FAC Wy species 0 x 2 = 0 FAC Wy species 0 x 2 = 0 1. Schedononus arundinacous 50% Yes FAC Column Totals: 110 (A) 370 (B) 7 Total Wind Stratum Off, = Total Cover FACU Prevalence Index EBIA = 160 1. Sched	SUMMARY OF FINDINGS – Attach	site map show	wing sampling	point locati	ions, transects, i	mportant feat	ures, etc.
Hydric Soil Present? Yes No X Is the Sampled Area within a Wetland? Yes No X Precipitation prior to fieldwork: 2.83 inches 2 weeks prior in Corvalits (0.93 inches above normal). (day prior received 1.81 inches!!) No X Remarks: 2.83 inches 2 weeks prior in Corvalits (0.93 inches above normal). (day prior received 1.81 inches!!) Dominant Status Dominant Species 1 Tree Stratum. (Plot size:30' r.) 3: Gover Species? Status Total Number of Dominant 4.	Hydrophytic Vegetation Present?	Yes X	No				
Wetland Hydrology Present? Yes No X Within a Wetland? Yes No X Pracipitation prior to fieldwork: 2.63 inches 2 weeks prior in Corvallis (0.93 inches above normal). (day prior received 1.81 inches!!) Remarks: Remarks: VEGETATION VEGETATION Dominant Indicator Number of Dominant Species 1.	Hydric Soil Present?	Yes	No X	Is the Sampl	led Area		
Precipitation prior to fieldwork: 2.63 inches 2 weeks prior in Corvailis (0.93 inches above normal). (day prior received 1.81 inches!!) Remarks: VEGETATION Tree Stratum (Plot size: _30'r) Absolute Dominant 9 <u>Socover</u> Species? Status 1.	Wetland Hydrology Present?	Yes	No X	within a Wet	land? Yes	<u>No X</u>	
VEGE IATION Tree Stratum (Plot size: _30' r_) Absolute Dominant Indicator 1.	Precipitation prior to fieldwork: 2.63 inche Remarks:	s 2 weeks prior in	Corvallis (0.93 inch	es above norma	al). (day prior received	1.81 inches!!)	
Absolute Dominant Indicator Dominant Indicator Number of Dominant Species 1.							
Insc. Graduation (Prot Size _ Sol _ 1) 3; 6 Cover Status Number of Dominant Species 1. That Are OBL, FACW, or FAC: 2 (A) 3.	Trop Stratum (Plot size: 20'r)	Absolute	Dominant	Indicator	Dominance Test w	orksheet:	
1.	(Plot size: <u>30 r</u>)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominar	nt Species	
2.	1. 				That Are OBL, FAC	W, or FAC:	2(A)
3.	2.						
4. 0% = Total Cover Species Across All Strata: 2 (B) Saping/Shrub Stratum (Plot size: 10' r) 1 Percent of Dominant Species 1. 1 1 1 0% = Total Cover Percent of Dominant Species 3. 1 1 0% = Total Cover FAC DBL species 0 x 1 = 0 5. 0% = Total Cover FAC Species 0 x 2 = 0 1. Schedonorus arundinaceus 50% Yes FAC Column Totals: 110 (A) 370 (B) 3. Dactylis glomerata 10% No FACU Prevalence Index = B/A = 3.36 4. Trifolum pratense 10% No FACU Prevalence Index = B/A = 3.36 4. Trifolum pratense 5% No FACU Hydrophytic Vegetation Indicators: 5. Dactylis glomerata 5% No FACU 1 - Rapid Test for Hydrophytic Vegetation 6. Hypericum perforatum 5% No FACU 3 - Prevalence Index is \$50% <	3.				Total Number of Do	minant	
O% = Total Cover Saplind/Shrub Stratum (Plot size:10 'r _) 1. That Are OBL, FACW, or FAC:100% (A/B) 2. That Are OBL, FACW, or FAC:100% (A/B) 9 Prevalence Index worksheet: 	4.				Species Across All	Strata:	2 (B)
Saplind/Shrub Stratum (Plot size: 10'r) 1.		0%	= Total Cover				
1.	Sapling/Shrub Stratum (Plot size: 10'	<u>r_</u>)			Percent of Dominar	t Species	
2.	1				That Are OBL, FAC	W, or FAC: <u>1</u>	<u>00%</u> (A/B)
3.	2				Prevalence Index v	worksheet:	
4. OBL species 0 x 1 = 0 5. 0% = Total Cover FACW species 0 x 2 = 0 Herb Stratum (Plot size: _5' r_) FACU species 0 x 4 = 160 1. Schedonorus arundinaceus 50% Yes FAC Prevalence Index = B/A = 3.36 2. Holcus lanatus 20% Yes FACU Prevalence Index = B/A = 3.36 3. Dactylis glomerata 10% No FACU Hydrophytic Vegetation Indicators: 5. Daucus carota 5% No FACU X 2 - Dominance Test is >50% 6. Hypericum perforatum 5% No FACU X 2 - Dominance Test is >50% 7. Taraxacum officinale 5% No FACU X 2 - Dominance Test is >50% 8. Leucanthemum vulgare 5% No FACU X 2 - Dominance Test is >50% 9. Allium species 5% No FACU 3 - Prevalence Index is \$3.0 ¹ 10. 10 10 5 - Wetland Non-Vascular Plants ¹ 10 5 - Wetland Non-Vascular Pl	3.				Total % Cover	of: Multiply by:	
5. 0% = Total Cover FACW species 0 x 2 = 0 Herb Stratum (Plot size: _5'r_) FAC FAC Schedonorus arundinaceus 210 1. Schedonorus arundinaceus 50% Yes FAC UPL species 0 x 4 = 160 2. Holcus lanatus 20% Yes FAC Column Totals: 110 (A) 370 (B) 3. Dactylis glomerata 10% No FACU Prevalence Index = B/A = 3.36 4. Trifolium pratense 10% No FACU Hydrophytic Vegetation Indicators: 5. Dacus carota 5% No FACU 1 - Rapid Test for Hydrophytic Vegetation 6. Hypericum perforatum 5% No FACU 3 - Prevalence Index is <3.0 ¹ 7. Taraxacum officinale 5% No FACU 3 - Prevalence Index is <3.0 ¹ 8. Leucanthemum vulgare 5% No FACU 3 - Prevalence Index is <3.0 ¹ 9. Allium species 5% No FACU 4 - Morphological Adaptations ¹ (Provide supp	4				OBL species	0 x 1 =	0
 0% = Total Cover FAC species 70 × 3 = 210 FACU species 70 × 4 = 160 1 Schedonorus arundinaceus 20% 20% Yes Yes FAC UPL species 0 × 5 = 0 0 0 0 0 0 5 0 x 5 = 0 0	5				FACW species	0 x 2 =	0
Herb Stratum (Plot size: _5' r) FAC FAC Schedonorus arundinaceus 50% Yes FAC UPL species 40 x 4 = 160 2. Holcus lanatus 20% Yes FAC Column Totals: 110 (A) 370 (B) 3. Dactylis glomerata 10% No FACU Prevalence Index = B/A = 3.36 4. Trifolium pratense 10% No FACU Hydrophytic Vegetation Indicators: 5. Daucus carota 5% No FACU 1 - Rapid Test for Hydrophytic Vegetation 6. Hypericum perforatum 5% No FACU X 2 - Dominance Test is >50% 7. Taraxacum officinale 5% No FACU 4 - Morphological Adaptations ¹ (Provide supporting 9. Allium species 5% No OBL to NOL 4 at in Remarks or on a separate sheet) 10.		0%	= Total Cover		FAC species	70 x 3 =	210
1. Schedonorus arundinaceus 50% Yes FAC UPL species 0 x 5 = 0 2. Holcus lanatus 20% Yes FAC Column Totals: 110 (A) 370 (B) 3. Dactylis glomerata 10% No FAC Prevalence Index = B/A = 3.36 4. Trifolium pratense 10% No FACU Hydrophytic Vegetation Indicators: 5. Daucus carota 5% No FACU 1 - Rapid Test for Hydrophytic Vegetation 6. Hypericum perforatum 5% No FACU X 2 - Dominance Test is >50% 7. Taraxacum officinale 5% No FACU 3 - Prevalence Index is ≤3.0 ¹ 8. Leucanthemum vulgare 5% No FACU 4 - Morphological Adaptations ¹ (Provide supporting 9. Allium species 5% No OBL to NOL data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹ 11.	<u>Herb Stratum</u> (Plot size: <u>5' r</u>)				FACU species	40 x 4 =	160
2. Holcus lanatus 20% Yes FAC Column Totals: 110 (A) 370 (B) 3. Dactylis glomerata 10% No FACU Prevalence Index = B/A = 3.36 4. Trifolium pratense 10% No FACU Hydrophytic Vegetation Indicators: 5. Dacus carota 5% No FACU 1 - Rapid Test for Hydrophytic Vegetation 6. Hypericum perforatum 5% No FACU X 2 - Dominance Test is >50% 7. Taraxacum officinale 5% No FACU 3 - Prevalence Index is ≤3.0 ¹ 8. Leucanthemum vulgare 5% No FACU 4 - Morphological Adaptations ¹ (Provide supporting 9. Allium species 5% No OBL to NOL 4 - Morphological Adaptations ¹ (Provide supporting 10.	1. Schedonorus arundinaceus	50%	Yes	FAC	UPL species	0 x 5 =	0
3. Dactylis glomerata 10% No FACU Prevalence Index = B/A = 3.36 4. Trifolium pratense 10% No FACU Hydrophytic Vegetation Indicators: 5. Dacus carota 5% No FACU 1 - Rapid Test for Hydrophytic Vegetation 6. Hypericum perforatum 5% No FACU X 2 - Dominance Test is >50% 7. Taraxacum officinale 5% No FACU 3 - Prevalence Index is ≤3.01 8. Leucanthemum vulgare 5% No FACU 4 - Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet) 9. Allium species 5% No OBL to NOL 5 - Wetland Non-Vascular Plants1 10.	2. Holcus lanatus	20%	Yes	FAC	Column Totals: 1	10 (A)	370 (B)
4. Trifolium pratense 10% No FACU Hydrophytic Vegetation Indicators: 5. Daucus carota 5% No FACU 1 - Rapid Test for Hydrophytic Vegetation 6. Hypericum perforatum 5% No FACU X 2 - Dominance Test is >50% 7. Taraxacum officinale 5% No FACU 3 - Prevalence Index is ≤3.01 8. Leucanthemum vulgare 5% No FACU 4 - Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet) 9. Allium species 5% No OBL to NOL data in Remarks or on a separate sheet) 10.	3. Dactylis glomerata	10%	No	FACU	Prevalence Inde	x = B/A =	3.36
5. Daucus carota 5% No FACU 1 - Rapid Test for Hydrophytic Vegetation 6. Hypericum perforatum 5% No FACU X 2 - Dominance Test is >50% 7. Taraxacum officinale 5% No FACU 3 - Prevalence Index is ≤3.01 8. Leucanthemum vulgare 5% No FACU 4 - Morphological Adaptations1 (Provide supporting 9. Allium species 5% No OBL to NOL data in Remarks or on a separate sheet) 10.	4. Trifolium pratense	10%	No	FACU	Hydrophytic Veget	ation Indicators:	
6. Hypericum perforatum 5% No FACU X 2 - Dominance Test is >50% 7. Taraxacum officinale 5% No FACU 3 - Prevalence Index is ≤3.01 8. Leucanthemum vulgare 5% No FACU 4 - Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet) 9. Allium species 5% No OBL to NOL data in Remarks or on a separate sheet) 10. 5 - Wetland Non-Vascular Plants1 Problematic Hydrophytic Vegetation1 (Explain) 11. 115% = Total Cover Problematic Hydrophytic vegetation1 (Explain) 1. 0% = Total Cover Hydrophytic 8. 0% = Total Cover Vegetation Yes X_No	5. Daucus carota	5%	No	FACU	1 - Rapid Test f	or Hydrophytic Veo	getation
7. Taraxacum officinale 5% No FACU 3 - Prevalence Index is ≤3.0 ¹ 8. Leucanthemum vulgare 5% No FACU 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 9. Allium species 5% No OBL to NOL data in Remarks or on a separate sheet) 10.	6. Hypericum perforatum	5%	No	FACU	X 2 - Dominance	Test is >50%	
8. Leucanthemum vulgare 5% No FACU 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) 9. Allium species 5% No OBL to NOL data in Remarks or on a separate sheet) 10. 5 - Wetland Non-Vascular Plants ¹ 5 - Wetland Non-Vascular Plants ¹ 11.	7 Taraxacum officinale	5%	No	FACU	3 - Prevalence I	ndex is ≤3.0 ¹	
9. Allium species 5% No OBL to NOL data in Remarks or on a separate sheet) 10. 5 - Wetland Non-Vascular Plants ¹ 11. Problematic Hydrophytic Vegetation ¹ (Explain) 11. 115% = Total Cover Woody Vine Stratum (Plot size: 10' r) 1 1. 0% = Total Cover Woody Net Stratum 0% = Total Cover Woody Net Stratum 0% = Total Cover Wegetation Yes X No Present?	8. Leucanthemum vulgare	5%	No	FACU	4 - Morphologic	al Adaptations ¹ (Pi	ovide supporting
10. 5 - Wetland Non-Vascular Plants ¹ 11. Problematic Hydrophytic Vegetation ¹ (Explain) 11. 115% = Total Cover Woody Vine Stratum (Plot size: 10' r) 1. 0% = Total Cover 0% = Total Cover Hydrophytic 0% = Total Cover Vegetation Yes X No % Bare Ground in Herb Stratum 0% Remarks: Entered by: cmw OC by:	9. Allium species	5%	No	OBL to NOL	data in Rem	arks or on a separa	ate sheet)
11.	10.				5 - Wetland Nor	n-Vascular Plants ¹	
Woody Vine Stratum (Plot size: 10' r) 1. 1. 2. 0% = Total Cover 0% = Total Cover Hydrophytic Vegetation Yes X No % Bare Ground in Herb Stratum 0% Remarks: Entered by: cmw	11.				Problematic Hy	drophytic Vegetatio	on ¹ (Explain)
1.	Woody Vine Stratum (Plot size: 10'	115%)	= Total Cover		¹ Indicators of hydric be present.	soil and wetland h	ydrology must
0% = Total Cover Vegetation Yes X No % Bare Ground in Herb Stratum 0% Present? Present?	2.				Hydrophytic		
% Bare Ground in Herb Stratum 0% Remarks: Fatered by: cmw			= Total Cover		Vegetation	Yes X No	
Remarks: Entered by: cmwOC by:	% Bare Ground in Herb Stratum				Present?		
	Remarks [.]				Fntere	d by: cmw OC	by:

