



April 12, 2022

Mr. Chris Beale, AICP
Senior Planner
City of Puyallup Planning Services
333 South Meridian
Puyallup, WA 98371

Re: Pierce College—Puyallup Parking Lot Expansion Project: Third-Party Review of Critical Areas Report

Dear Mr. Beale:

This letter includes the results from the third-party review of the January 2022 Critical Areas Report (the Report) created by Grette Associates LLC for McGranahan Architects and the Pierce College, Puyallup Campus Parking Lot Expansion Project. The Report investigated the Pierce College property across tax parcel numbers 0419034018, 0419023011, 0419023012, and 0419023013.. Confluence Environmental Company (Confluence) biologists reviewed the Report (Grette Associates LLC 2022) and conducted a site visit to the project property on March 30, 2022. Site photos from this visit are included in Attachment A. The following sections include our findings and recommendations based on the site visit and our review of the Report.

METHODS

In order to verify the findings in the Report, Confluence conducted a brief wetland reconnaissance on the property. This section describes the methods used to identify the presence or absence of wetlands.

For this reconnaissance effort, Confluence verified the presence or absence of wetland indicators at test plot and soil probe locations using the methods described by the U.S. Army Corps of Engineers (Corps) in the Corps of Engineers Wetland Delineation Manual (Corps 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Corps 2010). The Corps typically requires that the following 3 characteristics be present for an area to be identified as a wetland: (1) hydrophytic vegetation, (2) hydric soil, and (3) wetland hydrology. For each criterion, there are several possible indicators that can be used to determine whether the criterion has been met. The indicators were established so that if a wetland were present on-site, sufficient indicators would be observed at any time of the year, including the driest months, to identify a wetland. Since “normal circumstances,” as defined by the Corps (1987), exist on the site, all 3 criteria must be present for an area to be determined a wetland. The test plot data form can be found in Attachment B.

Confluence used the PLANTS Database (NRCS 2022) to provide consistency in scientific naming and the 2018 National Wetland Plant List (Corps 2020) to determine the wetland indicator status of plants.

RESULTS

The following sections outline the findings of the site visit and Report review.

Site Visit

During the site visit, Confluence biologists observed and noted the soil, hydrology, and vegetation conditions at 1 test plot located near the Report's Sample Plot (SP)-1 and SP-2 at the central portion of the proposed northern parking lot. Additional soil probes were used to verify soil and hydrology conditions in the vicinity of SP-1 and SP-2, as well as near SP-5 and SP-6 at Wetland B.

Test Plot (TP)-1 was located immediately adjacent to SP-2 in the central portion of the proposed northern parking lot, just west of College Way and north of the Pierce College Health Education Center. Vegetation at TP-1 was dominated by western red-cedar (*Thuja plicata*), red alder (*Alnus rubra*), black cottonwood (*Populus trichocarpus*), vine maple (*Acer circinatum*), and trailing blackberry (*Rubus ursinus*). This vegetation met the Dominance Test and therefore met the hydrophytic vegetation criterion. The top layer of the soil profile (from 0 to 8 inches) was a very dark brown (10YR 2/2) sandy silt loam with gravel and with no redoximorphic features. Soil in the second later (8-14+ inches) was a brown (10YR 4/3) silty sand with gravel and with no redoximorphic features. This soil profile does not meet any hydric soil indicators, and therefore the hydric soil criterion was not met. Three primary wetland hydrology indicators were observed: High Water Table (A2), Saturation (A3), and Sparsely Vegetated Concave Surface (B8). A secondary indicator, Water-Stained Leaves (B9), was also observed. Therefore, the wetland hydrology criterion was met. Because only 2 of the 3 wetland criteria were met at TP-1, this plot is an upland plot.

Two soil probes were also sampled in the vicinity of the proposed northern parking lot. Soil Prob1 was located between SP-1 and SP-2, and Soil Probe 2 was located near SP-1. Both of these soil probes resulted in similar findings to what was recorded for SP-1, SP-2, and TP-1, including the presence of hydrophytic vegetation and wetland hydrology but without any hydric soil indicators. Therefore, these 2 soil probes were also determined to be representative of an upland location.

Soil Probe 3 was located near SP-5 at the northeastern tip of Wetland B. This soil probe confirmed the presence of indicators for all three wetland criteria, including dominance by obligate wetland vegetation (skunk cabbage [*Lysichiton americanus*]), black (10YR 2/1) soils with a loamy mucky mineral texture, and a mix of wetland hydrology composed of surface water and saturation to surface.

