Appendix K

STREAM AND WETLAND DELINEATION

Barrelhead Solar, LLC

Wayne County, Kentucky



Wetland and Stream Delineation Report for the Proposed Barrelhead Solar Project in Wayne County, Kentucky



Prepared for: Barrelhead Solar, LLC

11 August 2025

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ACRONYMS AND ABBREVIATIONS

APT Antecedent Precipitation Tool

CWA Clean Water Act

FEMA Federal Emergency Management Agency

GPS Global Positioning System

NHD National Hydrography Dataset

NLCD National Land Cover Database

NRCS Natural Resource Conservation Service

NWI National Wetlands Inventory

OHWM Ordinary High-Water Mark

RPW Relatively Permanent Waters

USACE United States Army Corps of Engineers

USDA United States Department of Agriculture

USFWS United States Fish and Wildlife Service

USGS United States Geological Survey

WOTUS Waters of the United States



1 Introduction

Barrelhead Solar, LLC, (Barrelhead or the Applicant) contracted Copperhead Environmental Consulting, Inc. (Copperhead) to locate and delineate wetlands, streams, ponds, and other aquatic resources in connection with the proposed Barrelhead Solar project (Project) in Wayne County, Kentucky. The Project consists of an approximately 307-acre Study Area (*Figure 1 – Overview Map* in Appendix A). The field delineation was conducted on August 17, 2024 through August 20, 2024, by Copperhead employees D. Hunter and I. Bentley, and on September 30, 2024, by Copperhead employees I. Bentley and S. Davis.

1.1 Site Conditions

The Project Area is located within the Eastern Mountains and Piedmont physiographic province, southwest of Lake Cumberland. Vegetation communities were predominantly disturbed, nonnative communities, comprised primarily of agricultural/disturbed grassland species, with occasional areas of mesic forest and floodplain wetlands. The agricultural/disturbed grassland areas were comprised primarily of tall fescue (*Schedonorus arundinaceous*) and clover (*Trifolium* sp.). The mesic forests were dominated by eastern redcedar (*Juniperus virginiana*), sugar maple (*Acer saccharum*), wingstem (*Verbesina alternifolia*), and non-native shrubs and herbs such as Chinese privet (*Ligustrum sinense*) and Japanese stiltgrass (*Microstegium vimineum*). Project Area soils were generally characterized as silty loams, with some sandy/silty clay loam profiles occurring within wetland areas and alluvial areas adjacent to streams. One United States Department of Agriculture (USDA)-mapped hydric soil unit is present within the Project Area: Newark silt loam, occasionally flooded (Ne), totaling approximately 5.4 acres (1.6%) of the Study Area (USDA NRCS 2021; Soil Survey Staff 2022). See *Figure 7 – USDA SSURGO Soil Classifications* and the Custom Soil Resource Report for Wayne County, Kentucky: Birch Creek Barrelhead Solar in Appendix A.

The majority of the Project Area is actively maintained for agriculture practices such as cattle and horse pasture and row crop production. Some forested buffers exist on steep slopes within ravines and wetlands with poorly consolidated soils. Based on a review of the United States Army Corps of Engineers (USACE) Antecedent Precipitation Tool (APT), climatic conditions were considered normal for the location and time of year during the field survey (Appendix C). Representative photographs showing site conditions at the wetland determination data point and stream assessment point locations are included in Appendix B.

2 Methods

2.1 Preliminary Desktop Analysis

Prior to the field survey, a preliminary desktop analysis of available information was conducted using the following sources:



- National Land Cover Database (NLCD) (Dewitz and United States Geological Survey [USGS] 2024)
- Google Earth Pro (2025)
- Federal Emergency Management Agency (FEMA) National Flood Hazard Map (FEMA 2009)
- National Wetlands Inventory (NWI) Map (United States Fish and Wildlife Service [USFWS] 2021)
- The National Hydrography Dataset (NHD) (USGS 2023)
- USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (Soil Survey Staff 2022).

The locations of surface waters, wetlands, and floodplains identified during the preliminary desktop analysis were mapped (*Figure 3 – Existing Hydrology* and *Figure 4 – FEMA Chance Flood Hazard* in Appendix A) and used as a baseline reference that was compared, verified, and/or modified based on actual conditions observed during the field investigations using the methodologies outlined in Sections 2.2 and 2.3.

2.2 Methods for Delineating Wetlands

Copperhead conducted field investigations to identify the presence and extent of wetlands. When present, the boundaries of wetlands within the Project Area were delineated in accordance with the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers' Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0) (USACE 2012). Ultimately, wetland delineations were based on the presence of wetland hydrology, hydrophytic (wetland) vegetation, and hydric soils. Wetlands were described using Cowardin classes (Cowardin et al. 1979). The Cowardin Classification System was adopted by the USFWS and became a National Standard in 1996 for federal agencies to describe the type of wetland feature present (FGDC 2013).

When delineating the extent of wetlands, observations of the presence of wetland hydrology indicators were initially made. Vegetation species at each wetland determination data point were then identified, and the wetland indicator status of each plant species was determined according to the 2022 National Wetland Plant List (USACE 2022). Finally, soil profiles within each respective community were sampled to a depth of approximately 18 inches to determine whether hydric soil indicators were present. Soil colors were documented using a Munsell Soil Color Chart (Munsell Color 2010). Areas with the presence of all three wetland indicators (i.e., wetland hydrology, hydrophytic vegetation, and hydric soils) were delineated as wetlands. Areas with one or more parameters were considered "significantly disturbed" or "naturally problematic" based on the 1987 manual, and the Eastern Mountains and Piedmont (EMP) regional supplement were evaluated on a case-by-case basis.



At locations where wetland indicators were met (i.e., wetland hydrology, hydrophytic vegetation, and hydric soils were present), a USACE Wetland Determination Data Form for the EMP region was completed. Each data form included supporting rationales for determining the presence or absence of each wetland parameter.

Ponds within the Project Area were identified and differentiated from wetlands based on water depth, vegetation presence, and (where applicable) vegetation type. Features with only open waters or deepwater habitats were considered ponds, and a wetland fringe surrounding each pond was delineated separately wherever present.

The wetland boundaries within the Project Area were delineated using Trimble global positioning system (GPS) handheld DA-2 and R-1 units. GPS data were collected using the ArcGIS Online Field Maps application. The GPS points of wetland boundaries and data point locations (including coordinates and attribute information) were subsequently imported into ESRI ArcGIS software for creating maps of delineated wetlands and calculating wetland acreages.

2.3 Methods for Assessing Streams

Hydrologic features other than wetlands (e.g., stream channels) were delineated in the field by identifying the ordinary high-water mark (OHWM). OHWM is defined as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (33 CFR 328.3(c)(7)).

The Kentucky Energy and Environmental Cabinet has not released a state-specific methodology for evaluating the frequency and duration of flow within the state. To determine the flow regime for each stream (e.g. intermittent, perennial or ephemeral channel), Copperhead evaluated watercourses using methodologies derived from the Tennessee Department of Environment and Conservation (TDEC) Guidance for Making Hydrologic Determinations (Barbour et al. 1999, TDEC 2020) and the North Carolina Stream Assessment Method (NC SAM) Draft User Manual (NC SFAT and USACE 2013). Features meeting the definition of streams were assessed for flow regime (i.e., ephemeral, intermittent, or perennial) and listed according to their Cowardin classification (1979). All natural linear features with a defined bed and bank, OHWM, intermittent or perennial flow regime, and observed or mapped hydrologic connection to navigable waters downstream were considered jurisdictional waters of the United States (WOTUS). Locations of delineated streams were evaluated and recorded with a Trimble DA2 GPS unit.



2.4 Jurisdictional Statuses

2.4.1 Federal Jurisdiction

Jurisdictional statuses were defined for each delineated resource using the most up-to-date federal guidance current as of Monday, August 11, 2025. On March 12, 2025, revised guidance from the USACE and the U.S. Environmental Protection Agency (EPA) was published in the Federal Register, conforming to rulings from the case of *Sackett vs. EPA* regarding determinations of the jurisdictional status for wetlands and waterbodies. The 2025 guidance expanded on the previous conforming Guidance from September 2023, which removed the significant nexus standard introduced previously under the Rapanos rules and eliminated the portion of the January 2023 definitions that considered all interstate waters jurisdictional. The 2025 guidance officially states that only wetlands and streams with direct, continuous, relatively-permanent surface connections to navigable WOTUS were considered jurisdictional. As such, federal jurisdictional statuses for wetlands and waters were based on the relative permanence of a feature, and the presence of a direct surface connection between wetlands, relatively permanent waters (RPWs), and downstream WOTUS. Only those waters with relatively permanent stagnant or flowing water and a continuous overland connection to downstream navigable waters were deemed jurisdictional at the federal level.

3 RESULTS

3.1 Desktop Analysis Results

The following information on soils and hydrology was gathered to inform and prepare the field team completing the delineation.

3.1.1 Site Soils

A review of the NRCS Web Soil Survey and a Custom Soil Resource Report for the Project Area identified eight soil map units (Soil Survey Staff 2022; USDA NRCS 2025). Of these, one soil map unit has a hydric soil rating: Newark silt loam, occasionally flooded (Ne). The hydric soil map unit occupies approximately 5.4 acres (1.6%) of the Study Area. See *Figure 7 – USDA SSURGO Soil Classifications* and the Custom Soil Resource Report for Wayne County, Kentucky: Birch Creek Barrelhead Solar in Appendix A.

3.1.2 Site Hydrology

The Project Area is within the Lower Otter Creek (Hydrologic Unit Code [HUC] 051301030502) subwatershed. According to the KY-RS-6: Jamestown 9.0 SSW precipitation gauge located near Monticello, Kentucky, the last significant precipitation event that occurred near the Project Area was recorded on July 31, 2024, with a total of 1.33 inches (Weather Underground 2025). The NWI features in this area were photo-interpreted using 1:58,000 scale color infrared imagery, most recently in 2021, and the NHD features were interpreted at a 1:24,000 scale, most recently in 2023



(USFWS 2021; USGS 2023). The Project Area includes three freshwater ponds (PUBHh) and two riverine features (*Figure 3 – Existing Hydrology* in Appendix A).

3.2 Field Survey Results

The following sections provide the field survey results for the wetland and stream delineation. Photographic documentation of the site and delineated aquatic features is provided in Appendix B. Results from the APT are provided in Appendix C. USACE Wetland Determination Data Forms are provided in Appendix D. Resumes of Copperhead personnel who completed the delineation are included in Appendix E.

3.2.1 Wetland Delineation

The field survey resulted in the identification of 12 wetlands, 22 streams, and one pond within the Project Area (*Figure 6.1-6.6 – Wetland Delineation Overview* in Appendix A). Classifications and size/length of each delineated feature are described in Table 1



Table 1. Summary of delineated aquatic resources within the Barrelhead Solar project Project Area, Wayne County, KY.

| Feature Name | Latitude | Longitude | Feature Size (acres) | Feature Length (lf) | Cowardin Code ¹ | HGM Code | JD Type ² |
|--------------|------------|-------------|-------------------------|------------------------|-------------------------------|----------|----------------------|
| WAE | 36.781170° | -85.007088° | 0.01 | - | PEM | RIVERINE | Isolated |
| WAH | 36.783647° | -85.005467° | 0.24 | - | PFO | DEPRESS | Isolated |
| WAI | 36.783622° | -85.006985° | 0.07 | - | PFO | DEPRESS | Isolated |
| WAJ | 36.772205° | -85.009243° | 0.71 | - | PFO | RIVERINE | Jurisdictional |
| WAK | 36.772695° | -85.009540° | 0.01 | - | PFO | RIVERINE | Jurisdictional |
| WAL | 36.773685° | -85.000566° | 0.04 | - | PFO | RIVERINE | Jurisdictional |
| WAM | 36.777149° | -85.004052° | 0.03 | - | PFO | RIVERINE | Jurisdictional |
| WAN | 36.776612° | -85.008998° | 0.04 | - | PFO | RIVERINE | Jurisdictional |
| WAO | 36.776872° | -85.009604° | 0.05 | - | PEM | RIVERINE | Jurisdictional |
| WAP | 36.776732° | -85.010344° | 0.05 | - | PEM | DEPRESS | Isolated |
| WBA | 36.777954° | -85.012084° | 0.03 | - | PEM | RIVERINE | Jurisdictional |
| WBB | 36.778184° | -85.007049° | 0.25 | - | PFO | DEPRESS | Isolated |
| PAB | 36.782973° | -85.010168° | 1.05 | - | PUB | DEPRESS | Isolated |
| SAF - | 36.783678° | -85.005235° | - | 2018.57 | R6 (Ephemeral) | - | Ephemeral |
| SAF | 36.783673° | -85.006918° | - | 1986.09 | R4 (Intermittent) | - | Jurisdictional |
| SAJ | 36.772716° | -85.009567° | - | 98.50 | R4 (Intermittent) | - | Jurisdictional |



| Feature Name | Latitude | Longitude | Feature Size (acres) | Feature Length (lf) | Cowardin Code ¹ | HGM Code | JD Type ² |
|--------------|------------|-------------|-------------------------|------------------------|-------------------------------|----------|----------------------|
| SAK | 36.772337° | -85.007167° | - | 208.13 | R6 (Ephemeral) | - | Ephemeral |
| SAL | 36.772264° | -85.005242° | - | 177.10 | R4 (Intermittent) | - | Jurisdictional |
| SAM | 36.772202° | -85.004951° | - | 102.22 | R4 (Intermittent) | - | Jurisdictional |
| SAN | 36.772551° | -85.002650° | - | 18.43 | R4 (Intermittent) | - | Jurisdictional |
| SAO | 36.773316° | -85.001054° | - | 89.01 | R6 (Ephemeral) | - | Ephemeral |
| SAP | 36.781573° | -85.005021° | - | 312.32 | R6 (Ephemeral) | - | Ephemeral |
| SAQ - | 36.781222° | -85.007102° | - | 92.72 | R6 (Ephemeral) | - | Ephemeral |
| JAQ | 36.780035° | -85.004248° | - | 1318.39 | R4 (Intermittent) | - | Jurisdictional |
| SAR | 36.781712° | -85.006203° | - | 262.32 | R6 (Ephemeral) | - | Ephemeral |
| SAS | 36.781555° | -85.006423° | - | 214.98 | R6 (Ephemeral) | - | Ephemeral |
| SAT | 36.779816° | -85.005677° | - | 472.71 | R6 (Ephemeral) | - | Ephemeral |
| SAU | 36.772098° | -85.010709° | - | 7252.76 | R3 (Perennial) | - | Jurisdictional |
| SAV | 36.773231° | -85.010151° | - | 388.99 | R6 (Ephemeral) | - | Ephemeral |



| Feature Name | Latitude | Longitude | Feature Size (acres) | Feature Length (lf) | Cowardin Code ¹ | HGM Code | JD Type ² |
|------------------------|------------|------------------------------|-------------------------|------------------------|-------------------------------|-----------|---------------------------|
| SAW | 36.772897° | -85.004096° | - | 135.33 | R6 (Ephemeral) | - | Ephemeral |
| SAX | 36.774006° | -84.999223° | - | 113.24 | R4 (Intermittent) | - | Jurisdictional |
| CAV | 36.777761° | -85.012098° | - | 1927.96 | R4 (Intermittent) | - | Jurisdictional |
| SAY - | 36.775505° | -85.006185° | - | 2052.40 | R3 (Perennial) | - | Jurisdictional |
| SAZ - | 36.779822° | -85.009032° | - | 1139.69 | R6 (Ephemeral) | - | Ephemeral |
| SAZ | 36.77745° | -85.005341° | - | 1701.52 | R4 (Intermittent) | - | Jurisdictional |
| SBA | 36.778397° | -85.002642° | - | 234.39 | R4 (Intermittent) | - | Jurisdictional |
| SBB | 36.777589° | -85.006213° | - | 243.79 | R6 (Ephemeral) | - | Ephemeral |
| SBD | 36.777428° | -85.005400° | - | 68.42 | R6 (Ephemeral) | - | Ephemeral |
| SBM | 36.771876° | -85.008116° | - | 18.93 | R4 (Intermittent) | - | Jurisdictional |
| 0.91 acres JD Wetlands | | 1.67 acres Isolated Wetlands | | | 17,001.93 lf JI |) Streams | 5,646.96 lf ephemerals |

¹Classifications are based on Copperhead's professional judgment of actual field conditions.

²Jurisdictional determinations and boundaries, when presented, are preliminary and are subject to final verification by the USAC



Palustrine Emergent (PEM) Wetlands

Palustrine emergent (PEM) wetlands commonly appeared as small, ponded depressions within the surrounding landscape or along stream banks. These wetlands frequently exhibited some signs of disturbance resulting from runoff and erosion from agricultural practices and from cattle trampling. The PEM wetlands identified within the Project Area were dominated by wetland vegetation such as lamp rush (*Juncus effusus*), Japanese stilt grass (*Microstegium vimineum*), and mild water-pepper (*Persicaria hydropiper*). Soil profiles generally consisted of sandy clay loam and silty clay loam soils, with some having fine sandy loams within the first five inches of the profile. Common hydrology indicators included drainage patterns, surface water, and geomorphic position. USACE Wetland Determination Forms can be found in Appendix D.

Palustrine Forested (PFO) Wetlands

Palustrine forested (PFO) wetlands commonly appeared as depressions within the surrounding landscape or within ditches along streams. Disturbances within PFO wetlands consisted of cattle trampling in areas without cattle exclusion, though not as frequent as the PEM wetlands. The PFO wetlands identified within the Project Area supported a mix of wetland and upland vegetation consisting primarily of a canopy and midstory of black willow (*Salix nigra*), American sycamore (*Platanus occidentalus*), slippery elm (*Ulmus rubra*), spicebush (*Lindera benzoin*), and common pawpaw (*Asimina triloba*). When present, the herbaceous layer was sparse, yet diverse. Soil profiles generally consisted of silty clay loam and clay loam soils, with the occasional sandy clay loam. Common hydrologic indicators included surface water, saturation, and oxidized rhizospheres along living roots. USACE Wetland Determination forms can be found in Appendix D.

Ponds (PUB)

The PUB feature appeared as an isolated pond characterized as an open water habitat of unknown depth. Hydrologic inputs for this feature are received from overland flow within the Project Area, and no obvious culverting or continuous, relatively permanent overland connection to downstream waters was observed during surveys. Vegetation was not present within the PUB feature at the time of the survey, and no fringe wetlands were present along the boundary. Soils were not sampled within the PUB feature due to saturation.

Ephemeral (R6) Drainages

Thirteen (13) ephemeral drainage features feed into tributaries of the Cumberland River. The drainage features exhibit weak characteristics of both bed and bank and have the potential to erode in areas of open pasture. Average OHWM width varies from one to three feet, and standing or flowing water was primarily absent in the channels during normal conditions at the time of survey (USACE 2023). Additionally, no aquatic organisms were observed while assessing the streams.



Intermittent (R4) Streams

Eleven (11) intermittent streams drain into tributaries of the Cumberland River, including SBA (Pott's Creek). The streams exhibit characteristics of both bed and bank, and exposed bedrock and signs of groundwater input from seeps/springs were observed frequently throughout the surveys. Average OHWM width varies from three to seven feet, and standing or flowing water was present in portions of each channel during normal conditions at the time of survey (USACE 2023). No fish were noted while assessing the streams, but common, more tolerant macroinvertebrates were occasionally found in the intermittent channels.

Upper Perennial (R3) Streams

Two (2) perennial streams ultimately feed into the Cumberland River. The streams exhibited strong characteristics of both bed and bank, and the average OHWM widths vary from seven to 15 feet. Continuous flowing water was present in the channel of each perennial stream during normal conditions at the time of survey (USACE 2023). Fish and macroinvertebrates were observed in abundance while assessing the streams for flow regime.

4 CONCLUSIONS

It is Copperhead's professional judgment that the ProjectArea contains 12 wetlands, one pond, and 22 streams. Of the wetlands identified, seven wetlands possessed a relatively permanent downstream connection to other waters. Therefore, these features would likely be considered jurisdictional under Section 404 of the Clean Water Act (CWA). The remaining five wetlands lack a relatively permanent connection to downstream waters. Therefore, these features would be considered isolated and would likely be non-jurisdictional under Section 404 of the CWA.

Of the 22 linear features identified within the Project Area, 14 possess a relatively permanent flow of water and would likely be considered jurisdictional under Section 404 of the CWA. The remaining linear features are ephemeral drainages that appear to flow only in direct response to precipitation and would likely be considered non-jurisdictional under Section 404 of the CWA.



5 LITERATURE CITED

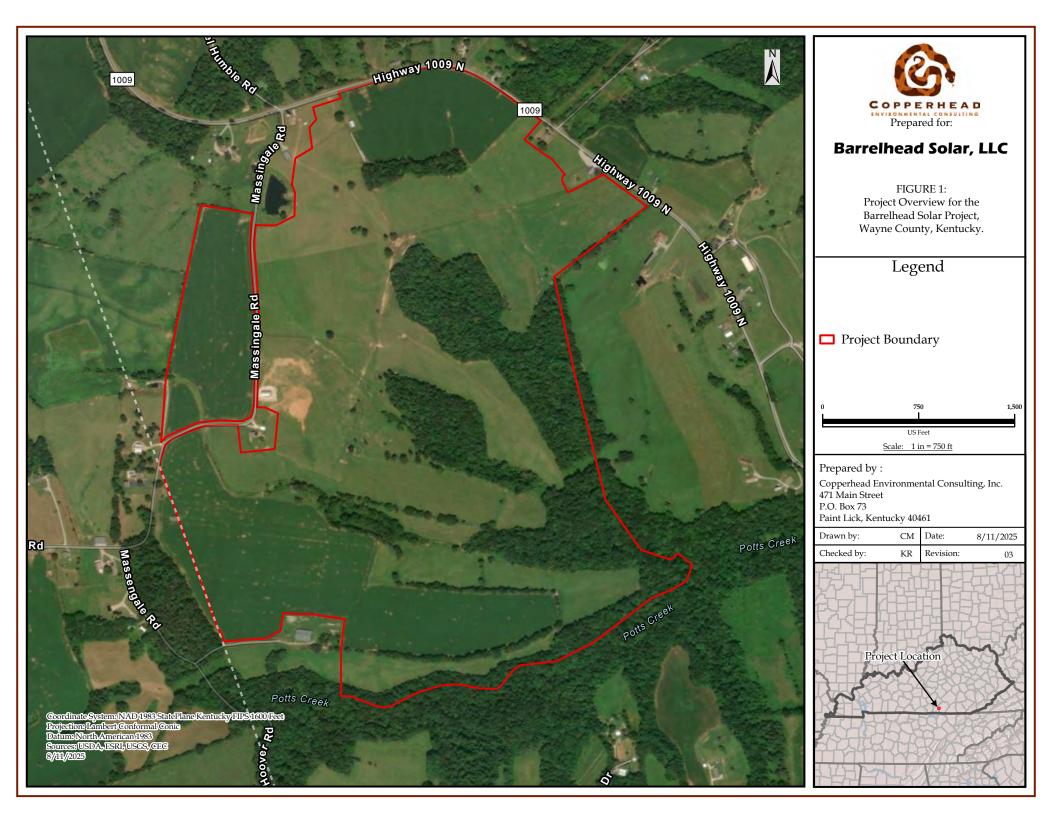
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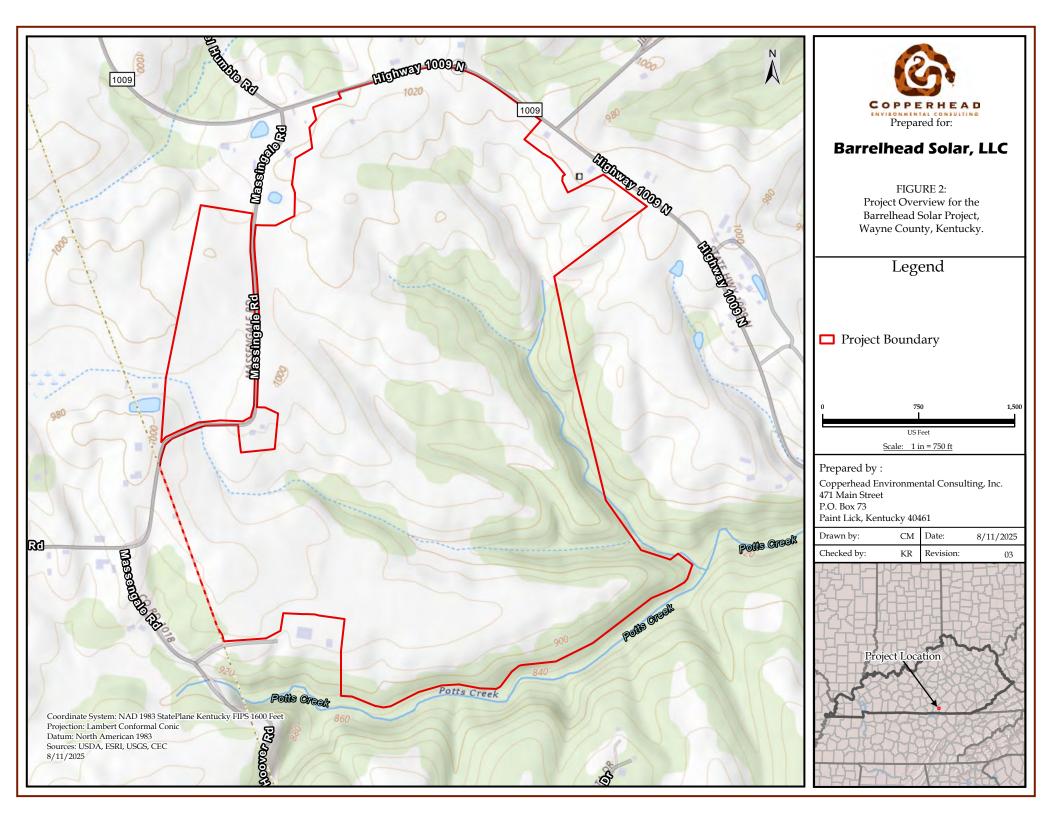


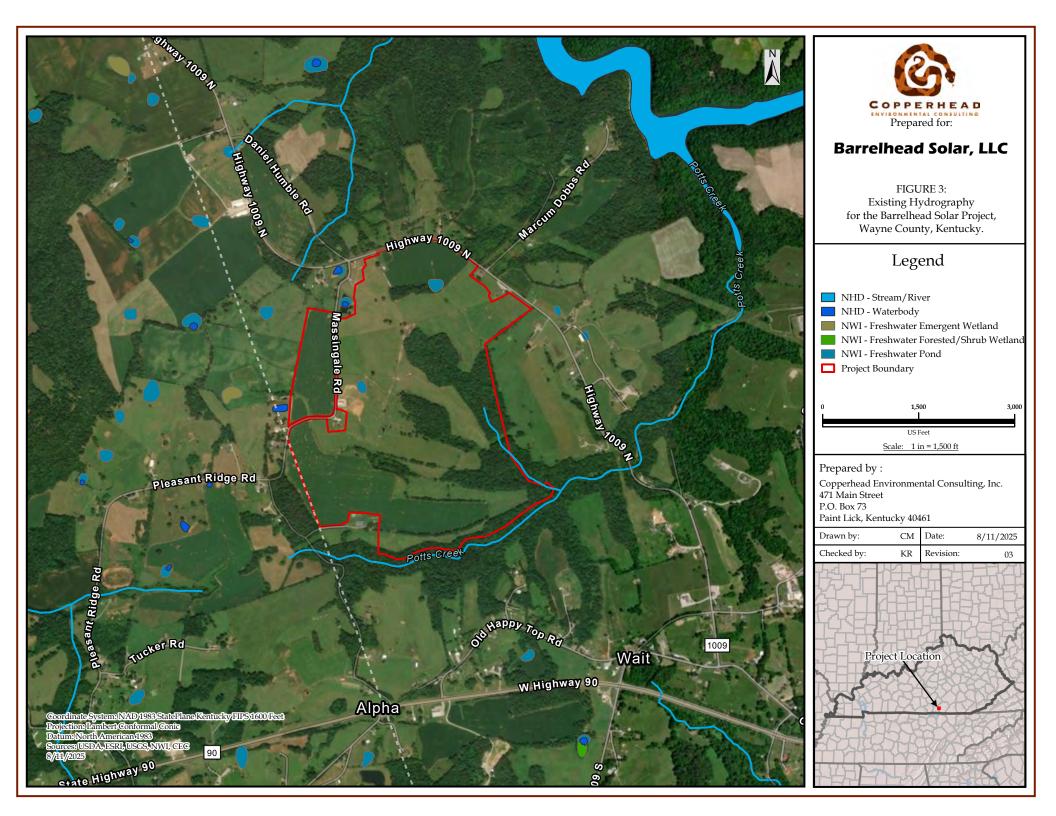
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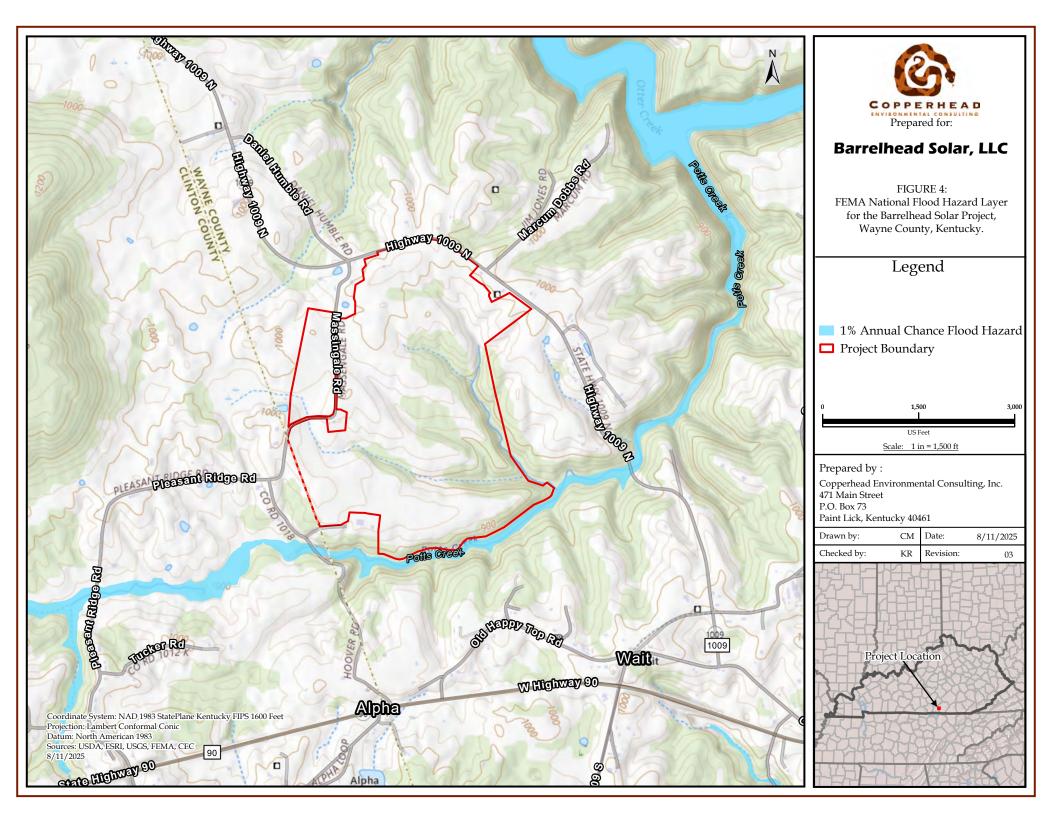


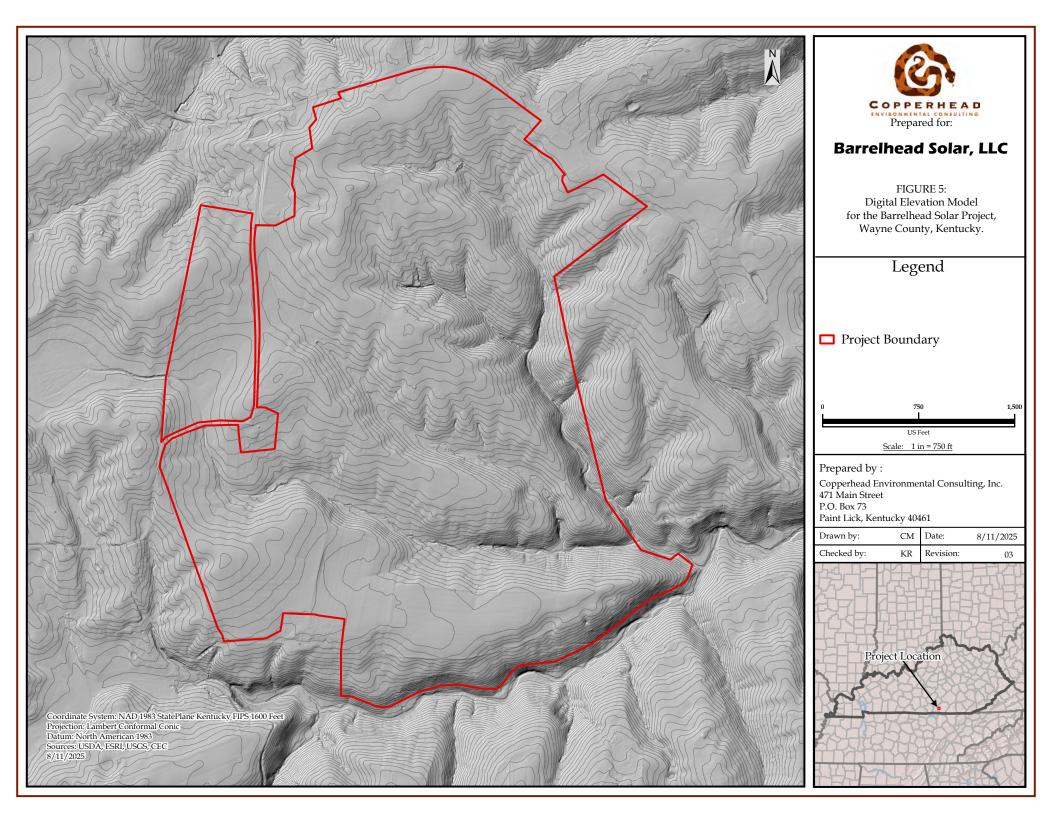
Appendix A Figures

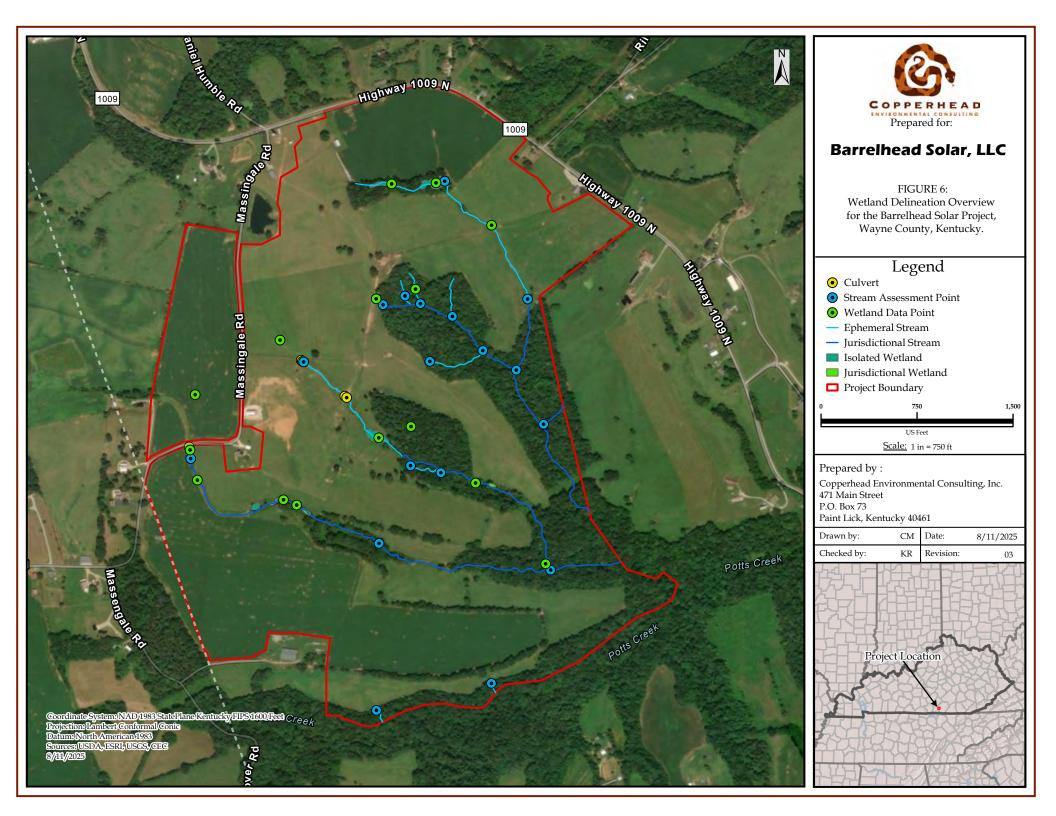


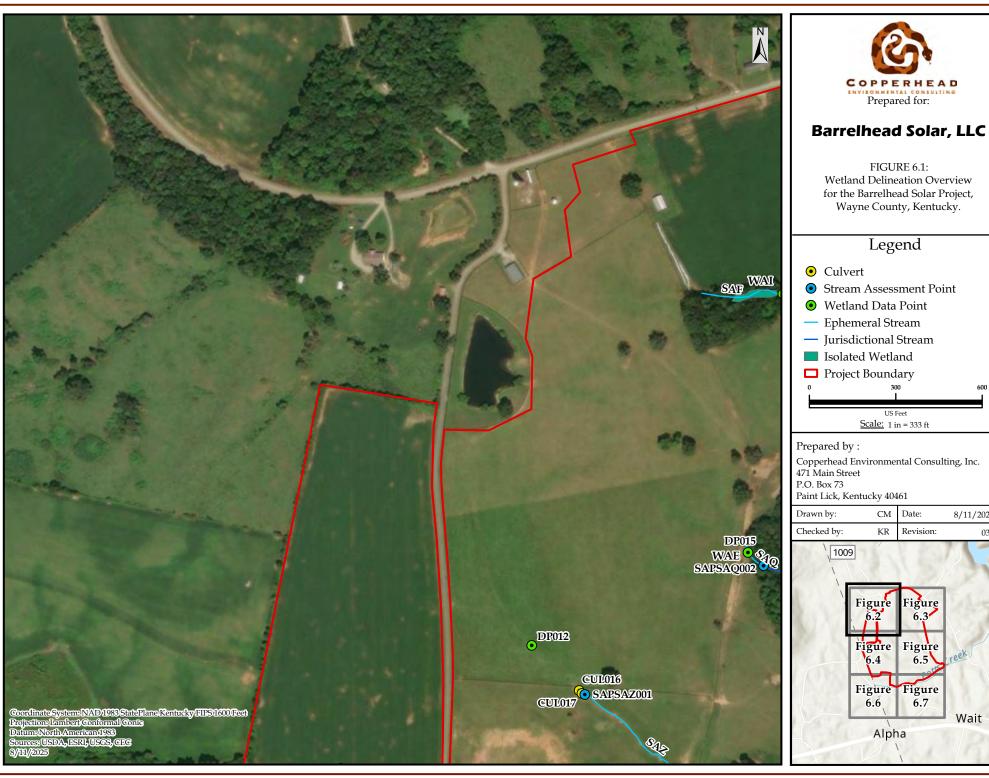








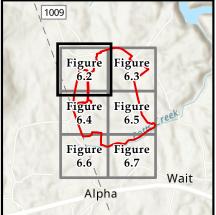


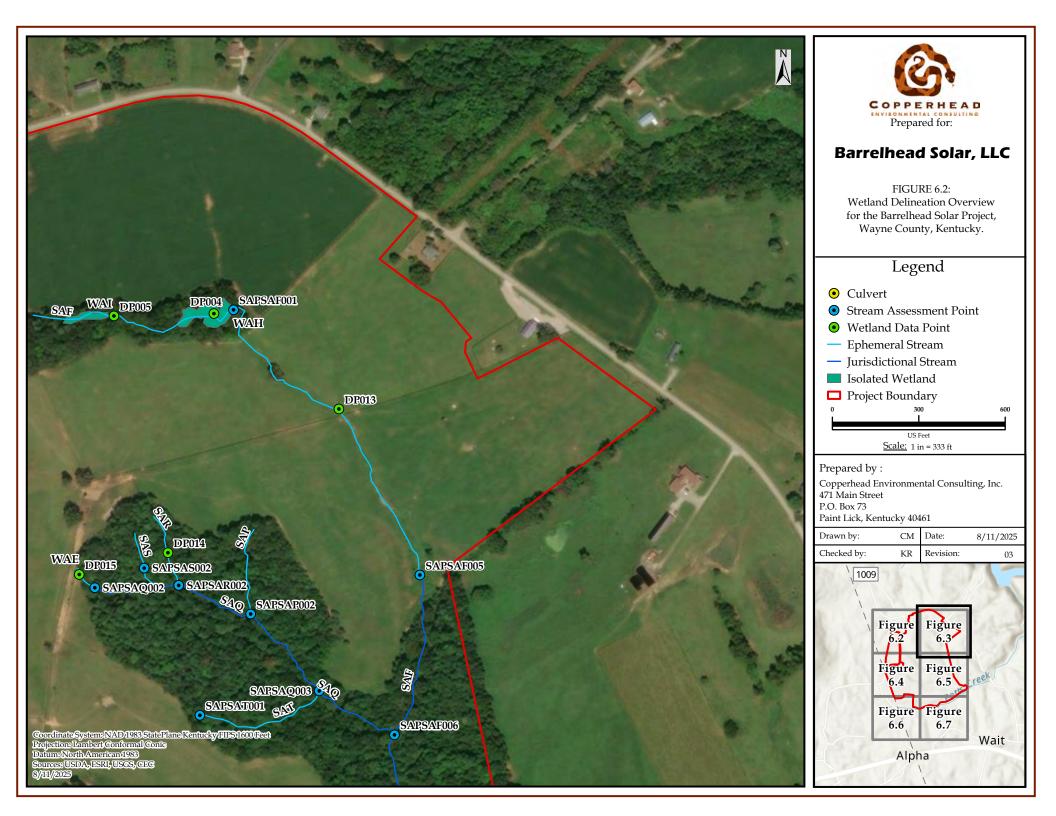


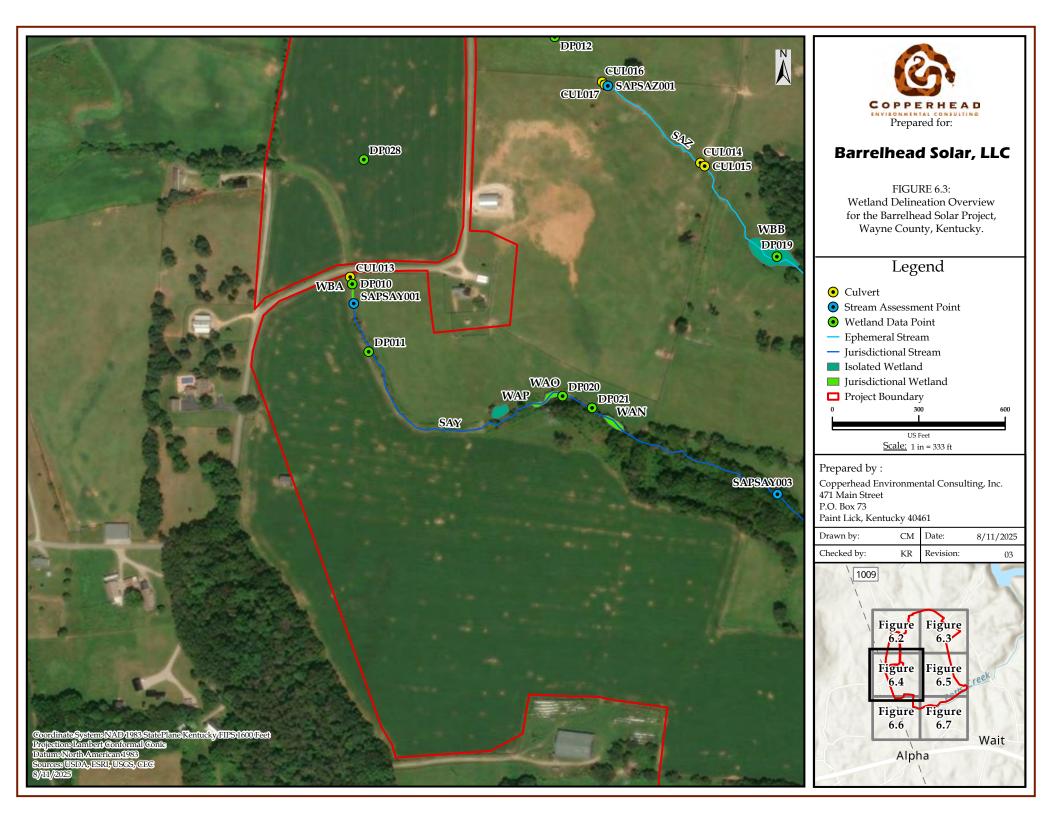


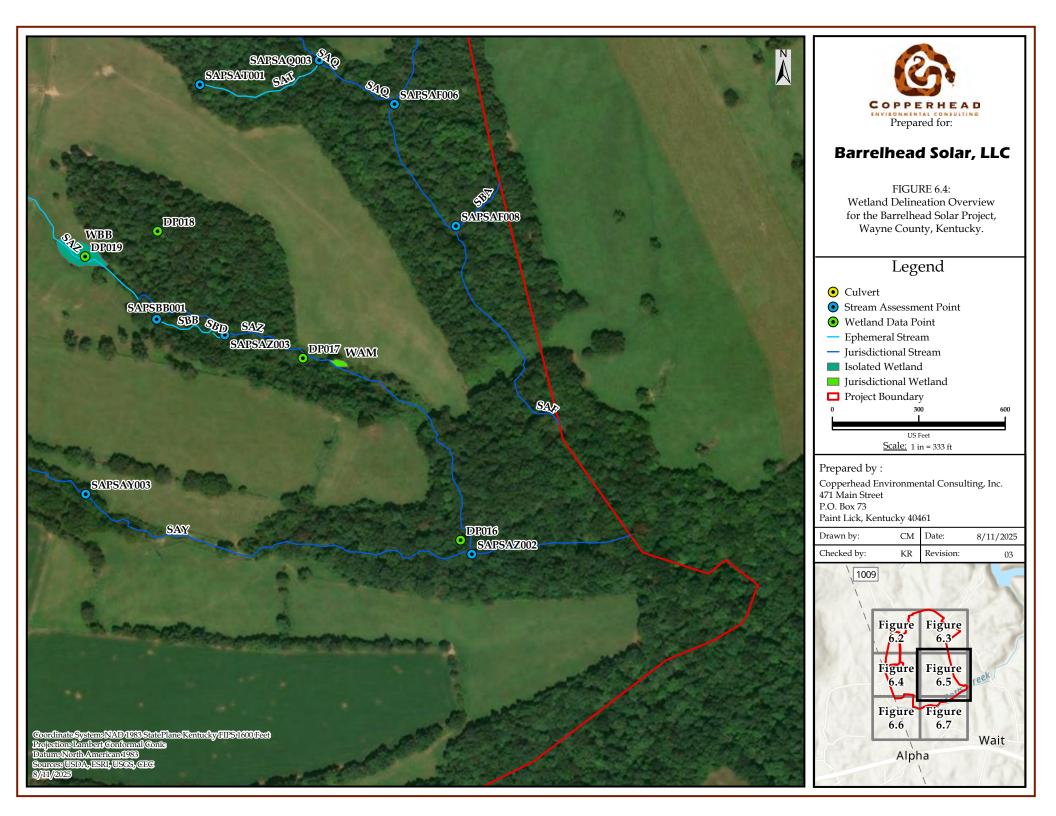
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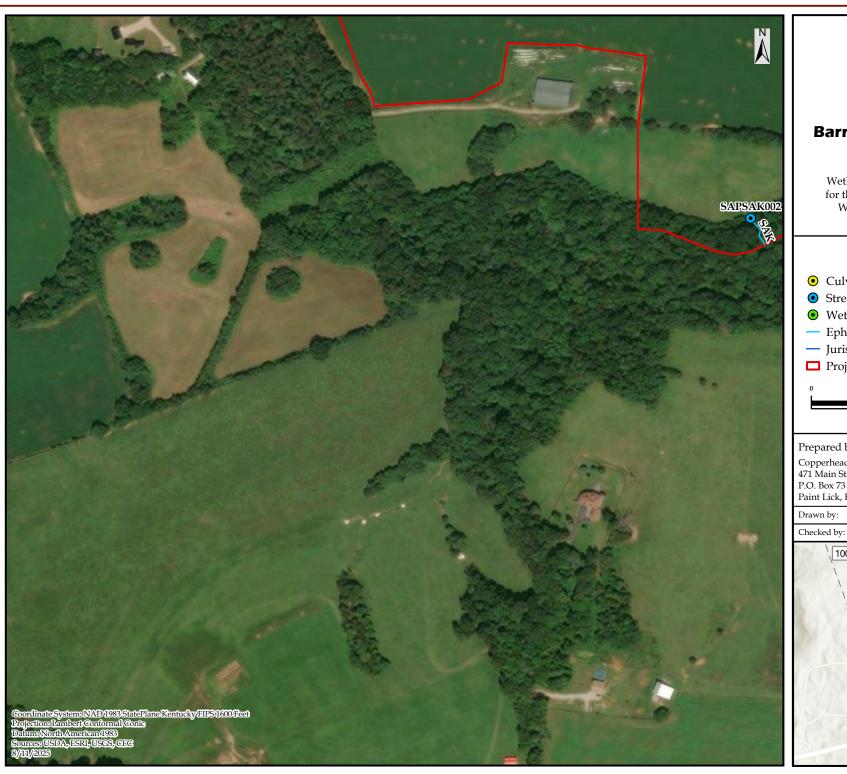
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Barrelhead Solar, LLC

FIGURE 6.5: Wetland Delineation Overview for the Barrelhead Solar Project, Wayne County, Kentucky.