(inches) Color (moist) %s Type! Loc? Texture Remark 0.4 7.5YR 3/3 100 7.5YR 3/3 5 C M gr SiL faint 4-1.4 10YR 3/2 95 7.5YR 3/3 5 C M gr SiL faint 4-1.4 10YR 3/2 95 7.5YR 3/3 5 C M gr SiL faint 4-1.4 10YR 3/2 95 7.5YR 3/3 5 C M gr SiL faint 4-1.4 10YR 3/2 95 7.5YR 3/3 5 C M gr SiL faint 4-1.4 10YR 3/2 95 7.5YR 3/3 5 C M gr SiL faint 4 10	· · · · · · · · · · · · · · · · · · ·	Matrix			Redox	-ealures		-	
0.4 7.5YR 3/3 100	(inches) Color (m	noist)	%	Color (mois	t) %	Type ¹	Loc ²	Texture	Remark
4-14 10YR 3J2 95 7.5YR 3/3 5 C M gr SIL Iaint	0-4 7.5YR	3/3	100					SiL	
yper: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix. yper: C=Concentration, D=Depletion, RM=Reduced Matrix (CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix. yper: Soli Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Solis ¹ : Histosol (A1) Sandy Redx (SS) 2 cm Muck (A10) Histosol (A2) Stripped Matrix (S6) Way Shallow Dark Surface (T72) Depleted Balow Dark Surface (A11) Depleted Matrix (F3) Other (Explain in Remarks) Depleted Balow Dark Surface (A12) Redox Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. sandy Gleyed Matrix (S4) Redox Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. estrictive Layer (if present): Type: No X Uproclocy Water Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Secondary Indicators (2 or more regulated) Saft Crust (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Saft Crust (B1) Surface Water (A1) Persence of Reduced Into (C4) Saftace Water (A1) Saftace Water (A1) High Water Table (A2) Saftace Water (A1) <	4-14 10YR	3/2	95	7.5YR 3/3	3 5	С	М	gr SIL	faint
ype: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ¹ Location: PL=Pore Lining, M=Matrix. yrdic Soil Inflicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ¹ : Histo Eppedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A11) Depleted Dark Surface (F6) ³ Indicators of hydrophytic vegetation and Sandy Mcky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. yrpe:									
ype: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining, M=Matrix. dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ : Histic Eppedon (A2) Stripped Matrix (S6) 2 cm Muck (A10) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A12) Redox Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. strictive Layer (If present): Type: No X Depleted Dark Surface (F1) water able, (A2) No X Surface Vater (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (except MLRA Surface Vater (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (except MLRA Surface Site (A2) 1, 2, 4A, and 4B) Dirinage Patterns (B10) Dirinage Patterns (B10) Dirinage Patterns (B10) Dirinage Patt									
ype: C=Concentration, D=Depletion, RM=Reduced Matrix CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix. ydric Soll Indicators: (Applicable to all LRRe, unless otherwise noted.) Indicators for Problematic Hydric Solls ³ : Histosol (A1) Sandy Redox (S5) _2 cm Muck (A10) Histosol (A2) Stripped Matrix (S6) Red Parent Material (TF2) Biack Histic (A3) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Other (Explain in Remarks) Sandy Gleyed Matrix (S4) Redox Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic Setrictive Layer (If present): Type: No X Type:									
gdrc Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils :	ype: C=Concentration, D	=Depletion,	RM=Reduce	ed Matrix CS	=Covered or Coate	ed Sand Grains.	² Location:	PL=Pore Lining, M=	-Matrix.
Histoc Sid (A1) Sandy Redox (S5) 2 cm Wuck (A10) Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) Depleted Delow Dark Surface (A11) Depleted Matrix (F2) Other (Explain in Remarks) Depleted Delow Dark Surface (A11) Depleted Dark Surface (F6) ³ Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Cleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Sandy Cleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. Depth (inches):	ydric Soil Indicators: (Aj	oplicable to	all LRRs, u	nless other	wise noted.)		Indicators	for Problematic Hy	dric Soils [°] :
Histic Epipedon (A2) Stipped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (accept MLRA 1) Very Shallow Dark Surface (TF12) Popleted Below Dark Surface (A11) Depleted Matrix (F3) ************************************	Histosol (A1)			Sandy Redo	ox (S5)		2 cm M	uck (A10)	
Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Bow Dark Surface (A11) Depleted Dark Surface (F6) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. Strictive Layer (if present): Type: Pupptiet Below Sist Sist is silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay) YDROLOGY Etam Hydrology Indicators: Imarks: Saturation (A1) Water-Stained Leaves (B9) (except MLRA	Histic Epipedon (A2)			Stripped Ma	atrix (S6)		Red Pa	rent Material (TF2)	
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) ³ Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F6) ³ Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) unless disturbed or problematic. estrictive Layer (if present): Type: No X Opth (inches): Hydric Soil Present? Yes No X emarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay) YDROLOGY ************************************	Black Histic (A3)			Loamy Muc	ky Mineral (F1) (e :	xcept MLRA 1)	Very Sh	allow Dark Surface	(TF12)
Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. strictive Layer (if present): Type: No X Type: Pepleted Dark Surface (F7) wetland hydrology must be present, unless disturbed or problematic. X Depth (inches): Hydric Soil Present? Yes No X amarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay) YDROLOGY	Hydrogen Sulfide (A4)			Loamy Gley	/ed Matrix (F2)		Other (E	Explain in Remarks)	
	Depleted Below Dark S	Surface (A11))	Depleted M	atrix (F3)		2		
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic. setrictive Layer (if present): Type: Hydric Soil Present? Yes No X Depth (inches): Hydric Soil Present? Yes No X emarks: S = sand; Si = silt; C = clay; L = loam or loamy; co = coarse; f = fine; vf = very fine; + = heavy (more clay); - = light (less clay) YDROLOGY ettand Hydrology Indicators: imary Indicators (2 or more required)	Thick Dark Surface (A1	2)		Redox Dark	Surface (F6)		°Indicators o	of hydrophytic veget	ation and
	Sandy Mucky Mineral (S1)		Depleted Da	ark Surface (F7)		wetland h	ydrology must be pr	esent,
estrictive Layer (if present): Type: Depth (inches):	Sandy Gleyed Matrix (S	64)		Redox Depr	ressions (F8)		unless dis	turbed or problemat	tic.
Secondary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) High Water Table (A2) 1, 2, 4A, and 4B) Water-Stained Leaves (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) No X Depth (inches):	Depth (inches): emarks: S = sand; S	Si = silt; C =	clay; L = loa	m or loamy;	co = coarse; f = fir	he; vf = very fine	lydric Soil Pre ; + = heavy (m	ore clay); - = light (le	No X
Surface Water (A1) Water-Stained Leaves (B9) (except MLRA Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) High Water Table (A2) 1, 2, 4A, and 4B) 4A, and 4B) Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) No X Depth (inches): - Water Table Present? Yes No X Depth (inches): - Saturation Present? Yes No X Depth (inches): - Saturation Present? Yes No X Depth (inches):	Depth (inches): emarks: S = sand; S IYDROLOGY /etland Hydrology Indica	Bi = silt; C =	clay; L = loa	m or loamy;	co = coarse; f = fir	he; vf = very fine	lydric Soil Pre ; + = heavy (m	esent? Yes ore clay); - = light (le	No X
High Water Table (A2) 1, 2, 4A, and 4B) 4A, and 4B) Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) No X Depth (inches): - Vater Table Present? Yes No X Depth (inches): - Vater Table Present? Yes No X Depth (inches): - Vater Table Present? Yes No X Depth (inches): - Vater Table Present? Yes No X Depth	Depth (inches): emarks: S = sand; S IYDROLOGY Vetland Hydrology Indicators (minimulation)	Si = silt; C = tors: m of one req	clay; L = loa	m or loamy;	co = coarse; f = fir y)	he; vf = very fine	lydric Soil Pre ; + = heavy (m <u>Secondary</u>	ore clay); - = light (le	No X ess clay)
Saturation (A3)	Depth (inches): emarks: S = sand; S YDROLOGY Yetland Hydrology Indications (minimumerization for the second secon	Bi = silt; C = Itors: m of one req	clay; L = loa uired; check	m or loamy; all that appl Water-Stair	co = coarse; f = fir y) ned Leaves (B9) (e	he; vf = very fine	lydric Soil Pre ; + = heavy (m <u>Secondary</u> Water-S	ore clay); - = light (le Indicators (2 or more Stained Leaves (B9)	No X ess clay) e required) (MLRA 1, 2,
Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) No X Depth (inches): - Vater Table Present? Yes No X Depth (inches): - Vater Table Present? Yes No X Depth (inches): - iaturation Present? Yes No X Depth (inches): - iaturation Present? Yes No X Depth (inches): - includes capillary fringe) Yes No X Depth (inches): -	Depth (inches): emarks: S = sand; S YDROLOGY Yetland Hydrology Indications rimary Indicators (minimul Surface Water (A1) High Water Table (A2)	Bi = silt; C = ntors: m of one req	clay; L = loa uired; check	m or loamy; <u>all that appl</u> Water-Stair 1, 2, 4A ,	co = coarse; f = fir y) ned Leaves (B9) (e and 4B)	he; vf = very fine	Hydric Soil Pre ; + = heavy (m <u>Secondary</u> Water-S 4A, a	ore clay); - = light (le Indicators (2 or more Stained Leaves (B9) nd 4B)	No X ess clay) e required) (MLRA 1, 2,
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baturation Present ? Yes <u>No X</u> Depth (inches): <u>- Yes No X</u> includes capillary fringe)	Depth (inches): emarks: S = sand; S Image: S = sand; S <tr< td=""><td>Bi = silt; C = tors: m of one req m of one req () 6) erial Imager incave Surfa Yes</td><td>clay; L = loa</td><td>m or loamy; all that appl Water-Stair 1, 2, 4A, Salt Crust (I Aquatic Invo Oxidized Rh Presence or Recent Iron Stunted or S Other (Expla</td><td>co = coarse; f = fir y) hed Leaves (B9) (e and 4B) B11) ertebrates (B13) Sulfide Odor (C1) hizospheres along f Reduced Iron (C4 Reduction in Tille Stressed Plants (D ain in Remarks) Depth (inches)</td><td>H ne; vf = very fine xcept MLRA xcept MLRA d Soils (C6) 1) (LRR A)</td><td>Hydric Soil Pre ; + = heavy (m <u>Secondary</u> Water-S Water-S Uration Drainag Dry-Sea Saturation Saturation Shallow FAC-Ne Raised Frost-Ho</td><td>esent? Yes ore clay); - = light (le Indicators (2 or more Stained Leaves (B9) nd 4B) e Patterns (B10) ason Water Table (C on Visible on Aerial rphic Position (D2) Aquitard (D3) eutral Test (D5) Ant Mounds (D6) (L eave Hummocks (D</td><td>No X ess clay) e required) (MLRA 1, 2, 22) Imagery (C9) RR A) 7)</td></tr<>	Bi = silt; C = tors: m of one req m of one req () 6) erial Imager incave Surfa Yes	clay; L = loa	m or loamy; all that appl Water-Stair 1, 2, 4A, Salt Crust (I Aquatic Invo Oxidized Rh Presence or Recent Iron Stunted or S Other (Expla	co = coarse; f = fir y) hed Leaves (B9) (e and 4B) B11) ertebrates (B13) Sulfide Odor (C1) hizospheres along f Reduced Iron (C4 Reduction in Tille Stressed Plants (D ain in Remarks) Depth (inches)	H ne; vf = very fine xcept MLRA xcept MLRA d Soils (C6) 1) (LRR A)	Hydric Soil Pre ; + = heavy (m <u>Secondary</u> Water-S Water-S Uration Drainag Dry-Sea Saturation Saturation Shallow FAC-Ne Raised Frost-Ho	esent? Yes ore clay); - = light (le Indicators (2 or more Stained Leaves (B9) nd 4B) e Patterns (B10) ason Water Table (C on Visible on Aerial rphic Position (D2) Aquitard (D3) eutral Test (D5) Ant Mounds (D6) (L eave Hummocks (D	No X ess clay) e required) (MLRA 1, 2, 22) Imagery (C9) RR A) 7)
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	WETLAND DETERM	INATION DATA	A FORM – Wes	tern Mounta	ins, Valleys and	Coast Region	
Project/Site: P	Philomath Water Treatment P	lant	City/County:	Philomath / Be	enton	Sampling Date: 12/10)/2020
Applicant/Owner:	Westech Engineering / City	of Philomath Publi	c Works Departmer	nt	State: OR	Sampling Point:	SP8
Investigator(s):	C. Mirth Walker and Rache	l Locke	Section,	Township, Range	e: 12S, 6W, 11D	-	
Landform (hillslope	, terrace, etc.): terrace			Local relief (concave, convex, none):	flat/hummocky Slope	(%): 1
Subregion (LRR):	A, Northwest Forests and C	Coasts	Lat: 44.535779	 Long	g: -123.374599	Datum: NAD	1983
Soil Map Unit Nan	ne: 111 Malabon Sil	ty Clay Loam			NW	l classification:	
Are climatic / hydr	ologic conditions on the site t	ypical for this time of	of year?	Ye	s X No	(If no, explain in	Remarks)
Are Vegetation	,Soil	, or Hydrology	significantly o	disturbed? A	re "Normal Circumsta	nces" present? Yes	X_No
Are Vegetation	,Soil	, or Hydrology	naturally prol	blematic? (l	f needed, explain any	answers in Remarks.)	
SUMMARY O	F FINDINGS – Attach	site map show	ving sampling	point location	ons, transects, ir	mportant features,	etc.
Hydrophytic Vege	etation Present?	Yes X	No				
Hydric Soil Prese	nt?	Yes	No X	Is the Sample	ed Area		
Wetland Hydrolog	gy Present?	Yes	No X	within a Wet	land? Yes	No X	
Precipitation prior Remarks: Grass field west o VEGETATION	to fieldwork: 0.86 inch i f road.	received 2 weeks p	ior to survey (Corva	allis).			
	-	Absolute	Dominant	Indicator	Dominance Test w	vorksheet:	
Tree Stratum	(Plot size: <u>30' r</u>)	% Cover	Species?	Status	Number of Dominar	nt Species	
1.		<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	<u></u>	<u></u>		1W or EAC: 3	(A)
2.					That Are ODE, I AO		(^)
3.							
4.						ominant Strata: 2	(D)
···			T () 0	. <u> </u>	Species Across All	Strata: 3	(B)
Sapling/Shrub Str	atum (Plot size: 10'	0%	= Total Cover				
1	atum (FIOL SIZE. 10	L)			Percent of Dominar	nt Species	,
·				·	That Are OBL, FAC	W, or FAC: <u>100%</u>	<u>∘</u> (A/B)
2. 				. <u> </u>	Prevalence Index	worksheet:	
3.					Total % Cover		
4.					OBL species	0 x 1 =	0
5.					FACW species	30 x 2 =	60
		0%	= Total Cover		FAC species	60 x 3 =	180
<u>Herb Stratum</u>	(Plot size: <u>5' r</u>)				FACU species	10 x 4 =	40
1. Phalaris arun	dinacea	30%	Yes	FACW	UPL species	5 x 5 =	25
2. Poa species		30%	Yes	FAC ?	Column Totals:	105 (A)	305 (B)
3. Agrostis spec	cies	20%	Yes	FAC ?	Prevalence Ind	lex = B/A = <u>2.</u>	90
4. Holcus lanatu	IS	5%	No	FAC	Hydrophytic Vege	tation Indicators:	
5. Allium specie	S	5%	No	FAC ?	1 - Rapid Test f	for Hydrophytic Vegetati	on
6. Trifolium prate	ense	5%	No	FACU	X 2 - Dominance	Test is >50%	
7. Dactvlis glom	erata	5%	No	FACU	X 3 - Prevalence	Index is ≤3.0 ¹	
8. Geranium mo	ble	5%	No	NOL	4 - Morphologia	al Adaptations ¹ (Provide	e supporting
9.					data in Rem	arks or on a separate sh	neet)
10.					5 - Wetland No	n-Vascular Plants ¹	,
11.				·	Problematic Hy	drophytic Vegetation ¹ (F	xplain)
· ·		105%	= Total Cover		¹ Indicators of hydric	soil and wetland hydrol	oav must
<u>Woody Vine Stratu</u> 1.	um (Plot size: <u>10'</u>	<u> </u>			be present.		ogy must
2.					Hydrophytic		
		0%	= Total Cover		Vegetation	Yes X No	
% Bare Ground in	Herb Stratum 0%				Present?		
Remarks:					Enter	red by: ral QC by:	cmw