A visual assessment of Wetland A confirmed the majority of the delineation as accurate. However, the presence of wetland indicators, including wetland surface hydrology and hydrophytic vegetation, indicates that the wetland extends beyond the northern delineated boundary. Wetland conditions extend approximately 20 feet beyond the northern edge of the utility corridor.

Visual assessment of Wetland C was sufficient to confirm the edges of the wetland area based on the presence of wetland hydrology (saturation to surface and standing water) and hydrophytic vegetation).

Report Review

The Report was reviewed from a technical standpoint and for completeness according to the regulations outlined in Puyallup Municipal Code (PMC) Chapter 21.06.530, "General critical area report requirements."

Technical Review

During our field investigation, we observed some issues with sample plot and delineation flag labeling. In the field, the sample plot flags that correspond with Wetland A are mislabeled. The wetland sample plot that should be called SP-3 per Report Appendix A and the wetland determination forms was actually labeled as SP-1 in the field. Similarly, the upland sample plot that should be called SP-4 per Report Appendix A and the wetland determination forms was actually labeled as SP-2 in the field. Additionally, the map of the sample plots in Report Appendix A on Sheet 2 shows both sample plots are labeled as SP-5, although the upland sample plot should be SP-6 per the wetland determination forms.

Upon reviewing the November 2021 wetland determination data forms (Report Appendix B) in the field, several incorrect plant species were included on the forms as opposed to what was present on-site during the March 2022 visit. Note that due to the life history of these species, the discrepancy between the species recorded in November 2021 and those observed in March 2022 is likely a case of misidentification and not due to die-off or dormancy. The form associated with SP-1 included 65% Sitka willow (*Salix sitchensis*). No willow was present within the area surrounding the plot during the March 2022 site visit, but a dense stand of vine maple was present. Both Sitka willow and vine maple have a wetland indicator status of facultative (FAC), so the wetland determination data form is not impacted by this misidentification. The SP-2 form included beaked hazelnut (*Corylus cornuta*) and sword fern (*Polystichum munitum*) when neither was present surrounding the sample plot during the March 2022 site visit. It is possible that these species were confused with vine maple and licorice fern (*Polypodium glycyrrhiza*) or lady fern (*Athyrium filix-femina*). The beaked hazelnut was not a dominant species and therefore did not impact the Dominance Test. However, if the dominant plant identified as sword fern (a facultative upland [FACU] species) was actually licorice fern (no wetland indicator status) or lady fern (FAC), then the Dominance Test would be impacted by this misidentification. The

form associated with SP-3 includes 70% reed canarygrass (*Phalaris arundinacea*), when none was found at the sample plot location during the March 2022 site visit. However, a patch of manna grass (likely *Glyceria elata*) was observed at this sample plot. Both of these species are FAC or wetter, so the Dominance Test would not be impacted.

During the March 2022 site visit, the Wetland A delineation flags A-16 and A-17 were observed at the southern edge of the utility corridor. This was in conflict with the delineated boundary shown for Wetland A in Report Appendix A, Sheet 1, which shows the wetland extending through the utility corridor. The utility corridor is a monoculture of reed canarygrass with standing water throughout the area of wetland mapped on Sheet 1, so the Wetland A delineation flags are incorrect. During the site visit, it was observed that wetland hydrology and vegetation extend past the utility corridor to the north by at least 20 feet. Standing water and red-osier dogwood (*Cornus sericea*), salmonberry (*Rubus spectabilis*), and various willow species (*Salix* spp.) were observed in this area. This extension of Wetland A is not represented in the Report or in Appendix A.

The delineated boundaries of Wetland B and C were correct.