Legend

- Culvert
- Stream Assessment Point
- Wetland Data Point
- **Ephemeral Stream**
- Jurisdictional Stream
- ☐ Project Boundary

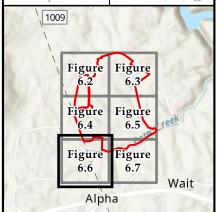


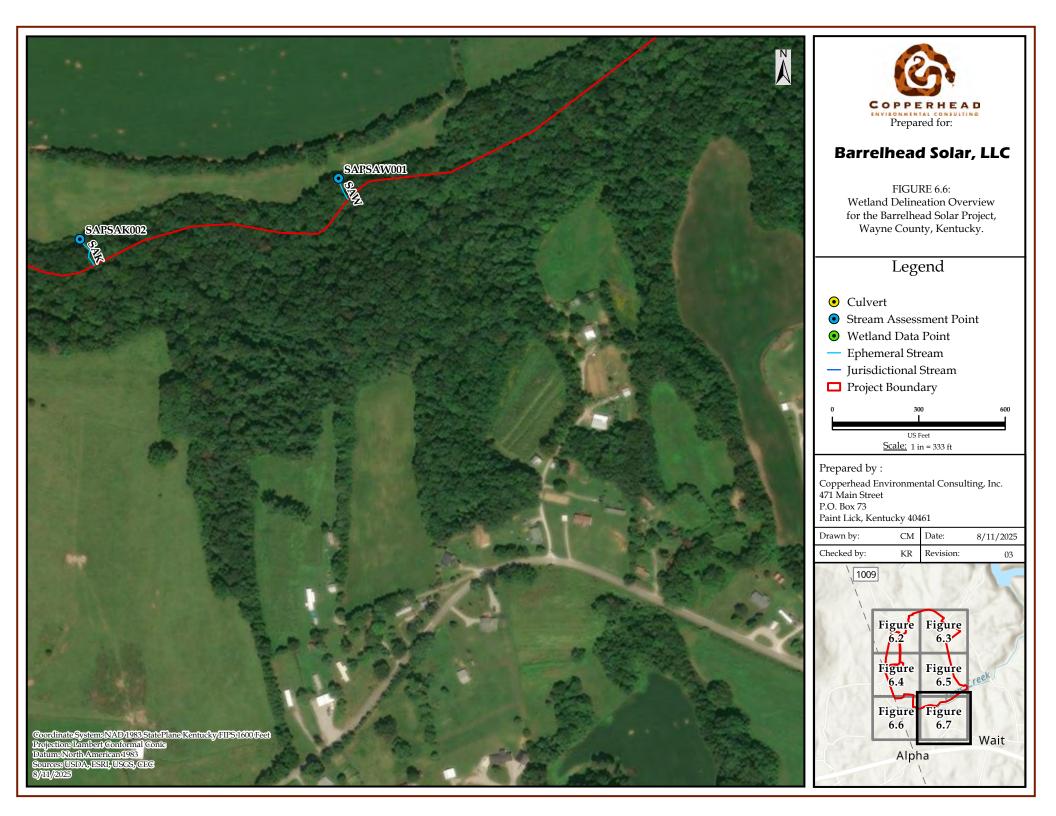
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VRCS

Natural Resources Conservation Service A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Wayne County, Kentucky

Barrelhead Solar, LLC



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2 053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



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

(o)

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

Sodic Spot

Slide or Slip

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

00

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: Wayne County, Kentucky Survey Area Data: Version 21, Aug 30, 2024

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

| MAP LEGEND | MAP INFORMATION | |
|------------|--|--|
| | Soil map units are labeled (as space allows) for map scales 1:50,000 or larger. | |
| | Date(s) aerial images were photographed: Apr 1, 2021—Oct 1, 2021 | |
| | 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 (Barrelhead Solar)

| | _ | | |
|-------------------------------|---|--------------|----------------|
| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
| DeC2 | Dewey loam, 6 to 15 percent slopes, eroded | 0.0 | 0.0% |
| DeD2 | Dewey loam, 15 to 25 percent slopes, eroded | 0.0 | 0.0% |
| Subtotals for Soil Survey Are | a | 0.0 | 0.0% |
| Totals for Area of Interest | | 337.0 | 100.0% |

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|-----------------------------|--|--------------|----------------|
| CgD | Caneyville-Garmon association, steep | 8.2 | 2.4% |
| FrC2 | Frederick silt loam, 6 to 12 percent slopes, eroded | 132.6 | 39.3% |
| FrD2 | Frederick silt loam, 12 to 20 percent slopes, eroded | 130.2 | 38.6% |
| GcF | Garmon-Caneyville association, very steep | 47.8 | 14.2% |
| МоВ | Mountview silt loam, 2 to 6 percent slopes | 12.4 | 3.7% |
| Ne | Newark silt loam, occasionally flooded | 5.4 | 1.6% |
| W | Water | 0.6 | 0.2% |
| Subtotals for Soil Survey A | rea | 337.0 | 100.0% |
| Totals for Area of Interest | | 337.0 | 100.0% |

Map Unit Descriptions (Barrelhead Solar)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without

including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Wayne County, Kentucky

CgD—Caneyville-Garmon association, steep

Map Unit Setting

National map unit symbol: Igcz Elevation: 720 to 1,780 feet

Mean annual precipitation: 44 to 56 inches
Mean annual air temperature: 45 to 68 degrees F

Frost-free period: 155 to 192 days

Farmland classification: Not prime farmland

Map Unit Composition

Caneyville and similar soils: 65 percent Garmon and similar soils: 15 percent Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Caneyville

Setting

Landform: Hills

Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope

Down-slope shape: Convex Across-slope shape: Convex

Parent material: Clayey residuum weathered from limestone

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 18 inches: silty clay loam
H3 - 18 to 30 inches: silty clay
R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 12 to 30 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Drainage class: Well drained Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20

to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: C

Ecological site: F122XY005KY - Moderately Deep Well Drained Uplands

Hydric soil rating: No

Description of Garmon

Setting

Landform: Hills

Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope

Down-slope shape: Convex Across-slope shape: Convex

Parent material: Fine-loamy residuum weathered from limestone and siltstone

and/or calcareous shale

Typical profile

H1 - 0 to 6 inches: silt loam

H2 - 6 to 32 inches: channery silt loam

R - 32 to 42 inches: bedrock

Properties and qualities

Slope: 12 to 30 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Drainage class: Well drained Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00

in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: B

Ecological site: F122XY005KY - Moderately Deep Well Drained Uplands

Hydric soil rating: No

Minor Components

Frederick

Percent of map unit: 9 percent

Hydric soil rating: No

Waynesboro

Percent of map unit: 9 percent

Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent

Hydric soil rating: No

FrC2—Frederick silt loam, 6 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2v5b5 Elevation: 500 to 1,150 feet

Mean annual precipitation: 42 to 60 inches Mean annual air temperature: 45 to 68 degrees F

Frost-free period: 155 to 224 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Frederick and similar soils: 88 percent Minor components: 12 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Frederick

Setting

Landform: Ridges

Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope

Down-slope shape: Convex Across-slope shape: Linear

Parent material: Clayey residuum weathered from limestone and sandstone

Typical profile

Ap - 0 to 8 inches: silt loam Bt - 8 to 65 inches: clay

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high

(0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Ecological site: F122XY001KY - Deep Well Drained Cherty Uplands

Hydric soil rating: No

Minor Components

Pricetown

Percent of map unit: 7 percent

Landform: Ridges

Landform position (two-dimensional): Summit Landform position (three-dimensional): Crest

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: No

Frankstown

Percent of map unit: 3 percent

Landform: Ridges

Landform position (two-dimensional): Summit Landform position (three-dimensional): Interfluve

Down-slope shape: Convex Across-slope shape: Concave

Hydric soil rating: No

Canmer

Percent of map unit: 1 percent

Landform: Ridges

Landform position (two-dimensional): Summit Landform position (three-dimensional): Interfluve

Down-slope shape: Convex Across-slope shape: Linear Hydric soil rating: No

Caneyville

Percent of map unit: 1 percent

Landform: Ridges

Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Side slope

Down-slope shape: Convex Across-slope shape: Linear Hydric soil rating: No

FrD2—Frederick silt loam, 12 to 20 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2v5b8 Elevation: 500 to 1,170 feet

Mean annual precipitation: 42 to 60 inches
Mean annual air temperature: 45 to 68 degrees F

Frost-free period: 155 to 224 days

Farmland classification: Not prime farmland

Map Unit Composition

Frederick and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Frederick

Setting

Landform: Hills

Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope

Down-slope shape: Convex Across-slope shape: Linear

Parent material: Clayey residuum weathered from limestone and sandstone

Typical profile

Ap - 0 to 8 inches: silt loam Bt - 8 to 65 inches: clay

Properties and qualities

Slope: 12 to 20 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high

(0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Ecological site: F122XY001KY - Deep Well Drained Cherty Uplands

Hydric soil rating: No

Minor Components

Caneyville

Percent of map unit: 7 percent

Landform: Hills

Landform position (two-dimensional): Shoulder Landform position (three-dimensional): Side slope

Down-slope shape: Convex Across-slope shape: Linear Hydric soil rating: No

Frankstown

Percent of map unit: 5 percent

Landform: Hills

Landform position (two-dimensional): Summit Landform position (three-dimensional): Interfluve

Down-slope shape: Convex Across-slope shape: Concave

Hydric soil rating: No

Canmer

Percent of map unit: 3 percent

Landform: Ridges

Landform position (two-dimensional): Summit Landform position (three-dimensional): Interfluve

Down-slope shape: Convex Across-slope shape: Linear Hydric soil rating: No

GcF—Garmon-Caneyville association, very steep

Map Unit Setting

National map unit symbol: Igdb Elevation: 710 to 1.780 feet

Mean annual precipitation: 44 to 56 inches Mean annual air temperature: 45 to 68 degrees F

Frost-free period: 155 to 192 days

Farmland classification: Not prime farmland

Map Unit Composition

Garmon and similar soils: 60 percent Caneyville and similar soils: 25 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Garmon

Setting

Landform: Hills

Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope

Down-slope shape: Concave Across-slope shape: Convex

Parent material: Fine-loamy residuum weathered from limestone and siltstone

and/or calcareous shale

Typical profile

H1 - 0 to 6 inches: silt loam

H2 - 6 to 32 inches: channery silt loam

R - 32 to 42 inches: bedrock

Properties and qualities

Slope: 30 to 75 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Drainage class: Well drained Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00

in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: B

Ecological site: F122XY005KY - Moderately Deep Well Drained Uplands

Hydric soil rating: No

Description of Caneyville

Setting

Landform: Hills

Landform position (two-dimensional): Backslope Landform position (three-dimensional): Side slope

Down-slope shape: Convex Across-slope shape: Convex

Parent material: Clayey residuum weathered from limestone

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 18 inches: silty clay loam
H3 - 18 to 30 inches: silty clay
R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 30 to 75 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Drainage class: Well drained Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20

to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: C

Ecological site: F122XY005KY - Moderately Deep Well Drained Uplands

Hydric soil rating: No

Minor Components

Frederick

Percent of map unit: 5 percent

Hydric soil rating: No

Waynesboro

Percent of map unit: 4 percent

Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent

Hydric soil rating: No

Shallow clayey soils

Percent of map unit: 2 percent

Hydric soil rating: No

Shallow loamy soils

Percent of map unit: 2 percent

Hydric soil rating: No

MoB—Mountview silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: Igdf Elevation: 720 to 1,780 feet

Mean annual precipitation: 44 to 56 inches Mean annual air temperature: 45 to 68 degrees F

Frost-free period: 155 to 192 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Mountview and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mountview

Setting

Landform: Ridges

Landform position (two-dimensional): Summit Landform position (three-dimensional): Interfluve

Down-slope shape: Linear Across-slope shape: Convex

Parent material: Fine-silty noncalcareous loess over clayey residuum weathered

from cherty limestone

Typical profile

H1 - 0 to 8 inches: silt loam H2 - 8 to 29 inches: silt loam H3 - 29 to 66 inches: silty clay

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high

(0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: B

Ecological site: F122XY023TN - Loess Veneered Thermic Uplands

Hydric soil rating: No

Minor Components

Frederick

Percent of map unit: 3 percent

Hydric soil rating: No

Waynesboro

Percent of map unit: 3 percent

Hydric soil rating: No

Dickson

Percent of map unit: 2 percent

Hydric soil rating: No

Mountview, mod deep

Percent of map unit: 2 percent

Hydric soil rating: No

Ne—Newark silt loam, occasionally flooded

Map Unit Setting

National map unit symbol: Igdh Elevation: 720 to 1.780 feet

Mean annual precipitation: 44 to 56 inches Mean annual air temperature: 45 to 68 degrees F

Frost-free period: 155 to 192 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Newark, occasionally flooded, and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newark, Occasionally Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear

Parent material: Mixed fine-silty alluvium

Typical profile

H1 - 0 to 9 inches: silt loam H2 - 9 to 38 inches: silt loam

H3 - 38 to 62 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high

(0.60 to 2.00 in/hr)

Depth to water table: About 12 to 18 inches

Frequency of flooding: Occasional Frequency of ponding: None

Available water supply, 0 to 60 inches: High (about 11.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Ecological site: F122XY017KY - Moist Alluvium

Hydric soil rating: No

Minor Components

Nolin

Percent of map unit: 5 percent Landform: Flood plains Hydric soil rating: No

Melvin, frequently flooded

Percent of map unit: 5 percent Landform: Flood plains Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

W-Water

Map Unit Setting

National map unit symbol: Igds

Mean annual precipitation: 44 to 56 inches Mean annual air temperature: 45 to 68 degrees F

Frost-free period: 155 to 192 days

Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

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Appendix B Representative Stream and Wetland Photographs



8/17/2024

Description:

Overview of upland data point DP001, facing south.



Photo Number: 2

8/17/2024

Description:

Overview of data point DP004, located in palustrine forested (PFO) wetland WAH, facing east.





8/17/2024

Description:

Overview of upland data point DP005, facing east.



Photo Number: 4

8/19/2024

Description:

Overview of data point DP007, located in PFO wetland WAJ, facing west.





8/19/2024

Description:

Overview of upland data point DP008, facing west.



Photo Number: 6

8/19/2024

Description:

Overview of upland data point DP009, facing north.





8/19/2024

Description:

Overview of data point DP010, located in PEM wetland WBA, facing north.



Photo Number: 8

8/19/2024

Description:

Overview of upland data point DP011, facing east.





8/19/2024

Description:

Overview of upland data point DP012, facing north.



Photo Number: 10

8/20/2024

Description:

Overview of upland data point DP013, facing south.





8/20/2024

Description:

Overview of upland data point DP014, facing north.



Photo Number: 12

8/20/2024

Description:

Overview of data point DP015, located in PEM wetland WAE, facing south.





8/20/2024

Description:

Overview of upland data point DP016, facing east.



Photo Number: 14

8/20/2024

Description:

Overview of upland data point DP017, facing west.





8/20/2024

Description:

Overview of upland data point DP018, facing east.



Photo Number: 16

8/20/2024

Description:

Overview of data point DP019, located in PFO wetland WBB, facing west.





8/20/2024

Description:

Overview of data point DP020, located in PEM wetland WAO, facing north.



Photo Number: 18

8/20/2024

Description:

Overview of upland data point DP021, facing west.





8/19/2024

Description:

Overview of upland data point DP022, facing south.



Photo Number: 20

9/30/2024

Description:

Overview of upland data point DP028, facing west.





9/30/2024

Description:

Overview of upland data point DP030, facing west.



Photo Number: 22

9/30/2024

Description:

Overview of upland data point DP033, facing east.





9/30/2024

Description:

Overview of upland data point DP034, facing south.



Photo Number: 24

8/17/2024

Description:

Overview of the ephemeral portion of SAF at stream assessment point (SAP) SAF001, facing west (towards PFO wetland WAH).





8/20/2024

Description:

Overview of SAF at SAPSAF005, facing south. The flow regime transitions from ephemeral to intermittent at this point.



Photo Number: 26

8/20/2024

Description:

Overview of the intermittent portion of SAF at SAPSAF007, facing northwest (upstream).





8/19/2024

Description:

Another overview of the intermittent portion of SAF at SAPSAF007, facing southeast (downstream).



Photo Number: 28

8/19/2024

Description:

Overview of intermittent stream SAJ at SAPSAJ001, facing south (downstream).





8/19/2024

Description:

Overview of ephemeral SAK at SAPSAK002, facing northwest (upstream).



Photo Number: 30

8/20/2024

Description:

Another overview of SAK at SAPSAK002, facing southeast (downstream).





8/19/2024

Description:

Overview of the confluence of SAK and perennial stream SAU at SAPSAK001, facing north.



Photo Number: 32

8/17/2024

Description:

Another overview of the confluence of SAK and SAU at SAPSAK001, facing south.





8/19/2024

Description:

Overview of the confluence of SAU and intermittent stream SAL at SAPSAL001, facing north.



Photo Number: 34

8/20/2024

Description:

Overview of the confluence of SAU and intermittent stream SAM at SAPSAM001, facing south.





8/20/2024

Description:

Overview of the confluence of SAU and intermittent stream SAN at SAPSAN001, facing southeast.



Photo Number: 36

8/19/2024

Description:

Overview of ephemeral SAO at SAPSAO001, facing south (upstream).





8/19/2024

Description:

Another overview of SAO at SAPSAO001, facing north (downstream).



Photo Number: 38

8/20/2024

Description:

Overview of the confluence of ephemeral SAP and intermittent stream SAQ at SAPSAP002, facing north.





8/20/2024

Description:

Another overview of the confluence of SAP and SAQ at SAPSAP002, facing southeast.



Photo Number: 40

8/20/2024

Description:

Overview of SAQ at SAPSAQ002, facing northwest (upstream). The flow regime transitions from ephemeral to intermittent below the headcut.





8/20/2024

Description:

Another overview of SAQ at SAPSAQ002, facing southeast (downstream). The flow regime transitions from ephemeral to intermittent at this point.



Photo Number: 42

8/20/2024

Description:

Overview of the confluence of SAQ and ephemeral SAR at SAPSAR002, facing north.





8/20/2024

Description:

Another overview of the confluence of SAQ and SAR at SAPSAR002, facing south.



Photo Number: 44

8/20/2024

Description:

Overview of ephemeral SAS at SAPSAS002, facing north (upstream).





8/21/2024

Description:

Another overview of SAS at SAPSAS002, facing south (downstream).



Photo Number: 46

8/19/2024

Description:

Overview of ephemeral SAT at SAPSAT001, facing west (upstream).





8/20/2024

Description:

Another overview of SAT at SAPSAT001, facing east (downstream).



Photo Number: 48

8/20/2024

Description:

Overview of perennial stream SAU at SAPSAU001, facing east (downstream).





8/20/2024

Description:

Overview of SAU at SAPSAU003, facing east (towards PFO wetland WAJ).



Photo Number: 50

8/19/2024

Description:

Overview of SAU at SAPSAU008, facing east (downstream).





8/19/2024

Description:

Overview of SAU at SAPSAU010, facing west (upstream).



Photo Number: 52

8/19/2024

Description:

Another overview of SAU at SAPSAU010, facing east (downstream).





8/19/2024

Description:

Overview of ephemeral SAV at SAPSAV001, facing northeast (upstream).



Photo Number: 54

8/19/2024

Description:

Another overview of SAV at SAPSAV001, facing southwest (downstream).





8/19/2024

Description:

Overview of SAV at SAPSAV002, facing northeast (upstream).



Photo Number: 56

8/19/2024

Description:

Another overview of SAV at SAPSAV002, facing southwest (downstream).





8/19/2024

Description:

Overview of intermittent stream SAX at SAPSAX001, facing south (upstream).



Photo Number: 58

8/19/2024

Description:

Another overview of SAX at SAPSAX001, facing north (downstream).





8/19/2024

Description:

Overview of SAY at SAPSAY003, facing north (upstream). The flow regime transitions from ephemeral to intermittent where the groundwater emerges from the bedrock fissures.



Photo Number: 60

8/19/2024

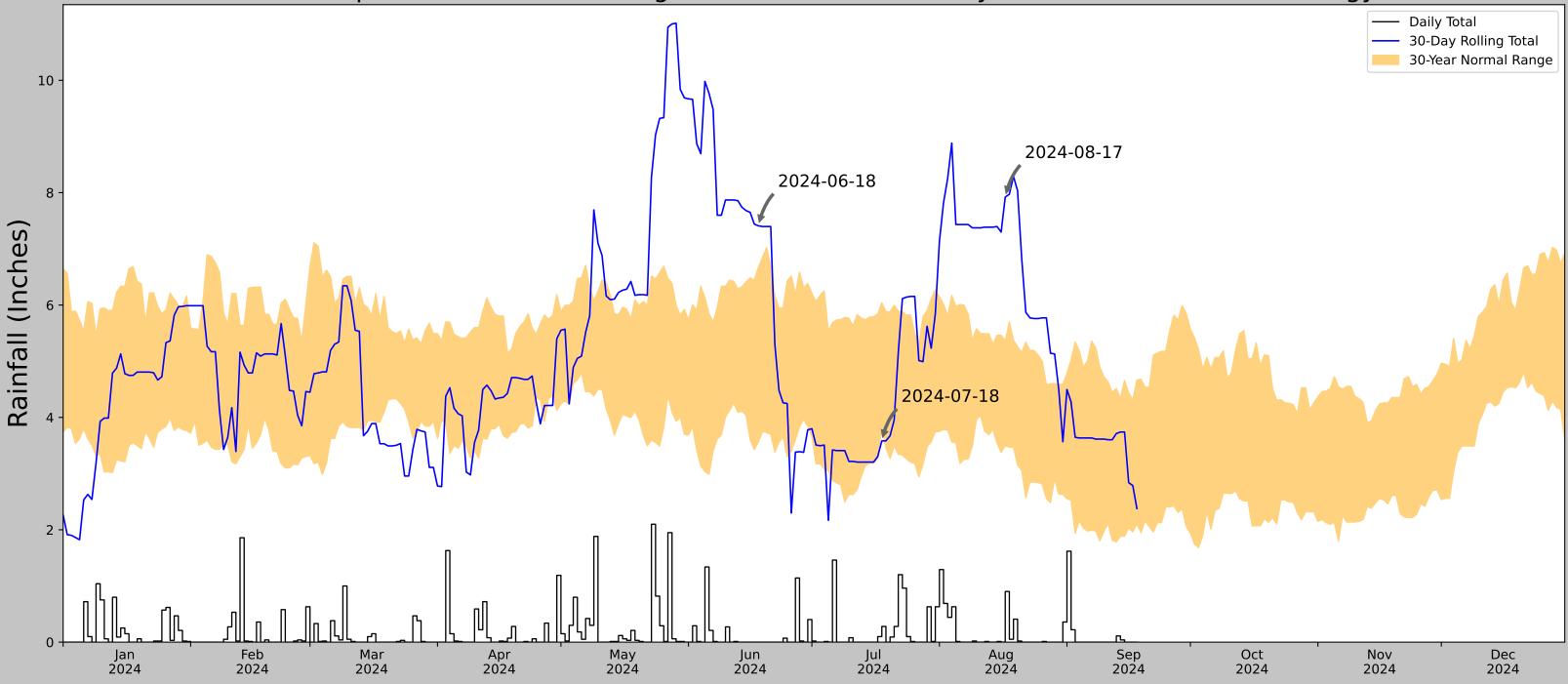
Description:

Another overview of SAY at SAPSAY003, facing south (downstream).



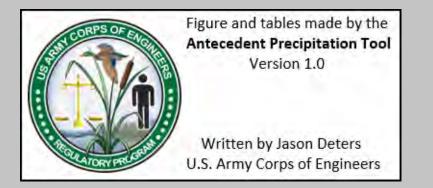


Appendix C **Antecedent Precipitation Table**

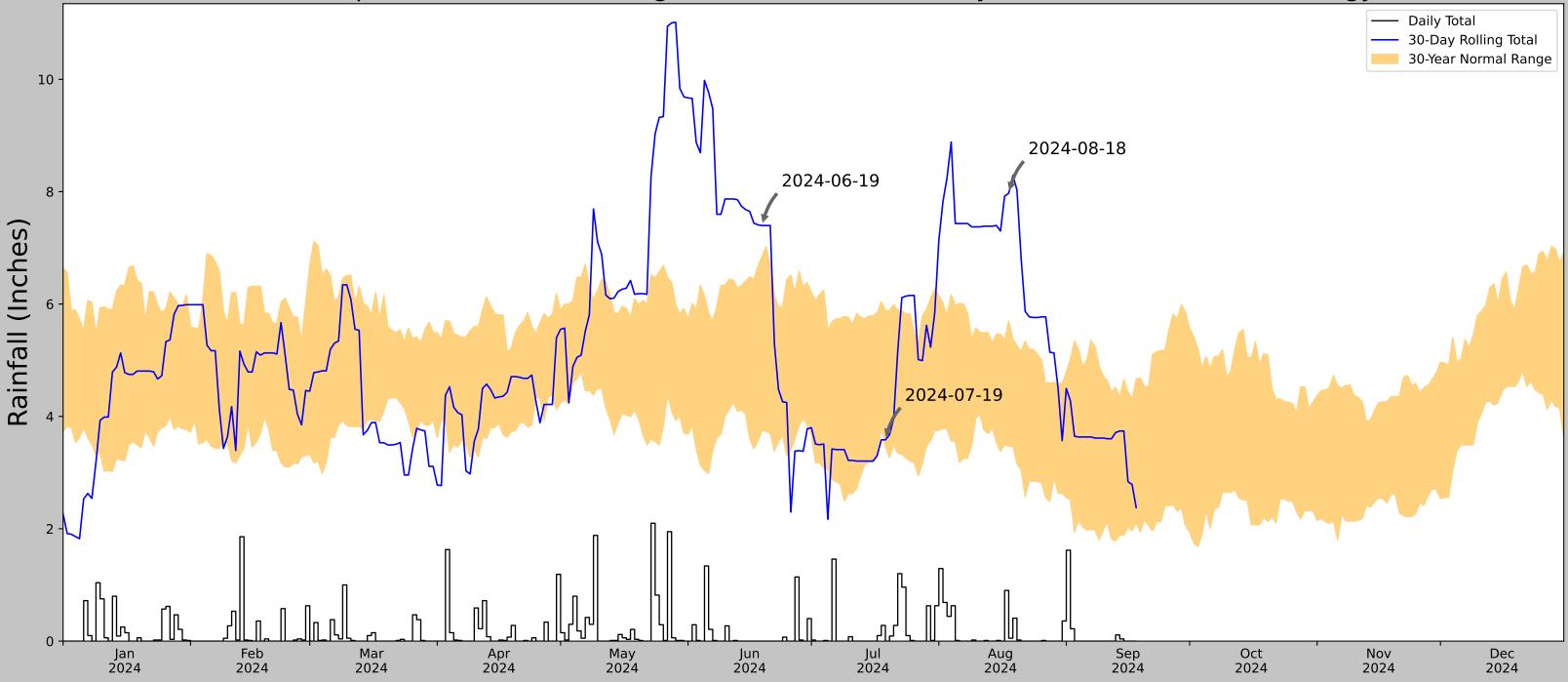


| Coordinates | 36.775937, -85.011720 |
|----------------------------------|-----------------------|
| Observation Date | 2024-08-17 |
| Elevation (ft) | 969.985 |
| Drought Index (PDSI) | Mild drought |
| WebWIMP H ₂ O Balance | Dry Season |

| 30 Days Ending | 30 th %ile (in) | 70 th %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|------------------------|
| 2024-08-17 | 3.494882 | 5.362205 | 7.92126 | Wet | 3 | 3 | 9 |
| 2024-07-18 | 3.829528 | 6.038977 | 3.582677 | Dry | 1 | 2 | 2 |
| 2024-06-18 | 3.562205 | 6.672441 | 7.409449 | Wet | 3 | 1 | 3 |
| Result | | | | | | | Normal Conditions - 14 |

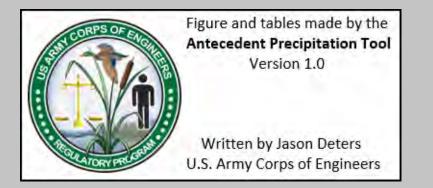


| Weather Station Name | Coordinates | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days Normal | Days Antecedent |
|-----------------------|-------------------|----------------|---------------|-------------|------------|-------------|-----------------|
| JAMESTOWN WWTP | 37.0056, -85.0617 | 890.092 | 16.107 | 79.893 | 8.535 | 10376 | 90 |
| JAMESTOWN 9.0 SSW | 36.8799, -85.1505 | 678.15 | 9.974 | 211.942 | 6.602 | 1 | 0 |
| MONTICELLO 9.1 W | 36.8198, -85.0107 | 965.879 | 13.143 | 75.787 | 6.91 | 151 | 0 |
| COLUMBIA STATE POLICE | 37.0897, -85.3045 | 845.144 | 14.596 | 44.948 | 7.224 | 814 | 0 |
| WINDSOR 1.2 NW | 37.1338, -84.9333 | 1109.908 | 11.339 | 219.816 | 7.595 | 1 | 0 |
| WINDSOR 0.8 NW | 37.1364, -84.9214 | 1142.06 | 11.895 | 251.968 | 8.35 | 1 | 0 |
| BYRDSTOWN | 36.5808, -85.1258 | 879.921 | 29.564 | 10.171 | 13.604 | 8 | 0 |

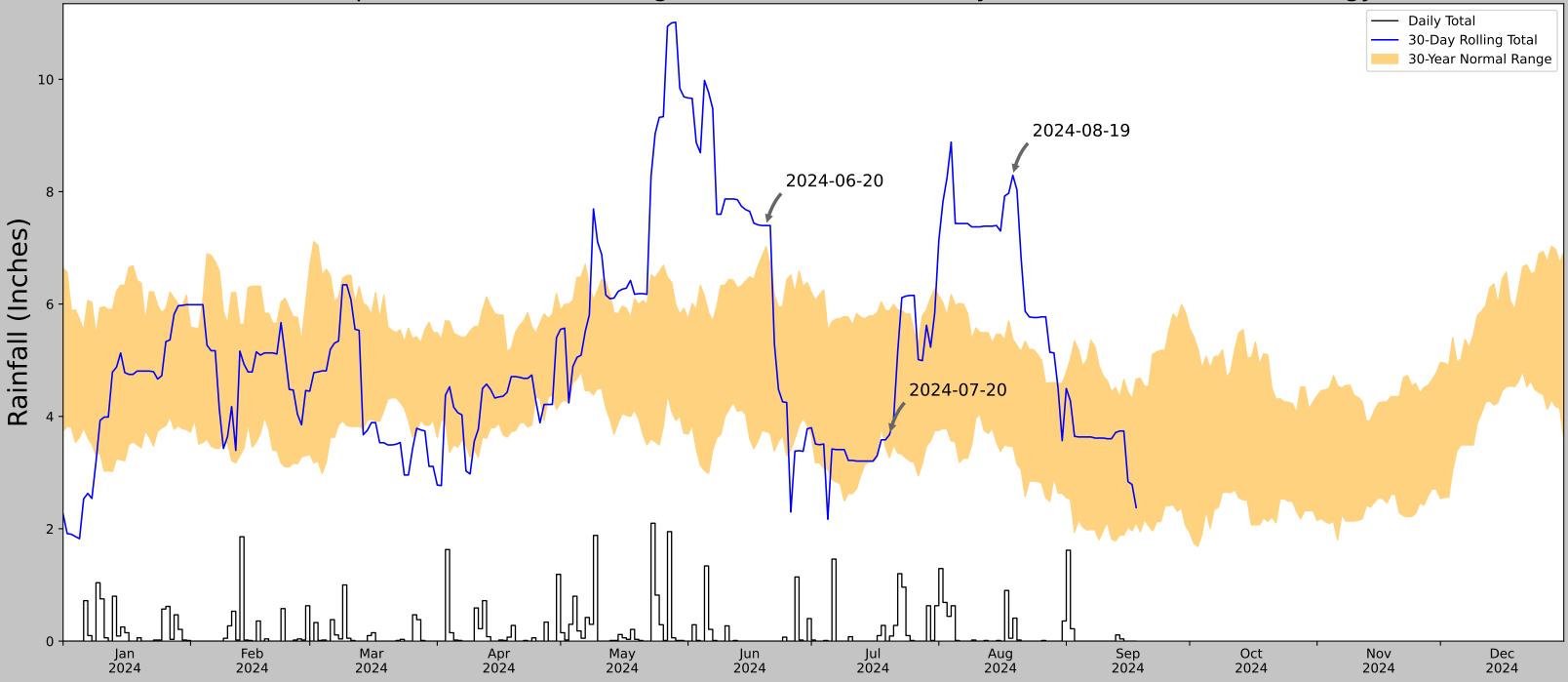


| Coordinates | 36.775937, -85.011720 |
|----------------------|-----------------------|
| Observation Date | 2024-08-18 |
| Elevation (ft) | 969.985 |
| Drought Index (PDSI) | Mild drought |
| WebWIMP H₂O Balance | Dry Season |

| 30 Days Ending | 30 th %ile (in) | 70 th %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|-------------------------|
| 2024-08-18 | 3.468898 | 5.698819 | 7.972441 | Wet | 3 | 3 | 9 |
| 2024-07-19 | 3.460236 | 5.881496 | 3.582677 | Normal | 2 | 2 | 4 |
| 2024-06-19 | 3.751969 | 6.848819 | 7.397638 | Wet | 3 | 1 | 3 |
| Result | | | | | | | Wetter than Normal - 16 |

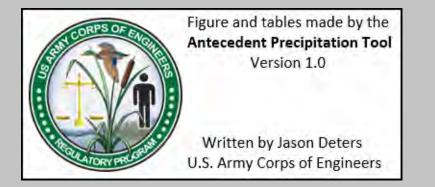


| Weather Station Name | Coordinates | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days Normal | Days Antecedent |
|-----------------------|-------------------|----------------|---------------|-------------|------------|-------------|-----------------|
| JAMESTOWN WWTP | 37.0056, -85.0617 | 890.092 | 16.107 | 79.893 | 8.535 | 10376 | 90 |
| JAMESTOWN 9.0 SSW | 36.8799, -85.1505 | 678.15 | 9.974 | 211.942 | 6.602 | 1 | 0 |
| MONTICELLO 9.1 W | 36.8198, -85.0107 | 965.879 | 13.143 | 75.787 | 6.91 | 151 | 0 |
| COLUMBIA STATE POLICE | 37.0897, -85.3045 | 845.144 | 14.596 | 44.948 | 7.224 | 814 | 0 |
| WINDSOR 1.2 NW | 37.1338, -84.9333 | 1109.908 | 11.339 | 219.816 | 7.595 | 1 | 0 |
| WINDSOR 0.8 NW | 37.1364, -84.9214 | 1142.06 | 11.895 | 251.968 | 8.35 | 1 | 0 |
| BYRDSTOWN | 36.5808, -85.1258 | 879.921 | 29.564 | 10.171 | 13.604 | 8 | 0 |

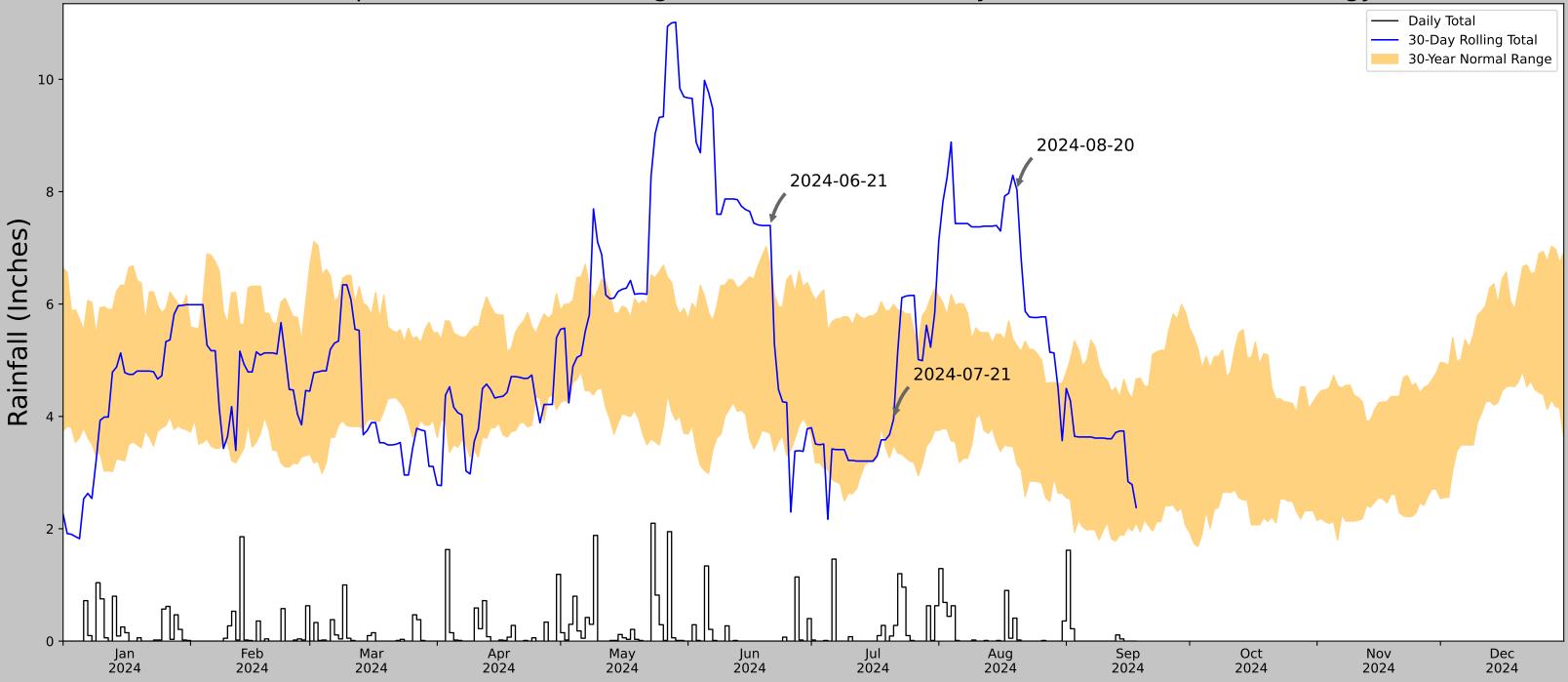


| Coordinates | 36.775937, -85.011720 |
|----------------------------------|-----------------------|
| Observation Date | 2024-08-19 |
| Elevation (ft) | 969.985 |
| Drought Index (PDSI) | Mild drought |
| WebWIMP H ₂ O Balance | Dry Season |

| 30 Days Ending | 30 th %ile (in) | 70 th %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|-------------------------|
| 2024-08-19 | 3.468898 | 5.372835 | 8.291339 | Wet | 3 | 3 | 9 |
| 2024-07-20 | 3.266536 | 5.877953 | 3.673228 | Normal | 2 | 2 | 4 |
| 2024-06-20 | 3.727559 | 7.022835 | 7.397638 | Wet | 3 | 1 | 3 |
| Result | | | | | | | Wetter than Normal - 16 |

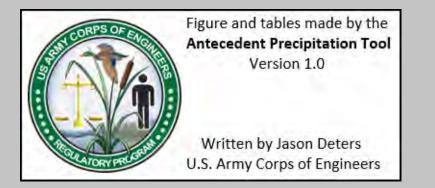


| Weather Station Name | Coordinates | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days Normal | Days Antecedent |
|-----------------------|-------------------|----------------|---------------|-------------|------------|-------------|-----------------|
| JAMESTOWN WWTP | 37.0056, -85.0617 | 890.092 | 16.107 | 79.893 | 8.535 | 10376 | 90 |
| JAMESTOWN 9.0 SSW | 36.8799, -85.1505 | 678.15 | 9.974 | 211.942 | 6.602 | 1 | 0 |
| MONTICELLO 9.1 W | 36.8198, -85.0107 | 965.879 | 13.143 | 75.787 | 6.91 | 151 | 0 |
| COLUMBIA STATE POLICE | 37.0897, -85.3045 | 845.144 | 14.596 | 44.948 | 7.224 | 814 | 0 |
| WINDSOR 1.2 NW | 37.1338, -84.9333 | 1109.908 | 11.339 | 219.816 | 7.595 | 1 | 0 |
| WINDSOR 0.8 NW | 37.1364, -84.9214 | 1142.06 | 11.895 | 251.968 | 8.35 | 1 | 0 |
| BYRDSTOWN | 36.5808, -85.1258 | 879.921 | 29.564 | 10.171 | 13.604 | 8 | 0 |



| Coordinates | 36.775937, -85.011720 |
|----------------------------------|-----------------------|
| Observation Date | 2024-08-20 |
| Elevation (ft) | 969.985 |
| Drought Index (PDSI) | Mild drought |
| WebWIMP H ₂ O Balance | Dry Season |

| 30 Days Ending | 30 th %ile (in) | 70 th %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|-------------------------|
| 2024-08-20 | 3.151969 | 5.262599 | 8.031496 | Wet | 3 | 3 | 9 |
| 2024-07-21 | 3.492126 | 5.995276 | 3.952756 | Normal | 2 | 2 | 4 |
| 2024-06-21 | 3.7 | 6.690945 | 7.397638 | Wet | 3 | 1 | 3 |
| Result | | | | | | | Wetter than Normal - 16 |



| Weather Station Name | Coordinates | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days Normal | Days Antecedent |
|-----------------------|-------------------|----------------|---------------|-------------|------------|-------------|-----------------|
| JAMESTOWN WWTP | 37.0056, -85.0617 | 890.092 | 16.107 | 79.893 | 8.535 | 10376 | 90 |
| JAMESTOWN 9.0 SSW | 36.8799, -85.1505 | 678.15 | 9.974 | 211.942 | 6.602 | 1 | 0 |
| MONTICELLO 9.1 W | 36.8198, -85.0107 | 965.879 | 13.143 | 75.787 | 6.91 | 151 | 0 |
| COLUMBIA STATE POLICE | 37.0897, -85.3045 | 845.144 | 14.596 | 44.948 | 7.224 | 814 | 0 |
| WINDSOR 1.2 NW | 37.1338, -84.9333 | 1109.908 | 11.339 | 219.816 | 7.595 | 1 | 0 |
| WINDSOR 0.8 NW | 37.1364, -84.9214 | 1142.06 | 11.895 | 251.968 | 8.35 | 1 | 0 |
| BYRDSTOWN | 36.5808, -85.1258 | 879.921 | 29.564 | 10.171 | 13.604 | 8 | 0 |



Appendix D Field Data Forms

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

| Project/Site: Barrelhead Solar | • | City/C | County: Wayne County | ; | Sampling Date: 2024-08-17 |
|--|-----------------------|-------------------------------|------------------------------------|------------------------|---------------------------------------|
| Applicant/Owner: Barrelhead | Solar LLC | | | State: Kentucky | Sampling Point: DP001 |
| Investigator(s): D. Hunter | | Section | | | |
| Landform (hillslope, terrace, e | | | | | |
| Subregion (LRR or MLRA): LF | | | | | |
| Soil Map Unit Name: Frederic | | | | | |
| Are climatic / hydrologic condi | | | | | |
| | | | | | |
| | | | | | esent? Yes No |
| Are Vegetation, Soil | | | | | in Remarks.) important features, etc. |
| | 71114011-011 | io map onowing oan | | ,, | |
| Hydrophytic Vegetation Pres | | No ✓ | Is the Sampled Area | | |
| Hydric Soil Present? | | No <u> </u> | within a Wetland? | Yes | No <u>✓</u> |
| Wetland Hydrology Present? | Yes | No ✓ | | | |
| Remarks: | : | -: | . d. The lead delineates | الله مناه ما المعمديات | mana a marijarri af tha Amtana dant |
| Precipitation Tool (APT) and | | | | | gence review of the Antecedent |
| 1 recipitation roof (rti 1) and | acternimed that my a | rologio contattorio were noi | marat the time of survey. | | |
| | | | | | |
| HYDROLOGY | | | | | |
| Wetland Hydrology Indicat | ors: | | | Secondary Indicate | ors (minimum of two required) |
| Primary Indicators (minimum | | check all that apply) | | Surface Soil C | · |
| Surface Water (A1) | Tor one is required, | True Aquatic Plants (| | | etated Concave Surface (B8) |
| High Water Table (A2) | | Hydrogen Sulfide Od | | Drainage Patt | |
| Saturation (A3) | | Oxidized Rhizospher | | Moss Trim Lin | |
| Water Marks (B1) | | Presence of Reduced | | | /ater Table (C2) |
| Sediment Deposits (B2) | | Recent Iron Reduction | | Crayfish Burro | |
| Drift Deposits (B3) | | Thin Muck Surface (0 | | | ible on Aerial Imagery (C9) |
| Algal Mat or Crust (B4) | | Other (Explain in Rer | | | essed Plants (D1) |
| Iron Deposits (B5) | | | | ✓ Geomorphic F | Position (D2) |
| Inundation Visible on Ae | rial Imagery (B7) | | | Shallow Aquita | ard (D3) |
| Water-Stained Leaves (| B9) | | | Microtopograp | phic Relief (D4) |
| Aquatic Fauna (B13) | | | | FAC-Neutral T | Test (D5) |
| Field Observations: | | | | | |
| Surface Water Present? | | ✓ Depth (inches): | | | |
| Water Table Present? | Yes No _ | ✓ Depth (inches): | | | |
| Saturation Present? | Yes No _ | ✓ Depth (inches): | Wetland H | ydrology Present | ? Yes No <u>√</u> |
| (includes capillary fringe) Describe Recorded Data (str | ream gauge, monito | ring well, aerial photos, pre | l evious inspections), if avail | lable: | |
| , | | | | | |
| Remarks: | | | | | |
| No primary and only one second | ondary indicator of w | vetland hydrology present; | parameter lacking. | | |
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VEGETATION (Four Strata) – Use scientific names of plants.