(inches) Color (moist 0-19 10YR 3/3	t) %	Color (moist)		4	2		
0-19 10YR 3/3			%	Туре'	Loc ²	Texture	Remark
	100	_				clay loam	
	_	_	- <u></u>				
	_	_					
				Oneine		Dana Lininan M-Matrix	
/pe: C=Concentration, D=De		uced Matrix CS=Co	vered or Coated Sand	Grains.	Location: PL=	Pore Lining, M=Matrix	(. • • • • • • • • •
aric Soli Indicators: (Applic	cable to all LKK	s, unless otherwise	noted.)		Indicators to	or Problematic Hydrid	c Solis :
Histosol (A1)		Sandy Redox	(S5)		2 cm Mu	ck (A10)	
Histic Epipedon (A2)		Stripped Matrix	(S6)		Red Pare	ent Material (TF2)	
Black Histic (A3)		Loamy Mucky	Mineral (F1) (except)	MLRA 1)	Very Sha	llow Dark Surface (TF	12)
Hydrogen Sulfide (A4)		Loamy Gleyed	Matrix (F2)		Other (Ex	cplain in Remarks)	
Depleted Below Dark Surfa	ice (A11)	Depleted Matri	x (F3)		_		
Thick Dark Surface (A12)		Redox Dark Su	urface (F6)		³ Indicators of	hydrophytic vegetatio	on and
Sandy Mucky Mineral (S1)		Depleted Dark	Surface (F7)		wetland hyd	drology must be prese	ent,
Sandy Gleyed Matrix (S4)		Redox Depres	sions (F8)		unless distu	urbed or problematic.	
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = s robed below 13 inches - same,	silt; C = clay; L = , no indicators of	loam or loamy; co = hydrology.	coarse; f = fine; vf =	Hy very fine; + =	ydric Soil Pres = heavy (more o	ent? Yes clay); - = light (less cla	No X
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = s robed below 13 inches - same, YDROLOGY etland Hydrology Indicators	silt; C = clay; L = , no indicators of	loam or loamy; co = hydrology.	coarse; f = fine; vf =	Hy very fine; + =	ydric Soil Pres = heavy (more e	ent? Yes clay); - = light (less cla	No <u>X</u>
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = : obed below 13 inches - same, YDROLOGY etland Hydrology Indicators imary Indicators (minimum of	silt; C = clay; L = , no indicators of :: one required; ch	loam or loamy; co = hydrology. eck all that apply)	coarse; f = fine; vf =	Hy very fine; + =	ydric Soil Pres = heavy (more of Secondary In	clay); - = light (less cla	No X
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = = obed below 13 inches - same YDROLOGY etland Hydrology Indicators imary Indicators (minimum of Surface Water (A1)	silt; C = clay; L = , no indicators of :: one required; ch	loam or loamy; co = hydrology. <u>eck all that apply)</u> Water-Stained	coarse; f = fine; vf =	Hy very fine; + = MLRA	ydric Soil Pres = heavy (more of Secondary In Water-St	ent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M	No X ay) aquired) LRA 1, 2,
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = sobed below 13 inches - same YDROLOGY etland Hydrology Indicators imary Indicators (minimum of	silt; C = clay; L = , no indicators of ;: one required; ch	loam or loamy; co = hydrology. eck all that apply) Water-Stained 1, 2, 4A, and	coarse; f = fine; vf = · Leaves (B9) (except d 4B)	very fine; + = MLRA	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an	ent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B)	No X ay) equired) LRA 1, 2,
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = : obed below 13 inches - same YDROLOGY etland Hydrology Indicators imary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3)	silt; C = clay; L = , no indicators of :: one required; ch	loam or loamy; co = hydrology. <u>eck all that apply)</u> Water-Stained 1, 2, 4A, an Salt Crust (B1 ²	coarse; f = fine; vf = Leaves (B9) (except d 4B)	Hy very fine; + = MLRA	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage	clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10)	No X ay) aquired) LRA 1, 2,
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = : obed below 13 inches - same YDROLOGY etland Hydrology Indicators imary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	silt; C = clay; L = , no indicators of :: one required; ch	loam or loamy; co = hydrology. <u>eck all that apply)</u> Water-Stained 1, 2, 4A, an Salt Crust (B1 ⁻ Salt Crust (D1 ⁻	coarse; f = fine; vf = Leaves (B9) (except d 4B) I) ebrates (B13)	Hy very fine; + = MLRA	ydric Soil Pres = heavy (more of Secondary In Water-St Urainage Drainage Dry-Seas	eent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) con Water Table (C2)	No X ay) aquired) LRA 1, 2,
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = : obed below 13 inches - same YDROLOGY etland Hydrology Indicators imary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	silt; C = clay; L = , no indicators of ;: one required; ch	loam or loamy; co = hydrology. eck all that apply) Water-Stained 1, 2, 4A, and Salt Crust (B1 ⁺ Aquatic Inverte Hydrogen Sulf	coarse; f = fine; vf = Leaves (B9) (except d 4B) () ebrates (B13) de Odor (C1)	Hy very fine; + = MLRA	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio	eent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Ima	No X ay) equired) LRA 1, 2,
	silt; C = clay; L = , no indicators of one required; ch	loam or loamy; co = hydrology. <u>eck all that apply)</u> Water-Stained 1, 2, 4A, an Salt Crust (B1 ⁻ Aquatic Inverte Hydrogen Sulf Oxidized Rhizo	coarse; f = fine; vf = Leaves (B9) (except d 4B) I) ebrates (B13) de Odor (C1) ospheres along Living	Hy very fine; + = MLRA	ydric Soil Pres = heavy (more of <u>Secondary In</u> Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp	eent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Ima blic Position (D2)	No X ay) equired) LRA 1, 2, agery (C9)
	silt; C = clay; L = , no indicators of :: one required; ch	loam or loamy; co = hydrology. eck all that apply) Water-Stained 1, 2, 4A, an Salt Crust (B1 ⁻ Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R	coarse; f = fine; vf = Leaves (B9) (except d 4B) I) ebrates (B13) de Odor (C1) ospheres along Living educed Iron (C4)	Hy very fine; + = MLRA Roots (C3)	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow	eent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) con Water Table (C2) n Visible on Aerial Ima whic Position (D2) Aquitard (D3)	No X ay) aquired) LRA 1, 2,
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = : obed below 13 inches - same YDROLOGY etland Hydrology Indicators imary Indicators (minimum of 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)	silt; C = clay; L = , no indicators of ;: one required; ch	loam or loamy; co = hydrology. Water-Stained 1, 2, 4A, and Salt Crust (B1 ⁻ Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of Recent Iron Re	coarse; f = fine; vf = Leaves (B9) (except d 4B) I) ebrates (B13) de Odor (C1) ospheres along Living educed Iron (C4) eduction in Tilled Soils	MLRA Roots (C3)	ydric Soil Pres = heavy (more of <u>Secondary In</u> Water-St 4A, an 	eent? Yes Clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) con Water Table (C2) n Visible on Aerial Ima whic Position (D2) Aquitard (D3) tral Test (D5)	No X ay) equired) LRA 1, 2,
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = : robed below 13 inches - same YDROLOGY Yetland Hydrology Indicators imary Indicators (minimum of 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)	silt; C = clay; L = , no indicators of one required; ch	loam or loamy; co = hydrology. Water-Stained 1, 2, 4A, and Salt Crust (B1 ⁻ Aquatic Invertee Hydrogen Sulfi Oxidized Rhize Presence of Re Recent Iron Re Stunted or Stre	coarse; f = fine; vf = Leaves (B9) (except d 4B) I) ebrates (B13) de Odor (C1) espheres along Living educed Iron (C4) eduction in Tilled Soils	Hy very fine; + = MLRA Roots (C3) ; (C6) R A)	ydric Soil Pres = heavy (more of <u>Secondary In</u> Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow / FAC-Neu Raised A	eent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Ima whic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LRR	No X ay) equired) LRA 1, 2, agery (C9)
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = : robed below 13 inches - same YDROLOGY /etland Hydrology Indicators fimary Indicators (minimum of 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)	silt; C = clay; L = , no indicators of one required; ch	loam or loamy; co = hydrology. Water-Stained 1, 2, 4A, an Salt Crust (B1 ⁻ Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of Ru Recent Iron Re Stunted or Stre	coarse; f = fine; vf = Leaves (B9) (except d 4B) I) ebrates (B13) de Odor (C1) ospheres along Living educed Iron (C4) eduction in Tilled Soils essed Plants (D1) (LR	Hy very fine; + = MLRA Roots (C3) ; (C6) R A)	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow A FAC-Neu Raised A Erost Hea	eent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Ima blic Position (D2) Aquitard (D3) tral Test (D5) nt Mounds (D6) (LRR	No X ay) equired) LRA 1, 2, agery (C9)
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = : robed below 13 inches - same YDROLOGY etland Hydrology Indicators imary Indicators (minimum of 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) Inundation Visible on Aerial	silt; C = clay; L = , no indicators of :: one required; ch	loam or loamy; co = hydrology.	coarse; f = fine; vf = Leaves (B9) (except d 4B) I) ebrates (B13) de Odor (C1) ospheres along Living educed Iron (C4) eduction in Tilled Soils essed Plants (D1) (LR in Remarks)	Hy very fine; + = MLRA Roots (C3) ; (C6) R A)	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow / FAC-Neu Raised A Frost-Hea	eent? Yes Clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Ima whic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LRR ave Hummocks (D7)	No X ay) equired) LRA 1, 2, agery (C9)
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = : obed below 13 inches - same YDROLOGY etland Hydrology Indicators imary Indicators (minimum of 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) Inundation Visible on Aerial Sparsely Vegetated Concav	silt; C = clay; L = , no indicators of :: one required; ch I Imagery (B7) ve Surface (B8)	loam or loamy; co = hydrology. Water-Stained 1, 2, 4A, and Salt Crust (B1 ⁻ Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Re Stunted or Stre Other (Explain	coarse; f = fine; vf = Leaves (B9) (except d 4B) I) bbrates (B13) de Odor (C1) bspheres along Living educed Iron (C4) eduction in Tilled Soils essed Plants (D1) (LR in Remarks)	MLRA Roots (C3) s (C6) R A)	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow / FAC-Neu Raised A Frost-Hea	eent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Ima whic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LRR ave Hummocks (D7)	No X ay) equired) LRA 1, 2, agery (C9)
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = : obed below 13 inches - same YDROLOGY etland Hydrology Indicators imary Indicators (minimum of 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) Inundation Visible on Aerial Sparsely Vegetated Concave eld Observations:	silt; C = clay; L = , no indicators of one required; ch I Imagery (B7) ve Surface (B8)	loam or loamy; co = hydrology. Water-Stained 1, 2, 4A, an Salt Crust (B1 ⁻ Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of Ro Recent Iron Re Stunted or Stre Other (Explain	coarse; f = fine; vf = Leaves (B9) (except d 4B) I) ebrates (B13) de Odor (C1) ospheres along Living educed Iron (C4) eduction in Tilled Soils essed Plants (D1) (LR in Remarks)	Hy very fine; + = MLRA Roots (C3) s (C6) R A)	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow / FAC-Neu Raised A Frost-Hea	eent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Ima ohic Position (D2) Aquitard (D3) tral Test (D5) nt Mounds (D6) (LRR ave Hummocks (D7)	No X ay) equired) LRA 1, 2, agery (C9)
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = : obed below 13 inches - same YDROLOGY etland Hydrology Indicators imary Indicators (minimum of 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) Inundation Visible on Aerial Sparsely Vegetated Concav eld Observations: urface Water Present?	silt; C = clay; L = , no indicators of one required; ch I Imagery (B7) ve Surface (B8) Yes	loam or loamy; co = hydrology.	coarse; f = fine; vf = Leaves (B9) (except d 4B) I) ebrates (B13) de Odor (C1) ospheres along Living educed Iron (C4) eduction in Tilled Soils essed Plants (D1) (LR in Remarks) Depth (inches):	Hy very fine; + = MLRA Roots (C3) ; (C6) R A)	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow / FAC-Neu Raised A Frost-Hea	eent? Yes Clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) In Visible on Aerial Ima whic Position (D2) Aquitard (D3) Itral Test (D5) Int Mounds (D6) (LRR ave Hummocks (D7)	No X ay) equired) LRA 1, 2, agery (C9)
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = : robed below 13 inches - same YDROLOGY retland Hydrology Indicators rimary Indicators (minimum of 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) Inundation Visible on Aerial Sparsely Vegetated Concav Surface Water Present? Surface Water Present?	silt; C = clay; L = , no indicators of one required; ch I Imagery (B7) ve Surface (B8) Yes Yes	loam or loamy; co = hydrology. Water-Stained 1, 2, 4A, and Salt Crust (B1 ⁻ Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of Re Recent Iron Re Stunted or Stre Other (Explain	coarse; f = fine; vf = Leaves (B9) (except d 4B) I) brates (B13) de Odor (C1) brates (B13) de Ddor (C4) brates (D1) (LR in Remarks) Depth (inches): brates (D1) (LR	Hy very fine; + = MLRA Roots (C3) 5 (C6) R A)	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow / FAC-Neu Raised A Frost-Heat Wetland	eent? Yes Clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Ima whic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LRR ave Hummocks (D7) Hydrology Present?	<u>No X</u> ay) equired) LRA 1, 2, agery (C9) A)
estrictive Layer (if present): Type: Depth (inches): emarks: S = sand; Si = robed below 13 inches - same YDROLOGY Yetland Hydrology Indicators rimary Indicators (minimum of 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) Inundation Visible on Aerial Sparsely Vegetated Concav ield Observations: Surface Water Present? Vater Table Present?	silt; C = clay; L = , no indicators of one required; ch I Imagery (B7) ve Surface (B8) Yes Yes Yes	loam or loamy; co = hydrology. Water-Stained 1, 2, 4A, and Salt Crust (B1 ⁻ Aquatic Invertee Hydrogen Sulfi Oxidized Rhize Presence of Re Recent Iron Re Stunted or Stree Other (Explain	coarse; f = fine; vf = Leaves (B9) (except d 4B) I) brates (B13) de Odor (C1) ospheres along Living educed Iron (C4) eduction in Tilled Soils essed Plants (D1) (LR in Remarks) Depth (inches): Depth (inches):	Hy very fine; + = MLRA Roots (C3) ; (C6) R A)	ydric Soil Pres = heavy (more of <u>Secondary In</u> Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow / FAC-Neu Raised A Frost-Hea Wetland	eent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Ima whic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LRR ave Hummocks (D7) Hydrology Present? Yes	<u>No X</u> ay) aquired) LRA 1, 2, agery (C9) A)

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys and Coast Region Philomath Water Treatment Plant Philomath / Benton Project/Site: City/County: Sampling Date: 12/10/2020 Westech Engineering / City of Philomath Public Works Department Sampling Point: Applicant/Owner: State: OR SP9 C. Mirth Walker and Rachel Locke Investigator(s): Section, Township, Range: 12S, 6W, 11D Landform (hillslope, terrace, etc.): overflow scour channel Local relief (concave, convex, none): concave Slope (%): 1 Subregion (LRR): A, Northwest Forests and Coasts Lat: 44.535509 Long: -123.375492 Datum: NAD 1983 Soil Map Unit Name: 111 Malabon Silty Clay Loam NWI classification: Are climatic / hydrologic conditions on the site typical for this time of year? (If no, explain in Remarks) Yes Х No Are Vegetation ,Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No ,Soil Are Vegetation , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Х Hydrophytic Vegetation Present? Yes No Х Is the Sampled Area Hydric Soil Present? Yes No within a Wetland? Х Wetland Hydrology Present? Х Yes No Yes No 0.86 inch received 2 weeks prior to survey (Corvallis). Precipitation prior to fieldwork: Remarks: North of Marys River. VEGETATION Absolute Dominant Indicator Dominance Test worksheet: Tree Stratum (Plot size: 30' r) % Cover Species? Status Number of Dominant Species 1. Fraxinus latifolia 50% Yes FACW That Are OBL, FACW, or FAC: 4 (A) 2 3. Total Number of Dominant 4. Species Across All Strata: 4 (B) 50% = Total Cover Sapling/Shrub Stratum (Plot size: 10'r) Percent of Dominant Species 1. 100% Cornus alba (C. sericea, C. stolonifera) 15% FACW That Are OBL, FACW, or FAC: (A/B)Yes 2. Prevalence Index worksheet: 3. Total % Cover of: Multiply by: 4 OBL species 0 x 1 = 0 5 FACW species 95 x 2 = 190 FAC species x 3 = 35 105 15% = Total Cover (Plot size: 5'r) x 4 = Herb Stratum FACU species 0 0 1. FAC UPL species 5 x 5 = 25 Ranunculus repens 20% Yes 2. Column Totals: 135 (A) 320 (B) Mentha arvensis 20% Yes FACW 3. Prevalence Index = B/A = 2.37 Carex leptopoda 10% No FAC 4. Hydrophytic Vegetation Indicators: FACW Phalaris arundinacea 10% No 5. Rumex obtusifolius 1 - Rapid Test for Hydrophytic Vegetation 5% FAC No X 2 - Dominance Test is >50% 6. Bromus carinatus 5% No NOL 7. X 3 - Prevalence Index is $\leq 3.0^{1}$ 8. 4 - Morphological Adaptations¹ (Provide supporting 9. data in Remarks or on a separate sheet) 10. 5 - Wetland Non-Vascular Plants¹ 11 Problematic Hydrophytic Vegetation¹ (Explain) 70% Indicators of hydric soil and wetland hydrology must = Total Cover (Plot size: <u>10' r</u> Woody Vine Stratum be present. 1. Hydrophytic 2 0% = Total Cover Vegetation Yes X No Present? 30% % Bare Ground in Herb Stratum Entered by: ral QC by: cmw

Remarks

Tree and shrub rooted on banks not in channel. One Iris pseudacorus (OBL) upslope toward river.