The Report Sections 2, 6.1, and 6.4, as well as Appendix C—wetland rating form for Wetland A—state that Wetland A is a slope wetland. However, this wetland does not solely meet the slope hydrogeomorphic classification. The central and northern portions of this wetland are depressional, and there are areas of substantial natural water impoundment within the wetland. A combination slope/depressional wetland should be rated as a depressional wetland for the water quality functions and hydrologic functions section of this form. For section H1.1 of the rating form and Report Section 6.1, we observed a significant canopy of trees within and overhanging the wetland area where shrubs were also present. Therefore, the Cowardin classes for Wetland A should be emergent and forested, with the forested class containing 3 out of 5 strata, for a total of 2 points. For Section H1.2, the wetland had substantial standing water in late March, so it has hydroperiods of seasonally flooded or inundated as well as saturated only, for a total of 1 point. For Section H1.5, the wetland may contain less than 25% cover of invasive species depending on the actual wetland area, which was not flagged correctly in the field, and this section should be updated accordingly. Report Section 6.1 states that dominant vegetation in Wetland A included Himalayan blackberry (*Rubus armeniacus*). However, per the SP-3 data form (Appendix B), Himalayan blackberry is only 18% of the herb stratum and not counted as a dominant species. During the March 2022 site visit, Himalayan blackberry was not observed to be a dominant species throughout the entire wetland, and the Report section should be updated appropriately.

The wetland rating form Section D1.3 for Wetland B states that the wetland has persistent, ungrazed plants over 1/2 of the wetland area. However, due to the dense tree and shrub cover in this wetland, it is more appropriate to state that the wetland has persistent, ungrazed plants over 95% of the area for a total of 5 points. For Section D1.4 of the Wetland B rating form, the wetland had substantial standing water, and it is more appropriate to call the area of seasonal

ponding over half of the total wetland area for a total of 4 points. For Section H1.5, invasive plants were found to cover less than 25% of the wetland area in every stratum, so 3 points is appropriate.

The wetland rating form Section D1.1 for Wetland C states that the wetland has an intermittently flowing stream or ditch, or a highly constricted permanently flowing outlet. The wetland outlet is not shown on any figure in Report Appendix C, as is required for the rating form (see Page 2: *Maps and figures required to answer questions correctly for Western Washington*). Please provide the location of this outlet on a figure. For Section D4.2, during the site visit, the water level in the wetland was 1.5 feet deep. Therefore, the depth of storage during wet periods is greater than 0.5 feet, and 3 points is appropriate. For Section D6.1, the explanation, “Doesn’t retain much surface water,” is not sufficient justification for concluding that the existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. The storage in the wetland in March 2022 was over a foot. The wetland is upgradient of areas that experience surface flooding problems due to the Puyallup River, and flooding from groundwater is also an issue in the subbasin. Therefore, a total of 1 point is appropriate for this question.

For all wetlands—A, B, and C—Section H2.1 and H2.2 of the rating form did not include calculations to indicate how the accessible and undisturbed habitat percentages were determined, and all forms say “0.00%” in both sections. These calculations should be included here on the form. Finally, per Section H3.1 of each form, the Washington Department of Fish and Wildlife (WDFW) Priority Habitat of Biodiversity Areas and Corridors may apply to the natural area where Wetlands A, B, and C occur.

The Report Section 6.0 states that the area along College Way where the proposed northern parking lot would be located (i.e., the location of SP-1 and SP-2) appears to be a man-made stormwater pond. Through an evaluation of historical aeriels and the dense tree canopy from 1998 to present, it does not appear that this location was ever cleared and graded (Pierce County 2022).

Code Compliance Review

Per PMC 21.06.530(1)(a), a critical areas report is required to include a detailed description of the critical areas and buffers on or adjacent to the project site, including the size, type/classification, condition, disturbance history, and functions and values. This condition has been met in the report based on the thorough examination of the project property.

PMC 21.06.530(1)(b) requires a site plan for the development proposal showing the proposed development footprint and clearing limits and all critical areas and buffers. This condition has been met in the report based on the Appendix A: Wetland Delineation Map that shows the development footprint and mapped critical areas.

PMC 21.06.530(1)(c) requires a description of the proposed stormwater management plan for the development and consideration of impacts to drainage alterations. No stormwater management plan was included with this Report.

Per PMC 21.06.530(1)(d), the report should include the dates, names, and qualifications of the persons preparing the report and documentation of any fieldwork performed on the site. This condition has been met in Report Section 9.

Per PMC 21.06.530(1)(e), detailed assessment of the potential impacts to critical areas and buffers resulting from site development is required. This condition is met in Report Section 6.5, Project Compliance. The proposed project has been designed to avoid impacts to the surrounding wetland features and their buffers, so there will be no impacts.

Per PMC 21.06.530(1)(f), the report should also include an analysis of site development alternatives and measures taken to avoid and minimize critical area impacts. The Report does not discuss avoidance and minimization measures or any development design alternatives.

