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October 20, 2021

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VIA E-MAIL

Mr. Kenneth C. Onyima, A.I.C.P.
Senior City Planner
City of Gresham Planning Department
Gresham City Hall
1333 NW Eastman Parkway
Gresham OR 97030-3825

RE: City of Gresham File No. PZ20126000353, Veranda Subdivision(the "Application"); Applicant's Response to your July 22, 2021 Email Containing Four Questions

Dear Mr. Onyima:

This office represents Leeper Development, LLC ("Leeper"). This letter answers the four questions that you asked in your July 22, 2021 email to Mr. Leeper.

The answers to your questions are based on evidence contained in the September 22, 2021 "Wetland Determination Report" (the "Report") prepared by Mr. Jason Smith of Castle-Rose Environmental. The Report is attached as **Exhibit 1** to this letter. The proposed future street plan is attached as **Exhibit 2** to this letter.

The City can find that the Report demonstrates that the presence of a small wetland on the Property will not affect the proposed tentative subdivision map. The future street plan for the adjacent property to the east cannot be subject to a feasibility analysis because that standard is not clear and objective but regardless of the presence of a waterway or undelineated wetlands on the adjacent property to the east, the Application must show streets connecting to that property. Based on the evidence in this letter, the City can impose clear and objective conditions of approval regarding compliance with the Report and that open-bottom culverts shall be used for waterway crossings by the future street plan, as required by ORS 197.307(4), and that the grading plan shown in ***Exhibit 2*** shall be used for the location and construction of the future street plan.

1. **Question 1:** "Natural Resources believes there are more wetlands on the site than you are showing that could significantly impact the feasibility of the layout."

Answer: The site referred to in your question is the subdivision property (the "Property"). The Applicant has collected more data on the presence or lack of presence of

wetlands on the Property since the prior wetland delineation. The Applicant has prepared a new wetland delineation for the Property consistent with state and federal requirements because the prior delineation was not prepared in accordance with these requirements. The new delineation has determined that there is less than .05 acres of wetlands on the Property. This small amount of wetlands is not required to be avoided and can be mitigated.

The new delineation demonstrates that the proposed tentative subdivision map is feasible to be constructed because wetlands will have no affect on the proposed subdivision.

A clear and objective condition as required by ORS 197.307(4) for this Application is possible and can simply say that the proposed tentative subdivision shall comply with the Report's recommendations.

2. **Question 2:** "The streams and potential wetlands on the adjacent property to the east could make the future street plan impractical to build."

Answer: Relevant provisions of the Gresham Development Code (the "GDC") require the Applicant to propose a tentative subdivision map that provides connectivity to adjacent properties. To the extent the adjacent property to the east contains a waterway (a tributary of Kelley Creek) or wetlands (which, as your question acknowledges, is presently unknown), they will have no affect on the approval of this Application. In fact, the adjacent property to the east may never be developed. The future street plan is not a development proposal and to the extent it is relevant to this Application, analysis of the future street plan is based on approval criteria which are neither clear nor objective as required by ORS 227.173(2) and 197.307(4). Therefore, the future street plan may not be a basis for a decision on this application.

Alternatively, ***Exhibit 2***, prepared by All County Surveying, shows that the road grading for the proposed future loop street is feasible and that open-bottomed culverts can be installed to ensure that no waterways are impacted during the construction of the streets.

3. **Question 3:** "The proposed loop street to the east doesn't seem feasible. The grade of the loop isn't shown and the waterway crossing is on the property but not addressed in the narrative."

Answer: The Property does not contain a waterway (Report, PDF page 29). Feasibility is not a clear and objective standard as required by ORS 197.307(4) because it requires a discretionary analysis of facts and, even if that were not the case, the facts are not capable of being ascertained with this Application because the Applicant has not delineated the wetlands on the adjacent property to the east.

Alternatively, the same reason as described in the answer to Question 3, above, applies here.

4. **Question 4:** "Crossing of the waterway will likely require state permits. Some indication that the crossings are permissible is needed to assure the future street is feasible."

Answer: Feasibility is not a clear and objective standard and may not be applied to the future street plan.

Alternatively, because open-bottom culverts can be used for the stream crossings so that the waterway would not be impacted during construction, state permits for crossing the waterway would not be needed.

I hope these answers are helpful to you. Jim's team would be happy to meet with you to discuss your questions and our answers.

Please place this letter in the official Planning Department file for this application.

Very truly yours,

Michael C Robinson

MCR:jmhi
Enclosures

cc: Mr. Jim Wheeler *(via email) (w/enclosures)*
Mr. Jim Leeper *(via email) (w/enclosures)*
Mr. Ray Moore *(via email) (w/enclosures)*
Mr. Tracy Brown *(via email) (w/enclosures)*
Mr. Jason Smith *(via email) (w/enclosures)*

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Castle-Rose Environmental
849 Woodpecker Dr
Kelso, WA 98626
360.270.8497

Wetland Determination

Prop ID:	R340789
Site Address:	7928 SE 190TH DR
Site City/Zip:	GRESHAM, OR 97080

September 22, 2021

Prepared For:

Jim Leeper

Exhibit 1

A) Landscape Setting

The subject parcel site address is 7928 or 8000 SE 190th Drive, Gresham OR 97080. The Multnomah County Parcel Number is R340789. Land use in the vicinity south of Kelley Creek is single-family residential and agricultural.

Parcel information [GreshamView GIS]

State ID:	1S3E20D -01200
RNO:	R993200440
Prop ID:	R340789
Site Address:	7928 SE 190TH DR
Site City/Zip:	GRESHAM, OR 97080
Legal:	SECTION 20 1S 3E, TL 1200 38.90 ACRES, FARM DISQUAL, 2009-2013, 37.90 ACRES,
Zoning:	LDR-PV
Acres:	40.17
Building SqFt:	828
Landuse:	SFR [*other databases documented as Agricultural*]
Basin:	Willamette
Watershed:	Johnson Creek
Sub Basin:	Lower Willamette
Sub Watershed:	Upper Johnson Creek

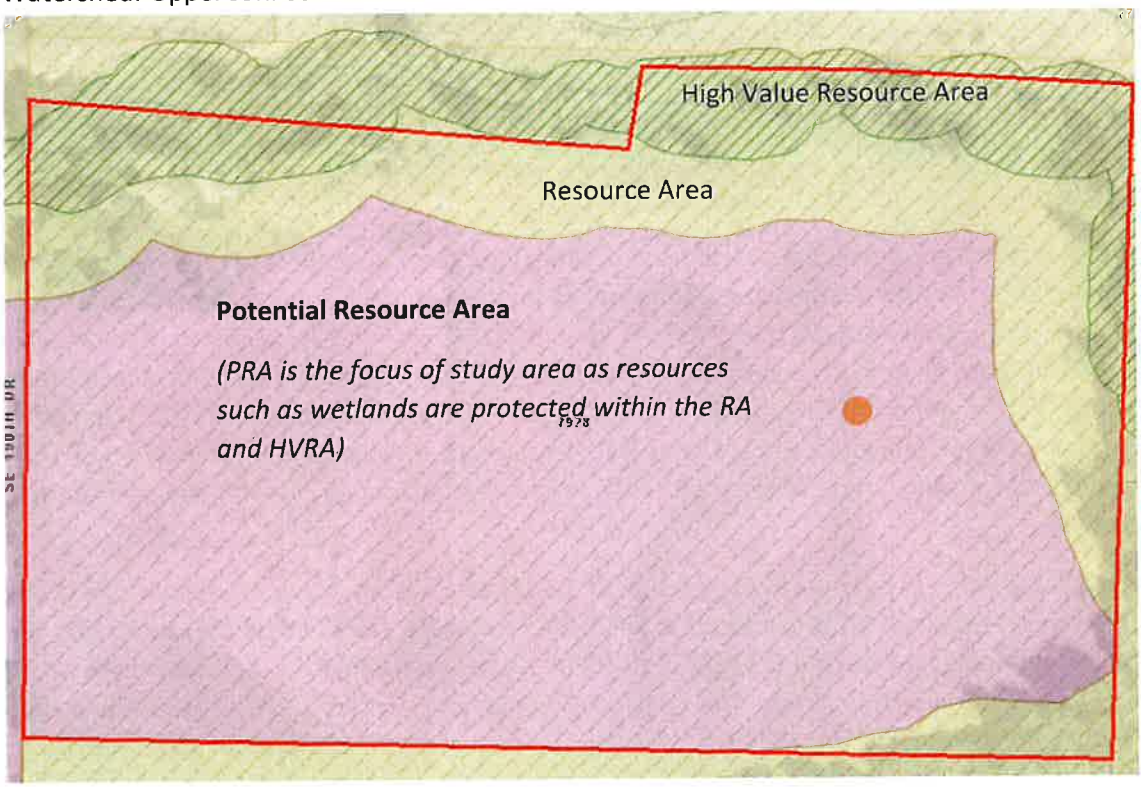


Figure 1: 7928 SE 190th GreshamView Map

The property generally slopes up towards the southeast, with peak elevation of 540' down to approximately 380' along SE 190th Drive. The slope gradient increases significantly towards the east and southeast (from ~4% to ~15%).

The study area is approximately 30 acres.

B) Site Alterations

Historical Topographic Maps show SE 190th Street adjacent to the property as a dirt road as early as 1911. In 1914, USGS Topographic Maps reflect the current open areas vs forested areas – and is the first documented use of the site as farmland. The entire study area and adjacent riparian areas have been significantly affected by grazing. Disturbance of soil by cattle is persistent.

Historical aerial imagery indicates irrigation within the study area.

At some point in the agricultural development of the property, drain tiles were installed. Some drain tiles were repaired in 2018. All drainage on the site is artificial. Historical imagery analysis reveals modified drainages in the northeast area of the parcel directing runoff north towards Kelley Creek. In the west areas, drainages direct runoff toward SE 190th Drive, where drainages converge at a point adjacent to the roadway.

A drainage ditch on the west property boundary was excavated in conjunction with a power pole replacement following a car accident sometime in 2017 (estimated from aerial imagery with first indication of drainage ditch in 2018).

C) Precipitation Data and Analysis

CRE performed pothole sampling on July 11, 2020 and August 4, 2021 and vegetation observation on January 12, 2021 (per Difficult Wetland Procedures). Previous field investigations with data used in this report were performed April 24, 2018 and March 26, 2019 by others. Precipitation data is evaluated for these dates.

No AgACIS or NOAA station relevant to this site has the necessary data collection years to establish WETS "normality". Previous field investigations relied on the Natural Resources Conservation Service (NRCS) Agricultural Applied Climate Information System (AgACIS) for the Portland-Troutdale Airport station in Troutdale, Oregon. The elevation for this WETS station is 29' at 6.5 miles distance from the study area. The referenced WETS interval is 1981-2010. However, that interval lacks 17 years of precipitation data (no precipitation data from 1981 through the first half of 1998). In addition, the elevation, distance and physical setting render the Portland-Troutdale Airport station irrelevant to the project site.

Two AgACIS stations – Gresham 2 SW and Portland 9.8 ESE are located within 1.2 miles of the project site. However, Gresham 2 SW (1.0 miles) has only seven complete years of data (2012 – 2018). Portland 9.8 ESE (1.2 miles) has six years of data (2015 to 2020) but has no complete data for an entire calendar or water year. A third station - Happy Valley 1.7 ESE in Clackamas County is 2.8 miles southwest of the project site at elevation 593 feet. The Happy Valley station has data integrity from 2012 – 2020. Overlap years with Gresham 2 SW are 2015-2018 – and annual precipitation varied by less than 2/10ths of 1 inch for those four years. To calculate the best available data, Happy Valley data from 2019 and

2020 was added to the Gresham 2 SW measurements. The average for years 2012-2020 is substituted for WETS "normality".

Gresham 2 SW is at elevation 450'; Portland 9.8 ESE is at elevation 393'.

GRESHAM 2 SW + Happy Valley 1.7 ESE Date of Field Visit	Precipitation Month to Date (average)	Precipitation 3 Months to Date (avg)	**Water Year to Date (inches)	Normal Water Year to Date (inches)	% of Normal Water Year to Date
24-Apr-18	5.6 (3.25)	14.16 (17.57)	39.6	40.1	99%
26-Mar-19	2.23 (5.02)	16.6 (19.0)	29.1	35.8	81%
11-JUL-20	0.05 (0.15)	10.06 (9.19)	46.04	46.1	99.8%
*Zero precipitation all site visit dates **Water Year = October 1 through September 30					

D) Methods

Dates of Field Investigations

- [Prior] April 24, 2018
- [Prior] March 26, 2019
- July 11, 2020
- January 12, 2021
- May 15, 2021
- May 19, 2021 (DSL site visit)
- August 4, 2021

Site-specific Methods

The study area is a farmed site and requires evaluation using Difficult Wetland Situations from the Corps' Regional Supplement to the [1987] US Army Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Western Supplement).

Specifically, under OAR 141-090-0035(10)(a):

> Wetland determination and delineation on **farmed sites** shall follow procedures outlined in the Difficult Wetland Situations Chapter of the appropriate regional supplement.

As an agricultural property, OAR 141-090-0035(10)(a) applies to any wetland determination for this site. The Western Supplement Chapter 5: Difficult Wetland Situations in the Western Mountains, Valleys, and Coast Region is organized in the following sections:

- **Problematic Vegetation**
- **Problematic Hydric Soils**
- **Wetlands that Periodically Lack Indicators of Wetland Hydrology**
- Wetland/Non-Wetland Mosaics

Of the four Difficult Wetland Situations, three (**bold font**) apply to this study area.