| /EGETATION (Four Strata) – Use scientific na | ames of | plants. | | Sampling Point: DP001 |
|---|----------|---------------|---------------|---|
| | Absolute | Dominant I | | Dominance Test worksheet: |
| <u>Tree Stratum</u> (Plot size: <u>30' Radius</u>) 1. Ulmus rubra | | Species? | Status FAC | Number of Dominant Species That Are OBL, FACW, or FAC:1 (A) |
| 2 | | | | |
| | | | | Total Number of Dominant Species Across All Strata: 2 (B) |
| | | | | Species Across All Strata: (B) |
| 4 | | · | | Percent of Dominant Species |
| 5 | | | | That Are OBL, FACW, or FAC: 50.00 (A/B) |
| 6 | - | | | Prevalence Index worksheet: |
| 7 | | · | | Total % Cover of: Multiply by: |
| | | = Total Cove | | OBL species 0 x 1 = 0 |
| 50% of total cover: <u>2.5</u> | 20% of | total cover:_ | 1.0 | FACW species 0 x 2 = 0 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | |
| 1 | | · | | 1710 species x s = |
| 2 | | | | FACU species 66 x 4 = 264 |
| 3 | | | | UPL species 0 x 5 = 0 |
| 4 | | | | Column Totals:92 (A)342.00 (B) |
| 5 | | | | Prevalence Index = B/A = 3.72 |
| 6 | | | | Hydrophytic Vegetation Indicators: |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | | | 2 - Dominance Test is >50% |
| 9 | | | | 3 - Prevalence Index is ≤3.0¹ |
| | 0 | = Total Cove | er | |
| 50% of total cover:0.0 | 20% of | total cover:_ | 0.0 | 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) |
| Herb Stratum (Plot size: 5' Radius) | | | | · · · · · · · · · · · · · · · · · · · |
| 1. Schedonorus arundinaceus | 63 | Y | FACU | Problematic Hydrophytic Vegetation ¹ (Explain) |
| 2. Vernonia gigantea | 15 | N | FAC | 4 |
| 3. Xanthium strumarium | 3 | N | FAC | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. Solanum carolinense | 3 | N | FACU | |
| 5. Rumex crispus | 3 | N | FAC | Definitions of Four Vegetation Strata: |
| 6 | | · | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| | | | | more in diameter at breast height (DBH), regardless of |
| | | - | | height. |
| 8 | | | | Sapling/Shrub – Woody plants, excluding vines, less |
| 9 | | · | | than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 10 | | · | | m) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| | | = Total Cove | | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover: <u>43.5</u> | 20% of | total cover:_ | 17.4 | Woody vine – All woody vines greater than 3.28 ft in |
| Woody Vine Stratum (Plot size: 30' Radius) | | | | height. |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | Hydrophytic |
| 5 | | | | Vegetation |
| | _ | = Total Cove | er | Present? Yes No/_ |
| 50% of total cover: 0.0 | | | | |
| Remarks: (Include photo numbers here or on a separate sh | neet.) | | | <u> </u> |
| Indicators of hydrophytic vegetation absent; parameter lacki | | | | |
| , , , | J | | | |
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SOIL Sampling Point: DP001

| Profile Desc | cription: (D | Describe t | to the dep | th needed | to docur | ment the i | indicator | or confirn | the abse | ence of indicators.) |
|----------------|---------------------------|------------|--------------|-----------|------------------------|-------------|--------------------|------------------|------------------------|---|
| Depth | | Matrix | | | Redo | x Feature | S | | | |
| (inches) | Color (| moist) | % | Color | (moist) | % | Type ¹ | Loc ² | Texture | e Remarks |
| 0-8 | 10YR | 4/3 | 98 | 10YR | 4/6 | 2 | C | М | SL | |
| 8-12 | 10YR | 4/3 | 85 | 5YR | 4/6 | 15 | C | M | SL | Redox features appear relict |
| | | | | | | | | · | | |
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| ¹Type: C=C | oncentration | n D-Denl | etion RM: | -Reduced | Matrix M | S-Masker | d Sand Gr | ains | ² l ocation | n: PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | etion, ixivi | -iveduced | iviatiix, ivi | 0-IVIASKE | J Sand Oi | airis. | | ndicators for Problematic Hydric Soils ³ : |
| Histosol | | | | Da | rk Surface | e (S7) | | | | _ 2 cm Muck (A10) (MLRA 147) |
| | pipedon (A2 | 2) | | | | | ice (S8) (N | /ILRA 147, | | Coast Prairie Redox (A16) |
| | istic (A3) | | | | in Dark Su | | | | | (MLRA 147, 148) |
| | en Sulfide (A | , | | | amy Gleye | | (F2) | | _ | _ Piedmont Floodplain Soils (F19) |
| | d Layers (A | | | | pleted Ma | | | | | (MLRA 136, 147) |
| | uck (A10) (L | | . (Δ11) | | dox Dark | | | | | Very Shallow Dark Surface (TF12) |
| | d Below Da ark Surface | | (A11) | | pleted Da dox Depre | | | | _ | _ Other (Explain in Remarks) |
| | Mucky Mine | | .RR N, | | n-Mangan | | | LRR N. | | |
| | A 147, 148) | | • | | MLRA 13 | | () (| | | |
| | Gleyed Matr | ix (S4) | | | nbric Surfa | | | | | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | | | | | | | (MLRA 14 | | wetland hydrology must be present, |
| | d Matrix (S6 | | | Re | d Parent N | Material (F | 21) (MLR | A 127, 147 | 7) | unless disturbed or problematic. |
| Restrictive | | | | | | | | | | |
| | | | | | | | | | | |
| | ches): | | | | | | | | Hydric | Soil Present? Yes No/ |
| Remarks: | | | | | | | | | | |
| Hydric soil in | dicators abs | sent; para | meter lack | ing. | | | | | | |
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WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

| Project/Site: Barrelhead Solar | | | | City/C | County: Wayne Count | ту | Sampling Date: 2024-08-17 |
|--|------------|--------------|-----------------------------|---|------------------------|------------------------|---|
| Applicant/Owner: Barrelhead S | | | | | | | Sampling Point: DP002 |
| Investigator(s): D. Hunter, L. B | | | | Section | | | |
| Landform (hillslope, terrace, et | | | | | | | |
| Subregion (LRR or MLRA): LR | | | | | | | |
| | | | | | | | |
| Soil Map Unit Name: Frederick | | | | | | | |
| Are climatic / hydrologic condit | | | | | | | |
| Are Vegetation, Soil | , or | · Hydı | ology | significantly distur | bed? Are "Nor | mal Circumstances" p | resent? Yes No |
| Are Vegetation, Soil | , or | · Hydı | ology | naturally problem | atic? (If neede | ed, explain any answer | s in Remarks.) |
| SUMMARY OF FINDING | GS – A | Attac | h sit | e map showing san | npling point loca | ations, transects, | , important features, etc. |
| Hydrophytic Vegetation Prese | ent? | | | ✓ No | Is the Sampled Are | ea | |
| Hydric Soil Present? | | | | ✓ No | within a Wetland? | Yes <u>√</u> | No |
| Wetland Hydrology Present? Remarks: | | | es | ✓ No | | | |
| All parameters met; area is co Precipitation Tool (APT) and c | | | | | | | nce review of the Antecedent |
| HYDROLOGY | | | | | | | |
| Wetland Hydrology Indicate | ors: | | | | | Secondary Indicat | tors (minimum of two required) |
| Primary Indicators (minimum | of one is | s requ | iired; c | check all that apply) True Aquatic Plants (| | Surface Soil (| , , |
| ✓ Surface Water (A1) | | | etated Concave Surface (B8) | | | | |
| ✓ High Water Table (A2) | | Drainage Pat | | | | | |
| ✓ Saturation (A3) | | | | ✓ Oxidized Rhizospher | | | |
| ✓ Water Marks (B1) | | | | Presence of Reduce | | | Vater Table (C2) |
| ✓ Sediment Deposits (B2) | | | | Recent Iron Reduction | | Crayfish Burr | , |
| Drift Deposits (B3) ✓ Algal Mat or Crust (B4) | | | | Thin Muck Surface (0 Other (Explain in Rei | | | sible on Aerial Imagery (C9) ressed Plants (D1) |
| Iron Deposits (B5) | | | | Other (Explain in Kei | ilaiks) | ✓ Geomorphic I | |
| Inundation Visible on Ae | rial Iman | erv (l | 37) | | | Shallow Aquit | |
| Water-Stained Leaves (E | _ | 0.7 (1 | <i>3.</i>) | | | | phic Relief (D4) |
| Aquatic Fauna (B13) | O) | | | | | ✓ FAC-Neutral | ' ' |
| Field Observations: | | | | | | | |
| Surface Water Present? | Yes | 1 | No | Depth (inches): 1 | | | |
| Water Table Present? | | | | Depth (inches): 0 | | | |
| Saturation Present? | | | | Depth (inches): 0 | Wetlan | nd Hydrology Presen | t? Yes/_ No |
| (includes capillary fringe) | | | | | | | |
| Describe Recorded Data (stre | am gau | ige, m | nonitor | ring well, aerial photos, pre | vious inspections), if | available: | |
| Remarks: | | | | | | | |
| At least one primary or two se | condary | indic | ators o | ohserved: narameter met | | | |
| The loads one primary or two so | Jonaary | maio | atoro c | bboorvou, paramotor mot. | | | |
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| EGETATION (Four Strata) – Use scientific na | ames of | plants. | | Sampling Point: DP002 |
|---|----------|---------------|------------|---|
| 201 Destina | Absolute | | | Dominance Test worksheet: |
| Tree Stratum (Plot size: 30' Radius) | | Species? | | Number of Dominant Species |
| 1. Salix nigra | 38 | <u> </u> | OBL | That Are OBL, FACW, or FAC: 2 (A) |
| 2 | | · | | Total Number of Dominant |
| 3 | | · | | Species Across All Strata: 2 (B) |
| 4 | | | | Percent of Dominant Species |
| 5 | | | | That Are OBL, FACW, or FAC:100.00 (A/B) |
| 6 | | | | Prevalence Index worksheet: |
| 7 | | | | Total % Cover of: Multiply by: |
| | | = Total Cove | | OBL species 59 x 1 = 59 |
| 50% of total cover: <u>19.0</u> | 20% of | total cover:_ | 7.6 | FACW species 87 x 2 = 174 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | 17.647 openios x = |
| 1 | | | | 1 AO Species X 0 = |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | Column Totals:146 (A)233.00 (B) |
| 5 | | | | Prevalence Index = B/A = 1.6 |
| 6 | | | | Hydrophytic Vegetation Indicators: |
| 7 | | | | ✓ 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | | | ✓ 2 - Dominance Test is >50% |
| 9 | | | | ✓ 3 - Prevalence Index is ≤3.0 ¹ |
| | | = Total Cove | | 4 - Morphological Adaptations ¹ (Provide supporting |
| | 20% of | total cover: | 0.0 | data in Remarks or on a separate sheet) |
| Herb Stratum (Plot size:5' Radius) | | | | Problematic Hydrophytic Vegetation ¹ (Explain) |
| 1. Echinochloa crus-pavonis | 63 | Y | FACW | robicinatio riyarophytic vegetation (Explain) |
| 2. Persicaria pensylvanica | 15 | N | FACW | ¹ Indicators of hydric soil and wetland hydrology must |
| 3. Sagittaria latifolia | 15 | N | OBL | be present, unless disturbed or problematic. |
| 4. Eleocharis obtusa | 3 | N | OBL | Definitions of Four Vegetation Strata: |
| 5. Cyperus strigosus | 3 | N | FACW | |
| 6. Juncus effusus | 3 | N | FACW | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of |
| 7 _. Ludwigia alternifolia | 3 | N | FACW | height. |
| 8. Carex vulpinoidea | 3 | N | OBL | Carling/Charle Wasdernlagte avaluation visus lass |
| 9 | | | | Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 10 | | | | m) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| | 108.0 | = Total Cove | er | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover: <u>54.0</u> | | | | Mandy vine All woods vines greater than 2.20 ft in |
| Woody Vine Stratum (Plot size:30' Radius) | | | | Woody vine – All woody vines greater than 3.28 ft in height. |
| 1 | | | | - 9 |
| 2 | | | | |
| 3 | | | | |
| 4. | | | | Hardward and a |
| 5. | | | | Hydrophytic Vegetation |
| | 0 | = Total Cove | er | Present? Yes No |
| 50% of total cover:0.0 | | | | |
| Remarks: (Include photo numbers here or on a separate sl | | | | I |
| ndicator 1 (Rapid Test) present with all dominant species F | , | BL; paramete | er met. Do | minance Test and Prevalence Index calculated for |

Indicator 1 (Rapid 1691, Foreference purposes only.

SOIL Sampling Point: DP002

| Profile Desc | cription: ([| Describe | to the dep | th needed | to docur | ment the i | indicator | or confirn | n the abs | sence of indicators.) |
|------------------------|---------------|--------------------|-------------|-----------|------------|-------------|-------------------|------------------|---------------------|--|
| Depth | | Matrix | | | Redo | x Feature | s | | | |
| (inches) | Color (| moist) | <u>%</u> | Color (| moist) | % | Type ¹ | Loc ² | Text | ure Remarks |
| 0-8 | 10YR | 4/2 | 80 | 7.5YR | 4/6 | 20 | C | М | SC | <u> </u> |
| 8-12 | 10YR | 4/1 | 92 | 7.5YR | 6/8 | 8 | С | | SC | <u> </u> |
| | | - | | | | | | | | |
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| ¹ Type: C=C | oncentratio | n, D=Dep | letion, RM | =Reduced | Matrix, M | S=Masked | d Sand Gr | ains. | ² Locati | on: PL=Pore Lining, M=Matrix. |
| Hydric Soil | Indicators: | | | | | | | | | Indicators for Problematic Hydric Soils ³ : |
| Histosol | l (A1) | | | Da | rk Surface | e (S7) | | | | 2 cm Muck (A10) (MLRA 147) |
| | pipedon (A2 | 2) | | | | . , | ce (S8) (N | /ILRA 147, | , 148) | Coast Prairie Redox (A16) |
| | istic (A3) | , | | | | ırface (S9 | | | , | (MLRA 147, 148) |
| | en Sulfide (/ | 44) | | | | ed Matrix (| | , , | | Piedmont Floodplain Soils (F19) |
| | d Layers (A | , | | | pleted Ma | | ` , | | | (MLRA 136, 147) |
| 2 cm Mu | uck (A10) (L | RR N) | | Re | dox Dark | Surface (F | - 6) | | | Very Shallow Dark Surface (TF12) |
| Deplete | d Below Da | rk Surface | e (A11) | De | pleted Da | rk Surface | e (F7) | | | Other (Explain in Remarks) |
| Thick D | ark Surface | (A12) | | Re | dox Depre | essions (F | 8) | | | |
| Sandy N | Mucky Mine | ral (S1) (L | .RR N, | Iron | n-Mangan | ese Mass | es (F12) (| LRR N, | | |
| | A 147, 148) | | | | MLRA 13 | 6) | | | | |
| Sandy C | Gleyed Matr | ix (S4) | | Um | bric Surfa | ace (F13) | (MLRA 13 | 36, 122) | | ³ Indicators of hydrophytic vegetation and |
| Sandy F | Redox (S5) | | | Pie | dmont Flo | oodplain S | oils (F19) | (MLRA 14 | 48) | wetland hydrology must be present, |
| Stripped | d Matrix (S6 | 5) | | Re | d Parent N | Material (F | 21) (MLR | A 127, 14 | 7) | unless disturbed or problematic. |
| Restrictive | Layer (if ol | oserved): | | | | | | | | |
| Type: | | | | | | | | | | |
| Depth (in | iches): | | | | | | | | Hvdri | c Soil Present? Yes No |
| Remarks: | | | | | | | | | | |
| Hydric soil in | dicator F3 (| Depleted | Matrix) pre | sent para | meter me | t. | | | | |
| , | | 200.0100 | | oom, para | | | | | | |
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WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

| Project/Site: Barrelhead Solar | | City | //County: Wayne County | Sa | ampling Date: 2024-08-17 |
|--|---------------------|------------------------------|-------------------------------|-----------------------|-----------------------------|
| Applicant/Owner: Barrelhead | | | | | · - |
| Investigator(s): D. Hunter, L. E | | | ction, Township, Range: | | |
| Landform (hillslope, terrace, et | | | | | |
| Subregion (LRR or MLRA): LF | | | | | |
| | | | | | |
| Soil Map Unit Name: Water | | | | | |
| Are climatic / hydrologic condit | | | | | |
| Are Vegetation, Soil | , or Hydrolog | yy significantly dis | turbed? Are "Norma | l Circumstances" pres | sent? Yes No |
| Are Vegetation, Soil | , or Hydrolog | yynaturally proble | matic? (If needed, | explain any answers i | n Remarks.) |
| SUMMARY OF FINDIN | GS – Attach s | ite map showing sa | ampling point location | ons, transects, i | mportant features, etc. |
| Hydrophytic Vegetation Pres | ont? Vos | ✓ No | | | |
| Hydric Soil Present? | | ✓ No | Is the Sampled Area | | |
| Wetland Hydrology Present? | | ✓ No | within a Wetland? | Yes | No |
| Remarks: | | | | | |
| All parameters met; area is co Precipitation Tool (APT) and o | | | | | e review of the Antecedent |
| HYDROLOGY | | | | | |
| Wetland Hydrology Indicat | ors: | | | Secondary Indicator | s (minimum of two required) |
| Primary Indicators (minimum | of one is required | ; check all that apply) | | ✓ Surface Soil Cra | acks (B6) |
| Surface Water (A1) | | True Aquatic Plant | s (B14) | Sparsely Vegeta | ated Concave Surface (B8) |
| High Water Table (A2) | | Hydrogen Sulfide (| Odor (C1) | ✓ Drainage Patter | ns (B10) |
| Saturation (A3) | | | eres on Living Roots (C3) | Moss Trim Line | s (B16) |
| Water Marks (B1) | | Presence of Reduc | ced Iron (C4) | Dry-Season Wa | ter Table (C2) |
| ✓ Sediment Deposits (B2) | | Recent Iron Reduc | tion in Tilled Soils (C6) | Crayfish Burrow | rs (C8) |
| Drift Deposits (B3) | | Thin Muck Surface | | | le on Aerial Imagery (C9) |
| Algal Mat or Crust (B4) | | Other (Explain in R | Remarks) | | ssed Plants (D1) |
| Iron Deposits (B5) | | | | ✓ Geomorphic Po | |
| Inundation Visible on Ae | | | | Shallow Aquitar | , , |
| Water-Stained Leaves (I | 39) | | | Microtopograph | , , |
| Aquatic Fauna (B13) | | | | ✓ FAC-Neutral Te | St (D5) |
| Field Observations: | Van Na | (Donth (inches) | | | |
| Surface Water Present? | | ✓ Depth (inches): | | | |
| Water Table Present? | | Depth (inches): | | | V / N- |
| Saturation Present? (includes capillary fringe) | Yes No | _ ✓ Depth (inches): | Wetland I | Hydrology Present? | Yes No |
| Describe Recorded Data (str | eam gauge, monit | oring well, aerial photos, p | previous inspections), if ava | ailable: | |
| Remarks: | | | | | |
| At least one primary or two se | econdary indicators | s observed; parameter me | et. | | |
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| 'EGETATION (Four Strata) – Use scientific na | ames of | piants. | | Sampling Point: DP004 |
|---|------------------|---------------------|------|---|
| Tree Stratum (Plot size: 30' Radius) | Absolute % Cover | Dominant Species? | | Dominance Test worksheet: |
| 1. Salix nigra | 38 | Y | OBL | Number of Dominant Species That Are OBL, FACW, or FAC:4 (A) |
| 2. Platanus occidentalis | 15 | Y | FACW | That Ale OBE, I AOVV, OI I AO (A) |
| 3. Ulmus rubra | 15 | Y | FAC | Total Number of Dominant Species Across All Strata: 4 (B) |
| | | | | Species Across All Strata:4 (B) |
| 4 5 | | | | Percent of Dominant Species |
| | | | | That Are OBL, FACW, or FAC: 100.00 (A/B) |
| 6 | | | | Prevalence Index worksheet: |
| 1 | | = Total Cove | | Total % Cover of: Multiply by: |
| 50% of total cover: <u>34.0</u> | | | | OBL species74 x 1 =74 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | 2070 01 | total 00 vor | 10.0 | FACW species 21 x 2 = 42 |
| , | | | | FAC species 100 x 3 = 300 |
| 1 2 | | | | FACU species 15 x 4 = 60 |
| 2 | | | | UPL species 0 x 5 = 0 |
| J | | | | Column Totals: 210 (A) 476.00 (B) |
| 4 | | | | |
| 5 6. | | | | Prevalence Index = B/A = 2.27 |
| · | | | | Hydrophytic Vegetation Indicators: |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | | | ✓ 2 - Dominance Test is >50% |
| 9 | | T-1-1-0 | | ✓ 3 - Prevalence Index is ≤3.0 ¹ |
| 50% of total cover: 0.0 | | = Total Cove | | 4 - Morphological Adaptations ¹ (Provide supporting |
| Herb Stratum (Plot size: 5' Radius) | 20 /6 01 | total cover | 0.0 | data in Remarks or on a separate sheet) |
| Microstegium vimineum | 85 | Υ | FAC | Problematic Hydrophytic Vegetation ¹ (Explain) |
| Persicaria hydropiperoides | 15 | N | OBL | |
| Lycopus americanus | 15 | N | OBL | ¹ Indicators of hydric soil and wetland hydrology must |
| Solidago canadensis | 15 | N | FACU | be present, unless disturbed or problematic. |
| 5. Mimulus alatus | 3 | N | OBL | Definitions of Four Vegetation Strata: |
| | 3 | N | OBL | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| 6. Carex Iupulina 7. Lobelia cardinalis | 3 | | FACW | more in diameter at breast height (DBH), regardless of |
| | 3 | N | | height. |
| 8. Boehmeria cylindrica | | N | FACW | Sapling/Shrub – Woody plants, excluding vines, less |
| 9 | | | | than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 10 | | | | m) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| 500/ // / | | = Total Cove | | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover: <u>71.0</u> | 20% of | total cover:_ | 28.4 | Woody vine – All woody vines greater than 3.28 ft in |
| Woody Vine Stratum (Plot size: 30' Radius) | | | | height. |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | Hydrophytic |
| 5 | | | | Vegetation |
| | 0 | = Total Cove | er | Present? Yes No |
| 50% of total cover: 0.0 | 20% of | total cover: | 0.0 | |
| Remarks: (Include photo numbers here or on a separate s | neet.) | | | |

Indicator 2 (Dominance Test) present with greater than 50% of dominant species FAC or wetter; parameter met. Prevalence Index calculated for reference purposes only.

SOIL Sampling Point: DP004

| Depth Matrix Color (moist) % Color (moist) % Type Loc Texture Remarks | Profile Des | cription: ([| Describe | to the dep | th needed | to docur | nent the i | ndicator | or confirn | n the abs | sence of indi | cators.) |
|--|----------------|---------------|-----------|-------------|--------------|------------|-------------|-----------------|------------|-----------|-------------------------|------------------------------|
| Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Location: PL=Pore Lining, M=Matrix. | | | | | | | | | | _ | | |
| 2-18 | (inches) | Color (| moist) | % | Color (| moist) | % | Type' | Loc | | | Remarks |
| Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Ptypric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148) Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148) Stratified Layers (A5) Zom Muck (A10) (MLRA 147, 148) Stratified Layers (A5) Zom Muck (A10) (LRR N) Depleted Matrix (F3) Zom Muck (A10) (LRR N) Depleted Below Dark Surface (F6) Thick Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Tiphic Surface (F13) (MLRA 136, 122) Sandy Redox (S5) Sandy Redox (S5) Red Parent Material (F21) (MLRA 147, 147) Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No Remarks: | 0-2 | 10YR | 4/2 | 100 | | | | C | M | SIC | <u>L</u> | |
| Hydric Soil Indicators: _ Histosol (A1) | 2-18 | 10YR | 5/2 | 85 | 7.5YR | 6/8 | 15 | С | M/PL | CL | - | |
| Hydric Soil Indicators: Histosol (A1) | | | | | | | | | | | | |
| Hydric Soil Indicators: _ Histosol (A1) | | | | | | | | | | | | |
| Hydric Soil Indicators: _ Histosol (A1) | | | | | | | | | | | _ | |
| Hydric Soil Indicators: _ Histosol (A1) | | | | | | | | | | | | |
| Hydric Soil Indicators: Histosol (A1) | | | | | | | | | | | | |
| Hydric Soil Indicators: Histosol (A1) | | | | | | | | | | | | |
| Hydric Soil Indicators: Histosol (A1) | | - | | - | - | | | - | | | | |
| Hydric Soil Indicators: Histosol (A1) | | | | · | - | | | | | | | |
| Hydric Soil Indicators: _ Histosol (A1) | | | | | - | | | - | - | | | |
| Hydric Soil Indicators: _ Histosol (A1) | | | | | | | | | | | | |
| Histosol (A1) | | | | letion, RM: | =Reduced | Matrix, MS | S=Masked | Sand Gr | ains. | | | |
| Histic Epipedon (A2) | Hydric Soil | Indicators | : | | | | | | | | Indicators fo | r Problematic Hydric Soils |
| Black Histic (A3) | | | | | | | | | | | | |
| Hydrogen Sulfide (A4) | | | 2) | | | | | | | , 148) | | |
| Tratified Layers (A5) 2 cm Muck (A10) (LRR N) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 136, 147) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, MLRA 136, 122) Piedmont Floodplain Soils (F19) (MLRA 148) Red Parent Material (F21) (MLRA 127, 147) Restrictive Layer (if observed): Type: Depth (inches): Remarks: | | | | | | | | | 47, 148) | | | |
| 2 cm Muck (A10) (LRR N) | | , | | | | | , | F2) | | | · | . , , |
| Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) Remarks: Depleted Dark Surface (F7) Depleted Dark Surface (F7) Sed Other (Explain in Remarks) Characterian Remarks) Depleted Dark Surface (F7) Cher (Explain in Remarks) Characterian Remarks) And Characterian Remarks Other (Explain in Remarks) Characterian Remarks) And Characterian Remarks All Characterian Remarks | | | | | | | | -6) | | | | |
| Thick Dark Surface (A12) | | | | ρ (Δ11) | | | | | | | | |
| Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) | | | | 0 (/ (/ / / | | | | | | | 01101 (E) | xpiair iii rtemantoj |
| MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) Restrictive Layer (if observed): Type: Depth (inches): Remarks: | | | | RR N, | | | | | LRR N, | | | |
| Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology must be present, Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) unless disturbed or problematic. Restrictive Layer (if observed): | | | | , | | | | () (| , | | | |
| Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes ✓ No Remarks: | Sandy (| Gleyed Matr | rix (S4) | | Um | bric Surfa | ce (F13) (| MLRA 13 | 6, 122) | | ³ Indicators | of hydrophytic vegetation an |
| Restrictive Layer (if observed): Type: Depth (inches): Remarks: Hydric Soil Present? Yes _ ✓ No | Sandy F | Redox (S5) | | | | | | | | | wetland hy | drology must be present, |
| Type: Depth (inches): Hydric Soil Present? Yes/ No Remarks: | | | | | Red | d Parent N | Material (F | 21) (MLR | A 127, 14 | 7) | unless dis | turbed or problematic. |
| Depth (inches): | Restrictive | Layer (if ol | oserved): | | | | | | | | | |
| Remarks: | Type: | | | | | | | | | | | |
| | Depth (in | nches): | | | | | | | | Hydri | c Soil Preser | nt? Yes 🗸 No |
| Hydric soil indicator F3 (Depleted Matrix) present; parameter met. | Remarks: | | | | | | | | | | | |
| | Hydric soil in | idicator F3 (| Depleted | Matrix) pre | esent; parai | meter met | . | | | | | |
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WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

| Project/Site: Barrelhead Solar | <u>- </u> | City/C | ounty: Wayne County | Sampling Date: 2024-08-17 |
|---|--|---|-----------------------------------|---|
| Applicant/Owner: Barrelhead | | | | Kentucky Sampling Point: DP005 |
| Investigator(s): D. Hunter, L. I | | | <u> </u> | |
| - · · · · | | | | ncave Slope (%): 3-7 |
| | | | | Datum: WGS84 |
| | | | | |
| | | | NV | |
| Are climatic / hydrologic condi | tions on the site typ | pical for this time of year? Y | es No (If no, ex | xplain in Remarks.) |
| Are Vegetation, Soil _ | , or Hydrolog | y significantly distur | bed? Are "Normal Circum | stances" present? Yes No |
| Are Vegetation, Soil _ | , or Hydrolog | y naturally problema | atic? (If needed, explain a | any answers in Remarks.) |
| SUMMARY OF FINDIN | IGS – Attach s | ite map showing sam | pling point locations, tra | ansects, important features, etc. |
| Hydrophytic Vegetation Pres | ent? Ves | No_ √ | | |
| Hydric Soil Present? | | No✓ | Is the Sampled Area | (aa Na (|
| Wetland Hydrology Present? | | No ✓ | within a Wetland? | 'es No <u>√</u> |
| Remarks: | | | | |
| One or more parameters lack Precipitation Tool (APT) and | | | | d a due diligence review of the Antecedent |
| HYDROLOGY | | | | |
| Wetland Hydrology Indicat | ors: | | Second | dary Indicators (minimum of two required) |
| Primary Indicators (minimum | of one is required: | | | rface Soil Cracks (B6) |
| Surface Water (A1) | | True Aquatic Plants (| | arsely Vegetated Concave Surface (B8) |
| High Water Table (A2) | | Hydrogen Sulfide Od | | ainage Patterns (B10) |
| Saturation (A3) | | Oxidized Rhizosphere | | oss Trim Lines (B16) |
| Water Marks (B1) | | Presence of Reduced | | y-Season Water Table (C2) |
| Sediment Deposits (B2) | | Recent Iron Reductio | | ayfish Burrows (C8) |
| Drift Deposits (B3) Algal Mat or Crust (B4) | | Thin Muck Surface (C Other (Explain in Ren | | turation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) |
| Iron Deposits (B5) | | Other (Explain in Ner | | eomorphic Position (D2) |
| Inundation Visible on Ac | erial Imagery (B7) | | | allow Aquitard (D3) |
| Water-Stained Leaves (| | | | crotopographic Relief (D4) |
| Aquatic Fauna (B13) | - / | | | C-Neutral Test (D5) |
| Field Observations: | | | | |
| Surface Water Present? | Yes No | ✓ Depth (inches): | | |
| Water Table Present? | | ✓ Depth (inches): | | |
| Saturation Present? | | ✓ Depth (inches): | | gy Present? Yes No✓ |
| (includes capillary fringe) | | | | |
| Describe Recorded Data (Sti | ream gauge, monito | oring well, aerial photos, pre | vious inspections), if available: | |
| Remarks: | | | | |
| No primary and only one seco | ondary indicator of | wetland hydrology present; | parameter lacking. | |
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VEGETATION (Four Strata) – Use scientific names of plants.

| /EGETATION (Four Strata) – Use scientific na | ames of | plants. | | Sampling Point: DP005 |
|---|----------|--------------|------------|---|
| | Absolute | Dominant | | Dominance Test worksheet: |
| <u>Tree Stratum</u> (Plot size:30' Radius) | % Cover | Species? | | Number of Dominant Species |
| 1. Acer saccharum | 38 | Y | FACU | That Are OBL, FACW, or FAC:3 (A) |
| 2. Acer nigrum | 38 | Y | FACU | Total Number of Dominant |
| 3. Carya glabra | 38 | <u> </u> | FACU | Species Across All Strata: 9 (B) |
| 4 | | | | Percent of Dominant Species |
| 5 | | | | That Are OBL, FACW, or FAC: 33.33 (A/B) |
| 6 | | | | Dravelance Index weather est. |
| 7 | | | | Prevalence Index worksheet: |
| | | = Total Cove | | Total % Cover of: Multiply by: |
| 50% of total cover:57.0 | 20% of | total cover: | 22.8 | OBL species 0 x 1 = 0 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | FAC species 0 x 2 = 0 FAC species 71 x 3 = 213 |
| 1. Acer saccharum | 15 | Y | FACU | 1710 opeoleo x o = |
| 2. Lindera benzoin | 15 | Y | <u>FAC</u> | FACU species 159 x 4 = 636 |
| 3 | | | | UPL species 3 x 5 = 15 |
| 4 | | | | Column Totals:233 (A)864.00 (B) |
| 5 | | | | Prevalence Index = B/A = 3.71 |
| 6 | | | | Hydrophytic Vegetation Indicators: |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | | | 2 - Dominance Test is >50% |
| 9 | | | | 3 - Prevalence Index is ≤3.0 ¹ |
| | | = Total Cove | | 4 - Morphological Adaptations ¹ (Provide supporting |
| 50% of total cover:15.0 | 20% of | total cover: | 6.0 | data in Remarks or on a separate sheet) |
| Herb Stratum (Plot size:5' Radius) | | | | Problematic Hydrophytic Vegetation¹ (Explain) |
| 1. Persicaria virginiana | 15 | <u> </u> | FAC | Froblematic Hydrophytic Vegetation (Explain) |
| 2. Verbesina alternifolia | 3 | N | FAC | ¹ Indicators of hydric soil and wetland hydrology must |
| 3. Sanicula canadensis | 3 | N | UPL | be present, unless disturbed or problematic. |
| 4 | | | | Definitions of Four Vegetation Strata: |
| 5 | | | | |
| 6 | | | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of |
| 7 | | | | height. |
| 8 | | | | Sapling/Shrub – Woody plants, excluding vines, less |
| 9 | | | | than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 10 | | | | m) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| | 21.0 | = Total Cove | er | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover:10.5 | 20% of | total cover: | 4.2 | Woody vine – All woody vines greater than 3.28 ft in |
| Woody Vine Stratum (Plot size: 30' Radius) | | | | height. |
| 1. Smilax rotundifolia | 38 | Y | FAC | |
| 2. Parthenocissus quinquefolia | 15 | Y | FACU | |
| 3. Lonicera japonica | 15 | Y | FACU | |
| 4 | | | | Hydrophytic |
| 5 | | | | Vegetation |
| | 68.0 | = Total Cove | er | Present? Yes No/ |
| 50% of total cover: <u>34.0</u> | 20% of | total cover: | 13.6 | |
| Remarks: (Include photo numbers here or on a separate si | | | | |
| Indicators of hydrophytic vegetation absent; parameter lack | ıııg. | | | |
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SOIL Sampling Point: DP005

| Profile Desc | cription: (D | Describe 1 | to the dept | th needed to docur | nent the | indicator | or confirn | n the al | bsence of indicators.) |
|----------------|------------------------------------|------------|-------------|---------------------------|--------------|-------------------|------------------|-------------------|--|
| Depth | | Matrix | | | x Feature | | | | |
| (inches) | Color (| moist) | % | Color (moist) | % | Type ¹ | Loc ² | Tex | kture Remarks |
| 0-6 | 10YR | 6/3 | 100 | | | | | S | SL |
| 6-10 | 10YR | 5/4 | 100 | | | | | S | SL |
| 10-18 | 10YR | 7/3 | 100 | | | | | | |
| | | | | | | - | | | |
| | - | | | | | - | | | |
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| | | | letion, RM= | Reduced Matrix, MS | S=Masked | d Sand Gra | ains. | ² Loca | ation: PL=Pore Lining, M=Matrix. |
| Hydric Soil | Indicators: | | | | | | | | Indicators for Problematic Hydric Soils ³ : |
| Histosol | | | | Dark Surface | . , | | | | 2 cm Muck (A10) (MLRA 147) |
| | pipedon (A2 | 2) | | Polyvalue Be | | | | , 148) | Coast Prairie Redox (A16) |
| | istic (A3) | | | Thin Dark Su | | | 47, 148) | | (MLRA 147, 148) |
| | en Sulfide (A | | | Loamy Gleye | | (F2) | | | Piedmont Floodplain Soils (F19) |
| | d Layers (A uck (A10) (L | | | Depleted Ma Redox Dark | | -c) | | | (MLRA 136, 147) Very Shallow Dark Surface (TF12) |
| | d Below Da | | - (Δ11) | Depleted Dai | | | | | Other (Explain in Remarks) |
| | ark Surface | | (/(1) | Redox Depre | | | | | Other (Explain in Remarks) |
| | Mucky Mine | | .RR N, | Iron-Mangan | | | LRR N, | | |
| | A 147, 148) | | , | MLRA 13 | | · / · | , | | |
| | Gleyed Matr | | | Umbric Surfa | • | (MLRA 13 | 6, 122) | | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | | | Piedmont Flo | odplain S | oils (F19) | (MLRA 14 | 48) | wetland hydrology must be present, |
| Stripped | d Matrix (S6 |) | | Red Parent N | /laterial (F | 21) (MLR | A 127, 147 | 7) | unless disturbed or problematic. |
| Restrictive | Layer (if ob | served): | | | | | | | |
| Type: | | | | | | | | | |
| Depth (in | iches): | | | | | | | Hyd | ric Soil Present? Yes No |
| Remarks: | | | | | | | | | |
| Hydric soil in | dicators abs | sent: para | meter lacki | na. | | | | | |
| , | | , , , | | 9. | | | | | |
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WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

| Project/Site: Barrelhead Solar | | | | City/C | City/County: Wayne County Sampling Date: 2024-08-19 | | | | | | |
|--|-----------|---------|------------|--------------------------|---|---|--|--|--|--|--|
| Applicant/Owner: Barrelhead S | Solar LLC |) | | | | State: Kentuc | ky Sampling Point: DP007 | | | | |
| Investigator(s): I. Bentley, D. Hunter Section, Township, Range: | | | | | | | | | | | |
| Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): Concave Slope (%): 0-2 | | | | | | | | | | | |
| Subregion (LRR or MLRA): LR | | | | | | | | | | | |
| | | | | | | | | | | | |
| Soil Map Unit Name: Garmon- | | | | | | | | | | | |
| 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 | Hydro | ology | naturally problema | atic? (If need | ed, explain any answ | ers in Remarks.) | | | | |
| SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. | | | | | | | | | | | |
| Hydrophytic Vegetation Prese Hydric Soil Present? | | Y | es 🗸 | No _ No _ No | Is the Sampled Ar within a Wetland? | | No | | | | |
| Wetland Hydrology Present? Remarks: | | T | es 🗸 | NO | | | | | | | |
| All parameters met; area is considered a palustrine forested (PFO) wetland. The lead delineator conducted a due diligence review of the Antecedent Precipitation Tool (APT) and determined that hydrologic conditions were normal at the time of survey. | | | | | | | | | | | |
| HYDROLOGY | | | | | | | | | | | |
| Wetland Hydrology Indicate | ors: | | | | | Secondary Indic | Secondary Indicators (minimum of two required) | | | | |
| Primary Indicators (minimum | of one is | requi | ired; chec | ck all that apply) | | ✓ Surface So | ✓ Surface Soil Cracks (B6) | | | | |
| ✓ Surface Water (A1) | | | | True Aquatic Plants (| | Sparsely Vegetated Concave Surface (B8) | | | | | |
| ✓ High Water Table (A2) ✓ Hydrogen Sulfide Odor (C1) ✓ Drainage Patterns (B10) | | | | | | | | | | | |
| ✓ Saturation (A3) | | | | Oxidized Rhizospher | | | | | | | |
| Water Marks (B1) | | | | Presence of Reduced | | | Water Table (C2) | | | | |
| Sediment Deposits (B2) | | | | Recent Iron Reduction | | | , | | | | |
| Drift Deposits (B3) | | | | | | | | | | | |
| ✓ Iron Deposits (B5) | | | | Otrier (Explain in Rei | naiks) | ✓ Geomorphi | | | | | |
| | rial Imag | erv (P | (7) | | | | , , | | | | |
| Inundation Visible on Aerial Imagery (B7) | | | | | | | | | | | |
| Aquatic Fauna (B13) | , | | | | | FAC-Neutra | ' ' | | | | |
| Field Observations: | | | | | | | | | | | |
| Surface Water Present? | Yes | / | No | _ Depth (inches): 16 | | | | | | | |
| Water Table Present? | | | | | | | | | | | |
| Water Table Present? Yes ✓ No Depth (inches): 2 Saturation Present? Yes ✓ No Depth (inches): 0 | | | | | | Wetland Hydrology Present? Yes No | | | | | |
| (includes capillary fringe) | - | | | - , , , , , | | | | | | | |
| Describe Recorded Data (stre | ∍am gauç | ge, m | onitoring | well, aerial photos, pre | vious inspections), if | f available: | | | | | |
| Remarks: | | | | | | | | | | | |
| At least one primary or two se | condary | indics | ators obse | erved: narameter met | | | | | | | |
| The loads one primary or two so | ooridary | iiidioc | 1010 0000 | orved, parameter met. | | | | | | | |
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| EGETATION (Four Strata) – Use scientific na | ames of | plants. | | Sampling Point: DP007 | | | | |
|--|--------------------------|-----------------|------------|---|--|--|--|--|
| Tree Stratum (Plot size: 30' Radius) | Absolute | Dominant | | Dominance Test worksheet: | | | | |
| 1. Platanus occidentalis | % Cover | Species? | FACW | Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A) | | | | |
| 2. Acer rubrum | 15 | - <u>'</u> Y | FAC | That Are OBL, FACW, or FAC: 9 (A) | | | | |
| - | | • ——— | | Total Number of Dominant | | | | |
| Liriodendron tulipifera | 10 | - <u>Y</u> | FACU | Species Across All Strata: 12 (B) | | | | |
| 4. Ulmus rubra | 10 | Y | _FAC_ | Percent of Dominant Species | | | | |
| 5 | | | | That Are OBL, FACW, or FAC: 75.00 (A/B) | | | | |
| 6 | | | | Prevalence Index worksheet: | | | | |
| 7 | | | | Total % Cover of: Multiply by: | | | | |
| 500/ of total account 25.0 | | = Total Cove | | OBL species 0 x 1 = 0 | | | | |
| 50% of total cover: 25.0 | 20% 01 | total cover: | 10.0 | FACW species 25 x 2 = 50 | | | | |
| Sapling/Shrub Stratum (Plot size: 15' Radius) 1. Asimina triloba | 40 | V | FAC | FAC species 93 x 3 = 279 | | | | |
| Alaua | 40 | - <u>Y</u> | <u>FAC</u> | FACU species 12 x 4 = 48 | | | | |
| 2. Alnus | 10 | . <u> </u> | • | UPL species | | | | |
| 3 | | | | Column Totals: 130 (A) 377.00 (B) | | | | |
| 4 | | | | Column Totals (A) (B) | | | | |
| 5 | | | | Prevalence Index = B/A = 2.9 | | | | |
| 6 | - | | | Hydrophytic Vegetation Indicators: | | | | |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation | | | | |
| 8 | | · | | ✓ 2 - Dominance Test is >50% | | | | |
| 9 | | · | | ✓ 3 - Prevalence Index is ≤3.0 ¹ | | | | |
| | | = Total Cove | | 4 - Morphological Adaptations ¹ (Provide supporting | | | | |
| | 20% of total cover: 10.0 | | | data in Remarks or on a separate sheet) | | | | |
| Herb Stratum (Plot size: 5' Radius) | | | | Problematic Hydrophytic Vegetation ¹ (Explain) | | | | |
| 1. Microstegium vimineum | 15 | <u>Y</u> | FAC | | | | | |
| 2. Impatiens capensis | 10 | <u>Y</u> | FACW | ¹ Indicators of hydric soil and wetland hydrology must | | | | |
| 3. Asimina triloba | 8 | <u> </u> | FAC_ | be present, unless disturbed or problematic. | | | | |
| 4 | | | | Definitions of Four Vegetation Strata: | | | | |
| 5 | | · | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or | | | | |
| 6 | | · | | more in diameter at breast height (DBH), regardless of | | | | |
| 7 | | | | height. | | | | |
| 8 | | | | Sapling/Shrub – Woody plants, excluding vines, less | | | | |
| 9 | | | | than 3 in. DBH and greater than or equal to 3.28 ft (1 | | | | |
| 10 | | | | m) tall. | | | | |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless | | | | |
| | 33.0 | = Total Cove | er | of size, and woody plants less than 3.28 ft tall. | | | | |
| 50% of total cover: 16.5 | 20% of | f total cover: | 6.6 | Woody vine – All woody vines greater than 3.28 ft in | | | | |
| Woody Vine Stratum (Plot size:30' Radius) | | | | height. | | | | |
| 1. Toxicodendron radicans | 3 | <u> </u> | FAC | | | | | |
| 2. Parthenocissus quinquefolia | 2 | Y | FACU | | | | | |
| 3. Smilax rotundifolia | 2 | Y | FAC | | | | | |
| 4 | | | | Hydrophytic | | | | |
| 5 | | | | Vegetation | | | | |

Remarks: (Include photo numbers here or on a separate sheet.)

50% of total cover: 3.5

Indicator 2 (Dominance Test) present with greater than 50% of dominant species FAC or wetter; parameter met. Prevalence Index calculated for reference purposes only.

7.0 _ = Total Cover

20% of total cover: 1.4

Yes ____ No ___

Present?