SUMMARY

In summary, we found several instances of conflicting information in the 2022 Report. We recommend that Grette Associates LLC update the Report as follows to address the issues detailed in this letter:

- Revise the map in Appendix A on Sheet 2 to show the correct sample plot numbers.
- Revise the wetland determination data forms in Appendix B to correct the misidentified plant species.
- Reassess and revise the delineation of Wetland A to include the wetland area to the north of the utility corridor, and update the field-flagging, Appendix A maps, and Wetland A rating form accordingly.
- Rate Wetland A as a depressional wetland with a Cowardin classification of emergent and forested.
- Update the wetland rating form sections H1.2 and H1.5 for Wetland A as described above.
- In Section 6.1, correct the misidentification of Himalayan blackberry as a dominant species in Wetland A.
- Update the wetland rating form sections D1.3, D1.4, and H1.5 for Wetland B as described above.

- Update the wetland rating form sections D4.2 and D6.1 for Wetland C as described above.
- For Wetland C, update or create a map figure showing the location of the wetland's outlet, as required.
- For all three wetland rating forms, update sections H2.1 and H2.2 to show the calculations of accessible and undisturbed habitat percentages. Update the associated figure as needed to call out the level of land-use intensity.
- For the wetland rating forms for all three wetlands, update H3.1 to include the WDFW Priority Habitat of Biodiversity Areas and Corridors.
- Once the rating forms have been updated, reassess the final rating scores and associated buffers to ensure that the project still meets the requirements of PMC 21.06.530(1)(e).
- Provide additional information to support the statement that the location where the proposed northern parking lot would be constructed is a man-made stormwater pond.
- Per PMC 21.06.530(1)(c), provide a stormwater management plan with the Report.
- Per PMC 21.06.530(1)(f), include an analysis of site development alternatives and measures taken to avoid and minimize critical area impacts (i.e., best management practices).

Respectfully yours,



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Attachment A: Site Photos

Attachment B: Wetland Determination Data Form

REFERENCES

- Corps (U.S. Army Corps of Engineers). 1987. Corps of Engineers wetlands delineation manual. Corps Environmental Laboratory, Waterways Experiment Station, Vicksburg, Mississippi. Technical Report Y-87-1.
- Corps. 2010. Regional supplement to the Corps of Engineers wetland delineation manual: western mountains, valleys, and coast region (Version 2.0). U.S. Army Engineer Research and Development Center Environmental Laboratory, Vicksburg, Mississippi. ERDC/EL TR-08-13.
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- Pierce County. 2022. Pierce County Public GIS [online database]. Pierce County, Tacoma, Washington. Available at: <https://matterhornwab.co.pierce.wa.us/publicgis/> (accessed March 30, 2022).



Photo 1—Interior of Wetland A with impounded water/ponding caused by a natural berm of vegetation.



Photo 2—A patch of manna grass (likely *Glyceria elata*) located within Wetland A near SP-3.



Photo 3—View of the utility corridor at the northern portion of Wetland A, looking northeast. The wetland delineation flags were observed to stop short of the corridor (to the south).



Photo 4—View of the northern portion of Wetland A that extends across the utility corridor and into the natural vegetation, looking northwest.



Photo 5—Soil profile at Test Plot (TP)-1.



Photo 6—View to the north from TP-1.



Photo 7—View to the east from TP-1.



Photo 8—View to the south from TP-1.



Photo 9—View to the west from TP-1.



Photo 10—Hydrology at TP-1.



Photo 11—Surface condition at Soil Probe 1, including water stained leaves and a sparsely-vegetated concave surface



Photo 12—Soils and hydrology observed at Soil Probe 1.



Photo 13—Surface condition and surrounding vegetation at Soil Probe 2.



Photo 14—Soils and hydrology at Soil Probe 2.



Photo 15—View of the portion of Wetland C in the utility corridor, looking northeast.



Photo 16—View of Wetland B from SP-5, looking south.



Photo 17—Soils and hydrology at Soil Probe 3.