Problematic Hydrophytic Vegetation

The Difficult Wetlands Situations guidance prescribes two methods for evaluating Problematic Hydrophytic Vegetation:

1) Specific Problematic Vegetation Situations
    - **a. Temporal shifts in vegetation**
        - **i. Seasonal shifts in plant communities**
        - ii. Extended drought conditions
    - b. Sparse and patchy vegetation
    - c. Riparian areas
    - d. Areas affected by grazing
    - **e. Managed plant communities**
    - **f. Aggressive invasive plants**
    - g. Areas affected by fires, floods and other natural disturbances
    - h. Vigor and stress responses to wetland conditions
2) General Approaches to Problematic Hydrophytic Vegetation Situations
    - **a. Direct hydrologic observations**
    - b. Reference sites
    - **c. Technical literature**

The applicable situations are highlighted in **bold** and discussed in detail below.

1) Specific Problematic Vegetation Situations for:
    - *a. Temporal/Seasonal shifts in plant communities*

Plant communities were observed in January (2021), March (2019), April (2018), May (2021), July (2020; 2021), August (2021) and September (2021). Within the study area overall, no significant changes occurred in plant communities as the growing season progressed. Plant dominance did not change during the season, although non-dominant hydrophytic vegetation in scattered areas did exhibit distressed (or dead) characteristics.

Although plants observed in January were either dormant or dead, observation during the non-growing season assists in distinguishing areas of plant dominance. In January 2021, the plant communities between upland and wetland were clearly distinguished (Appendix C – Site Photos).

b. Managed plant communities

The site is planted with pasture grasses and managed for agricultural purposes.

The following approaches are recommended if the natural vegetation has been altered through management to such an extent that a hydrophytic vegetation determination may be unreliable:

- *Compare vegetation to a reference site*

A reference site is not available. East of the study area is forested and steep. South of the study area is a tree farm. West of the study area is residential and pasture. North of the study area is a riparian corridor and residential subdivision.

- *Leave portion of site unmanaged for one season*

Vegetation for the entire study area was unmanaged in 2020 due to the COVID-19 pandemic. *Holcus lanatus* (common velvet grass) has emerged as the dominant grass species throughout the upland areas and is prevalent within the delineated wetland. Within the wetland, Facultative Wet (FACW) species *Juncus effusus* (common rush) and Tlepevw$evyrhmregie$reed canary grass) are dominant, with several Facultative (FAC) herbaceous species (e.g., Canada thistle; bird's foot trelfoil; curly dock, etc.) and one Obligate (OBL) species (*Veronica americana*; American speedwell). A non-growing season photo (January 2021) illustrates the dominance of *Juncus effusus*, *Phalaris arundinacea* and *Holcus lanatus* within the wetland perimeter. *Holcus lanatus* has a minimum rooting depth of four inches – which reflects the seasonal nature of the wetland and the emergence of an anaerobic plant species in large areas of the wetland. The OBL American speedwell is concentrated in the lowest point of the wetland at the head of the 2017 drainage ditch.

Upland, some FAC species are dominant in patches (e.g., *Ranunuclus repens* (creeping buttercup); *Rubus armeniacus* (Himalayan blackberry); *Cirsium arvense* (creeping thistle)). However, these patches of FAC species dominance do not correlate with saturated or inundated soils – but are reflective of invasive species patterns.

Within the study area, the wetland represents the only area of dominance for herbaceous FAC and FACW species and the only occurrence for any OBL species.

Based on historical aerial imagery, the wetland site appears to be undisturbed by agricultural activities in most recent years, except for grazing. Haying activities avoided the wetland area.

c. Aggressive Invasive Species

Invasive species *Rubus armeniacus* (Himalayan blackberry) and *Anthoxanthum odoratum* (sweet vernal grass) are present. Overall, Himalayan blackberry is dominant in isolated patches.

d. Areas affected by fires, floods and other natural disturbances

Not applicable to this site.

e. Vigor and stress responses to wetland conditions

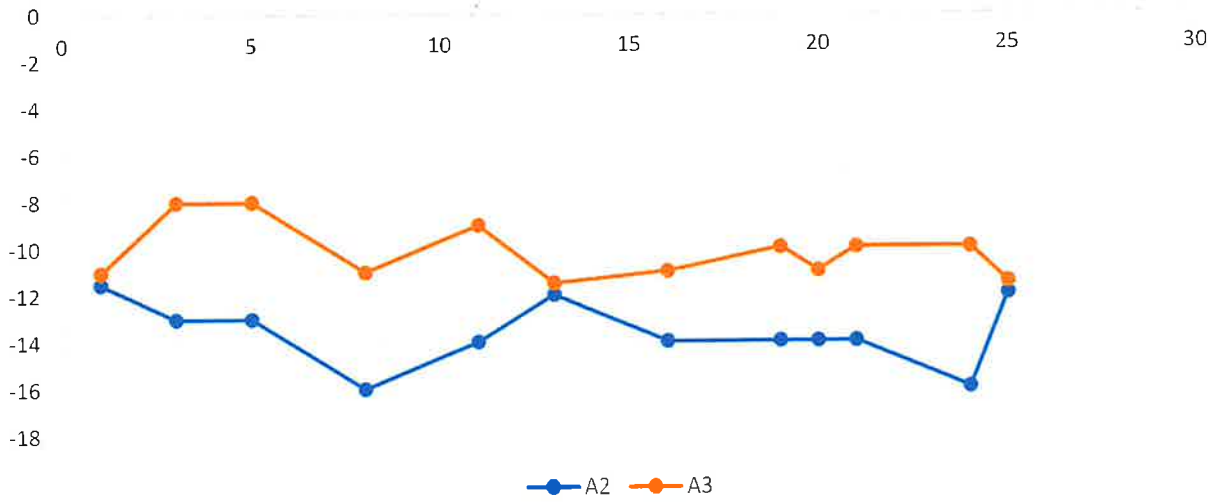
Not observed at this site.

2) General Approaches to Problematic Hydrophytic Vegetation Situations
   a. Direct hydrologic observations
      i. Verify that the plant community occurs in an area subject to prolonged inundation or soil saturation during the growing season:

No prolonged inundation or saturation was observed for upland areas. Although saturation and some inundation within -12 inches of the surface were observed in March and April months, subsequent observations in May showed no indication of prolonged inundation or saturation in areas outside of the mapped wetland. The dominant pasture grass plant communities in the upland areas have no tolerance for anaerobic soil conditions.

For April 2018 samples collected within the lowest topographic area, we have the following positive A2 and A3 indicators, relative to the -12-inch indicator standard:

Chart 1: Depth of A2 (High Water Table) and A3 (Saturation): inches below surface



Each of these sampling points has a matched pair, with A2 and A3 observed in only one of those sample points (-16" for A2; -15" for A3). Sample points were separated by an average of 4 meters, but all matched sample points were at the same elevation. All sample points reflect the same plant community. Eight additional sample points in March 2019 exhibited similar characteristic: marginal A3 indicators (-11 inches) with no other primary or secondary hydrology indicators and a lack of hydrology in matched sampling points only a few feet away at the same elevation. Plant communities show no difference between areas with no observed hydrology and those areas with saturation within 12 inches of the surface.

In July 2020, two out of 18 sample points exhibited the A3 indicator – again marginal at close to 12 inches below ground surface. However, the July 2020 plant community associated with these two sampling points was dominated by FACW plants – a condition not observed anywhere else in the study area.

In January 2021, the A1 hydrology indicator was observed in the mapped wetland. In July 2021, saturation (A3) was observed in two data points within the mapped wetland. In May 2021, July 2021, August 2021 and September 2021, no hydrology was observed anywhere on the site outside the mapped wetland.

The standard for this evaluation method is "prolonged inundation or soil saturation during the growing season" that contributes to a hydrophytic plant community. The dominant plant community within the study area is not hydrophytic and does not change over time, supporting a conclusion that prolonged inundation or soil saturation is not present during the growing season.

b. Reference sites

No reference site available for this study area.

c. *Technical literature*

i. Published and unpublished scientific literature may be used to support a decision to treat specific FACU species or species with no assigned indicator status (e.g., NI, NO, or unlisted) as hydrophytes or certain plant communities as hydrophytic. Preferably, this literature should discuss the species' natural distribution along the moisture gradient, its capabilities and adaptations for life in wetlands, wetland types in which it is typically found, or other wetland species with which it is commonly associated.

Outside of the plant community adjacent to SE 190th Drive, the plant community within the study area is dominated by planted pasture grasses. Using the USDA's PLANTS Characteristics database (et al), two of the dominant "FAC" plant species were identified within the literature as having zero tolerance for anaerobic soil conditions (*Alopecurus pratensis and Holcus lanatus):*

> PLANTS contains an expanded data set of Conservation Plant Characteristics that are primarily used to support the VegSpec application, a web-based decision support system that helps land managers plan and design natural resource conservation plantings. PLANTS Characteristics contains about one hundred plant characteristics ranging from growth form and growth requirements to suitability for various uses.

Previous field investigations relied on the Dominance Test and listed indicator status to test for hydrophytic vegetation. This method is not appropriate for Difficult Wetlands Situations. Furthermore, the Corps cautions against the indiscriminate use of indicator status to identify hydrophytic plant communities:

> ...the concept of hydrophyte is integral to wetland determination and delineation, and, according to federal regulations [33 CFR 328.3(b)], a site must support "a prevalence of vegetation typically adapted for life in saturated soil conditions." It is important to note that the wetland indicator status (e.g., Obligate, Facultative Wetland, Facultative, Facultative Upland, Upland) is not well characterized for the majority of species and is often determined without reference to significant data. [*US Army Corps of Engineers (Corps) technical publication Vegetation Sampling for Wetland Delineation (July 2010)]*

When adjusted for anaerobic intolerance for *Alopecurus pratensis and Holcus lanatus,* the majority of data points within the study area fail the Rapid Test, Dominance Test, Prevalence Test and FAC Neutral test.

As referenced in the Western Regional Supplement, "the Corps Manual defines hydrophytic vegetation as the assemblage of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to influence plant occurrence."

> The manual uses a plant-community approach to evaluate vegetation. Hydrophytic vegetation decisions are based on the assemblage of plant species growing on a site, rather than the presence or absence of indicator species.

> Hydrophytic vegetation is present when the plant community is dominated by species that require or can tolerate prolonged inundation or soil saturation during the growing season.

The plant communities within the study area do not vary with season or topography. The plant community development exhibits no correlation to soil saturation or inundation outside the *Juncus effusus* and *Phalaris arundinacea*-dominated plant community that is present within the lowest study area elevation.

Growing Season

The growing season can be approximated as the period of time between the average date of the last killing frost in the spring to the average date of the first killing frost in the fall. This represents a temperature threshold of 28 degrees F or lower at a frequency of 5 years in 10 [https://www.nrcs.usda.gov/wps/portal/wcc/home/climateSupport/wetlandsClimateTables/growingSeasonDatesLength/]

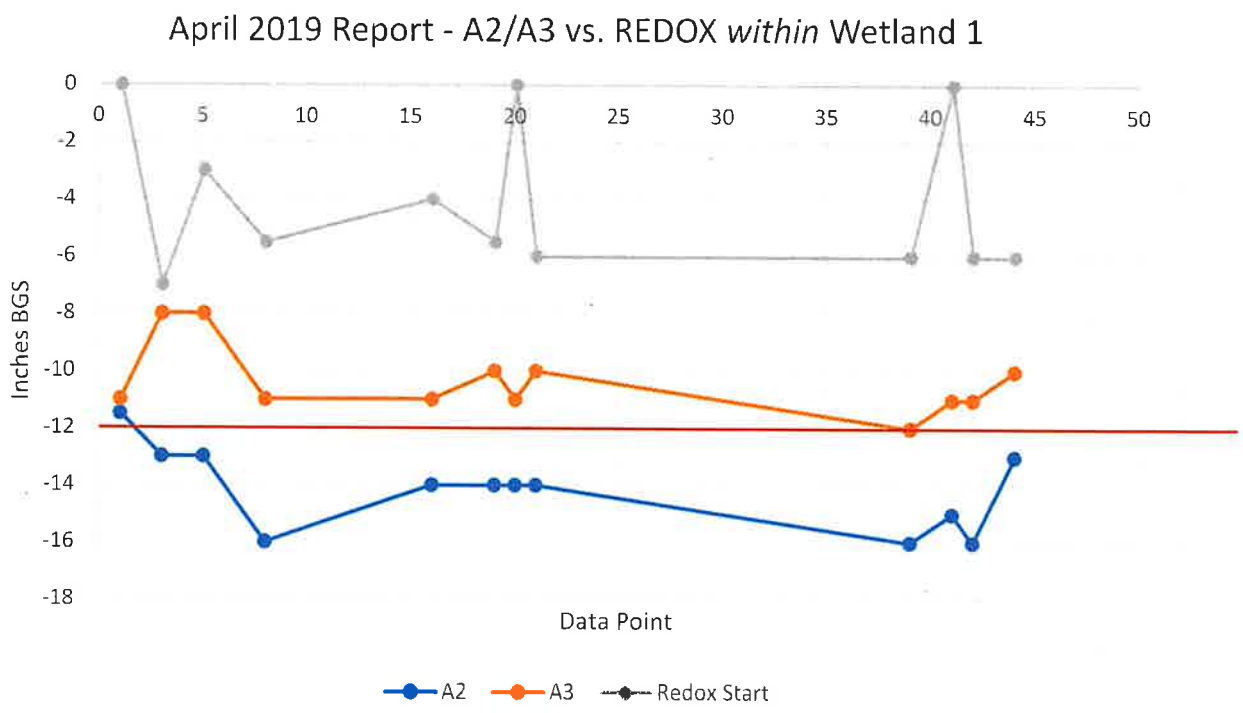
NOAA data is not available for the site to calculate the growing season from weather station temperature measurements (using appropriate statistical methods). The NRCS soils data reports indicate frost-free period of 165 days to 210 days. A conservative estimate using this data is a growing season for the site between mid-March and mid-October. This is consistent with January 2021 vegetation observations – which showed dormant or dead vegetation throughout the study area.