				TREADAT	ediales			
(inches) Co	olor (moist)	%	Color (moist)) %	Type ¹	Loc ²	Texture	Remark
0-13	10YR 3/3	100					Silt Loam	
vpe: C=Concentrati	ion D=Depletic	on RM=Redu	Iced Matrix CS=C		and Grains	² Location: PL =	Pore Lining M=Matrix	×
dric Soil Indicator	s: (Applicable	to all LRRs	unless otherwis	se noted.)		Indicators fo	r Problematic Hydri	c. Soils ³ .
	er (Appricable		Condy Dada	x (QE)				
	4.0)			x (85)				
Histic Epipedon (/	A2)	,		(FIX (S6)			ent Material (TF2)	-10)
Black Histic (A3)		,		y Mineral (F1) (exc	ept MLRA 1)	very Sna	llow Dark Surface (1)	-12)
Hydrogen Sulfide	(A4)		Loamy Gleye	ed Matrix (F2)		Other (Ex	(plain in Remarks)	
Depleted Below D	Dark Surface (A	.11)	Depleted Ma	itrix (F3)		3	1	
Thick Dark Surfac	ce (A12)	,	Redox Dark	Surface (F6)		-indicators of	nydropnytic vegetatio	on and
Sandy Mucky Min	neral (S1)	,	Depleted Da	rk Surface (F7)		wetland hyd	drology must be prese	ent,
Sandy Gleyed Ma	atrix (S4)		Redox Depre	essions (F8)		unless dist	urbed or problematic.	
Type: Depth (inches): emarks: S = s pots to 11 inches bg:	and; Si = silt; (s. Charcoal bit	C = clay; L = I s at 10 inches	oam or loamy; co s bgs.	= coarse; f = fine; \	H /f = very fine; +	ydric Soil Pres = heavy (more o	ent? Yes	No X ay)
Type: Depth (inches): emarks: S = s oots to 11 inches bg: IYDROLOGY /etland Hydrology li	and; Si = silt; C s. Charcoal bit ndicators:	C = clay; L = I s at 10 inches	oam or loamy; co s bgs.	= coarse; f = fine; \	/f = very fine; +	ydric Soil Pres = heavy (more o	ent? Yes	ay)
Type: Depth (inches): Emarks: S = s bots to 11 inches bg: YDROLOGY Etland Hydrology In imary Indicators (mi	and; Si = silt; C s. Charcoal bit: ndicators:	C = clay; L = I s at 10 inche: <u>required; che</u>	oam or loamy; co s bgs. ck all that apply)	= coarse; f = fine; v	/f = very fine; +	ydric Soil Pres = heavy (more of Secondary In	ent? Yes clay); - = light (less cla dicators (2 or more re	<u>No X</u> ay)
Type: Depth (inches): marks: S = s bots to 11 inches bg: YDROLOGY etland Hydrology I imary Indicators (mi Surface Water (A	and; Si = silt; C s. Charcoal bit: ndicators: nimum of one 1)	C = clay; L = I s at 10 inche: <u>required; che</u>	oam or loamy; co s bgs. <u>ck all that apply)</u> Water-Staine	ed Leaves (B9) (exc	/f = very fine; +	ydric Soil Pres = heavy (more <u>Secondary In</u> Water-St	ent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M	No X ay) equired) ILRA 1, 2,
Type: Depth (inches): marks: S = s bots to 11 inches bg: YDROLOGY etland Hydrology In imary Indicators (mi Surface Water (A High Water Table	and; Si = silt; Charcoal bit s. Charcoal bit ndicators: nimum of one 1 1) e (A2)	C = clay; L = I s at 10 inche: required; che	oam or loamy; co s bgs. <u>ck all that apply)</u> Water-Staine 1, 2, 4A, a	ed Leaves (B9) (exc	rf = very fine; +	ydric Soil Pres = heavy (more Secondary In Water-St 4A, an	ent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B)	No X ay) equired) ILRA 1, 2,
Type: Depth (inches): Semarks: S = s bots to 11 inches bg: YDROLOGY etland Hydrology I imary Indicators (mi Surface Water (A High Water Table Saturation (A3)	and; Si = silt; C s. Charcoal bit: ndicators: nimum of one i 1) a (A2)	C = clay; L = I s at 10 inche: 	oam or loamy; co s bgs. <u>ck all that apply)</u> Water-Staine 1, 2, 4A, a Salt Crust (B	ed Leaves (B9) (exc and 4B)	/f = very fine; +	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage	tent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10)	No X ay) equired) ILRA 1, 2,
Type: Depth (inches): S = s pots to 11 inches bg: YDROLOGY etland Hydrology I imary Indicators (mi Surface Water (A High Water Table Saturation (A3) Water Marks (B1)	and; Si = silt; Charcoal bit: s. Charcoal bit: ndicators: inimum of one 1) e (A2)	C = clay; L = I s at 10 inches required; che	oam or loamy; co s bgs. <u>ck all that apply)</u> Water-Staine 1, 2, 4A, a Salt Crust (B Aquatic Inve	e = coarse; f = fine; v ed Leaves (B9) (exc and 4B) (11) rtebrates (B13)	/f = very fine; +	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Drainage	tent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) con Water Table (C2)	No X ay) equired) ILRA 1, 2,
Type: Depth (inches): marks: S = s bots to 11 inches bg: YDROLOGY etland Hydrology In imary Indicators (mi Surface Water (A High Water Table Saturation (A3) Water Marks (B1) Sediment Deposit	and; Si = silt; Charcoal bit s. Charcoal bit ndicators: inimum of one 1) e (A2) ts (B2)	C = clay; L = I s at 10 inche: <u>required; che</u>	oam or loamy; co s bgs. <u>ck all that apply)</u> Water-Staine 1, 2, 4A, a Salt Crust (B Aquatic Inve Hydrogen Su	ed Leaves (B9) (exc and 4B) (11) (Hebrates (B13) (Hide Odor (C1)	/f = very fine; +	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio	tent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) con Water Table (C2) n Visible on Aerial Im	No X ay)
Type: Depth (inches): emarks: S = s bots to 11 inches bg: YDROLOGY etland Hydrology I imary Indicators (mi Surface Water (A High Water Table Saturation (A3) Water Marks (B1) Sediment Deposit Drift Deposits (B3	and; Si = silt; C s. Charcoal bit: ndicators: nimum of one i 1) (A2) ts (B2)	C = clay; L = I s at 10 inche: <u>required; che</u>	oam or loamy; co s bgs. <u>ck all that apply)</u> <u>Water-Staine</u> 1, 2, 4A, a Salt Crust (B Aquatic Inve <u>Hydrogen St</u> Oxidized Rh	ed Leaves (B9) (exc and 4B) (11) rtebrates (B13) ulfide Odor (C1) izospheres along Liv	/f = very fine; +	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio Geomore	ent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Im shic Position (D2)	No X ay) equired) ILRA 1, 2, agery (C9)
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Type: Depth (inches): emarks: S = s bots to 11 inches bg: YDROLOGY etland Hydrology I imary Indicators (mi Surface Water (A High Water Table Saturation (A3) Water Marks (B1) Sediment Deposit Drift Deposits (B3 Algal Mat or Crus Iron Deposits (B3 Surface Soil Crac Inundation Visible Sparsely Vegetate	and; Si = silt; C s. Charcoal bit: ndicators: inimum of one i 1) (A2) ts (B2) (A2) (A2) (A2) (A3) ts (B4) (A3) (A4) (A4) (A4) (A4) (A4) (A4) (A4) (A4	C = clay; L = I s at 10 inche: required; che required; che gery (B7) urface (B8)	oam or loamy; co s bgs. (k all that apply) (Water-Staine 1, 2, 4A, a Salt Crust (B Aquatic Inve Hydrogen Su Oxidized Rh Presence of Recent Iron Stunted or S Other (Expla	ed Leaves (B9) (exc and 4B) (11) (11) (11) (12) (11) (12) (12) (12)	tf = very fine; +	ydric Soil Pres = heavy (more of <u>Secondary In</u> Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow / X FAC-Neu Raised A Frost-Hea	ent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Im whic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LRR ave Hummocks (D7)	No X ay) equired) ILRA 1, 2, agery (C9)
Type: Depth (inches): emarks: S = s bots to 11 inches bg: YDROLOGY etland Hydrology In imary Indicators (mi Surface Water (A High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3 Algal Mat or Crus Iron Deposits (B5 Surface Soil Crac Inundation Visible Sparsely Vegetate eld Observations:	and; Si = silt; C s. Charcoal bit: ndicators: inimum of one i 1) (A2) ts (B2) 3) ts (B4) b) e on Aerial Imaged Concave St ed Concave St	C = clay; L = I s at 10 inche: required; che	oam or loamy; co s bgs. <u>ck all that apply)</u> Water-Staine 1, 2, 4A, a Salt Crust (B Aquatic Inve Hydrogen St Oxidized Rh Presence of Recent Iron Stunted or S Other (Expla	ed Leaves (B9) (exc and 4B) (11) (11) (11) (12) (11) (12) (12) (12)	H vf = very fine; + cept MLRA ving Roots (C3) Soils (C6) (LRR A)	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow / X FAC-Neu Raised A Frost-Hea	eent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) con Water Table (C2) n Visible on Aerial Im whic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LRR ave Hummocks (D7)	No X ay) equired) ILRA 1, 2, agery (C9)
Type: Depth (inches): emarks: S = s bots to 11 inches bg: YDROLOGY etland Hydrology In fimary Indicators (mi Surface Water (A High Water Table Saturation (A3) Water Marks (B1) Sediment Deposits Drift Deposits (B3 Algal Mat or Crus Iron Deposits (B3 Surface Soil Crac Inundation Visible Sparsely Vegetate eld Observations: Surface Water Present Vater Table Present	and; Si = silt; C s. Charcoal bit: ndicators: inimum of one i 1) (A2) ts (B2) ts (B2) ts (B4)) ts (B4)) e on Aerial Imaged Concave Su nt? Yes	C = clay; L = I s at 10 inche: required; che gery (B7) urface (B8)	oam or loamy; co s bgs. <u>ck all that apply)</u> Water-Staine 1, 2, 4A, a Salt Crust (B Aquatic Inve Hydrogen St Oxidized Rhi Presence of Recent Iron Stunted or S Other (Expla	ed Leaves (B9) (exc and 4B) (11) (11) (11) (12) (11) (12) (12) (12)	H vf = very fine; + cept MLRA ving Roots (C3) Soils (C6) (LRR A)	ydric Soil Pres = heavy (more of <u>Secondary In</u> Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow / X FAC-Neu Raised A Frost-Hea	eent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) con Water Table (C2) n Visible on Aerial Im whic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LRR ave Hummocks (D7)	No X ay) equired) ILRA 1, 2, agery (C9)
Type: Depth (inches): emarks: S = s oots to 11 inches bg: IYDROLOGY Vetland Hydrology II rimary Indicators (mi Surface Water (A High Water Table Saturation (A3) Water Marks (B1) Sediment Deposit Drift Deposits (B3 Algal Mat or Crus Iron Deposits (B5 Surface Soil Crac Inundation Visible Sparsely Vegetate ield Observations: Surface Water Present Saturation Present?	and; Si = silt; C s. Charcoal bit: ndicators: inimum of one i 1) (A2) ts (B2) ts (B2) t (B4)) ts (B4)) e on Aerial Imaged ed Concave Su nt? Yes ? Yes	C = clay; L = I s at 10 inche: required; che gery (B7) urface (B8)	oam or loamy; co s bgs. <u>ck all that apply)</u> Water-Staine 1, 2, 4A, a Salt Crust (B Aquatic Inve Hydrogen Su Oxidized Rhi Presence of Recent Iron Stunted or S Other (Expla No X No X	ed Leaves (B9) (exc and 4B) (11) (11) (11) (12) (11) (12) (12) (12)	H vf = very fine; + cept MLRA ving Roots (C3) Soils (C6) (LRR A)	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow / X FAC-Neu Raised A Frost-Hea	ent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) con Water Table (C2) n Visible on Aerial Im whic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LRR ave Hummocks (D7) Hydrology Present?	No X ay) equired) ILRA 1, 2, agery (C9) 4 A)
Type: Depth (inches): emarks: S = s oots to 11 inches bg: IYDROLOGY /etland Hydrology II rimary Indicators (mi Surface Water (A High Water Table Saturation (A3) Water Marks (B1) Sediment Deposit Drift Deposits (B3 Algal Mat or Crus Iron Deposits (B5 Surface Soil Crac Inundation Visible Sparsely Vegetate Surface Water Present Surface Water Present Saturation Present? Saturation Present?	and; Si = silt; C s. Charcoal bit ndicators: inimum of one I 1) e (A2)) ts (B2)) t (B4)) e on Aerial Imaged ed Concave Su nt? Yes ? Yes Yes Yes	C = clay; L = I s at 10 inche: required; che gery (B7) urface (B8)	oam or loamy; co s bgs. <u>ck all that apply)</u> Water-Staine 1, 2, 4A, a Salt Crust (B Aquatic Inve Hydrogen St Oxidized Rh Presence of Recent Iron Stunted or S Other (Explation) No X No X No X	ed Leaves (B9) (exc and 4B) (11) (11) (12) (11) (12) (12) (13) (14) (14) (14) (14) (14) (14) (14) (14	<pre>H /f = very fine; + // cept MLRA ving Roots (C3) Soils (C6) (LRR A)</pre>	ydric Soil Pres = heavy (more of Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow / X FAC-Neu Raised A Frost-Hea	ent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) con Water Table (C2) n Visible on Aerial Im whic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LRR ave Hummocks (D7) Hydrology Present? Yes	<u>No X</u> ay) equired) ILRA 1, 2, agery (C9) & A)

WETLAND DETERMIN	IATION DAT	A FORM – West	ern Mounta	ains, Valleys and (Coast Region
Project/Site: Philomath Water Treatment Plan	nt	City/County:	Philomath / Be	enton	Sampling Date: 12/10/2020
Applicant/Owner: Westech Engineering / City o	f Philomath Publi	c Works Departmen	t	State: OR	Sampling Point: SP10
Investigator(s): C. Mirth Walker and Rachel L	ocke	Section, T	ownship, Rang	e: 12S, 6W, 11D	
Landform (hillslope, terrace, etc.): terrace			Local relief	(concave, convex, none):	concave Slope (%): 1
Subregion (LRR): A, Northwest Forests and Co	asts	Lat: 44.535631	_ Lon	g: -123.375150	Datum: NAD 1983
Soil Map Unit Name: 111 Malabon Silty	Clay Loam		-	NWI	classification:
Are climatic / hydrologic conditions on the site typ	pical for this time	of year?	Ye	s X No	(If no, explain in Remarks)
Are Vegetation,Soil	, or Hydrology	significantly d	isturbed? A	re "Normal Circumstan	ces" present? Yes X No
Are Vegetation,Soil	, or Hydrology	naturally prob	lematic? (I	lf needed, explain any a	answers in Remarks.)
SUMMARY OF FINDINGS – Attach s	ite map show	ving sampling	point location	ons, transects, im	portant features, etc.
Hydrophytic Vegetation Present?	Yes	No X			
Hydric Soil Present?	Yes	No X	Is the Sampl	led Area	
Wetland Hydrology Present?	Yes	No X	within a Wet	land? Yes	<u>No X</u>
Precipitation prior to fieldwork: 0.86 inch rec	ceived 2 weeks p	rior to survey (Corva	llis).		
Remarks:					
Edge of lorest.					
VEGETATION					
	Absolute	Dominant	Indicator	Dominance Test we	orksheet:
Tree Stratum (Plot size: <u>30' r</u>)	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominan	t Species
1. Fraxinus latifolia	30%	Yes	FACW	That Are OBL, FAC	<i>N</i> , or FAC: 1 (A)
2. Acer macrophyllum	20%	Yes	FACU		
3.				Total Number of Dor	ninant
4.				Species Across All S	Strata: 5 (B)
	50%	= Total Cover			
Sapling/Shrub Stratum (Plot size: <u>10' r</u>	_)			Percent of Dominant	t Species
1. Acer macrophyllum	20%	Yes	FACU	That Are OBL. FAC	N. or FAC: <u>20%</u> (A/B)
2.				Prevalence Index w	vorksheet:
3.				Total % Cover	of: Multiply by:
4.				OBL species	0 x 1 = 0
5.				FACW species	$30 \times 2 = 60$
	20%	= Total Cover		FAC species	$10 \times 3 = 30$
Herb Stratum (Plot size: <u>5' r</u>)				FACU species 1	20 x 4 = 480
1. Tellima grandiflora	60%	Yes	FACU	UPL species	0 x 5 = 0
2. Carex leptopoda	10%	No	FAC	Column Totals: 1	(A) 570 (B)
3.				Prevalence Inde	= B/A = 3.56
4.				Hydrophytic Vegeta	ation Indicators:
5.	<u> </u>			1 - Rapid Test fo	or Hydrophytic Vegetation
6.	<u> </u>			2 - Dominance T	est is >50%
7.				3 - Prevalence li	ndex is ≤3.0 ¹
8.				4 - Morphologica	al Adaptations ¹ (Provide supporting
9.				data in Rema	arks or on a separate sheet)
10.				5 - Wetland Non	-Vascular Plants ¹
11.				Problematic Hvd	Irophytic Vegetation ¹ (Explain)
	70%	= Total Cover		¹ Indicators of hydric	soil and wetland hydrology must
Woody Vine Stratum (Plot size: <u>10' r</u>	_)			be present.	een ana wetana nyarology must
1. Rubus ursinus	20%	Yes	FACU	1	
2.				Hydrophytic	
	20%	= Total Cover		Vegetation	Yes No X
% Bare Ground in Herb Stratum 30%				Present?	
Remarks: Leaf litter.				Entere	ed by: ral QC by: cmw

US Army Corps of Engineers SWCA Environmental Consultants

			Reduxite	eatures			
(inches) Color (m	oist) %	Color (moist) %	Type ¹	Loc ²	Texture	Remark
0-10 10YR 3	3/3 100					Clay Loam	
10-22 10YR 3	3/3 100					Loam	
					·		
ive: C-Concentration D-	Depletion PM-Rev			and Grains	² Location: PL -	Pore Lining M-Matrix	~
ydric Soil Indicators: (Ap	plicable to all LRR	s, unless otherwi	se noted.)		Indicators fo	or Problematic Hydri	c Soils ³ :
Histosol (A1)		Sandv Redo	x (S5)		2 cm Mu	ck (A10)	
Histic Eninedon (A2)		Stripped Ma	r(20)		2 GH Muck (ATU) Red Parent Matorial (TE2)		
Black Histic (A3)			w Mineral (F1) (exc	ent MI RA 1)	Ked Parent Material (TF2)		
	(A 4 4)	Loamy Gley			Other (E)	quain in Remarks)	
Depleted Below Dark St	irrace (A11)		urix (F3)		³ Indicators of	hydrophytic yccototic	and and
I hick Dark Surface (A12	2) 	Redox Dark Surface (F6)			muicators of		anu
Sandy Mucky Mineral (S	(1)	Depleted Dark Surface (F7)			wetland hydrology must be present,		
Sandy Gleyed Matrix (S	4)	Redox Depressions (F8)			unless disturbed or problematic.		
Type: Depth (inches): emarks: S = sand; S robed 12 inches below bott	; i = silt; C = clay; L = om of the pit (10 inc	: loam or loamy; cc :hes).	ο = coarse; f = fine; ν	f = very fine; +	ydric Soil Pres = heavy (more o	ent? Yes clay); - = light (less cla	No X
Type: Depth (inches): emarks: S = sand; S robed 12 inches below bott	i = silt; C = clay; L = om of the pit (10 inc	: loam or loamy; cc :hes).	ο = coarse; f = fine; ν	f = very fine; +	ydric Soil Pres	e ent? Yes clay); - = light (less cla	No X
Type: Depth (inches): emarks: S = sand; S robed 12 inches below bott IYDROLOGY /etland Hydrology Indicat rimary Indicators (minimum	i = silt; C = clay; L = om of the pit (10 inc ors: of one required; ch	e loam or loamy; co ches). eck all that apply)	9 = coarse; f = fine; v	f = very fine; +	lydric Soil Pres = heavy (more o Secondary In	ent? Yes clay); - = light (less cla dicators (2 or more re	No X
Type: Depth (inches): emarks: S = sand; S robed 12 inches below bott YDROLOGY /etland Hydrology Indicat rimary Indicators (minimum Surface Water (A1)	i = silt; C = clay; L = om of the pit (10 inc ors: of one required; ch	e loam or loamy; co ches). <u>leck all that apply)</u> Water-Staine	e = coarse; f = fine; v	f = very fine; +	ydric Soil Pres = heavy (more of <u>Secondary In</u> Water-St	clay); - = light (less cla clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M	No X ay) equired) ILRA 1, 2,
Type: Depth (inches): emarks: S = sand; S robed 12 inches below bott IYDROLOGY retland Hydrology Indicat rimary Indicators (minimum Surface Water (A1) High Water Table (A2)	i = silt; C = clay; L = om of the pit (10 inc ors: of one required; ch	e loam or loamy; co ches). <u>eck all that apply)</u> Water-Staine 1, 2, 4A, a	e = coarse; f = fine; v ed Leaves (B9) (exc and 4B)	f = very fine; +	ydric Soil Pres = heavy (more of <u>Secondary In</u> Water-St 4A, an	clay); - = light (less cla clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B)	No X ay) equired) ILRA 1, 2,
Type: Depth (inches): emarks: S = sand; S robed 12 inches below bott IYDROLOGY /etland Hydrology Indicat rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3)	i = silt; C = clay; L = om of the pit (10 inc ors: of one required; ch	e loam or loamy; cc ches). eck all that apply) Water-Staine 1, 2, 4A, a Salt Crust (E	e = coarse; f = fine; v ed Leaves (B9) (exc and 4B)	f = very fine; +	secondary In <u>Secondary In</u> Water-St 4A, an Drainage	clay); - = light (less cla clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10)	No X ay) equired) ILRA 1, 2,
Type: Depth (inches): emarks: S = sand; S robed 12 inches below bott IYDROLOGY /etland Hydrology Indicat rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	i = silt; C = clay; L = om of the pit (10 inc ors: of one required; ch	e loam or loamy; co ches). <u>eck all that apply)</u> <u>Water-Staine</u> 1, 2, 4A, a Salt Crust (E Aquatic Inve	e = coarse; f = fine; v ed Leaves (B9) (exc and 4B) 811) rtebrates (B13)	f = very fine; +	Secondary In <u>Secondary In</u> Water-St: 4A, an Drainage Drv-Seas	ent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2)	No X ay) equired) ILRA 1, 2,
Type: Depth (inches): emarks: S = sand; S robed 12 inches below bott PDROLOGY retland Hydrology Indicat rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	i = silt; C = clay; L = om of the pit (10 inc ors: of one required; ch	e loam or loamy; co ches). <u>eck all that apply)</u> <u>Water-Staine</u> 1, 2, 4A, a <u>Salt Crust (E</u> <u>Aquatic Inve</u> Hydrogen Si	e = coarse; f = fine; v ed Leaves (B9) (exc and 4B) B11) rtebrates (B13)	rf = very fine; +	secondary In Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio	tent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Im	No X ay) equired) ILRA 1, 2,
Type: Depth (inches): emarks: S = sand; S robed 12 inches below bott PYDROLOGY retland Hydrology Indicat rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B3)	i = silt; C = clay; L = om of the pit (10 inc ors: of one required; ch	eck all that apply) Water-Staine 1, 2, 4A, a Salt Crust (E Aquatic Inve Uvidized Rh	e = coarse; f = fine; v ed Leaves (B9) (exc and 4B) 311) rtebrates (B13) ulfide Odor (C1)	f = very fine; +	Secondary In <u>Secondary In</u> Water-St 4A, an Drainage Dry-Seas Saturatio	tent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Im abic Position (D2)	No X ay) equired) ILRA 1, 2, agery (C9)
Type: Depth (inches): emarks: S = sand; S robed 12 inches below bott IYDROLOGY /etland Hydrology Indicat rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	i = silt; C = clay; L = om of the pit (10 inc ors: of one required; ch	E loam or loamy; co ches).	e = coarse; f = fine; v ed Leaves (B9) (exc and 4B) 811) rtebrates (B13) ulfide Odor (C1) izospheres along Liv Reduced Iron (C1)	rf = very fine; +	Secondary In Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp	ent? Yes Clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Im whic Position (D2) Aquitard (D3)	No X ay) equired) ILRA 1, 2, agery (C9)
Type: Depth (inches): emarks: S = sand; S robed 12 inches below bott IYDROLOGY /etland Hydrology Indicat rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	i = silt; C = clay; L = om of the pit (10 inc ors: of one required; ch	e loam or loamy; co ches). Water-Staine 1, 2, 4A, a Salt Crust (E Aquatic Inve Hydrogen Si Oxidized Rh Presence of	e = coarse; f = fine; v ed Leaves (B9) (exc and 4B) 311) rtebrates (B13) ulfide Odor (C1) izospheres along Liv Reduced Iron (C4)	/f = very fine; +	Secondary In Secondary In Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow /	eent? Yes clay); - = light (less cla dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) con Water Table (C2) n Visible on Aerial Im whic Position (D2) Aquitard (D3)	No X ay) equired) ILRA 1, 2, agery (C9)
Type: Depth (inches): emarks: S = sand; S robed 12 inches below bott IYDROLOGY /etland Hydrology Indicat rimary Indicators (minimum 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 Sail Cruste (B6)	i = silt; C = clay; L = om of the pit (10 inc ors: of one required; ch	e loam or loamy; co ches). Water-Staino 1, 2, 4A, a Salt Crust (E Aquatic Inve Hydrogen Su Oxidized Rh Presence of Recent Iron	e = coarse; f = fine; v ed Leaves (B9) (exc and 4B) 111) rtebrates (B13) ulfide Odor (C1) izospheres along Liv Reduced Iron (C4) Reduction in Tilled S	rf = very fine; +	Secondary In <u>Secondary In</u> Water-St 4A, an Drainage Dry-Seas Saturatio Geomorp Shallow / FAC-Neu Paised A	dicators (2 or more re ained Leaves (B9) (M d 4B) Patterns (B10) son Water Table (C2) n Visible on Aerial Im whic Position (D2) Aquitard (D3) ttral Test (D5) nt Mounds (D6) (LPR	No X ay) equired) ILRA 1, 2, agery (C9)
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APPENDIX F

Ground-level Site Photographs




Photopoint 1. Ditch 1, view north, as it exits the study area boundary. Photo taken by Tom Dee April 9, 2018.



Photopoint 2. Ditch 1, view south as it exits the study area boundary. Photo taken by C. Mirth Walker December 10, 2020.

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Photopoint 3. SP 1. View northeast from upland into Wetland A. Photo taken by Tom Dee April 9, 2018.



Photopoint 4. SP 2. Wetland A. View west. Photo taken by Tom Dee April 9, 2018.



Photopoint 5. Wetland B view north along foot path. Photo taken by Tom Dee April 25, 2018.



Photopoint 6. View west of SP 3 in Wetland B. Photo taken by Tom Dee April 9, 2018.



Photopoint 7. Wetland B close-up. Photo taken by Tom Dee April 9, 2018.



Photopoint 8. Wetland B boundary between SP4 and SP5, view northwest. Photo taken by Tom Dee April 9, 2018.



Photopoint 9. SP6 in upland, view southeast. Photo taken by Tom Dee April 9, 2018.



Photopoint 10. Oxbow Pond, view southwest. Photo taken by Tom Dee April 9, 2018.



Photopoint 11. Pipe leading from Backwash Ponds A and B into Oxbow. View west. Photo taken by C. Mirth Walker December 10, 2020.



Photopoint 12. Pipe leading from Backwash Ponds A and B into Oxbow. View east. Photo taken by C. Mirth Walker December 10, 2020.



Photopoint 13. Backwash Ponds A and B, view southeast. Photo taken by C. Mirth Walker April 25, 2018.



Photopoint 14. Pond C, view southwest. Photo taken by C. Mirth Walker December 10, 2020.

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Photopoint 15. SP7, view northeast. Photo taken by Tom Dee April 25, 2018.



Photopoint 16. SP8, view northwest. Photo taken by Rachel Locke December 10, 2020.



Photopoint 17. SP9, view southwest. Photo taken by C. Mirth Walker December 10, 2020.



Photopoint 18. SP10 and Rachel Locke, view south. Photo taken by C. Mirth Walker December 10, 2020.



Photopoint 19. Marys River with red flagging indicated OHWL. View southeast. Photo taken by C. Mirth Walker December 10, 2020.



Photopoint 20. Marys River with red flagging indicated OHWL. View south. Photo taken by C. Mirth Walker December 10, 2020.

APPENDIX G

Vegetation List

Philomath Water Treatment Plant							
	Vegetation List						
April 9 and 25, 2018, and December 10, 2020							
Common Name	Common Name Scientific Name Wetland Indicator Native and Invasive,						
		Status	Noxious				
big-leaf maple	Acer macrophyllum	FACU	native				
colonial bent grass	Agrostis capillaris	FAC	non-native				
bent grass	Agrostis species	FAC ?	-				
spreading bent grass	Agrostis stolonifera	FAC	non-native				
wild onion or wild garlic	Allium species	OBL to NOL	-				
field meadow-foxtail	Alopecurus pratensis	FAC	non-native				
large sweet vernal grass	Anthoxanthum odoratum	FACU	non-native				
bride's-feathers, goatsbeard	Aruncus dioicus	FACU	native				
English daisy	Bellis perennis	NOL	non-native				
California brome	Bromus carinatus	NOL	native				
small camas	Camassia quamash	FACW	native				
little western bittercress	, Cardamine oligosperma	FAC	native				
taper-fruit short-scale sedge	Carex leptopoda	FAC	native				
Canada thistle	Cirsium arvense	FAC	invasive, noxious				
poison-hemlock	Conium maculatum	FAC	noxious				
red osier dogwood	Cornus alba (C. sericea, C. stolonife	FACW	native				
beaked hazelnut	Corylus cornuta	FACU	native				
black hawthorn	Crataegus douglasii	FAC	native				
English hawthorn	Crataegus monogyna	FAC	non-native				
orchard grass	Dactylis glomerata	FACU	non-native				
Queen Anne's-lace	Daucus carota	FACU	non-native				
Columbian larkspur	Delphinium trolliifolium	NOL	native				
Fuller's teasel	Dipsacus fullonum	FAC	invasive				
fringed willowherb	, Epilobium ciliatum	FACW	native				
giant horsetail	Equisetum telmateia	FACW	native, noxious				
red fescue	Festuca rubra	FAC	native				
beach strawberry	Fragaria chiloensis	FACU	native				
cascara false buckthorn	Frangula (Rhamnus) purshiana	FAC	native				
Oregon ash	Fraxinus latifolia	FACW	native				
Oregon ash	Fraxinus latifolia	FACW	native				
sticky-willy	Galium aparine	FACU	native				
cutleaf geranium	Geranium dissectum	NOL	non-native				
dovefoot geranium	Geranium molle	NOL	non-native				
lesser herbrobert	Geranium robertianum	FACU	noxious				
English ivy	Hedera helix	FACU	invasive, noxious				
American cow-parsnip	Heracleum maximum	FAC	native				
common velvet grass	Holcus lanatus	FAC	non-native				
common St. John's-wort	Hypericum perforatum	FACU	noxious				
hairy cat's-ear	Hypochaeris radicata	FACU	non-native				

Common Name	Scientific Name	Wetland Indicator	Native and Invasive,
		Status	Noxious
stinking willie	Jacobaea vulgaris	FACU	noxious
lamp rush	Juncus effusus	FACW	native
red dead-nettle	Lamium purpureum	NOL	non-native
ox-eye daisy	Leucanthemum vulgare	FACU	non-native
feathery false Solomon's-seal	Maianthemum racemosum	FAC	native
Oregon bigroot	Marah oreganus	NOL	native
lemonbalm	Melissa officinalis	FACU	non-native
American wild mint	Mentha arvensis	FACW	native
oso-berry	Oemleria cerasiformis	FACU	native
reed canary grass	Phalaris arundinacea	FACW	invasive
Pacific ninebark	Physocarpus capitatus	FACW	native
English plantain	Plantago lanceolata	FACU	non-native
annual blue grass	Poa annua	FAC	non-native
bluegrass	Poa species	FAC ?	-
licorice fern	Polypodium glycyrrhiza	NOL	native
western or pineland sword fern	Polystichum munitum	FACU	native
balsam poplar, black cottonwood	Populus balsamifera ssp. trichocarp	FAC	native
drops-of-gold	Prosartes hookeri	NOL	native
sweet cherry	Prunus avium	FACU	non-native
Douglas-fir	Pseudotsuga menziesii	FACU	native
western buttercup	Ranunculus occidentalis	FACW	native
creeping buttercup	Ranunculus repens	FAC	non-native
woodland buttercup	Ranunculus uncinatus	FAC	native
Nootka rose	Rosa nutkana	FAC	native
Himalayan blackberry	Rubus armeniacus	FAC	invasive, noxious
western thimbleberry	Rubus parviflorus	FACU	native
California dewberry or trailing blackberry	Rubus ursinus	FACU	native
bitter dock	Rumex obtusifolius	FAC	non-native
willow dock	Rumex salicifolius	FACW	native
Pacific willow	Salix lasiandra	FACW	non-native
Scouler's willow	Salix scouleriana	FAC	non-native
Sitka willow	Salix sitchensis	FACW	native
red elderberry	Sambucus racemosa	FACU	native
Pacific blacksnakeroot	Sanicula crassicaulis	NOL	native
tall fescue	Schedonorus arundinaceus	FAC	non-native
common chickweed	Stellaria media	FACU	non-native
common snowberry	Symphoricarpos albus	FACU	native
common dandelion	Taraxacum officinale	FACU	non-native
fragrant fringecup	Tellima grandiflora	FACU	native
western meadow-rue	Thalictrum occidentale	FACU	native
Pacific poison-oak	Toxicodendron diversilobum	FAC	non-native
red clover	Trifolium pratense	FACU	non-native
western trillium	Trillium ovatum	FACU	native
pioneer violet	Viola glabella	FACW	native

 Wetland Indicator Status and taxonomy for the Western Mountains, Valleys, and Coast Region per the National Wetland Plant List

 2018 v3.4. Accessed May 18, 2020.

 http://wetland-plants.usace.army.mil/nwpl_static/v34/home/home.html

Native per Hitchcock & Cronquist 2018 and http://plants.usda.gov/

Invasive per Clean Water Services 2019: <u>http://cleanwaterservices.org/permits-development/design-construction-standare</u> Noxious per ODA 2020:

https://www.oregon.gov/ODA/programs/Weeds/OregonNoxiousWeeds/Pages/AboutOregonWeeds.aspx

WETLAND INDICATOR STATUS (WIS)

OBL	Obligate Wetland Plant – Almost always occurs in wetlands (hydrophyte), rarely in uplands
FACW	Facultative Wetland Plant - Usually occur in wetlands (hydrophyte), but may occur found in non-wetlands
FAC	Facultative Plant – Occurs in wetlands (hydrophyte) and uplands (nonhydrophyte)
FACU	Facultative Upland Plant - Usually occur in non-wetlands (non-hydrophyte), but may occur in wetlands
UPL	Upland Plant - Almost always occurs in uplands (non-hydrophyte), almost never occurs in wetlands. UPL plants have a WIS in other regions
NOL	Not Listed - Plants that are not on the National Wetland Plant List are assumed to be UPL and have no WIS in any region

APPENDIX H

Local Wetlands Inventory Data

Local Wetlands Inventory for the City of Philomath

APPROVED WETLANDS INVENTORY Oregon Division of State Lands Meets Local Wetland Threntony standards Date 1/13/97 Approved by J. Morlan

Prepared for

Randy Kugler, City Manager City of Philomath 980 Applegate P.O. Box 400 Philomath, Oregon 97370

Prepared by

Dan Cary Julie Fukuda Fred Small SRI/SHAPIRO/AGCO, Inc. 1650 N.W. Front Avenue, Suite 302 Portland, Oregon 97209 SRI/SHAFIRO/AGCO Project #7955019

December 20, 1996

Wetland		USFWS Wetland	Classification		Total
Code	PEM	PFO	PSS	POW	Acreage
MR-1	0.38	0.50			0.88
MR-2		0.76			0.76
MR-3	2.82	4.55			7.37
MR-4	0.90	1.33		0.40	2.63
MR-5	1.00		2.84		3.84
MR-6	2.82		0.60		3.42
MR-7		5.21			5.21
MR-8	<mark>4.00</mark>	<mark>5.55</mark>	<mark>0.50</mark>		10.05
MR-9	0.20	1.90			2.10
MR-10	0.73				0.73
MR-11	1.50				1.50
MR-12	3.00	2.80	1.40		7.20
MR-13	1.24	1.44		0.82	3.50
Sub-Total	18.59	24.04	5.34	1.22	49.19
NC-1	1.00	3.90		0.10	5.00
NC-2	1.30		0.08		1.38
NC-3	0.53		0.40	4.50	5.43
NC-4	12.71	6.40	7.00		26.11
NC-5	6.00	8.70			14.70
NC-6	1.00	1.14	1.00		3.14
NC-7	1.12		0.80		1.92
NC8	32.10	· · · · · · · · · · · · · · · · · · ·	7.00		39.10
NC-9	3.60		2.00		5.60
NC-10	1.14		0.50		1.64
NC-11	4.02				4.02
NC-12	1.62		0.64		2.26
NC-13	0.45		0.31		0.76
NC-14	50.62	6.80	35.95	1.27	94.64
NC-15	3.41	4.00			7.41
NC-16	1.90		0.30		2.20
NC-17	0.50		1.28		1.78
NC-18	0.30	0.81	0.20		1.31
NC-19	3.00	1.50	5.05		9.55
NC-20	0.12	1.00	1.00		2.12
NC-21	9.00	8.00	9.07		26.07
NC-22	1.14		1.00		2.14
NC-23	0.61	2.60			3.21
NC-24	0.10		4.30		4.40
NC-25	11.84				11.84
NC-26	3.10				3.10
NC-27	70.00	20.00	38.09		128.09
Sub-Total	222.23	64.85	115.97	5.87	408.92
Total Acres	240 82	88,89	121.31	7.09	458.11

Table 3. USFWS Wetland Classification*

* Wetland type according to wetland designations and the classification system developed by the USFWS and included in "Classification of Wetlands and Deepwater Habitats of the United States" (Cowardin et al, 1979)

Several wetlands fit the criteria for protection as a result of the assessment. A number of wetlands within the study area have had confirmed sightings of federal or state listed threatened endangered or sensitive species. Wetland areas MR-7, MR-8, MR-9 along the Marys River have had confirmed sightings of northwestern pond turtle (*Clemmys marmorata marmorata*; Federal status - Species of Concern, State status - Sensitive-Critical; source - personal communication with Dr. Doug Cottam, Oregon Department of Fish and Wildlife). A pond previously used as a mill pond (NC-14a) on the Willamette Industries mill site has had confirmed sightings of northwestern pond turtles (source - Oregon Natural Heritage Database [ONHDB]).

A swale in the west end of NC-27 contains sightings of Nelson's checker-mallow (*Sidalcea nelsoniana*; Federal and state status - Listed Threatened; source - ONHDB). Nelson's checker-mallow was sighted at the southern end of NC-5 in the Newton Creek area. Nelson's checker-mallow was sighted from 1985 every year in a weedy lot adjacent to Highway 20 at the southern end of NC-15. After a mowing in 1994 no plants have been sighted, therefore, presence is unknown at this time.

Kincaid's lupine (*Lupinus sulphureus* ssp. *kincaidii*; Federal status - Species of Concern, State status - Listed Threatened; source - ONHDB) has been sighted and collected in open upland fields in many areas in association with NC-27 including a small knoll in the northwest corner. Fender's blue Butterfly (*Icaricia icarioides fenderi*; Federal status - Species of Concern, no state status) has also been sighted in the area of the small knoll in the northwest corner of NC-27.

Several wetlands are located within two city parks. These protected wetlands are: the southern half of NC-20; the northern tip of NC-21; most of MR-8, and the western edge of MR-9.

The eastern portion of NC-4 and the eastern portion of NC-27 each contain a wetland vegetation community dominated by tufted hairgrass (*Deschampsia cespitosa*). This wetland vegetation community type is considered imperiled because of its rarity in Oregon.

	ON DIVICTON OF CIATE LANDS	Dur lant to OEA10	-212	0E /1E /0
Applicant: UREG County: BENT Investigator: JF/D	ON DIVISION OF STATE LANDS ON State: OR DC	Project #: 95019 Township: 125	-212 Date: Range: 6W Sample Site: 21	05/15/90 Section: 1: 12
	Soils			
Mapped Series and F	hase: COBURG SILTY CLAY LOAM			
On Hydric Soils	List: NO	11-1-1-1-1-	Jaur 7 EVD	2/2 0-10
Drainage	Diass MUDERATELT DRAINED	Matrix C	010r: 7.51K	5/2 0-10
		Hv	dric Soil Criter	ia met: NO
Comment= SILT-LC	DAM			
	Hydrolo	gy		
Inundate	ed: NO Depth: "Sa	turated Soils: NO	Depth to Water	Table: >18
Active Oxidized Rhi: Comment:	zoapheres Present: NO	Wetland	Hydrology Crite	ria met: NO
*****	Vegetat	ion		
Туре	Dominant Species	FWS Status	Stratum	Overal
Tree	ACER MACROPHYLLUM	FACU	100%	40%
Sepling/Shrut	CORNUS STOLONTEERA	FACU	30%	
Sapling/Shrub	OF A CERASIFORMIS	FACU	40%	
Sapling/Shrut	SYMPHORICARPOS ALBUS	FACU	30%	20%
Harh	CAREY DELIEVANA	*5400	1.0%	
Herb	CAREA DEWEIHNA GALTUM ADADINE		20%	
Herh	HERACI FUM I ANATUM		40%	
Herb	TELL THA GRANDIEL ARA		15%	
Herb	THALICTRUM OCCIDENTALE	*FACU	15%	30%
Woody Vine	RUBUS DISCOLOR	FACU	100%	10%
	Percentage of dominant	(>= 20%) species that a	are FAC: FACW or	08L: 29
		"Hydrophytic Veg	etation Criteria	met: NO
Comment :				
Determinatio	n: Non-Wetland			

SRI/SHAPIRO

Routine Onsite Method

Hydric Soil Criteria met: YES

Applicant: OREGON DIVISION OF STATE LANDS County: BENTON State: OR Investigator: JF/DC	Project #: 95019-213 Date: 05/15/96 Township: 125 Range: 6W Section: 11 Sample Site: 213
Soils	
Mapped Series and Phase: COBURG SILTY CLAY LOAM	
On Hydric Soils List: NU	
Drainage Class: MODERATELY DRAINED	Matrix Color: 5Y 3/1 0-18+"
Mottles: YES	Mottle Color: 10YR 3/2

Comment: ORGANIC SILT

Hydrology

Inundated: NO Depth: "Saturated Soils: YES Depth to Water Table: 5 Active Oxidized Rhizospheres Present: NO Wetland Hydrology Criteria met: YES Comment: SOIL SATURATED TO SURFACE

	Vegetation							
~	Туре	Dominant Species	FWS Status	Stratum	Overall			
	Tree Tree	ALNUS RUBRA SALIX SCOULERIANA	FAC FAC	70% 30%	50%			
	Sapling/Shrub Sapling/Shrub Sapling/Shrub	CORNUS STOLONIFERA FRAXINUS LATIFOLIA SALIX LASIANDRA	FACW FACW FACW+	30% 30% 40%	30%			
	Herb Herb	PHALARIS ARUNDINACEA SOLANUM DULCAMARA	FACW FAC+	20% 80%	20%			

Percentage of dominant (>= 20%) species that are FAC, FACW or OBL: 100% Hydrophytic Vegetation Criteria met: YES

Comment:

Determination:

Wetland

Comment:

SRI/SHAPIRO

Routine Onsite Method

Applicant: OREGON DIVISION OF STATE LANDS Project #: 95019-223 Date: 07/19/95 County: BENTON State: OR Township: 12S Range: 6W Section: 12 Investigator: JF/FS Sample Site: 223							
	Soils						
Mapped Series and Phase: COBURG SILTY CLAY LOAM On Hydric Soils List: NO Drainage Class: MODERATELY DRAINED Mottles: NO Hydric Soil Criteria met: NO							
	Hydrolog	Y					
Inunck Active Oxidized R Comment:	ated: NO Depth: "Satu hizospheres Present: NO	urated Soils: NO Wetland H	Depth to Water tydrology Criter	Table: >18 fia met: NO			
	Vegetati	ดก					
Туре	Dominant Species	FWS Status	Stratum	Overall			
Tree Tree	ACER MACROPHYLLUM FRAXINUS LATIFOLIA	FACU FACW	70% 30%	40%			
Sapling/Shru Sapling/Shru	ub OEMLERIA CERASIFORMIS ub SYMPHORICARPOS ALBUS	FACU FACU	5% 95%	30%			
Herb Herb Herb Herb Herb	CAMASSIA QUAMASH ELYMUS GLAUCUS HEDERA HELIX POLYSTICHUM MUNITUM TELLIMA GRANDIFLORA	*FACW FACU UPL FACU UPL	10% 20% 10% 5% 20%				
Herb	THALICTRUM OCCIDENTALE	*FACU	20%	20%			
Woody Vine	RUBUS DISCOLOR	FACU	100%	10%			
Percentage of dominant (>= 20%) species that are FAC, FACW or OBL: 14% Hydrophytic Vegetation Criteria met: NO Comment:							
Determinatio	on: Non-Wetland	•• •		•			
Comment:							

SRI/SHAPIRO

Routine Onsite Method

Applicant: OREGON DIVISION OF STATE LANDS Project #: 9501 County: BENTON State: OR Township: 12S Investigator: JF/FS

Project #: 95019-224 Date: 07/19/95 Township: 12S Range: 6W Section: 12 Sample Site: 224

Soils

Mapped Series and Phase: COBURG SILTY CLAY LOAM On Hydric Soils List: NO Orainage Class: MODERATELY DRAINED Mottles: YES

Matrix Color: 5Y 2.5/1 0-16" Mottle Color: 7.5YR 3/4 Hydric Soil Criteria met: YES

comment: CLAY; H2S ODOR

Hydrology

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.

Inundated: NO Depth: Active Oxidized Rhizospheres Present: NO Comment: SOIL SATURATED AT 2" Saturated Soils: YES Depth to Water Table: 6 Wetland Hydrology Criteria met: YES

Vegetation							
Туре	Dominant Species	FWS Status	Stratum	Overall			
Tree	FRAXINUS LATIFOLIA	FACW	100%	90%			
Herb	SOLANUM DULCAMARA	FAC+	100%	10%			

Percentage of dominant (>= 20%) species that are FAC, FACW or OBL:	100%
Hydrophytic Vegetation Criteria met:	YES

Comment :				
	·····			
Determination:	Wetland			
Connent:	. []			

SRI/SHAPIRO

			Rogeine	VINSI DE MECHOU
Applicant: ORf County: BEN Investigator: JF	EGON DIVISION OF STATE LANDS NTON state: OR /FS	Project #: 95019 Township: 125	-225 Oate: Range: 6W Sample Site: 2;	07/19/95 Section: 12 25
	Soils	•		
Happed Series and On Hydric Soil Orainase H	1 Phase: COBURG SILTY CLAY LOAM ls List: NO : Class: MODERATELY DRAINED Nottles: YES	Matrix Co Mottle Co	plor: 10YR 2 plor: 10YR 3.	.5/2 /3
Comment: 0-18"	, SILTY CLAY LOAM			
	Hydrolo	-9y		
Inunde Active Oxidized R Comment:	ated: NO Depth: "Se nizospheres Present: NO	nturated Soils: NO Wetland H	Depth to Water tydrology Criter	Table: >18 ria met: NO
	Vegetat	ion		
Туре	Dominant Species	FWS Status	Stratum	Overall
Tree	FRAXINUS LATIFOLIA	FACW	100%	40%
Sapling/Shru Sapling/Shru Sapling/Shru	ub ACER MACROPHYLLUM ub CRATAEGUS DOUGLASII ub SYMPHORICARPOS ALBUS	FACU FAC FACU	5% 5% 90%	20%
Herb Herb Herb Herb	CAREX DEWEYANA ELYMUS GLAUCUS GALIUM APARINE GEUM MACROPHYLLUM	*FACU FACU FACU *F ACW -	10% 75% 5% 5%	20%
Woody Vine Woody Vine	RUBUS DISCOLOR RUBUS URSINUS	FACU FACU	40% 60%	20%
	Percentage of dominant	(>= 20%) species that a Hydrophytic Vege	tation Criteria	OBL: 20% met: NO
Comment :				
Determinati	on: Non-Wetland			

SRI/SHAPIRO

Routine Onsite Method

Applicant: ORE County: BEN Investigator: JF/	GON DIVISION OF STATE	LANDS	Project #: 95019 Township: 125	-226 Date: Range: 6W Sample Site: 22	07/20/95 Section: 13 26
		Soils			
Mapped Series and	Phase: COBURG SILTY CLA	Y LOAM			
On Hydric Soil	s List: NO				/4
"Drainage M	Class: MODERATELT DRAIN	IED	Matrix C	$\frac{1071101R}{101R} = 37$	21 / 1 3/4
•			Hor	dric Soil Criter	ia met: YES
Comment: SILTY	CLAY LOAM; 0-7" 10YR	3/1 W/5Y	R 3/3 MOTTS.		
	۲	lydrology	•		
Inunda Active Oxidized Rh Comment: SOIL S	ted: YES Depth: 12" izospheres Present: NO SATURATED TO SURFACE;	Satur SILT LIN	rated Soils: YES Wetland I IE ON TREE TRU	Depth to Water Hydrology Criter NKS 4.5' H]	Table: O ia met: YES [GH
	V	/egetatio	n		
Туре	Dominant Species		FWS Status	Stratum	Overall
Tree	FRAXINUS LATIFOLIA		FACW	100%	60%
Herb	PHALARIS ARUNDINACE	EA	FACW	35%	
Herb	SOLANUM DULCAMARA		FAC+	35%	
Herb	STACHYS COOLEYAE		FACW	30%	40%
	:				
	Percentage of	dominant (>	= 20%) species that a	are FAC, FACW or	08L: 100%
			Utorophy Cic Vege	FLACION CILLUTIA	imet,• k.√
Comment:					
Determinatio	on: Wetland				

SRI/SHAPIRO

Routine Onsite Method

Applicant: OREGON DIVISION OF STATE LANDS Project #: 95019-227 Date: 05/16/96 County: BENTON State: OR Township: 12S Range: 6W Section: 12 Investigator: JF/DC Sample Site: 227				
	Soi	ls		
Happed Series and Phase: COBURG SILTY CLAY LOAM On Hydric Soils List: NO Orainage Class: MODERATELY DRAINED Hottles: YES Hydric Soil Criteria met: YES Comment: SANDY S/C/L; 0-4" ORGANIC S/L; 12-18+" 10YR 3/2 W/7-5YR 3/1 MOTT				
	Hydro	logy		
Inundated: NO Depth: "Saturated Soils: YES Depth to Water Table: 10 Active Oxidized Rhizospheres Present: NO Wetland Hydrology Criteria met: YES Comment: SOIL SATURATED TO SURF.; FLOOD WATER MARKS, DEBRIS UP TO 5' HIGH				Table: 10 Yia met: YES 'HIGH
	Vegeta	ation		
Туре	Dominant Species	FWS Status	Stratum	Overall
Tree	FRAXINUS LATIFOLIA	FACW	100%	70%
Sapling/Shr Sapling/Shr	ub FRAXINUS LATIFOLIA ub SYMPHORICARPOS ALBUS	FACW	60% 40%	25%
Herb Herb	PHALARIS ARUNDINACEA SOLANUM DULCAMARA	FACW FAC+	10% 90%	5%
Percentage of dominant (>= 20%) species that are FAC, FACW or OBL: 75% Hydrophytic Vegetation Criteria met: YES Comment:				
Determination: Wetland				

PHILOMATH LOCAL WETLANDS INVENTORY

- Wetland Summary Sheet -

Date(s) of Field	7/19 and 7/20/95	Wetland			
		Mapping Code:	MR-0		
Investigator(s):		Size (acres):	10.05		
Data Sheet Numbers:	214 through 231				
Location					
Legal:	T12S, R6W, S12, S13, S14	Tax Lot(s):	1100, 1103, 501, 500,		
Other:	Mary's River Park, south of	Applegate Street,	CB1900, CB1800		
	and water treatment plant w	vest of park			
Hydrologic Basin:	Mary's River				
Soils					
Mapped Series:	Conser silty clay loam, Cob	ourg silty clay loam, Malabon s	ilty clay loam		
Hydrology					
Hydrologic Source:	groundwater, surface water	. precipitation, river floodwater	r		
Wetland Classification(s):	PFO, PSS, PEM	<u>, , , , , , , , , , , , , , , , , , , </u>			
Dominant Vegetation	<u> </u>				
Trees	Shrube	Vinee	Harbs		
Fravinus latifolia	Crataogus douglasii		Agrostic alba		
	Cornus stolonifera		Alopecurus geniculatus		
	Eravinus latifolia		Frynaium netiolatum		
	Rosa pisocarpa		Phalaris arundinacea		
			Scirpus microcarpus		
			Solanum dulcamara		
······································			Stachvs coolevae		
······································			Ranunculus repens		
· · · · · · · · · · · · · · · · · · ·			Veronica americana		
			Juncus tenuis		
Comments					
Two kinds of wetland; old flux	vial features north of active M	Arv's River channel including	old oxbows, and gently		
sloping headwaters south of	Applegate Street toward roa	dside ditches at western and e	eastern boundaries of park.		
There appears to have been some fill placed in the northern end of the park, near the new City Hall building. On the					
western side of the wetland outside the park grounds, there is a scrub/shrub pond south of the water treatment					
plant delineated by Scoles Assoc., Inc. There is a 300'long, 25'wide new gravel road along the northern boundary of					
the pond. Mature forested area dominated by ash, and field is being invaded by young ash saplings. Field					
appears to have been ditched for historic agricultural use. Quiet city park, but some signs of human disturbance:					
trash and old wood debris. Zoned light industrial and public (park). Good access by way of trails. Potential for					
educational uses. Western pond turtle (Clemmys marmorata marmorata) sighted in this area (ODFW).					

Wetland Classification Codes:

PFO = palustrine forested PSS = pal PEM = palustrine emergent POW = pa

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLOGY

Date: 7/19, 20/95, 5/1	16/96 Investigator(s): FS, DC, JF
Project Name:	Philomath Local Wetlands Inventory
Wetland Location:	Mary's River Park, south of Applegate Street
Wetland Code:	MR-8
Wetland Type(s):	PFO, PSS, PEM
Approximate Area (acres):	10.05

Wild Hab	life litat	Fi Hat	sh Ditat	Wa Qui	iter ality	Hydro	ologic trol	Sensi to Im	tivity pact	Enhanc	ement ntial
Q	A	Q	A	Q	A	Q	A	Q	A	Q	A
Q-1	Α	Q-1	В	Q-1	Α	Q-1	Α	Q-1	В	Q-1	Α
Q-2	С	Q-2	Α	Q-2	Α	Q-2	Α	Q-2	В	Q-2	Α
Q-3	в	Q-3	В	Q-3	В	Q-3	Α	Q-3	Α	Q-3	Α
Q-4	С	Q-4	С	Q-4	Α	Q-4	С	Q-4	С	Q-4	Α
Q-5	Α	Q-5	Α	Q-5	С	Q-5	С	Q-5	Α	Q-5	В
Q-6	A	Q-6	Α	Q-6	Α	Q-6	В	Q-6	В	Q-6	В
Q-7	С			- I .		Q-7	Α				
Q-8	Α					1		_			
Q-9A											

Education		Recr	eation	Aesthetic Quality	
Q	A	Q	A	Q	Â
Q-1	A	Q-1	A	Q-1	В
Q-2	В	Q-2	Α	Q-2	В
Q-3	В	Q-3	Α	Q-3	Α
Q-4	Α	Q-4	В	Q-4	в
Q-5	Α	Q-5	Α	Q-5	Α
Q-6	Α	Q-6	В	Q-6	Α

RESULTS:

Q-9B

В

Wildlife Habitat	Wetland provides habitat for some wildlife species	
Fish Habitat	Wetland's fish habitat function is intact	
Water Quality	Wetland's water-quality function is impacted or degraded	
Hydrologic Control	Wetland's hydrologic control function is intact	
Sensitivity to Impact	Wetland is potentially sensitive to future impacts	
Enhancement Potential	Wetland has high enhancement potential	
Education	Wetland has potential for educational use	
Recreation	Wetland provides recreational opportunities	
Aesthetic Quality	Wetland is considered to be moderately pleasing	

OREGON FRESHWATER WETLAND ASSESSMENT METHODOLOGY

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Function & Condition Summary Sheet for the Oregon Method

Wetland Gode: MR-8

Function	Evaluation Descriptor	Rationale
Wildlife Habitat	Provides habitat for some wildlife species	Connected to Mary's River, good buffer, agricultural uses, emergent vegetation dominant
Fish Habitat	Function is intact	Shaded river, natural channel, some instream structure, but severe water quality condition
Water Quality	Function is impacted or degraded	Perennial stream, moderate vegetation cover, open space (park), river in severe water quality condition
Hydrologic Control	Function is intact	Within 100-year floodplain, flooding, unrestricted outflow, some PFO, developed land uses upslope
Sensitivity to Impact	Potentially sensitive to secondary effects	Severe water quality condition, emergent vegetation dominant, developed land uses upslope and upstream
Enhancement Potential	High enhancement potential	Habitat for some wildlife species, unrestricted outflow, large size, some areas of good buffer
Education	Has potential for educational use	Public access, steep banks, habitat for some wildlife, trails, viewing areas, boat access (Mary's River)
Recreation	Provides recreational opportunities	Public access, trails, boat access (Mary's River), fishing allowed (public land), no hunting
Aesthetic Quality	Considered to be moderately pleasing	No visual detractors, quiet, no odors, open space

APPENDIX I

National Flood Hazard Layer Firmette Map

National Flood Hazard Layer FIRMette



Legend

123°22'47"W 44°32'28"N SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT Without Base Flood Elevation (BFE) Zone A. V. A9 With BFE or Depth Zone AE, AO, AH, VE, AR SPECIAL FLOOD AREA OF MINIMAL FLOOD HAZARD HAZARD AREAS **Regulatory Floodway** Zone X 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X Future Conditions 1% Annual Chance Flood Hazard Zone X Area with Reduced Flood Risk due to Levee. See Notes. Zone X OTHER AREAS OF FLOOD HAZARD Area with Flood Risk due to Levee Zone D NO SCREEN Area of Minimal Flood Hazard Zone X Effective LOMRs OTHER AREAS Area of Undetermined Flood Hazard Zone D - — – – Channel, Culvert, or Storm Sewer GENERAL Zone AE STRUCTURES LIIII Levee, Dike, or Floodwall 20.2 Cross Sections with 1% Annual Chance CITY OF PHILOMATH 17.5 Water Surface Elevation 410011 **Coastal Transect** Base Flood Elevation Line (BFE) Limit of Study Jurisdiction Boundary ---- Coastal Transect Baseline OTHER **Profile Baseline** 41003C0186F 41003C0167 FEATURES Hydrographic Feature eff. 6/2/2011 eff. 6/2/2011 **Digital Data Available** No Digital Data Available MAP PANELS Unmapped FLOODWAY The pin displayed on the map is an approximate BENTON COUNTY point selected by the user and does not represent Zone AE an authoritative property location. 410008 This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards Zone AE The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/3/2021 at 2:44 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for 123°22'9"W 44°32'3"N Feet 1:6.000 unmapped and unmodernized areas cannot be used for regulatory purposes. 250 500 1,000 1,500 2.000 n

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020