SOIL Sampling Point: DP007

| Profile Des | cription: ([| Describe t | o the dep | th needed to docur | nent the i | ndicator | or confirm | the abs | sence of indic | ators.) | |
|-------------|------------------------------------|------------|---------------|---|-------------|-----------------|------------------|---------|---------------------------|---|--|
| Depth | | Matrix | | | x Feature | - | . 2 | | | | |
| (inches) | Color (| | <u>%</u> | Color (moist) | % | Type' | Loc ² | Textu | | Remarks | |
| 0-3 | 10YR | 3/2 | 100 | | | | | SIL | | | |
| 3-18 | 10YR | 5/2 | 100 | | | | | SIL | <u> </u> | | |
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| | | | etion, RM= | Reduced Matrix, MS | S=Masked | Sand Gra | ins. | | | _ining, M=Matrix. | |
| • | Indicators | : | | | | | | | | Problematic Hydric Soils ³ : | |
| Histoso | | | | Dark Surface | . , | | | | | k (A10) (MLRA 147) | |
| | pipedon (A2 | 2) | | Polyvalue Be | | | | 148) | | irie Redox (A16) | |
| | listic (A3) | ۸ ۵) | | Thin Dark Su | | | 47, 148) | | | 147, 148) | |
| | en Sulfide (A | | | Loamy Gleye | | F2) | | | | Floodplain Soils (F19) | |
| | d Layers (A uck (A10) (I | | | ✓ Depleted Ma | | .e) | | | | 136, 147) | |
| | ed Below Da | | (A11) | Redox Dark Surface (F6)Depleted Dark Surface (F7)Other (Explain in Remarks) | | | | | | | |
| | ark Surface | | , (, (, , , , | Redox Depre | | | | | 00. (2.4 | plant in reomane, | |
| | Mucky Mine | | RR N, | Iron-Mangan | | | RR N, | | | | |
| | A 147, 148) | | • | MLRA 13 | | ` , ` | , | | | | |
| | Gleyed Matr | | | Umbric Surfa | | MLRA 13 | 6, 122) | | ³ Indicators o | f hydrophytic vegetation and | |
| Sandy F | Redox (S5) | | | Piedmont Flo | odplain S | oils (F19) | (MLRA 14 | l8) | wetland hy | drology must be present, | |
| | d Matrix (S6 | | | Red Parent N | Material (F | 21) (MLR | A 127, 147 | 7) | unless dist | urbed or problematic. | |
| Restrictive | Layer (if ol | oserved): | | | | | | | | | |
| Type: | | | | | | | | | | | |
| Depth (in | nches): | | | | | | | Hydrid | c Soil Present | ? Yes <u>/</u> No | |
| Remarks: | | | | | | | | 1 | | | |
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WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

| Project/Site: Barrelhead Solar | | City/C | county: Wayne | | Sampling Date: 2024-08-19 | | | | |
|--|--|---|---------------------------------|---|---------------------------------|--|--|--|--|
| Applicant/Owner: Barrelhead | | | | | Sampling Point: DP008 | | | | |
| Investigator(s): D. Hunter, I. Bentley Section, Township, Range: | | | | | | | | | |
| Landform (hillslope, terrace, e | | | | | | | | | |
| Subregion (LRR or MLRA): LF | | | | | | | | | |
| | (((), (), (), (), (), (), (), (), (), () | | | | | | | | |
| Soil Map Unit Name: None | | | | | | | | | |
| Are climatic / hydrologic condi | | | | | | | | | |
| Are Vegetation, Soil | , or Hydrolog | y significantly distur | bed? Are "Norma | l Circumstances" p | resent? Yes No | | | | |
| Are Vegetation, Soil | , or Hydrolog | y naturally problema | atic? (If needed, | explain any answer | rs in Remarks.) | | | | |
| SUMMARY OF FINDIN | GS – Attach s | ite map showing san | pling point location | ons, transects | , important features, etc. | | | | |
| Hydrophytic Vegetation Pres | ent? Vec | ✓ No | | | | | | | |
| Hydric Soil Present? | Yes _ | Is the Sampled Area | | N | | | | | |
| Wetland Hydrology Present? | | ✓ No | within a Wetland? | Yes No | | | | | |
| Remarks: | | | | | | | | | |
| One or more parameters lack Precipitation Tool (APT) and | | | | | igence review of the Antecedent | | | | |
| HYDROLOGY | | | | | | | | | |
| Wetland Hydrology Indicat | ors: | | | Secondary Indica | tors (minimum of two required) | | | | |
| Primary Indicators (minimum | of one is required | ; check all that apply) | | Surface Soil Cracks (B6) | | | | | |
| Surface Water (A1) | | Sparsely Vegetated Concave Surface (B8) | | | | | | | |
| High Water Table (A2) | ✓ Drainage Pat | | | | | | | | |
| Saturation (A3) | | | es on Living Roots (C3) | Moss Trim Li | | | | | |
| Water Marks (B1) | | Presence of Reduced | | | Water Table (C2) | | | | |
| Sediment Deposits (B2) | | Recent Iron Reductio | | Crayfish Burrows (C8) | | | | | |
| Drift Deposits (B3) | | Thin Muck Surface (C | | Saturation Visible on Aerial Imagery (C9) | | | | | |
| Algal Mat or Crust (B4) | | Other (Explain in Rer | narks) | | ressed Plants (D1) | | | | |
| Iron Deposits (B5) Inundation Visible on Ae | orial Imagery (R7) | | | ✓ Geomorphic Shallow Aqui | , , | | | | |
| Water-Stained Leaves (I | , | | | | phic Relief (D4) | | | | |
| Aquatic Fauna (B13) | 33) | | | FAC-Neutral | | | | | |
| Field Observations: | | | | | | | | | |
| Surface Water Present? | Yes No. | Depth (inches): | | | | | | | |
| Water Table Present? | | ✓ Depth (inches): | | | | | | | |
| Saturation Present? | Yes No | | tland Hydrology Present? Yes No | | | | | | |
| (includes capillary fringe) | | | | | 1: 163 <u>V</u> 110 | | | | |
| Describe Recorded Data (str | eam gauge, monit | oring well, aerial photos, pre | vious inspections), if ava | ailable: | | | | | |
| Remarks: | | | | | | | | | |
| At least one primary or two se | econdary indicators | s observed; parameter met. | | | | | | | |
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| EGETATION (Four Strata) – Use scientific na | | plants. | | Sampling Point: DP008 |
|--|----------|-------------------|------------|--|
| Tree Stratum (Plot size:30' Radius) | Absolute | Dominant Species? | | Dominance Test worksheet: |
| 1. Liriodendron tulipifera | 38 | Y | FACU | Number of Dominant Species That Are OBL, FACW, or FAC:5 (A) |
| 2. Acer rubrum | 38 | - <u>'</u> Y | FAC | That Are OBL, FACW, OF FAC (A) |
| 3. Ulmus rubra | 15 | . N | FAC | Total Number of Dominant |
| 4. Asimina triloba | 15 | N | FAC | Species Across All Strata: 6 (B) |
| 5 | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: 83.33 (A/B) |
| 6 | - | | | Basedon as Indianas de La co |
| 7 | | | | Prevalence Index worksheet: |
| | 106.0 | = Total Cov | er | Total % Cover of: Multiply by: |
| 50% of total cover:53.0 | 20% of | f total cover: | 21.2 | OBL species |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | FACW species15 x 2 =30 |
| 1. Asimina triloba | 38 | Y | FAC | FAC species x 3 = 753 |
| 2. Lindera benzoin | 38 | Y | FAC | FACU species 59 x 4 = 236 |
| 3. Fraxinus pennsylvanica | 15 | N | FACW | UPL species 0 x 5 = 0 |
| 4. Carpinus caroliniana | 3 | N | FAC | Column Totals: 325 (A) 1019.00 (B) |
| 5. Hamamelis virginiana | 3 | N | FACU | Prevalence Index = B/A = 3.14 |
| 6 | - | | | Hydrophytic Vegetation Indicators: |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | | | ✓ 2 - Dominance Test is >50% |
| 9 | | | | 3 - Prevalence Index is ≤3.0¹ |
| | 97.0 | = Total Cov | er | 4 - Morphological Adaptations¹ (Provide supporting |
| 50% of total cover: 48.5 | 20% of | f total cover: | 19.4 | data in Remarks or on a separate sheet) |
| Herb Stratum (Plot size:5' Radius) | | | | Problematic Hydrophytic Vegetation¹ (Explain) |
| 1. Laportea canadensis | 63 | Y | <u>FAC</u> | 1 Toblematic Hydrophytic Vegetation (Explain) |
| 2. Polystichum acrostichoides | 15 | N | FACU | ¹ Indicators of hydric soil and wetland hydrology must |
| 3. Amphicarpaea bracteata | 3 | N | FAC | be present, unless disturbed or problematic. |
| 4. Heuchera americana | 3 | N | FACU | Definitions of Four Vegetation Strata: |
| 5 | | | | |
| 6 | | | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of |
| 7 | - | | | height. |
| 8 | | | | One line of Ohmoha Mandanda and and and and and and and and |
| 9 | | | | Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 10 | | | | m) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| | 84.0 | = Total Cov | er | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover: 42.0 | | | | Was divides All was divided and state their 2.20 ft in |
| Woody Vine Stratum (Plot size:30' Radius) | | | | Woody vine – All woody vines greater than 3.28 ft in height. |
| 1. Toxicodendron radicans | 38 | Y | FAC | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | Understadie |
| 5 | _ | · | | Hydrophytic |

Remarks: (Include photo numbers here or on a separate sheet.)

Indicator 2 (Dominance Test) present with greater than 50% of dominant species FAC or wetter; parameter met. Prevalence Index calculated for reference purposes only.

50% of total cover: <u>19.0</u> 20% of total cover: <u>7.6</u>

38.0 _ = Total Cover

Yes ____ No ___

Present?

| Profile Des | cription: ([| Describe | to the dep | th needed | d to docun | nent the i | indicator | or confirn | n the abse | nce of indicators.) |
|----------------|---------------------|------------|--------------|-----------|-------------|------------|-------------------|------------------|-----------------------|---|
| Depth | | Matrix | | | Redo | x Feature | S | | | |
| (inches) | Color (| | % | Color | (moist) | % | Type ¹ | Loc ² | Texture | e Remarks |
| 0-2 | 10YR | 4/3 | 100 | | | | | | L | |
| 2-12 | 10YR | 4/4 | 100 | | | - | - | | FSL | |
| | | | · —— | | | | | | • | |
| 12-18 | 10YR | 4/3 | 95 | 10YR | 5/8 | 5 | C | M | FSL | |
| | | | | | | | | | | |
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| ¹Type: C=C | oncentratio | n. D=Dep | letion. RM | =Reduced | Matrix. MS | S=Masked | d Sand Gr | ains. | ² Location | n: PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | | | | | | | | dicators for Problematic Hydric Soils ³ : |
| Histoso | | - | | Da | rk Surface | (97) | | | | _ 2 cm Muck (A10) (MLRA 147) |
| | pipedon (A2 | 2) | | | lyvalue Be | . , | ce (S8) (N | II RΔ 147 | 148) | Coast Prairie Redox (A16) |
| | listic (A3) | -, | | | in Dark Su | | . , . | | , _ | (MLRA 147, 148) |
| | en Sulfide (| Δ4) | | | amy Gleye | | | 147, 140) | | Piedmont Floodplain Soils (F19) |
| | d Layers (A | | | | pleted Ma | | (1 2) | | _ | (MLRA 136, 147) |
| | uck (A10) (L | , | | | dox Dark | | -6) | | | Very Shallow Dark Surface (TF12) |
| | ed Below Da | | e (A11) | | pleted Dar | | | | _ | _ Other (Explain in Remarks) |
| | ark Surface | | , (, , , ,) | | dox Depre | | | | _ | |
| | Mucky Mine | | RR N. | | n-Mangan | | | LRR N. | | |
| | A 147, 148) | | , | | MLRA 13 | | 00 () (| , | | |
| | Gleyed Matr | | | Un | nbric Surfa | - | (MLRA 13 | 6. 122) | | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | (- 1) | | | edmont Flo | | | | | wetland hydrology must be present, |
| | d Matrix (S6 | 5) | | | d Parent N | | | | | unless disturbed or problematic. |
| Restrictive | | - | | | | (1 | , (| | 1 | |
| Type: | | | | | | | | | | |
| | - I \ | | | | | | | | I I a collection of | 0-11 Pos-s10 Vs-s No. / |
| | nches): | | | | | | | | Hydric | Soil Present? Yes No/ |
| Remarks: | | | | | | | | | | |
| Hydric soil in | dicators abs | sent; para | meter not | met. | | | | | | |
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| Project/Site: Barrelhead Solar | • | City/C | county: Wayne County | ; | Sampling Date: 2024-08-19 | | | | | |
|---|---|--------------------------------|-------------------------------|-------------------------------|-------------------------------|--|--|--|--|--|
| Applicant/Owner: Barrelhead | Solar LLC | | | State: Kentucky | Sampling Point: DP009 | | | | | |
| | nvestigator(s): D. Hunter, I. Bentley Section, Township, Range: | | | | | | | | | |
| Landform (hillslope, terrace, e | | | | | | | | | | |
| Subregion (LRR or MLRA): LF | | | | | | | | | | |
| Soil Map Unit Name: Garmon | | | | | | | | | | |
| Are climatic / hydrologic condi | | | | | | | | | | |
| | | | | | | | | | | |
| - | | | | | esent? Yes/ No | | | | | |
| Are Vegetation, Soil SUMMARY OF FINDIN | | | | | important features, etc. | | | | | |
| | | | 7 37 | | | | | | | |
| Hydrophytic Vegetation Pres | | ✓ No | Is the Sampled Area | | | | | | | |
| Hydric Soil Present? Wetland Hydrology Present? | | No <u>√</u> No <u>√</u> | within a Wetland? | Yes | No/ | | | | | |
| Remarks: | 165_ | NO | | | | | | | | |
| All parameters met; area is co | onsidered a palustrir | ne forested (PFO) wetland. | The lead delineator cond | lucted a due diliger | nce review of the Antecedent | | | | | |
| Precipitation Tool (APT) and | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| HYDROLOGY | | | | | | | | | | |
| Wetland Hydrology Indicat | ors: | | | Secondary Indicate | ors (minimum of two required) | | | | | |
| Primary Indicators (minimum | of one is required; | check all that apply) | | Surface Soil C | racks (B6) | | | | | |
| Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (| | | | | | | | | | |
| High Water Table (A2) | | Hydrogen Sulfide Od | | Drainage Patte | erns (B10) | | | | | |
| Saturation (A3) | | Oxidized Rhizosphere | | Moss Trim Lin | | | | | | |
| Water Marks (B1) | | Presence of Reduced | | | /ater Table (C2) | | | | | |
| Sediment Deposits (B2) | | Recent Iron Reductio | | Crayfish Burro | | | | | | |
| Drift Deposits (B3) | | Thin Muck Surface (C | | | ible on Aerial Imagery (C9) | | | | | |
| Algal Mat or Crust (B4) Iron Deposits (B5) | | Other (Explain in Rer | | Stunted or Str ✓ Geomorphic F | essed Plants (D1) | | | | | |
| Inundation Visible on Ae | arial Imagery (R7) | | • | Shallow Aquita | | | | | | |
| Water-Stained Leaves (I | | | | | hic Relief (D4) | | | | | |
| Aquatic Fauna (B13) | | | • | FAC-Neutral T | • • | | | | | |
| Field Observations: | | | | | | | | | | |
| Surface Water Present? | Yes No _ | ✓ Depth (inches): | | | | | | | | |
| Water Table Present? | | ✓ Depth (inches): | | | | | | | | |
| Saturation Present? | | ✓ Depth (inches): | | ydrology Present | ? Yes No✓ | | | | | |
| (includes capillary fringe) Describe Recorded Data (str | room gougo, monito | ring wall parial photos pro | vious inapactions) if avail | loblo: | | | | | | |
| Describe Recorded Data (Sti | eam gauge, monitor | ning well, aerial priolos, pre | vious irispections), ir avail | iable. | | | | | | |
| Remarks: | | | | | | | | | | |
| No primary and only one seco | ondary indicator of w | vetland hydrology present; | parameter lacking. | | | | | | | |
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| EGETATION (Four Strata) – Use scientific n | Sampling Point: DP009 | | | | |
|--|-----------------------|-----------------|------|--|--|
| 001 Parillia | Absolute | Dominant Ir | | Dominance Test worksheet: | |
| Tree Stratum (Plot size: 30' Radius) | | Species? | | Number of Dominant Species | |
| 1. Morus rubra | 38 | Y | FACU | That Are OBL, FACW, or FAC:7 (A) | |
| 2 _. Juniperus virginiana | 38 | Y | FACU | Total Number of Dominant | |
| 3. Quercus alba | 15 | N | FACU | Species Across All Strata: 10 (B) | |
| 4. Platanus occidentalis | 15 | N | FACW | Percent of Dominant Species | |
| 5 | | | | That Are OBL, FACW, or FAC: (A/B) | |
| 6 | | | | Prevalence Index worksheet: | |
| 7 | | | | | |
| | | = Total Cover | | Total % Cover of: Multiply by: OBL species 0 x 1 = 0 | |
| 50% of total cover:53.0 | 20% of | f total cover:_ | 21.2 | X 1 = | |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | FACW species 36 x 2 = 72 | |
| 1. Carpinus caroliniana | 38 | <u> </u> | FAC | FAC species 165 x 3 = 495 | |
| 2. Lindera benzoin | 38 | Y | FAC | FACU species121 x 4 =484 | |
| 3. Prunus serotina | 15 | <u>N</u> | FACU | UPL species0 x 5 =0 | |
| 4. Fraxinus pennsylvanica | 3 | N | FACW | Column Totals:322 (A)1051.00 (B) | |
| 5 | | | | Prevalence Index = B/A = 3.26 | |
| 6 | | | | Hydrophytic Vegetation Indicators: | |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation | |
| 8 | · - | | | ✓ 2 - Dominance Test is >50% | |
| 9 | · - | | | 3 - Prevalence Index is ≤3.0 ¹ | |
| | 94.0 | = Total Cover | r | 4 - Morphological Adaptations ¹ (Provide supporting | |
| 50% of total cover: <u>47.0</u> | 20% of | f total cover:_ | 18.8 | data in Remarks or on a separate sheet) | |
| Herb Stratum (Plot size: 5' Radius) | | | | , | |
| 1. Persicaria virginiana | 15 | <u> </u> | FAC | Problematic Hydrophytic Vegetation ¹ (Explain) | |
| 2 _. Microstegium vimineum | 15 | Y | FAC | The directions of broading of the adversarial broadings are the | |
| 3. Agrimonia parviflora | 15 | Y | FACW | 'Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | |
| 4. Rosa multiflora | 15 | Y | FACU | Definitions of Four Vegetation Strata: | |
| 5. Sceptridium dissectum | 3 | <u>N</u> | FAC | Seminorio di Fodi Vegetation Ottata. | |
| 6. Vernonia noveboracensis | 3 | <u>N</u> | FACW | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or | |
| 7 | | | | more in diameter at breast height (DBH), regardless of height. | |
| 8. | | | | | |
| 9. | | | | Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 | |
| 10. | | | | m) tall. | |
| 11. | | | | Hank All hankassassa (rasa susanbi) mlanta manandisas | |
| | 66.0 | = Total Cove | | Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. | |
| 50% of total cover: 33.0 | | f total cover: | | | |
| Woody Vine Stratum (Plot size: 30' Radius) | | _ | | Woody vine – All woody vines greater than 3.28 ft in height. | |
| 1. Toxicodendron radicans | 38 | Υ | FAC | noight. | |
| 2. Smilax rotundifolia | 15 | Y | FAC | | |
| 3. Bignonia capreolata | 3 | N | FAC | | |
| 4. | | | | | |
| . | | · —— | | Hydrophytic Vegetation | |
| | 56.0 | = Total Cove | | Present? Yes/ No | |
| | | - 10tal 0076 | | | |

Remarks: (Include photo numbers here or on a separate sheet.)

Indicator 2 (Dominance Test) present with greater than 50% of dominant species FAC or wetter; parameter met. Prevalence Index calculated for reference purposes only.

50% of total cover: <u>28.0</u> 20% of total cover: <u>11.2</u>

| Profile Desc | ription: (D | Describe | to the dept | th needed to docum | nent the i | ndicator | or confirn | n the ab | sence of indicators.) |
|----------------|------------------------------------|--------------------|-------------|-----------------------------|-------------|---------------------|------------------|--------------------|--|
| Depth | | Matrix | | | k Feature | | | | |
| (inches) | Color (| moist) | % | Color (moist) | % | Type ¹ | Loc ² | Text | ture Remarks |
| 0-2 | 10YR | 4/3 | 100 | | | | | L | <u> </u> |
| 2-8 | 10YR | 4/4 | 100 | | | | | FS | SL |
| 8-18 | 7.5YR | 4/6 | 100 | | | | | FS | SL |
| | | | | | | | | | |
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| | | | letion, RM= | Reduced Matrix, MS | S=Masked | Sand Gra | ains. | ² Locat | tion: PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | | | | | | | Indicators for Problematic Hydric Soils ³ : |
| Histosol | | ., | | Dark Surface | . , | (00) (1) | | 4.40\ | 2 cm Muck (A10) (MLRA 147) |
| | oipedon (A2 | <u>(</u>) | | Polyvalue Be | | | | 148) | Coast Prairie Redox (A16) |
| | stic (A3) en Sulfide (<i>A</i> | \ | | Thin Dark Su Loamy Gleye | | | 47, 148) | | (MLRA 147, 148) Piedmont Floodplain Soils (F19) |
| | d Layers (A | , | | Depleted Ma | | 172) | | | (MLRA 136, 147) |
| | uck (A10) (L | | | Redox Dark | | -6) | | | Very Shallow Dark Surface (TF12) |
| | d Below Da | | e (A11) | Depleted Dar | | | | | Other (Explain in Remarks) |
| | ark Surface | | , , | Redox Depre | | | | | |
| Sandy N | lucky Miner | ral (S1) (L | .RR N, | Iron-Mangan | ese Mass | es (F12) (I | _RR N, | | |
| | A 147, 148) | | | MLRA 13 | - | | | | |
| | Sleyed Matr | ix (S4) | | Umbric Surfa | | | | | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | | | Piedmont Flo | | | | | wetland hydrology must be present, |
| | Matrix (S6) | | | Red Parent N | faterial (F | 21) (MLR . | A 127, 147 | 7) | unless disturbed or problematic. |
| Restrictive | | | | | | | | | |
| | | | | | | | | | |
| Depth (in | ches): | | | | | | | Hydr | ric Soil Present? Yes No/ |
| Remarks: | | | | | | | | | |
| Hydric soil in | dicators abs | sent; para | meter not r | net. | | | | | |
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| Project/Site: Barrelhead Solar | | | City/C | ounty: Wayne County | | Sampling Date: 2024-08-19 | | | | |
|--|--|----------|---|----------------------------|--|--|--|--|--|--|
| Applicant/Owner: Barrelhead S | | | | | | Sampling Point: DP010 | | | | |
| Investigator(s): D. Hunter, I. B | | | | | | | | | | |
| Landform (hillslope, terrace, et | | | | | | | | | | |
| | | | | | | | | | | |
| Subregion (LRR or MLRA): LR | | | | | | | | | | |
| Soil Map Unit Name: Frederick | | | | | | | | | | |
| Are climatic / hydrologic condit | | | | | | | | | | |
| Are Vegetation, Soil | , or Hydrolog | ЭУ | significantly disturb | ped? Are "Norm | nal Circumstances" pi | resent? Yes No | | | | |
| Are Vegetation, Soil | , or Hydroloç | ЭУ | naturally problema | itic? (If needed | , explain any answer | s in Remarks.) | | | | |
| SUMMARY OF FINDIN | GS – Attach s | site ma | ap showing sam | pling point locat | ions, transects, | important features, etc. | | | | |
| Lludrophytic Variation Drag | ont? Voc | | No | | | | | | | |
| Hydrophytic Vegetation Present? | | | No | Is the Sampled Area | | | | | | |
| Wetland Hydrology Present? | | | No | within a Wetland? | Yes | No | | | | |
| Remarks: | | | | | | | | | | |
| All parameters met; area is co Precipitation Tool (APT) and o | | | | | | ence review of the Antecedent | | | | |
| HYDROLOGY | | | | | | | | | | |
| Wetland Hydrology Indicate | ors: | | | | Secondary Indicat | ors (minimum of two required) | | | | |
| Primary Indicators (minimum | of one is required | l; check | all that apply) | | ✓ Surface Soil (| Cracks (B6) | | | | |
| Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8) | | | | | | | | | | |
| High Water Table (A2) | High Water Table (A2) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) | | | | | | | | | |
| Saturation (A3) | | | | es on Living Roots (C3 | | | | | | |
| Water Marks (B1) | | | Presence of Reduced | | | Vater Table (C2) | | | | |
| ✓ Sediment Deposits (B2) | | | Recent Iron Reduction | | Crayfish Burro | | | | | |
| Drift Deposits (B3) Algal Mat or Crust (B4) | | | Γhin Muck Surface (C Other (Explain in Ren | | | sible on Aerial Imagery (C9) ressed Plants (D1) | | | | |
| Iron Deposits (B5) | | — ` | Julei (Explain in Neil | iaiks) | | | | | | |
| Inundation Visible on Ae | rial Imagery (B7) | | | | ✓ Geomorphic Position (D2)— Shallow Aquitard (D3) | | | | | |
| Water-Stained Leaves (E | | | | | | phic Relief (D4) | | | | |
| Aquatic Fauna (B13) | , | | | | ✓ FAC-Neutral | , , | | | | |
| Field Observations: | | | | | | | | | | |
| Surface Water Present? | Yes No | | Depth (inches): | | | | | | | |
| Water Table Present? | | | Depth (inches): | | | | | | | |
| Saturation Present? | Yes No | ✓ | Depth (inches): | Wetland | l Hydrology Present | ? Yes/_ No | | | | |
| (includes capillary fringe) Describe Recorded Data (stre | eam gauge monit | toring w | all aerial photos pre | vious inspections) if a | vailable: | | | | | |
| Document recorded Data (care | Jan gaago, mom | ornig w | on, donar priotoc, pro | viodo iriopodilorio), ir d | vanasio. | | | | | |
| Remarks: | | | | | | | | | | |
| At least one primary or two se | condary indicator | s observ | ved; parameter met. | | | | | | | |
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VEGETATION (Four Strata) – Use scientific names of plants.

| EGETATION (Four Strata) – Use scientific r | iailles oi | piarits. | | Sampling Point: DP010 |
|--|--|---------------|--------|--|
| To the Color of Color | | Dominant | | Dominance Test worksheet: |
| Tree Stratum (Plot size:30' Radius) 1 | | Species? | Status | Number of Dominant Species That Are OBL, FACW, or FAC:4 (A) |
| 2 | | | | Total Number of Dominant Species Across All Strata:4 (B) |
| 4 5 | _ | | | Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B) |
| 6 | | | | (42) |
| 7 | | | | Prevalence Index worksheet: |
| | 0 | = Total Cove | er | Total % Cover of: Multiply by: OBL species 41 x 1 = 41 |
| 50% of total cover: 0.0 | 20% of | total cover:_ | 0.0 | X 1 = |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | 77.677 opedide X = |
| 1 | - | | | 1710 opcoles x o = |
| 2 | | | | 17100 oposico x 1= |
| 3 | · . | | | |
| 4 | | | | Column Totals:98 (A)197.00 (B) |
| 5 | | | | Prevalence Index = B/A = 2.01 |
| 6 | | | | Hydrophytic Vegetation Indicators: |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | - | | | ✓ 2 - Dominance Test is >50% |
| 9 | · — | | | ✓ 3 - Prevalence Index is ≤3.0 ¹ |
| 500/ (/ /) | | = Total Cove | | 4 - Morphological Adaptations ¹ (Provide supporting |
| 50% of total cover: 0.0 | <u>) </u> | total cover:_ | 0.0 | data in Remarks or on a separate sheet) |
| Herb Stratum (Plot size: 5' Radius) | 38 | V | OBL | Problematic Hydrophytic Vegetation ¹ (Explain) |
| 1. Carex frankii | 15 | <u> </u> | FAC | |
| 2. Setaria parviflora | 15 | Y | | ¹ Indicators of hydric soil and wetland hydrology must |
| 3. Paspalum dilatatum | · | | FAC | be present, unless disturbed or problematic. |
| 4. Juncus effusus | 15 3 | | FACW | Definitions of Four Vegetation Strata: |
| 5. Symphyotrichum racemosum | - | | FACW | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| 6. Vernonia noveboracensis | 3 | N | FACW | more in diameter at breast height (DBH), regardless of |
| 7. Ludwigia palustris | 3 | N | OBL | height. |
| 8. Ambrosia artemisiifolia | 3 | N | FACU | Sapling/Shrub – Woody plants, excluding vines, less |
| 9. Rosa multiflora | 3 | N | FACU | than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 10 | | | | m) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| 500/ of total course. 40 | | = Total Cove | | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover: 49. | <u>0 </u> | total cover:_ | 19.6 | Woody vine – All woody vines greater than 3.28 ft in |
| Woody Vine Stratum (Plot size: 30' Radius) | | | | height. |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | Hydrophytic |
| 5 | | | | Vegetation Present? Ves / No |
| 50% of total cover: 0.0 | | = Total Cove | | Present? Yes No |
| | | TOTAL COVOR | | 1 |

reference purposes only.

| Profile Desc | cription: ([| Describe | to the dep | th needed | | | | or confirn | n the abse | ence of indicators.) |
|----------------|---------------|------------|--------------|-------------|---------------|-------------|-------------------|------------------|-----------------------|---|
| Depth | | Matrix | | | | x Features | | . 2 | | |
| (inches) | Color (| | % | Color (| moist) | % | Type ¹ | Loc ² | Textur | re Remarks |
| 0-2 | 10YR | 4/3 | 100 | | | | | | L | |
| 2-6 | 10YR | 4/3 | 95 | 7.5YR | 5/8 | 5 | C | M | FSL | |
| 6-18 | 10YR | 4/2 | 88 | 10YR | 5/8 | 12 | С | М | SCL | |
| | | | · | | | | | | | |
| | | | · —— | | | | - | | | - |
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| | | | | | | | | | | - |
| ¹Type: C=C | `oncontratio | n D-Don | lotion PM | | Matrix M | S-Maskad | Sand Gr | | ² Location | n: PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | ielion, Kivi | =Reduced | ivialită, ivi | S=IVIASKEU | Sand Gra | aii i5. | | ndicators for Problematic Hydric Soils ³ : |
| Histosol | | • | | Da | rk Surface | (97) | | | | 2 cm Muck (A10) (MLRA 147) |
| | pipedon (A2 | 2) | | | | elow Surfa | ce (S8) (N | II RΔ 147 | | Coast Prairie Redox (A16) |
| | listic (A3) | -) | | | | urface (S9) | | | | (MLRA 147, 148) |
| | en Sulfide (/ | A4) | | | | ed Matrix (| | , , | | Piedmont Floodplain Soils (F19) |
| | d Layers (À | | | | pleted Ma | , | , | | _ | (MLRA 136, 147) |
| 2 cm Mu | uck (A10) (L | RR N) | | Re | dox Dark | Surface (F | 6) | | _ | Very Shallow Dark Surface (TF12) |
| | ed Below Da | | e (A11) | | | rk Surface | | | _ | Other (Explain in Remarks) |
| | ark Surface | | | | | essions (F | | | | |
| | Mucky Mine | | _RR N, | | | ese Masse | es (F12) (| LRR N, | | |
| | A 147, 148) | | | | MLRA 13 | | | > | | 3 |
| | Gleyed Matr | rix (S4) | | | | ace (F13) (| | | 40) | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | ٠, | | | | oodplain S | | | | wetland hydrology must be present, |
| Restrictive | d Matrix (S6 | | | | u Falelii i | Material (F | ZI) (WILK | A 121, 14 | <i>'</i>) | unless disturbed or problematic. |
| | Layer (II OI | osei veu). | • | | | | | | | |
| Type: | -1> | | | | | | | | 11 | Ocil Buccoulo Vec (No |
| Depth (in | icnes): | | | | | | | | Hydric | Soil Present? Yes/ No |
| Remarks: | dicator E2 (| Donloted | Matrix) pro | scont: para | motor mo | + | | | | |
| Hydric soil in | idicator F3 (| Depleted | Matrix) pre | eseni, para | meter me | ι. | | | | |
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| Project/Site: Barrelhead Solar | | | City/C | county: Wayne County | ; | Sampling Date: 2024-08-19 | | | |
|--|--------------------|-----------|---|---|--|--------------------------------|--|--|--|
| Applicant/Owner: Barrelhead | Solar LLC | | , | • | State: Kentucky | Sampling Point: DP011 | | | |
| Investigator(s): D. Hunter, I. B | | | | | <u> </u> | | | | |
| Landform (hillslope, terrace, et | | | | | | | | | |
| Subregion (LRR or MLRA): LF | | | | | | | | | |
| Soil Map Unit Name: Frederic | | | | | | | | | |
| | | | | | | | | | |
| Are climatic / hydrologic condit | | | | | | | | | |
| - | | | | | | esent? Yes No | | | |
| Are Vegetation, Soil | , or Hydrold | ду | naturally problema | atic? (If needed, o | explain any answers | s in Remarks.) | | | |
| SUMMARY OF FINDIN | GS – Attach | site m | nap showing sam | pling point location | ons, transects, | important features, etc. | | | |
| Hydrophytic Vegetation Pres | ent? Yes | | No <u>√</u> | | | | | | |
| Hydric Soil Present? | | | No ✓ | Is the Sampled Area within a Wetland? | Voc | _ No <u></u> ✓ | | | |
| Wetland Hydrology Present? | | | No | within a wetland: | 165 | | | | |
| Remarks: | | | | | | | | | |
| Precipitation Tool (APT) and (| ing; area is not o | ydrolog | ed a definitional wettar gic conditions were nor | nd. The lead delineator demails at the time of survey | onducted a due diliç /. | gence review of the Antecedent | | | |
| HYDROLOGY | | | | | | | | | |
| Wetland Hydrology Indicat | ors: | | | | Secondary Indicate | ors (minimum of two required) | | | |
| Primary Indicators (minimum | of one is require | d; chec | k all that apply) | | Surface Soil C | racks (B6) | | | |
| Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8) | | | | | | | | | |
| High Water Table (A2) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) | | | | | | | | | |
| Saturation (A3) | | | | es on Living Roots (C3) | Moss Trim Lin | | | | |
| Water Marks (B1) | | | Presence of Reduced | | | /ater Table (C2) | | | |
| Sediment Deposits (B2) | | | Recent Iron Reductio | | Crayfish Burro | | | | |
| Drift Deposits (B3) Algal Mat or Crust (B4) | | | Thin Muck Surface (C Other (Explain in Rer | | | ible on Aerial Imagery (C9) | | | |
| Iron Deposits (B5) | | | Other (Explain in Nei | nansj | Stunted or Stressed Plants (D1) Geomorphic Position (D2) | | | | |
| Inundation Visible on Ae | rial Imagery (B7) | | | | Shallow Aquita | | | | |
| Water-Stained Leaves (I | | | | | | hic Relief (D4) | | | |
| Aquatic Fauna (B13) | | | | | FAC-Neutral T | est (D5) | | | |
| Field Observations: | | | | | | | | | |
| Surface Water Present? | Yes N | | Depth (inches): | | | | | | |
| Water Table Present? | Yes N | | Depth (inches): | | | | | | |
| Saturation Present? (includes capillary fringe) | Yes N | <u> </u> | Depth (inches): | Wetland I | Hydrology Present | ? Yes No <u>√</u> | | | |
| Describe Recorded Data (str | eam gauge, mon | itoring v | well, aerial photos, pre | vious inspections), if ava | ailable: | | | | |
| | | | | | | | | | |
| Remarks: | | | Literar | | | | | | |
| Indicators of wetland hydrolog | jy absent, param | eter iac | king. | | | | | | |
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VEGETATION (Four Strata) – Use scientific names of plants

| /EGETATION (Four Strata) – Use scientific na | | Sampling Point: DP011 | | | | | | |
|--|----------|-----------------------|------|--|--|--|--|--|
| | Absolute | | | Dominance Test worksheet: | | | | |
| <u>Tree Stratum</u> (Plot size: <u>30' Radius</u>) 1 | | Species? | | Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A) | | | | |
| 2 | | | | | | | | |
| 3 | | | | Total Number of Dominant Species Across All Strata: 9 (B) | | | | |
| | | | | Species Across Air Strata. | | | | |
| 5 | | | | Percent of Dominant Species | | | | |
| | | | | That Are OBL, FACW, or FAC: 44.44 (A/B) | | | | |
| 6 | | | | Prevalence Index worksheet: | | | | |
| 7 | | | | Total % Cover of: Multiply by: | | | | |
| 50% of total cover: 0.0 | | = Total Cove | | OBL species 0 x 1 = 0 | | | | |
| 50% of total cover: 0.0 | 20% 01 | iolai cover. | 0.0 | FACW species15 x 2 =30 | | | | |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | 15 | V | FACU | FAC species 45 x 3 = 135 | | | | |
| 1. Rhus copallinum | | - <u>Y</u> | | FACU species 104 x 4 = 416 | | | | |
| 2. Ulmus rubra | 15 | <u> </u> | FAC_ | UPL species 3 x 5 = 15 | | | | |
| 3 | | | | | | | | |
| 4 | | · —— | | Column Totals:167 | | | | |
| 5 | | | - | Prevalence Index = B/A = 3.57 | | | | |
| 6 | | | | Hydrophytic Vegetation Indicators: | | | | |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation | | | | |
| 8 | | | | 2 - Dominance Test is >50% | | | | |
| 9 | | | | 3 - Prevalence Index is ≤3.0 ¹ | | | | |
| | 30.0 | = Total Cove | er | | | | | |
| 50% of total cover:15.0 | 20% of | total cover: | 6.0 | 4 - Morphological Adaptations ¹ (Provide supporting | | | | |
| Herb Stratum (Plot size:5' Radius) | | | | data in Remarks or on a separate sheet) | | | | |
| 1. Cynodon dactylon | 38 | Y | FACU | Problematic Hydrophytic Vegetation ¹ (Explain) | | | | |
| 2. Eleusine indica | 15 | Υ | FACU | | | | | |
| 3. Digitaria ciliaris | 15 | Y | FAC | Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | |
| 4. Solanum carolinense | 15 | Y | FACU | | | | | |
| 5. Phytolacca americana | 15 | Y | FACU | Definitions of Four Vegetation Strata: | | | | |
| 6. Vernonia noveboracensis | 15 | Υ Υ | FACW | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or | | | | |
| 7. Rubus pensilvanicus | 15 | Y | FAC | more in diameter at breast height (DBH), regardless of height. | | | | |
| 8. Amaranthus spinosus | 3 | N | FACU | neight. | | | | |
| 9. Tridens flavus | 3 | N | FACU | Sapling/Shrub – Woody plants, excluding vines, less | | | | |
| 10. Daucus carota | 3 | N N | UPL | than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. | | | | |
| | | | | m) tall. | | | | |
| 11 | 407.0 | | | Herb – All herbaceous (non-woody) plants, regardless | | | | |
| FOO/ of total agrees CO F | | = Total Cove | | of size, and woody plants less than 3.28 ft tall. | | | | |
| 50% of total cover: 68.5 Woody Vine Stratum (Plot size: 30' Radius) | 20% 01 | total cover. | 27.4 | Woody vine - All woody vines greater than 3.28 ft in | | | | |
| (| | | | height. | | | | |
| 1 | | | | | | | | |
| 2 | | · —— | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | Hydrophytic | | | | |
| 5 | | | | Vegetation | | | | |
| | | = Total Cove | | Present? Yes No/_ | | | | |
| 50% of total cover: 0.0 | 20% of | total cover: | 0.0 | | | | | |
| Remarks: (Include photo numbers here or on a separate sl | neet.) | | | | | | | |
| Indicators of hydrophytic vegetation absent; parameter lack | ng. | | | | | | | |
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| Profile Desc | cription: ([| Describe | to the dep | th needed | to docur | nent the i | ndicator | or confirn | n the abs | sence of indic | ators.) | |
|----------------|---------------------------|------------|----------------|-----------------|---------------|---------------------------------|-------------------|------------------|----------------------|----------------|----------------------|--------------|
| Depth | | Matrix | | | | x Features | | . , | _ | | | |
| (inches) | Color (| (moist) | <u>%</u> | Color (| moist) | % | Type' | Loc ² | Textu | ure | Remarks | |
| 0-2 | 10YR | 4/3 | 100 | | | | | | L | | | |
| 2-18 | 10YR | 4/3 | 95 | 7.5YR | 5/8 | 5 | С | M | FSL | _ | | |
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| ¹Type: C=C | oncentratio | n. D=Dep | letion. RM: | =Reduced | Matrix. MS | S=Masked | Sand Gra | ains. | ² Locatio | on: PL=Pore L | ining, M=Matrix | |
| Hydric Soil | | | 7100011, 11011 | -i (oddood | iviation, ivi | <u>J-Macked</u> | Ourid Oil | AII 10. | | | Problematic H | |
| Histosol | | | | Da | rk Surface | (S7) | | | | 2 cm Muc | k (A10) (MLRA | 147) |
| | pipedon (A2 | 2) | | | | low Surfac | ce (S8) (N | ILRA 147, | , 148) | | irie Redox (A16 | |
| | istic (A3) | , | | | | ırface (S9) | | | , , | | 147, 148) | , |
| Hydroge | en Sulfide (| A4) | | | | ed Matrix (| | | | Piedmont | Floodplain Soils | s (F19) |
| Stratified | d Layers (A | .5) | | De _l | pleted Ma | trix (F3) | | | | (MLRA | 136, 147) | |
| | uck (A10) (L | | | | | Surface (F | | | | | low Dark Surfac | |
| | d Below Da | | e (A11) | | | rk Surface | | | | Other (Exp | plain in Remark | s) |
| | ark Surface | | | | | essions (F | | | | | | |
| | Mucky Mine | | LRR N, | | | ese Masse | es (F12) (| LRR N, | | | | |
| | A 147, 148) | | | | MLRA 13 | 6) ice (F13) (| MI D A 12 | 6 122) | | 3Indiantors o | f hydrophytic ve | actation and |
| | Gleyed Matr Redox (S5) | IIX (54) | | | | odplain S | | | 18) | | drology must be | - |
| | d Matrix (S6 | 3) | | | | /laterial (F | | | | | urbed or probler | |
| Restrictive | | | <u> </u> | | a i aioni i | natorial (i | Z I / (IIIIZIX | A 121, 141 | ., T | uriicoo diote | arbed or probler | nano. |
| Type: | | | - | | | | | | | | | |
| | ches): | | | | | | | | Hydrid | c Soil Present | ? Yes | No <u>_</u> |
| Remarks: | CHES) | | | | | | | | пушт | Jon Fresent | .: 162 | |
| Hydric soil in | dicators ab | sent; para | ameter not | met. | | | | | | | | |
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| Project/Site: Barrelhead Solar | r | City/C | County: Wayne County | Sampling Date: 2024-08-19 | | | | |
|--|--------------------|---|---|---|--|--|--|--|
| Applicant/Owner: Barrelhead | | | State: Ke | · - | | | | |
| • | | | on, Township, Range: | | | | | |
| | | | ief (concave, convex, none): Concav | | | | | |
| | | | Long: <u>-85.009641</u> | | | | | |
| | | | | | | | | |
| Soil Map Unit Name: Newark | | | NWI cl | | | | | |
| | | | es No (If no, expla | | | | | |
| Are Vegetation, Soil _ | , or Hydrolo | gy significantly distur | bed? Are "Normal Circumstar | nces" present? Yes No | | | | |
| Are Vegetation, Soil _ | , or Hydrolo | gy naturally problema | atic? (If needed, explain any | answers in Remarks.) | | | | |
| SUMMARY OF FINDIN | IGS – Attach | site map showing san | pling point locations, trans | sects, important features, etc. | | | | |
| Hydrophytic Vegetation Pres | sent? Yes | No ✓ | lo the Compled Avec | | | | | |
| Hydric Soil Present? | | ✓ No | Is the Sampled Area within a Wetland? Yes | No √ | | | | |
| Wetland Hydrology Present? | | No ✓ | Willing a Welland. | | | | | |
| Remarks: | | | | | | | | |
| Precipitation Tool (APT) and | | | | due diligence review of the Antecedent | | | | |
| HYDROLOGY | | | | | | | | |
| Wetland Hydrology Indicat | | | | Indicators (minimum of two required) | | | | |
| Primary Indicators (minimum | of one is require | | e Soil Cracks (B6) | | | | | |
| Surface Water (A1) | | | ely Vegetated Concave Surface (B8) | | | | | |
| High Water Table (A2) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) | | | | | | | | |
| Saturation (A3) | | Oxidized Rhizospher | | Trim Lines (B16) | | | | |
| Water Marks (B1) | | Presence of Reduced | | eason Water Table (C2) | | | | |
| Sediment Deposits (B2) | | Recent Iron Reductio | | | | | | |
| Drift Deposits (B3) Algal Mat or Crust (B4) | | Thin Muck Surface (C Other (Explain in Rer | | Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) | | | | |
| Iron Deposits (B5) | | Office (Explain in No. | | orphic Position (D2) | | | | |
| Inundation Visible on Ae | erial Imagery (B7) | | | w Aquitard (D3) | | | | |
| Water-Stained Leaves (| | | | opographic Relief (D4) | | | | |
| Aquatic Fauna (B13) | -, | | | Neutral Test (D5) | | | | |
| Field Observations: | | | | | | | | |
| Surface Water Present? | Yes N | o Depth (inches): | | | | | | |
| Water Table Present? | | Depth (inches): | | | | | | |
| Saturation Present? | | o ✓ Depth (inches): | | Present? Yes No✓ | | | | |
| (includes capillary fringe) | room gougo, mon | itoring well porial photos, pro | vious inspections), if available: | | | | | |
| Describe Necorded Data (Str | eam gauge, mon | itoring well, aerial priotos, pre | vious irispections), ii available. | | | | | |
| Remarks: | | | | | | | | |
| No primary and only one sec | ondary indicator c | of wetland hydrology present; | parameter lacking. | ! | | | | |
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VEGETATION (Four Strata) – Use scientific names of plants.

| /EGETATION (Four Strata) – Use scientific na | ames of | plants. | | Sampling Point: DP012 | | | |
|--|-------------|--------------|------------|--|--|--|--|
| | Absolute | Dominant | Indicator | Dominance Test worksheet: | | | |
| Tree Stratum (Plot size: 30' Radius) 1 | | Species? | Status | Number of Dominant Species That Are OBL, FACW, or FAC:0 (A) | | | |
| 2 | | | | (,, | | | |
| 3 | | | | Total Number of Dominant Species Across All Strata: 1 (B) | | | |
| 4 | | | | CPCOIGS / NOIGSS / III Citata. | | | |
| 5 | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B) | | | |
| 6 | | | | That Ale OBE, FACW, OF FAC (A/B) | | | |
| 7. | | | | Prevalence Index worksheet: | | | |
| | 0 | = Total Cove | er . | Total % Cover of: Multiply by: | | | |
| 50% of total cover: 0.0 | | | | OBL species 0 x 1 = 0 | | | |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | _ | | FACW species15 x 2 =30 | | | |
| 1 | | | | FAC species 24 x 3 = 72 | | | |
| 2 | | | | FACU species103 x 4 =412 | | | |
| 3 | | | | UPL species3 x 5 =15 | | | |
| 4 | | | | Column Totals:145 (A)529.00 (B) | | | |
| 5 | | | | Prevalence Index = B/A = 3.65 | | | |
| 6 | | | | Hydrophytic Vegetation Indicators: | | | |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation | | | |
| 8 | | | | 2 - Dominance Test is >50% | | | |
| 9 | | | | 3 - Prevalence Index is ≤3.0¹ | | | |
| | | = Total Cove | | 4 - Morphological Adaptations ¹ (Provide supporting | | | |
| 50% of total cover: 0.0 | 20% of | total cover: | 0.0 | data in Remarks or on a separate sheet) | | | |
| Herb Stratum (Plot size: 5' Radius) | | | | Problematic Hydrophytic Vegetation¹ (Explain) | | | |
| Schedonorus arundinaceus | 85 | <u>Y</u> | FACU | resistant rydrophyno vogotation (Explain) | | | |
| 2. Paspalum laeve | 15 | <u>N</u> | FAC | ¹ Indicators of hydric soil and wetland hydrology must | | | |
| 3. Solanum carolinense | 15 | N | FACU | be present, unless disturbed or problematic. | | | |
| 4. Vernonia noveboracensis | 15 | N | FACW | Definitions of Four Vegetation Strata: | | | |
| 5. Persicaria longiseta | 3 | N | <u>FAC</u> | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or | | | |
| 6. Coleataenia anceps | 3 | <u>N</u> | <u>FAC</u> | more in diameter at breast height (DBH), regardless of | | | |
| 7. Diodia teres | 3 | N | UPL | height. | | | |
| 8. Acalypha rhomboidea | 3 | N | FACU | Sapling/Shrub – Woody plants, excluding vines, less | | | |
| 9. Coleataenia anceps | 3 | <u>N</u> | FAC | than 3 in. DBH and greater than or equal to 3.28 ft (1 | | | |
| 10 | | | | m) tall. | | | |
| 11 | 145.0 | = Total Cove | | Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. | | | |
| 50% of total cover:72.5 | | | | or oles, and woody plante loss than oles it tall. | | | |
| Woody Vine Stratum (Plot size: 30' Radius) | | | | Woody vine – All woody vines greater than 3.28 ft in | | | |
| 1 | | | | height. | | | |
| 2. | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| | | | | Hydrophytic Vegetation | | | |
| 5 | _ | = Total Cove | | Present? Yes No/_ | | | |
| 50% of total cover: 0.0 | | | | | | | |
| Remarks: (Include photo numbers here or on a separate sl | | | | | | | |
| Indicators of hydrophytic vegetation absent; parameter lacki | | | | | | | |
| indicators of hydrophytic vegetation absent, parameter lacki | ng. | | | | | | |
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| Profile Des | cription: ([| Describe | to the dep | oth needed | to docur | ment the i | ndicator | or confirm | the abs | ence of indicators.) |
|------------------------|---------------|------------|-------------|-----------------|------------|--------------------|-------------------|------------------|---------|--|
| Depth | | Matrix | | | Redo | x Features | 3 | | | |
| (inches) | Color (| moist) | % | Color (| | % | Type ¹ | Loc ² | Textu | re Remarks |
| 0-2 | 10YR | 4/2 | 100 | | | | | | L | |
| 2-12 | 10YR | 4/2 | 95 | 7.5YR | 5/8 | 5 | С | M | FSL | |
| - | | | | - | | | | · | | |
| 12-18 | 10YR | 4/1 | 85 | 7.5YR | 6/8 | 15 | C | M/PL | SCL | - |
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| ¹ Type: C=C | concentration | n, D=Dep | letion, RM | =Reduced | Matrix, M | S=Masked | Sand Gr | ains. | | on: PL=Pore Lining, M=Matrix. |
| Hydric Soil | Indicators: | : | | | | | | | I | Indicators for Problematic Hydric Soils ³ : |
| Histoso | l (A1) | | | Da | rk Surface | e (S7) | | | _ | 2 cm Muck (A10) (MLRA 147) |
| Histic E | pipedon (A2 | 2) | | Pol | yvalue Be | elow Surfac | ce (S8) (N | ILRA 147, | 148) | Coast Prairie Redox (A16) |
| Black H | listic (A3) | | | Thi | n Dark Su | urface (S9) | (MLRA | 147, 148) | | (MLRA 147, 148) |
| Hydroge | en Sulfide (A | 44) | | Loa | amy Gleye | ed Matrix (I | F2) | | _ | Piedmont Floodplain Soils (F19) |
| Stratifie | d Layers (A | 5) | | ✓ De | oleted Ma | trix (F3) | | | | (MLRA 136, 147) |
| 2 cm M | uck (A10) (L | RR N) | | Re | dox Dark | Surface (F | 6) | | _ | Very Shallow Dark Surface (TF12) |
| Deplete | ed Below Da | rk Surface | e (A11) | De _l | oleted Da | rk Surface | (F7) | | _ | Other (Explain in Remarks) |
| | ark Surface | | | | | essions (F8 | | | | |
| | Mucky Mine | | RR N, | | | ese Masse | es (F12) (| LRR N, | | |
| | A 147, 148) | | | | MLRA 13 | • | | | | |
| | Gleyed Matr | ix (S4) | | | | ace (F13) (| | | | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | | | | | | | (MLRA 14 | | wetland hydrology must be present, |
| | d Matrix (S6 | | | Re | d Parent N | Material (F | 21) (MLR | A 127, 147 | 7) | unless disturbed or problematic. |
| Restrictive | Layer (if ob | oserved): | | | | | | | | |
| Туре: | | | | | | | | | | |
| Depth (in | nches): | | | | | | | | Hydric | Soil Present? Yes/ No |
| Remarks: | <u> </u> | | | | | | | | 1 - | |
| Hydric soil in | dicator F3 (| Depleted | Matrix) pro | esent; para | meter me | t. | | | | |
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| Project/Site: Barrelhead Solar | , | City/C | County: Wayne | Sampling Date: 2024-08-20 | | | | | |
|--|--------------------|---------------------------------|-----------------------------|--|--|--|--|--|--|
| Applicant/Owner: Barrelhead | | | | State: KY Sampling Point: DP013 | | | | | |
| • • | | | | | | | | | |
| | | | | ne): Concave Slope (%): 3-7 | | | | | |
| | | | | 003996 Datum: WGS84 | | | | | |
| | | | | | | | | | |
| Soil Map Unit Name: Water | | | | NWI classification: None | | | | | |
| Are climatic / hydrologic condi | | | | | | | | | |
| Are Vegetation, Soil | , or Hydrolo | gy significantly distur | bed? Are "Normal | Circumstances" present? Yes No | | | | | |
| Are Vegetation, Soil _ | , or Hydrolo | gynaturally problem | atic? (If needed, e | explain any answers in Remarks.) | | | | | |
| SUMMARY OF FINDIN | GS – Attach | site map showing san | npling point location | ons, transects, important features, etc. | | | | | |
| Hydrophytic Vegetation Pres | ent? Ves | No_ √ | | | | | | | |
| Hydric Soil Present? | | No ✓ | Is the Sampled Area | | | | | | |
| Wetland Hydrology Present? | | No ✓ | within a Wetland? | Yes No | | | | | |
| Remarks: | | | | | | | | | |
| One or more parameters lacking; area is not considered a definitional wetland. The lead delineator conducted a due diligence review of the Antecedent Precipitation Tool (APT) and determined that hydrologic conditions were normal at the time of survey. | | | | | | | | | |
| HYDROLOGY | | | | | | | | | |
| Wetland Hydrology Indicat | ors: | | | Secondary Indicators (minimum of two required) | | | | | |
| Primary Indicators (minimum | of one is required | d; check all that apply) | | Surface Soil Cracks (B6) | | | | | |
| Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (Bit is a context of the context o | | | | | | | | | |
| High Water Table (A2) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) | | | | | | | | | |
| Saturation (A3) Oxidized Rhizospheres on Living Roots (C3) Moss Trim Lines (B16) | | | | | | | | | |
| Water Marks (B1) | | Presence of Reduce | | Dry-Season Water Table (C2) | | | | | |
| Sediment Deposits (B2) | | Recent Iron Reduction | | Crayfish Burrows (C8) | | | | | |
| Drift Deposits (B3) | | Thin Muck Surface (0 | | Saturation Visible on Aerial Imagery (C9) | | | | | |
| Algal Mat or Crust (B4) | | Other (Explain in Rei | marks) | Stunted or Stressed Plants (D1) | | | | | |
| Iron Deposits (B5) | riol Imagary (P7) | | | ✓ Geomorphic Position (D2) Shallow Aquitard (D3) | | | | | |
| Inundation Visible on Ae Water-Stained Leaves (| | | | Shallow Aquitard (D3) Microtopographic Relief (D4) | | | | | |
| Aquatic Fauna (B13) | 39) | | | FAC-Neutral Test (D5) | | | | | |
| Field Observations: | | | <u> </u> | | | | | | |
| Surface Water Present? | Ves Nr | Depth (inches): | | | | | | | |
| Water Table Present? | | Depth (inches): | | | | | | | |
| Saturation Present? | | Depth (inches): | | lydrology Present? Yes No ✓ | | | | | |
| (includes capillary fringe) | | | | | | | | | |
| Describe Recorded Data (str | eam gauge, moni | toring well, aerial photos, pre | evious inspections), if ava | ilable: | | | | | |
| Remarks: | | | | | | | | | |
| No primary and only one seco | ondary indicator o | wetland hydrology present; | parameter lacking. | | | | | | |
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VEGETATION (Four Strata) – Use scientific names of plants.

| /EGETATION (Four Strata) – Use scientific na | ames of | plants. | | Sampling Point: DP013 | | | |
|---|----------|--------------|-------|---|--|--|--|
| | Absolute | | | Dominance Test worksheet: | | | |
| <u>Tree Stratum</u> (Plot size: <u>30' Radius</u>) 1 | | Species? | | Number of Dominant Species That Are OBL, FACW, or FAC: (A) | | | |
| 2 | | | | | | | |
| 3 | | | | Total Number of Dominant Species Across All Strata: 2 (B) | | | |
| 4 | | | | Species Norces 7 in Strate. | | | |
| 5 | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B) | | | |
| 6 | | | | That Are OBE, I ACW, OI I AC. (A/B) | | | |
| 7. | | | | Prevalence Index worksheet: | | | |
| | 0 | = Total Cov | er | Total % Cover of: Multiply by: | | | |
| 50% of total cover:0.0 | | | | OBL species0 x 1 =0 | | | |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | FACW species13 x 2 =26 | | | |
| 1 | | | | FAC species6 x 3 =18 | | | |
| 2 | | | | FACU species113 x 4 =452 | | | |
| 3 | | | | UPL species 0 x 5 = 0 | | | |
| 4 | | | | Column Totals:132 (A)496.00 (B) | | | |
| 5 | | | | Prevalence Index = B/A = 3.76 | | | |
| 6 | | | | Hydrophytic Vegetation Indicators: | | | |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation | | | |
| 8 | | | | 2 - Dominance Test is >50% | | | |
| 9 | | | | 3 - Prevalence Index is ≤3.0 ¹ | | | |
| | | = Total Cov | | 4 - Morphological Adaptations ¹ (Provide supporting | | | |
| 50% of total cover: 0.0 | 20% of | total cover: | 0.0 | data in Remarks or on a separate sheet) | | | |
| Herb Stratum (Plot size: 5' Radius) | 20 | V | FACIL | Problematic Hydrophytic Vegetation ¹ (Explain) | | | |
| 1. Eleusine indica | 38 | <u> </u> | FACU | | | | |
| 2. Amaranthus spinosus | 38 | <u>Y</u> | FACU | ¹ Indicators of hydric soil and wetland hydrology must | | | |
| 3. Schedonorus arundinaceus | 15 | N | FACU | be present, unless disturbed or problematic. | | | |
| 4. Solanum carolinense | 13 | N | FACU | Definitions of Four Vegetation Strata: | | | |
| 5. Vernonia noveboracensis | 13 | N | FACW | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or | | | |
| 6. Ambrosia artemisiifolia | 3 | N | FACU | more in diameter at breast height (DBH), regardless of | | | |
| 7. Trifolium repens | 3 | N | FACU | height. | | | |
| 8. Xanthium strumarium | 3 | N | FAC | Sapling/Shrub – Woody plants, excluding vines, less | | | |
| 9. Plantago rugelii | 3 | N | FACU | than 3 in. DBH and greater than or equal to 3.28 ft (1 | | | |
| 10. Rumex crispus | 3 | <u>N</u> | FAC | m) tall. | | | |
| | 132.0 | = Total Cov | er | Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. | | | |
| 50% of total cover:66.0 | | | | Woody vine – All woody vines greater than 3.28 ft in | | | |
| Woody Vine Stratum (Plot size:30' Radius) | | | | height. | | | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | Hydrophytic | | | |
| 5 | | | | Vegetation No. (| | | |
| | | = Total Cov | | Present? Yes No/_ | | | |
| 50% of total cover: 0.0 | | total cover: | 0.0 | | | | |
| Remarks: (Include photo numbers here or on a separate sl | | | | | | | |
| Indicators of hydrophytic vegetation absent; parameter lack | ing. | | | | | | |
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| Profile Desc | ription: (D | Describe | to the dep | th needed | to docur | nent the i | ndicator | or confirn | n the abs | ence of indica | ators.) |
|-----------------|---------------------|----------------|--------------|-----------|----------------|-------------------|-------------------|------------------|----------------------|----------------------------|---|
| Depth | | Matrix | | | | x Features | | | | | |
| (inches) | Color (| moist) | % | Color (| moist) | % | Type ¹ | Loc ² | Textu | ire | Remarks |
| 0-12 | 10YR | 5/3 | 100 | | | | | | L | | |
| 12-18 | 10YR | 5/3 | 95 | 7.5YR | 5/8 | 5 | С | М | FSL | _ | |
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| | | | | | | | | | | | |
| ¹Type: C=Ce | oncontration | n D-Don | lotion PM | -Poducod | Matrix M | S-Mackad | Sand Gr | nine | ² Locatio | on: DI –Doro I | Lining, M=Matrix. |
| Hydric Soil | | | ieuon, Rivi | =Reduced | iviatrix, ivis | 5=IVIaskeu | Sand Gra | airis. | | | Problematic Hydric Soils ³ : |
| Histosol | | | | Da | rk Surface | (97) | | | ' | | k (A10) (MLRA 147) |
| | oipedon (A2 | 2) | | | | low Surfac | co (SR) (N | II DA 147 | 1/2) | | irie Redox (A16) |
| | stic (A3) | -) | | | | rface (S9) | | | , 140) | | 147, 148) |
| | en Sulfide (A | ۸۸) | | | | ed Matrix (| | 47, 140) | | | Floodplain Soils (F19) |
| | d Layers (A | | | | pleted Ma | | 1 2) | | • | | 136, 147) |
| | ick (A10) (L | | | | | Surface (F | ·6) | | | • | low Dark Surface (TF12) |
| | d Below Da | | e (A11) | | | k Surface | | | • | | plain in Remarks) |
| | ark Surface | | - () | | | ssions (F | | | | | , |
| | lucky Mine | | _RR N, | | | ese Masse | | LRR N, | | | |
| | A 147, 148) | | , | | MLRA 13 | | , , | , | | | |
| | Sleyed Matr | | | | | ce (F13) (| MLRA 13 | 6, 122) | | ³ Indicators of | f hydrophytic vegetation and |
| | Redox (S5) | ` , | | | | odplain S | | | 48) | | drology must be present, |
| | Matrix (S6 |) | | | | ⁄laterial (F | | | | | urbed or problematic. |
| Restrictive I | | | | | | ` | | | Ì | | · |
| Type: | | | | | | | | | | | |
| | ches): | | | | | | | | Hydric | Soil Present | ? Yes No/_ |
| Remarks: | | | | | | | | | , | | |
| Hydric soil inc | dicators abs | sent; para | ımeter lack | ing. | | | | | | | |
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| Project/Site: Barrelhead Solar | | City/C | county: Wayne County | | Sampling Date: 2024-08-20 | | | | |
|---|---------------------|---|---------------------------------------|--|-----------------------------|--|--|--|--|
| Applicant/Owner: Barrelhead | Solar LLC | | State: Kentucky | _ Sampling Point: DP014 | | | | | |
| Investigator(s): D. Hunter, I. B | | | | | | | | | |
| Landform (hillslope, terrace, et | | | | | | | | | |
| Subregion (LRR or MLRA): LF | | | | | | | | | |
| Soil Map Unit Name: Frederic | | | | | | | | | |
| Are climatic / hydrologic condit | | | | | | | | | |
| | | | | | esent? Yes No | | | | |
| Are Vegetation, Soil | | | | | | | | | |
| | | | | | important features, etc. | | | | |
| Hydrophytic Vegetation Pres Hydric Soil Present? Wetland Hydrology Present? | Yes | No ✓ No ✓ ✓ No | Is the Sampled Area within a Wetland? | Yes | _ No <u></u> ✓ | | | | |
| Remarks: | Yes | ✓ NO | | | | | | | |
| One or more parameters lacking; area is not considered a definitional wetland. The lead delineator conducted a due diligence review of the Antecedent Precipitation Tool (APT) and determined that hydrologic conditions were normal at the time of survey. | | | | | | | | | |
| HYDROLOGY | | | | | | | | | |
| Wetland Hydrology Indicat | | | | Secondary Indicators (minimum of two required) | | | | | |
| Primary Indicators (minimum | of one is required; | check all that apply) True Aquatic Plants (| | Surface Soil C | | | | | |
| Surface Water (A1) | | _ | etated Concave Surface (B8) | | | | | | |
| High Water Table (A2)Saturation (A3) | | ✓ Drainage Patt _ Moss Trim Lin | | | | | | | |
| Water Marks (B1) | | • , , | · | /ater Table (C2) | | | | | |
| Sediment Deposits (B2) | | Presence of ReducedRecent Iron Reduction | | Crayfish Burro | | | | | |
| Drift Deposits (B3) | | Thin Muck Surface (C | | | ible on Aerial Imagery (C9) | | | | |
| Algal Mat or Crust (B4) | | Other (Explain in Rer | | | essed Plants (D1) | | | | |
| Iron Deposits (B5) | | Out of (2xpidin in 100) | name) | ✓ Geomorphic F | | | | | |
| Inundation Visible on Ae | erial Imagery (B7) | | | Shallow Aquita | | | | | |
| Water-Stained Leaves (I | | | | | phic Relief (D4) | | | | |
| Aquatic Fauna (B13) | , | | | FAC-Neutral 1 | • • | | | | |
| Field Observations: | | | | | , | | | | |
| Surface Water Present? | Yes No _ | ✓ Depth (inches): | | | | | | | |
| Water Table Present? | Yes No | ✓ Depth (inches): | | | | | | | |
| Saturation Present? | | ✓ Depth (inches): | | lydrology Present | ? Yes/_ No | | | | |
| (includes capillary fringe) Describe Recorded Data (str | eam gauge monitor | ring well perial photos pre | vious inspections) if ava | ilahle: | | | | | |
| Describe Necoraea Data (Str | cam gauge, monitor | ing well, acrial priotos, pre | vious irispections), ii ava | nabic. | | | | | |
| Remarks: | | | | | | | | | |
| At least one primary or two se | econdary indicators | observed; parameter met. | | | | | | | |
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VEGETATION (Four Strata) - Use scientific names of plants.

4. Lindera benzoin 3 Y

5' Radius____)

5. Verbesina alternifolia 3

53.0 = Total Cover

Vegetation Present?

50% of total cover: 26.5 20% of total cover: 10.6

30' Radius___)

3. Nyssa sylvatica

4. Platanus occidentalis

Sapling/Shrub Stratum (Plot size: 15' Radius)

Tree Stratum (Plot size:

1. Juniperus virginiana

Herb Stratum (Plot size: ___

2. Clematis terniflora

Ageratina altissima

4. Rubus pensilvanicus

1. Microstegium vimineum

6. Persicaria virginiana

2. Fagus grandifolia

3. Sassafras albidum

2. Ulmus rubra

Liriodendron tulipifera

| Radius) | Absolute | Dominant Species? Y | Status | Dominance Test worksheet: Number of Dominant Species | | | | | |
|---|----------|---------------------------|--------|---|--|--|--|--|--|
| , | 38 15 | Y | | | | | | | |
| | | | FACU | That Are OBL, FACW, or FAC:6 (A) | | | | | |
| | 15 | Y | FAC | Total Number of Descions | | | | | |
| | | Y | FAC | Total Number of Dominant Species Across All Strata: 12 (B) | | | | | |
| | 15 | Y | FACW | | | | | | |
| | | · | | Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B) | | | | | |
| | | | | Prevalence Index worksheet: | | | | | |
| | 83.0 | = Total Cove | | Total % Cover of: Multiply by: | | | | | |
| 50% of total cover: 41.5 | | | | OBL species0 x 1 =0 | | | | | |
| 15' Radius) | _ | _ | | FACW species15 x 2 =30 | | | | | |
| | 3 | Υ | FACU | FAC species118 x 3 =354 | | | | | |
| | 3 | Y | FACU | FACU species103 x 4 =412 | | | | | |
| | 3 | Y | FACU | UPL species0 x 5 =0 | | | | | |
| | 3 | Y | FAC | Column Totals:236 (A)796.00 (B) | | | | | |
| | | | | Prevalence Index = B/A = 3.37 | | | | | |
| | | | | Hydrophytic Vegetation Indicators: | | | | | |
| | | | | 1 - Rapid Test for Hydrophytic Vegetation | | | | | |
| | | | | 2 - Dominance Test is >50% | | | | | |
| - | 12.0 | = Total Cove | or. | 3 - Prevalence Index is ≤3.0¹ | | | | | |
| 50% of total cover: 6.0 | | | | 4 - Morphological Adaptations ¹ (Provide supporting | | | | | |
| Radius) | _ | _ | | data in Remarks or on a separate sheet) | | | | | |
| | 38 | Υ | FAC | Problematic Hydrophytic Vegetation ¹ (Explain) | | | | | |
| | 38 | <u> Y</u> | FACU | | | | | | |
| | 3 | N | FACU | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | | |
| | 3 | N | FAC | Definitions of Four Vegetation Strata: | | | | | |
| | 3 | N | FAC | Definitions of Four Vegetation Strata. | | | | | |
| | 3 | N | FAC | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. | | | | | |
| | | | | Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. | | | | | |
| | 88.0 | = Total Cove | er | Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. | | | | | |
| 50% of total cover: <u>44.0</u> 30' Radius) | 20% of | total cover: | 17.6 | Woody vine – All woody vines greater than 3.28 ft in height. | | | | | |
| | 38 | Υ | FAC | neight. | | | | | |
| | 15 | Y | FACU | | | | | | |

Remarks: (Include photo numbers here or on a separate sheet.) Indicators of hydrophytic vegetation absent; parameter lacking.

Woody Vine Stratum (Plot size: 30' Radius) 1. Toxicodendron radicans

2. Lonicera japonica

Yes _____ No __/_

| Profile Desc | cription: (Describe t | o the dep | th needed to docur | nent the i | ndicator | or confirn | the ab | sence of indicators.) | |
|------------------------|------------------------|------------|---|--------------|-------------------|------------------|-------------------|---|--------------|
| Depth | Matrix | | | x Feature | - | | | | |
| (inches) | Color (moist) | <u>%</u> | Color (moist) | % | Type ¹ | Loc ² | Tex | ture Remarks | |
| 0-18 | 10YR 5/3 | 100 | | | | | L | _ | |
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| ¹ Type: C=C | concentration, D=Deple | etion, RM= | Reduced Matrix, MS | S=Masked | d Sand Gra | ains. | ² Loca | tion: PL=Pore Lining, M=Matrix. | |
| Hydric Soil | | | , | | | | | Indicators for Problematic Hyd | dric Soils³: |
| Histosol | | | Dark Surface | (S7) | | | | 2 cm Muck (A10) (MLRA 14 | 17) |
| | pipedon (A2) | | Polyvalue Be | . , | ce (S8) (N | ILRA 147. | 148) | Coast Prairie Redox (A16) | • |
| | istic (A3) | | Thin Dark Su | | | | , | (MLRA 147, 148) | |
| | en Sulfide (A4) | | Loamy Gleye | | | , | | Piedmont Floodplain Soils (| F19) |
| | d Layers (A5) | | Depleted Ma | trix (F3) | , | | | (MLRA 136, 147) | ŕ |
| 2 cm Mu | uck (A10) (LRR N) | | Redox Dark | Surface (F | - 6) | | | Very Shallow Dark Surface | (TF12) |
| Deplete | d Below Dark Surface | (A11) | Depleted Da | rk Surface | (F7) | | | Other (Explain in Remarks) | |
| Thick D | ark Surface (A12) | | Redox Depre | essions (F | 8) | | | | |
| Sandy N | Mucky Mineral (S1) (L | RR N, | Iron-Mangan | ese Mass | es (F12) (| LRR N, | | | |
| MLR | A 147, 148) | | MLRA 13 | 6) | | | | | |
| Sandy 0 | Gleyed Matrix (S4) | | Umbric Surfa | ce (F13) (| (MLRA 13 | 6, 122) | | ³ Indicators of hydrophytic vege | etation and |
| Sandy F | Redox (S5) | | Piedmont Flo | | | | | wetland hydrology must be pr | resent, |
| | d Matrix (S6) | | Red Parent N | /laterial (F | 21) (MLR | A 127, 147 | 7) | unless disturbed or problema | tic. |
| Restrictive | Layer (if observed): | | | | | | | | |
| Type: | | | | | | | | | |
| Depth (in | iches): | | | | | | Hydi | ric Soil Present? Yes | No/ |
| Remarks: | | | | | | | | | <u> </u> |
| | dicators absent; parar | neter lack | na | | | | | | |
| r iyano son iir | aloatoro aboern, parar | notor laok | ng. | | | | | | |
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| Project/Site: Barrelhead Solar | | City/C | county: Wayne County | ; | Sampling Date: 2024-08-20 | | | |
|---|-------------------------------------|---|--|---|-------------------------------------|--|--|--|
| Applicant/Owner: Barrelhead | Solar LLC | • | | State: Kentucky | Sampling Point: DP015 | | | |
| Investigator(s): D. Hunter, I. B | | | | | | | | |
| Landform (hillslope, terrace, et | | | | | | | | |
| Subregion (LRR or MLRA): LF | | | | | | | | |
| Soil Map Unit Name: Frederic | | | | | | | | |
| Are climatic / hydrologic condit | | | | | | | | |
| | | | | | esent? Yes No | | | |
| Are Vegetation, Soil | | | | | | | | |
| | | | | | important features, etc. | | | |
| Hydrophytic Vegetation Pres Hydric Soil Present? Wetland Hydrology Present? Remarks: All parameters met; area is co Precipitation Tool (APT) and o | Yes Yes onsidered a palustrin | No No No e emergent (PEM) wetlander cologic conditions were not | Is the Sampled Area within a Wetland? d. The lead delineator concral at the time of survey. | | No ence review of the Antecedent | | | |
| HYDROLOGY | | | | | | | | |
| Wetland Hydrology Indicat | ors: | | 9 | Secondary Indicate | ors (minimum of two required) | | | |
| Primary Indicators (minimum | | check all that apply) | _ | Surface Soil Cracks (B6) | | | | |
| Surface Water (A1) | | | | etated Concave Surface (B8) | | | | |
| High Water Table (A2) | | | ✓ Drainage Patte | | | | | |
| Saturation (A3) | | es on Living Roots (C3) | Moss Trim Lin | es (B16) | | | | |
| Water Marks (B1) | | d Iron (C4) | Dry-Season W | /ater Table (C2) | | | | |
| Sediment Deposits (B2) | | Recent Iron Reduction | n in Tilled Soils (C6) | Crayfish Burro | ws (C8) | | | |
| Drift Deposits (B3) | | Thin Muck Surface (C | C7) _ | Saturation Visible on Aerial Imagery (C9) | | | | |
| Algal Mat or Crust (B4) | | Other (Explain in Rer | narks) _ | Stunted or Str | essed Plants (D1) | | | |
| Iron Deposits (B5) | | | <u>د</u> | Geomorphic P | | | | |
| Inundation Visible on Ae | rial Imagery (B7) | | _ | Shallow Aquita | ard (D3) | | | |
| Water-Stained Leaves (F | 39) | | _ | | hic Relief (D4) | | | |
| Aquatic Fauna (B13) | | | - | FAC-Neutral T | Test (D5) | | | |
| Field Observations: | | | | | | | | |
| Surface Water Present? | | ✓ Depth (inches): | | | | | | |
| Water Table Present? | Yes No _ | ✓ Depth (inches): | | | | | | |
| Saturation Present? (includes capillary fringe) | Yes No _ | ✓ Depth (inches): | Wetland Hy | drology Present | ? Yes/_ No | | | |
| Describe Recorded Data (str | eam gauge, monitor | ing well, aerial photos, pre | vious inspections), if availa | able: | | | | |
| | | | | | | | | |
| Remarks: | | | | | | | | |
| At least one primary or two se | econdary indicators of | observed; parameter met. | | | | | | |
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| | Absolute | Dominant | Indicator | Dominance Test worksheet: |
|--|----------|--------------|-----------|---|
| Free Stratum (Plot size:30' Radius) | | Species? | | |
| (| | | | Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A) |
| <u>.</u> | | | | |
| 3 | | | | Total Number of Dominant Species Across All Strata: 6 (B) |
| l. | | | | |
| 5 | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B) |
| 5 | | | | That Are OBL, FACW, or FAC: 66.67 (A/B) |
| 7. | | | | Prevalence Index worksheet: |
| | 0 | = Total Cove | | Total % Cover of: Multiply by: |
| 50% of total cover:0.0 | | | | OBL species15 x 1 =15 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | FACW species 41 x 2 = 82 |
| Elaeagnus angustifolia | 3 | Υ | FACU | FAC species x 3 = 237 |
| Ligustrum vulgare | 3 | Υ | FACU | FACU species 9 x 4 = 36 |
| 3. Ulmus rubra | 3 | Υ | FAC | UPL species0 x 5 =0 |
| | | | | Column Totals:144 (A)370.00 (B) |
| 5 | | | | 2.57 |
| 5. | | | | Prevalence Index = $B/A = 2.57$ |
| 7 | | | | Hydrophytic Vegetation Indicators: |
| 3 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
|). | | | | ✓ 2 - Dominance Test is >50% |
| | 9.0 | = Total Cove | <u></u> | ✓ 3 - Prevalence Index is ≤3.0 ¹ |
| 50% of total cover: 4.5 | 20% of | total cover: | 1.8 | 4 - Morphological Adaptations ¹ (Provide supporting |
| Herb Stratum (Plot size:5' Radius) | | | | data in Remarks or on a separate sheet) |
| . Microstegium vimineum | 38 | Y | FAC | Problematic Hydrophytic Vegetation ¹ (Explain) |
| _ Juncus effusus | 38 | Y | FACW | 4 |
| Rubus pensilvanicus | 38 | Y | FAC | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| p. Persicaria hydropiper | 15 | N | OBL | Definitions of Four Vegetation Strata: |
| 5. Boehmeria cylindrica | 3 | N | FACW | Definitions of Four Vegetation Strata. |
| S Solidago altissima | 3 | N | FACU | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| 7. | | | | more in diameter at breast height (DBH), regardless of height. |
| 3. | | | | |
|). | | | | Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 0 | | | | m) tall. |
| 1. | | | | Harb All borbaccous (non woods) plants regardless |
| | 135.0 | = Total Cove | <u></u> | Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover: 67. | | | | |
| Noody Vine Stratum (Plot size:30' Radius) | | | | Woody vine – All woody vines greater than 3.28 ft in height. |
| l | | | | noight. |
| 2. | | | | |
| 3 | | | | |
| l | | | | 1 |
| 5. | | | | Hydrophytic Vegetation |
| | | | | |

Remarks: (Include photo numbers here or on a separate sheet.)

Indicator 2 (Dominance Test) present with greater than 50% of dominant species FAC or wetter; parameter met. Prevalence Index calculated for reference purposes only.

| Profile Desc | cription: (C | Describe | to the dep | th needed | to docur | ment the i | ndicator | or confirn | n the abse | nce of indicators.) |
|----------------|---------------------|----------------|--------------|-----------|---------------|-------------|-------------------|------------------|-----------------------|---|
| Depth | | Matrix | | | | x Features | | . 2 | _ | |
| (inches) | Color (| moist) | % | Color (| moist) | % | Type ¹ | Loc ² | Texture | e Remarks |
| 0-4 | 10YR | 5/3 | 100 | | | | | | L | |
| 4-8 | 10YR | 5/3 | 92 | 7.5YR | 4/6 | 8 | C | M | SCL | |
| 8-18 | 10YR | 4/1 | 88 | 7.5YR | 4/6 | 12 | С | M | SCL | |
| | | | | - | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | | | - | | | | | | |
| ¹Type: C=C | oncentration | n D-Den | letion PM | -Peduced | Matrix M | S-Masked | L Sand Gr | | ² Location | : PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | ietion, Kivi | =Reduced | ivialiix, ivi | S=IVIASKEC | i Sariu Gra | 11115. | | dicators for Problematic Hydric Soils ³ : |
| Histosol | | • | | Da | rk Surface | (S7) | | | | _ 2 cm Muck (A10) (MLRA 147) |
| | pipedon (A2 | 2) | | | | elow Surfa | ce (S8) (N | LRA 147. | | Coast Prairie Redox (A16) |
| | istic (A3) | -/ | | | | urface (S9) | | | | (MLRA 147, 148) |
| | en Sulfide (A | 44) | | | | ed Matrix (| | ,, | | Piedmont Floodplain Soils (F19) |
| | d Layers (A | | | | oleted Ma | , | . –, | | | (MLRA 136, 147) |
| | uck (A10) (L | , | | | | Surface (F | 6) | | | Very Shallow Dark Surface (TF12) |
| | d Below Da | | e (A11) | | | rk Surface | , | | | Other (Explain in Remarks) |
| | ark Surface | | , , | | | essions (F | | | | _ |
| | /lucky Mine | | RR N, | | | ese Mass | | _RR N, | | |
| | A 147, 148) | | , | | MLRA 13 | | · / · | • | | |
| | Sleyed Matr | | | | | ace (F13) (| MLRA 13 | 6, 122) | ; | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | , | | | | oodplain S | | | | wetland hydrology must be present, |
| | Matrix (S6 | i) | | | | Material (F | | | | unless disturbed or problematic. |
| Restrictive | Layer (if ok | oserved): | | | | - | | | | |
| Type: | | | | | | | | | | |
| Depth (in | ches): | | | | | | | | Hydric | Soil Present? Yes/ No |
| Remarks: | | | | | | | | | 1, | |
| Hydric soil in | | 20p.010 | | , para | | | | | | |
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| Project/Site: Barrelhead Solar | | City/C | ounty: Wayne County | Sampling Date: 2024-08-20 | | | | | |
|---|---------------------------------------|---|---|---|--|--|--|--|--|
| Applicant/Owner: Barrelhead | | | | te: Kentucky Sampling Point: DP016 | | | | | |
| • • | | | <u> </u> | | | | | | |
| | | | | Concave Slope (%): 0-2 | | | | | |
| | | | | 9 Datum: WGS84 | | | | | |
| | | | | | | | | | |
| Soil Map Unit Name: Garmon | | | ! | | | | | | |
| Are climatic / hydrologic condi | tions on the site typ | oical for this time of year? Y | es No (If no, | explain in Remarks.) | | | | | |
| Are Vegetation, Soil _ | , or Hydrolog | y significantly distur | ped? Are "Normal Circu | ımstances" present? Yes No | | | | | |
| Are Vegetation, Soil _ | , or Hydrolog | y naturally problema | itic? (If needed, explain | n any answers in Remarks.) | | | | | |
| SUMMARY OF FINDIN | GS – Attach s | ite map showing sam | pling point locations, | transects, important features, etc. | | | | | |
| Hydrophytic Vegetation Pres Hydric Soil Present? Wetland Hydrology Present? | Yes _ | ✓ No No ✓ No | Is the Sampled Area within a Wetland? | Yes No | | | | | |
| Remarks: One or more parameters lacking; area is not considered a definitional wetland. The lead delineator conducted a due diligence review of the Antecedent Precipitation Tool (APT) and determined that hydrologic conditions were normal at the time of survey. | | | | | | | | | |
| HYDROLOGY | | | | | | | | | |
| Wetland Hydrology Indicat | ors: | | Seco | ondary Indicators (minimum of two required) | | | | | |
| Primary Indicators (minimum | of one is required | | | Surface Soil Cracks (B6) | | | | | |
| Surface Water (A1) | | | Sparsely Vegetated Concave Surface (B8) | | | | | | |
| High Water Table (A2) | | | Drainage Patterns (B10) | | | | | | |
| Saturation (A3) | | | Moss Trim Lines (B16) | | | | | | |
| Water Marks (B1) | | | Dry-Season Water Table (C2) | | | | | | |
| Sediment Deposits (B2) | | Recent Iron Reductio | | Crayfish Burrows (C8) | | | | | |
| Drift Deposits (B3) Algal Mat or Crust (B4) | | Thin Muck Surface (C Other (Explain in Ren | | Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) | | | | | |
| Iron Deposits (B5) | | Office (Explain in Non | | Geomorphic Position (D2) | | | | | |
| Inundation Visible on Ac | erial Imagery (B7) | | | Shallow Aquitard (D3) | | | | | |
| Water-Stained Leaves (| | | | Shallow Adultard (D3) Microtopographic Relief (D4) | | | | | |
| Aquatic Fauna (B13) | | | | FAC-Neutral Test (D5) | | | | | |
| Field Observations: | | | | , | | | | | |
| Surface Water Present? | Yes No | Depth (inches): | | | | | | | |
| Water Table Present? | · · · · · · · · · · · · · · · · · · · | ✓ Depth (inches): | | | | | | | |
| Saturation Present? | | ✓ Depth (inches): | | logy Present? Yes _ ✓ No | | | | | |
| (includes capillary fringe) | | | vious inspections), if available | | | | | | |
| Describe Necorded Data (Sti | eam gauge, monte | oring well, aerial priotos, pre | vious irispections), ii avaliable | • | | | | | |
| Remarks: | | | | | | | | | |
| At least one primary or two se | econdary indicators | s observed; parameter met. | | | | | | | |
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VEGETATION (Four Strata) - Use scientific names of plants.

| EGETATION (Four Strata) – Use scientific | names of | plants. | | Sampling Point: DP016 |
|--|-------------------|----------------------|-------------|---|
| Tree Stratum (Plot size:30' Radius) | Absolute | Dominant Species? | | Dominance Test worksheet: |
| 1. Liriodendron tulipifera | 63 | Species? | FACU | Number of Dominant Species That Are OBL FACW or FAC: 4 (A) |
| <u>'</u> | <u>03</u> 15 | N | FACU | That Are OBL, FACW, or FAC:4 (A) |
| 2. Morus rubra | | - | | Total Number of Dominant |
| 3. Carpinus caroliniana | 15 | N | FAC | Species Across All Strata:5 (B) |
| 4 | | | · | Percent of Dominant Species |
| 5 | _ | | | That Are OBL, FACW, or FAC: 80.00 (A/B) |
| 6 | | | | Prevalence Index worksheet: |
| 7 | | | | Total % Cover of: Multiply by: |
| FOO/ of total covers A | | = Total Cov | | OBL species 0 x 1 = 0 |
| 50% of total cover: 4 Sapling/Shrub Stratum (Plot size: 15' radius) | 0.5 20% 01 | total cover | 10.0 | FACW species 0 x 2 = 0 |
| ` | 38 | Υ | FAC | FAC species 153 x 3 = 459 |
| Lindera benzoin Juniperus virginiana | | <u>'</u> N | FACU | FACU species 81 x 4 = 324 |
| | | N | | UPL species 15 x 5 = 75 |
| 3. Acer rubrum | | | FAC | Column Totals: 249 (A) 858.00 (B) |
| 4. Carpinus caroliniana | | N | FAC_ | Column Totals (A) (B) |
| 5 | | | <u> </u> | Prevalence Index = B/A = 3.45 |
| 6 | | | <u> </u> | Hydrophytic Vegetation Indicators: |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | _ | - | | ✓ 2 - Dominance Test is >50% |
| 9 | | | | 3 - Prevalence Index is ≤3.0 ¹ |
| 500/ -11-1-1 | | = Total Cov | | 4 - Morphological Adaptations ¹ (Provide supporting |
| 50% of total cover: 2 Herb Stratum (Plot size: 5' Radius) | 3.3 20% 01 | total cover | 9.4 | data in Remarks or on a separate sheet) |
| / Iot 0.201 | 38 | Υ | FAC | Problematic Hydrophytic Vegetation ¹ (Explain) |
| Amphicarpaea bracteata Bubus possiblesticus | 38 | Y | FAC | |
| 2. Rubus pensilvanicus | <u></u> | | UPL | ¹ Indicators of hydric soil and wetland hydrology must |
| Actea racemosa Persicaria virginiana | 3 | N | FAC | be present, unless disturbed or problematic. |
| ·· <u> </u> | | IN | - FAC | Definitions of Four Vegetation Strata: |
| 5 | _ | | · —— | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| 6 | _ | | · —— | more in diameter at breast height (DBH), regardless of |
| 7 | | | <u> </u> | height. |
| 8 | | | <u> </u> | Sapling/Shrub – Woody plants, excluding vines, less |
| 9 | | | | than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 10 | | - | | m) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| 500/ -freel- | | = Total Cov | | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover: 4 | <u>7.0</u> 20% of | total cover | . 18.8 | Woody vine - All woody vines greater than 3.28 ft in |
| Woody Vine Stratum (Plot size: 30' Radius) | 15 | V | EAC | height. |
| 1. Toxicodendron radicans | 15 | Y | FAC | |

Remarks: (Include photo numbers here or on a separate sheet.)

Indicator 2 (Dominance Test) present with greater than 50% of dominant species FAC or wetter; parameter met. Prevalence Index calculated for reference purposes only.

15.0 = Total Cover

Hydrophytic Vegetation Present?

Yes ____ No ____

| Profile Desc | cription: (E | Describe 1 | to the dep | th needed to document the indicator or conf | irm the abs | sence of indicators.) |
|------------------------|-----------------------------|------------|----------------|--|----------------------|---|
| Depth | | Matrix | | Redox Features | _ | |
| (inches) | Color (| moist) | % | Color (moist) % Type ¹ Loc ² | Textu | ure Remarks |
| 0-4 | 10YR | 4/3 | 100 | | L | |
| 4-8 | 10YR | 5/4 | 100 | | SL | Refusal at 8in due to bedrock |
| | 1011 | 5/4 | | | | Trefusal at oill due to bedrock |
| | | | | | | |
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| | | | | | | |
| ¹ Type: C=C | oncentratio | n D=Denl | letion RM= | Reduced Matrix, MS=Masked Sand Grains. | ² l ocati | on: PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | ionori, ixivi= | - Nousood Matrix, MO-Masked Garia Grailis. | | Indicators for Problematic Hydric Soils ³ : |
| • | | | | Dark Surface (S7) | | · · |
| Histosol | (A1) pipedon (A2 |)) | | Dark Surface (S7) Polyvalue Below Surface (S8) (MLRA 1- | 17 1/01 | 2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16) |
| | istic (A3) | -) | | Thin Dark Surface (S9) (MLRA 147, 148 | | |
| | istic (A3) en Sulfide (A | 14) | | Loamy Gleyed Matrix (F2) | " | (MLRA 147, 148) Piedmont Floodplain Soils (F19) |
| | , | | | | | |
| | d Layers (A | | | Depleted Matrix (F3) | | (MLRA 136, 147) |
| | uck (A10) (L | | · (A11) | Redox Dark Surface (F6)Depleted Dark Surface (F7) | | Very Shallow Dark Surface (TF12) |
| | d Below Da ark Surface | | # (ATT) | Redox Depressions (F8) | | Other (Explain in Remarks) |
| | Aucky Mine | | DD N | Redox Depressions (F6) Iron-Manganese Masses (F12) (LRR N, | | |
| | 147, 148) | | .KK N, | MLRA 136) | | |
| | | | | • | | ³ Indicators of hydrophytic vegetation and |
| | Bleyed Matr Redox (S5) | IX (54) | | Umbric Surface (F13) (MLRA 136, 122) | | |
| | | ` | | Piedmont Floodplain Soils (F19) (MLRARed Parent Material (F21) (MLRA 127, | | wetland hydrology must be present, |
| Restrictive | Matrix (S6 | | | Red Farent Material (F21) (MERA 121, | 147) | unless disturbed or problematic. |
| | | isei veu). | | | | |
| Type: Be | | | | | | |
| Depth (in | ches): <u>8</u> | | | | Hydri | c Soil Present? Yes No |
| Remarks: | | | | | | |
| Hydric soil inc | dicators abs | sent; para | meter lacki | ng. | | |
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| Project/Site: Barrelhead Solar | | City/C | county: Wayne County | ; | Sampling Date: 2024-08-20 |
|--|-----------------------|-------------------------------------|------------------------------|---------------------|---------------------------------------|
| Applicant/Owner: Barrelhead | Solar LLC | | | State: Kentucky | Sampling Point: DP017 |
| Investigator(s): D. Hunter, I. B | | | | | |
| Landform (hillslope, terrace, et | | | | | |
| Subregion (LRR or MLRA): LF | | | | | |
| Soil Map Unit Name: Frederic | | | | | |
| Are climatic / hydrologic condit | | | | | |
| | | | | | |
| | | | | | esent? Yes No |
| Are Vegetation, Soil SUMMARY OF FINDIN | | | | | in Remarks.) important features, etc. |
| | | | 7 37 | | |
| Hydrophytic Vegetation Pres | | ✓ No | Is the Sampled Area | | |
| Hydric Soil Present? | | No <u>√</u> No <u>√</u> | within a Wetland? | Yes | No |
| Wetland Hydrology Present? Remarks: | 165 | NO | | | |
| One or more parameters lack | ing; area is not cons | sidered a definitional wetlar | nd. The lead delineator co | nducted a due dilig | gence review of the Antecedent |
| Precipitation Tool (APT) and | determined that hyd | rologic conditions were no | mal at the time of survey. | | , |
| | | | | | |
| | | | | | |
| HYDROLOGY | | | | | |
| Wetland Hydrology Indicat | ors: | | | Secondary Indicate | ors (minimum of two required) |
| Primary Indicators (minimum | of one is required; | check all that apply) | | Surface Soil C | racks (B6) |
| Surface Water (A1) | | True Aquatic Plants (| B14) | Sparsely Vege | etated Concave Surface (B8) |
| High Water Table (A2) | | Hydrogen Sulfide Od | or (C1) | Drainage Patte | erns (B10) |
| Saturation (A3) | | Oxidized Rhizosphere | es on Living Roots (C3) | Moss Trim Lin | es (B16) |
| Water Marks (B1) | | Presence of Reduced | | Dry-Season W | /ater Table (C2) |
| Sediment Deposits (B2) | | Recent Iron Reduction | n in Tilled Soils (C6) | Crayfish Burro | ws (C8) |
| Drift Deposits (B3) | | Thin Muck Surface (C | | | ible on Aerial Imagery (C9) |
| Algal Mat or Crust (B4) | | Other (Explain in Rer | | | essed Plants (D1) |
| Iron Deposits (B5) | | | - | ✓ Geomorphic P | |
| Inundation Visible on Ae | | | - | Shallow Aquita | |
| Water-Stained Leaves (I | 39) | | - | | hic Relief (D4) |
| Aquatic Fauna (B13) | | | - | FAC-Neutral T | est (D5) |
| Field Observations: Surface Water Present? | Voc. No. | (Donth (inches) | | | |
| Water Table Present? | | ✓ Depth (inches): ✓ Depth (inches): | | | |
| Saturation Present? | | ✓ Depth (inches): | | udrology Procent | ? Yes No_ ✓ |
| (includes capillary fringe) | | | | | ? res No |
| Describe Recorded Data (str | eam gauge, monitor | ring well, aerial photos, pre | vious inspections), if avail | lable: | |
| Remarks: | | | | | |
| No primary and only one seco | andary indicator of w | vetland hydrology present: | narameter lacking | | |
| The primary and only one seed | madi y maloator or w | reliand hydrology present, | parameter lacking. | | |
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| EGETATION (Four Strata) – Use scientific n | | <u> </u> | | Sampling Point: DP017 | |
|---|----------|----------------------|------|--|------|
| Free Stratum (Plot size: 30' Radius) | Absolute | Dominant Species? | | Dominance Test worksheet: | |
| <u>Free Stratum</u> (Plot size: <u>30' Radius</u>) 」Salix nigra | 38 | Species? | OBL | Number of Dominant Species That Are OBL. FACW. or FAC: 3 (A | ` |
| . Sailx Higra | | | OBL | That Are OBL, FACW, or FAC:3 (A | () |
| <u>, </u> | | | | Total Number of Dominant | |
| 3 | | | | Species Across All Strata: 4 (B | 3) |
| ł | | | | Percent of Dominant Species | |
| 0 | | | - | That Are OBL, FACW, or FAC: 75.00 (A | /B) |
|) | | | | Prevalence Index worksheet: | |
| · | 38.0 | Tatal Cau | | Total % Cover of: Multiply by: | |
| 50% of total cover: 19.0 | | = Total Cover | | OBL species 38 x 1 = 38 | |
| Sapling/Shrub Stratum(Plot size: 15' Radius) | 20 /6 01 | total cover. | 7.0 | FACW species 3 x 2 = 6 | |
| r (Flot Size. 10 Radius) | | | | FAC species 104 x 3 = 312 | |
|)) | | · | | FACU species 71 x 4 = 284 | |
| | | | | UPL species 15 x 5 = 75 | |
| 5 | | | | 715.00 | B) |
| + - | | | | () | , |
| D | | | | Prevalence Index = $B/A = 3.1$ | |
| o | | | | Hydrophytic Vegetation Indicators: | |
| · | | | | 1 - Rapid Test for Hydrophytic Vegetation | |
| 3 | | | | ✓ 2 - Dominance Test is >50% | |
| 9 | 0 | Tatal Cau | | 3 - Prevalence Index is ≤3.0 ¹ | |
| 50% of total cover: 0.0 | | = Total Cover: | | 4 - Morphological Adaptations ¹ (Provide suppor | ting |
| Herb Stratum (Plot size: 5' Radius) | 2070 01 | total oover. | 0.0 | data in Remarks or on a separate sheet) | |
| Microstegium vimineum | 63 | Υ | FAC | Problematic Hydrophytic Vegetation ¹ (Explain) | |
| Phytolacca americana | 38 | Y | FACU | | |
| Rubus pensilvanicus | 38 | Y | FAC | ¹ Indicators of hydric soil and wetland hydrology mus | t |
| 1 Passiflora incarnata | 15 | N | UPL | be present, unless disturbed or problematic. | |
| Perilla frutescens | 15 | N | FACU | Definitions of Four Vegetation Strata: | |
| S Solidago canadensis | 15 | N | FACU | Tree - Woody plants, excluding vines, 3 in. (7.6 cm) | |
| 7 Dichanthelium clandestinum | 3 | N | FAC | more in diameter at breast height (DBH), regardless height. | of |
| Verbesina occidentalis | 3 | N | FACU | noight. | |
| g. Boehmeria cylindrica | 3 | N | FACW | Sapling/Shrub – Woody plants, excluding vines, les | |
| 10. | | | | than 3 in. DBH and greater than or equal to 3.28 ft (m) tall. | |
| in. | | | | | |
| | 193.0 | = Total Cove | | Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall. | ess |
| 50% of total cover: <u>96.</u> | | | | | |
| Noody Vine Stratum (Plot size: 30' Radius) | _ | - | | Woody vine – All woody vines greater than 3.28 ft in height. | n |
| | | | | neight. | |
| 2. | | | | | |
| 3. | | | | | |
| <u> </u> | | | | | |
| 5. | | | | Hydrophytic Vegetation | |
| | 0 | = Total Cove | | Present? Yes/ No | |

Remarks: (Include photo numbers here or on a separate sheet.)

Indicator 2 (Dominance Test) present with greater than 50% of dominant species FAC or wetter; parameter met. Prevalence Index calculated for reference purposes only.

50% of total cover: 0.0 20% of total cover: 0.0

| Profile Des | cription: ([| Describe | to the dep | th needed | to docur | nent the i | ndicator | or confirm | the absen | ce of indicators.) |
|------------------------|---------------------|------------|------------|-----------|------------|--------------------|-------------------|------------------|--|---|
| Depth | | Matrix | | | Redo | x Features | 3 | | | |
| (inches) | Color (| moist) | % | Color (| moist) | <u>%</u> | Type ¹ | Loc ² | Texture | Remarks |
| 0-4 | 10YR | 4/3 | 100 | | | | | | LS | |
| 4-8 | 10YR | 4/4 | 95 | 10YR | 6/8 | 5 | | | SL | |
| - | | | · —— | - | | | | | | Augor refused at 12in due to cabble |
| 8-12 | 10YR | 4/3 | 90 | 7.5YR | 4/6 | 10 | C | M | SL | Auger refusal at 12in due to cobble |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| ¹ Type: C=C | | | letion, RM | =Reduced | Matrix, M | S=Masked | Sand Gra | ains. | | PL=Pore Lining, M=Matrix. |
| - | | • | | Do | rk Surface | (07) | | | | • |
| Histoso | pipedon (A2 | 2) | | | | elow Surfac | co (SS) /M | II D A 147 | | 2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16) |
| | listic (A3) | <u>~)</u> | | | | ırface (S9) | | | 140) | (MLRA 147, 148) |
| | en Sulfide (A | ۸۸) | | | | ed Matrix (| | 47, 140) | | Piedmont Floodplain Soils (F19) |
| | d Layers (A | | | | pleted Ma | , | 172) | | | (MLRA 136, 147) |
| | uck (A10) (L | , | | | | Surface (F | ·6) | | | Very Shallow Dark Surface (TF12) |
| | ed Below Da | | - (Δ11) | | | rk Surface | | | _ | Other (Explain in Remarks) |
| | ark Surface | | 5 (7111) | | | essions (F | | | | Other (Explain in Normanie) |
| | Mucky Mine | | RR N. | | | ese Masse | | _RR N. | | |
| | A 147, 148) | | , | | MLRA 13 | | / (| , | | |
| | Gleyed Matr | | | | | ace (F13) (| MLRA 13 | 6, 122) | ³ lı | ndicators of hydrophytic vegetation and |
| | Redox (S5) | (- / | | | | odplain S | | | | wetland hydrology must be present, |
| | d Matrix (S6 | i) | | | | Material (F | | | | unless disturbed or problematic. |
| Restrictive | | | | | | | , , | | <u>, </u> | · · · · · · · · · · · · · · · · · · · |
| Type: Be | | , | | | | | | | | |
| | nches): 8 | | | | | | | | Hydric So | oil Present? Yes No/_ |
| Remarks: | 101100). <u>-</u> | | | | | | | | Tiyano o | 70 10 10 10 10 <u>V</u> |
| Hydric soil in | dicators abs | sent; para | meter lack | ing. | | | | | | |
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| Project/Site: Barrelhead Solar | | City/C | ounty: Wayne County | Sampling Date: 2024-08-20 |
|---|---------------------|---|---------------------------------------|---|
| Applicant/Owner: Barrelhead | | | | te: Kentucky Sampling Point: DP018 |
| • • | | | | |
| | | | | Ione Slope (%): 3-7 |
| | | <u> </u> | | Datum: WGS84 |
| | | | | |
| Soil Map Unit Name: Frederic | | | | |
| Are climatic / hydrologic condi | | | | |
| Are Vegetation, Soil _ | , or Hydrolog | y significantly distur | bed? Are "Normal Circu | ımstances" present? Yes No |
| Are Vegetation, Soil _ | , or Hydrolog | y naturally problema | atic? (If needed, explain | n any answers in Remarks.) |
| SUMMARY OF FINDIN | GS – Attach s | ite map showing sam | pling point locations, | transects, important features, etc. |
| Hydrophytic Vegetation Pres | sent? Yes | No_ √ | | |
| Hydric Soil Present? | | No ✓ | Is the Sampled Area within a Wetland? | Yes No✓ |
| Wetland Hydrology Present? | | ✓ No | within a wettand? | res NO |
| Remarks: | | | | |
| One or more parameters lack Precipitation Tool (APT) and | | | | eted a due diligence review of the Antecedent |
| HYDROLOGY | | | | |
| Wetland Hydrology Indicat | ors: | | Seco | endary Indicators (minimum of two required) |
| Primary Indicators (minimum | of one is required: | ; check all that apply) | | Surface Soil Cracks (B6) |
| Surface Water (A1) | | True Aquatic Plants (| | Sparsely Vegetated Concave Surface (B8) |
| High Water Table (A2) | | Hydrogen Sulfide Od | | Drainage Patterns (B10) |
| Saturation (A3) | | Oxidized Rhizosphere | | Moss Trim Lines (B16) |
| Water Marks (B1) | | Presence of Reduced | | Dry-Season Water Table (C2) |
| Sediment Deposits (B2) | | Recent Iron Reductio | | Crayfish Burrows (C8) |
| Drift Deposits (B3) Algal Mat or Crust (B4) | | Thin Muck Surface (C Other (Explain in Rer | | Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) |
| Iron Deposits (B5) | | Other (Explain in Ker | | Geomorphic Position (D2) |
| Inundation Visible on Ae | erial Imagery (B7) | | | Shallow Aquitard (D3) |
| Water-Stained Leaves (| | | | Microtopographic Relief (D4) |
| Aquatic Fauna (B13) | -, | | | FAC-Neutral Test (D5) |
| Field Observations: | | | | · · · · · · · · · · · · · · · · · · · |
| Surface Water Present? | Yes No | ✓ Depth (inches): | | |
| Water Table Present? | · | ✓ Depth (inches): | | |
| Saturation Present? | | ✓ Depth (inches): | | logy Present? Yes/ No |
| (includes capillary fringe) | | | | |
| Describe Recorded Data (Sti | eam gauge, monito | oring well, aerial photos, pre | vious inspections), if available: | : |
| Remarks: | | | | |
| At least one primary or two se | econdary indicators | s observed; parameter met. | | |
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VEGETATION (Four Strata) – Use scientific names of plants.

| EGETATION (Four Strata) – Use scientific na | ames of | plants. | | Sampling Point: DP018 | | | | |
|--|------------|--------------|--------|---|--|--|--|--|
| | Absolute | Dominant | | Dominance Test worksheet: | | | | |
| Tree Stratum (Plot size:30' Radius) | % Cover | Species? | Status | Number of Dominant Species | | | | |
| 1. Prunus serotina | 63 | Y | FACU | That Are OBL, FACW, or FAC:1 (A) | | | | |
| 2. Fraxinus americana | 15 | N | FACU | Total Number of Dominant | | | | |
| 3. Carya glabra | 15 | N | FACU | Species Across All Strata: 3 (B) | | | | |
| 4. Ilex opaca | 3 | N | FACU | | | | | |
| 5 | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B) | | | | |
| 6 | | | | That Are OBE, FACW, OF FAC (A/B) | | | | |
| 7 | | | | Prevalence Index worksheet: | | | | |
| ·- <u></u> | 96.0 | = Total Cove | | Total % Cover of: Multiply by: | | | | |
| 50% of total cover: 48.0 | | | | OBL species0 x 1 =0 | | | | |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | 2070 0. | 10101 00101. | | FACW species15 x 2 =30 | | | | |
| . Francisco autoriores | 15 | Υ | FACU | FAC species63 x 3 =189 | | | | |
| · | | | 17100 | FACU species 129 x 4 = 516 | | | | |
| 2 | | | | UPL species | | | | |
| 3 | | | | Column Totals: 207 (A) 735.00 (B) | | | | |
| 4 | | · | | Column Totals. 201 (A) 100.00 (B) | | | | |
| 5 | | | | Prevalence Index = B/A = 3.55 | | | | |
| 6 | | | | Hydrophytic Vegetation Indicators: | | | | |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation | | | | |
| 8 | | | | 2 - Dominance Test is >50% | | | | |
| 9 | | . <u></u> | | 3 - Prevalence Index is ≤3.0¹ | | | | |
| | 15.0 | = Total Cove | er | | | | | |
| 50% of total cover: 7.5 | 20% of | total cover: | 3.0 | 4 - Morphological Adaptations ¹ (Provide supporting | | | | |
| Herb Stratum (Plot size:5' Radius) | | | | data in Remarks or on a separate sheet) | | | | |
| Microstegium vimineum | 63 | Υ | FAC | Problematic Hydrophytic Vegetation ¹ (Explain) | | | | |
| 2. Verbesina occidentalis | 15 | N | FACU | | | | | |
| 3. Boehmeria cylindrica | 15 | N | FACW | ¹ Indicators of hydric soil and wetland hydrology must | | | | |
| 4. Polystichum acrostichoides | 3 | N | FACU | be present, unless disturbed or problematic. | | | | |
| _ | | | | Definitions of Four Vegetation Strata: | | | | |
| | | | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or | | | | |
| 6 | | | | more in diameter at breast height (DBH), regardless of | | | | |
| 7 | | | | height. | | | | |
| 8 | | | | Sapling/Shrub – Woody plants, excluding vines, less | | | | |
| 9 | | · | | than 3 in. DBH and greater than or equal to 3.28 ft (1 | | | | |
| 10 | | | | m) tall. | | | | |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless | | | | |
| | 96.0 | = Total Cove | er | of size, and woody plants less than 3.28 ft tall. | | | | |
| 50% of total cover: <u>48.0</u> | 20% of | total cover: | 19.2 | Woody vine – All woody vines greater than 3.28 ft in | | | | |
| Woody Vine Stratum (Plot size:30' Radius) | | | | height. | | | | |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | Lludranhutia | | | | |
| 5 | | | | Hydrophytic Vegetation | | | | |
| | _ | = Total Cove | | Present? Yes No/ | | | | |
| 50% of total cover: 0.0 | | | | | | | | |
| Remarks: (Include photo numbers here or on a separate sh | | • | - | | | | | |
| Indicators of hydrophytic vegetation absent; parameter lacki | | | | | | | | |
| | <i>3</i> - | | | | | | | |
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| Profile Desc | cription: (Describe to | o the depth | needed to docur | nent the i | indicator | or confirm | the ab | sence of | indicator | s.) | |
|----------------|---|---------------|---------------------------|------------|-------------------|------------------|--------------------|---------------------|-------------|-----------------------|-----------------------------|
| Depth | Matrix | | Redo | x Feature | | | | | | | |
| (inches) | Color (moist) | <u>%</u> | Color (moist) | % | Type ¹ | Loc ² | Tex | ture | | Remarks | <u> </u> |
| 0-10 | 10YR 5/3 | 100 | | | | | S | <u>L R</u> | efusal at | 10in due do | bedrock |
| | | | | | | | | | | | |
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| 1 | | | | | | | 2. | | | | |
| | oncentration, D=Deple | etion, RM=R | educed Matrix, MS | S=Masked | d Sand Gra | ains. | ² Locat | | | g, M=Matrix | |
| Hydric Soil | | | 5 . 6 . | (0-) | | | | | | | lydric Soils ³ : |
| Histosol | | | Dark Surface | . , | (00) (5) | | 4.46 | | | 10) (MLRA | |
| | pipedon (A2) | | Polyvalue Be | | | | 148) | | | Redox (A16 | 5) |
| | istic (A3) | | Thin Dark Su | | | 47, 148) | | | ILRA 147 | | o (F10) |
| | en Sulfide (A4) | | Loamy Gleye | | (F2) | | | | | dplain Soil | s (F19) |
| | d Layers (A5) uck (A10) (LRR N) | | Depleted Ma Redox Dark | | -c) | | | | ILRA 136 | , 147) Dark Surfac | oo (TE12) |
| | d Below Dark Surface | (Δ11) | Depleted Dai | | | | | | | in Remark | |
| | ark Surface (A12) | (Д11) | Redox Depre | | | | | Ourie | i (Lapiaii) | III IXeman | .3) |
| | Mucky Mineral (S1) (Ll | RR N. | Iron-Mangan | | | LRR N. | | | | | |
| | A 147, 148) | , | MLRA 13 | | 00 (1 12) (1 | | | | | | |
| | Gleyed Matrix (S4) | | Umbric Surfa | • | (MLRA 13 | 6. 122) | | ³ Indica | ors of hvo | drophytic ve | egetation and |
| | Redox (S5) | | Piedmont Flo | | | | 8) | | | gy must be | - |
| | d Matrix (S6) | | Red Parent N | | | | | | | d or proble | |
| | Layer (if observed): | | | , | / \ | | Í | | | | |
| Type: Be | | | | | | | | | | | |
| , | ches): 10 | | | | | | Hydr | ic Soil Pr | esent? | Yes | No ✓ |
| Remarks: | onoo) | | | | | | yu. | | | | |
| | P 4 | | | | | | | | | | |
| Hydric soil in | dicators absent; parar | neter lacking | j . | | | | | | | | |
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| Project/Site: Barrelhead Solar | | City/C | ounty: Wayne County | | Sampling Date: 2024-08-20 |
|---|---------------------|--------------------------------|---------------------------------------|--------------------|-------------------------------|
| Applicant/Owner: Barrelhead | | • | | State: Kentucky | Sampling Point: DP019 |
| Investigator(s): D. Hunter, I. B | entley | Section | n. Township, Range: | - | |
| Landform (hillslope, terrace, et | | | | | |
| Subregion (LRR or MLRA): LF | | | | | |
| Soil Map Unit Name: Frederick | | | | | |
| | | | | | |
| Are climatic / hydrologic condit | | | | | |
| Are Vegetation, Soil | , or Hydrology | y significantly disturb | ped? Are "Normal C | Circumstances" pr | esent? Yes/ No |
| Are Vegetation, Soil | , or Hydrology | y naturally problema | tic? (If needed, ex | plain any answers | s in Remarks.) |
| SUMMARY OF FINDIN | GS – Attach s | ite map showing sam | pling point location | ns, transects, | important features, etc. |
| Hydrophytic Vegetation Pres Hydric Soil Present? Wetland Hydrology Present? | Yes _ | ✓ No ✓ No ✓ No | Is the Sampled Area within a Wetland? | Yes <u>√</u> | _ No |
| Remarks: | 100_ | <u>v</u> 110 | | | |
| All parameters met; area is co Precipitation Tool (APT) and o | | | | ucted a due dilige | nce review of the Antecedent |
| HYDROLOGY | | | | | |
| Wetland Hydrology Indicat | ors: | | <u>S</u> | Secondary Indicat | ors (minimum of two required) |
| Primary Indicators (minimum | of one is required; | check all that apply) | | Surface Soil C | Cracks (B6) |
| ✓ Surface Water (A1) | | True Aquatic Plants (I | | | etated Concave Surface (B8) |
| High Water Table (A2) | | Hydrogen Sulfide Odd | | Drainage Patt | |
| Saturation (A3) | | Oxidized Rhizosphere | | ✓ Moss Trim Lin | |
| Water Marks (B1) | | Presence of Reduced | | | /ater Table (C2) |
| Sediment Deposits (B2) | | Recent Iron Reduction | | Crayfish Burro | , |
| ✓ Drift Deposits (B3) | | Thin Muck Surface (C | | | ible on Aerial Imagery (C9) |
| Algal Mat or Crust (B4) | | Other (Explain in Ren | | | essed Plants (D1) |
| Iron Deposits (B5) | rial Imagan, (D7) | | | ✓ Geomorphic F | |
| Inundation Visible on Ae | | | _ | Shallow Aquit | ` , |
| Water-Stained Leaves (B Aquatic Fauna (B13) | 39) | | _ | | phic Relief (D4) |
| | | | <u>.</u> | ✓ FAC-Neutral 1 | est (D3) |
| Field Observations: Surface Water Present? | Voc. / No. | Depth (inches):1 | | | |
| Water Table Present? | | ✓ Depth (inches): | | | |
| Saturation Present? | | ✓ Depth (inches): | | dralagy Procent | ? Yes <u>√</u> No |
| (includes capillary fringe) | 165 140 | Deptil (iliches) | wellallu riy | diology Fresent | : 162 / NO |
| Describe Recorded Data (str | eam gauge, monito | oring well, aerial photos, pre | vious inspections), if availa | able: | |
| Remarks: | | | | | |
| At least one primary or two se | condary indicators | chserved: narameter met | | | |
| At least one primary or two se | condary indicators | observed, parameter met. | | | |
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| EGETATION (Four Strata) – Use scientific | names of | plants. | | S | Sampling | Point:_ | DP019 | |
|---|----------------------|--------------|---------------|---|--------------|--------------|----------------|---------|
| | Absolute | Dominant I | | Dominance Test | worksheet | t: | | |
| Tree Stratum (Plot size:30' Radius) 1. Salix nigra | <u>% Cover</u> 85 | Species? | Status OBL | Number of Domin That Are OBL, FA | | | 5 | (A) |
| 2 | | | | Total Number of E Species Across A | | | 7 | (B) |
| 4 | | | | Doroont of Domin | ant Chasias | | | |
| 5 | | | | Percent of Domina That Are OBL, FA | | | 71.43 | (A/B) |
| 6 | | | | Prevalence Index | x workshee | et: | | |
| 7 | 85.0 | = Total Cove | | Total % Cove | er of: | Mu | ıltiply by: | |
| 50% of total cover: 42 | | | | OBL species | 85 | x 1 = | 85 | _ |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | 20 /0 01 | total cover | 17.0 | FACW species | 6 | x 2 = | 12 | = |
| | 3 | N | FACU | FAC species | 6 | x 3 = | 40 | - |
| · | | | 1700 | FACU species | 9 | x 4 = | | - |
| 2 | | | | UPL species | 0 | - | 0 | - |
| 3 | | | | Column Totals: | | (A) | 151.00 | (B) |
| 4 | | | | Dravalanca | In day D/ | ۸ 1 <i>1</i> | 2 | |
| 6 | | | | Prevalence | | | | - |
| 7 | | | | Hydrophytic Veg | | | | |
| 8 | | | | 1 - Rapid Tes | | | egetation | |
| 9. | | | | ✓ 2 - Dominano | | | | |
| | 3.0 | = Total Cove | | ✓ 3 - Prevalenc | | | | |
| 50% of total cover: 1 | | | | 4 - Morpholog | - | | | oorting |
| Herb Stratum (Plot size:5' Radius) | | | | | marks or or | • | | |
| 1. Boehmeria cylindrica | 3 | Y | FACW | Problematic I | -lydrophytic | Vegetat | ion' (Explair | n) |
| 2. Persicaria longiseta | 3 | Υ | FAC | | | | | |
| 3. Microstegium vimineum | 3 | Υ | FAC | ¹ Indicators of hydrony be present, unless | | | | nust |
| 4. Juncus effusus | 3 | Υ | FACW | Definitions of Fo | | • | | |
| 5. Schedonorus arundinaceus | 3 | Y | FACU | Delinitions of Fo | ur vegetat | ion Sua | la. | |
| 6. Oxalis stricta | 3 | Υ | FACU | Tree – Woody pla | , | 0 | , | , |
| 7 | | | | more in diameter height. | at breast ne | agnt (DE | sH), regardie | ess or |
| 8 | | | | 0 1: (0) | | | | |
| 9 | | | | Sapling/Shrub – than 3 in. DBH an | | | | |
| 10 | | | | m) tall. | 3 | | | |
| 11 | | | | Herb – All herbac | eous (non- | woody) r | lante regar | dlace |
| | | = Total Cove | r | of size, and wood | | | | uicss |
| 50% of total cover: 9 | | | | Woody vine – All | woody ving | as areat | ar than 3 28 | ft in |
| Woody Vine Stratum (Plot size:30' Radius) | | | | height. | woody viile | 55 greate | 51 tilali 5.20 | 11 111 |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | Hydrophytic | | | | |
| 5 | | | | Vegetation | | | | |
| | 0 | = Total Cove | r | Present? | Yes | No | | |
| 50% of total cover:0 | | | | | | | | |
| Pomarks: (Include phote numbers here or on a congrete | aboot) | | | | | | | |

Remarks: (Include photo numbers here or on a separate sheet.)

Indicator 2 (Dominance Test) present with greater than 50% of dominant species FAC or wetter; parameter met. Prevalence Index calculated for reference purposes only.

| Profile Desc | cription: (E | Describe | to the dep | th needed | to docu | ment the i | ndicator | or confirm | n the abs | sence of indic | ators.) |
|---------------------------------------|---------------------------|-------------|--------------|-------------|--------------|----------------------------------|-------------------|------------------|-----------------------|----------------|---|
| Depth | | Matrix | | | | x Features | | | | | |
| (inches) | Color (| moist) | % | Color (| moist) | % | Type ¹ | Loc ² | Textu | ure | Remarks |
| 0-4 | 10YR | 4/1 | 85 | 10YR | 6/8 | 15 | C | M | L | | |
| 4-12 | 10YR | 4/3 | 90 | 7.5YR | 6/8 | 10 | С | M | SL | | |
| 12-18 | 10YR | 4/1 | 75 | 7.5YR | 6/8 | 25 | С | М | SCI | L | |
| | | | | | | | | | | | |
| | | | | | | | | | - | | |
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| | | | | | | | | | | | |
| 1Turne: C-C | oncontration | n D-Don | lotion DM | | Motrix M | S_Maakad | L Cond Cr | | ² L coatie | on: DI _Doro I | ining M-Motriy |
| ¹ Type: C=C Hydric Soil | | | netion, Rivi | =Reduced | Matrix, M | S=IVIASKed | Sand Gr | ains. | | | _ining, M=Matrix. r Problematic Hydric Soils ³ : |
| Histosol | | • | | Da | rk Surface | 2 (87) | | | | | k (A10) (MLRA 147) |
| | pipedon (A2 | 2) | | | | elow Surfa | ce (S8) (N | ILRA 147 | . 148) | | airie Redox (A16) |
| | istic (A3) | -/ | | | | urface (S9) | | | , , | | . 147, 148) |
| | en Sulfide (A | A4) | | | | ed Matrix (| | | | | Floodplain Soils (F19) |
| Stratified | d Layers (A | 5) | | ✓ De | pleted Ma | atrix (F3) | | | | (MLRA | 136, 147) |
| | uck (A10) (L | | | Re | dox Dark | Surface (F | 6) | | • | | low Dark Surface (TF12) |
| | d Below Da | | e (A11) | | | rk Surface | | | | Other (Ex | plain in Remarks) |
| | ark Surface | | | | | essions (F | | | | | |
| | Mucky Mine | | LRR N, | | | ese Masse | es (F12) (| LRR N, | | | |
| | A 147, 148) | | | | MLRA 13 | | MI DA 42 | c 422\ | | 3Indiantora | f budranbutia vagatatian and |
| | Gleyed Matr Redox (S5) | 1X (S4) | | | | ace (F13) (oodplain S | | | 40) | | of hydrophytic vegetation and drology must be present, |
| | d Matrix (S6 | :) | | | | Material (F | | | | | urbed or problematic. |
| Restrictive | | | <u> </u> | 1 | a i aiciit i | wateriai (i | 21) (IVILIX | A 121, 14 | <u>'',</u> | unicss dist | arbed of problematic. |
| Type: | | | - | | | | | | | | |
| | ches): | | | | | | | | Hydrid | c Soil Present | t? Yes/_ No |
| Remarks: | CHES) | | | | | | | | пушп | C 3011 Fresein | r: les 140 |
| Hydric soil in | dicator F3 (| Depleted | Matrix) pre | esent; para | meter me | t. | | | | | |
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| Project/Site: Barrelhead Solar | | City/C | county: Wayne County | | Sampling Date: 2024-08-20 |
|---|--|-------------------------------------|--|----------------------|---------------------------------|
| Applicant/Owner: Barrelhead S | Solar LLC | • | | State: Kentucky | _ Sampling Point: DP020 |
| Investigator(s): D. Hunter, I. Bo | | | | | |
| Landform (hillslope, terrace, et | | | | | |
| Subregion (LRR or MLRA): LR | | | | | |
| Soil Map Unit Name: Frederick | | | | | |
| Are climatic / hydrologic condit | | | | | |
| | | | | | esent? Yes No |
| Are Vegetation, Soil | | | | | |
| | | | | | important features, etc. |
| Hydrophytic Vegetation Prese Hydric Soil Present? Wetland Hydrology Present? Remarks: All parameters met; area is co Precipitation Tool (APT) and co | Yes _ Yes _ onsidered a palustri | No No No ne forested (PFO) wetland. | Is the Sampled Area within a Wetland? The lead delineator concretal at the time of survey | ducted a due diliger | No nce review of the Antecedent |
| HYDROLOGY | | | | | |
| Wetland Hydrology Indicate | ors: | | | Secondary Indicate | ors (minimum of two required) |
| Primary Indicators (minimum | | check all that apply) | | Surface Soil C | |
| ✓ Surface Water (A1) | or one to required, | True Aquatic Plants (| | | etated Concave Surface (B8) |
| ✓ High Water Table (A2) | | Hydrogen Sulfide Od | | ✓ Drainage Patt | |
| ✓ Saturation (A3) | | Oxidized Rhizospher | | Moss Trim Lin | es (B16) |
| Water Marks (B1) | | Presence of Reduced | d Iron (C4) | Dry-Season W | /ater Table (C2) |
| Sediment Deposits (B2) | | Recent Iron Reduction | n in Tilled Soils (C6) | Crayfish Burro | ows (C8) |
| ✓ Drift Deposits (B3) | | Thin Muck Surface (C | 27) | Saturation Vis | ible on Aerial Imagery (C9) |
| Algal Mat or Crust (B4) | | Other (Explain in Rer | narks) | Stunted or Str | essed Plants (D1) |
| Iron Deposits (B5) | | | | ✓ Geomorphic F | Position (D2) |
| Inundation Visible on Ae | rial Imagery (B7) | | | Shallow Aquita | ard (D3) |
| Water-Stained Leaves (E | 39) | | | Microtopograp | hic Relief (D4) |
| Aquatic Fauna (B13) | | | | ✓ FAC-Neutral 1 | est (D5) |
| Field Observations: | | | | | |
| Surface Water Present? | | Depth (inches):1 | | | |
| Water Table Present? | | Depth (inches):1 | | | |
| Saturation Present? (includes capillary fringe) | Yes <u>√</u> No _ | Depth (inches):1 | Wetland H | lydrology Present | ? Yes/_ No |
| Describe Recorded Data (stre | eam gauge, monito | ring well, aerial photos, pre | vious inspections), if ava | ilable: | |
| | | | | | |
| Remarks: | | | | | |
| At least one primary or two se | condary indicators | observed, parameter met. | | | |
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VEGETATION (Four Strata) – Use scientific names of plants

| /EGETATION (Four Strata) – Use scientific na | ames of | plants. | | Sampling Point: DP020 |
|--|-----------|---------------|-----------|---|
| | Absolute | Dominant I | | Dominance Test worksheet: |
| <u>Tree Stratum</u> (Plot size:30' Radius) | % Cover | Species? | Status | Number of Dominant Species |
| 1. Salix nigra | 3 | <u>N</u> | OBL | That Are OBL, FACW, or FAC:4 (A) |
| 2 | | | | Total Number of Dominant |
| 3 | | | | Species Across All Strata: 4 (B) |
| 4 | | | | Descent of Deminant Charles |
| 5 | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B) |
| 6 | | | | , , |
| 7. | | | | Prevalence Index worksheet: |
| | 3.0 | = Total Cove | | Total % Cover of: Multiply by: |
| 50% of total cover: 1.5 | | | | OBL species36 x 1 =36 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | FACW species 62 x 2 = 124 |
| 1 | | | | FAC species0 x 3 =0 |
| 2 | | | | FACU species 0 x 4 = 0 |
| 3 | | | | UPL species 0 x 5 = 0 |
| 4 | | | | Column Totals:98 (A)160.00 (B) |
| _ | | | | |
| 5 6 | | | | Prevalence Index = B/A = 1.63 |
| 6 | | | | Hydrophytic Vegetation Indicators: |
| 7 | | | | ✓ 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | | | ✓ 2 - Dominance Test is >50% |
| 9 | | | | ✓ 3 - Prevalence Index is ≤3.0 ¹ |
| 500/ aftertal account 0.0 | | = Total Cove | | 4 - Morphological Adaptations ¹ (Provide supporting |
| 50% of total cover: 0.0 | 20% of | total cover:_ | 0.0 | data in Remarks or on a separate sheet) |
| Herb Stratum (Plot size: 5' Radius) | 20 | V | EA C) A / | Problematic Hydrophytic Vegetation ¹ (Explain) |
| 1. Mentha spicata | 38 | <u>Y</u> | FACW | |
| 2. Cyperus erythrorhizos | 15 | <u>Y</u> | FACW | ¹ Indicators of hydric soil and wetland hydrology must |
| 3. Persicaria hydropiper | 15 | <u> </u> | OBL | be present, unless disturbed or problematic. |
| 4. Carex Iurida | 15 | <u> </u> | OBL | Definitions of Four Vegetation Strata: |
| 5. Boehmeria cylindrica | 3 | N | FACW | The Manthalanta and displaying 0 in (7.0 an) |
| 6. Juncus effusus | 3 | N | FACW | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of |
| 7. Ludwigia palustris | 3 | N | OBL | height. |
| 8. Bidens aristosa | 3 | N | FACW | Continue (Charaba Manda and and and and and and and and and |
| 9 | | | | Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 10 | | | | m) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| | | = Total Cove | | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover: 47.5 | | | | |
| Woody Vine Stratum (Plot size: 30' Radius) | | | | Woody vine – All woody vines greater than 3.28 ft in height. |
| 1 | | | | noight. |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| | | | | Hydrophytic |
| 5 | | | | Vegetation Present? Yes No |
| 50% of total cover: 0.0 | | = Total Cove | | |
| | | total cover | 0.0 | |
| Remarks: (Include photo numbers here or on a separate si | , | BI : paramata | ormet De | aminance Test and Provalence Index calculated for |
| Indicator 1 (Rapid Test) present with all dominant species F reference purposes only. | ACVV OF O | ∟, paramete | a met. Do | ominance rest and Frevalence index calculated for |
| | | | | |
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| Profile Des | cription: (D | Describe t | o the dep | th needed | to docui | ment the i | indicator | or confirn | the abse | ence of indicators.) |
|----------------|---------------|-------------|-------------|----------------|---------------|--------------|-------------------|------------------|------------------------|---|
| Depth | | Matrix | | Redox Features | | | | | | |
| (inches) | Color (| moist) | <u>%</u> | Color (| moist) | % | Type ¹ | Loc ² | Texture | e Remarks |
| 0-4 | 10YR | 4/3 | 85 | 10YR | 6/8 | 15 | C | M | L | |
| 4-12 | 10YR | 4/1 | 90 | 7.5YR | 6/8 | 10 | C | M | SL | Auger refusal due to cobble at 12in |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| ¹Type: C=C | `oncentratio | n D-Denl | etion RM | -Reduced | Matriy M | S-Masker | 1 Sand Gr | aine | ² l ocation | n: PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | elion, Kivi | =Reduced | ivialită, ivi | 3=IVIASKEC | J Sanu Gi | all is. | | ndicators for Problematic Hydric Soils ³ : |
| Histoso | | | | Da | rk Surface | (\$7) | | | | _ 2 cm Muck (A10) (MLRA 147) |
| | pipedon (A2 | P) | | | | . , | ce (S8) (N | /ILRA 147, | | Coast Prairie Redox (A16) |
| | istic (A3) | -) | | | | urface (S9) | | | 140) _ | (MLRA 147, 148) |
| | en Sulfide (A | A4) | | | | ed Matrix (| | ,, | | _ Piedmont Floodplain Soils (F19) |
| | d Layers (A | | | | pleted Ma | | , | | _ | (MLRA 136, 147) |
| | uck (A10) (L | | | | | Surface (F | - 6) | | | Very Shallow Dark Surface (TF12) |
| Deplete | d Below Da | rk Surface | (A11) | De | pleted Da | rk Surface | e (F7) | | _ | _ Other (Explain in Remarks) |
| | ark Surface | | | | | essions (F | | | | |
| | Mucky Mine | | RR N, | | | ese Mass | es (F12) (| LRR N, | | |
| | A 147, 148) | | | | MLRA 13 | • | | | | 3 |
| | Gleyed Matr | ix (S4) | | | | ace (F13) (| | | | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | ` | | | | | | (MLRA 14 | | wetland hydrology must be present, |
| | d Matrix (S6 | | | Re | d Parent i | viateriai (F | ·21) (WLR | A 127, 147 | <u>')</u> | unless disturbed or problematic. |
| Restrictive | | | | | | | | | | |
| | | | | | | | | | | |
| Depth (in | iches): | | | | | | | | Hydric | Soil Present? Yes No |
| Remarks: | | | | | | | | | | |
| Hydric soil in | dicator F3 (| Depleted | Matrix) pre | esent; para | meter me | t. | | | | |
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| Project/Site: Barrelhead Solar | | City/C | county: Wayne County | ; | Sampling Date: 2024-08-20 | | | | |
|--|-----------------------|-------------------------------|------------------------------|---|---------------------------------------|--|--|--|--|
| Applicant/Owner: Barrelhead | Solar LLC | | | State: Kentucky | Sampling Point: DP021 | | | | |
| Investigator(s): D. Hunter, I. Bentley Section, Township, Range: | | | | | | | | | |
| Landform (hillslope, terrace, et | | | | | | | | | |
| Subregion (LRR or MLRA): LF | | | | | | | | | |
| Soil Map Unit Name: Frederick | | | | | | | | | |
| Are climatic / hydrologic condit | | | | | | | | | |
| | | | | | | | | | |
| = | | | | | esent? Yes No | | | | |
| Are Vegetation, Soil | | | | | in Remarks.) important features, etc. | | | | |
| | | io map onowing can | | ,, | | | | | |
| Hydrophytic Vegetation Pres | | No ✓ | Is the Sampled Area | | | | | | |
| Hydric Soil Present? | | No∕ | within a Wetland? | Yes | No <u>✓</u> | | | | |
| Wetland Hydrology Present? | Yes | No | | | | | | | |
| Remarks: | ing: area is not con | oidarad a dafinitional watlar | ad. The lead delineater of | andustad a dua dili | gence review of the Antecedent | | | | |
| Precipitation Tool (APT) and of | determined that hvd | rologic conditions were not | mal at the time of survey. | mauciea a due diii(| gence review of the Antecedent | | | | |
| () | | . | | | | | | | |
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| HYDROLOGY | | | | | | | | | |
| Wetland Hydrology Indicate | ors: | | , | Secondary Indicate | ors (minimum of two required) | | | | |
| Primary Indicators (minimum | of one is required; | check all that apply) | | Surface Soil Cracks (B6) | | | | | |
| Surface Water (A1) | | | | etated Concave Surface (B8) | | | | | |
| High Water Table (A2) | | or (C1) | Drainage Patt | | | | | | |
| Saturation (A3) | | Oxidized Rhizosphere | es on Living Roots (C3) | Moss Trim Lin | es (B16) | | | | |
| Water Marks (B1) | | Presence of Reduced | d Iron (C4) | Dry-Season W | /ater Table (C2) | | | | |
| Sediment Deposits (B2) | | Recent Iron Reduction | n in Tilled Soils (C6) | Crayfish Burro | ayfish Burrows (C8) | | | | |
| Drift Deposits (B3) | | Thin Muck Surface (C | 27) | Saturation Visible on Aerial Imagery (C9) | | | | | |
| Algal Mat or Crust (B4) | | Other (Explain in Rer | | | essed Plants (D1) | | | | |
| Iron Deposits (B5) | | | | Geomorphic F | | | | | |
| Inundation Visible on Ae | | | | Shallow Aquita | | | | | |
| Water-Stained Leaves (E | 39) | | | | phic Relief (D4) | | | | |
| Aquatic Fauna (B13) | | | | FAC-Neutral T | est (D5) | | | | |
| Field Observations: Surface Water Present? | Vaa Na | (Danth (in the ca) | | | | | | | |
| | | ✓ Depth (inches): | | | | | | | |
| Water Table Present? | | ✓ Depth (inches): | | | 0 Van Na (| | | | |
| Saturation Present? (includes capillary fringe) | res No_ | ✓ Depth (inches): | wetland Hy | yarology Present | ? Yes No/ | | | | |
| Describe Recorded Data (str | eam gauge, monitor | ring well, aerial photos, pre | vious inspections), if avail | lable: | | | | | |
| Remarks: | | | | | | | | | |
| No primary and only one seco | andary indicator of w | vetland hydrology present: | narameter lacking | | | | | | |
| Two primary and only one seed | maary malcator or w | reliand hydrology present, | parameter lacking. | | | | | | |
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VEGETATION (Four Strata) – Use scientific names of plants.

| /EGETATION (Four Strata) – Use scientific na | ames of | plants. | | Sampling Point: DP021 |
|--|----------|--------------|-----------|---|
| | Absolute | Dominant | Indicator | Dominance Test worksheet: |
| Tree Stratum (Plot size:30' Radius) | % Cover | Species? | Status | Number of Dominant Species |
| 1 | | | | That Are OBL, FACW, or FAC: 0 (A) |
| 2 | | | | Total Number of Dominant |
| 3 | | | | Species Across All Strata: 1 (B) |
| 4 | | | | |
| 5 | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B) |
| 6 | | | | That Are OBE, I ACW, OF I AC (A/B) |
| 7 | | | | Prevalence Index worksheet: |
| | | = Total Cove | | Total % Cover of: Multiply by: |
| 50% of total cover: 0.0 | | | | OBL species0 x 1 =0 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | FACW species 3 x 2 = 6 |
| 1 | | | | FAC species3 x 3 =9 |
| | | | | FACU species96 x 4 =384 |
| 2 | | | | UPL species 0 x 5 = 0 |
| 3 | | | | Column Totals: 102 (A) 399.00 (B) |
| 4 | | | | (2) |
| 5 | | | | Prevalence Index = B/A = 3.91 |
| 6 | | | | Hydrophytic Vegetation Indicators: |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | | | 2 - Dominance Test is >50% |
| 9 | | | | 3 - Prevalence Index is ≤3.0 ¹ |
| | | = Total Cove | | 4 - Morphological Adaptations ¹ (Provide supporting |
| 50% of total cover:0.0 | 20% of | total cover: | 0.0 | data in Remarks or on a separate sheet) |
| Herb Stratum (Plot size: 5' Radius) | | | | Problematic Hydrophytic Vegetation¹ (Explain) |
| 1. Schedonorus arundinaceus | 63 | Y | FACU | Problematic Hydrophytic Vegetation (Explain) |
| 2. Trifolium repens | 15 | N | FACU | The disease of burden and supplement burden are mount |
| 3. Eleusine indica | 15 | N | FACU | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4. Persicaria longiseta | 3 | N | FAC | Definitions of Four Vegetation Strata: |
| 5. Vernonia noveboracensis | 3 | N | FACW | Definitions of Four Vegetation of ata. |
| 6. Plantago rugelii | 3 | N | FACU | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| 7 | | | | more in diameter at breast height (DBH), regardless of height. |
| 0 | | | | noight. |
| 0 | | | | Sapling/Shrub – Woody plants, excluding vines, less |
| 10 | | | | than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. |
| 10 | - | | | |
| 11 | 102.0 | | | Herb – All herbaceous (non-woody) plants, regardless |
| 50% of total cover: 51.0 | | = Total Cove | | of size, and woody plants less than 3.28 ft tall. |
| | 20 /6 01 | total cover. | 20.4 | Woody vine – All woody vines greater than 3.28 ft in |
| (************************************** | | | | height. |
| 1 | | | | |
| 2 | - | | | |
| 3 | | | | |
| 4 | | | | Hydrophytic |
| 5 | | | | Vegetation |
| | | = Total Cove | | Present? Yes No/ |
| 50% of total cover: 0.0 | 20% of | total cover: | 0.0 | |
| Remarks: (Include photo numbers here or on a separate sl | neet.) | | | |
| Indicators of hydrophytic vegetation absent; parameter lacki | ing. | | | |
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| Profile Des | cription: (D | Describe t | o the dept | th needed to docur | nent the | indicator | or confirn | n the ab | osence of indicators.) |
|------------------------|----------------------------|-------------|---------------|----------------------------|------------|-------------------|------------------|-------------------|--|
| Depth | | Matrix | | | x Feature | | | | |
| (inches) | Color (| moist) | <u></u> % | Color (moist) | % | Type ¹ | Loc ² | Tex | ture Remarks |
| 0-4 | 10YR | 4/3 | 100 | | | | | | <u> </u> |
| 4-18 | 7.5YR | 4/6 | 100 | | | | | S | SL |
| | | | | | - | | | | |
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| ¹ Type: C=C | Concentration | n, D=Depl | etion, RM= | Reduced Matrix, M | S=Masked | d Sand Gra | ains. | ² Loca | tion: PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | | | | | | | Indicators for Problematic Hydric Soils ³ : |
| Histoso | I (A1) | | | Dark Surface | (S7) | | | | 2 cm Muck (A10) (MLRA 147) |
| Histic E | pipedon (A2 | 2) | | Polyvalue Be | low Surfa | ice (S8) (N | ILRA 147, | 148) | Coast Prairie Redox (A16) |
| Black H | listic (A3) | | | Thin Dark Su | ırface (S9 |) (MLRA 1 | 47, 148) | | (MLRA 147, 148) |
| | en Sulfide (A | , | | Loamy Gleye | | (F2) | | | Piedmont Floodplain Soils (F19) |
| | d Layers (A | | | Depleted Ma | | | | | (MLRA 136, 147) |
| | uck (A10) (L | | (0.4.4) | Redox Dark | | | | | Very Shallow Dark Surface (TF12) |
| | ed Below Da ark Surface | | e (A11) | Depleted Da Redox Depreted | | | | | Other (Explain in Remarks) |
| | Mucky Mine | | RR N | Iron-Mangan | | | I RR N | | |
| | A 147, 148) | | , | MLRA 13 | | (1 12) (| LIXIX IV, | | |
| | Gleyed Matr | | | Umbric Surfa | - | (MLRA 13 | 6. 122) | | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | () | | Piedmont Flo | | | | 18) | wetland hydrology must be present, |
| | d Matrix (S6 |) | | Red Parent I | | | | | unless disturbed or problematic. |
| Restrictive | Layer (if ob | served): | | | | | | | |
| Type: | | | | | | | | | |
| Depth (ir | nches): | | | | | | | Hydr | ric Soil Present? Yes No/ |
| Remarks: | , <u> </u> | | | | | | | | |
| Hydric soil in | dicatore abo | ent: narai | meter lacki | na | | | | | |
| r iyunc son in | idicators abs | sent, parai | illeter lacki | rig. | | | | | |
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| Project/Site: Barrelhead Solar | | City/C | county: Wayne County | ; | Sampling Date: 2024-08-19 | | | | | |
|---|--|---|------------------------------|---|---------------------------------------|--|--|--|--|--|
| Applicant/Owner: Barrelhead | Solar LLC | | | State: Kentucky | Sampling Point: DP022 | | | | | |
| Investigator(s): I. Bentley, D. I | Investigator(s): I. Bentley, D. Hunter Section, Township, Range: | | | | | | | | | |
| Landform (hillslope, terrace, et | | | | | | | | | | |
| Subregion (LRR or MLRA): LF | • | | | | | | | | | |
| Soil Map Unit Name: Garmon- | | | | | | | | | | |
| Are climatic / hydrologic condit | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | esent? Yes/ No | | | | | |
| Are Vegetation, Soil SUMMARY OF FINDIN | | | | | in Remarks.) important features, etc. | | | | | |
| | | | 9 | ,, | | | | | | |
| Hydrophytic Vegetation Pres | | ✓ No | Is the Sampled Area | | | | | | | |
| Hydric Soil Present? | | No | within a Wetland? | Yes | No <u>√</u> | | | | | |
| Wetland Hydrology Present? Remarks: | res_ | No ✓ | | | | | | | | |
| | ing: area is not cons | sidered a definitional wetlar | nd. The lead delineator co | inducted a due dilio | gence review of the Antecedent | | | | | |
| Precipitation Tool (APT) and (| | | | | genee review of the functional | | | | | |
| | | | | | | | | | | |
| HYDROLOGY | | | | | (; ; ;) | | | | | |
| Wetland Hydrology Indicat | | ah a ah all that awal A | | | ors (minimum of two required) | | | | | |
| Primary Indicators (minimum | of one is required; | | | Surface Soil C | | | | | | |
| Surface Water (A1) | | True Aquatic Plants (Hydrogen Sulfide Od | | | etated Concave Surface (B8) | | | | | |
| High Water Table (A2)Saturation (A3) | | Oxidized Rhizospher | | Drainage Patters Moss Trim Lin | | | | | | |
| Water Marks (B1) | | Presence of Reduced | | | /ater Table (C2) | | | | | |
| Sediment Deposits (B2) | | Recent Iron Reductio | | Crayfish Burro | | | | | | |
| Drift Deposits (B3) | | Thin Muck Surface (0 | | Saturation Visible on Aerial Imagery (C9) | | | | | | |
| Algal Mat or Crust (B4) | | Other (Explain in Rer | | | essed Plants (D1) | | | | | |
| Iron Deposits (B5) | | | | ✓ Geomorphic F | Position (D2) | | | | | |
| Inundation Visible on Ae | rial Imagery (B7) | | | Shallow Aquita | ard (D3) | | | | | |
| Water-Stained Leaves (F | 39) | | | Microtopograp | ohic Relief (D4) | | | | | |
| Aquatic Fauna (B13) | | | | FAC-Neutral T | est (D5) | | | | | |
| Field Observations: | | | | | | | | | | |
| Surface Water Present? | | ✓ Depth (inches): | | | | | | | | |
| Water Table Present? | Yes No _ | ✓ Depth (inches): | | | | | | | | |
| Saturation Present? (includes capillary fringe) | | ✓ Depth (inches): | | | ? Yes No✓ | | | | | |
| Describe Recorded Data (str | eam gauge, monitor | ring well, aerial photos, pre | vious inspections), if avail | lable: | | | | | | |
| Remarks: | | | | | | | | | | |
| No primary and only one seco | ondary indicator of w | vetland hydrology present: | parameter lacking. | | | | | | | |
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VEGETATION (Four Strata) - Use scientific names of plants.

| /EGETATION (Four Strata) – Use scientific | names of | plants. | | Sampling Point: DP022 |
|---|---|--------------|-------|---|
| 001 Parling | Absolute | Dominant | | Dominance Test worksheet: |
| <u>Tree Stratum</u> (Plot size: <u>30' Radius</u>) | | Species? | | Number of Dominant Species |
| 1. Acer rubrum | 35 | Y | FAC | That Are OBL, FACW, or FAC:6 (A) |
| 2. Aesculus flava | 15 | Y | FACU | Total Number of Dominant |
| 3 | | | | Species Across All Strata:8 (B) |
| 4 | | | | Percent of Dominant Species |
| 5 | | | | That Are OBL, FACW, or FAC:75.00 (A/B) |
| 6 | | | | Prevalence Index worksheet: |
| 7 | | | | Total % Cover of: Multiply by: |
| | | = Total Cove | | OBL species x 1 = 0 |
| 50% of total cover: 2 | 5.U 20% of | total cover: | 10.0 | FACW species 0 x 2 = 0 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | 40 | | E40 | FAC species x 2 = FAC species x 3 = 213 |
| 1. Asimina triloba | 10 | - <u>Y</u> | FAC | FACU species 23 x 4 = 92 |
| 2. Lindera benzoin | 5 | - <u>Y</u> | FAC | UPL species |
| 3. Ulmus rubra | 5 | Y | FAC_ | Column Totals: 94 (A) 305.00 (B) |
| 4 | | · | | Column Totals (A) (B) |
| 5 | | · | | Prevalence Index = B/A = 3.24 |
| 6 | | · | | Hydrophytic Vegetation Indicators: |
| 7 | | · | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | · | | ✓ 2 - Dominance Test is >50% |
| 9 | | | | 3 - Prevalence Index is ≤3.0 ¹ |
| 500/ -1/ 4 | | = Total Cove | | 4 - Morphological Adaptations ¹ (Provide supporting |
| 50% of total cover: 1 | <u>0.0 </u> | total cover: | 4.0 | data in Remarks or on a separate sheet) |
| Herb Stratum (Plot size: 5' Radius) | 5 | Υ | FAC | Problematic Hydrophytic Vegetation ¹ (Explain) |
| 1. Lindera benzoin | <u></u> | Y | FAC | |
| Asimina triloba Polystichum acrostichoides | <u></u> | | FACU | ¹ Indicators of hydric soil and wetland hydrology must |
| Carya ovata | | N | FACU | be present, unless disturbed or problematic. |
| 5. Microstegium vimineum | | N | FAC | Definitions of Four Vegetation Strata: |
| 0. | | | _FAC_ | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| 6 | | · —— | | more in diameter at breast height (DBH), regardless of |
| 1 | | | | height. |
| 8 | | | | Sapling/Shrub – Woody plants, excluding vines, less |
| 9 | | · - | | than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. |
| 10 | | | | 111) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| EOO/ of total acress 4 | | = Total Cove | | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover: 1 | <u>u.ə </u> 20% 01 | iolai cover: | 4.∠ | Woody vine – All woody vines greater than 3.28 ft in |
| Woody Vine Stratum (Plot size:30' Radius) 1 Toxicodendron radicans | 3 | N | FAC | height. |
| T. TOXICOUCHUIOH TAUICANS | | | 1 40 | |

Remarks: (Include photo numbers here or on a separate sheet.)

Indicator 2 (Dominance Test) present with greater than 50% of dominant species FAC or wetter; parameter met. Prevalence Index calculated for reference purposes only.

3.0 = Total Cover

50% of total cover: ____1.5___ 20% of total cover: ____0.6___

Hydrophytic Vegetation Present?

Yes ____ No ____

| Profile Desc | ription: (D | escribe t | o the dept | h needed to docun | nent the i | ndicator | or confirm | the ab | sence of indicators.) | |
|-----------------|----------------------------|-------------------|-------------|----------------------------|-------------|---------------------|--------------------|--------|---|---|
| Depth | | Matrix | | Redo | x Features | 3 | | | | |
| (inches) | Color (r | moist) | % | Color (moist) | % | Type ¹ | Loc ² | Text | ture Remarks | |
| 0-1 | 10YR | 4/2 | 100 | | | | | SI | <u> </u> | |
| 1-5 | 10YR | 4/4 | 100 | | | | | SI | L | |
| 5-18 | 7.5YR | 5/6 | 100 | | | | | SI | L | |
| | | | | | | | | | | |
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| 1- 0.0 | | | | | | | | 21 | | |
| Hydric Soil I | | | etion, RM= | Reduced Matrix, MS | s=Masked | Sand Gra | ins. | Locat | tion: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ : | |
| Histosol | | | | Dark Surface | (97) | | | | 2 cm Muck (A10) (MLRA 147) | |
| | oipedon (A2 |) | | Polyvalue Be | | ce (S8) (M | I RA 147. | 148) | Coast Prairie Redox (A16) | |
| Black Hi | | , | | Thin Dark Su | | | | 140) | (MLRA 147, 148) | |
| | n Sulfide (A | (4) | | Loamy Gleye | | | , , | | Piedmont Floodplain Soils (F19) | |
| | d Layers (A | , | | Depleted Mat | trix (F3) | | | | (MLRA 136, 147) | |
| | ick (A10) (L | | | Redox Dark S | | | | | Very Shallow Dark Surface (TF12) | |
| | d Below Dai | | e (A11) | Depleted Dar | | | | | Other (Explain in Remarks) | |
| | ark Surface Iucky Miner | | RR N | Redox Depre Iron-Mangan | | | RR N | | | |
| | 147, 148) | ai (31) (L | IXIX IV, | MLRA 13 | | 55 (1 12) (1 | -IXIX I 4 , | | | |
| | Bleyed Matri | x (S4) | | Umbric Surfa | • | MLRA 13 | 6, 122) | | ³ Indicators of hydrophytic vegetation and | |
| | ledox (S5) | ` , | | Piedmont Flo | | | | l8) | wetland hydrology must be present, | |
| | Matrix (S6) | | | Red Parent N | Material (F | 21) (MLR | A 127, 147 | 7) | unless disturbed or problematic. | |
| Restrictive I | _ayer (if ob | served): | | | | | | | | |
| Туре: | | | | | | | | | | |
| Depth (inc | ches): | | | | | | | Hydri | ic Soil Present? Yes No | _ |
| Remarks: | | | | | | | | • | | |
| Hydric soil inc | dicators abs | ent; para | meter lacki | ng. | | | | | | |
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| Project/Site: Barrelhead Solar | | City/ | County: Wayne County | S | ampling Date: 2024-09-30 | | |
|---|---------------------|---|----------------------------------|---|-------------------------------|--|--|
| Applicant/Owner: Barrelhead | | | S | | · | | |
| Investigator(s): I. Bentley, S. I | | | | | | | |
| Landform (hillslope, terrace, e | | | | | | | |
| Subregion (LRR or MLRA): LI | | | | | | | |
| | | | | | | | |
| Soil Map Unit Name: Newark | | | | | | | |
| Are climatic / hydrologic condi | | | | | | | |
| Are Vegetation, Soil | , or Hydrolo | gy significantly distu | urbed? Are "Normal Cir | rcumstances" pre | sent? Yes No | | |
| Are Vegetation, Soil | , or Hydrolo | gy naturally problen | natic? (If needed, expl | ain any answers | in Remarks.) | | |
| SUMMARY OF FINDIN | GS – Attach | site map showing sa | mpling point locations | s, transects, i | mportant features, etc. | | |
| Hydrophytic Vegetation Pres Hydric Soil Present? | | No_ ✓ No_ ✓ | Is the Sampled Area | | | | |
| Wetland Hydrology Present? | | No | within a Wetland? | Yes | No | | |
| Remarks: | | 140 | | | | | |
| Precipitation Tool (APT) and | | | | | ence review of the Antecedent | | |
| HYDROLOGY | | | | | | | |
| Wetland Hydrology Indicat | | | · | | rs (minimum of two required) | | |
| Primary Indicators (minimum | of one is required | | <u> </u> | _ Surface Soil Cr | , , | | |
| Surface Water (A1) | | | | ated Concave Surface (B8) | | | |
| High Water Table (A2) | | dor (C1) | _ Drainage Patte | | | | |
| Saturation (A3) | | | eres on Living Roots (C3) | | | | |
| Water Marks (B1)Sediment Deposits (B2) | | Presence of Reduction Recent Iron Reduction | | Dry-Season Water Table (C2) | | | |
| Drift Deposits (B3) | | Thin Muck Surface | | | | | |
| Algal Mat or Crust (B4) | | Other (Explain in Re | | Saturation Visible on Aerial Imagery (C9)Stunted or Stressed Plants (D1) | | | |
| Iron Deposits (B5) | | | | | | | |
| Inundation Visible on Ae | rial Imagery (B7) | | | ✓ Geomorphic Position (D2)_ Shallow Aguitard (D3) | | | |
| Water-Stained Leaves (| | | | Microtopograph | , , | | |
| Aquatic Fauna (B13) | • | | _ | FAC-Neutral Te | est (D5) | | |
| Field Observations: | | | | | | | |
| Surface Water Present? | Yes No | o Depth (inches): | | | | | |
| Water Table Present? | Yes No | o Depth (inches): | | | | | |
| Saturation Present? | Yes No | o ✓ Depth (inches): | Wetland Hyd | rology Present? | Yes No✓ | | |
| (includes capillary fringe) Describe Recorded Data (str | eam gauge, moni | itoring well, aerial photos, p | revious inspections), if availab | ole: | | | |
| , | | | | | | | |
| Remarks: | | | | | | | |
| No primary and only one sec | ondary indicator of | f wetland hydrology present | ; parameter lacking. | | | | |
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VEGETATION (Four Strata) – Use scientific names of plants.

| /EGETATION (Four Strata) – Use scientific na | ames of | plants. | | Sampling Point: DP028 |
|---|----------|---------------|------|--|
| | Absolute | | | Dominance Test worksheet: |
| <u>Tree Stratum</u> (Plot size: <u>30' Radius</u>) 1 | | Species? | | Number of Dominant Species That Are OBL, FACW, or FAC:0 (A) |
| 2 | | | | |
| 3 | | | | Total Number of Dominant Species Across All Strata: 1 (B) |
| 4 | | | | Openies Across Air Strata. |
| 5 | | | | Percent of Dominant Species |
| | | | | That Are OBL, FACW, or FAC: 0.00 (A/B) |
| 6 | | | | Prevalence Index worksheet: |
| 7 | | T-1-1-0 | | Total % Cover of: Multiply by: |
| 50% of total cover: 0.0 | | = Total Cov | | OBL species0 x 1 =0 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | 20 /6 01 | total cover. | 0.0 | FACW species0 x 2 =0 |
| | | | | FAC species 0 x 3 = 0 |
| 1 | | | | FACU species 0 x 4 = 0 |
| 2 | | | | UPL species 90 x 5 = 450 |
| 3 | | | | Column Totals: 90 (A) 450.00 (B) |
| 4 | | | | Column Totals (A) |
| 5 | | | | Prevalence Index = B/A = 5.0 |
| 6 | | | | Hydrophytic Vegetation Indicators: |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | | | 2 - Dominance Test is >50% |
| 9 | | | | 3 - Prevalence Index is ≤3.0¹ |
| | | = Total Cov | er | |
| 50% of total cover: 0.0 | 20% of | total cover: | 0.0 | 4 - Morphological Adaptations ¹ (Provide supporting |
| Herb Stratum (Plot size: 5' Radius) | | | | data in Remarks or on a separate sheet) |
| 1. Zea mays | 90 | Y | UPL | Problematic Hydrophytic Vegetation ¹ (Explain) |
| 2 | | | | |
| 3 | | | | ¹Indicators of hydric soil and wetland hydrology must |
| 4 | | | | be present, unless disturbed or problematic. |
| _ | | | | Definitions of Four Vegetation Strata: |
| • | | | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| 6 | | | | more in diameter at breast height (DBH), regardless of |
| 7 | | | | height. |
| 8 | - | · | | Sapling/Shrub – Woody plants, excluding vines, less |
| 9 | | | | than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 10 | - | · —— | | m) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| | | = Total Cov | | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover: <u>45.0</u> | 20% of | total cover: | 18.0 | Woody vine – All woody vines greater than 3.28 ft in |
| Woody Vine Stratum (Plot size: 30' Radius) | | | | height. |
| 1 | | · —— | | |
| 2 | - | | | |
| 3 | | | | |
| 4 | - | | | Hydrophytic |
| 5 | | | | Vegetation |
| | 0 | = Total Cov | er | Present? Yes No/ |
| 50% of total cover:0.0 | 20% of | total cover: | 0.0 | |
| Remarks: (Include photo numbers here or on a separate si | heet.) | | | 1 |
| Indicators of hydrophytic vegetation absent; parameter lack | ing. | | | |
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| Profile Desc | cription: ([| Describe | to the dep | th needed | to docur | nent the i | ndicator | or confirm | n the abso | ence of indicators.) |
|----------------|---------------------------|------------|----------------|------------|-------------|---------------------------------|-------------------|------------------|----------------------|---|
| Depth | | Matrix | | | | x Features | | | | |
| (inches) | Color (| moist) | <u></u> % | Color (| moist) | % | Type' | Loc ² | Textu | re Remarks |
| 0-8 | 10YR | 4/4 | 100 | | | | | | SIL | |
| 8-18 | 10YR | 4/4 | 90 | 10YR | 6/2 | 10 | D | M | SIL | |
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| ¹Type: C=C | oncentratio | n. D=Dep | letion. RM= | =Reduced | Matrix. MS | S=Masked | Sand Gra | ains. | ² Locatio | n: PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | 1011011, 11111 | -i (oddood | matrix, m | <u>o-maonoa</u> | . Cana On | xII 10. | | ndicators for Problematic Hydric Soils ³ : |
| Histosol | | | | Da | rk Surface | e (S7) | | | | 2 cm Muck (A10) (MLRA 147) |
| | pipedon (A2 | 2) | | | | low Surfa | ce (S8) (N | ILRA 147. | | Coast Prairie Redox (A16) |
| | istic (A3) | , | | | | ırface (S9) | | | , , _ | (MLRA 147, 148) |
| Hydroge | en Sulfide (/ | 44) | | | | ed Matrix (| | | _ | Piedmont Floodplain Soils (F19) |
| Stratified | d Layers (A | 5) | | De | pleted Ma | trix (F3) | | | | (MLRA 136, 147) |
| | uck (A10) (L | | | | | Surface (F | | | _ | Very Shallow Dark Surface (TF12) |
| | d Below Da | | e (A11) | | | rk Surface | | | _ | Other (Explain in Remarks) |
| | ark Surface | | | | | essions (F | | | | |
| | Mucky Mine | | _RR N, | | | ese Masse | es (F12) (| LRR N, | | |
| | A 147, 148) | | | | MLRA 13 | 6) ace (F13) (| MIDA 12 | 6 122) | | ³ Indicators of hydrophytic vegetation and |
| | Gleyed Matr Redox (S5) | IX (54) | | | | oodplain S | | | 18) | wetland hydrology must be present, |
| | d Matrix (S6 | () | | | | Material (F | | | | unless disturbed or problematic. |
| Restrictive | | | | | a r aront r | viatoriai (i | 21) (IIILIX | 7 127, 17 | ·, | unioss distarsed of prosientatio. |
| Type: | _uyo. (o. | | | | | | | | | |
| | ches): | | | | | | | | Lludria | Soil Present? Yes No/_ |
| | cries) | | | | | | | | пуштс | Soil Present? Yes No/ |
| Remarks: | dicators abo | cont: nara | motor lack | ina | | | | | | |
| Hydric soil in | uicators abs | seni, para | ineter lack | irig. | | | | | | |
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| Project/Site: Barrelhead Solar | | | | City/C | ounty: Wayne County | | Sampling Date: 2024-09-30 | | |
|--|---------------|---------|--------------|---|---------------------------------------|---|---|--|--|
| Applicant/Owner: Barrelhead S | | | | | | | Sampling Point: DP029 | | |
| Investigator(s): I. Bentley, S. D. | | | | Section | | <u> </u> | | | |
| Landform (hillslope, terrace, et | | | | | | | | | |
| Subregion (LRR or MLRA): LR | | | | | | | | | |
| | | | | | | | | | |
| Soil Map Unit Name: Frederick | | | | | | | | | |
| Are climatic / hydrologic condit | | | | | | | | | |
| Are Vegetation, Soil | , 01 | r Hyd | ology _ | significantly distur | ped? Are "Norm | nal Circumstances" p | resent? Yes No | | |
| Are Vegetation, Soil | , or | r Hyd | ology _ | naturally problema | atic? (If needed | , explain any answer | s in Remarks.) | | |
| SUMMARY OF FINDIN | GS – <i>F</i> | Attac | h site | map showing sam | pling point locat | ions, transects, | important features, etc. | | |
| Hydrophytic Vegetation Prese Hydric Soil Present? | | ` | /es , | / No | Is the Sampled Area within a Wetland? | | No | | |
| Wetland Hydrology Present? Remarks: | | | es | / No | | | | | |
| All parameters met; area is confirmed in the Precipitation Tool (APT) and of | | | | | | | nce review of the Antecedent | | |
| HYDROLOGY | | | | | | | | | |
| Wetland Hydrology Indicate | ors: | | | | | Secondary Indicat | tors (minimum of two required) | | |
| Primary Indicators (minimum | of one is | s requ | | | | Surface Soil (| ` ' | | |
| ✓ Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave S | | | | | | | | | |
| ✓ High Water Table (A2) | | | | Hydrogen Sulfide Ode | | ✓ Drainage Pat | | | |
| ✓ Saturation (A3) | | | | Oxidized Rhizosphere | | | | | |
| Water Marks (B1) | | | | Presence of Reduced | | | Vater Table (C2) | | |
| Sediment Deposits (B2) | | | | Recent Iron Reductio | | | | | |
| Drift Deposits (B3) Algal Mat or Crust (B4) | | | | Thin Muck Surface (C Other (Explain in Ren | | | sible on Aerial Imagery (C9) ressed Plants (D1) | | |
| ✓ Iron Deposits (B5) | | | - | Other (Explain in Ken | iaiks) | · | , , | | |
| Inundation Visible on Ae | rial Imar | rery (| 37) | | | ✓ Geomorphic Position (D2) Shallow Aquitard (D3) | | | |
| ✓ Water-Stained Leaves (E | - | ,0., (. | <i>3.</i>) | | | | phic Relief (D4) | | |
| Aquatic Fauna (B13) | .0) | | | | | FAC-Neutral | · | | |
| Field Observations: | | | | | | | () | | |
| Surface Water Present? | Yes | 1 | Nο | Depth (inches):2 | | | | | |
| Water Table Present? | | | | Depth (inches):3 | | | | | |
| Saturation Present? | | | | Depth (inches):0 | | l Hydrology Presen | t? Yes / No | | |
| (includes capillary fringe) | | | | | | | 100 <u>v</u> 110 | | |
| Describe Recorded Data (stre | eam gau | ıge, n | nonitorin | ng well, aerial photos, pre | vious inspections), if a | vailable: | | | |
| Remarks: | | | | | | | | | |
| At least one primary or two se | oondon | , indic | otoro ob | accruad: parameter met | | | | | |
| At least one primary or two se | coridary | iriuic | ators of | serveu, parameter met. | | | | | |
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| EGETATION (Four Strata) – Use scientific na | ames of | plants. | | Sampling Point: DP029 |
|--|----------|-------------------------------|------|---|
| | Absolute | Dominant In | | Dominance Test worksheet: |
| Tree Stratum (Plot size: 30' Radius) | | Species? | | Number of Dominant Species |
| 1. Salix nigra | 25 | <u> </u> | OBL | That Are OBL, FACW, or FAC:3 (A) |
| 2 | | | | Total Number of Dominant |
| 3 | - | · . | | Species Across All Strata: 4 (B) |
| 4 | | | | Develop of Deminent Charles |
| 5 | - | . <u></u> . | | Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B) |
| 6 | | | | , |
| 7. | | | | Prevalence Index worksheet: |
| | 25.0 | = Total Cover | | Total % Cover of: Multiply by: |
| 50% of total cover:12.5 | 20% of | total cover: | 5.0 | OBL species25 x 1 =25 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | FACW species0 x 2 =0 |
| 1. Ligustrum sinense | 5 | Υ | FACU | FAC species30 x 3 =90 |
| 7 | - | · | | FACU species 5 x 4 = 20 |
| <u>.</u> | • | · —— · | | UPL species |
| 3 | | | | Column Totals: 60 (A) 135.00 (B) |
| 4 | | | | Goldmin Totals (7) |
| 5 | | | | Prevalence Index = B/A = 2.25 |
| 6 | | | | Hydrophytic Vegetation Indicators: |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | | | ✓ 2 - Dominance Test is >50% |
| 9 | | | | ✓ 3 - Prevalence Index is ≤3.0 ¹ |
| | 5.0 | = Total Cover | | 4 - Morphological Adaptations¹ (Provide supporting |
| 50% of total cover: 2.5 | 20% of | total cover: | 1.0 | data in Remarks or on a separate sheet) |
| Herb Stratum (Plot size: 5' Radius) | | | | • |
| 1. Persicaria longiseta | 20 | <u> </u> | FAC | Problematic Hydrophytic Vegetation ¹ (Explain) |
| 2 | | | | 4 |
| 3 | | | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 4 | | | | |
| 5 | | | | Definitions of Four Vegetation Strata: |
| 5 | | | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| 7 | | | | more in diameter at breast height (DBH), regardless of |
| 7 | | · - | | height. |
| B | - | · | | Sapling/Shrub – Woody plants, excluding vines, less |
| 9 | | · | | than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 10 | | · | | m) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| | | = Total Cover | | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover:10.0 | 20% of | total cover: | 4.0 | Woody vine – All woody vines greater than 3.28 ft in |
| Woody Vine Stratum (Plot size:30' Radius) | | | | height. |
| 1. Vitis rotundifolia | 10 | <u> </u> | FAC | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | Hydrophytic |
| 5 | | | | Hydrophytic Vegetation |
| | | T-1-1-0 | | Present? Yes/ No |
| | 10.0 | = 10fal Cover | | |
| 50% of total cover:5.0 | | = Total Cover total cover: | | |

Indicator 2 (Dominarice is reference purposes only.

| Profile Des | cription: (I | Describe | to the dep | th needed | to docur | ment the i | ndicator | or confirm | the abs | ence of indicators.) |
|---------------------------------------|--------------|----------|--------------|-------------|-------------|--------------|-------------------|------------------|----------------------|--|
| Depth | | Matrix | | - | Redo | x Feature | s | | | |
| (inches) | Color (| | % | Color (| | % | Type ¹ | Loc ² | Textu | re Remarks |
| 0-4 | 10YR | 6/1 | 100 | | | | | | SL | |
| 4-18 | 10YR | 6/1 | 90 | 10YR | 4/4 | 10 | С | M | SL | |
| 4-10 | IUTK | 0/ 1 | | 101K | 4/4 | | | IVI | | |
| | | | | | | | | | | |
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| 1 _{Tympo} , C. C | `oncontratio | n D Don | lotion DM | Dadusad | Motris M | C Maakaa | | | ² l acati | on: PL=Pore Lining, M=Matrix. |
| ¹ Type: C=C Hydric Soil | | | ietion, Rivi | =Reduced | Matrix, IVI | 5=IVIASKeC | Sand Gr | airis. | | Indicators for Problematic Hydric Soils ³ : |
| _ | | | | - | | (07) | | | | • |
| Histoso | | 2) | | | rk Surface | . , | (00) (7 | | | 2 cm Muck (A10) (MLRA 147) |
| | pipedon (A2 | 2) | | | | | | ILRA 147, | 148) | Coast Prairie Redox (A16) |
| | listic (A3) | A 4) | | | | urface (S9) | | 47, 148) | | (MLRA 147, 148) |
| | en Sulfide (| | | | | ed Matrix (| F2) | | • | Piedmont Floodplain Soils (F19) |
| | d Layers (A | , | | | pleted Ma | . , | | | | (MLRA 136, 147) |
| | uck (A10) (I | | (0.4.4) | | | Surface (F | | | , | Very Shallow Dark Surface (TF12) |
| | ed Below Da | | e (A11) | | | rk Surface | | | | Other (Explain in Remarks) |
| | ark Surface | | DD N | | | essions (F | | . DD N | | |
| | Mucky Mine | | LRR N, | | | ese Mass | es (F12) (| LRK N, | | |
| | A 147, 148) | | | | MLRA 13 | - | (NAL DA 40 | 0 400\ | | 31. Parton of harden by Carron and Carron |
| | Gleyed Mati | rix (S4) | | | | ace (F13) (| | | | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | ., | | | | | | (MLRA 14 | | wetland hydrology must be present, |
| | d Matrix (S6 | | | Re | d Parent I | viateriai (F | 21) (MLR | A 127, 147 | () | unless disturbed or problematic. |
| Restrictive | | | | | | | | | | |
| Type: | | | | | | | | | | |
| Depth (in | nches): | | | | | | | | Hydrid | Soil Present? Yes/ No |
| Remarks: | | | | | | | | | | |
| Hydric soil in | dicator F3 (| Depleted | Matrix) pre | esent; para | meter me | t. | | | | |
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| Project/Site: Barrelhead Solar | | City/County: Wayne County Sampling Date: 202 | | | | | | |
|--|--|--|---------------------------------------|--|--------------------------------|--|--|--|
| Applicant/Owner: Barrelhead Solar LL | С | State: Kentucky | _ Sampling Point: DP030 | | | | | |
| Investigator(s): I. Bentley, S. Davis Section, Township, Range: | | | | | | | | |
| Landform (hillslope, terrace, etc.): Oth | | | | | | | | |
| Subregion (LRR or MLRA): LRR N, MI | | | | | | | | |
| Soil Map Unit Name: Frederick silt loan | | | | | | | | |
| Are climatic / hydrologic conditions on | | | | | | | | |
| | | | | | | | | |
| Are Vegetation, Soil, o | | - | | | | | | |
| Are Vegetation, Soil, o | | | | | | | | |
| SUMMARY OF FINDINGS – A | Attach site m | nap showing sam | npling point location | ons, transects, | important features, etc. | | | |
| Hydrophytic Vegetation Present? | | | | | | | | |
| Hydric Soil Present? | | No <u> </u> | Is the Sampled Area within a Wetland? | Vas | _ No <u></u> ✓ | | | |
| Wetland Hydrology Present? | | No | within a Wetland: | 103 | | | | |
| Remarks: | | | | | | | | |
| One or more parameters lacking; area | is not considere | ed a definitional wetlar | nd. The lead delineator o | onducted a due diliç | gence review of the Antecedent | | | |
| Precipitation Tool (APT) and determin | ed that hydrolog | lic conditions were nor | mai at the time of survey | <i>/</i> . | | | | |
| | | | | | | | | |
| HADBOLOGA | | | | | | | | |
| HYDROLOGY Wetland Hydrology Indicators: | | | | Socondary Indicate | are (minimum of two required) | | | |
| , ,, | | It all that apply | | Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) | | | | |
| Primary Indicators (minimum of one i | - | rue Aquatic Plants (| D4.4) | | | | | |
| Surface Water (A1) | Sparsely veget ✓ Drainage Patter | etated Concave Surface (B8) | | | | | | |
| | High Water Table (A2) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Roots (C3) | | | | | | | |
| ✓ Saturation (A3) | | | | Moss Trim Lin | , , | | | |
| Water Marks (B1) Sediment Deposits (B2) | | Presence of Reduced Recent Iron Reductio | | Dry-Season Water Table (C2) | | | | |
| Drift Deposits (B3) | | Thin Muck Surface (C | | | | | | |
| Algal Mat or Crust (B4) | | Other (Explain in Ren | | Saturation Visible on Aerial Imagery (C9) | | | | |
| Iron Deposits (B5) | | Other (Explain in Item | narks) | Stunted or Stressed Plants (D1) | | | | |
| Inundation Visible on Aerial Imag | nery (R7) | | | ✓ Geomorphic Position (D2) Shallow Aguitard (D3) | | | | |
| Water-Stained Leaves (B9) | jery (Br) | | | Shallow Aquitard (D3) | | | | |
| Aquatic Fauna (B13) | | | | Microtopographic Relief (D4) FAC-Neutral Test (D5) | | | | |
| Field Observations: | | | | 17.0 110011011 | | | | |
| | No 🗸 | Depth (inches): | | | | | | |
| | | Depth (inches): | | | | | | |
| | | Depth (inches): 0 | | lydrology Present | ? Yes <u>√</u> No | | | |
| (includes capillary fringe) | | | | , | <u> </u> | | | |
| Describe Recorded Data (stream gau | ige, monitoring v | well, aerial photos, pre | vious inspections), if ava | illable: | | | | |
| Remarks: | | | | | | | | |
| At least one primary or two secondary | indicators obse | rved; parameter met. | | | | | | |
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VEGETATION (Four Strata) – Use scientific names of plants.

| /EGETATION (Four Strata) – Use scientific na | ames of | plants. | | Sampling Point: DP030 |
|---|-------------|----------------|------------|---|
| | Absolute | Dominant | | Dominance Test worksheet: |
| <u>Tree Stratum</u> (Plot size: <u>30' Radius</u>) | | Species? | | Number of Dominant Species |
| 1. Acer rubrum | | Y | <u>FAC</u> | That Are OBL, FACW, or FAC: 2 (A) |
| 2. Juglans cinerea | 10 | Y | FACU | Total Number of Dominant |
| 3 | | | | Species Across All Strata: 4 (B) |
| 4 | | · | | Percent of Dominant Species |
| 5 | | | | That Are OBL, FACW, or FAC: 50.00 (A/B) |
| 6 | | | | |
| 7 | | <u> </u> | | Prevalence Index worksheet: |
| | 30.0 | = Total Cove | er | Total % Cover of: Multiply by: |
| 50% of total cover:15.0 | 20% of | f total cover: | 6.0 | OBL species x 1 = 0 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | FACW species $0 \times 2 = 0$ |
| 1 | | | | FAC species26 x 3 =78 |
| 2 | | | | FACU species25 x 4 =100 |
| 3 | | | | UPL species0 x 5 =0 |
| 4 | | | | Column Totals:51 (A)178.00 (B) |
| 5 | | | | Provolonce Index D/A 3.40 |
| 6 | | | | Prevalence Index = B/A = 3.49 |
| 7 | | | | Hydrophytic Vegetation Indicators: |
| 8 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 9 | | | | 2 - Dominance Test is >50% |
| <u> </u> | 0 | = Total Cove | er | 3 - Prevalence Index is ≤3.0¹ |
| 50% of total cover:0.0 | | | | 4 - Morphological Adaptations ¹ (Provide supporting |
| Herb Stratum (Plot size: 5' Radius) | | • | | data in Remarks or on a separate sheet) |
| 1. Verbesina occidentalis | 15 | Y | FACU | Problematic Hydrophytic Vegetation ¹ (Explain) |
| 2 | | | | |
| 3 | | | | ¹ Indicators of hydric soil and wetland hydrology must |
| | | | | be present, unless disturbed or problematic. |
| 4 5. | | | | Definitions of Four Vegetation Strata: |
| • | | | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| 6 | | | | more in diameter at breast height (DBH), regardless of |
| 7 | | | | height. |
| 8 | | | | Sapling/Shrub – Woody plants, excluding vines, less |
| 9 | | | | than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. |
| 10 | | | | |
| 11 | 45.0 | | | Herb – All herbaceous (non-woody) plants, regardless |
| 50% of total cover: | | = Total Cove | | of size, and woody plants less than 3.28 ft tall. |
| Woody Vine Stratum (Plot size: 30' Radius) | 20% 01 | i lotal cover. | 3.0 | Woody vine – All woody vines greater than 3.28 ft in |
| | 6 | Υ | FAC | height. |
| | - | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | Hydrophytic |
| 5 | | | | Vegetation Present? Yes No |
| 50% (***) | | = Total Cove | | riesent: resNo |
| 50% of total cover: 3.0 | | total cover: | 1.2 | |
| Remarks: (Include photo numbers here or on a separate si | | | | |
| Indicators of hydrophytic vegetation absent; parameter lack | ing. | | | |
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| Profile Desc | cription: (E | escribe 1 | to the dept | h needed to document the indicator or con | firm the a | absence of indicators.) |
|------------------------|---------------------|-------------|-------------|--|------------------|--|
| Depth | | Matrix | | Redox Features | | |
| (inches) | Color (| moist) | <u></u> % | Color (moist) % Type ¹ Loc ² | Te | exture Remarks |
| 0-3 | 10YR | 3/3 | 100 | | | SL |
| 3-8 | 10YR | 5/3 | 100 | | | SL |
| | 1011 | 3/3 | | | | |
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| ¹ Type: C=C | oncentratio | n, D=Depl | etion, RM= | Reduced Matrix, MS=Masked Sand Grains. | ² Loc | ation: PL=Pore Lining, M=Matrix. |
| Hydric Soil | Indicators: | | | | | Indicators for Problematic Hydric Soils ³ : |
| Histosol | (A1) | | | Dark Surface (S7) | | 2 cm Muck (A10) (MLRA 147) |
| | pipedon (A2 | 2) | | Polyvalue Below Surface (S8) (MLRA 1 | 47, 148) | Coast Prairie Redox (A16) |
| | istic (A3) | | | Thin Dark Surface (S9) (MLRA 147, 14 | | (MLRA 147, 148) |
| | en Sulfide (A | A4) | | Loamy Gleyed Matrix (F2) | | Piedmont Floodplain Soils (F19) |
| Stratified | d Layers (A | 5) | | Depleted Matrix (F3) | | (MLRA 136, 147) |
| 2 cm Mu | uck (A10) (L | .RR N) | | Redox Dark Surface (F6) | | Very Shallow Dark Surface (TF12) |
| | d Below Da | | e (A11) | Depleted Dark Surface (F7) | | Other (Explain in Remarks) |
| | ark Surface | | | Redox Depressions (F8) | | |
| | /lucky Mine | | .RR N, | Iron-Manganese Masses (F12) (LRR N | , | |
| | A 147, 148) | | | MLRA 136) | | |
| | Sleyed Matr | ix (S4) | | Umbric Surface (F13) (MLRA 136, 122) | | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | | | Piedmont Floodplain Soils (F19) (MLRA | | wetland hydrology must be present, |
| | d Matrix (S6 | | | Red Parent Material (F21) (MLRA 127, | 147) | unless disturbed or problematic. |
| Restrictive | | served): | | | | |
| Type: Be | edrock | | | <u> </u> | | |
| Depth (in | ches): <u>8</u> | | | | Hyd | dric Soil Present? Yes No/_ |
| Remarks: | | | | | | |
| Hydric soil in | dicators abs | ent: para | meter lacki | na. | | |
| , | a.oa.o.o a.o. | o, pa.a | | | | |
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| Project/Site: Barrelhead Solar | | City/County: Wayne County | Sampling Da | ate: 2024-09-30 |
|---|---|--|--|-----------------------------------|
| Applicant/Owner: Barrelhead So | | | · - | |
| Investigator(s): I. Bentley, S. Da | | Section, Township, Range: | | · |
| • , , | | Local relief (concave, convex, nor | | |
| | | Long: <u>-84.9</u> | | |
| | | | | |
| | | | | |
| | | e of year? Yes No (| | |
| Are Vegetation, Soil | , or Hydrology signific | cantly disturbed? Are "Normal | Circumstances" present? Yes | s No |
| Are Vegetation, Soil | , or Hydrology natura | ally problematic? (If needed, e | xplain any answers in Remarks | s.) |
| SUMMARY OF FINDING | S – Attach site map show | wing sampling point locatio | ns, transects, importar | nt features, etc. |
| Hydrophytic Vegetation Present Hydric Soil Present? | Yes <u>√</u> No | within a Wetland? | Yes <u>√</u> No | |
| Wetland Hydrology Present? Remarks: | Yes No | <u> </u> | | |
| | | EM) wetland. The lead delineator conns were normal at the time of survey | | of the Antecedent |
| HYDROLOGY | | | | |
| Wetland Hydrology Indicator | s: | | Secondary Indicators (minimur | m of two required) |
| Primary Indicators (minimum of | f one is required; check all that a | pply) | ✓ Surface Soil Cracks (B6) | |
| ✓ 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) ✓ Inundation Visible on Aeria ✓ Water-Stained Leaves (B9) Aquatic Fauna (B13) | ✓ Hydrogen Oxidized Presence Recent Ire Thin Mucl Other (Ex | atic Plants (B14) n Sulfide Odor (C1) Rhizospheres on Living Roots (C3) of Reduced Iron (C4) on Reduction in Tilled Soils (C6) k Surface (C7) cplain in Remarks) | ✓ Sparsely Vegetated Conca Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (Crayfish Burrows (C8) Saturation Visible on Aeria Stunted or Stressed Plant ✓ Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) ✓ FAC-Neutral Test (D5) | (C2) al Imagery (C9) s (D1) |
| Field Observations: | | | | |
| Surface Water Present? | Yes _ ✓ No Depth (in | | | |
| Water Table Present? | Yes No Depth (in | | | |
| Saturation Present? (includes capillary fringe) | Yes No Depth (in | nches): 0 Wetland H | drology Present? Yes | No |
| Describe Recorded Data (streat Remarks: | am gauge, monitoring well, aerial | photos, previous inspections), if ava | able: | |

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| EGETATION (Four Strata) – Use scientific na | ames of | plants. | | Sampling Point: DP031 |
|---|-----------|----------------|---------------|---|
| - COLD divis | Absolute | | | Dominance Test worksheet: |
| Tree Stratum (Plot size: 30' Radius) | % Cover | Species? | <u>Status</u> | Number of Dominant Species |
| 1 | | | | That Are OBL, FACW, or FAC: 2 (A) |
| 2 | | | | Total Number of Dominant |
| 3 | | | | Species Across All Strata: 2 (B) |
| 4 | | | | Percent of Dominant Species |
| 5 | | | | That Are OBL, FACW, or FAC:100.00 (A/B) |
| 6 | | | | Prevalence Index worksheet: |
| 7 | | | | Total % Cover of: Multiply by: |
| | | = Total Cover | | OBL species x 1 = 10 |
| 50% of total cover: 0.0 | 20% of | total cover: | 0.0 | FACW species 35 x 2 = 70 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | FAC species 25 x 3 = 75 |
| 1 | | | | FACU species 0 x 4 = 0 |
| 2 | | | | UPL species 0 x 5 = 0 |
| 3 | | | | Column Totals: 70 (A) 155.00 (B) |
| 4 | | | | Coldifili Totals (A) (B) |
| 5 | | | | Prevalence Index = B/A = 2.21 |
| 6 | | | | Hydrophytic Vegetation Indicators: |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | | | ✓ 2 - Dominance Test is >50% |
| 9 | | | | ✓ 3 - Prevalence Index is ≤3.0 ¹ |
| | | = Total Cover | | 4 - Morphological Adaptations ¹ (Provide supporting |
| 50% of total cover: 0.0 | 20% of | total cover: | 0.0 | data in Remarks or on a separate sheet) |
| Herb Stratum (Plot size: 5' Radius) | 0.5 | | E4 0)4/ | Problematic Hydrophytic Vegetation ¹ (Explain) |
| 1. Echinochloa colona | 35 | | FACW | |
| 2. Persicaria longiseta | 25 | <u>Y</u> | FAC | ¹ Indicators of hydric soil and wetland hydrology must |
| 3. Typha latifolia | 10 | <u> </u> | OBL | be present, unless disturbed or problematic. |
| 4 | | | | Definitions of Four Vegetation Strata: |
| 5 | | | <u>.</u> | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| 6 | | | | more in diameter at breast height (DBH), regardless of |
| 7 | | | | height. |
| 8 | | | | Sapling/Shrub – Woody plants, excluding vines, less |
| 9 | | | | than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 10 | | | | m) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| | | = Total Cover | | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover: <u>35.0</u> | 20% of | total cover: | 14.0 | Woody vine – All woody vines greater than 3.28 ft in |
| Woody Vine Stratum (Plot size: 30' Radius) | | | | height. |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | Hydrophytic |
| 5 | | | | Vegetation |
| | | = Total Cover | | Present? Yes No |
| 50% of total cover: 0.0 | | total cover: | 0.0 | |
| Remarks: (Include photo numbers here or on a separate sl | • | | | |
| Indicator 2 (Dominance Test) present with greater than 50% reference purposes only. | of domina | int species FA | C or we | tter; parameter met. Prevalence Index calculated for |
| ererence purposes orny. | | | | |
| | | | | |
| | | | | |

| Profile Desc | cription: (Describe to | the depth | needed to document th | e indicator or confirm | the ab | sence of indicators.) |
|------------------------|------------------------|------------|------------------------|------------------------------------|--------------------|--|
| Depth | Matrix | | Redox Featu | | | |
| (inches) | Color (moist) | % | Color (moist) % | Type ¹ Loc ² | Text | ture Remarks |
| 0-9 | 10YR 6/2 | 100 | | | SIC | CL |
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| | | | | | | |
| ¹ Type: C=C | oncentration, D=Deple | tion, RM=R | educed Matrix, MS=Mask | ed Sand Grains. | ² Locat | ion: PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | | | | Indicators for Problematic Hydric Soils ³ : |
| Histosol | | | Dark Surface (S7) | | | 2 cm Muck (A10) (MLRA 147) |
| | oipedon (A2) | | | rface (S8) (MLRA 147, | 148) | Coast Prairie Redox (A16) |
| | istic (A3) | | | S9) (MLRA 147, 148) | 170) | (MLRA 147, 148) |
| | en Sulfide (A4) | | Loamy Gleyed Matri | | | Piedmont Floodplain Soils (F19) |
| | d Layers (A5) | | ✓ Depleted Matrix (F3) | | | |
| | • • • | | | | | (MLRA 136, 147) |
| | uck (A10) (LRR N) | (144) | Redox Dark Surface | • • | | Very Shallow Dark Surface (TF12) |
| | d Below Dark Surface (| (ATT) | Depleted Dark Surfa | | | Other (Explain in Remarks) |
| | ark Surface (A12) | D.N. | Redox Depressions | | | |
| | Mucky Mineral (S1) (LR | RN, | Iron-Manganese Ma | sses (F12) (LRR N, | | |
| | A 147, 148) | | MLRA 136) | | | 3 |
| | Bleyed Matrix (S4) | | Umbric Surface (F13 | | | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | | | n Soils (F19) (MLRA 14 | | wetland hydrology must be present, |
| | l Matrix (S6) | | Red Parent Material | (F21) (MLRA 127, 147 | 7) | unless disturbed or problematic. |
| Restrictive | Layer (if observed): | | | | | |
| Type: Be | edrock | | _ | | | |
| Depth (in | ches): 9 | | | | Hvdr | ic Soil Present? Yes No |
| Remarks: | | | _ | | , | |
| | dicator F3 (Depleted M | | | | | |
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| Project/Site: Barrelhead Solar | | City/C | ounty: Wayne County | Sa | ampling Date: 2024-09-30 | | | |
|--|---------------------------------------|---|---------------------------------------|---|------------------------------|--|--|--|
| Applicant/Owner: Barrelhead | | | | | · · | | | |
| nvestigator(s): I. Bentley, S. Davis Section, Township, Range: | | | | | | | | |
| Landform (hillslope, terrace, e | | | | | | | | |
| Subregion (LRR or MLRA): LI | | | | | | | | |
| | | | | | | | | |
| Soil Map Unit Name: Frederic | | | | | | | | |
| Are climatic / hydrologic condi | tions on the site typ | pical for this time of year? Y | es No (If r | no, explain in Rem | arks.) | | | |
| Are Vegetation, Soil _ | , or Hydrolog | y significantly distur | oed? Are "Normal Ci | rcumstances" pres | sent? Yes No | | | |
| Are Vegetation, Soil _ | , or Hydrolog | y naturally problema | itic? (If needed, exp | lain any answers i | n Remarks.) | | | |
| SUMMARY OF FINDIN | GS – Attach s | ite map showing sam | pling point locations | s, transects, ii | mportant features, etc. | | | |
| Hydrophytic Vegetation Pres Hydric Soil Present? | Yes _ | ✓ No ✓ No | Is the Sampled Area within a Wetland? | Yes <u>√</u> | No | | | |
| Wetland Hydrology Present? Remarks: | Yes _ | ✓ No | | | | | | |
| All parameters met; area is con Precipitation Tool (APT) and | | | | ucted a due diliger | nce review of the Antecedent | | | |
| HYDROLOGY | | | | | | | | |
| Wetland Hydrology Indicat | ors: | | <u>Se</u> | econdary Indicator | s (minimum of two required) | | | |
| Primary Indicators (minimum | of one is required; | ; check all that apply) | | _ Surface Soil Cra | acks (B6) | | | |
| Surface Water (A1) | | | _ Sparsely Vegeta | ated Concave Surface (B8) | | | | |
| High Water Table (A2) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) | | | | | | | | |
| Saturation (A3) | | Oxidized Rhizosphere | | _ Moss Trim Lines | | | | |
| Water Marks (B1) | | Presence of Reduced | | _ Dry-Season Wa | | | | |
| Sediment Deposits (B2) | | Recent Iron Reductio | | _ Crayfish Burrow | ` , | | | |
| Drift Deposits (B3) Algal Mat or Crust (B4) | | Thin Muck Surface (C Other (Explain in Ren | | Saturation visibStunted or Stres | le on Aerial Imagery (C9) | | | |
| Iron Deposits (B5) | | Other (Explain in Neil | · — | _ Stanted of Stres | | | | |
| Inundation Visible on Ae | rial Imagery (B7) | | | Shallow Aquitar | | | | |
| Water-Stained Leaves (| | | _ | _ Microtopographi | ` ' | | | |
| Aquatic Fauna (B13) | | | _ | _ FAC-Neutral Te | ` ' | | | |
| Field Observations: | | | | | | | | |
| Surface Water Present? | Yes No | Depth (inches): | | | | | | |
| Water Table Present? | · · · · · · · · · · · · · · · · · · · | ✓ Depth (inches): | | | | | | |
| Saturation Present? | | ✓ Depth (inches): | | Irology Present? | Yes No | | | |
| (includes capillary fringe) | | | | | | | | |
| Describe Recorded Data (str | eam gauge, monito | oring well, aerial photos, pre | vious inspections), if availat | ole: | | | | |
| Remarks: | | | | | | | | |
| At least one primary or two se | econdary indicators | s observed: parameter met | | | | | | |
| 7 to court one primary or the or | roomaa.y maroatoro | o o o o o o o o o o o o o o o o o o o | | | | | | |
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| EGETATION (Four Strata) – Use scientific na | ames of | piants. | | Sampling Point: DP032 |
|---|----------|----------------|------|---|
| Tree Stratum (Plot size:30' Radius) | Absolute | Dominant | | Dominance Test worksheet: |
| Norus rubra | 20 | Species? | FACU | Number of Dominant Species That Are OBL FACW, or FAC: 3 (A) |
| | | ·' | 1700 | That Are OBL, FACW, or FAC:3 (A) |
| 2 | | | | Total Number of Dominant |
| 3 | | | | Species Across All Strata: 4 (B) |
| 4 | | | | Percent of Dominant Species |
| 5 | | | | That Are OBL, FACW, or FAC: 75.00 (A/B) |
| 0 | | · | | Prevalence Index worksheet: |
| · | 20.0 | Tatal Cau | | Total % Cover of: Multiply by: |
| 50% of total cover: 10.0 | | = Total Cov | | OBL species 0 x 1 = 0 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | 20% 0 | i lotal cover. | 4.0 | FACW species 20 x 2 = 40 |
| 1 | | | | FAC species 25 x 3 = 75 |
| 1 | | | | FACU species 28 x 4 = 112 |
| 2 | | | | UPL species |
| 3 | | | | Column Totals: 73 (A) 227.00 (B) |
| 4 | | | | (1) |
| 5 | | · | | Prevalence Index = B/A = 3.11 |
| ō | | · | | Hydrophytic Vegetation Indicators: |
| | | · | | 1 - Rapid Test for Hydrophytic Vegetation |
| 3 | - | · | | ✓ 2 - Dominance Test is >50% |
| 9 | | | | 3 - Prevalence Index is ≤3.0 ¹ |
| 50% of total cover: 0.0 | | = Total Cover: | | 4 - Morphological Adaptations ¹ (Provide supporting |
| Herb Stratum (Plot size: 5' Radius) | 20 % 01 | i total cover. | 0.0 | data in Remarks or on a separate sheet) |
| 1. Persicaria pensylvanica | 20 | Υ | FACW | Problematic Hydrophytic Vegetation ¹ (Explain) |
| 2. Symphyotrichum pilosum | 15 | - <u>'</u> | FAC | |
| 3. Rubus allegheniensis | 8 | N | FACU | ¹ Indicators of hydric soil and wetland hydrology must |
| | | | TACO | be present, unless disturbed or problematic. |
| 4 | - | · | | Definitions of Four Vegetation Strata: |
| 5 | | · | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| 6 | | · | | more in diameter at breast height (DBH), regardless of |
| 7 | | | | height. |
| 3 | - | · | | Sapling/Shrub – Woody plants, excluding vines, less |
|) | - | · | | than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. |
| 10 | | | | iii) taii. |
| 11 | 40.0 | | | Herb – All herbaceous (non-woody) plants, regardless |
| 50% of total cover: 21.5 | | = Total Cov | | of size, and woody plants less than 3.28 ft tall. |
| | 20% 0 | total cover. | 0.0 | Woody vine - All woody vines greater than 3.28 ft in |
| Woody Vine Stratum (Plot size: 30' Radius) 1. Fallopia scandens | 10 | Υ | FAC | height. |
| <u> </u> | | | TAC | |
| 2 | | · —— | | |
| 3 | | <u> </u> | | |
| 4 | | | | Hydrophytic |
| 5 | | | | Vegetation |
| | | = Total Cov | | Present? Yes <u>√</u> No |
| 50% of total cover: 5.0 | 20% of | f total cover: | 2.0 | |

Remarks: (Include photo numbers here or on a separate sheet.)

Indicator 2 (Dominance Test) present with greater than 50% of dominant species FAC or wetter; parameter met. Prevalence Index calculated for reference purposes only.

| Profile Desc | cription: ([| Describe | to the dep | th needed | to docui | ment the i | ndicator | or confirm | n the abs | sence of indicators.) |
|------------------------|---------------------|-----------|-------------|-------------|-------------|-------------|-------------------|------------------|---------------------|--|
| Depth | | Matrix | | | Redo | x Feature: | s | | | |
| (inches) | Color (| | % | Color (| | % | Type ¹ | Loc ² | Text | ture Remarks |
| 0-5 | 10YR | 3/3 | 100 | | | | | | SII | IL |
| 5-18 | 10YR | 6/2 | 90 | 10YR | 3/3 | 10 | С | M | SIL | II |
| | 1011 | 0/2 | | 10110 | 3/3 | | | | | |
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| ¹ Type: C=C | oncentratio | n. D=Dep | letion. RM: | =Reduced | Matrix. M | S=Masked | Sand Gr | ains. | ² Locati | tion: PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | , | | , | | | - | | Indicators for Problematic Hydric Soils ³ : |
| Histosol | | | | Da | rk Surface | e (S7) | | | | 2 cm Muck (A10) (MLRA 147) |
| | pipedon (A2 | 2) | | | | . , | ce (S8) (N | ILRA 147, | 148) | Coast Prairie Redox (A16) |
| | istic (A3) | -, | | | | urface (S9) | | | , | (MLRA 147, 148) |
| | en Sulfide (/ | A4) | | | | ed Matrix (| | ,, | | Piedmont Floodplain Soils (F19) |
| | d Layers (A | | | | pleted Ma | | / | | | (MLRA 136, 147) |
| | uck (A10) (L | • | | | | Surface (F | -6) | | | Very Shallow Dark Surface (TF12) |
| | d Below Da | | e (A11) | | | rk Surface | , | | | Other (Explain in Remarks) |
| | ark Surface | | , | | | essions (F | | | | |
| | Mucky Mine | | .RR N, | | | ese Mass | | LRR N, | | |
| | A 147, 148) | | | | MLRA 13 | | , , , | | | |
| | Gleyed Matr | | | Um | nbric Surfa | ace (F13) (| (MLRA 13 | 6, 122) | | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | | | | | | | (MLRA 14 | 18) | wetland hydrology must be present, |
| Stripped | d Matrix (S6 | 6) | | Re | d Parent I | Material (F | 21) (MLR | A 127, 147 | 7) | unless disturbed or problematic. |
| Restrictive | Layer (if ol | bserved): | | | | | | | | |
| Type: | | | | | | | | | | |
| | ches): | | | | | | | | Hvdri | ric Soil Present? Yes No |
| | | | | | | | | | , | 100 <u>v</u> 110 <u> </u> |
| Remarks: | diagtor E2 (| Donloted | Motriy) pro | oont: noro | motor mo | | | | | |
| Hydric soil in | dicator F3 (| Depleted | Matrix) pre | esent; para | meter me | τ. | | | | |
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| Project/Site: Barrelhead Solar | | City/C | County: Wayne County | ; | Sampling Date: 2024-09-30 | | |
|--|---|-------------------------------|-------------------------------|-----------------------------|---------------------------------------|--|--|
| Applicant/Owner: Barrelhead | nt/Owner: Barrelhead Solar LLC State: Kentucky Sampling | | | | | | |
| Investigator(s): I. Bentley, S. Davis Section, Township, Range: | | | | | | | |
| Landform (hillslope, terrace, e | | | | | | | |
| Subregion (LRR or MLRA): LF | | | | | | | |
| Soil Map Unit Name: Frederic | | | | | | | |
| Are climatic / hydrologic condi | | | | | | | |
| | | | | | | | |
| - | | - | | | esent? Yes No | | |
| Are Vegetation, Soil | | | | | in Remarks.) important features, etc. | | |
| | 71114011 01 | to map one mig our | | ,, | | | |
| Hydrophytic Vegetation Pres | | No✓ | Is the Sampled Area | | | | |
| Hydric Soil Present? | | No | within a Wetland? | Yes | No <u>√</u> | | |
| Wetland Hydrology Present? Remarks: | res_ | No ✓ | | | | | |
| | ing: area is not con | sidered a definitional wetla | nd. The lead delineator co | nducted a due dilic | gence review of the Antecedent | | |
| Precipitation Tool (APT) and | determined that hyd | rologic conditions were no | mal at the time of survey. | naucteu a duc ding | genee review of the Antecedent | | |
| | • | • | · | | | | |
| | | | | | | | |
| HYDROLOGY | | | | | | | |
| Wetland Hydrology Indicat | ors: | | | Secondary Indicato | ors (minimum of two required) | | |
| Primary Indicators (minimum | of one is required; | check all that apply) | | Surface Soil C | cracks (B6) | | |
| Surface Water (A1) | | True Aquatic Plants (| B14) | Sparsely Vege | etated Concave Surface (B8) | | |
| High Water Table (A2) | | Hydrogen Sulfide Od | | Drainage Patte | erns (B10) | | |
| Saturation (A3) | | Oxidized Rhizospher | | Moss Trim Lin | es (B16) | | |
| Water Marks (B1) | | Presence of Reduced | | | /ater Table (C2) | | |
| Sediment Deposits (B2) | | Recent Iron Reduction | | Crayfish Burro | | | |
| Drift Deposits (B3) | | Thin Muck Surface (0 | | | ible on Aerial Imagery (C9) | | |
| Algal Mat or Crust (B4) | | Other (Explain in Rer | narks) _ | | essed Plants (D1) | | |
| Iron Deposits (B5) Inundation Visible on Ae | erial Imagery (R7) | | - | Geomorphic P Shallow Aquita | | | |
| Water-Stained Leaves (I | | | - | | phic Relief (D4) | | |
| Aquatic Fauna (B13) | 20) | | - | FAC-Neutral T | , , | | |
| Field Observations: | | | <u> </u> | | | | |
| Surface Water Present? | Yes No | ✓ Depth (inches): | | | | | |
| Water Table Present? | · · · · · · · · · · · · · · · · · · · | ✓ Depth (inches): | | | | | |
| Saturation Present? | | ✓ Depth (inches): | | drology Present | ? Yes No✓ | | |
| (includes capillary fringe) | | | | | | | |
| Describe Recorded Data (str | eam gauge, monito | ring well, aerial photos, pre | evious inspections), if avail | able: | | | |
| Remarks: | | | | | | | |
| Indicators of wetland hydrolog | gy absent; paramete | er lacking. | | | | | |
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VEGETATION (Four Strata) – Use scientific names of plants.

| /EGETATION (Four Strata) – Use scientific na | Sampling Point: DP033 | | | |
|--|-----------------------|--------------|-------|---|
| | Absolute | Dominant | | Dominance Test worksheet: |
| Tree Stratum (Plot size: 30' Radius) | | Species? | | Number of Dominant Species |
| 1. Morus alba | 30 | Y | UPL_ | That Are OBL, FACW, or FAC:1 (A) |
| 2. Juglans nigra | 15 | Y | FACU | Total Number of Dominant |
| 3 | | | | Species Across All Strata: 3 (B) |
| 4 | | | | Percent of Dominant Species |
| 5 | | | | That Are OBL, FACW, or FAC: 33.33 (A/B) |
| 6 | | | | |
| 7 | | | | Prevalence Index worksheet: |
| | 45.0 | = Total Cove | er | Total % Cover of: Multiply by: |
| 50% of total cover: 22.5 | 20% of | total cover: | 9.0 | OBL species0 x 1 =0 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | FACW species 0 x 2 = 0 |
| 1 | | | | FAC species65 x 3 =195 |
| 2 | | | | FACU species 30 x 4 = 120 |
| 3 | | | | UPL species 30 x 5 = 150 |
| 4 | | | | Column Totals:125 (A)465.00 (B) |
| 5 | | | | D |
| 6 | | | | Prevalence Index = B/A = 3.72 |
| 7 | | | | Hydrophytic Vegetation Indicators: |
| ā | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 9. | | | | 2 - Dominance Test is >50% |
| <u>. </u> | 0 | = Total Cove | | 3 - Prevalence Index is ≤3.0 ¹ |
| 50% of total cover:0.0 | | | | 4 - Morphological Adaptations ¹ (Provide supporting |
| Herb Stratum (Plot size: 5' Radius) | 20 /0 01 | total oover. | 0.0 | data in Remarks or on a separate sheet) |
| Microstegium vimineum | 60 | Υ | FAC | Problematic Hydrophytic Vegetation ¹ (Explain) |
| Verbesina occidentalis | 10 | | FACU | |
| 2 Symphyotrichum pilosum | 5 | N | FAC | ¹ Indicators of hydric soil and wetland hydrology must |
| 4. Rubus allegheniensis | 5 | N | FACU | be present, unless disturbed or problematic. |
| _ | | | 1 700 | Definitions of Four Vegetation Strata: |
| 5 | | · —— | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| 6 | | | | more in diameter at breast height (DBH), regardless of |
| 7 | | · | | height. |
| 8 | | · | | Sapling/Shrub – Woody plants, excluding vines, less |
| 9 | - | · | | than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 10 | | | | m) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| | | = Total Cove | | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover: <u>40.0</u> | 20% of | total cover: | 16.0 | Woody vine – All woody vines greater than 3.28 ft in |
| Woody Vine Stratum (Plot size: 30' Radius) | | | | height. |
| 1 | | | | |
| 2 | | · | | |
| 3 | | · | | |
| 4 | | | | Hydrophytic |
| 5 | | | | Vegetation |
| | 0 | = Total Cove | er | Present? Yes No/ |
| 50% of total cover: 0.0 | 20% of | total cover: | 0.0 | |
| Remarks: (Include photo numbers here or on a separate sl | neet.) | | | |
| Indicators of hydrophytic vegetation absent; parameter lacki | ing. | | | |
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| Profile Des | cription: ([| Describe t | o the dept | th needed to docur | nent the | indicator | or confirm | the ab | osence of indicators.) |
|------------------------|---------------------------|-------------|-------------|-------------------------|------------|-------------------|------------------|-------------------|--|
| Depth | | Matrix | | | x Feature | | | | |
| (inches) | Color (| moist) | <u>%</u> | Color (moist) | % | Type ¹ | Loc ² | Tex | ture Remarks |
| 0-3 | 10YR | 4/4 | 100 | | | | | S | IL |
| 3-18 | 10YR | 5/6 | 100 | | | | | S | IL |
| | | | | | - | | | | |
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| | | | | | | | | | |
| ¹ Type: C=C | oncentration | n, D=Depl | etion, RM= | Reduced Matrix, M | S=Masked | d Sand Gra | ains. | ² Loca | tion: PL=Pore Lining, M=Matrix. |
| Hydric Soil | Indicators: | : | | · | | | | | Indicators for Problematic Hydric Soils ³ : |
| Histosol | l (A1) | | | Dark Surface | (S7) | | | | 2 cm Muck (A10) (MLRA 147) |
| Histic E | pipedon (A2 | 2) | | Polyvalue Be | low Surfa | ice (S8) (N | ILRA 147, | 148) | Coast Prairie Redox (A16) |
| Black H | istic (A3) | | | Thin Dark Su | ırface (S9 |) (MLRA 1 | 47, 148) | | (MLRA 147, 148) |
| | en Sulfide (A | | | Loamy Gleye | | (F2) | | | Piedmont Floodplain Soils (F19) |
| | d Layers (A | | | Depleted Ma | | | | | (MLRA 136, 147) |
| | uck (A10) (L | | (0.4.4) | Redox Dark | | | | | Very Shallow Dark Surface (TF12) |
| | d Below Da ark Surface | | e (A11) | Depleted Da Redox Depre | | | | | Other (Explain in Remarks) |
| | Mucky Mine | | RR N | Iron-Mangan | | | RR N | | |
| | A 147, 148) | | ixix iv, | MLRA 13 | | (1 12) (1 | LIXIX IV, | | |
| | Gleyed Matr | | | Umbric Surfa | • | (MLRA 13 | 6. 122) | | ³ Indicators of hydrophytic vegetation and |
| | Redox (S5) | () | | Piedmont Flo | | | | l8) | wetland hydrology must be present, |
| | d Matrix (S6 |) | | Red Parent N | | | | | unless disturbed or problematic. |
| Restrictive | Layer (if ok | served): | | | | | | | |
| Type: | | | | | | | | | |
| Depth (in | iches): | | | | | | | Hydr | ric Soil Present? Yes No |
| Remarks: | , <u> </u> | | | | | | | | |
| Hydric soil in | dicatore abo | ent: narai | meter lacki | na | | | | | |
| r iyunc son in | ulcators abs | sent, parai | neter lacki | rig. | | | | | |
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| Project/Site: Barrelhead Solar | r | | City/C | County: Wayne County | | Sampling Date: 2024-09-30 | | | |
|--|-------------------------|--------------------------|---|-------------------------------|--------------------------|-------------------------------|--|--|--|
| Applicant/Owner: Barrelhead | Solar LLC | | | | State: Kentucky | _ Sampling Point: DP034 | | | |
| Investigator(s): I. Bentley, S. I | | | Secti | on, Township, Range: | | · - | | | |
| Landform (hillslope, terrace, e | | | | · | | Slope (%): 3-7 | | | |
| Subregion (LRR or MLRA): LF | , | | | | | | | | |
| Soil Map Unit Name: Frederic | | | | | | | | | |
| Are climatic / hydrologic condi | tions on the site typic | cal for this tir | me of year? Y | ∕es √ No | (If no, explain in Re | marks.) | | | |
| Are Vegetation . Soil | . or Hvdroloav | sian | nificantly distur | rbed? Are "Normal | l Circumstances" pr | esent? Yes/ No | | | |
| Are Vegetation, Soil | | _ | | | explain any answers | | | | |
| | | | | | | important features, etc. | | | |
| Hydrophytic Vegetation Pres | cent? Ves | No | | | | | | | |
| Hydric Soil Present? | | No_ | | Is the Sampled Area | v | | | | |
| Wetland Hydrology Present? | | No_ | | within a Wetland? | Yes | No <u></u> | | | |
| Remarks: | | | | | | | | | |
| Precipitation Tool (APT) and | determined that hydr | rologic condi | itions were no | rmal at the time of survey | /. | | | | |
| HYDROLOGY | | | | | | | | | |
| Wetland Hydrology Indicat | | | | | | ors (minimum of two required) | | | |
| Primary Indicators (minimum | of one is required; of | | | | Surface Soil Cracks (B6) | | | | |
| Surface Water (A1) | | (B14) | Sparsely Vegetated Concave Surface (B8) | | | | | | |
| High Water Table (A2) | | lor (C1) | Drainage Patterns (B10) | | | | | | |
| Saturation (A3) | | res on Living Roots (C3) | | | | | | | |
| Water Marks (B1) | | d Iron (C4) | Dry-Season Water Table (C2) S) Crayfish Burrows (C8) | | | | | | |
| Sediment Deposits (B2)Drift Deposits (B3) | | on in Tilled Soils (C6) | Saturation Visible on Aerial Imagery (C9) | | | | | | |
| Algal Mat or Crust (B4) | | | uck Surface ((Explain in Rei | | | essed Plants (D1) | | | |
| Iron Deposits (B5) | | 001 (| xpiaiir iii rtoi | marko) | Geomorphic F | | | | |
| Inundation Visible on Ae | erial Imagery (B7) | | | | Shallow Aquit | ` ' | | | |
| Water-Stained Leaves (| • • • • | | | | | phic Relief (D4) | | | |
| Aquatic Fauna (B13) | | | | | FAC-Neutral | Test (D5) | | | |
| Field Observations: | | | | | | | | | |
| Surface Water Present? | Yes No | ✓ Depth | (inches): | | | | | | |
| Water Table Present? | Yes No | ✓ Depth | (inches): | | | | | | |
| Saturation Present? | Yes No | ✓ Depth | (inches): | Wetland H | Hydrology Present | ? Yes No/ | | | |
| (includes capillary fringe) Describe Recorded Data (str | ream gauge monitor | ing well aer | rial photos, pre | evious inspections) if ava | nilable. | | | | |
| Describe Nesoraea Bala (str | cam gaage, monto | ing well, aci | iai priotos, pre | ovious irispositoris), ir uve | madic. | | | | |
| Remarks: | | | | | | | | | |
| Indicators of wetland hydrolog | gy absent; paramete | r lacking. | | | | | | | |
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VEGETATION (Four Strata) – Use scientific names of plants.

| /EGETATION (Four Strata) – Use scientific na | Sampling Point: DP034 | | | |
|--|-----------------------|----------------|-----------|---|
| | Absolute | Dominant I | Indicator | Dominance Test worksheet: |
| Tree Stratum (Plot size:30' Radius) | % Cover | Species? | Status | Number of Dominant Species |
| 1. Juglans nigra | 25 | Y | FACU | That Are OBL, FACW, or FAC:1 (A) |
| 2. Juniperus virginiana | 20 | Υ | FACU | T. IN I (D.) |
| 3 | | · · | | Total Number of Dominant Species Across All Strata: 6 (B) |
| 4 | | | | Openies / toross / till otratia. |
| | | | | Percent of Dominant Species |
| 5 | | | | That Are OBL, FACW, or FAC:16.67 (A/B) |
| 6 | | · —— | | Prevalence Index worksheet: |
| 1 | 45.0 | | | Total % Cover of: Multiply by: |
| | | = Total Cove | | OBL species0 x 1 =0 |
| 50% of total cover: <u>22.5</u> | 20% of | total cover:_ | 9.0 | FACW species 0 x 2 = 0 |
| Sapling/Shrub Stratum (Plot size: 15' Radius) | | | | |
| 1. Rosa multiflora | 25 | <u> </u> | FACU | 1710 opeoles x o = |
| 2 | | | | FACU species 110 x 4 = 440 |
| 3 | | | | UPL species 8 x 5 = 40 |
| 4 | | | | Column Totals:133 (A)525.00 (B) |
| 5 | | | | Dravelance lades D/A 3.95 |
| 6 | | | | Prevalence Index = B/A = 3.95 |
| 7 | | | | Hydrophytic Vegetation Indicators: |
| 8 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 9. | | · | | 2 - Dominance Test is >50% |
| 9 | 25.0 | Tatal Caus | | 3 - Prevalence Index is ≤3.0 ¹ |
| 50% of total cover:12.5 | | = Total Cover: | | 4 - Morphological Adaptations ¹ (Provide supporting |
| Herb Stratum (Plot size: 5' Radius) | _ | _ | | data in Remarks or on a separate sheet) |
| 1. Rosa multiflora | 15 | Υ | FACU | Problematic Hydrophytic Vegetation ¹ (Explain) |
| 2. Verbesina occidentalis | 15 | Y | FACU | |
| 3. Vernonia gigantea | 10 | · <u>·</u> Y | FAC | ¹ Indicators of hydric soil and wetland hydrology must |
| | 8 | N | UPL | be present, unless disturbed or problematic. |
| 4. Digitaria bicornis | 5 | | | Definitions of Four Vegetation Strata: |
| 5. Juniperus virginiana | | N | FACU | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or |
| 6. Symphyotrichum pilosum | 5 | <u>N</u> | FAC | more in diameter at breast height (DBH), regardless of |
| 7. Liriodendron tulipifera | 5 | N | FACU | height. |
| 8 | | | | Sapling/Shrub – Woody plants, excluding vines, less |
| 9 | | | | than 3 in. DBH and greater than or equal to 3.28 ft (1 |
| 10 | | | | m) tall. |
| 11 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| | 63.0 | = Total Cove | er | of size, and woody plants less than 3.28 ft tall. |
| 50% of total cover: 31.5 | | | | W 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 |
| Woody Vine Stratum (Plot size: 30' Radius) | | | | Woody vine – All woody vines greater than 3.28 ft in height. |
| 1 | | | | noight. |
| 2 | | | | |
| | | · | | |
| 3 | | | | |
| 4 | | · —— | | Hydrophytic |
| 5 | _ | · | | Vegetation Present? Yes No/_ |
| | | = Total Cove | | rresent: resNo |
| 50% of total cover: 0.0 | | total cover:_ | 0.0 | |
| Remarks: (Include photo numbers here or on a separate sh | neet.) | | | |
| Indicators of hydrophytic vegetation absent; parameter lacki | ng. | | | |
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| Profile Desc | cription: ([| Describe | to the dep | th needed to docu | ment the i | indicator | or confirn | n the ab | sence of indicators.) | |
|----------------|-----------------------------------|------------|-------------|------------------------|-------------|-----------------|------------------|-------------|--|----------------------------------|
| Depth | | Matrix | | | x Feature | | . 2 | _ | _ | |
| (inches) | Color (| | | Color (moist) | % | Type' | Loc ² | Text | | narks |
| 0-6 | 10YR | 4/4 | 100 | | | | | SII | <u> </u> | |
| 6-18 | 10YR | 4/6 | 100 | | | | | SII | <u>L</u> | |
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| | | | letion, RM= | Reduced Matrix, M | S=Masked | d Sand Gra | ains. | | ion: PL=Pore Lining, M=N | |
| Hydric Soil | Indicators | : | | | | | | | Indicators for Problema | atic Hydric Soils ³ : |
| Histosol | | | | Dark Surface | | | | | 2 cm Muck (A10) (M | |
| | pipedon (A2 | 2) | | Polyvalue Be | | | | , 148) | Coast Prairie Redox | |
| | istic (A3) | | | Thin Dark Su | | | 47, 148) | | (MLRA 147, 148) | |
| | en Sulfide (| | | Loamy Gleye | | (F2) | | | Piedmont Floodplain | Soils (F19) |
| | d Layers (A | | | Depleted Ma | | -0) | | | (MLRA 136, 147) |)((TE40) |
| | uck (A10) (I d Below Da | | o (A11) | Redox Dark Depleted Da | | | | | Very Shallow Dark S Other (Explain in Re | |
| | ark Surface | | e (ATT) | Redox Depre | | | | | Other (Explain in Ne | marks) |
| | Mucky Mine | | _RR N. | Iron-Mangan | | | RR N. | | | |
| | A 147, 148) | | , | MLRA 13 | | () (- | , | | | |
| | Gleyed Matr | | | Umbric Surfa | | (MLRA 13 | 6, 122) | | ³ Indicators of hydrophy | tic vegetation and |
| | Redox (S5) | | | Piedmont Flo | oodplain S | oils (F19) | (MLRA 14 | 48) | wetland hydrology mu | ist be present, |
| Stripped | d Matrix (S6 | 5) | | Red Parent I | Material (F | 21) (MLR | A 127, 14 | 7) | unless disturbed or pr | oblematic. |
| Restrictive | Layer (if ol | oserved): | | | | | | | | |
| Type: | | | | | | | | | | |
| Depth (in | ches): | | | | | | | Hydri | c Soil Present? Yes _ | No <u></u> ✓ |
| Remarks: | | | | | | | | | | |
| Hydric soil in | dicators ab | sent; para | meter lack | ing. | | | | | | |
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Appendix E Employee Resumes



DAKOTA HUNTER SENIOR WETLAND SCIENTIST

Regulatory Expertise

- Clean Water Act
- NEPA
- Endangered Species Act
- Migratory Bird Treaty Act
- Bald and Golden Eagle Protection Act
- Chesapeake Bay Preservation Act

Industry Clientele

- Utilities/Traditional Energy Sources
- US Department of Defense
- US Department of the Interior/National Park Service
- US Fish and Wildlife Service
- Corresponding State Agencies
- FHWA & State DOTs
- Academic Institutions & NGOs

Listed Taxa Expertise

- Plants
- Avian
- Herptiles

Survey Expertise

- Wetland Delineation
- Stream Assessments
- Botanical Surveys
- Mitigation Monitoring
- Avian Surveys
- Herpetological Surveys

Certifications/Trainings

- Professional Wetland Scientist (PWS)
- Tennessee Qualified Hydrologic Professional (QHP)
- OSHA 40 Hour Construction
- First Aid/CPR

Affiliations

- Virginia Native Plant Society
- The Society of Wetland Scientists
- Virginia Herpetological Society
- Trout Unlimited
- Rivanna Conservation Alliance

Education

- **M.S. Biology**, 2019, College of William & Mary, Williamsburg, VA
- **B.S. Biology & Environmental Science**, 2017, College of William & Mary, Williamsburg, VA



Qualifications and Background

Mr. Hunter has 8 years of experience working as a wetland scientist across the eastern seaboard and as a wildlife biologist conducting surveys for federal and state listed flora and fauna species. He completed Master's level research studying correlations between invasive plant prevalence, environmental factors, and native plant assemblages on wetland mitigation banks. He has worked as a wetland and stream mitigation manager and has led wetland delineations and rare species surveys on multiple large-scale energy projects, roadway expansions, commercial real estate developments and federal land improvement projects. Mr. Hunter has developed and implemented botanical inventories and related research, invasive species management, and mitigation monitoring plans across Virginia and the southeastern United States. Mr. Hunter was certified as a Professional wetland Scientist (PWS) in 2023 by the Society of Wetland Scientists Professional Certification Program, and as a Qualified Hydrologic Professional (QHP) by the Tennessee Department of Environment and Conservation.

Publications

Dakota M. Hunter and Douglas A. DeBerry. 2023. Environmental Drivers of Plant Invasion in Wetland Mitigation. Wetlands 43:81

DeBerry, DA and DM Hunter. 2021. Invasive Species Research in Non-tidal Compensatory Mitigation: Final Report. College of William & Mary, Williamsburg, VA. Resource Protection Group RFP#08.

Douglas A. DeBerry, Dakota M. Hunter. 2018. An Account of *Triadica sebifera* (L.) Small in Virginia with Comments on Invasiveness and Range Expansion. Castanea, 83(2), 300-304.

Dakota M. Hunter. 2017. Field Notes: Rainbow Snake (*Farancia erytrogramma*) in Williamsburg City, VA. Catesbeiana 37(2).

Presentations

Floating Solar: Maximizing Renewable Energy Production, Minimizing Wildlife Conflict. 2023 REWI Solar Power and Wildlife/Natural Resources Symposium

Invasive Species Research in Compensatory Wetland Mitigation. 2019. The Society of Wetland Scientists Annual Meeting.

The Ups and Downs of Large-Scale Habitat Restoration. 2019. Virginia Native Plant Society Monthly Meeting.

John Levy Memorial Presentation/William and Mary College Woods Diversity *Walk.* 2019. William and Mary Law School Reunion.

Selected Project Experience

Dominion Energy, Wetland Delineation, Rare, Threatened, and Endangered Plant, Bird, and Small Mammal Species Surveys, Atlantic Coast Pipeline, VA

Environmental Scientist

Mr. Hunter served as wetlands team lead and environmental staff scientist for numerous project tasks associated with the over 600-mile LNG pipeline construction project. These responsibilities included wetland delineation in adherence to the USACE most current guideline for identification and determining the limits of federal jurisdiction, stream assessments using the North Carolina DEQ Methodology for identification of Intermittent and Perennial Steams, and RTE species surveys across 305 miles of proposed pipeline corridor. Plant surveys included performing detailed investigation of the project corridor for seven federally listed, three state listed, and nine state ranked species along with a host of species of concern that were identified by the George Washington National Forest. Responsibilities also included mapping of natural community types, generating comprehensive plant species lists, photo documentation of onsite conditions, and collecting applicable GIS/GPS data.

Dominion Energy, Transmission and Storage Wetland delineations, VA, NC Lead Wetland Delineator

Mr. Hunter let wetland delineation teams for multiple projects totaling over 200 miles of transmission line corridor from 2019 to 2022 as part of a multi-service agreement for Dominion Energy. Mr. Hunter led field efforts to deliver natural resource assessments identifying wetlands and waters within transmission corridors slated for routine maintenance and pole replacement. Mr. Hunter coordinated field efforts with Dominion Energy and C2 Consulting for land access and scheduling. Mr.

Hunter also provided quality control for data collected throughout the projects and prepared Preliminary Jurisdictional Determination packages for submittal to the USACE.

Natural Resource Inventories, AL, TN, SC, GA, FL

Environmental Scientist

Mr. Hunter served as a field lead contracted by a private land holding company to conduct natural resource inventories and prepare detailed reports for a total of 53 properties located in South Carolina, Tennessee, Georgia, Alabama, Tennessee, and Florida, and ranging in size from less than 100 acres to over 800 acres. Mr. Hunter participated in aquatic resource mapping, as well as seasonal botanical surveys, avian surveys, and herpetological surveys to document the presence of rare, threatened and endangered, species, and estimate species diversity on those properties. Mr. Hunter confirmed the presence of aquatic features mapped during desktop review, performed stream assessments, sampled aquatic herpetofauna and macroinvertebrates using dip nets, and documented species by auditory and visual survey while navigating often difficult environmental conditions. Mr. Hunter also worked extensively to ensure sampling adequacy by generating and analyzing species accumulation curves, reviewing transect placement and adherence and scrutinizing species lists for accurate identification and sufficient documentation.

Piedmont Natural Gas, Line 439 Protective Fencing, Greenville, NC

Wetland Scientist

Mr. Hunter served as Wetland Scientist and Field Team Lead tasked with identifying and delineating jurisdictional Waters of the United States within the approximate 255-acre, 20-mile long study area that partially circumscribes the City of Greenville, North Carolina. Mr. Hunter was also involved in the documentation and report preparation needed to comply with Clean Water Act Section 404/401 regulations. Additionally, Mr. Hunter participated in archeological field surveys for the length of the corridor.

TC Energy, Virginia Reliability Project, Waverly, VA to Chesapeake, VA

Lead Wetland delineator

For this highly visible and ongoing LNG pipeline replacement project Mr. Hunter served as a Lead wetland delineator. This project included wetland delineation along approximately 50 miles of existing pipeline in addition to compressor stations, mainline valves, and access roads. Mr. Hunter led efforts and field coordination with TC Energy routers and engineers to efficiently and effectively deliver natural resource data assessments to help identify preferred ROW placement. Mr. Hunter coordinated field efforts with TC energy for land access and scheduling. Mr. Hunter also maintained team safety records, oversaw, and provided quality control for data collected throughout the project, and ensured compliance with all Client, Agency, and Employer standards.

Mountain Valley Pipeline Supplemental Environmental Impact Statement, Jefferson National Forest, Virginia and West Virginia. Mr. Hunter conducted stream and riparian buffer assessments and served as a technical writer for the preparation of an SEIS for a proposed pipeline crossing the JNF. The project was on a fast-tracked schedule; the Record of Decision was issued 6 months after contract. The Forest Service and White House General Counsel reviewed and approved our SEIS. Project is restarting construction this summer.

City of Norfolk, Ohio Creek Watershed Study, Norfolk, VA

Project Scientist

Mr. Hunter served as a Project Scientist for the City of Norfolk on the Ohio Creek Watershed Project. He collected data and documentation of natural resources to support National Environmental Policy Act (NEPA) compliance and permitting for flood protection, stormwater infrastructure, and living shoreline

construction in the Grandy Village neighborhood of Norfolk. Responsibilities included wetland delineation, tree identification and quantification, and support for oyster restoration among others.

VDOT, I-64 Hampton Roads Bridge Tunnel (HRBT) Expansion Project, Norfolk/Hampton, VA Environmental Scientist

As a designated VDOT Bird Monitor, Mr. Hunter helped implement the avian survey, data collection protocol for this project in coastal Virginia. He conducted nesting season bird surveys (March-September) to determine avian abundance, behavior, and land use for numerous colonial nesting species within the project area. He was also responsible for the monitoring and reporting associated with avian deterrent measures across the site. Mr. Hunter is also tasked with on-call injured bird, egg, and nest response, and associated documentation and reporting. These efforts are all in support of adherence to VDOTs Federal and State permits for conducting work to expand the capacity of the interstate. Mr. Hunter directly coordinates with VDOT Lead Bird Monitor on any project related matters, assisting in timely and accurate coordination with multiple agencies and other stakeholders.

Mitigation Bank Maintenance and Monitoring, Various

Lead Scientist

Mr. Hunter served as a lead scientist for vegetation and stream monitoring associated with over a dozen non-tidal wetland and stream mitigation banks within the U.S. Mid-Atlantic. These projects included vegetation sampling from stream and buffer plots, bio-physical/chemical water assessment, aquatic macroinvertebrate sampling, and hydrogeomorphology data collection used to support annual monitoring reports to the Virginia Department of Environmental Quality and the U.S. Army Corps of Engineers. Mr. Hunter was also responsible the development and implementation of site maintenance plans to ensure adherence with Mitigation Banking Instrument (MBI) standards, including removal of non-native invasive species, planting of native trees and herbaceous vegetation, and construction monitoring.

Reedy Creek Mitigation Bank

Lead Scientist

Mr. Hunter served as a lead scientist for vegetation and stream monitoring associated with the Reedy Creek Mitigation Bank. The project included regular maintenance to ensure adherence with Mitigation Banking Instrument (MBI) standards, removal of non-native invasive species, vegetation sampling from stream and buffer plots, bio-physical/chemical water assessment, aquatic macroinvertebrate sampling, hydrologic and geomorphological data collection used to support annual monitoring reports to the Virginia Department of Environmental Quality and the U.S. Army Corps of Engineers.

Mr. Hunter performed a similar role in association with the Cannon Regional Environmental Bank (CREB) in Orange County, VA, the Lakota Mitigation Bank in Culpeper County, VA, the James River Mitigation Bank in Goochland County, VA, and the Buena Vista Mitigation Bank in King George County, VA, the Bailey Mitigation Bank in Charles City County, VA, the Coan Mill Mitigation Bank in Northumberland County, VA, the Baptist Run Stream Restoration in the City of Newport News, VA, the Pamunkey Farms Mitigation bank, in New Kent County, VA, the Hungry Run Mitigation Bank in Rappahannock County, VA, the Amelia Environmental Bank, in Amelia County, VA, and the Buck Mountain Mitigation Bank in Albemarle County, VA

Central Hudson Gas and Electric (CHG&E), Elting's Remediation Monitoring, NY Lead Scientist

Mr. Hunter served as a lead botanist responsible for monitoring vegetation communities within a large remediation site in eastern New York. Woody and Herbaceous vegetation was identified to species within numerous pre-established plots over the course of a multi-year monitoring period.



Southeastern Public Service Authority (SPSA) Landfill Expansion EIS, Suffolk and Isle of White counties, VA

Lead wetland delineator

Mr. Hunter was hired by the Norfolk District of the United States Army Corps of Engineers (USACE) as a lead wetland delineator responsible for assessing the extent and quality of wetlands and waters associated with design alternatives for the proposed SPSA landfill expansion in southeast Virginia. Conditions of the proposed alternatives warranted use of complex methodologies for assessing wetlands and waters detailed in Chapter 5 of the USACE Wetland delineation manual. The data collected were used to draft components of an EIS and the associated alternatives analyses.

LIV Housing development, Norfolk, VA

Lead wetland delineator and permitting specialist

Mr. Hunter served as a lead wetland delineator and permitting specialist for the development of a multifamily housing development in Norfolk Virginia. He was responsible for completing a wetland delineation and the complete section 401/404 process, including a Joint Permit Application from the Virginia Marine Resource Commission, the City of Norfolk office of environmental services, the Virginia Department of Environmental Quality and the USACE. Mr. Hunter has served in this role in the completion of several other projects in the residential/commercial development, energy and transportation sectors within the southeast, midwest, and mid-Atlantic regions.

New England Power/National Grid, A1B2 Transmission Line Rebuild, New Hampshire, Vermont and Massachusetts

Lead wetland delineator

Mr. Hunter served as a lead wetland delineator responsible for assessing the extent of wetlands and waters within nearly 50 miles of transmission line ROW. He also performed tasks as a lead botanist completing Rare, Threatened and Endangered (RTE) plant species surveys within the transmission line and adjacent to the Vernon 13 substation.

Vermont Gas Systems (VGS), NNIS Monitoring Plan Implementation, Vermont.

Field Botanist

Mr. Hunter worked as a field botanist performing Non-Native Invasive Species (NNIS) monitoring and removal within natural gas transmission corridors across central and western Vermont. Invasive plant populations were identified, mapped and monitored annually to ensure compliance with Vermont NNIS regulations.

Emera Maine, Transmission and Battery storage

Lead wetland delineator

Mr. Hunter served as a lead wetland delineator responsible for assessing the extent of wetlands and waters for multiple transmission line rebuild projects within central and northern Maine. Field tasks for these projects were conducted in remote wilderness areas and required substantial planning and coordination to complete field work safely and efficiently.

Vermont Department of Transportation (VTrans) Roadway Expansions, Vermont RTE Plant surveys and NNIS Monitoring

Field Botanist

Mr. Hunter worked as a field botanist performing Non-Native Invasive Species (NNIS) monitoring and removal within transportation corridors for several roadways in Vermont. Invasive plant populations were identified, mapped, and monitored annually to ensure compliance with Vermont NNIS regulations. In certain locations, RTE plant surveys were conducted concurrently with NNIS Monitoring.

Sun Energy, Springfield Solar, Hanover County, VA.

Lead wetland delineator

Mr. Hunter participated in the delineation of approximately 500 acres In Hanover County, VA for the proposed Springfield Solar Facility. He was responsible for the delineation, mapping, and evaluation of stream and wetland features on site. Mr. Hunter collected data for the completion of Virginia's Hydrologic Determination Field Data Sheets (James City County methodology) and USACE wetland Determination forms. He also assisted in the preparation of a request for Preliminary Jurisdictional Determination for the site.

Strata Solar, Swift Creek Solar, Rocky Mount, NC

Lead wetland delineator

Mr. Hunter participated in the delineation of approximately 600 acres near Rocky Mount, NC for the proposed Swift Creek Solar Facility. He was responsible for the delineation, mapping, and evaluation of stream and wetland features on site as well as habitat evaluation for RTE aquatic species including the Neuse River Waterdog. Mr. Hunter collected data for the completion of North Carolina's Hydrologic Determination Field Data Sheets and USACE wetland Determination forms. He also assisted in the preparation of a request for Preliminary Jurisdictional Determination for the site.

Strata Solar, Firefly Solar and Storage, Haywood County, TN.

Lead wetland delineator

Mr. Hunter led one of 6 teams of wetland scientists responsible for delineating approximately 2500 acres of highly disturbed land in Haywood County Tennessee for the proposed Firefly Solar and Storage Facility. He was responsible for the delineation, mapping, and evaluation of several miles of stream and several acres of wetlands. Mr. Hunter collected data for the completion of Tennessee's Hydrologic Determination Field Data Sheets and USACE wetland Determination forms. He also assisted in the preparation of a request for Preliminary Jurisdictional Determination for the site.

EMI Energy, Rumford Battery Storage, Rumford Maine.

Lead wetland delineator

Mr. Hunter participated in the delineation of approximately 80 acres in Rumford Maine for the proposed Rumford Battery Storage Facility. He was responsible for the delineation, mapping, and evaluation of stream and wetland features on site. Mr. Hunter collected data for the completion USACE wetland Determination forms. He also assisted in the assessment of RTE plant habitat on site.

Florida Power and Light, Baker County Solar Delineation

Wetland Scientist

Mr. Hunter participated in the delineation of approximately 600 acres In Baker County, FL for an unnamed Solar Facility in Baker County, FL. He was responsible for the delineation, mapping, and evaluation of stream and wetland features on site. He also assisted in gopher tortoise occupancy surveys for the site.

Pine Gate Renewables, Solar Critical Issues Analyses (CIA), VA

Lead Scientist

Mr. Hunter completed a series of desktop analyses for potential solar facilities across southern and central Virginia as part of a high-level pursuit of suitable locations for solar development. Sites ranged in size from 200 acres to over 2500 acres, and available data including LiDAR, aerial imagery, NWI/NHD mapping, SSURGO soil data and previous delineation results were used to accurately map aquatic features without field delineations. Mr. Hunter was also responsible for generating preliminary results from Virginia's Department of Wildlife Resources (DWR), Department of Conservation and Recreation (DCR), Department of Historic Resources (DHR), and U.S, Fish and Wildlife's online Information for Planning and Consultation (IPaC) tool to identify constraints relating to historic and/or wildlife resources.



Cape Hatteras (CAHA) National Seashore Sediment Management Framework EIS, North Carolina Technical Writer

Mr. Hunter served as a technical writer for wildlife and aquatic resource components of EIS published in support of beach nourishment and shoreline resiliency programs implemented within the Cape Hatteras National seashore.

Mark Twain National Forest (MTNF) Fuels Reduction and Prescribed Fire EA, Missouri.

Technical Writer

Mr. Hunter worked as a technical writer analyzing the potential effects of a long-term fuels reduction and prescribed fire plan on streams and other aquatic resources within the MTNF as part of an Environmental Assessment (EA).



ISAAC BENTLEY

AQUATIC/WETLAND SCIENTIST II

Regulatory Expertise

- CWA (Section 404 & 401)
- United States Army Corps of Engineering (USACE) Wetland Delineation Manual & Regional Supplements
- ESA (§7 & §10)
- Migratory Bird Treaty Act

Industry Clientele

- KY Department of Fish and Wildlife Resources
- TN Department of Environment and Conservation

Education

- M.S. Biology, 2020, Eastern Kentucky University, Richmond, Kentucky
- B.S. Wildlife Management, 2017, Eastern Kentucky University, Richmond, Kentucky

Taxa Expertise

- Inland Stream Fishes (Listed)
- Freshwater Invertebrates (Listed)
- Wetland and Aquatic plants
- Eastern U.S. Woody Plants and Vegetation
- Passerines and Raptors
- Reptiles/Amphibians
- Mammals

Survey Expertise

- Wetland and Stream Delineation
- Habitat Assessments, Aquatic and Terrestrial
- Presence/Absence
- Fish Shocking
- Aquatic Invertebrate
- Vegetation, Wetland and Upland
- Avian, Passerine and Raptor

Certifications/Trainings

- Wetland Delineation Certificate, Wetland Training Institute, 2021
- Swamp School Training, 2022
- Tennessee Department of Environment & Conservation Hydrologic Determination Training Course, 2022
- Certified Wildlife Biologist (TWS)
- Type II Wildland Firefighter
- Chronic Wasting Disease Workshop,
 Retropharyngeal Lymph Node Extraction



Qualifications and Background

Mr. Bentley has 8 years of experience studying, working, and volunteering alongside universities, agencies, and NGOs with federal and state listed flora and fauna species. He has conducted master's level research on the ability of movement in stream fishes as part of a restoration technique employed by Kentucky Department of Fish and Wildlife. He has worked extensively with wetland delineation, fishes, vegetation surveys, stream surveys/capture methods, and identification skills. Mr. Bentley has designed, developed, and implemented an inventory, research, management, and monitoring for his fish study. He has filled supervisory roles during his master's research, employing assistance and coordinating dates for employing field-method based research.

Affiliations

- The Wildlife Society
- National Wild Turkey Federation
- Rocky Mountain Elk Foundation
- Southeastern Fishes Council
- Ecological Society of America



Selected Project Experience

Wetland & Stream Delineation for Mammoth Cave Campground Denison Ferry Road, KY 2023

Conducted a wetland and stream delineation for a site of approximately 200 acres near Mammoth Cave, Kentucky.

Multiple Service Aquatic Surveys for Lochner Bridge Replacements, KY 2022

Conducted preliminary multiple-service surveys for 23 bridges to be replaced in areas that span the entirety of Kentucky. Once preliminary surveys were conducted, aquatic surveys for listed species (Big Sandy Crayfish, Cumberland Darter, and Kentucky Arrow Darter) were conducted.

Wetland & Stream Delineation for DNV Mastodon Solar Project, MI 2022

Conducted a wetland and stream delineation for a site of approximately 3,000 acres near Blissfield, Michigan.

Wetland & Stream Delineation for CCR Fiddler Solar Project, TN 2022

Conducted a wetland and stream delineation for a site of approximately 850 acres in DeKalb County, Tennessee.

Wetland & Stream Delineation for EDP Solar Project, KY 2022

Conducted a wetland and stream delineation for a site of approximately 2,500 acres in Breckinridge County, Kentucky.

Wetland & Stream Delineation for JDA Geil Lane Project, KY 2022

Conducted a wetland and stream delineation for a site of approximately 35 acres near Louisville, Kentucky.

Wetland & Stream Delineation for CCR Tupelo MS Solar Project, MS 2022

Conducted a wetland and stream delineation for a site of approximately 3,000 acres in Tupelo, Mississippi.

Wetland & Stream Delineation for TVA Transmission Lines (Barkley-Oakwood) Project, KY/TN 2022

Conducted a corridor wetland and stream delineation for a site of approximately 60 linear miles in Western Kentucky and Tennessee.

Wetland & Stream Delineation for Village at the Palisades, KY 2022

Conducted a wetland and stream delineation for a site of approximately 8 acres in Mercer County, Kentucky.

Wetland & Stream Delineation for WKRRA for Wickliffe Solar Project, KY 2022

Conducted a wetland and stream delineation for a site of approximately 15 acres in Ballard County, Kentucky.

Wetland & Stream Delineation for Horseshoe Bend Solar Project, KY 2022

Conducted a wetland and stream delineation for a site of approximately 560 acres in Green County, Kentucky.

Wetland & Stream Delineation for Engie, Mt. Olive Creek Solar Project KY 2022

Conducted a wetland and stream delineation for a site of approximately 512 acres in Russel and Adair Counties, Kentucky.

Wetland & Stream Delineation for TVA - Incompatible Vegetation Project in Transmission Right of Ways, TN/KY/AL/GA 2022



Conducted a corridor wetland and stream delineation for transmission lines approximately 200 linear miles long primarily in Tennessee, but also in Kentucky, Alabama, and Georgia.

Wetland & Stream Delineation for Hardin County Solar Project, KY 2021

Corrected a wetland and stream delineation alongside the USACE for a site of approximately 1100 acres in Hardin County, Kentucky.

Wetland & Stream Delineation for Pine Gate Renewables Belsena Solar Project, PA 2021

Conducted a wetland and stream delineation for a site of approximately 900 acres in Clearfield County, Pennsylvania.

Movement of Stream Fishes Over Potential Migratory Barriers, Kentucky Department of Fish and Wildlife Resources, Menifee Co., Kentucky - 2017-2020

Mr. Bentley designed, developed, managed, and conducted movement surveys of stream fishes in East Fork Indian Creek in the Red River Gorge of Kentucky. The study was formed to understand passage of all stream fish, including two species of Kentucky state concern (*Percina maculata* and *Etheostoma baileyi*), over potential anthropogenic migratory barriers. Logistics of the study included orchestrating, overseeing, and installing/removing field equipment, utilizing two types of marking techniques (PIT and VIE), and monitoring fish movement over the duration of two years. Management recommendations were provided to Federal and State organizations based on data analyses and results.

Presentations

Movement of stream fishes across potential migration barriers in East Fork Indian Creek, Menifee Co. Kentucky, 2019. The Kentucky Academy of Sciences and the Southeastern Fishes Council Annual Meeting



SHEA DAKOTA DAVIS

AQUATIC BIOLOGIST

Survey Expertise

- Freshwater Mussel Surveys and Relocation
- Mussel Habitat Assessment
- Electrofishing/Seining Fish Surveys and relocation
- Rapid Bioassessment Protocols

Relevant Coursework

- Forest Ecology
- Stream Restoration
- Fluvial Geomorphology
- Hydrogeology
- GIS
- Entomology
- Forest Entomology

Certifications/Training

- West Virginia Mussel Course (2023, 2024)
- Swamp School
- CPR
- Wilderness First Aid

Professional Experience

Copperhead Environmental Consulting, Inc., Aquatic Biologist, May 2022 - Present

Education

University of Kentucky, Bachelor of Science in Natural Resources and Environmental Science with concentrations in Water Resources, Field/Lab, and Wildlife, 2021



Qualifications and Background

Ms. Davis attended the University of Kentucky where she graduated summa cum laude with a Bachelor of Science in Natural Resources and Environmental Science.

During her undergraduate career, her emphasis areas were water resources, wildlife, and field/laboratory analysis. Presently she is an aspiring aquatic biologist with a specific interest in freshwater mussels as well gaining experience in delineating wetlands

Bridge Water Quality Monitoring TDOT, TN 2022-current

Conducts monthly monitoring of water chemistry parameters of two locations on Clear Creek, writes and submits a monthly report of results and calibrates YSI and turbidity meters.

Wetland & Stream Delineation for KY-536 Expansion Project, KY 2022

Conducted a wetland and stream delineation for an approximately 150-acre site in Kenton County, Kentucky.

Water Quality Survey, KY 2022.

Backpack electroshocking two reaches to investigate stream health of Yellow Creek, Middlesboro, KY using the Kentucky Index of Biotic Integrity (KIBI). Macroinvertebrate sampling for stream health assessments also took place using kick-netting as well as swoop-netting to collect samples.

Mussel Survey TDOT Gary Dyer, TN 2022

Conducted a freshwater mussel survey on Black Wolf Creek and its tributaries within the project boundary in Scott County, TN.

Bridge Surveys KYTC, KY 2022

Conducted a fish survey for a KYTC bridge replacement project in Tye Fork, Knox County, Kentucky. Including water quality assessment, mussel surveys, mussel habitat assessment, general stream assessment.

Fish Relocation for the Kentucky Bridge Program Project, KY 2022, 2023

Collected and identified fish within the impacted stream area and relocated the threatened Kentucky Arrow Darter (*Etheostoma spilotum*).

National Parks Service Mussel Surveys, WV 2022

Conducted mussel surveys for an inventory program on the New River, Gauley River, and Bluestone River for the National Park Service. Supervised by biologists Price Sewell and Taylor Fagin.

Hinkston Creek Water Quality Assessment, KY 2022

Evaluated water quality in Hinkston Creek (Bourbon County, KY) through bivalve (*Corbicula fluminea*) in situ growth studies in mussel silos, electrofishing and subsequent IBI, and by use of water quality meters.

Wetland & Stream Delineation for Montrose Environmental, TN 2023

Conducted a wetland and stream delineation for an approximately 29-acre site in Cheatham County, Kentucky.

Little Sextons Creek Habitat Assessment, KY 2023

Marked and recorded data on individual trees to be retained that served as potential habitat for bat species along Little Sextons Creek in service of the ILF-KDFWR stream restoration project in Jackson and Clay Counties, KY.

Slabcamp Branch Habitat Assessment, KY 2023

Marked and recorded data on individual trees to be retained that served as potential habitat for bat species along Slabcamp Branch in service of the ILF-KDFWR stream restoration project in Rowan County, KY.

Wetland & Stream Delineation for Lost City Solar, KY 2024

Conducted a wetland and stream delineation for an approximately 1,368-acre site in Muhlenberg County, Kentucky.