Problematic Hydric Soils

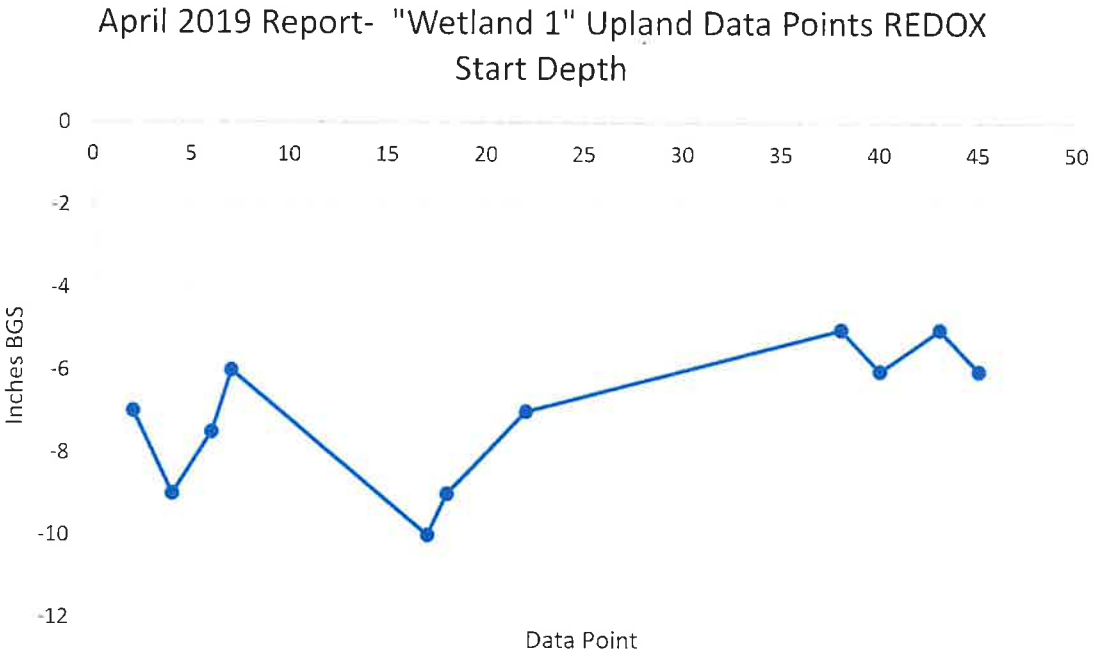
The study area is mapped by the NRCS with non-hydric soils:

- Cascade silt loam, 3 to 8 percent slopes
- Cascade silt loam, 8 to 15 percent slopes
- Cascade silt loam, 15 to 30 percent slopes
- Powell silt loam, 0 to 3 percent slopes

Previous field investigations documented soil color in the study area as predominantly 10 YR 3/2. Out of 45 data points, 37 "A Horizons" were documented with the 10 YR 3/2 color. The color remained consistent with depth, varying only slightly in hue and chroma. These soil colors fall within the range the F6 indicator (Redox Dark Surface). However, the documented redoximorphic features do no correlate to observed hydrology:



The observed A2 (Inundation) and A3 (Saturation) indicators do not correlate with the redoximorphic features. This is also true for the upland data points in documented in the April 2019 report and for the majority of the data points collected in 2020 and 2021.



The Western Supplement Difficult Wetland Situations, Problematic Hydric Soils methodologies address two situations: 1) soils with faint or absent hydric soil indicators; 2) soils with relict hydric indicators.

The prescribed method requires correlation of soil characteristics to other indicators such as topography, hydrology patterns, etc. In the absence of a hydrophytic plant community and the lack of hydrology at soil depths relevant to redoximorphic features, the conclusion is that the study area soils outside of Wetland 1 are aerobic during the growing season. The observed redoximorphic features at shallow depths may be a function of temporary seasonal saturation during some years – but any inundation or saturation is not sufficiently prolonged to cause a hydrophytic plant community in at least five out of ten years.

Wetlands that Periodically Lack Indicators of Wetland Hydrology

The size of the wetland in the study area appears to fluctuate based on season and year. The area is flat. The wetland is drained with an artificial ditch. The wetland is dependent on precipitation funneled to the site via artificial drainage. The wetland boundary appears to vary, year by year, as a function of hydrology. The A3 (Saturation) indicator was observed in July 2020.

The Difficult Wetlands Situations guidance prescribes multiple methods for evaluating hydrology if both hydrophytic vegetation and hydric soils are present. For the identified Wetland 1, all three indicators were present in July 2020 for a very small area (<0.05 acre). Using methods prescribed for this Difficult Wetland Situation to evaluate hydrology using historical aerial photography, the size is adjusted to 0.12-acre.

Procedure:

1) Verify indicators of hydrophytic vegetation and hydric soil are present;

The wetland has indicators of hydrophytic vegetation and hydric soils.

2) Verify the area is in a landscape position likely to collect or concentrate water;

The wetland is located within the lowest topographic area within the study area.

3) Site visits during Dry Season (July 2020; August 2021)
    a. Identify whether indirect hydrology indicators are present:
        i. Water marks
        ii. Drift deposits
        iii. Surface cracks, etc.

No indirect hydrology indicators present. The A3 (Saturation) indicator was observed within the wetland boundaries.

4) Site visits with below-normal rainfall
    a. *Not applicable*
5) Site visits during drought year
    a. *Not applicable*
6) Years with unusually low winter snowpack
    a. *Not applicable*
7) Reference Sites
    a. *Not applicable*
8) Hydrology Tools

a. Stream and Gauge Data
    i. *Not applicable*
b. Estimate runoff volumes
    i. *Not applicable*
c. Evaluate frequency of wetness signatures on aerial photography
    i. **This method is applied to this site**
d. Model water-table fluctuations in fields with parallel drainage systems using the DRAINMOD model
    i. *Not applicable*
e. Estimate the "scope and effect" of ditches or subsurface drain lines
    i. *Not applied*
f. Estimate the effectiveness of agricultural drainage systems using NRCS state drainage guides
    i. *Not applied*
g. Analyze data from groundwater monitoring wells
    i. *Not available*

Evaluating Multiple Years of Aerial Photography

1) Five or more years of growing-season photography
    a. Six years (2012 – 2018) applied
2) Use NRCS "wetland mapping conventions"
    a. Not specifically available for Oregon
    b. General guidance is to evaluate for surface water, saturated soils, flooded or drowned-out crops, differences in vegetation patterns, unharvested crops, isolated areas not farmed with rest of the field, patches of greener vegetation during dry periods and other conditions per Part 513.30 of the USDA Natural Resource Conservation Service 1994)
        i. For each photo, determine whether the rainfall in 2-3 months prior is "normal"
        ii. Use only photos taken in normal rainfall years or an equal number of above normal or below normal
        iii. Wetness signatures must be present in more than half the photos for wetland hydrology to be present
3) Normal rainfall years
    a. The Gresham 2 SW station had rainfall within 30% of the station mean in 2012, 2013, 2014, 2015, 2016 and 2018. In 2017, precipitation was 48% higher than normal. All years were evaluated for aerial wetland indicators:

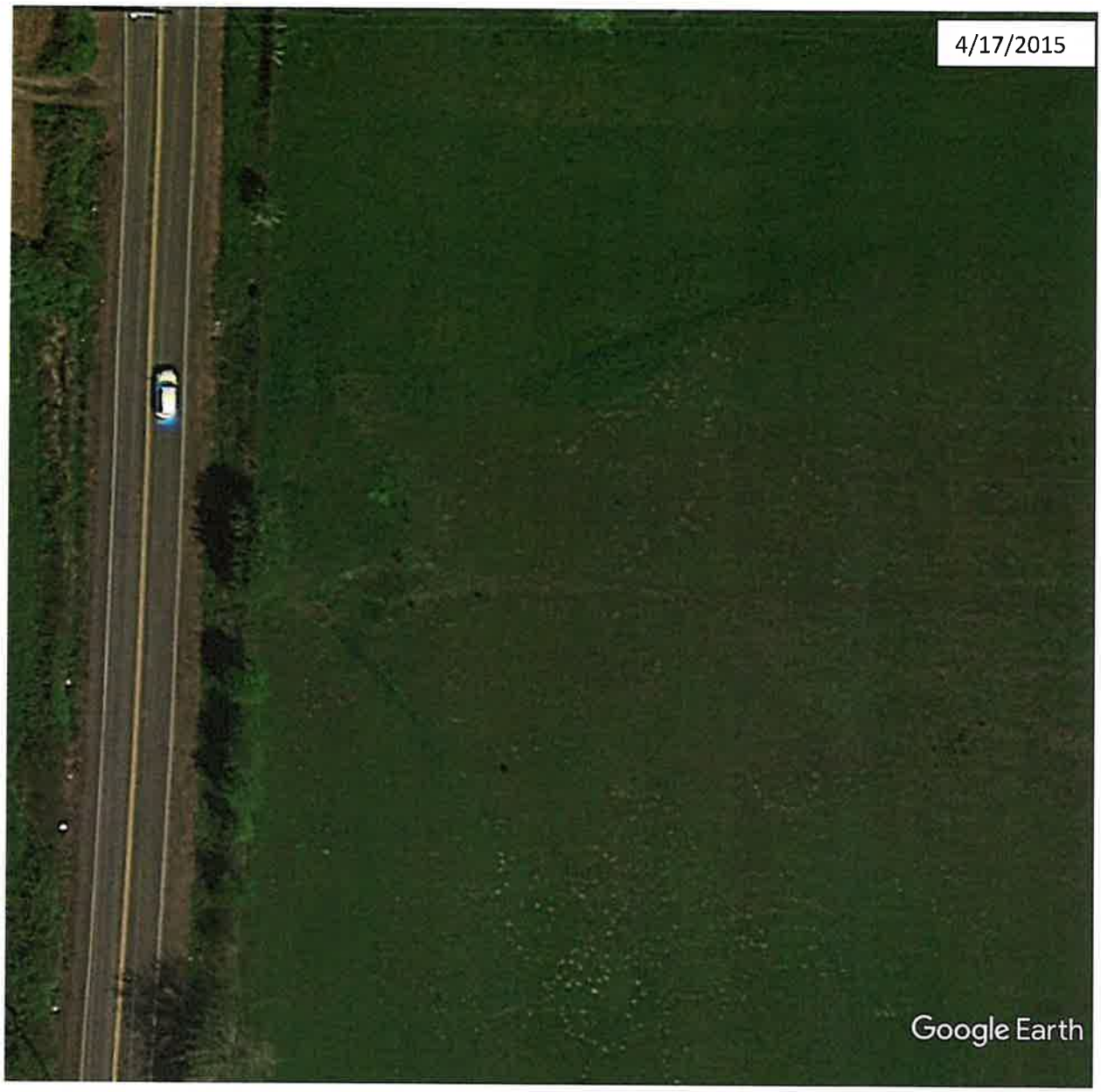
Google Earth Pro image dated 07/23/2012. Darker pattern is mix of hydrology and vegetation, as shown in imagery below dated less than one month later after haying. Technically, the image is not qualifying due to excessive precipitation 3-months prior (>40% difference from average). However, the 2012 imagery has two data points – similar to 2018 which has a -12% difference in 3-month prior precipitation and is qualifying. The wetness conditions patterns are very similar, reinforcing the wetland boundary.

The wetness pattern is definitive in the August 8, 2012 imagery. The closeups on the left show the wetness profile in relationship to the sampling points from 2020. No sampling performed in this area prior to 2020. The wetland area matches several wetness conditions, such as unharvested crop (no haying in the wetland); greener color in the dry season; different vegetation pattern. As noted for the July 2012 imagery, precipitation was 40.2% higher than average in the three months preceding the image date. The narrow green "spike" to the west of the wetland is not included in the boundary based on lack of hydrophytic plant community (and lack of observed hydrology in July 2020 compared to the wetland hydrology). The green spike does not appear consistently within the historical aerial imagery.

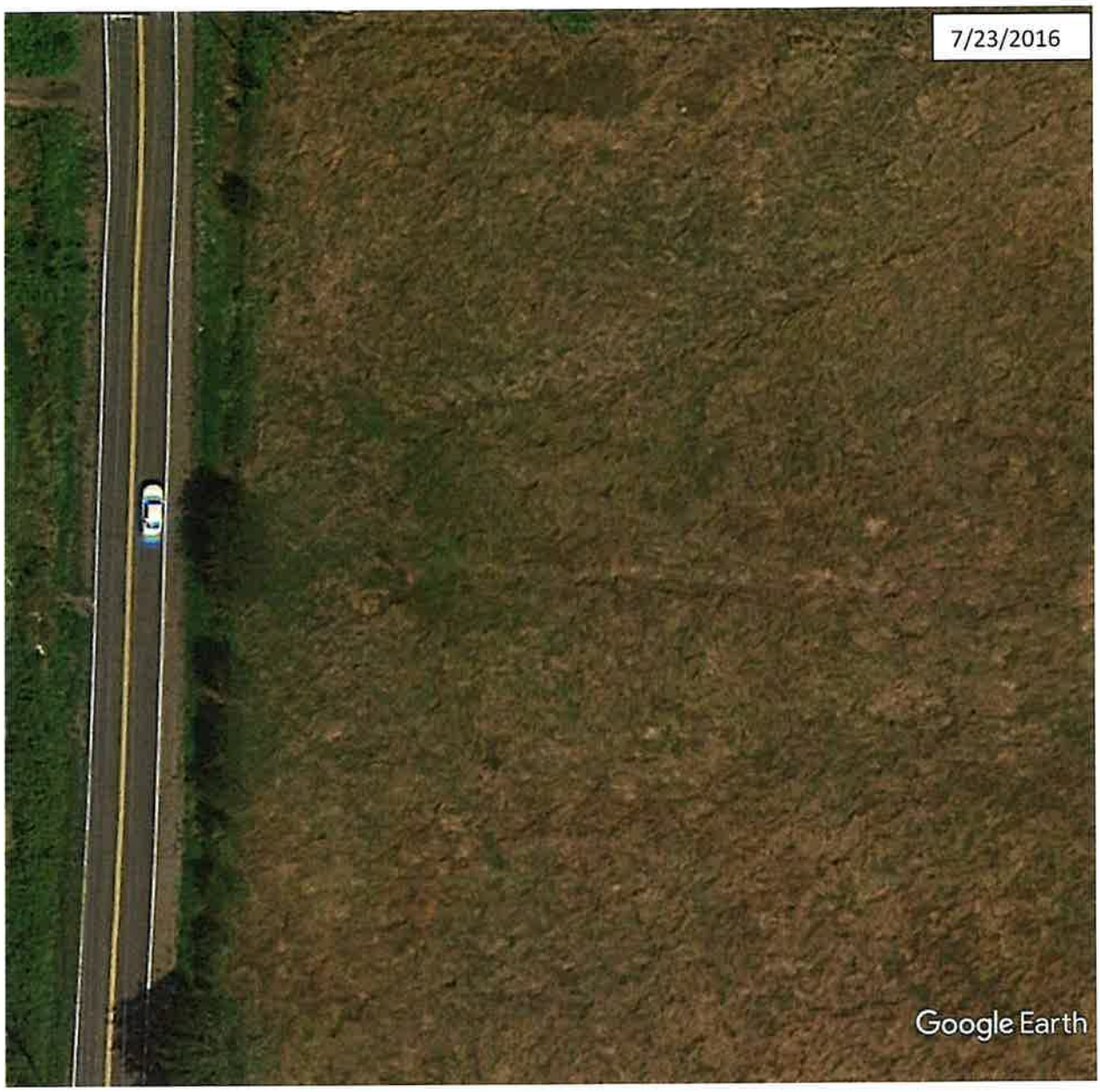
Although not a qualifying image under the Difficult Wetlands Situations protocol (non-growing season imagery) the wetland area remains consistent into the wet, non-growing season. Lines are livestock grazing patterns etched into the soil.

In July, 2013 – two drain tile lines converging on the wetland area are clearly visible. 3-month preceding precipitation +11% from normal. Imagery is 1-foot resolution vs. 6-inch resolution on imagery from other years.

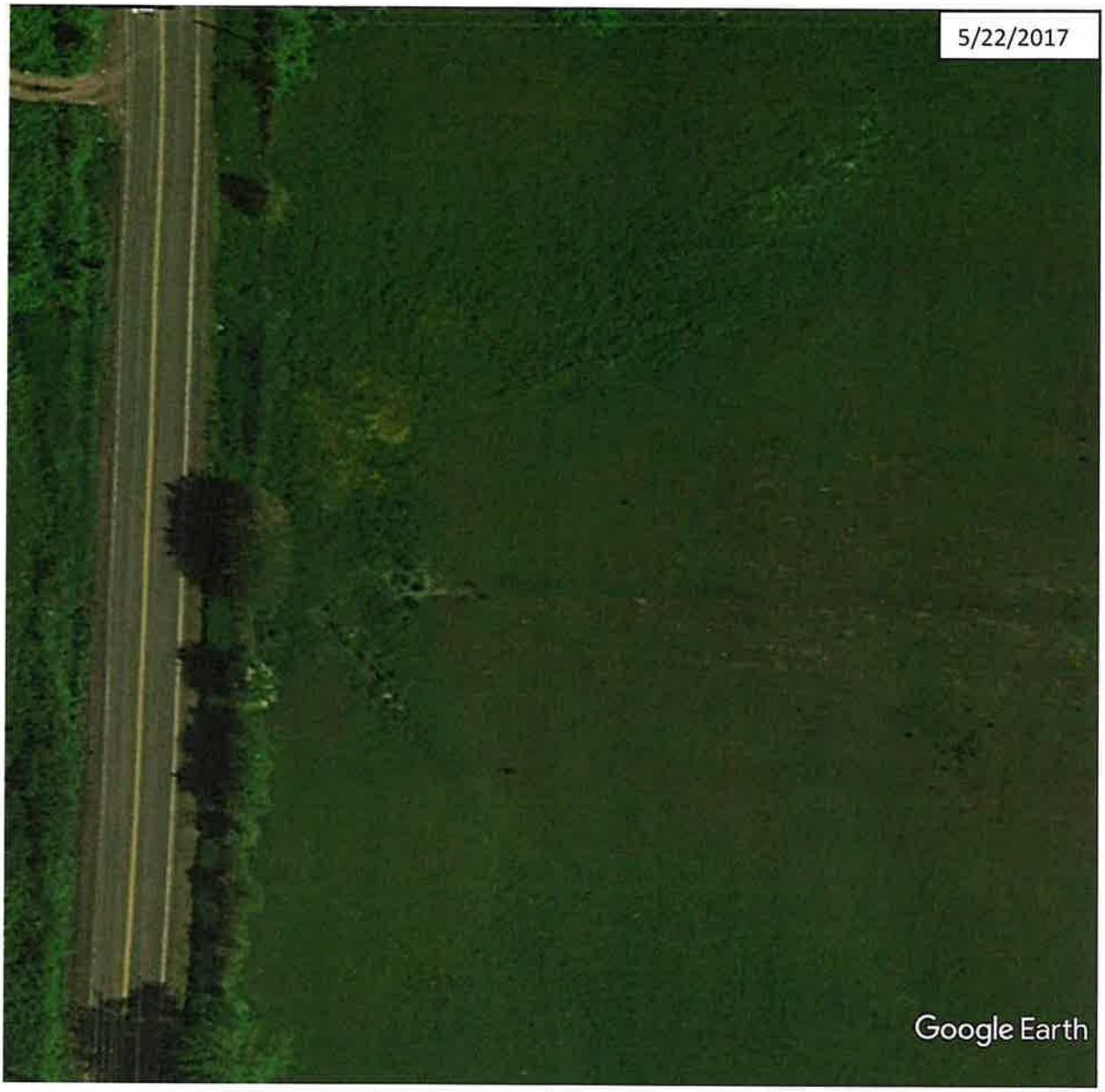
In July, 2014 – differences in vegetation pattern slightly distinguishable as a wetness condition. 3-month prior precipitation -2%. Lines are grazing patterns and are persistent into recent years.



Early in the growing season, converging drain tiles and differences in vegetation pattern mark wetness conditions. 3-month prior precipitation -57%. 2-month prior precipitation was -10%. The difference in the 3-month and 2-month preceding precipitation illustrates the importance of recency on site hydrology.

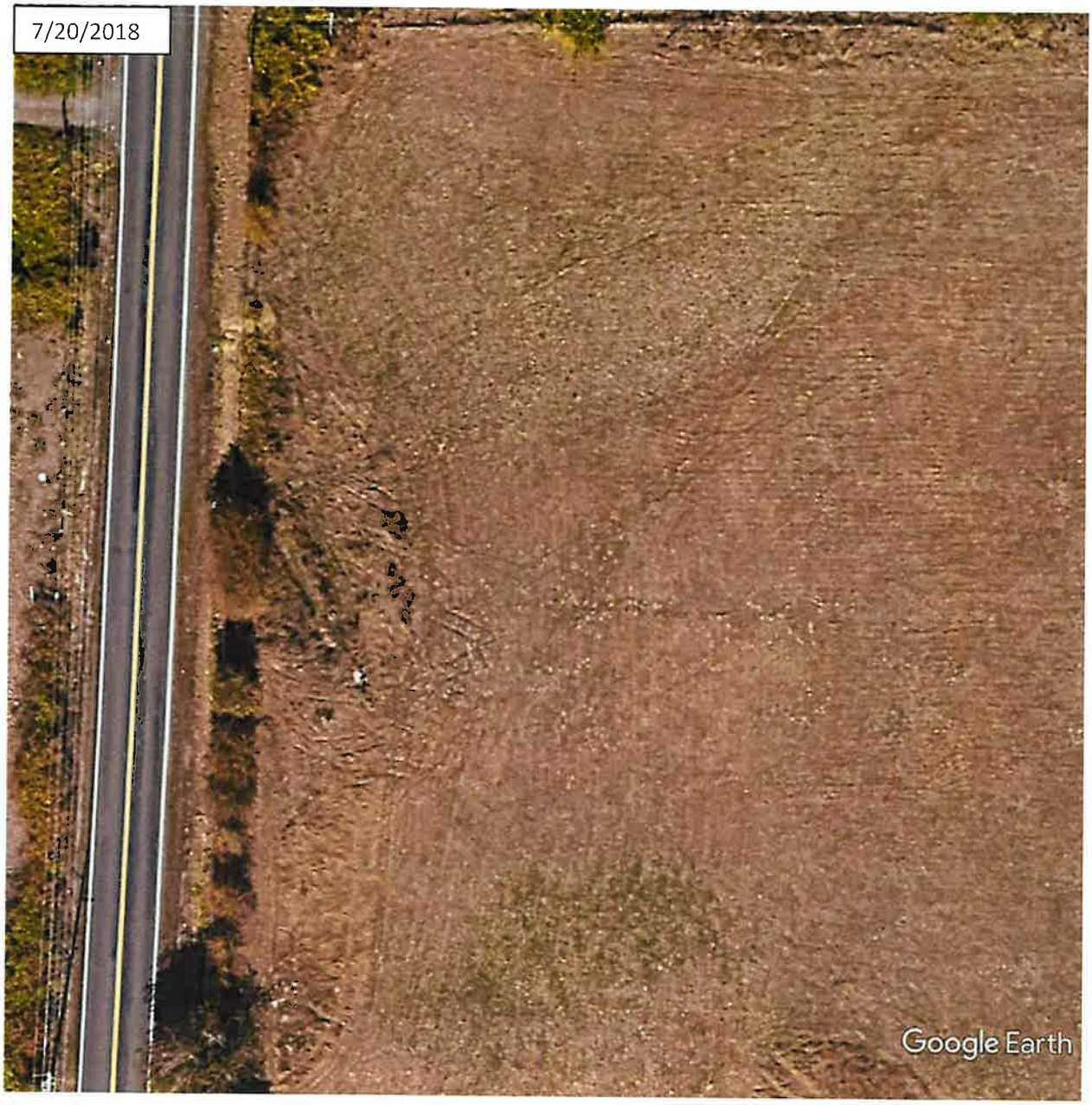


Less definitive in 2016, slight color variation and drain tile patterns are visible. Precipitation for three months prior -17%.



May 2017 imagery supports the difference in wetness conditions between wetland and adjacent upland. Vegetation patterns clearly distinguished. Converging drain tiles clearly visible. 2017 precipitation was 12% higher than average, but for the three months preceding – precipitation was 47% higher than normal.

July 16, 2018 image collected four days before haying. Wetness conditions distinguishable between uplands and wetland (color; vegetation pattern). The current ditch draining the wetland is now visible vs. the 2017 image.



The July 20, 2018 imagery mirrors the 2012 imagery pair. The wetland is unharvested; clear vegetation pattern difference. 3-month prior precipitation -12%.

The standard to be met is wetness indicators in 3 out of 5 years:

- 2012 – YES
- 2013 – YES
- 2014 – YES
- 2015 – YES
- 2016 – YES (although not as definitive as other years)
- 2018 – YES

The Wetland 1 area is the only area within the 36-acre study area to meet the standard for wetness conditions over these six image years.

Wetland/Non-Wetland Mosaics

- *Not identified as a site characteristic*

Data Point Summary

45 data points were collected by Schotts & Associates in 2018 and 2019. Data from those points were used in this delineation, with differing conclusions based on Difficult Wetland Procedures.

Eighteen data points were collected in July 2020 by Castle-Rose Environmental. An additional sixteen data points were collected on August 4, 2021.

E) Description of All Wetlands and Other Non-Wetland Waters

Wetland 1

Within the study area, one depressional wetland was identified adjacent to SE 190th Drive. Wetland 1 is approximately 5,250 s.f. (0.12-acre). The Cowardin classification is Palustrine Emergent Seasonally Flooded/Saturated Partly Drained/Ditched (PEMEd). The Partly Drained/Ditch component is due to a drainage ditch that was installed to facilitate an emergency power pole replacement following a winter-time car accident. The ditch was installed sometime between 2017 and 2018.

The hydrogeomorphic (HGM) class is "depressional". 3DEM data (The National Map) indicates a slight depression in the area of the wetland. Similarly, the project Existing Conditions survey (Appendices) with 1-foot contours shows the wetland within the lowest elevation on the parcel.

Vegetation

Dominant vegetation includes *Juncus effuses* (common rush), patches of *Phalaris arundinacea* (reed canary grass) pasture grass (Colonial Bentgrass: *Agrostis capillaris*) and *Ranunculus repens* (creeping buttercup). Non-dominant species included *Rumex crispus* (curly dock), *Rubus armeniacus* (Himalayan blackberry) and *Acmispon parviflorus* (American speedwell). Dominant FACW plants (common rush and reed canary grass) distinguish the wetland plant community from adjacent upland plant communities. The wetland is also has the only occurrence of an OBLIGATE species in the entire 36-acre study area (American speedwell).

Adjacent upland vegetation included the pasture grasses *Agrostis capillaris* (Colonial bentgrass), *Alopecurus pratensis* (meadow foxtail) and common velvetgrass, Cogswell's hawthorn, small bird's foot trelfoil, stickywilly, various thistles, Himalayan blackberry, common rush (FACW) among others. The greatest species diversity and density occurs in the margins between the mowed agricultural area and the east roadside ditch at SE 190th (west boundary of the wetland).

Soil

The soil in the wetland is hydric. Soil color is matrix 4 and chroma 2, with greater than 10% prominent redox concentrations as pore linings. These features are greater than two inches thick in the upper six inches of the soil. This color profile meets the F3 Depleted Matrix indicator.

Hydrology

On July 11, 2020 – two sampling points within the wetland exhibited A3 hydrology indicators. No other indicators observed, consistent with previous site visits. The hydrology indicators were not present in adjacent uplands (paired data points).

Non-Wetland Waters

Kelley Creek – a perennial stream – is aligned with the north property boundary. However, this stream and the associated riparian zone is not included in the study area for this report. Kelley Creek and its riparian zone is documented with wetlands presence, and the entire riparian zone lies within the City of Gresham High Value Resource Area.

On the east side of SE 190th Drive, the roadside ditch is adjacent to Wetland 1. This ditch reach is ephemeral and has no defined channel or active flow in the areas adjacent to the wetland. The east ditch flows under SE 190th Drive via culvert, connecting to a roadside ditch on the west side of SE 190th Drive that ostensibly discharges to Kelley Creek. However, only one end of the west roadside culvert that may drain toward Kelley Creek can be identified from the road. Both roadside ditches are artificial, have channel widths of less than ten feet and contain no game fish.

F) Deviation from LWI or NWI

No portion of the study area contains wetlands or suspected wetlands documented in the Local Wetlands Inventory (LWI) or National Wetlands Inventory (NWI). Wetland 1 is a deviation from both the LWI and NWI.

G) Mapping Method

Data points and the wetland boundary were mapped using sub-meter Trimble GNSS technology by All County Surveyors:

The wetland boundary was identified using two methods: 1) vegetation as the surface indicator; 2) historical aerial photography. The two methods identified a surface area of approximately 5,250 s.f. and 5,227 s.f., respectively.

H) Additional Information

No Fish Presence

The roadside ditches at SE 190th Drive (either side of the road) have no fish presence.

Artificially Created Entirely from Upland

The roadside ditch adjacent to Wetland 1 was artificially created from uplands with the construction of SE 90th Drive.

Wetland 1 was similarly created from uplands, based on historical aerial and topographic information. The area soils are mapped as non-hydric; the area was historically forested; the area was cleared for agricultural purposes; drain tiles were installed to facilitate agriculture; the wetland occurs at the convergence of several drain tiles easily visible on aerial imagery; the wetland occurs adjacent to a roadside ditch that is also created from uplands for the purpose of stormwater conveyance.

Prior Jurisdictional Determination

Castle-Rose Environmental with principal investigator Jason Smith was contracted in the summer of 2020 to evaluate jurisdictional wetland issues for the property. The initial question was whether the new Navigable Waters Protection Rule: Definition of "Waters of the United States" (33 CFR Part 328; 40 CFR Parts 110, 112, 116, 117, 120, 122, 230, 232, 300, 302, and 401) would have any impact on the Corps' jurisdictional determination for the subject property dated 4/6/2020.

The basis for the review was a wetland delineation completed by another consulting firm dated April 2019. However, during review of the delineation report, we discovered the report was not compliant with Oregon Administrative Rules (OAR) 141-090-0035 (1-17) or by reference, the 1987 US Army Corps of Engineers Wetland Delineation Manual and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Western Supplement).

Specifically, under OAR 141-090-0035(10)(a):

> Wetland determination and delineation on **farmed sites** shall follow procedures outlined in the Difficult Wetland Situations Chapter of the appropriate regional supplement.

As an agricultural property, OAR 141-090-0035(10)(a) applies to any wetland determination for this site. The Western Supplement Chapter 5: Difficult Wetland Situations in the Western Mountains, Valleys, and Coast Region is organized in the following sections:

- Problematic Hydrophytic Vegetation
- Problematic Hydric Soils
- Wetlands that Periodically Lack Indicators of Wetland Hydrology
- Wetland/Non-Wetland Mosaics

The April 2019 wetland delineation did not apply delineation protocols required by OAR 141-090-0035, and therefore cannot be relied upon for determining wetland presence on the parcel. The Oregon Department of State Lands (DSL) issued a concurrence letter (WD# 2019-0500 - January 23, 2020) and finding of jurisdiction based on the non-compliant wetland delineation. Under OAR Rule 141-090-0045: Duration, Expiration and Reissuance of Jurisdictional Determinations (JD), a JD may be revised by the DSL prior to the five-year expiration date if: (a) A field investigation or new information reveals that site conditions or the geographic extent of waters of this state are not consistent with the information in a report or permit application submitted to the Department; (b) Additional site information or data is provided voluntarily by an applicant or landowner to the Department.

Under OAR 141-090-0045(a), new information generated from the follow-up site investigation and wetland determination reveals that the geographic extent of waters of the state documented in the April 2019 wetland report do not match the vegetation and hydrology data included in the report.

Results and Conclusion

A 0.12-acre wetland (Wetland 1) does exist within the site study area. Data and analysis indicate this wetland was created artificially from uplands when SE 190th Drive was constructed (approximately 1914). Wetland 1 hydrology is created through converging drain tiles and the elevated road profile (SE 190th Drive).

Areas within the study area previously identified as wetlands lack the required hydrophytic plant community. The plant community on the site, outside of Wetland 1, is not a function of anaerobic soil conditions (prolonged saturated or inundated soils).

I) Disclaimer

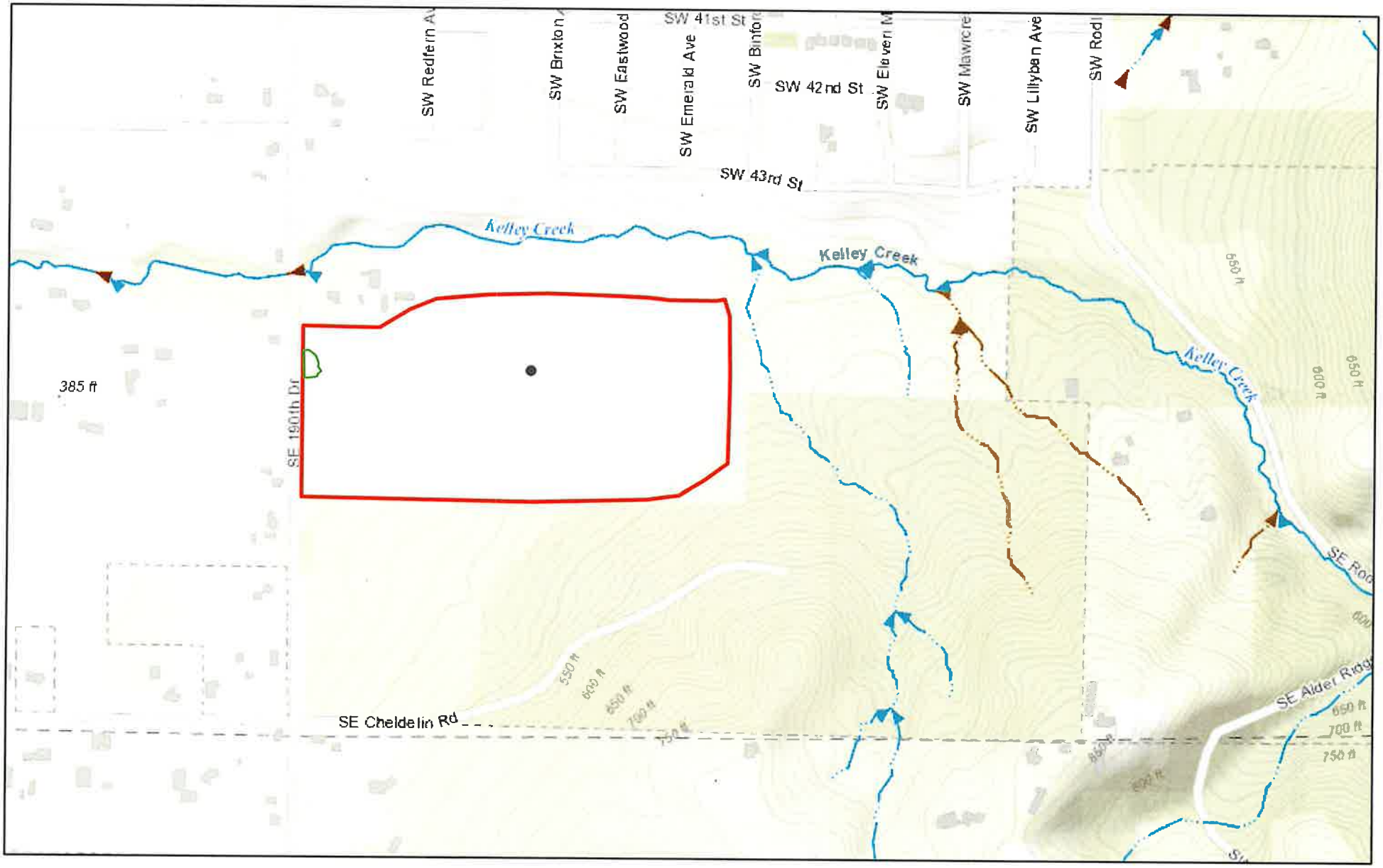
This report documents the investigation, best professional judgment and conclusions of the investigator. It is correct and complete to the best of my knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been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

Jason Smith
Principal Investigator

Appendix A

Figures

7928 SE 190th - LOCATION MAP



1:9,028

0 290 580 1,160 ft

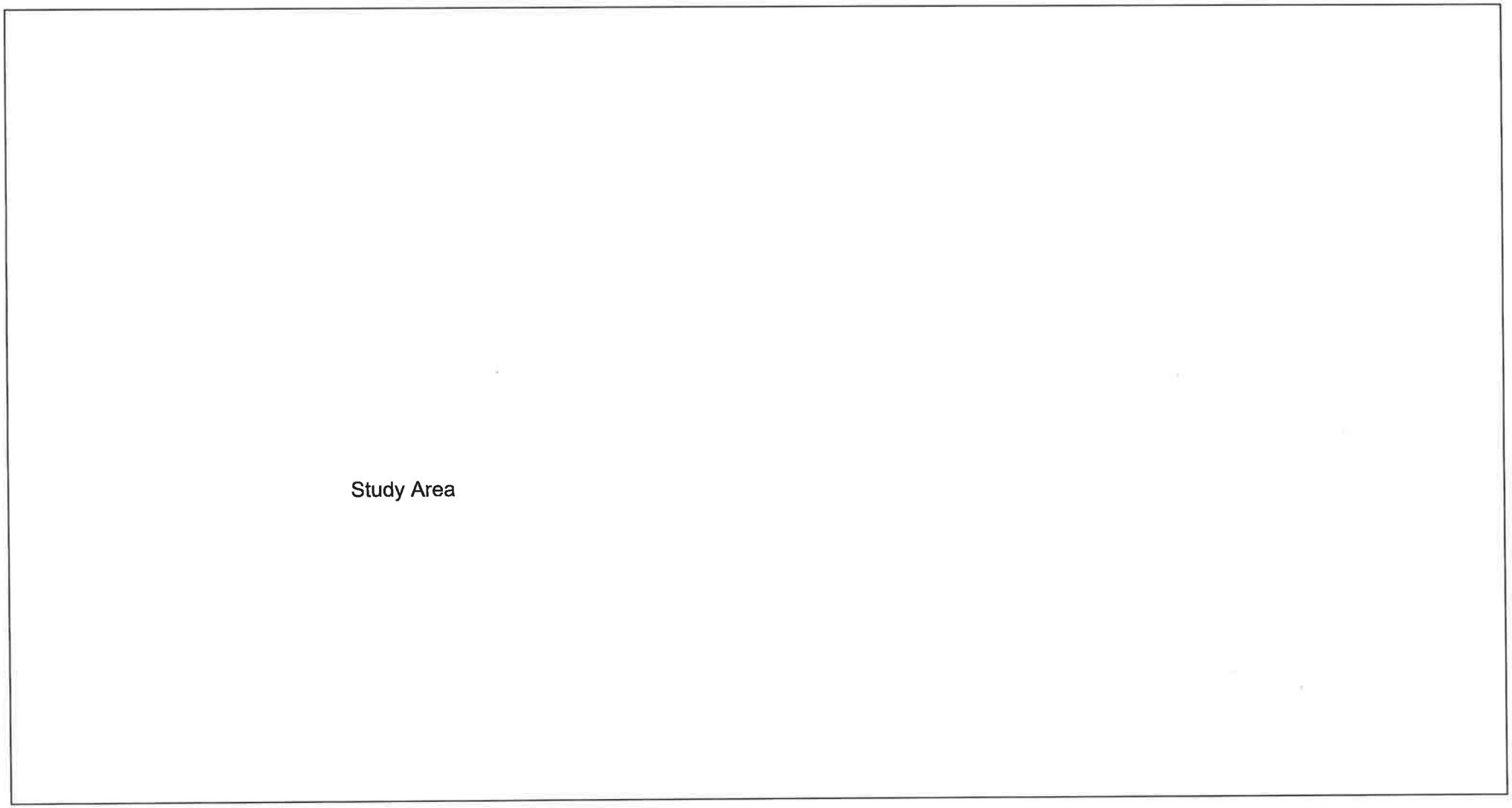
0 87.5 175 350 m

Oregon Metro, Bureau of Land Management, State of Oregon, State of

USGS

2021 USGS

GreshamGIS Map



August 23, 2021

- High Value Resource Area
- Resource Area
- Potential Resource Area

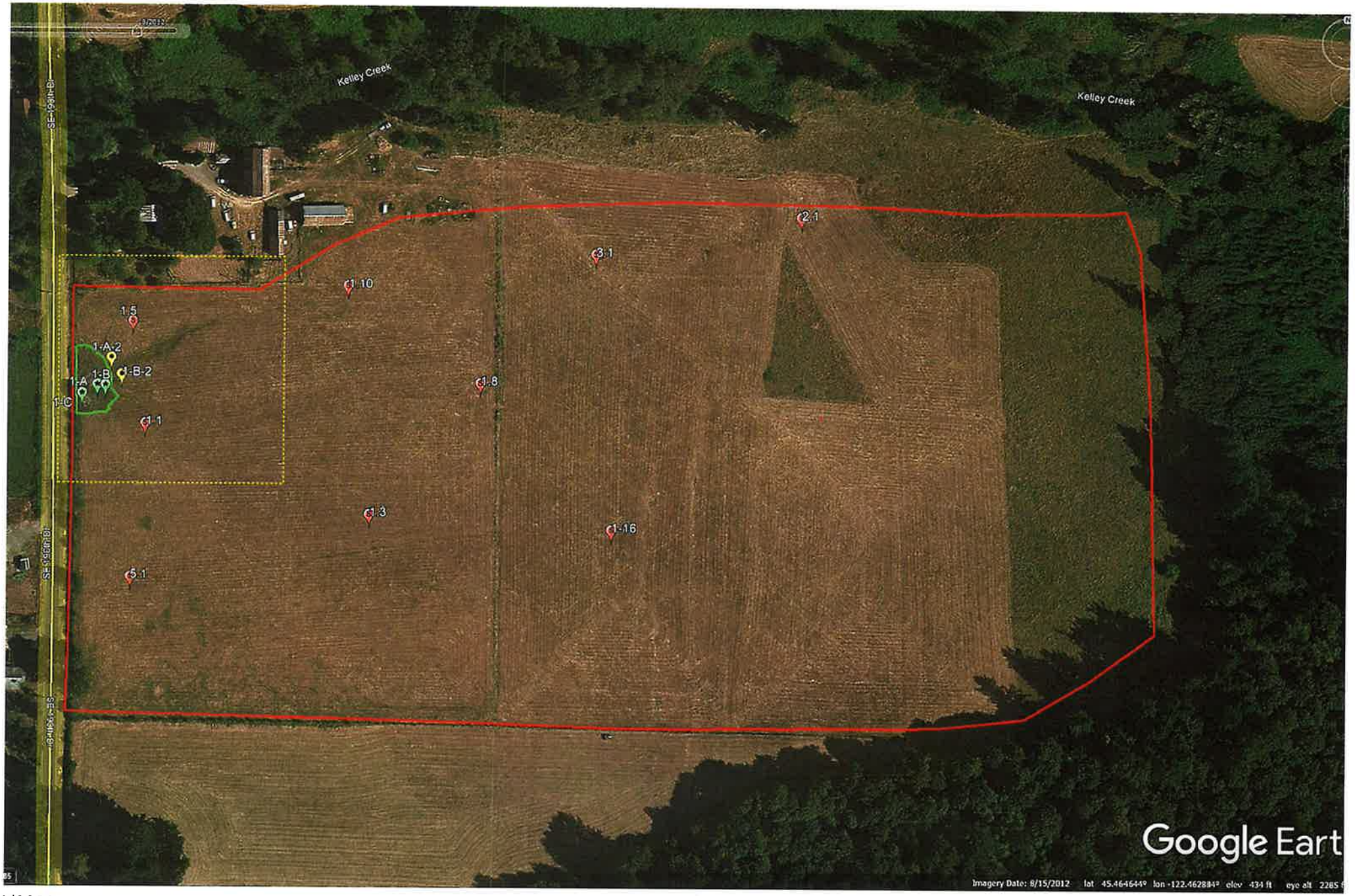
7928 SE 190th Drive, Gresham OR 97080
Parcel #: R340789

1:2,400

0	0.03	0.06	0.12 mi
0	0.0475	0.095	0.19 km

Gresham GIS

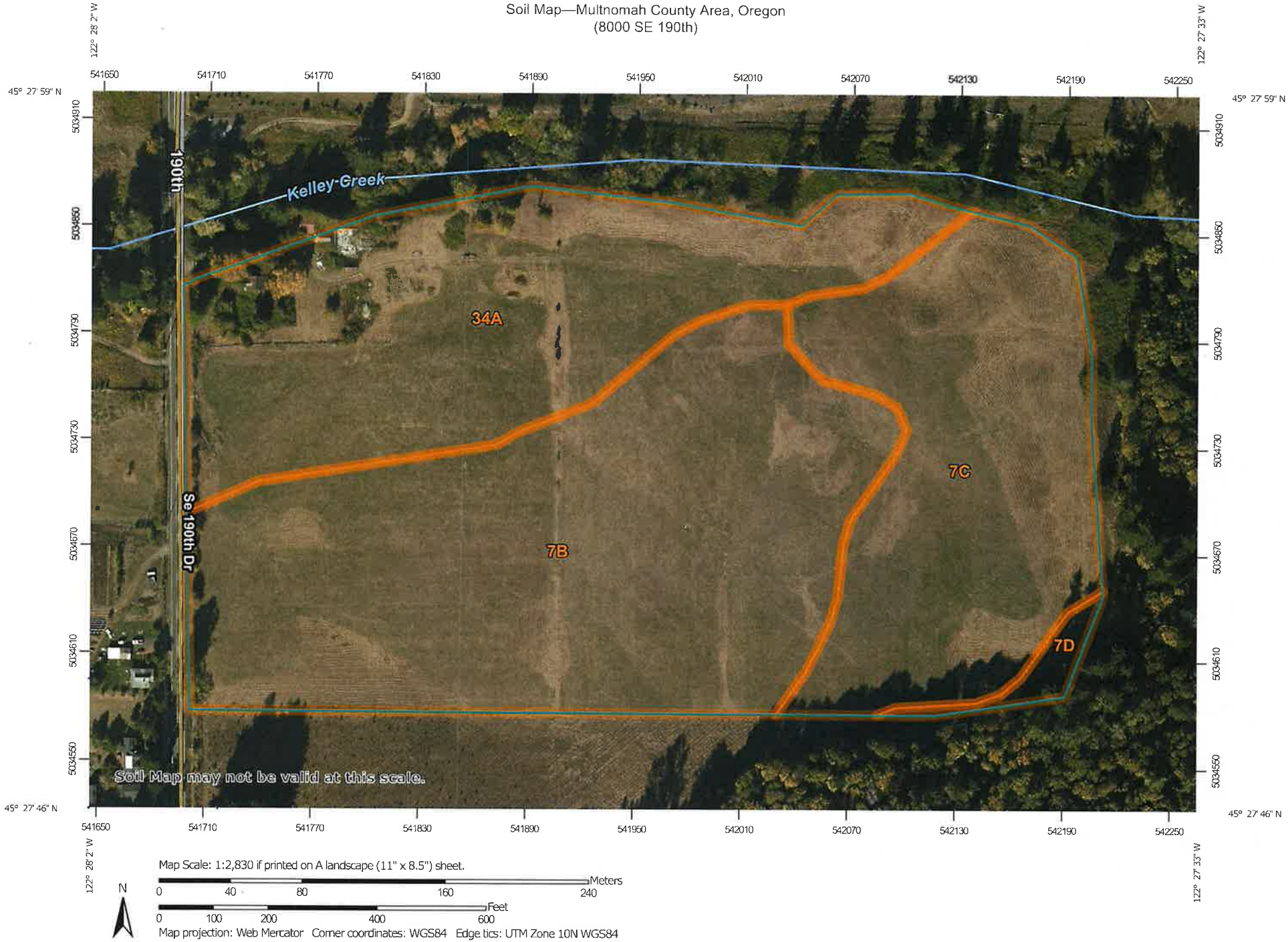
7928 SE 190th Dr - Data Point & Wetland Map



9/2021

7928 SE 190th Dr
Wetland 1 - Large Scale View

Soil Map—Multnomah County Area, Oregon
(8000 SE 190th)



Map Scale: 1:2,830 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Multnomah County Area, Oregon
Survey Area Data: Version 18, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 15, 2018—Oct 18, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7B	Cascade silt loam, 3 to 8 percent slopes	15.3	43.8%
7C	Cascade silt loam, 8 to 15 percent slopes	8.7	24.9%
7D	Cascade silt loam, 15 to 30 percent slopes	0.4	1.2%
34A	Powell silt loam, 0 to 3 percent slopes	10.5	30.1%
Totals for Area of Interest		**34.9**	**100.0%**


11
1
1
9 & 10
2
2
1
3
1
5 & 6
2
4
1
7 & 8
2
Photo Points

Appendix B

Data Forms

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7928 SE 190th Dr City/County: Gresham/Multnomah Sampling Date: July 11, 2020
Applicant/Owner: Jim Leeper State: OR Sampling Point: 1-A-2
Investigator(s): Jason Smith Section, Township, Range: S25 T8S R2W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): A Lat: 45.464955° Long: -122.466320° Datum: WGS84
Soil Map Unit Name: Powell silt Loam NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation x , Soil x , or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** x
Hydric Soil Present?	Yes ___	No x	
Wetland Hydrology Present?	Yes ___	No x	

Remarks: Pair data point with Wetland 1-A.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5)			
1. ***Holcus lanatus****	65	X	FAC*
2. *Lotus corniculatus*	30	X	FAC
3. *Schedonorus arundinaceus*	5		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___		___
FACW species	___		___
FAC species	___		___
FACU species	___		___
UPL species	___	x 5 =	___
Column Totals:	___	(A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
x Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ___ **No** x

Remarks: *Holcus lanatus* (common velvet grass) has ZERO tolerance for anaerobic soil conditions and has a minimum root depth of only 4 inches – well above any seasonal saturation observed at the site. *Schedonorus pratensis/arundinaceus* (tall/meadow fescue) are difficult to distinguish from each other in the field – but both are identified as low tolerance for anaerobic soil conditions. The common velvetgrass/fescue past grass plant community is dominant in the upland areas. In accordance with '87 Corp Manual and Regional Supplement procedures, the pasture grass plant community is identified *as* non-hydrophytic for this site.

SOIL

Sampling Point: 1-A-2 (Paired)

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8	7.5YR 5/3	95					Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- x Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7928 SE 190th Dr City/County: Gresham/Multnomah Sampling Date: July 11, 2020
Applicant/Owner: Jim Leeper State: OR Sampling Point: 1-B-2
Investigator(s): Jason Smith Section, Township, Range: S25 T8S R2W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): A Lat: 45.464883° Long: -122.466256° Datum: WGS84
Soil Map Unit Name: Powell silt Loam NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation x , Soil x , or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes ___	No x		
Wetland Hydrology Present?	Yes ___	No x		

Remarks: Pair data point with Wetland 1-B.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5)			
1. ***Holcus lanatus****	55	X	FAC*
2. *Lotus corniculatus*	30	X	FAC
3. *Rumex crispus*	5		FAC
4. *Juncus effusus*	5		FAC
5. *Schedonorus arundinaceus**	10		FAC*
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___		___
FACW species	___		___
FAC species	___		___
FACU species	___		___
UPL species	___	x 5 =	___
Column Totals:	___	(A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
x Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes ___ No x**

Remarks: *Holcus lanatus* (common velvet grass) has ZERO tolerance for anaerobic soil conditions and has a minimum root depth of only 4 inches – well above any seasonal saturation observed at the site. *Schedonorus pratensis/arundinaceus* (tall/meadow fescue) are difficult to distinguish from each other in the field – but both are identified as low tolerance for anaerobic soil conditions. The common velvetgrass/fescue past grass plant community is dominant in the upland areas. In accordance with '87 Corp Manual and Regional Supplement procedures, the pasture grass plant community is identified *as* non-hydrophytic for this site.

SOIL

Sampling Point: 1-B-2 (Paired)

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8	7.5YR 6/3	95					Silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- x Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes ___ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7928 SE 190th Dr City/County: Gresham/Multnomah Sampling Date: August 4, 2021
Applicant/Owner: Jim Leeper State: OR Sampling Point: 1.1
Investigator(s): Jason Smith Section, Township, Range: S25 T8S R2W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): A Lat: 45.464672° Long: -122.466107° Datum: WGS84
Soil Map Unit Name: Powell silt Loam NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation x , Soil x , or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes x	No ___		
Wetland Hydrology Present?	Yes ___	No x		

Remarks: Historically, no wetland features are mapped for this study area. Study area is historically forested with conversion to pasture in the early 1900's. Drainage affected by drain tiles. Study area plant community is typical for forage seed blends with some invasive species infestation. Study area plant community is affected by grazing and haying. This data point is re-evaluated from the 2019 wetland delineation.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5)			
1. ***Holcus lanatus****	50	X	FAC*
2. *Ranunculus repens*	30	X	FAC
3. *Schedonorus pratensis/arundinaceus**	20	X	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	___	___
FACW species	___	___
FAC species	___	___
FACU species	___	___
UPL species	___ x 5 =	___
Column Totals:	___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
x Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No x

Remarks: *Holcus lanatus* (common velvet grass) has ZERO tolerance for anaerobic soil conditions and has a minimum root depth of only 4 inches – well above any seasonal saturation observed at the site. *Schedonorus pratensis/arundinaceus* (tall/meadow fescue) are difficult to distinguish from each other in the field – but both are identified as low tolerance for anaerobic soil conditions. The common velvetgrass/fescue past grass plant community is dominant in the upland areas. In accordance with '87 Corp Manual and Regional Supplement procedures, the pasture grass plant community is identified *as* non-hydrophytic for this site.

SOIL

Sampling Point: 1.1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 4/2	95					Silt loam	Distinct redox
6-8	10YR 4/2	90	10YR 5/3	10	C	PL		
8-16	10YR 4/3	90						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes x No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- x Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes ___ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7928 SE 190th Dr City/County: Gresham/Multnomah Sampling Date: August 4, 2021
Applicant/Owner: Jim Leeper State: OR Sampling Point: 1.2
Investigator(s): Jason Smith Section, Township, Range: S25 T8S R2W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): A Lat: 45.464672° Long: -122.466107° Datum: WGS84
Soil Map Unit Name: Powell silt Loam NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation x , Soil x , or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes x	No ___		
Wetland Hydrology Present?	Yes ___	No x		

Remarks: Historically, no wetland features are mapped for this study area. Study area is historically forested with conversion to pasture in the early 1900's. Drainage affected by drain tiles. Study area plant community is typical for forage seed blends with some invasive species infestation. Study area plant community is affected by grazing and haying. This data point is re-evaluated from the 2019 wetland delineation (Wetland 1.2)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5)			
1. ***Holcus lanatus****	40	X	FAC*
2. *Ranunculus repens*	35	X	FAC
3. *Schedonorus pratensis/arundinaceus**	15	X	FACU
4. *Vicia villosa*	1		NOL
5. *Alopecurus pratensis*	10		FAC*
6.			
7.			
8.			
9.			
10.			
11.			
	101 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	___	___
FACW species	___	___
FAC species	___	___
FACU species	___	___
UPL species	x 5 =	___
Column Totals:	___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
x Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No x

Remarks: *Holcus lanatus* and *Alopecurus pratensis* have ZERO tolerance for anaerobic soil conditions. *Schedonorus pratensis/arundinaceus* (tall/meadow fescue) are difficult to distinguish from each other in the field – but both are identified as low tolerance for anaerobic soil conditions. The pasture grass plant community is dominant in the upland areas. In accordance with '87 Corp Manual and Regional Supplement procedures, the pasture grass plant community is identified *as* non-hydrophytic for this site.

SOIL

Sampling Point: 1.2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	7.5YR 4/2	100						
6-12	7.5YR 3/3	50	10YR 5/4	10	C	M		
6-12	7.5YR 3/2	50						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes x No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- x Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes ___ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7928 SE 190th Dr City/County: Gresham/Multnomah Sampling Date: August 4, 2021
Applicant/Owner: Jim Leeper State: OR Sampling Point: 1.3
Investigator(s): Jason Smith Section, Township, Range: S25 T8S R2W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): A Lat: 45.464287° Long: -122.464717° Datum: WGS84
Soil Map Unit Name: Cascade silt Loam NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation x , Soil x , or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes x	No ___		
Wetland Hydrology Present?	Yes ___	No x		

Remarks: Historically, no wetland features are mapped for this study area. Study area is historically forested with conversion to pasture in the early 1900's. Drainage affected by drain tiles. Study area plant community is typical for forage seed blends with some invasive species infestation. Study area plant community is affected by grazing and haying. This data point is re-evaluated from the 2019 wetland delineation (Wetland 1.3)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5)			
1. ***Holcus lanatus****	75	X	FAC*
2. *Schedonorus pratensis/arundinaceus*	20	X	FAC*
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species		
FACW species		
FAC species		
FACU species		
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
x Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No x

Remarks: *Holcus lanatus* and *Alopecurus pratensis* have ZERO tolerance for anaerobic soil conditions. *Schedonorus pratensis/arundinaceus* (tall/meadow fescue) are difficult to distinguish from each other in the field – but both are identified as low tolerance for anaerobic soil conditions. The pasture grass plant community is dominant in the upland areas. In accordance with '87 Corp Manual and Regional Supplement procedures, the pasture grass plant community is identified *as* non-hydrophytic for this site.

SOIL

Sampling Point: 1.3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10YR 3/2	95	10YR 4/4	5	C	M	Silt loam	
2-8	10YR 3/2	100						
8-10	7.5YR 3/2	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes x No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes ___ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7928 SE 190th Dr City/County: Gresham/Multnomah Sampling Date: August 4, 2021
Applicant/Owner: Jim Leeper State: OR Sampling Point: 1.8
Investigator(s): Jason Smith Section, Township, Range: S25 T8S R2W
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Concave Slope (%): 2%
Subregion (LRR): A Lat: 45.464845° Long: -122.464045° Datum: WGS84
Soil Map Unit Name: Powell silt Loam NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation x , Soil x , or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes x	No ___		
Wetland Hydrology Present?	Yes ___	No x		

Remarks: Historically, no wetland features are mapped for this study area. Study area is historically forested with conversion to pasture in the early 1900's. Drainage affected by drain tiles. Study area plant community is typical for forage seed blends with some invasive species infestation. Study area plant community is affected by grazing and haying. This data point is re-evaluated from the 2019 wetland delineation (Wetland 1.44)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5)			
1. ***Holcus lanatus****	70	X	FAC*
2. *Schedonorus pratensis/arundinaceus*	20	X	FAC*
3. *Anthoxanthum odoratum*	5		FACU
4. *Ranunculus repens*	5		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___		___
FACW species	___		___
FAC species	___		___
FACU species	___		___
UPL species	___	x 5 =	___
Column Totals:	___	(A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
x Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No x

Remarks: *Holcus lanatus* and *Alopecurus pratensis* have ZERO tolerance for anaerobic soil conditions. *Schedonorus pratensis/arundinaceus* (tall/meadow fescue) are difficult to distinguish from each other in the field – but both are identified as low tolerance for anaerobic soil conditions. The pasture grass plant community is dominant in the upland areas. In accordance with '87 Corp Manual and Regional Supplement procedures, the pasture grass plant community is identified *as* non-hydrophytic for this site.

SOIL

Sampling Point: 1.8

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR 4/2	99	10YR 4/4	<1	C	M	Silt loam	
4-12	7.5YR 3/2	95	10YR 5/4	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes x No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes ___ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7928 SE 190th Dr City/County: Gresham/Multnomah Sampling Date: August 4, 2021
Applicant/Owner: Jim Leeper State: OR Sampling Point: 1.10
Investigator(s): Jason Smith Section, Township, Range: S25 T8S R2W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): A Lat: 45.465268° Long: -122.464861° Datum: WGS84
Soil Map Unit Name: Cascade silt Loam NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation x , Soil x , or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes ___	No x		
Wetland Hydrology Present?	Yes ___	No x		

Remarks: Historically, no wetland features are mapped for this study area. Study area is historically forested with conversion to pasture in the early 1900's. Drainage affected by drain tiles. Study area plant community is typical for forage seed blends with some invasive species infestation. Study area plant community is affected by grazing and haying. This data point is re-evaluated from the 2019 wetland delineation (Wetland 1.8)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5)			
1. ***Holcus lanatus****	50	X	FAC*
2. *Schedonorus pratensis/arundinaceus*	10		FAC*
3. *Ranunculus repens*	20	X	FAC
4. *Alopecurus pratensis*	10		FAC*
5. *Cirsium arvense*	5		FAC
6. *Vicia villosa*	<5		NOL
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___		___
FACW species	___		___
FAC species	___		___
FACU species	___		___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
x Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No x

Remarks: *Holcus lanatus* and *Alopecurus pratensis* have ZERO tolerance for anaerobic soil conditions. *Schedonorus pratensis/arundinaceus* (tall/meadow fescue) are difficult to distinguish from each other in the field – but both are identified as low tolerance for anaerobic soil conditions. The pasture grass plant community is dominant in the upland areas. In accordance with '87 Corp Manual and Regional Supplement procedures, the pasture grass plant community is identified *as* non-hydrophytic for this site.

SOIL

Sampling Point: 1.10

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/2						Silt loam	
4-6	7.5YR 3/2	95	10YR 4/4	5	C	M		
6-12	5YR 3/3	98	10YR 4/4	2	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Previously (April 2019) identified with saturation at -11 inches (A3) and redox starting at -5.5 inches. Redox similar in 2021, but soil did not meet F6 color indicator past 6 in. Redox layer within requisite color was only 2" thick.

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7928 SE 190th Dr City/County: Gresham/Multnomah Sampling Date: August 4, 2021
Applicant/Owner: Jim Leeper State: OR Sampling Point: 1.16
Investigator(s): Jason Smith Section, Township, Range: S25 T8S R2W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): A Lat: 45.464228° Long: -122.463247° Datum: WGS84
Soil Map Unit Name: Cascade silt Loam NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation x , Soil x , or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?**	**Yes** ___	**No** x
Hydric Soil Present?	Yes ___	No x			
Wetland Hydrology Present?	Yes ___	No x			

Remarks: Historically, no wetland features are mapped for this study area. Study area is historically forested with conversion to pasture in the early 1900's. Drainage affected by drain tiles. Study area plant community is typical for forage seed blends with some invasive species infestation. Study area plant community is affected by grazing and haying.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Holcus lanatus**	50	X	FAC*
2. *Schedonorus pratensis/arundinaceus*	25	X	FAC*
3. *Alopecurus pratensis*	15		FAC*
4. *Anthoxanthum odoratum*	10		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___		___
FACW species	___		___
FAC species	___		___
FACU species	___		___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
x Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ___ **No** x

Remarks: *Holcus lanatus* and *Alopecurus pratensis* have ZERO tolerance for anaerobic soil conditions. *Schedonorus pratensis/arundinaceus* (tall/meadow fescue) are difficult to distinguish from each other in the field – but both are identified as low tolerance for anaerobic soil conditions. The pasture grass plant community is dominant in the upland areas. In accordance with '87 Corp Manual and Regional Supplement procedures, the pasture grass plant community is identified *as* non-hydrophytic for this site.

SOIL

Sampling Point: 1.16

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 6/3	100	10YR 4/4	2	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Previously (April 2019) identified with saturation at -11 inches (A3) and redox starting at -5.5 inches. Redox similar in 2021, but soil did not meet F6 color indicator past 6 in. Redox layer within requisite color was only 2" thick.

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7928 SE 190th Dr City/County: Gresham/Multnomah Sampling Date: August 4, 2021
Applicant/Owner: Jim Leeper State: OR Sampling Point: 2.1
Investigator(s): Jason Smith Section, Township, Range: S25 T8S R2W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): A Lat: 45.465556° Long: -122.462112° Datum: WGS84
Soil Map Unit Name: Powell silt Loam NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation x , Soil x , or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?**	**Yes** ___	**No** x
Hydric Soil Present?	Yes ___	No x			
Wetland Hydrology Present?	Yes ___	No x			

Remarks: Historically, no wetland features are mapped for this study area. Study area is historically forested with conversion to pasture in the early 1900's. Drainage affected by drain tiles. Study area plant community is typical for forage seed blends with some invasive species infestation. Study area plant community is affected by grazing and haying.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5)			
1. ***Holcus lanatus****	60	X	FAC*
2. *Schedonorus pratensis/arundinaceus*	35	X	FAC*
3. *Anthoxanthum odoratum*	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___		___
FACW species	___		___
FAC species	___		___
FACU species	___		___
UPL species	___	x 5 =	___
Column Totals:	___	(A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
x Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ___ **No** x

Remarks: *Holcus lanatus* and *Alopecurus pratensis* have ZERO tolerance for anaerobic soil conditions. *Schedonorus pratensis/arundinaceus* (tall/meadow fescue) are difficult to distinguish from each other in the field – but both are identified as low tolerance for anaerobic soil conditions. The pasture grass plant community is dominant in the upland areas. In accordance with '87 Corp Manual and Regional Supplement procedures, the pasture grass plant community is identified *as* non-hydrophytic for this site.

SOIL

Sampling Point: 2.1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 – 8	5YR 3/3	50	10YR 5/4	1	C	M	Silt loam	
0 – 8	10YR 4/3	50	10YR 5/4					
8 - 12	5YR 3/3	100	10YR 5/4	10	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes ___ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Previously identified boundaries for Wetland 3 documented with F6 Redox Dark surface (10YR 3/2 & 4/2).

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7928 SE 190th Dr City/County: Gresham/Multnomah Sampling Date: August 4, 2021
Applicant/Owner: Jim Leeper State: OR Sampling Point: 3.1
Investigator(s): Jason Smith Section, Township, Range: S25 T8S R2W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): A Lat: 45.465402° Long: -122.463353° Datum: WGS84
Soil Map Unit Name: Powell silt Loam NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation x , Soil x , or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?**	**Yes ___ No x**
Hydric Soil Present?	Yes ___	No x		
Wetland Hydrology Present?	Yes ___	No x		

Remarks: Historically, no wetland features are mapped for this study area. Study area is historically forested with conversion to pasture in the early 1900's. Drainage affected by drain tiles. Study area plant community is typical for forage seed blends with some invasive species infestation. Study area plant community is affected by grazing and haying. This data point is within previously delineated Wetland 3.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5)			
1. ***Holcus lanatus****	60	X	FAC*
2. *Schedonorus pratensis/arundinaceus*	20	X	FAC*
3. *Alopecurus pratensis*	10		FAC*
4. *Anthoxanthum odoratum*	10		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___		___
FACW species	___		___
FAC species	___		___
FACU species	___		___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
x Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No x

Remarks: *Holcus lanatus* and *Alopecurus pratensis* have ZERO tolerance for anaerobic soil conditions. *Schedonorus pratensis/arundinaceus* (tall/meadow fescue) are difficult to distinguish from each other in the field – but both are identified as low tolerance for anaerobic soil conditions. The pasture grass plant community is dominant in the upland areas. In accordance with '87 Corp Manual and Regional Supplement procedures, the pasture grass plant community is identified *as* non-hydrophytic for this site.

SOIL

Sampling Point: 3.1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 – 8	7.5YR 4/3	100					Silt loam	
8 – 12	10YR 4/3	95	10YR 5/4	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** x

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Previously identified boundaries for Wetland 3 documented with F6 Redox Dark surface (10YR 3/2 & 4/2).

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7928 SE 190th Dr City/County: Gresham/Multnomah Sampling Date: August 4, 2021
Applicant/Owner: Jim Leeper State: OR Sampling Point: 5.1
Investigator(s): Jason Smith Section, Township, Range: S25 T8S R2W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): A Lat: 45.464016° Long: -122.466180° Datum: WGS84
Soil Map Unit Name: Cascade silt Loam NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation x , Soil x , or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___	No x	**Is the Sampled Area within a Wetland?** Yes ___ No x
Hydric Soil Present?	Yes x	No ___	
Wetland Hydrology Present?	Yes ___	No x	

Remarks: Historically, no wetland features are mapped for this study area. Study area is historically forested with conversion to pasture in the early 1900's. Drainage affected by drain tiles. Study area plant community is typical for forage seed blends with some invasive species infestation. Study area plant community is affected by grazing and haying.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5)			
1. *Holcus lanatus**	20	X	FAC*
2. *Schedonorus pratensis/arundinaceus**	20	X	FAC*
3. *Anthoxanthum odoratum*	60	X	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___		___
FACW species	___		___
FAC species	___		___
FACU species	___		___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
x Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ___ No x

Remarks: *Holcus lanatus* and *Alopecurus pratensis* have ZERO tolerance for anaerobic soil conditions. *Schedonorus pratensis/arundinaceus* (tall/meadow fescue) are difficult to distinguish from each other in the field – but both are identified as low tolerance for anaerobic soil conditions. The pasture grass plant community is dominant in the upland areas. In accordance with '87 Corp Manual and Regional Supplement procedures, the pasture grass plant community is identified *as* non-hydrophytic for this site.

SOIL

Sampling Point: 5.1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 – 4	7.5YR 3/2	100	10YR 4/4	5	C	M	Silt loam	
4 - 12	5YR 3/3	100	10YR 4/4	1	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___x___ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No _X_ Depth (inches): _____

Water Table Present? Yes ___ No _X_ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No _X_ Depth (inches): _____

Wetland Hydrology Present? Yes ___ No _x_

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Previously identified boundaries for Wetland 3 documented with F6 Redox Dark surface (10YR 3/2 & 4/2).

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7928 SE 190th Dr City/County: Gresham/Multnomah Sampling Date: July 11, 2021
Applicant/Owner: Jim Leeper State: OR Sampling Point: Wetland 1-A
Investigator(s): Jason Smith Section, Township, Range: S25 T8S R2W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): A Lat: 45.464838° Long: -122.466406° Datum: WGS84
Soil Map Unit Name: Powell silt Loam NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation x , Soil x , or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	x	No	___
Hydric Soil Present?	Yes	x	No	___
Wetland Hydrology Present?	Yes	x	No	___

Is the Sampled Area within a Wetland? Yes x No ___

Remarks: Historically, no wetland features are mapped for this study area. Wetland features appear to be an artifact of road construction and land clearing to convert from forestry to agricultural use. Drain lines concentrate precipitation in the lowest point of the site – where the wetland occurs. Drainage is blocked by SE 190th Drive, adjacent to the wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5250)			
1. ***Holcus lanatus****	40*	X	FAC*
2. *Juncus effusus*	20	X	FACW
3. *Phalaris arundinacea*	15	X	FACW
4. *Veronica americana*	1		OBL
5. *Lotus corniculatus*	15	X	FAC
6. *Cirsium arvense*	1		FAC
7. *Rumex crispus*	10		FAC
8.			
9.			
10.			
11.			
	100* = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___		___
FACW species	___		___
FAC species	___		___
FACU species	___		___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No ___

Remarks: *Holcus lanatus* has ZERO tolerance for anaerobic soil conditions and has a minimum root depth of only 6 inches. In accordance with '87 Corp Manual and Regional Supplement procedures, *Holcus lanatus* is identified as non-hydrophytic for this site.

Wetland 1

SOIL

Sampling Point: 1-A

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 5/2	90	10YR 3/4	10	C	PL	Silt loam	Prominent redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes x No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- x Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- x Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes x No ___ Depth (inches): 6

Wetland Hydrology Present? Yes x No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: an artificial ditch was constructed circa 2017 to drain the wetland area to the adjacent roadside ditch at SE 190th Dr (no ditch in 2016; ditch in 2017 on aerial imagery). The ditch was flowing in January 2021. Upland areas are tiled, with at least three drain tiles concentrating at the wetland, based on aerial imagery.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 7928 SE 190th Dr City/County: Gresham/Multnomah Sampling Date: July 11, 2020
Applicant/Owner: Jim Leeper State: OR Sampling Point: Wetland 1-A
Investigator(s): Jason Smith Section, Township, Range: S25 T8S R2W
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): A Lat: 45.464836° Long: -122.466356° Datum: WGS84
Soil Map Unit Name: Powell silt Loam NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation x , Soil x , or Hydrology x significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes x	No ___	**Is the Sampled Area within a Wetland?**	**Yes x No ___**
Hydric Soil Present?	Yes x	No ___		
Wetland Hydrology Present?	Yes x	No ___		

Remarks: Historically, no wetland features are mapped for this study area. Wetland features appear to be an artifact of road construction and land clearing to convert from forestry to agricultural use. Drain lines concentrate precipitation in the lowest point of the site – where the wetland occurs. Drainage is blocked by SE 190th Drive, adjacent to the wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5250)			
1. *Holcus lanatus**	40*	X	FAC*
2. *Juncus effusus*	20	X	FACW
3. *Phalaris arundinacea*	15	X	FACW
4. *Veronica americana*	1		OBL
5. *Lotus corniculatus*	15	X	FAC
6. *Cirsium arvense*	1		FAC
7. *Rumex crispus*	10		FAC
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___		___
FACW species	___		___
FAC species	___		___
FACU species	___		___
UPL species	___	x 5 =	___
Column Totals:	___	(A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
x 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ 5 - Wetland Non-Vascular Plants[1]
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No ___

Remarks: *Holcus lanatus* has ZERO tolerance for anaerobic soil conditions and has a minimum root depth of only 6 inches. In accordance with '87 Corp Manual and Regional Supplement procedures, *Holcus lanatus* is identified as non-hydrophytic for this site.

Due to the small size, the entire wetland area is included in the "plot size" for vegetation analysis. Due to complexity of sampling around the fence, those species at the fence separating the wetland from the adjacent roadside ditch are not included in the calculus, but typically represent FAC.

SOIL

Sampling Point: 1-B

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16"	10YR 6/2	95	7.5YR 5/4	5	C	M	Silt loam	Distinct Redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes x No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- x Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- x Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes x No ___ Depth (inches): 6

Wetland Hydrology Present? Yes x No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: an artificial ditch was constructed circa 2017 to drain the wetland area to the adjacent roadside ditch at SE 190th Dr (no ditch in 2016; ditch in 2017 on aerial imagery). The ditch was flowing in January 2021. Upland areas are tiled, with at least three drain tiles concentrating at the wetland, based on aerial imagery.

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Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	___		___
FACW species	___		___
FAC species	___		___
FACU species	___		___
UPL species	___	x 5 =	___
Column Totals:	___ (A)		___ (B)

Prevalence Index = B/A = ___

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Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes x No ___ Depth (inches): 6

Wetland Hydrology Present? **Yes** x **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

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Appendix C

Photos

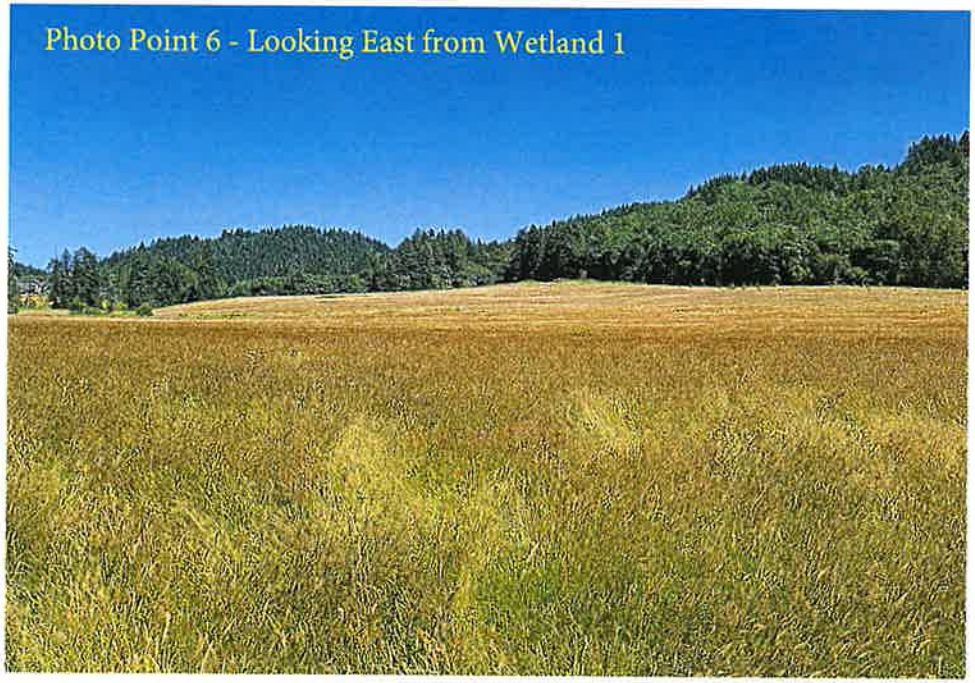


Photo Point 6 - Looking East from Wetland 1


Photo Point 8 - Looking NW from Wetland 1


Photo Point 5 - facing West from Wetland 1 Boundary (through wetland)


Photo Point 7 - Looking West from Wetland 1 east boundary toward new drainage ditch


Photo Point 10 - Facing South


Photo Point 1 - Facing SE toward Wetland 1 Ditch from SE 190th DR


Photo Point 9 - Facing West toward SE 190th Dr

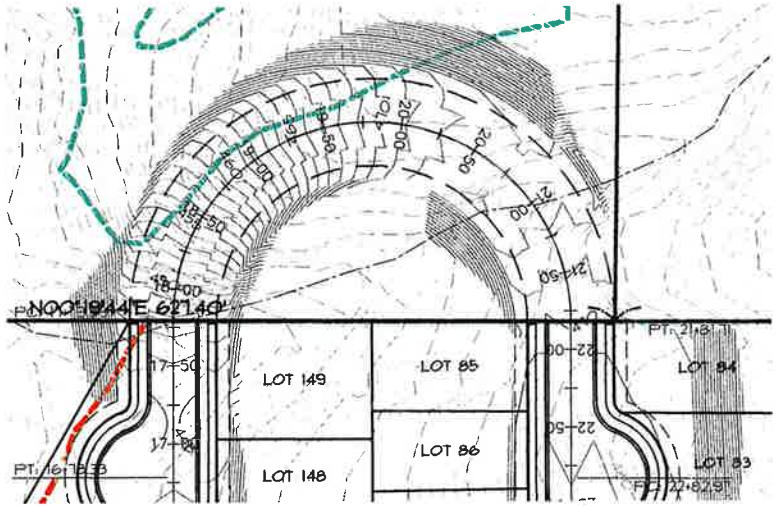

Photo Point 11 - Facing South

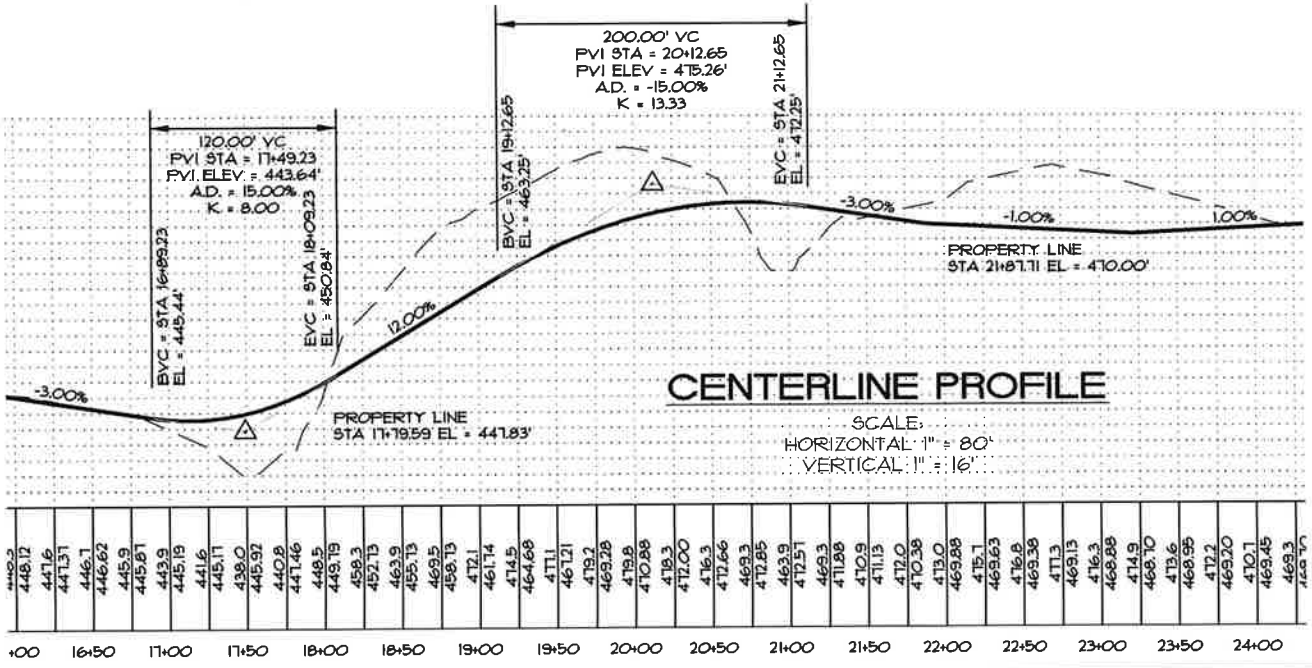

Photo Point 3 - Facing SW toward Wetland


Photo Point 2 - Facing West toward SE 190th DR


Photo Point 4 - Facing NE toward Wetland 1 from SE 190th Dr

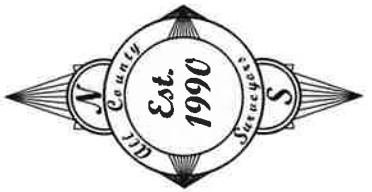
OFFSITE GRADING SKETCH





CENTERLINE PROFILE

SCALE:
HORIZONTAL 1" = 80'
VERTICAL 1" = 16'



SCALE : 1" = 80'

0' 40' 80' 160'

RENEWAL DATE: 12/31/2022

CLIENT : JIM LEEPER

All County Surveyors & Planners, Inc.
Surveying, Planning and Civil Engineering
P.O. Box 955 Sandy, OR 97055
Phone: (503) 668-3151
Fax: (503) 668-4730

FILE: 19-093 Planning.dwg DATE OF PLOT : 08-04-21

Exhibit 2