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

Project/Site: Pierce College City/County: Puyallup/Pierce Sampling Date: 3/30/22
 Applicant/Owner: _____ State: WA Sampling Point: TP-1
 Investigator(s): KAM/SPV Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____
 Subregion (LRR): A Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 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 <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Is the Sampled Area within a Wetland? | Yes _____ | No <input checked="" type="checkbox"/> | |
| Hydric Soil Present? | Yes _____ | No <input checked="" type="checkbox"/> | | | | |
| Wetland Hydrology Present? | Yes <input checked="" type="checkbox"/> | No _____ | | | | |
| Remarks: <u>overcast w/ sunbreaks</u> <u>@ GA SP-2 location</u> | | | | | | |

VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: <u>15'</u>) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: | |
|---|------------------|-------------------------------------|------------------|--|-----------------|
| 1. <u>Red cedar</u> | <u>15</u> | <input checked="" type="checkbox"/> | <u>FAC</u> | Number of Dominant Species That Are OBL, FACW, or FAC: | <u>4</u> (A) |
| 2. <u>red alder</u> | <u>15</u> | <input checked="" type="checkbox"/> | <u>FAC</u> | Total Number of Dominant Species Across All Strata: | <u>5</u> (B) |
| 3. <u>Co Hornwood</u> | <u>10</u> | <input checked="" type="checkbox"/> | <u>FAC</u> | Percent of Dominant Species That Are OBL, FACW, or FAC: | <u>80</u> (A/B) |
| 4. _____ | _____ | _____ | _____ | Prevalence Index worksheet: | |
| <u>35</u> = Total Cover | | | | Total % Cover of: _____ Multiply by: _____ | |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | OBL species _____ x 1 = _____ | |
| 1. <u>Vine maple</u> | <u>100</u> | <input checked="" type="checkbox"/> | <u>FAC</u> | FACW species _____ x 2 = _____ | |
| 2. <u>Salmonberry</u> | <u>5</u> | _____ | <u>PAC</u> | FAC species _____ x 3 = _____ | |
| 3. _____ | _____ | _____ | _____ | FACU species _____ x 4 = _____ | |
| 4. _____ | _____ | _____ | _____ | UPL species _____ x 5 = _____ | |
| 5. _____ | _____ | _____ | _____ | Column Totals: _____ (A) _____ (B) | |
| _____ = Total Cover | | | | Prevalence Index = B/A = _____ | |
| Herb Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Indicators: | |
| 1. _____ | _____ | _____ | _____ | 1 - Rapid Test for Hydrophytic Vegetation | |
| 2. _____ | _____ | _____ | _____ | <input checked="" type="checkbox"/> 2 - Dominance Test is >50% | |
| 3. _____ | _____ | _____ | _____ | 3 - Prevalence Index is ≤3.0 ¹ | |
| 4. _____ | _____ | _____ | _____ | 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) | |
| 5. _____ | _____ | _____ | _____ | 5 - Wetland Non-Vascular Plants ¹ | |
| 6. _____ | _____ | _____ | _____ | Problematic Hydrophytic Vegetation ¹ (Explain) | |
| 7. _____ | _____ | _____ | _____ | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| 8. _____ | _____ | _____ | _____ | | |
| 9. _____ | _____ | _____ | _____ | | |
| 10. _____ | _____ | _____ | _____ | | |
| 11. _____ | _____ | _____ | _____ | | |
| Woody Vine Stratum (Plot size: <u>5'</u>) | | | | Hydrophytic Vegetation Present? | |
| 1. <u>trailing BB</u> | <u>1</u> | _____ | <u>FACW</u> | Yes <input checked="" type="checkbox"/> | No _____ |
| 2. _____ | _____ | _____ | _____ | | |
| _____ = Total Cover | | | | | |
| % Bare Ground in Herb Stratum <u>80-85</u> | | | | | |
| _____ = Total Cover | | | | | |
| Remarks: _____ | | | | | |

SOIL

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

| Depth (inches) | Matrix | | Redox Features | | | | Texture | Remarks |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|---------------------------|---------|
| | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | | |
| 0-8 | 10YR 2/2 | 100 | | | | | Sandy silt loam w/ gravel | |
| 8-14 | 10YR 4/3 | 100 | | | | | Silty sand w/ gravel | |
| 8-12 ¹ | 2.5Y 5/3 | | 7.5YR 4/6 | | C M | | | |
| 0-8 | 10YR 2/2 | 100 | | | | | | |

Soil Pit 1

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

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

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

Indicators for Problematic Hydric Soils³:

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

³Indicators 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

Remarks: Soil pit 1 between SP 1 & SP 2

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 _____ Depth (inches): _____
 Water Table Present? Yes No _____ Depth (inches): 8"
 Saturation Present? (includes capillary fringe) Yes No _____ Depth (inches): 0

Wetland Hydrology Present? Yes No _____

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

Remarks: